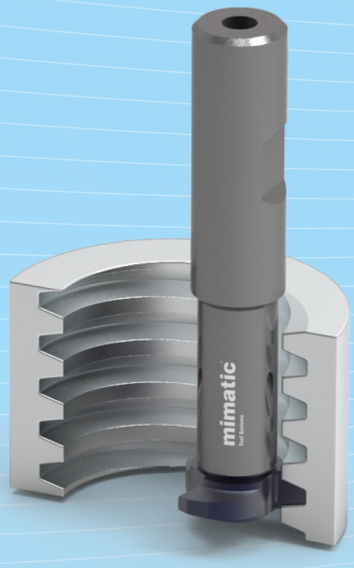
mimatic®

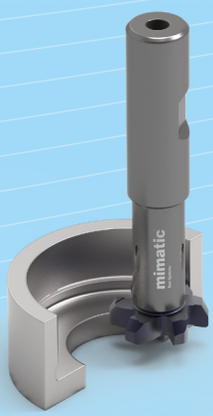
Tool Systems

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

mimatic® GmbH
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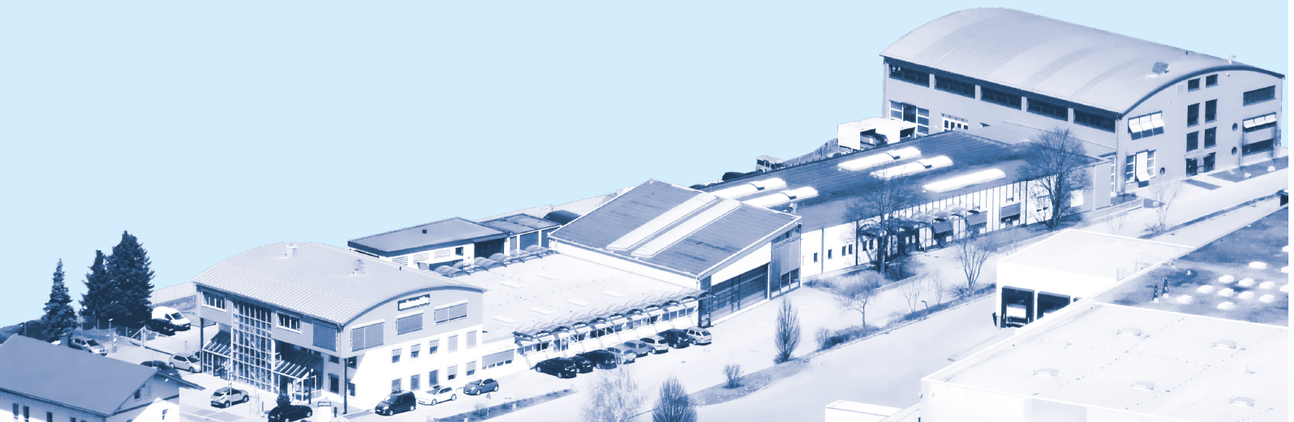
D-87488 Betzigau
☎ **+49 (0) 831 / 5 74 44-0**
✉ **info@mimatic.de**
💻 **www.mimatic.de**

mimatic®
Tool Systems

Our Company



mimatic®
Tool Systems

Tool Systems for Highest Demands

Since 1974, we have been developing and producing cutting tools and driven tools for CNC machine tools. Our products are used in various fields of application for the machining industry for customers of the automotive industry, automotive suppliers, electrical engine-ering, ve-hicle construction, foundries, mechanical engineering and medical technology.

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 in toolmaking and mechanical engineering. Our location in the Allgäu has a powerful production with all facilities of a modern industrial enter-prise.

Locations

Headquarter

mimatic GmbH
Westendstraße 3
87488 Betzigau
Germany
Tel. +49 831-57444-0
info@mimatic.de
www.mimatic.de

Research & Development
Production
Sales
Service

Subsidiaries

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Building 4
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Tel.: +1 847 734 9222 Ext. 1001

Sales
Service

mimatic Tool Systems (Shanghai) Co.Ltd.
Jinhui Road No.1688,
Minhang District
CN-201807 Shanghai
China
Tel.: +86 21 62213668

Sales
Service

mimatic®
Tool Systems

Certificates

ZERTIFIKAT ◆ 認證證書 ◆ CERTIFICATE ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Management Service

CERTIFICATE

Certificate Registration No.: **12 100 15724 TMS** / Order No.: **70006182**

The Certification Body of TÜV SÜD Management Service GmbH
certifies that the organization

mimatic
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mimatic GmbH
Westendstraße 3
87488 Betzigau
Germany

for the scope

Development, Design, Production, Sales and Service of Driven Toolholders, Cutting Tools, Clamping Systems, Special Tools and Electronic Sensor Technology

has established and applies a Quality Management System.
An audit was performed and has furnished proof that the requirements according to

DIN EN ISO 9001:2015

are fulfilled.

The certificate is valid from **2026-02-27** until **2029-02-06**.

Fred Wenke
Head of Certification Body
Munich, 2026-02-27

IAF DAkkS Deutsche Akkreditierungsstelle D-ZM-16103-01-00

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstrasse 57 • 80339 München • Germany
www.tuvsud.com/de-certificate-validity-check

TÜV®

DIN EN ISO 9001 : 2015

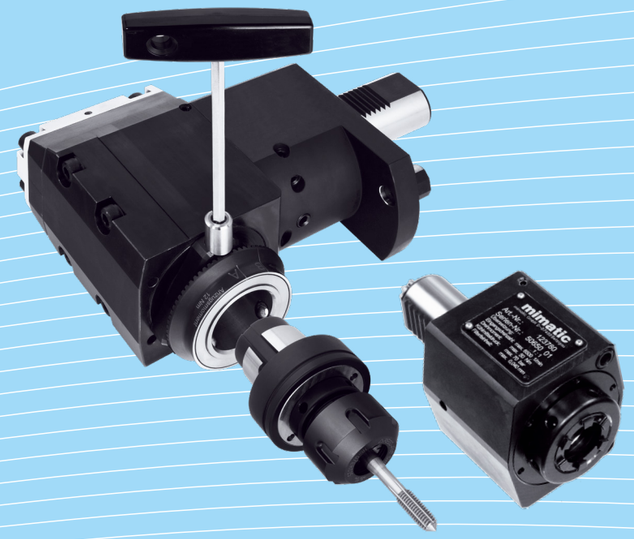
AEO F
Authorized Economic Operator

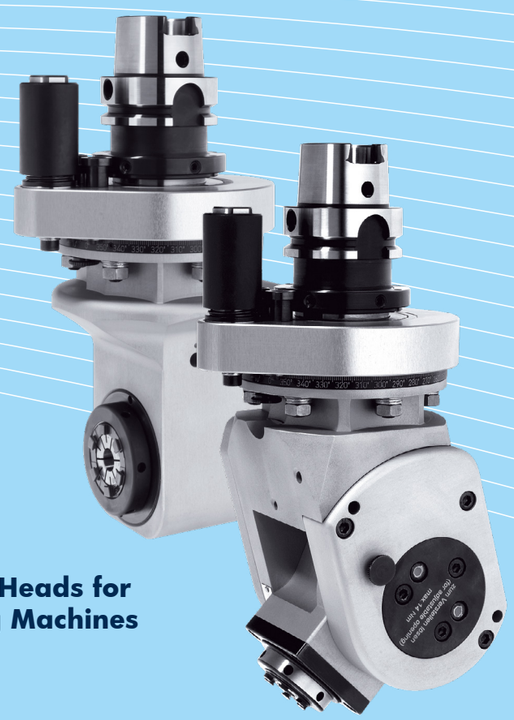
mimatic®
Tool Systems

Products

Cutting Tools

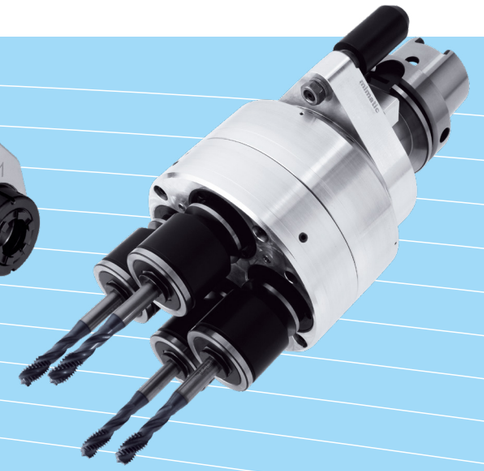
Live Tools for Turning Machines





Angle Heads for Milling Machines

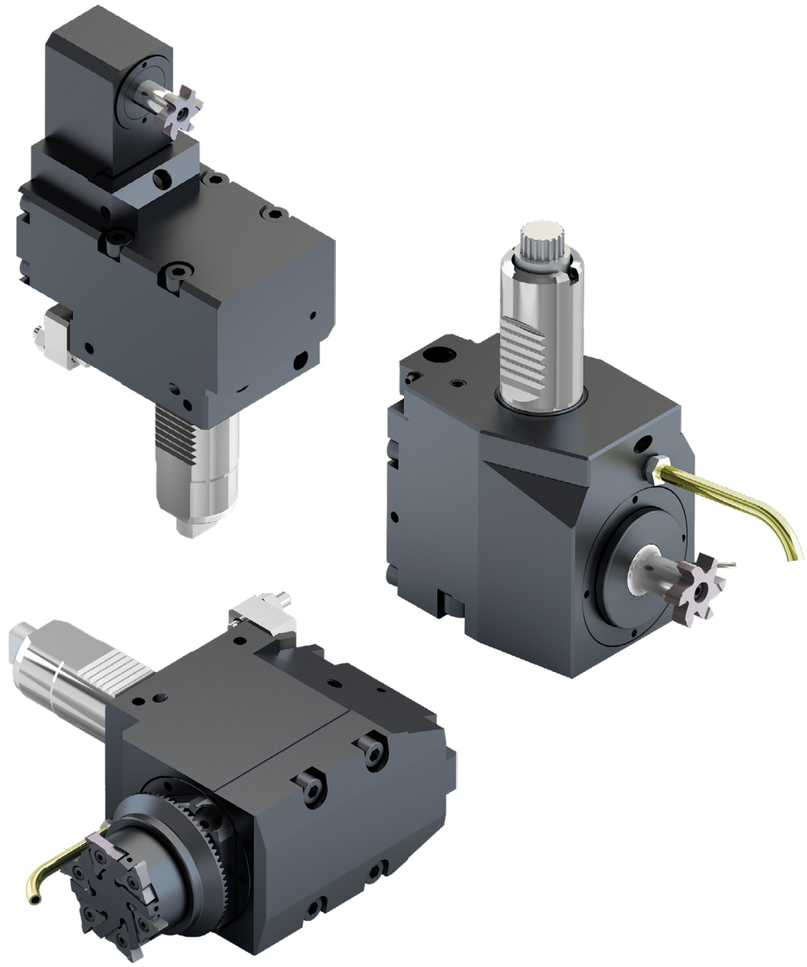
Multi Spindle Units



Clamping Technology

Special Solutions

Economical Complete Machining with Live Tools



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 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

- 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
- Live tools are largely suitable for dry running
- The coolant filtering capabilities of the machine should be < 40 µm

mimatic®
Tool Systems

Angle Heads

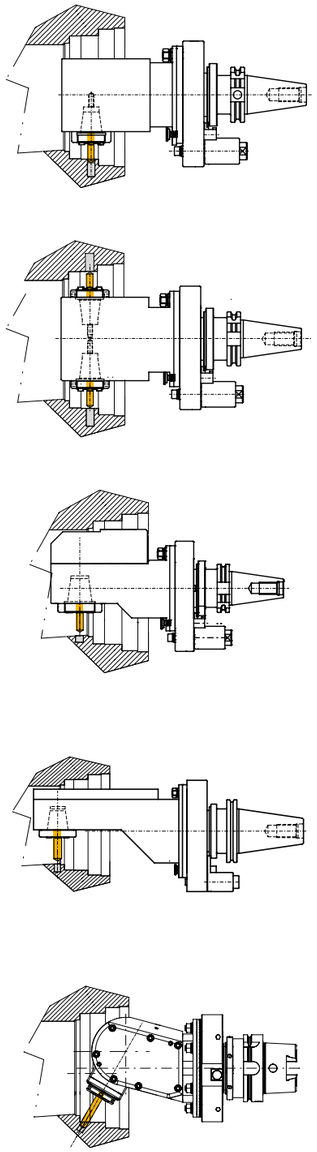
mimatic® has been a reliable partner in project planning and the supply of precision tools worldwide for many years in the field of chip removing production.

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 of **angle 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 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.



eltimon® PRO

Wireless Sensor Control and Entire Ecosystem

Free Your Tool Monitoring

The complete system for digitising of live tools and angle heads

Process Data Acquisition and Evaluation

Proactive Action Instead of Expensive Reactions

Basic Data
Detailed information of the used tool

Operating Hours
Accumulated operating hours since tool use

Tool Temperature
with limit warning for critical conditions

Revolution Informations
Detailed usage values and recorded speed ranges

Load Cylces
For example the number of holes drilled

smart Gateway
Usage close to the machine area
Power supply and internet connection

Vibration Control
Tool breakage and downtime prevention

Highly Integrated Sensor System for Most Effective Productivity

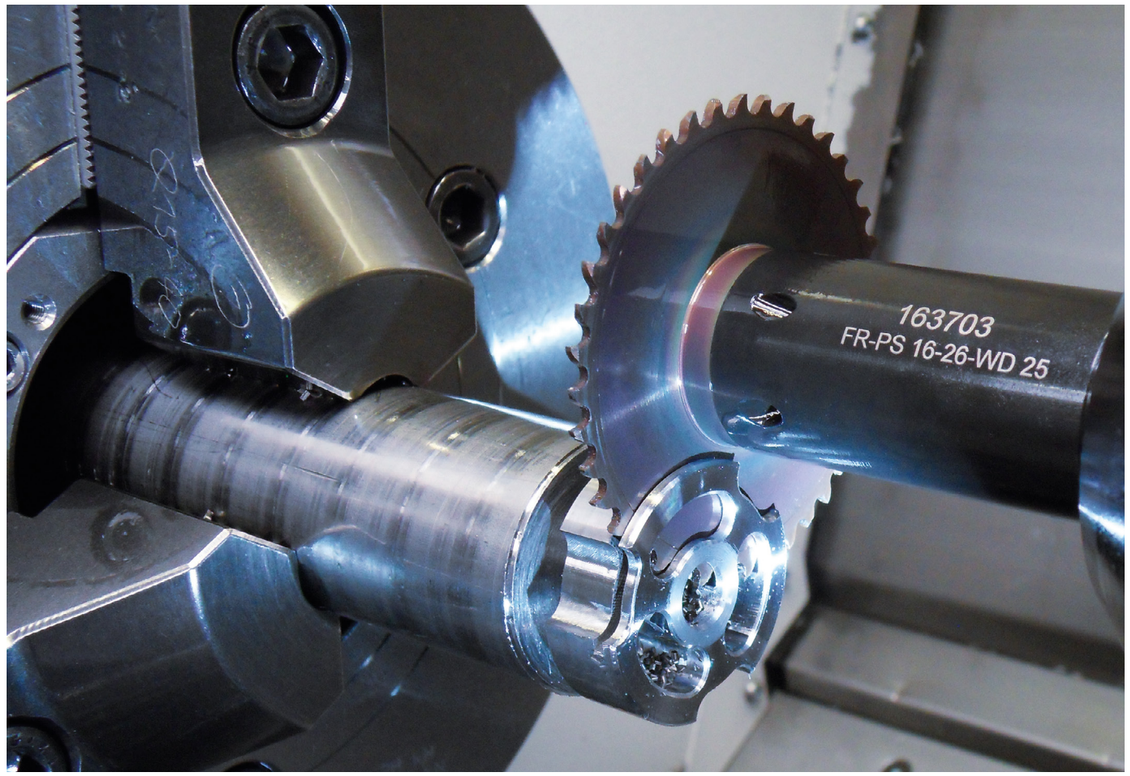
*Wireless data transfer**
directly via eltimon Reader or eltimon smart gateway to the eltimon® service portal and/or to the machine.

www.eltimon.de

mimatic®
Tool Systems

Turn Cut Milling

mimaticDTF



- **Short processing times**
- **High process reliability**
- **Material saving**
- **High surface quality**
- **Absence of burrs**
- **Short chips**

Faster Parting Off Than Anybody Else!
Turn Cut Milling Instead of Parting Off.

mimatic®
Tool Systems

Thread Milling

mimatic® Tool Systems

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 lifes.

- **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 lifes. 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 gradients 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

Steel shaft without clamping surface

Steel shaft with Weldon clamping surface

Solid carbide shaft without clamping surface

Solid carbide shaft with Weldon clamping surface


Cutter with tightening thread

Smallest necessary bore-diameter


Internal coolant supply


Number of inserts

Thread standard

Thread with undercut (Trio-Cut)

for right- and left hand internal thread
for left hand thread modify your NC-program!

for right- and left hand external thread
for left hand thread modify your NC-program!

Full form thread milling

Partial form thread milling

Point angle

Thread standard

Short Descriptions

Alpha (α)	Point angle of milling insert
A	Groove width
A_1	Basic width in the Groove
B_{f6}	Insert holder width of axial grooving tool
B_{H7}	Groove width of axial grooving tool
B_W	Tool width of axial grooving tool
C	Chamfer width
D	Cutting diameter
d_1	Milling body diameter (front)
d_2	Large diameter of milling body
d_{g6}	Fitting face diameter of threaded milling tool
D_{h6}	Shaft diameter of milling body (Arbor)
D_P	Flight circle of insert
D_R	Nominal diameter of concave radius insert
E	Width blank insert
F	Width of trailing chamfer
H_P	Insert height
H_S	Slider height (Axial grooving tool)
L	Lenght of milling tool
L_1	Clamping lenght of milling tool
L_2	Lenght of step milling head
L_G	Usable thread length at the multi-tooth thread milling
L_{HA}	Holder lenght
L_{P1}	Insert height of milling body – edge
L_{P2}	Insert height of edge – interfering contour
L_{PF}	Lenght of fitting face
L_S	Shaft lenght – clamping lenght (Depth)
M	Thread size
P	Pitch
R	Radius (general/common)

Formula for Tool Lengths

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

mimatic® Tool Systems

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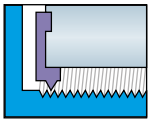
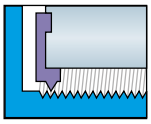
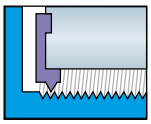
PolyMILL



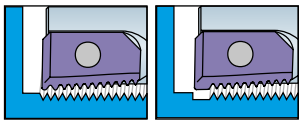
NEW UNEF thread

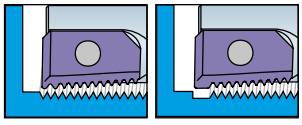
TriMILL





TrioCUT





mimatic® Tool Systems

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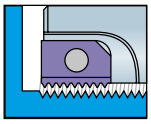

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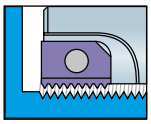


SolidCUT

mimaticSTC

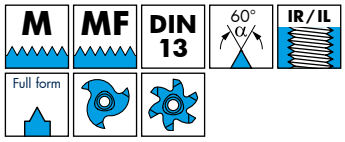
Technical Data

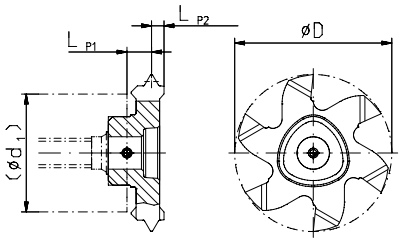
mimatic Tool Systems

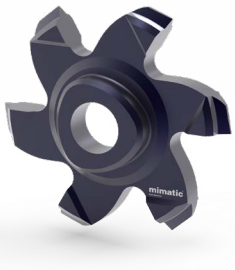
PolyMILL

Thread Milling

- Insert holder see page 27-29
- Cutting data see page 166



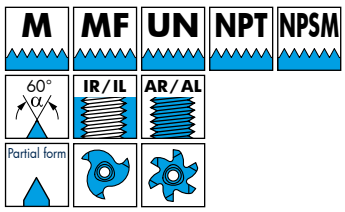


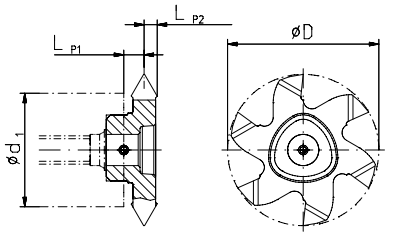


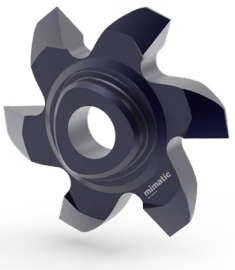
	Type	Pitch mm	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,00	9,6	2,65	0,80	0,572	≥ M12x1	3	171875
	P1210 *	1,50	9,6	2,50	0,95	0,875	≥ M14x1,5	3	171876
	P1210 *	1,75	9,6	2,25	1,20	1,010	only M12	3	175479
	P1211 *	2,00	10,5	2,25	1,20	1,127	only M14, M16	3	160857
	P1211 *	2,00	10,5	2,25	1,20	1,157	≥ M18x2	3	171877
P16	P1616	1,00	16,0	2,80	1,03	0,572	≥ M18x1	6	107240
	P1616	1,50	16,0	2,55	1,28	0,864	≥ M20x1,5	6	142569
	P1616	2,00	16,0	2,55	1,28	1,157	≥ M22x2	6	142570
	P1616	2,50	16,0	2,05	1,78	1,400	only M20, M22	6	142534
	P1616	2,50	16,0	2,05	1,78	1,444	≥ M24 x2,5	6	142543
	P1616	3,00	16,0	3,05	1,78	1,702	≥ M24	6	142575
P20	P2020	1,50	20,0	2,55	1,28	0,875	≥ M24x1,5	6	168683
	P2020	2,00	20,0	2,55	1,28	1,157	≥ M27x2	6	168684
	P2020	3,00	20,0	2,15	1,68	1,745	only M24, M27	6	168685
P25	P2526	1,50	26,0	2,15	1,28	0,875	≥ M30x1,5	6	142617
	P2526	2,00	26,0	2,55	1,28	1,159	≥ M33x2	6	142644
	P2526	3,00	26,0	2,95	1,88	1,702	≥ M39x3	6	142599
	P2524	3,50	24,0	2,75	2,08	1,960	only M30, M33	6	142671
	P2526	3,50	26,0	2,90	1,93	1,980	≥ M42x3,5	6	142623
	P2526	4,00	26,0	2,65	2,18	2,262	M36 - M45 x 4	6	169675
	P2526	4,00	26,0	2,90	1,93	2,262	≥ M48x4	6	142624
	P2526	4,50	26,0	2,65	2,18	2,602	≥ M42	6	142638
	P2526	5,00	26,0	3,85	3,48	2,836	≥ M48	6	107275
	P2526	5,50	26,0	3,85	3,48	3,182	≥ M56	6	161786
	P2526	6,00	26,0	3,85	3,48	3,467	≥ M64	6	175645

CLICK ME!

External thread according to DIN 13 on request







	Type	Pitch mm	Thread Nominal Ø	D mm	LP1 mm	LP2 mm	G mm	S max. mm	Number of teeth	Order No. TINAMATIC
P12	P1212	1-3	≥16	11,7	2,125	1,33	0,10	1,81	3	171911
P16	P1616 **	1-4	≥20	16,0	2,70	1,68	0,10	2,45	6	142580
	P1616 **	2,5-4	≥22	16,0	2,70	1,68	0,25	2,45	6	142544
	P1618	1-3	≥22	17,7	2,70	1,05	0,10	1,81	6	171954
P20	P2020	1-3	≥24	20,0	2,15	1,68	0,10	1,81	6	168686
	P2022	1-2	≥27	21,7	4,15	1,00	0,10	1,15	6	171972
	P2022	2-4	≥30	21,7	2,95	1,80	0,15	2,45	6	171973
P25	P2526	1-3	≥32	26,0	2,75	2,08	0,10	1,81	6	142647
	P2526	2,5-5	≥36	26,0	2,65	2,18	0,25	3,20	6	142592
	P2526	3,5-6	≥52	26,0	3,85	2,93	0,40	4,20	6	175936

CLICK ME!

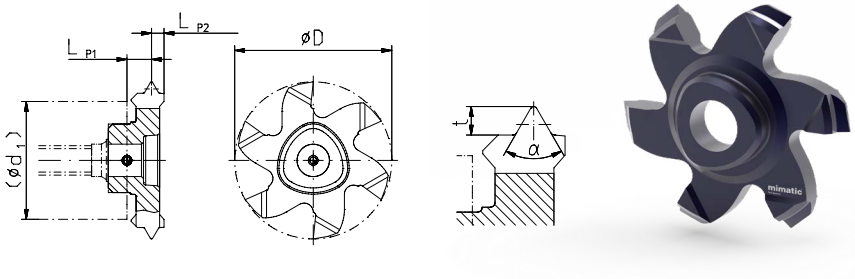
* Not suited for cutter 177676
** Not suited for pitch suitable 3,5 mm with the cutters 123588 and 123590

PolyMILL

Thread Milling

- Insert holder see page 27-29
- Cutting data see page 166
- Further sizes on request

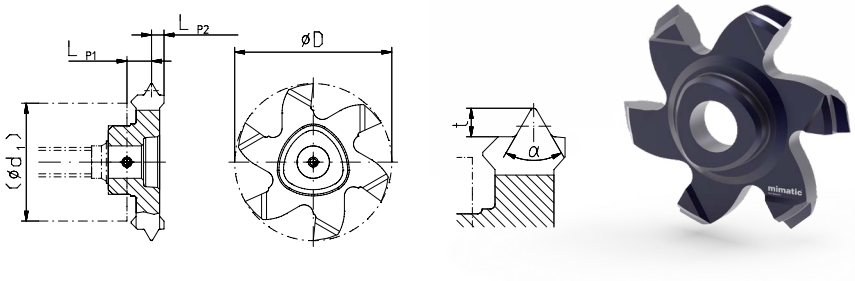
BSW | BS 84 | 55° α | IR / IL | Full form



	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	2,117	12	10	2,25	1,1	1,371	BSW 9/16	3	162119
	P1210 *	2,309	11	10,4	2,15	1,5	1,494	BSW 5/8 + 11/16	3	160998
	P1212 *	2,540	10	11,7	2,2	1,4	1,455	BSW 3/4 + 13/16	3	160663
P16	P1616	2,822	9	16	2,15	1,675	1,622	BSW 7/8 + 15/16	6	160940
	P1616	3,175	8	16	2,65	1,84	1,83	BSW 1	6	161053
	P1616 **	3,629	7	16	2,65	2,05	2,098	BSW 1 1/8 + 1 1/4	6	161166
	P1616 **	4,233	6	16	3,175	2,2	2,455	BSW 1 3/8 + 1 1/2	6	162371
P20	P2020	3,629	7	20	2,7	2,225	2,098	BSW 1 1/8 + 1 1/4	6	160959
	P2020 ***	4,233	6	20	3,15	2,675	2,455	BSW 1 3/8 + 1 1/2	6	161270
P25	P2524	4,233	6	24	4,4	2,675	2,455	BSW 1 3/8	6	161466
	P2524	4,233	6	24	4,4	2,675	2,455	BSW 1 1/2	6	162615
	P2524	5,080	5	24	3,9	2,875	2,955	BSW 1 5/8 + 1 3/4	6	161100

CLICK ME!

BSF | BS 84 | 55° α | IR / IL | Full form



	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,814	14	9,6	2,25	1,1	1,177	BSF 5/8 + 11/16	3	160930
	P1210 *	2,117	12	10	2,25	1,1	1,371	BSF 3/4 + 11/16	3	161623
	P1210 *	2,309	11	10,4	2,15	1,5	1,494	BSF 7/8	3	160951
P16	P1616	2,822	9	16	2,15	1,675	1,622	BSF 1 1/8 + 1 1/4	6	160989
	P1616	3,175	8	16	2,15	1,675	1,83	BSF 1 3/8 - 1 5/8	6	162077
	P1616 **	3,629	7	16	2,65	2,05	2,098	BSF 1 3/4 + 2	6	160960
	P1616 **	4,233	6	16	3,175	2,2	2,455	BSF 2 1/4 - 2 3/4	6	162305
P20	P2020	3,175	8	20	2,15	1,675	1,83	BSF 1 3/8 - 1 5/8	6	161089
	P2020	3,629	7	20	2,7	2,225	2,098	BSF 1 3/4 + 2	6	161341
	P2020 ***	4,233	6	20	3,15	2,675	2,455	BSF 2 1/4 - 2 3/4	6	160942
P25	P2524	3,175	8	24	2,1	1,675	1,83	BSF 1 3/8 - 1 5/8	6	162051
	P2524	3,629	7	24	2,65	2,175	2,098	BSF 1 3/4 + 2	6	161436
	P2524	4,233	6	24	4,4	2,675	2,455	BSF 2 1/4 - 2 3/4	6	161887
	P2524	5,080	5	24	3,9	2,875	2,955	BSF 3 - 3 1/4	6	161250

CLICK ME!

External thread BSW / BSF see next page

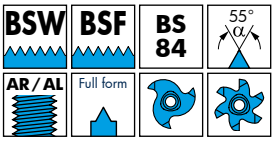
* Not suited for cutter 177676
** Not suited for cutters 123588 and 123590
*** Not suited for cutter 174314

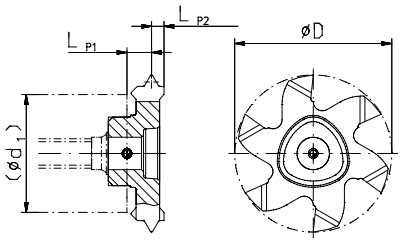
mimatic Tool Systems

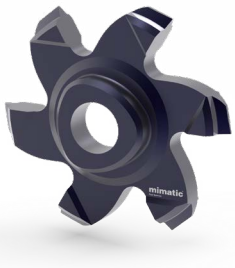
PolyMILL

Thread Milling

- Insert holder see page 27-29
- Cutting data see page 166
- Further sizes on request

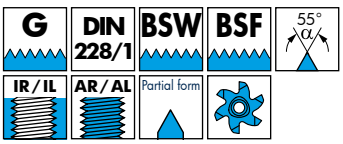


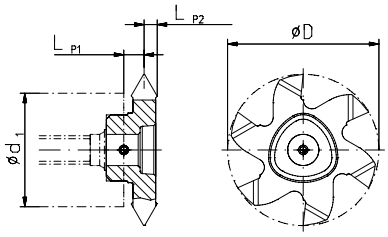


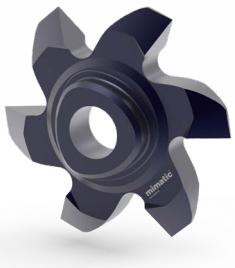


	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1212 *	1,814	14	11,7	2,30	1,3	1,178	BSW / BSF - 14 Gg	3	160943
	P1212 *	2,117	12	11,7	2,25	1,4	1,374	BSW / BSF - 12 Gg	3	160967
	P1212 *	2,309	11	11,7	2,25	1,4	1,498	BSW / BSF - 11 Gg	3	161112
	P1212 *	2,540	10	11,7	2,25	1,4	1,646	BSW / BSF - 10 Gg	3	161184
P16	P1616	1,814	14	16	2,15	1,675	1,178	BSW / BSF - 14 Gg	6	142576
	P1616	2,117	12	16	2,15	1,675	1,374	BSW / BSF - 12 Gg	6	160947
	P1616	2,309	11	16	2,75	2,075	1,498	BSW / BSF - 11 Gg	6	142549
	P1616	2,540	10	16	2,15	1,675	1,646	BSW / BSF - 10 Gg	6	167014
	P1616	2,822	9	16	2,15	1,675	1,829	BSW / BSF - 9 Gg	6	160977
	P1616 **	3,175	8	16	2,65	1,820	2,056	BSW / BSF - 8 Gg	6	161744
	P1616 **	3,629	7	16	3,15	2,225	2,348	BSW / BSF - 7 Gg	6	162097
	P1616 **	4,233	6	16	3,15	2,225	2,737	BSW / BSF - 6 Gg	6	162650
P20	P2020	1,814	14	20	2,05	1,725	1,178	BSW / BSF - 14 Gg	6	168688
	P2020	2,117	12	20	2,15	1,725	1,374	BSW / BSF - 12 Gg	6	160963
	P2020	2,309	11	20	2,05	1,725	1,498	BSW / BSF - 11 Gg	6	168687
	P2020	2,540	10	20	2,15	1,725	1,646	BSW / BSF - 10 Gg	6	160984
	P2020	2,822	9	20	2,15	1,725	1,829	BSW / BSF - 9 Gg	6	160997
	P2020 ***	3,175	8	20	2,65	2,175	2,056	BSW / BSF - 8 Gg	6	161113
	P2020 ***	3,629	7	20	2,65	2,175	2,348	BSW / BSF - 7 Gg	6	161259
	P2020 ***	4,233	6	20	3,15	2,675	2,737	BSW / BSF - 6 Gg	6	161325
P25	P2526	2,309	11	26	2,75	2,075	1,478	BSW / BSF - 11 Gg	6	142600
	P2526	3,175	8	26	2,60	2,175	2,056	BSW / BSF - 8 Gg	6	160949
	P2526	3,629	7	26	2,60	2,175	2,348	BSW / BSF - 7 Gg	6	160950
	P2524	4,233	6	24	4,40	2,675	2,737	BSW / BSF - 6 Gg	6	161130
	P2524	5,080	5	24	4,40	2,675	3,281	BSW / BSF - 5 Gg	6	161400

CLICK ME!







	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	r mm	S max. mm	Number of teeth	Order No. TINAMATIC
P16	P1616	2,54-3,175	14-8	16	2,75	1,625	0,35	2,5	6	173906
	P1616	1,814-2,309	14-11	16	2,15	1,35	0,2	1,5	6	162585
P25	P2526	4,233-6,35	6-4	26	2,65	2,175	0,6	2,8	6	177427

CLICK ME!

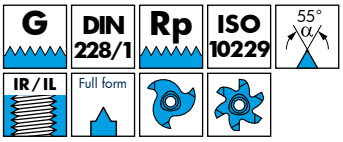
Taper pipe thread BSPT according to BS.84 on request

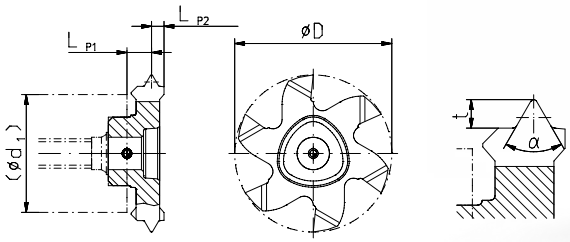
* Not suited for cutter 177676
** Not suited for cutters 123588 and 123590
*** Not suited for cutter 174314

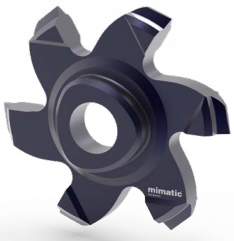
PolyMILL

Thread Milling

- Insert holder see page 27-29
- Cutting data see page 166
- Further sizes on request

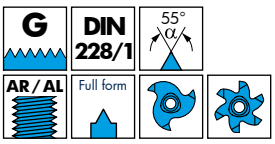


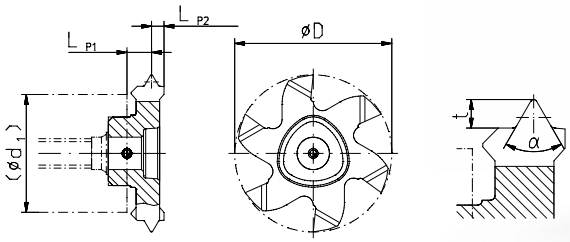


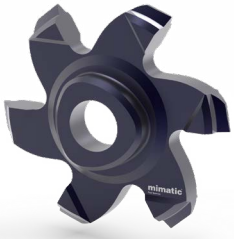


	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,337	19	9,6	2,25	1,2	0,871	G ¼	3	160952
	P1210 *	1,337	19	9,6	2,25	1,2	0,871	G ⅜	3	171912
	P1212 *	1,814	14	11,7	2,25	1,2	1,177	G ½ - G ⅞	3	160970
	P1212 *	2,309	11	11,7	2,15	1,5	1,319	G 1 - G 6	3	160996
P16	P1616	1,814	14	16	2,15	1,675	1,177	G ½ - G ⅝	6	160620
	P1616	1,814	14	16	2,15	1,675	1,177	G ¾ - G ⅞	6	142576
	P1616	2,309	11	16	2,75	2,075	1,478	G 1 - G 6	6	142549
P20	P2020	1,814	14	20	2,05	1,725	1,177	G ¾ - G ⅞	6	168688
	P2020	2,309	11	20	2,05	1,725	1,478	G 1 - G 6	6	168687
P25	P2526	2,309	11	26	2,15	1,675	1,478	G 1 - G 1¼	6	160980
	P2526	2,309	11	26	2,75	2,075	1,478	G 1½ - G 6	6	142600

CLICK ME!







	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,337	19	9,6	2,25	1,2	0,871	G ¼ - G ⅜	3	171912
	P1212 *	1,814	14	11,7	2,3	1,1	1,178	G ½ - G ⅞	3	160943
	P1212 *	2,309	11	11,7	2,25	1,4	1,498	G 1 - G 6	3	161112
P16	P1616	1,814	14	16	2,15	1,675	1,177	G ½ - G ⅞	6	142576
	P1616	2,309	11	16	2,75	2,075	1,478	G 1 - G 6	6	142549
	P1618	1,814	14	17,7	3,15	0,95	1,177	G ½ - G ⅞	6	171949
P20	P2020	1,814	14	20	2,5	1,725	1,177	G ½ - G ⅞	6	168688
	P2020	2,309	11	20	2,5	1,725	1,478	G 1 - G 6	6	168687
P25	P2526	2,309	11	26	2,75	2,075	1,478	G 1 - G 6	6	142600

CLICK ME!

Taper pipe thread R according to ISO 10226 on request

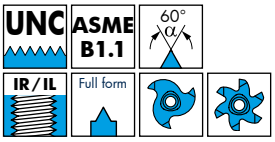
* **Not suited for cutter 177676**

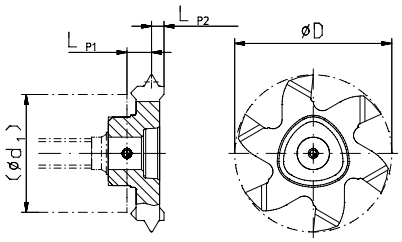
mimatic Tool Systems

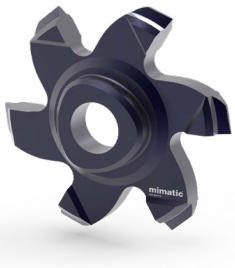
PolyMILL

Thread Milling

- Insert holder see page 27-29
- Cutting data see page 166

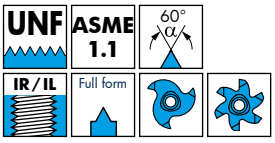


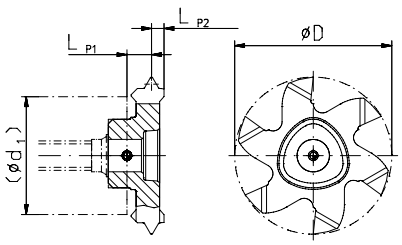




	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,954	13	10	2,25	1,2	1,10	UNC ½ - 13	3	192134
	P1210 *	2,117	12	10	2,25	1,2	1,29	UNC 9/16 - 12	3	171883
	P1211 *	2,309	11	10,5	2,13	1,52	1,35	UNC 5/8 - 11	3	171880
	P1212 *	2,540	10	11,7	2,13	1,52	1,485	UNC ¾ - 10	3	171879
P16	P1616	2,822	9	16	2,05	1,775	1,577	UNC 7/8 - 9	6	172148
P20	P2018 **	3,175	8	18	2,65	2,175	1,809	UNC 1 - 8	6	172149
	P2020 **	3,629	7	20	2,65	2,175	2,043	UNC 1⅛ - 1¼ - 7	6	172150
P25	P2524	4,233	6	24	4,05	3,275	2,454	UNC 1⅜ - 1½ - 6	6	172151
	P2526	5,080	5	26	3,85	3,475	2,979	UNC 1¾ - 5	6	172152
	P2526 ***	5,644	4,5	26	3,85	3,475	3,289	UNC 2 - 2¼ - 4½	6	172153

CLICK ME!

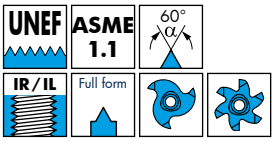


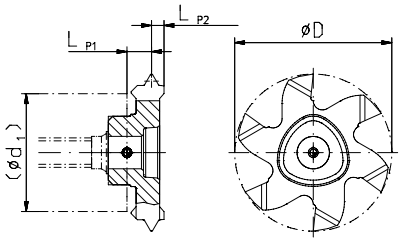


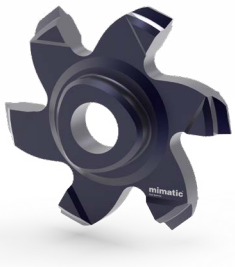
	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,270	20	9,6	2,5	0,95	0,733	UNF ½ - 20	3	171884
	P1211 *	1,411	18	10,5	2,5	0,95	0,827	UNF 9/16 - 18	3	171885
	P1212	1,588	16	11,7	2,5	0,95	0,945	UNF ¾ - 16	3	171900
P16	P1618	1,814	14	17,7	3,15	0,95	1,071	UNF 7/8 - 14	6	171950
P20	P2020	2,117	12	20	2,15	1,675	1,228	UNF 1 - 12	6	171951

CLICK ME!

- Article conditioned on stock







	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210 *	0,907	28	9,6	2,5	0,95	0,491	UNEF 7/16 - ½	3	161798
	P1212	1,058	24	11,7	2,5	0,95	0,59	UNEF 9/16 - 11/16	3	161833
P16	P1616	1,270	20	16	2,05	1,775	0,733	UNEF ¾ - 1	6	161868
P20	P2020	1,411	18	20	2,15	1,675	0,827	UNEF 1 1/16 - 1 11/16	6	162008

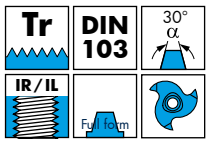
CLICK ME!

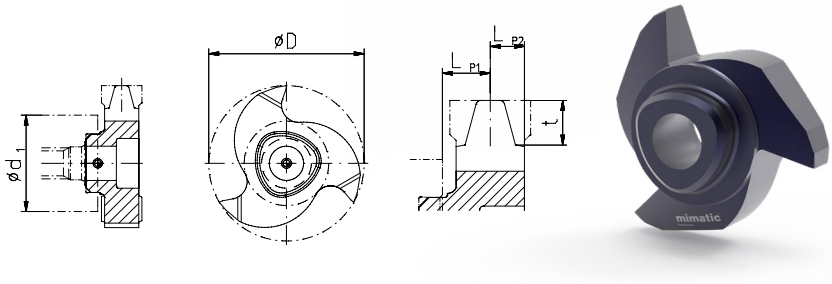
* Not suited for cutter 177676
** Not suited for cutter 174314
*** Not suited for cutter 123613 and 161205

PolyMILL

Thread Milling

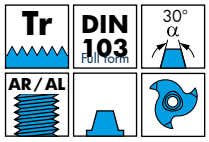
- Insert holder see page 27-29
- Cutting data see page 166

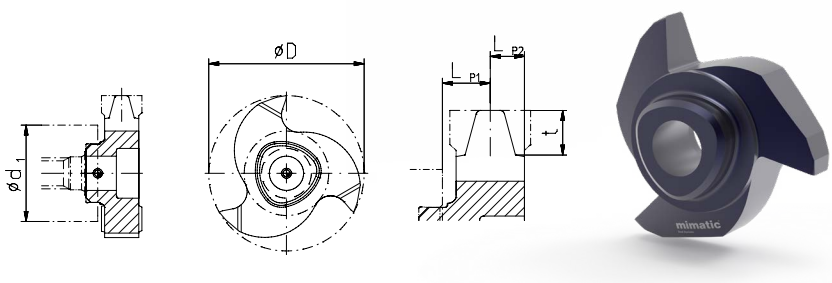




	Type	Pitch mm	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,5	9,6	2,775	0,575	0,9	Tr 14x1,5	6°	3	160689
	P1210 *	1,5	9,6	2,775	0,575	0,9	Tr 20x1,5	6°	3	161243
	P1212 *	2,0	11,7	2,5	1,1	1,25	Tr 16x2 - Tr 20x2	6°	3	177717
	P1211 *	3,0	11,0	2,23	1,42	1,75	Tr 18x3 - Tr 20x3	6°	3	160862
	P1212 *	4,0	12,0	2,15	1,5	2,25	Tr 20x4	6°	3	160308
P16	P1614 **	3,0	14,0	2,3	1,5	1,75	TR 24x3 - Tr 32x3	8°	3	162630
	P1615 **	5,0	15,3	3,06	2,19	2,75	Tr 24x5	8°	3	161652
	P1615 **	5,0	15,3	3,15	2,1	2,75	Tr 26x5	8°	3	166213
	P1615 **	5,0	15,3	3,15	2,1	2,75	Tr 28x5 - Tr 36x5	8°	3	150365
	P1616 **	6,0	16,2	4,27	3,0	3,5	Tr 30x6 - Tr 32x6	8°	3	182498
	P1616 **	6,0	16,2	4,22	3,03	3,5	Tr 34x6 - Tr 42x6	8°	3	161736
P25	P2524	3,0	24,0	2,6	2,1	1,75	Tr 36x3 - Tr 40x3	8°	3	160972
	P2524	4,0	24,0	1,85	2,0	2,25	≥ Tr 65x4	8°	3	161124
	P2525	5,0	25,0	3,2	2,37	2,75	Tr 44x5 - Tr 48x5	8°	3	160872
	P2521 ***	6,0	21,0	3,85	2,75	3,5	Tr 32x6 - Tr 36x6	8°	3	149185 NEW
	P2524 ***	6,0	24,0			3,5	Tr 36x6 - Tr 38x6	8°	3	182872 NEW
	P2522 ***	7,0	22,0	4,0	2,65	4,00	Tr 38x7 - Tr 42x7	8°	3	162648
	P2522 ***	7,0	22,0	4,0	2,65	4,00	Tr 44x7	8°	3	161111
	P2525 ***	8,0	25,0	4,75	3,4	4,5	Tr 46x8 - Tr 48x8	8°	3	162257
	P2525 ***	8,0	25,0	5,03	3,13	4,5	Tr 50x8 - Tr 52x8	8°	3	110966
	P2525 ***	9,0	25,0	4,73	3,42	5,00	Tr 55x9 - Tr 60x9	8°	3	160869
	P2525 ***	10,0	25,0	4,65	3,5	5,5	Tr 65x10 - Tr 80x10	8°	3	167236

CLICK ME!





	Type	Pitch mm	D mm	LP1 mm	LP2 mm	t mm	Chip angle	Number of teeth	Order No. TINAMATIC
P12	P1210 *	1,5	9,6	2,775	0,575	0,90	6°	3	161243
	P1212 *	2,0	11,7			1,25	6°	3	200635 NEW
	P1212 *	3,0	11,7			1,75	6°	3	On request
	P1212 *	4,0	11,7			2,25	6°	3	198739 NEW
P16	P1616	3,0	16,0			1,75	8°	3	198335 NEW
	P1616 **	4,0	16,0	2,4	1,63	2,25	8°	3	161588
	P1616 **	5,0	16,0			2,75	8° / 6°	3 / 6	On request
	P1616 **	6,0	16,0			3,5	8° / 6°	3 / 6	On request
P25	P2526	4,0	26			2,25	8°	6	195655 NEW
	P2526 ***	5,0	26			2,75	6°	6	160270 NEW
	P2526 ****	6,0	26			3,5	6°	6	203633 NEW
	P2525 ***	7,0	25			4,0	8°	3	206245 NEW
	P2525 ***	8,0	26			4,25	6°	6	174605 NEW
	P2525 ***	9,0	26			5,0	8°	6	194539 NEW
	P2525 ***	10,0	25 / 26			5,5	8° / 6°	3 / 6	On request

CLICK ME!

* Not suited for cutter 177676
** Not suited for cutters 123588 and 123590
*** Not suited for cutters 123613, 123609, 123611 and 161205
**** Not suited for cutters 161205 and 123613

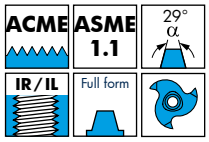
Only single-start thread!

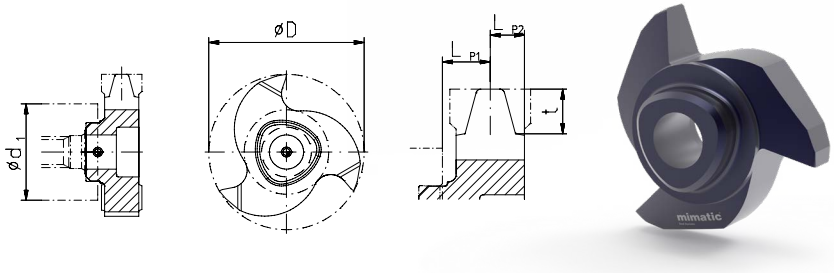
mimatic Tool Systems

PolyMILL

Thread Milling

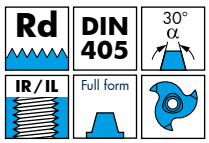
- Insert holder see page 27-29
- Cutting data see page 166
- Further sizes on request

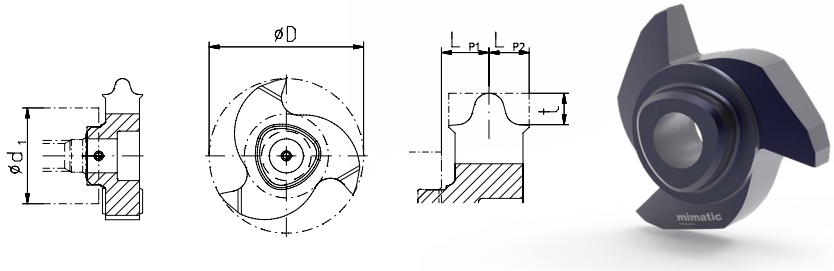




	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P16	P1616	5,08	5	16	3,02	2,23	2,85	1"-5Gg - 1⅛"-5Gg	8°	3	182614
	P1616 *	6,35	4	16	4,04	3,21	3,43	1¼"-4Gg - 1½"-4Gg	8°	3	172556
P25	P2524	6,35	4	24	3,9	2,75	3,47	1¾"-4Gg - 2"-4Gg	8°	3	162654
	P2525	8,467	3	25	4,65	3,5	4,51	2¼"-3Gg - 2¾"-3Gg	8°	3	161935

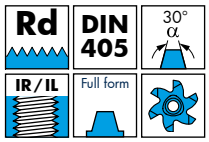
CLICK ME!

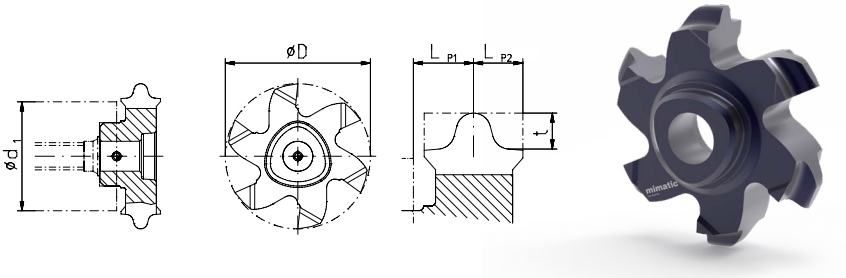




	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P16	P1613 *	3,175	8	13	3,15	2,1	1,588	Rd 20 x ⅛	8°	3	174442
	P1614 *	3,175	8	14	3,15	2,1	1,588	Rd 22 x ⅛	8°	3	161424
	P1615	3,175	8	15,3	2,4	1,9	1,588	Rd 24 x ⅛ - Rd 26 x ⅛	8°	3	161156
	P1616	3,175	8	16	2,4	1,9	1,588	Rd 28 x ⅛ - Rd 32 x ⅛	8°	3	174421
	P1616	3,175	8	16	2,4	1,9	1,588	Rd 34 x ⅛ - Rd 38 x ⅛	8°	3	162544
	P1616 *	4,233	6	16	3,15	2,575	2,117	Rd 40 x ⅛ - Rd 55 x ⅛	8°	3	160954
	P1616 *	4,233	6	16	3,15	2,575	2,117	Rd 58 x ⅛ - Rd 80 x ⅛	8°	3	161067
	P1616 *	4,233	6	16	3,15	2,575	2,117	Rd 82 x ⅛ - Rd 100 x ⅛	8°	3	161110
	P1616 *	6,35	4	16	4,15	3,125	3,175	Rd 105 x ¼ - Rd 200 x ¼	8°	3	160995

CLICK ME!





	Type	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P16	P1616	3,175	8	16	2,65	2	1,588	Rd 28 x ⅛	6°	6	175137
P25	P2526	4,233	6	26	3,85	3,4	2,117	from Rd 65 x ⅛	6°	6	172430
	P2526	6,35	4	26	3,85	3,4	3,175	Rd 105 x ¼ - Rd 120 x ¼	6°	6	168288

CLICK ME!

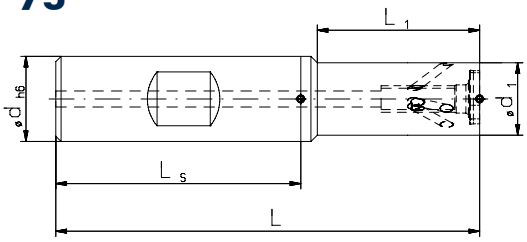
Knuckle thread acc. to DIN 20400 on request

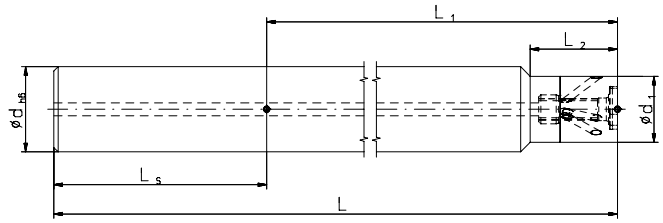
* **Not suited for cutters 123588 and 123590**

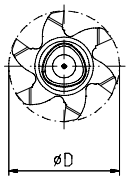
PolyMILL

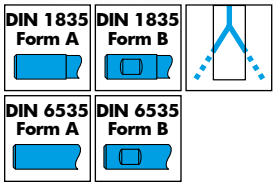
Circular Milling Tools with Polygonal Insert Seat

■ Inserts see page 20-26
■ Cutting data see page 166









Type	Order No.	Form	dh6 mm	d1 mm	S max. (D-d1)/2 mm	L mm	L1 mm	L2 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	3,5	54	8	-	Steel	T8 IP 111656	M2,5x7 107596
	123619	B	12	7,0	3,5	67,5	20	-	Steel		
	100228	B	12	7,0	3,5	67,5	20	-	Carbide		
	171778	A	12	7,0	3,5	67,5	20	-	Carbide		
	171780	B	12	7,0	3,5	80	30	-	Carbide		
	171781	A	12	7,0	3,5	80	30	-	Carbide		
	171783	B	12	7,0	3,5	100	40	-	Carbide		
	171784	A	12	7,0	3,5	100	40	-	Carbide		
P16	177174	A	10	9,0	6,5	60	11	-	Steel	T8 IP 111656	M3x12 143158
	123573	B	12	9,0	6,5	67,4	21	-	Steel		
	123577	B	12	9,0	6,5	67,4	21	-	Carbide		
	171787	A	12	9,0	6,5	67,4	21	-	Carbide		
	123580	B	12	9,0	6,5	82,4	36	-	Carbide		
	171789	A	12	9,0	6,5	82,4	36	-	Carbide		
	123584	A	12	9,0	6,5	100	30	-	Carbide		
	123588	A	12	11,5	5,25	82,4	37,4	13	Carbide		
	123590	A	12	12,0	5,0	122,5	77,5	-	Carbide		
P20	177178	A	12	11,5	10,25	62,4	14,4	-	Steel	T15 IP 111671	M4x13 107597
	123615	B	16	11,5	10,25	80	30	-	Steel		
	123616	B	16	11,5	10,25	80	30	-	Carbide		
	171794	A	16	11,5	10,25	80	30	-	Carbide		
	123617	B	16	11,5	10,25	100	50	-	Carbide		
	171796	A	16	11,5	10,25	100	50	-	Carbide		
	174314	A	16	15,5	8,25	105,5	57,5	20	Carbide		
P25	177182	A	16	13,6	11,7	69,6	20,4	-	Steel	T20 IP 111594	M5x13,5 107529
	123592	B	16	13,6	11,7	79,6	30,5	-	Steel		
	123598	B	16	13,6	11,7	79,6	30,5	-	Carbide		
	171855	A	16	13,6	11,7	79,6	30,5	-	Carbide		
	123600	B	16	13,6	11,7	94,6	45,5	-	Carbide		
	171857	A	16	13,6	11,7	94,6	45,5	-	Carbide		
	123603	B	16	13,6	11,7	109,6	60,5	-	Carbide		
	171859	A	16	13,6	11,7	109,6	60,5	-	Carbide		
	123609	A	16	15,5	10,75	105	57	21,5	Carbide		
	123611	A	16	15,5	10,75	149,5	101,5	21,5	Carbide		
	161205 NEW	A	20	15,5	10,75	100	52	21,5	Carbide		
	123613	A	20	15,5	10,75	174,45	128,5	21,5	Carbide		

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

* **Screwdriver and clamping screw included in delivery**

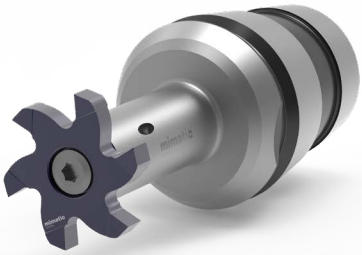
CLICK ME!

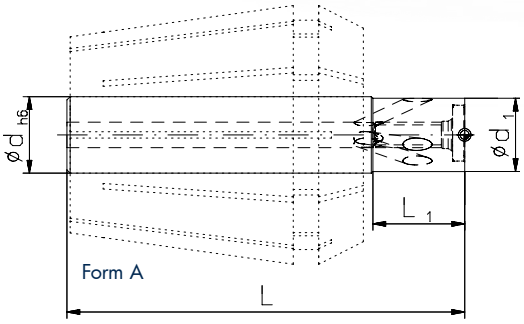
mimatic Tool Systems

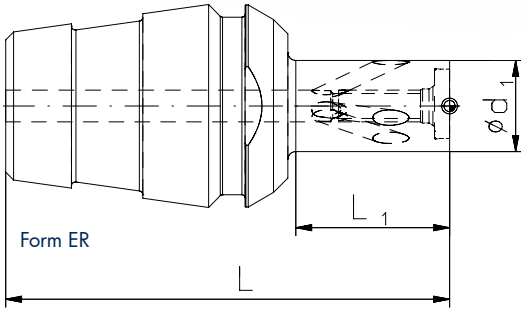
PolyMILL

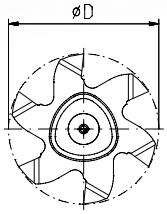
Circular Milling Tools for Driven Toolholders

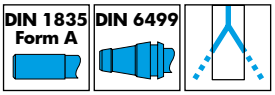
- Inserts see page 20-26
- Cutting data see page 166











Type	Order No.	Form	d h6 mm	d1 mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	3,5	54	8	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16		7,0	3,5	37,5	8	Steel		
	177173	ER 20		7,0	3,5	47	13	Steel		
P16	177174	A	10	9,0	6,5	60	11	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16		9,0	6,5	41,4	11	Steel		
	177177	ER 20		9,0	6,5	51	16	Steel		
P20	177178	A	12	11,5	10,25	62,4	14,4	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20		11,5	10,25	49,5	14,5	Steel		
	177181	ER 25		11,5	10,2	56	19,4	Steel		
P25	177182	A	16	13,6	11,7	69,6	20,4	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25		13,6	11,7	56	19,4	Steel		
	177185	ER 32		13,6	11,7	73	30,4	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

CLICK ME!

Changing Inserts

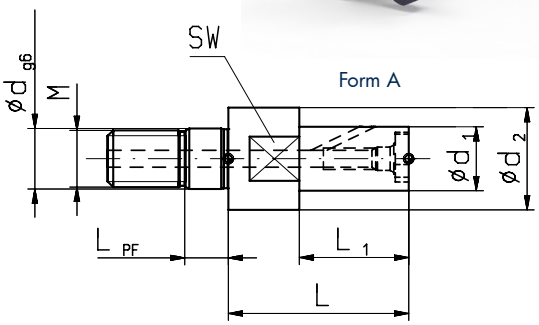
Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert.
Please use the appropriate TIP hex key for the tighening of the inserts and consider the screw tightening torques in the tables.

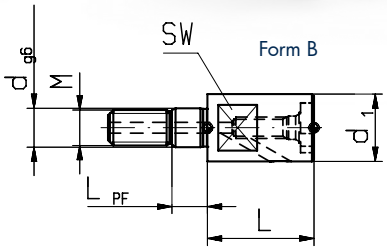
* **Screwdriver and clamping screw included in delivery**

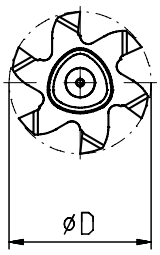
PolyMILL

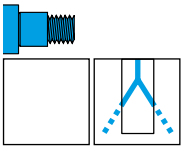
Circular Milling Tools with Polygonal Insert Seat

■ Inserts see page 20-26
■ Cutting data see page 166









Please adapt cutting data to overhangs length

Type	Order No.	Form	d1 mm	d2 mm	S max. (D-d1)/2 mm	L mm	L1 mm	M	dg6 mm	LPF mm	Spare part No. Screw-driver *	Spare part No. Screw *
P12***	177676	B	9,5	–	2,25	10,0	–	M5	5,5	5,0	111656	107596
P16	123586	A	9,0	14,4	6,5 / 3,8	25,4	15,4	M8	8,5	5,5	111656	143158
P16**	177683	B	9,5	–	6,25	15,0	–	M5	5,5	5,0	111656	143158
P16***	177698	B	11,0	–	5,5	15,0	–	M6	6,5	5,0	111656	143158
P20	123618	A	11,5	18,0	10,25 / 7	29,4	19,4	M10	10,5	5,5	111671	107597
P20**	177734	B	11,5	–	10,25	15,0	–	M6	6,5	5,0	111671	107597
P20***	177735	B	13,5	–	9,25	15,0	–	M8	8,5	5,5	111671	107597
P25	123605	A	13,6	22,5	11,7 / 7,25	37,9	24,9	M12	12,5	5,5	111594	107529
P25**	177747	B	13,6	–	11,7	18,0	–	M8	8,5	5,5	111594	107529
P25***	177767	B	18,0	–	9,5	18,0	–	M10	10,5	5,5	111594	107529

* Screwdriver and clamping screw included in delivery
** Slim design for thread milling
*** Reinforced design

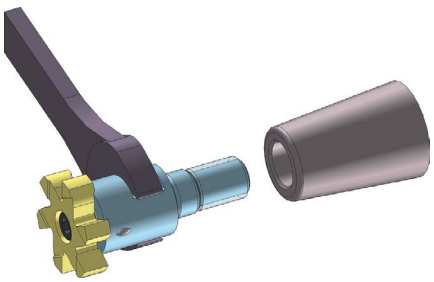
Screw torques max.

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

CLICK ME!

Assembling Instructions

■ Recommended tightening torque for screw-in circular milling body
■ End-wrench see page 153



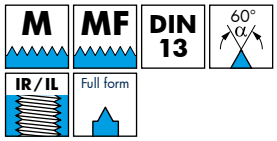
Thread size (M)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60
M16	24	80

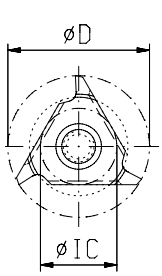
mimatic Tool Systems

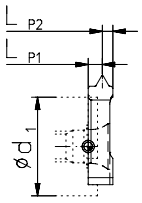
TriMILL

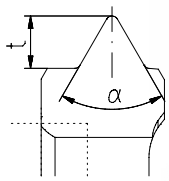
Thread Milling

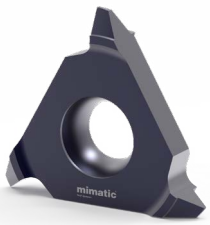
- Insert holder see page 32
- Cutting data see page 166





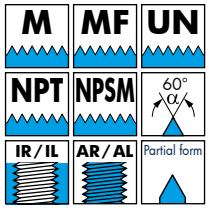


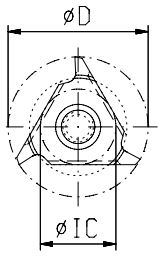


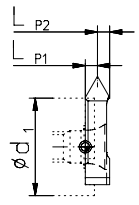


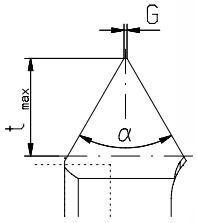
Type	Pitch mm	D mm	IC mm	L_{P1} mm	L_{P2} mm	t mm	Thread	Order No. TINAMATIC
03	1,0	10,6	5,5	1,64	0,7	0,578	≥ M12 x 1	141613
	1,5	10,6	5,5	1,39	0,95	0,864	≥ M14 x 1,5	141674
	2,0	10,6	5,5	2,0	1,0	1,159	≥ M16 x 2	141647
02	1,0	17,5	9,2	2,8	0,7	0,578	≥ M20 x 1	141443
	1,5	17,5	9,2	2,55	0,95	0,864	≥ M22 x 1,5	141482
	2,0	17,5	9,2	2,3	1,2	1,159	≥ M24 x 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	≥ M24 x 2,5	141514
	3,0	17,5	9,2	2,1	1,4	1,728	≥ M24	141494
01	1,0	23,0	12,4	3,3	0,7	0,578	≥ M25 x 1	141317
	1,5	23,0	12,4	3,05	0,95	0,864	≥ M27 x 1,5	141291
	2,0	23,0	12,4	2,8	1,2	1,159	≥ M30 x 2	141312
	2,5	23,0	12,4	2,55	1,45	1,444	≥ M33 x 2,5	141287
	3,0	23,0	12,4	2,3	1,7	1,728	≥ M36 x 3	141339
	3,5	23,0	12,4	2,3	1,7	2,023	≥ M36 x 3,5	141300
	4,0	23,0	12,4	2,3	1,7	2,308	≥ M36	141347
	4,5	23,0	12,4	4,0	2,5	2,602	≥ M42	141365
	5,0	23,0	12,4	4,0	2,5	2,887	≥ M48	141342
	5,5*	23,0	12,4	3,6	2,9	3,182	≥ M56	141350
	6,0*	23,0	12,4	3,2	3,3	3,467	≥ M64	141369

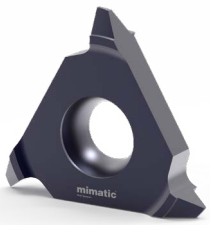
CLICK ME!











Type	Pitch mm	Thread Nominal Ø	D mm	IC mm	L_{P1} mm	L_{P2} mm	G mm	$t_{max.}$ mm	Order No. TINAMATIC
03	1–2,0	≥ 14	10,6	5,5	1,5	1,5	0,1	1,6	141677
02	1–3,5	≥ 22	17,5	9,2	1,59	1,91	0,1	2,15	141528
01	1–4,0	≥ 27	23,0	12,4	1,85	2,15	0,1	2,45	141366

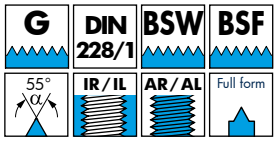
CLICK ME!

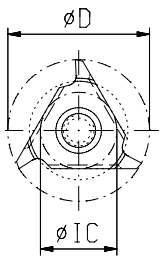
* Not suited for cutters 123415, 170320 and 123416

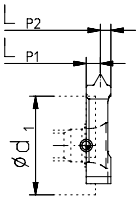
TriMILL

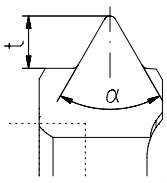
Thread Milling

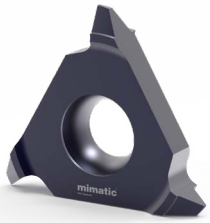
- Insert holder see page 32
- Cutting data see page 166





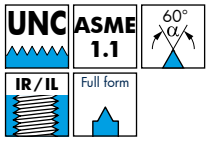


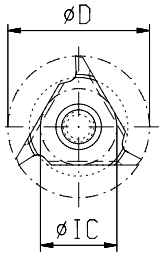


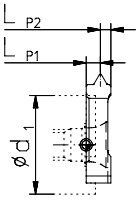


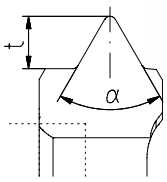
Type	Pitch mm	Pitch / "	D mm	IC mm	LP1 mm	LP2 mm	t mm	Thread	TINAMATIC
03	1,337 *	19	10,6	5,5	1,25	1,09	0,871	G ¼"	141652
	1,337	19	10,6	5,5	1,25	1,09	0,871	G ⅜"	141682
02	1,814 *	14	16,0	9,2	1,75	1,75	1,162	G ½"	141508
	1,814	14	17,5	9,2	2,2	1,3	1,162	G ¾"	141488
	2,309	11	17,5	9,2	1,9	1,6	1,494	≥ G 1"	141522
	3,175	8	17,5	9,2	1,75	1,75	1,830	BSW 1"	160665
	3,175	8	17,5	9,2	1,75	1,75	1,830	BSW 1⅜ - 1 ⅝"	161718
01	2,309	11	23,0	12,4	2,4	1,6	1,494	≥ G 1"	141381

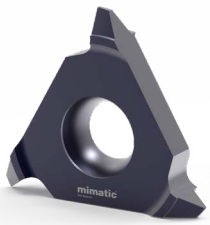
CLICK ME!











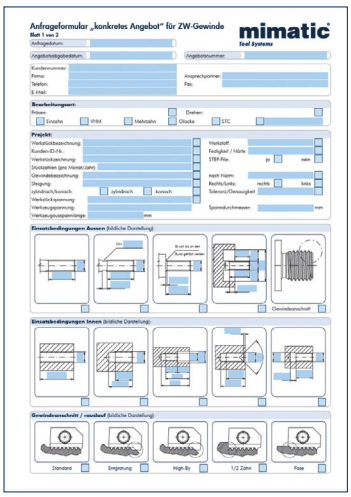
Type	Pitch mm	Pitch / "	D mm	IC mm	LP1 mm	LP2 mm	t mm	Thread	TINAMATIC
03	1,954**	13	10,0	5,5	1,17	1,17	1,099	UNC ½" –13	149460
	2,309**	11	10,6	5,5	1,17	1,17	1,349	UNC ⅝" –11	149204
	2,540**	10	10,6	5,5	1,17	1,17	1,470	UNC ¾" –10	149732

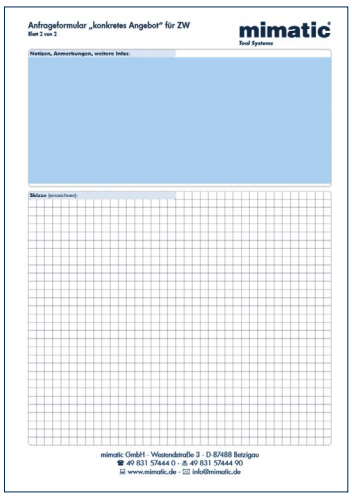
CLICK ME!

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**

Request form:
www.mimatic.de/Gew_EN.pdf





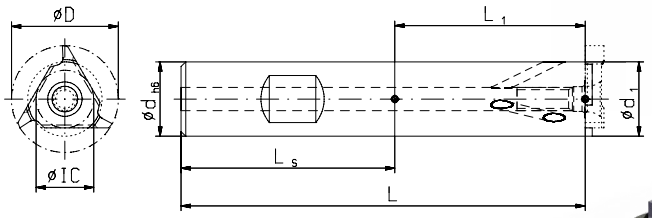
* Only for external threads
** Not suited for cutters 123489

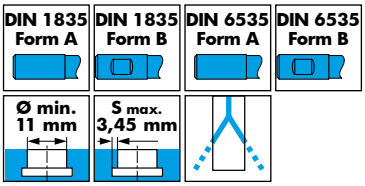
mimatic Tool Systems

TriMILL

Circular Milling Tools

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





Type	Order No.	Form	D mm	IC mm	d h6 mm	d1 mm	S max. mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. 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		

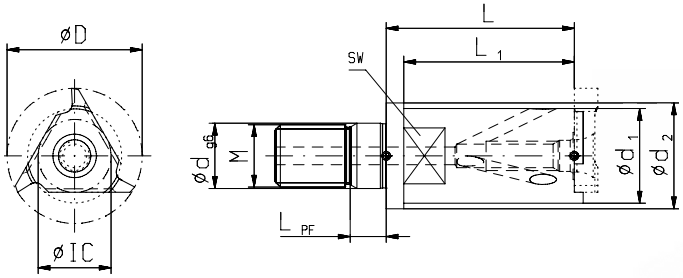
CLICK ME!

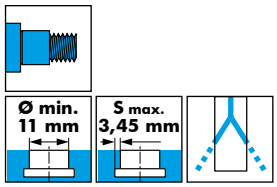
** Without internal coolant supply *** Also suitable as basic body for a tandem cutter.

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





Please adapt cutting data to overhangs length

Limited max. cutting depth Smax

Type	Order No.	D mm	IC mm	d g6 mm	d1 mm	d2 mm	S max. mm	L mm	L1 mm	M	Spare part No. Screw-driver *	Spare part No. 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

CLICK ME!

Screw torques max.

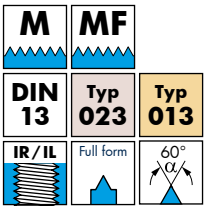
107530	T6 IP	0,9 Nm
107547	T15 IP	3,8 Nm
107551	T20 IP	5,5 Nm

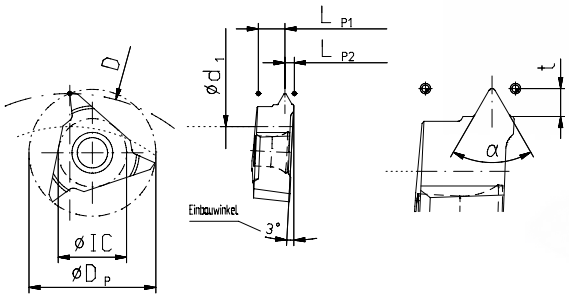
* Screwdriver and clamping screw included in delivery

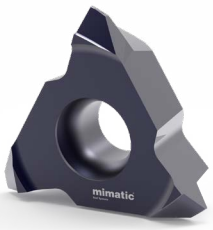
TriMILL

Thread Milling

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

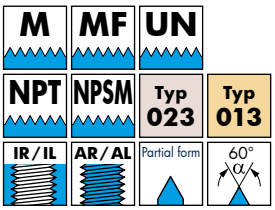


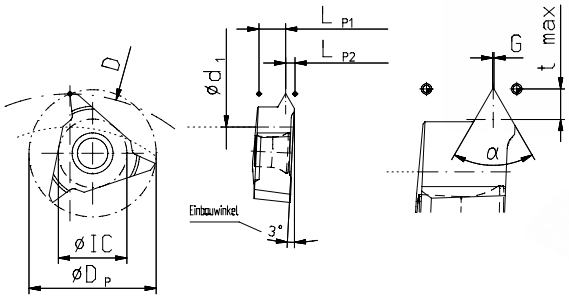


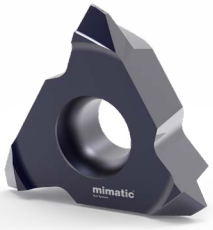


Type	Pitch mm	Thread Nominal Ø	DP mm	IC mm	LP1 mm	LP2 mm	t mm	Order No. TINAMATIC
023	1,5	≥ M36 x 1,5	17,5	9,2	4,08	0,95	0,864	142020
	2,0	≥ M39 x 2	17,5	9,2	3,83	1,2	1,159	142003
	2,5	≥ M42 x 2,5	17,5	9,2	3,52	1,51	1,444	141989
	3,0	≥ M45 x 3	17,5	9,2	3,33	1,7	1,728	141988
	4,0	≥ M52 x 4	17,5	9,2	2,63	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 x1,5	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

CLICK ME!







Type	Pitch mm	Thread Nominal Ø	DP mm	IC mm	LP1 mm	LP2 mm	G mm	S max. 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

CLICK ME!

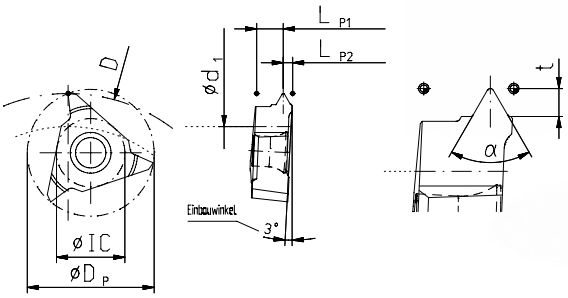
* Not suited for cutters 123462

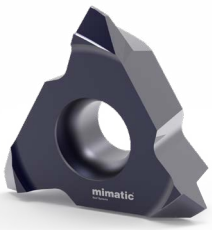
mimatic Tool Systems

TriMILL

Thread Milling

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





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

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

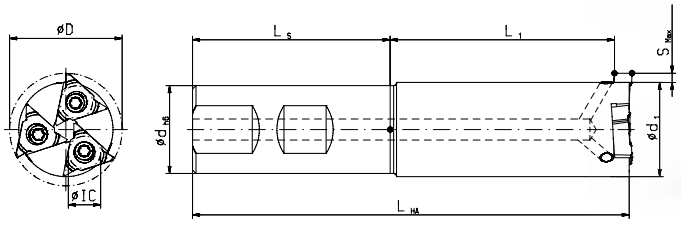
CLICK ME!

TriMILL 023

Circular Milling Tools

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

Typ 023	DIN 1835 Form B	IC 9,2
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	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123462	32	25	26,8	2,6	124,2	119,97	61,97	3	Steel	111671	107547

Screw torque max. 3,8 Nm

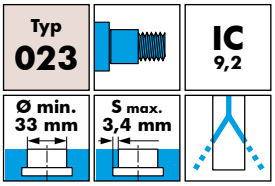
CLICK ME!

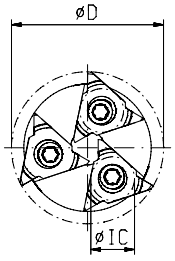
TriMILL 023

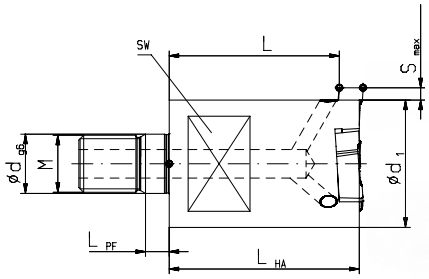
Circular Milling Tools

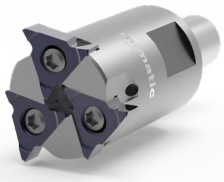
- Inserts see page 33-34
- Cutting data see page 166
- Tightening torques see page 29

Please adapt cutting data to overhangs length







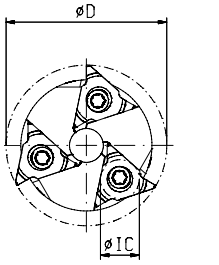


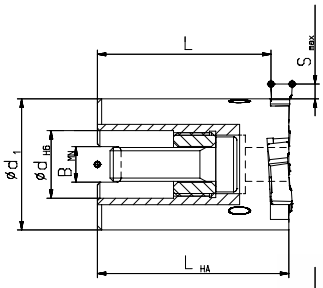
Order No.	D mm	d g6 mm	d1 mm	S max. mm	LHA mm	L mm	Inserts	M	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123465	32	12,5	24,3	3,8	40	34,97	3	M12	111671	107547

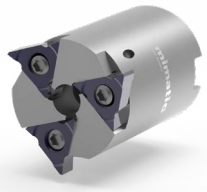
Screw torque max. 3,8 Nm

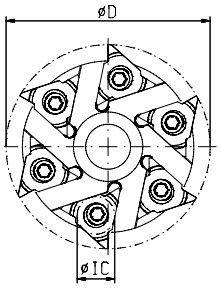
CLICK ME!

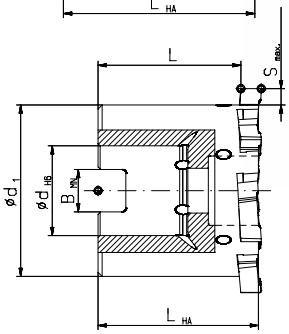
- Assembly instruction see page 178

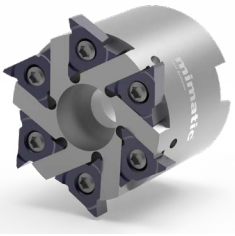


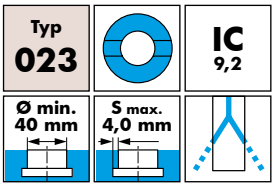












Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Cutting edge	Accessories Key	Spare part No. Cutter fastening screw	Spare part No. T15 IP Screw-driver	Spare part No. Screw
123464	38	16	31	3,4	45,3	40,97	8,4	3	134984	114476*	111671*	107547*
123461	50	22	42	3,9	39,3	34,97	10,4	6		114684*	111671*	107547*
161485	63	27	55	4,0	39,3	34,97	12,4	8		114684*	111671*	107547*

Screw torque max. 3,8 Nm

CLICK ME!

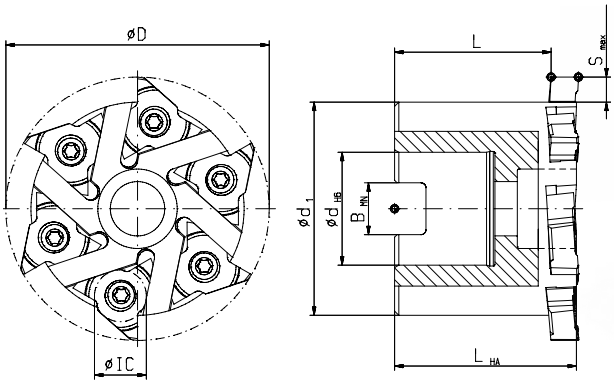
Screw torque max. 3,8 Nm

* Included in delivery

TriMILL 013

Circular Milling Tools

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



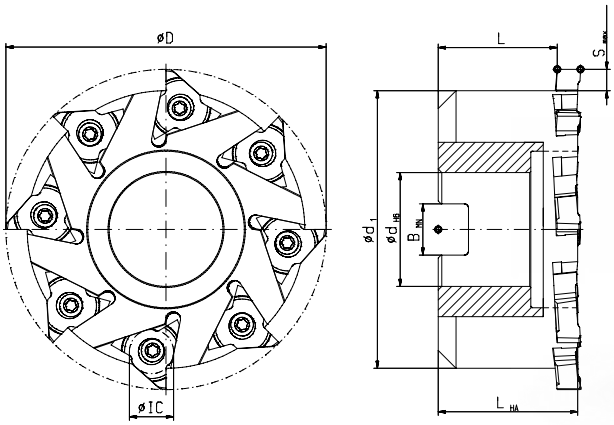
Typ 013 | IC 12,4 | Ø min. 65 mm | S max. 6,0 mm

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123435	63	27	51	6	43,18	37,5	12,4	6	111594	107551

Screw torque 5,5 Nm

CLICK ME!

Cutter clamping screw internal hexagon
Order No. 114695

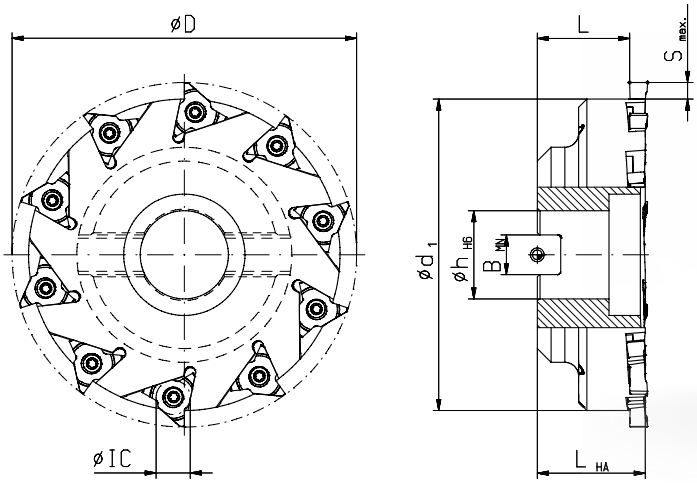


Typ 013 | IC 12,4 | Ø min. 95 mm | S max. 6,0 mm

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123436	90	32	78	6	39,2	33,5	14,4	8	111594	107551

Screw torque 5,5 Nm

CLICK ME!



Typ 013 | IC 12,4 | Ø min. 95 mm | S max. 6,0 mm

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
134561	125	32	113	6,0	39,2	33,5	14,4	10	111594	107551

Screw torque 5,5 Nm

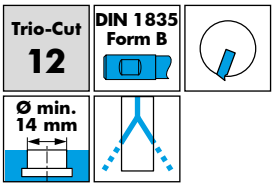
CLICK ME!

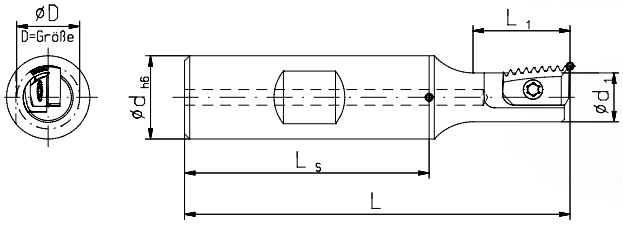
* **Screwdriver and clamping screw included in delivery**

TrioCUT

Circular Milling Tools

- Inserts see below
- Cutting data see page 166





Order No.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No. T8 IP Screw-driver *	Spare part No. Screw *
123620	12	16	9,4	74	18	Steel	111656	115567

Screw torque max. 1,1 Nm

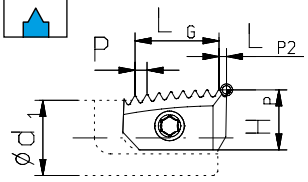
CLICK ME!

Circular Milling Inserts

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

Trio-Cut
12

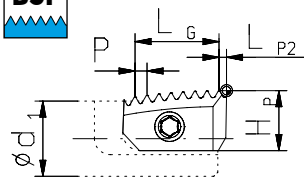
M | DIN 13 | IR/IL | Full form | 60° α



Pitch mm	HP mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,0	7,5	11,0	12	0,5	142594
1,5	7,5	10,5	8	0,75	142694

CLICK ME!

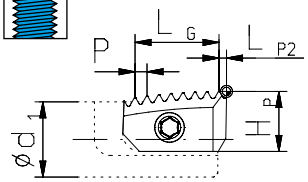
G | DIN 228/1 | BSW | BSF | IR/IL | AR/AL | Full form | 55° α



Pitch mm	Pitch/"	HP mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,337	19	7,5	9,07	9	0,65	142688
1,814	14	7,5	9,07	6	0,9	142632

CLICK ME!

PG | DIN 40430 | IR/IL | AR/AL | Full form | 80° α



Pitch mm	Pitch/"	HP mm	LG** mm	Teeth	LP2** mm	Thread	Order No. TINAMATIC
1,411	18	7,5	11,28	9	0,7	PG 9-16	142679
1,588	16	7,5	11,11	8	0,8	PG21-48	142664

CLICK ME!

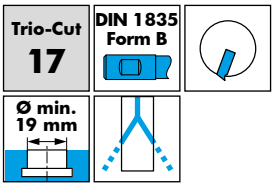
* Screwdriver and clamping screw included in delivery
** The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.

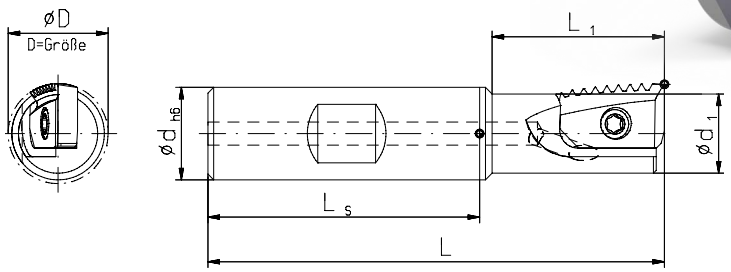
mimatic Tool Systems

TrioCUT

Circular Milling Tools

- Inserts see page 38-39
- Cutting data see page 166





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

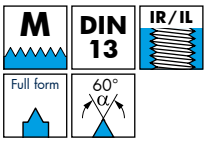
Screw torque max. 3,8 Nm

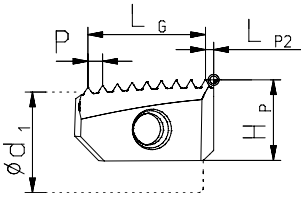
CLICK ME!

Circular Milling Inserts

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

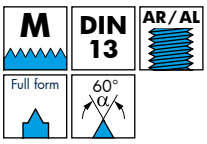
Trio-Cut 17

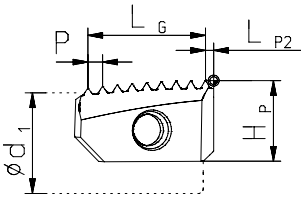




Pitch mm	HP mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,0	11	16,0	17	0,55	142731
1,5	11	16,5	12	0,75	142720
2,0	11	16,0	9	1,0	142651

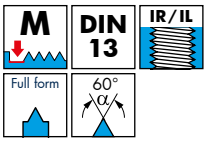
CLICK ME!

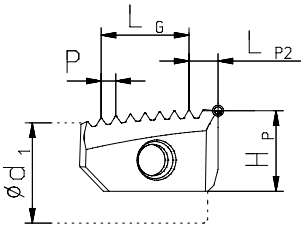




Pitch mm	HP mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,5	11	16,5	12	0,75	142721

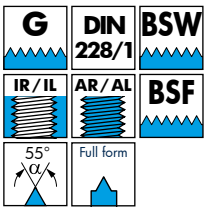
CLICK ME!

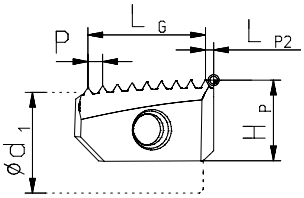




Pitch mm	HP mm	LG** mm	Teeth	LP2** mm	R mm	Order No. TINAMATIC
1,0	11	14,0	15	3,6	0,4	142668
1,5	11	13,5	10	4,1	0,4	142650
2,0	11	12,0	7	3,6	0,4	142672

CLICK ME!





Pitch mm	Pitch/"	HP mm	LG** mm	Teeth	LP2** mm	Thread	Order No. TINAMATIC
2,309	11	11	16,16	8	1,16	all	142685
1,814	14	11	16,33	10	0,95	5/8-3/4-7/8"	142732

CLICK ME!

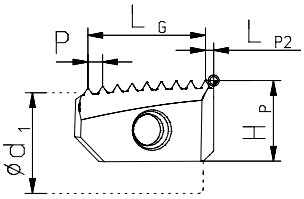
* Screwdriver and clamping screw included in delivery
** The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.

TrioCUT

Circular Milling Inserts

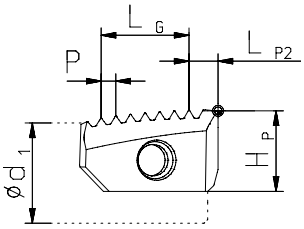
Trio-Cut 17

G | DIN 228/1 | BSW | BSF | IR/IL | Full form | 55° α



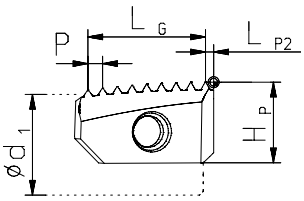
Pitch mm	Pitch / "	HP mm	LG** mm	Teeth	LP2** mm	Thread	Order No. TINAMATIC
1,814	14	11	16,33	10	0,95	G ½"	142652

G | DIN 228/1 | BSW | BSF | IR/IL | AR/AL | Full form | 55° α



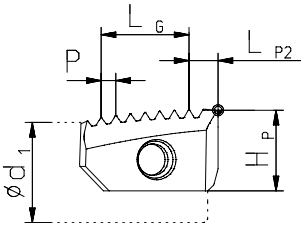
Pitch mm	Pitch / "	HP mm	LG** mm	Teeth	LP2** mm	R mm	Thread	Order No. TINAMATIC
2,309	11	11	11,54	6	4,6	0,4	all	142725
1,814	14	11	12,69	8	3,5	0,4	5/8-3/4-7/8"	142717
1,814	14	11	12,69	8	3,5	0,4	only ½"	142669

PG | DIN 40430 | IR/IL | AR/AL | Full form | 80° α



Pitch mm	Pitch / "	HP mm	LG** mm	Teeth	LP2** mm	Thread	Order No. TINAMATIC
1,411	18	11	16,92	12	0,7	11-16	142674
1,588	16	11	15,88	11	0,8	21-48	142675

PG | DIN 40430 | IR/IL | AR/AL | Full form | 80° α



Pitch mm	Pitch / "	HP mm	LG** mm	Teeth	LP2** mm	R mm	Thread	Order No. TINAMATIC
1,411	18	11	14,1	11	3,9	0,4	PG11-16	142684
1,588	16	11	12,7	9	3,7	0,4	PG21-48	142714

CLICK ME! CLICK ME! CLICK ME! CLICK ME!

* **Internal thread only**

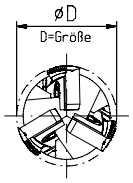
** **The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.**

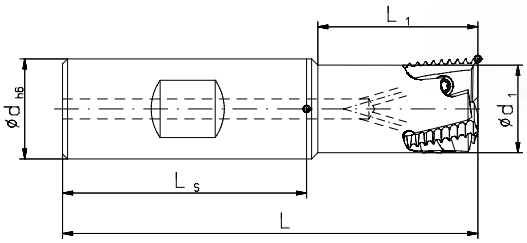
mimatic Tool Systems

TrioCUT

Circular Milling Tools

- Inserts see below
- Cutting data see page 166





Trio-Cut 20 | DIN 1835 Form B | Ø min. 22 mm

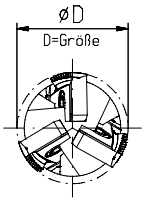
Order No.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No. T8 IP Screw-driver *	Spare part No. Screw *
123622	20	20	17,5	83	32	Steel	111656	115567

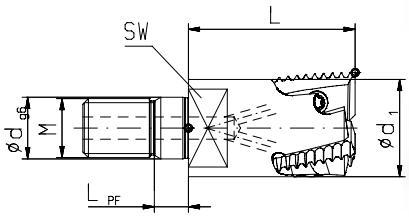
Screw torque max. 1,1 Nm

CLICK ME!

- Tightening torques see page 29

Please adapt cutting data to overhangs length





Trio-Cut 20 | Ø min. 22 mm

Order No.	D mm	dg6 mm	M	LPF mm	d1 mm	L mm	Shaft	Spare part No. T8 IP Screw-driver *	Spare part No. Screw *
123623	20	10,5	10	5	17,5	21	Steel	111656	115567

Screw torque max. 1,1 Nm

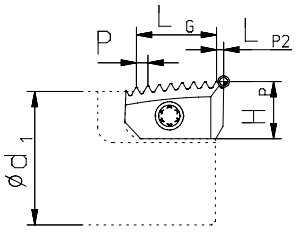
CLICK ME!

Circular Milling Inserts

Trio-Cut 20

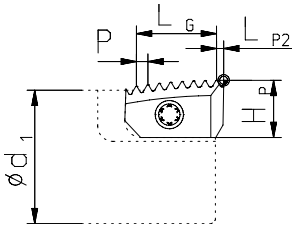
Note:
Type 20 milling tools can only be used with type 20 milling inserts!

M | DIN 13 | IR/IL | Full form | 60° α



Pitch mm	HP mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,0	7,5	12,0	13	0,5	142690
1,5	7,5	10,5	8	0,75	142633

G | DIN 228/1 | BSW | IR/IL | AR/AL | BSF | Full form | 55° α



Pitch mm	Pitch / "	HP mm	LG** mm	Teeth	LP2** mm	Thread	Order No. TINAMATIC
1,814	14	7,5	9,07	6	0,9		142707
1,814	14**	7,5	9,07	6	0,9	G ¾"	142666

CLICK ME!

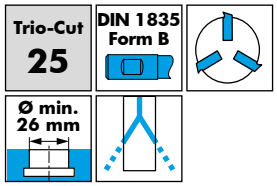
** for internal threads only

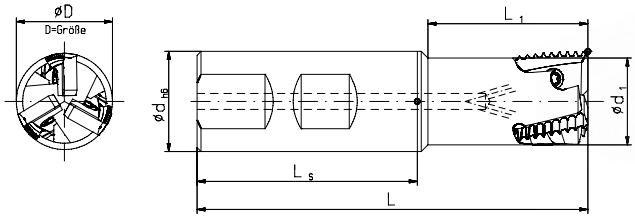
* Screwdriver and clamping screw included in delivery
** The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.

TrioCUT

Circular Milling Tools

■ Inserts see page 42
■ Cutting data see page 166





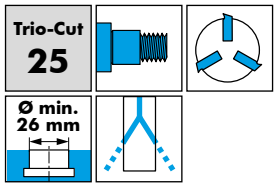
Order No.	D mm	d h6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123638	25	25	21,7	107,6	50	Steel	111671	115628
123639	25	25	21,7	142,6	85	Heavy metal	111671	115628

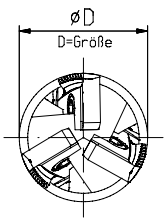
Screw torque max. 3,8 Nm

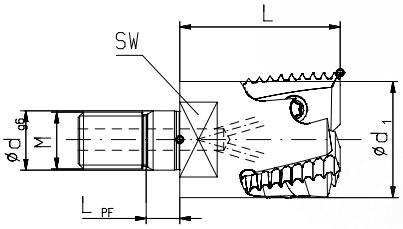
CLICK ME!

■ Tightening torques see page 29

Please adapt cutting data to overhangs length







Order No.	D mm	d g6 mm	M	LPF mm	d1 mm	L mm	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
166204	25	10,5	10	5	21,7	30	Steel	111671	115628

Screw torque max. 3,8 Nm

CLICK ME!

TrioCUT 25 inserts see next page

* Screwdriver and clamping screw included in delivery
** The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.

mimatic
Tool Systems

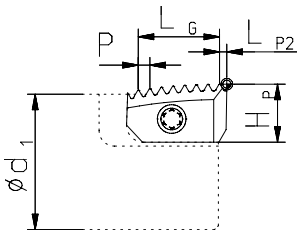
TrioCUT

Circular Milling Inserts

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

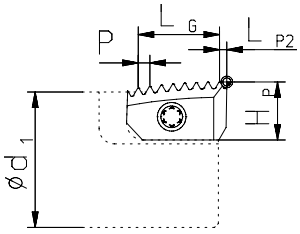
Trio-Cut 25

M | **DIN 13** | **IR / IL** | **Full form** | **60° α**



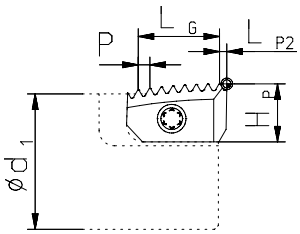
Pitch mm	Hp mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,0	11	16,0	17	0,5	142754
1,5	11	16,5	12	0,75	142722
2,0	11	16,0	9	1,11	142723

M | **DIN 13** | **AR / AL** | **Full form** | **60° α**



Pitch mm	Hp mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
1,5	11	16,5	12	0,75	142772

G | **DIN 228/1** | **BSW** | **IR / IL** | **AR / AL** | **BSF** | **Full form** | **55° α**



Pitch mm	Pitch / "	Hp mm	LG** mm	Teeth	LP2** mm	Order No. TINAMATIC
2,309	11	11	16,16	8	1,16	142743
1,814	14	11	16,33	10	0,95	142798

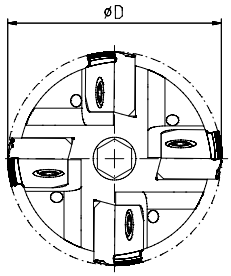
CLICK ME! CLICK ME! CLICK ME!

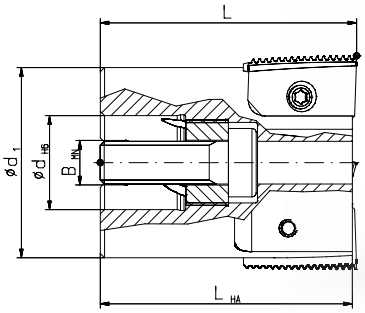
** The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.

TrioCUT

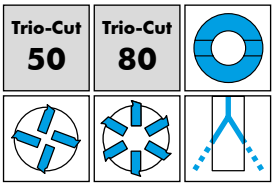
Circular Milling Tools

- Inserts see below
- Cutting data see page 166
- Assembly instruction see page 178





Trio-Cut 50 | Trio-Cut 80



Order No.	Size	D mm	dH6 mm	BMN mm	d1 mm	L mm	LHA mm	Inserts	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
135203	50	50	22	10,4	44,5	60	59	4	111671	107559
172159	80	80	32	14,4	75	60	59	6	111671	107559

Screw torque max. 3,8 Nm

CLICK ME!

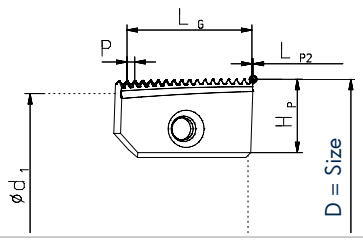
Circular Milling Inserts

Trio-Cut 50 | Trio-Cut 80

Hinweis:
Type 50 milling tools can only be used with type 50 milling inserts!

Type 80 milling tools can only be used with type 80 milling inserts!

M | DIN 13 | IR / IL | Full form | 60° α



Pitch mm	Size	HP mm	LG** mm	Teeth	LP2** mm	Thread	Order No. TINAMATIC
1,5	50	18,4	22,5	16	0,75	>M60	150114
1,5	80	18,4	22,5	16	0,75	>M85	148871
2,0	80	18,4	22,0	12	1,0	>M85	171636

CLICK ME!

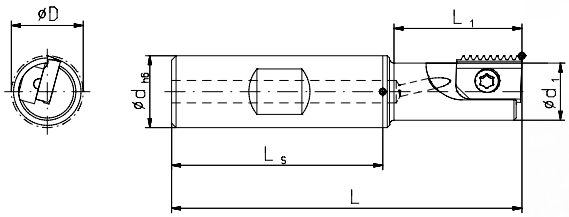
* Screwdriver and clamping screw included in delivery
** The length "LG" and "LP2" of the Thread Milling Insert are measured when the insert is clamped in the holder.

mimatic Tool Systems

14,5

Circular Thread Milling Tools

- Inserts see page 45
- Cutting data see page 166

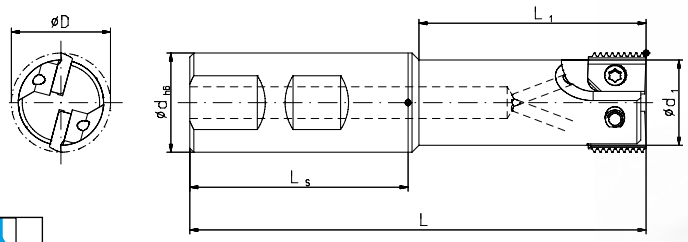


Typ 14,5 | DIN 1835 Form B

Order No.	D mm	d h6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123540	16	16	12,7	78	29	17	short	Steel	111671	107571
123541	16	16	12,7	98	50	17	long	Heavy metal	111671	107571
123542	20	20	16,8	110	60	21	long	Steel	111671	115628

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

CLICK ME!



Typ 14,5 | DIN 1835 Form B

Order No.	D mm	d h6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123546	25	25	21,5	106	48,2	26	short	Steel	111671	107552
123547	25	25	21,5	150	92,2	26	long	Heavy metal	111671	107552

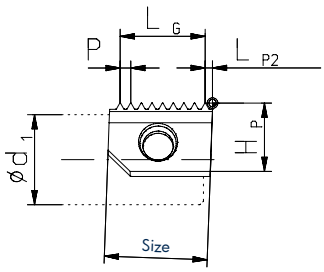
Screw torque max. 3,8 Nm

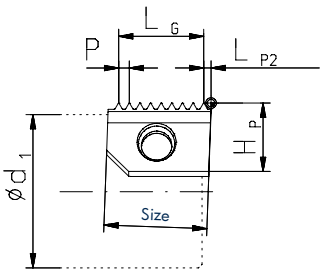
CLICK ME!

* Screwdriver and clamping screw included in delivery

14,5

Circular Thread Milling Inserts





M | DIN 13 | IR/IL | Full form | 60° α

Pitch mm	Hp mm	Lg mm	Lp2 mm	Thread	Teeth	Order No. TINAMATIC
0,5	10	13,50	0,62		28	142117
0,75	10	13,50	0,62		19	142048
1,0	10	13,00	0,95		14	142037
1,25	10	12,50	0,95		11	142067
1,5	10	12,00	1,05		9	142053
1,75	10	12,25	1,05		8	142080
2,0	10	12,00	1,05		7	142136
2,5	10	10,00	1,75		5	142129
2,5	10	10,00	1,75	M20x2,5	5	142069

M | DIN 13 | AR/AL | Full form | 60° α

Pitch mm	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
1,0	10	13	0,71	14	142177
1,5	10	12	0,78	9	142186
2,0	10	12	1,22	7	142167

G | DIN 228/1 | BSW | BSF | IR/IL | AR/AL | Full form | 55° α

Pitch mm	Pitch/"	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
1,058	24	10	12,70	1,02	13	142218
1,270	20	10	12,70	1,02	11	142213
1,337	19	10	12,03	1,02	10	142234
1,411	18	10	11,28	1,63	9	142145
1,588	16	10	11,11	1,6	8	142152
1,814	14	10	12,70	1,05	8	142203
2,117	12	10	10,58	1,31	6	142181
2,309	11	10	11,54	1,35	6	142159

UNC | UNF | ASME B 1.1 | IR/IL | Full form | 60° α

Pitch mm	Pitch/"	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
0,635	40	10	13,33	0,74	22	142124
0,794	32	10	12,70	0,91	17	142286
0,907	28	10	12,70	0,99	15	142223
1,058	24	10	12,70	0,83	13	142273
1,270	20	10	12,70	0,95	11	142285
1,411	18	10	12,69	0,93	10	142216
1,588	16	10	12,70	1,03	9	142147
1,814	14	10	10,88	1,47	7	142221
2,117	12	10	10,58	1,32	6	142243
2,309	11	10	11,55	1,24	6	142237

PG | DIN 40430 | IR/IL | AR/AL | Full form | 80° α

Pitch mm	Pitch/"	Hp mm	Lg mm	Lp2 mm	Thread	Teeth	Order No. TINAMATIC
1,411	18	10	12,69	3,18	PG 11-16	10	142263
1,588	16	10	11,16	3,18	PG 21-48	8	142257

CLICK ME!

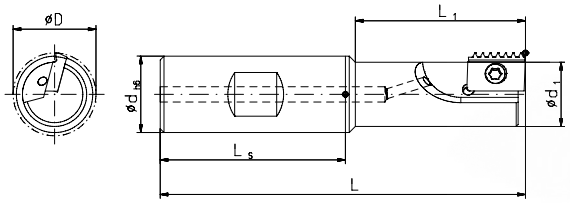
CLICK ME!

CLICK ME!

CLICK ME!

Circular Thread Milling Tools

- Inserts see below
- Cutting data see page 166

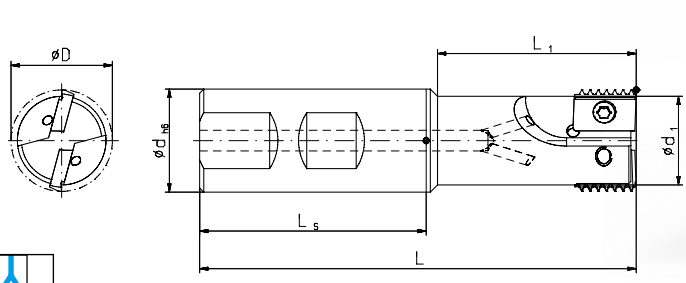


Typ 15 | DIN 1835 Form B

Order No.	D mm	dh6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123550	18	16	12,7	79	30	19	short	Steel	111671	107571
123551	22	20	16,8	110	60	23	long	Steel	111671	107571

Screw torque max. 3,8 Nm

CLICK ME!



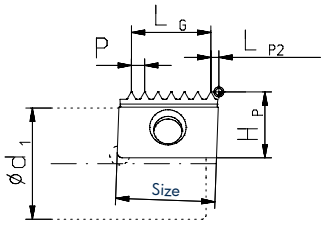
Typ 15 | DIN 1835 Form B

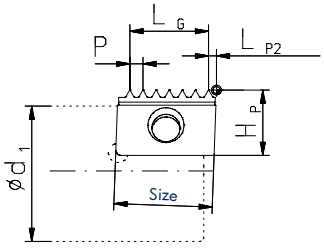
Order No.	D mm	dh6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123555	25	25	21,5	106	48,2	26	short	Steel	111671	107552

Screw torque max. 3,8 Nm

CLICK ME!

Circular Thread Milling Inserts





M | DIN 13 | IR/IL | Full form | 60° α

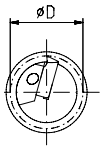
Pitch mm	HP mm	LG mm	LP2 mm	Teeth	Order No. TINAMATIC
3,0	10,5	12,0	1,52	5	142269
3,5	10,5	10,5	1,74	4	142231

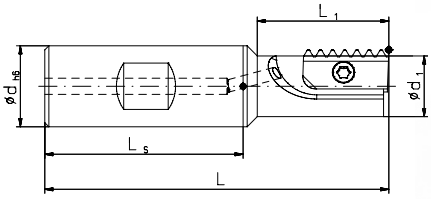
CLICK ME!

* Screwdriver and clamping screw included in delivery

Circular Thread Milling Tools

■ Inserts see page 48
■ Cutting data see page 166



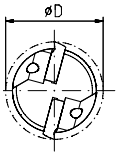


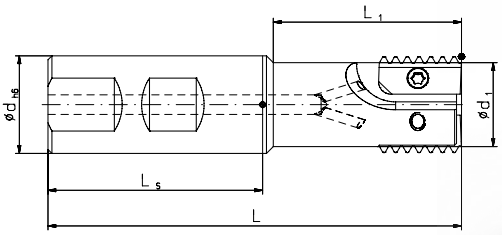
Typ 21 | DIN 1835 Form B

Order No.	D mm	d h6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123557	16	20	12,7	85	31,3	17	short	Steel	111671	107571
123560	18	20	15,0	85	31,3	29	short	Steel	111671	107571
123558	22	25	18,7	92	32,8	23	short	Steel	111671	107571
123559	22	25	18,7	122	62,8	23	long	Heavy metal	111671	107552

Screw torque max. 3,8 Nm

CLICK ME!





Typ 21 | DIN 1835 Form B

Order No.	D mm	d h6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123564	28	32	24,7	102	38,3	29	short	Steel	111671	107552
123566	28	32	24,5	142	78,3	29	long	Heavy metal	111671	107552

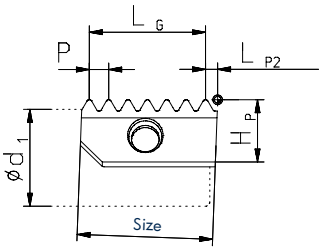
Screw torque max. 3,8 Nm

CLICK ME!

Type 21 inserts see next page

* Screwdriver and clamping screw included in delivery

Circular Thread Milling Inserts



M | DIN 13 | IR/IL | Full form | 60° α

Pitch mm	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
1,0	10	19,0	0,83	20	142334
1,5	10	19,5	0,83	14	142366
2,0	10	18,0	1,07	10	142341

CLICK ME!

M | DIN 13 | AR/AL | Full form | 60° α

Pitch mm	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
1,5	10	18	0,98	13	142325

CLICK ME!

G | DIN 228/1 | BSW | BSF | IR/IL | AR/AL | Full form | 55° α

Pitch mm	Pitch / "	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
2,309	11	10	18,47	1,28	9	142398
1,814	14	10	18,14	1,07	11	142376

CLICK ME!

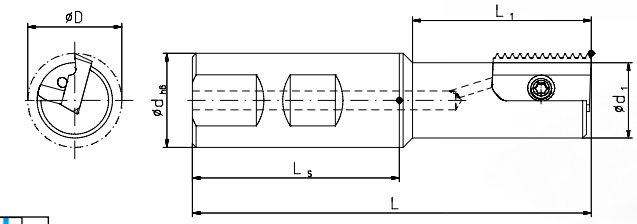
UNC | UNF | ASME B 1.1 | IR/IL | Full form | 60° α

Pitch mm	Pitch / "	Hp mm	Lg mm	Lp2 mm	Teeth	Order No. TINAMATIC
1,588	16	10	19,05	0,83	13	142402
1,814	14	10	18,14	1,07	11	142446
2,117	12	10	18,04	1,07	10	142416

CLICK ME!

Circular Thread Milling Tools

- **Inserts see below**
- **Cutting data see page 166**



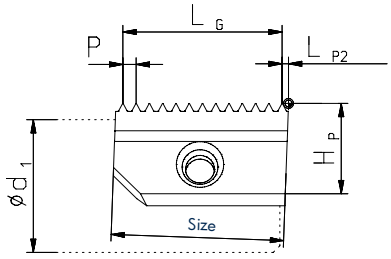
Typ **26** | **DIN 1835 Form B**

Order No.	D mm	dh6 mm	d1 mm	L mm	L1 mm	min. Bore diameter	Type	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123569	25	25	20	107	48,5	26	short	Steel	111671	107559

Screw torque max. 3,8 Nm

CLICK ME!

Circular Thread Milling Inserts



M | **DIN 13** | **IR/IL** | Full form | 60° α

Pitch mm	HP mm	LG mm	LP2 mm	Teeth	Order No. TINAMATIC
1,5	15	24	1,03	17	142417
2,0	15	24	1,03	13	142452
3,0	15	21	1,88	8	142489
3,5	15	20	2,41	7	142445
4,0	15	20	2,91	6	142449

G | **DIN 228/1** | **BSW** | **BSF** | **IR/IL** | **AR/AL** | Full form | 55° α

Pitch mm	Pitch/"	HP mm	LG mm	LP2 mm	Teeth	Order No. TINAMATIC
2,309	11	15	23,09	1,46	11	142450

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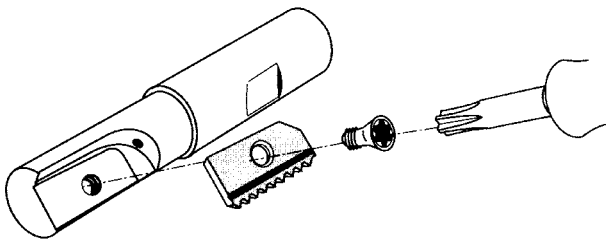
Assembling Instructions

Changing Thread Milling Inserts

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



* **Screwdriver and clamping screw included in delivery**

mimatic® Tool Systems

SolidCUT

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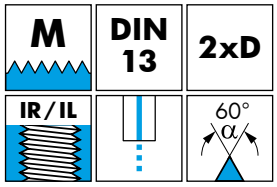
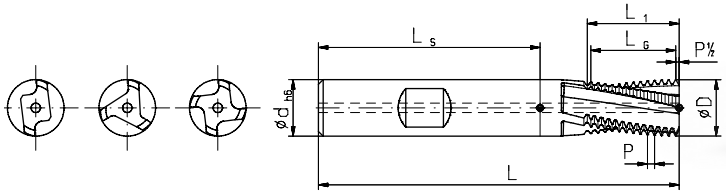
Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 168





Thread	P mm	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
M3	0,5	2,4	42	7,0	6,5	14	4	2		168192		
M4	0,7	3,15	55	9,8	9,1	14	6	3		168195	168196	168197
M5	0,8	4,0	55	12,0	11,2	15	6	3		168198	168199	168200
M6	1,0	4,8	55	14,0	13	14	6	3		168201	168202	168203
M8	1,25	5,95	60	18,75	17,5	15	6	3	✓	168204	168205	168206
M10	1,5	7,95	70	22,5	21	15	8	3	✓	168207	168208	168209
M12	1,75	9,9	75	28,0	26,25	16	10	4	✓	168210	168211	168212
M14	2,0	11,6	85	32,0	30	16	12	4	✓	168213	168214	168215
M16	2,0	11,95	85	36,0	34	18	12	4	✓	168216	168217	168218
M18	2,5	13,95	90	42,5	40	17	14	4	✓	168219	168220	168221
M20	2,5	15,95	90	42,5	40	17	16	4	✓	168222	168223	168224

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- Chamfer type
- Cutting Data see page 168

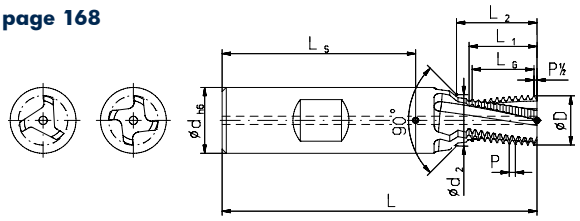
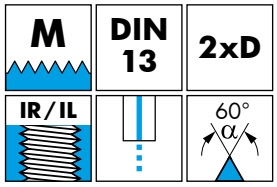


Figure 1:
Chamfer on the shank



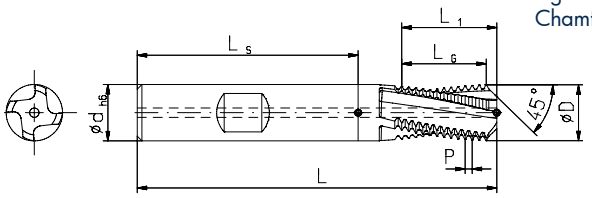


Figure 2:
Chamfer on the face

Thread	P mm	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
M3	0,5	2,4	42	7,0	7,6	6,5	14	4	3,3	2		1	190812 NEW	-
M4	0,7	3,15	55	9,80	11,03	9,1	14	6	4,3	3		1	186833	186834
M5	0,8	4,00	62	12,70	13,35	11,2	15	8	5,3	3		1	171556	171565
M6	1,0	4,80	62	14,00	15,55	13	14	8	6,3	3		1	171557	171566
M8	1,25	6,50	74	18,75	20,60	17,5	15	10	8,3	3	✓	1	171558	171567
M10	1,5	7,95	80	22,50	24,80	21	15	12	10,3	3	✓	1	171559	171568
M12	1,75	9,90	90	28,00	30,60	26,25	16	14	12,3	4	✓	1	171560	171569
M14	2,0	11,60	100	32,00	34,85	30	16	16	14,3	4	✓	1	171561	171570
M16	2,0	11,95	90	37,60		34	18	12		4	✓	2	171562	171571
M18	2,5	13,95	110	37,50	41,40	40	17	20	18,3	4	✓	1	171563	171572
M20	2,5	15,95	100	44,00		40	17	16		4	✓	2	171564	171573

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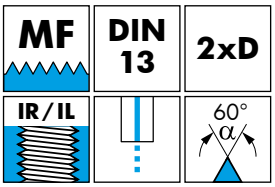
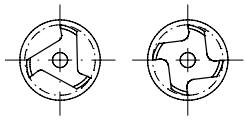
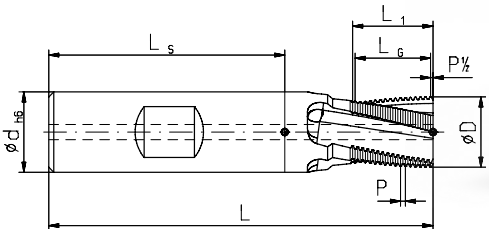
SolidCUT

Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 168







Thread	P mm	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
M5x0,5	0,5	4,0	55	11,5	11	23	6	3		168225	168226	168227
M6x0,75	0,75	4,8	55	14,25	13,5	19	6	3		168228	168229	168230
M8x1	1,0	5,95	60	19,0	18	19	6	3	✓	168231	168232	168233
M10x1	1,0	7,95	70	21,0	20	21	8	3	✓	193058	on request NEW	on request NEW
M10x1,25	1,25	7,95	70	21,5	20	17	8	3	✓	168234	168235	168236
M12x1	1,0	9,9	75	27,0	26	27	10	4	✓	168237	168238	168239
M12x1,25	1,25	9,9	75	27,5	26,25	22	10	4	✓	168240	168241	168242
M12x1,5	1,5	9,9	75	27,0	25,5	18	10	4	✓	168243	168244	168245
M14x1	1,0	11,6	85	31,0	30	31	12	4	✓	168246	168247	168248
M14x1,25	1,25	11,6	85	31,25	30	25	12	4	✓	200257 NEW	200258 NEW	200259 NEW
M14x1,5	1,5	11,6	85	31,5	30	21	12	4	✓	168249	168250	168251
M16x1,5	1,5	11,95	85	34,5	33	23	12	4	✓	168252	168253	168254
M18x1,5	1,5	13,95	90	42,0	40,5	28	14	4	✓	168255	168256	168257
M20x1,5	1,5	15,95	90	42,0	40,5	28	16	4	✓	168258	168259	168260

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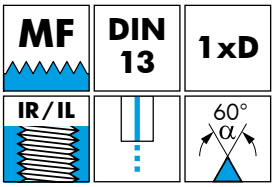
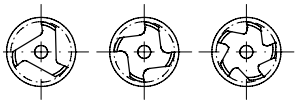
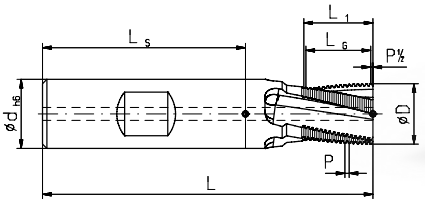
- Universal type
- Cutting Data see page 168







Thread from	P mm	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
> M10	0,5	7,95	70	12	11,5	24	8	3	✓	170779	170780	170781
> M11	0,75	7,95	70	12	11,25	16	8	3	✓	170782	170783	170784
> M12	1,0	9,95	75	16	15	16	10	4	✓	170785	170786	170787
> M14	1,0	11,95	85	20	19	20	12	4	✓	170791	170792	170793
> M18	1,0	15,95	90	25	24	25	16	5	✓	170800	170801	170802
> M22	1,0	19,95	110	32	31	32	20	5	✓	170812	170813	170814
> M14	1,5	9,95	75	16	15	11	10	4	✓	170788	170789	170790
> M16	1,5	11,95	85	20	19,5	14	12	4	✓	170794	170795	170796
> M20	1,5	15,95	90	25	24	17	16	5	✓	170803	170804	170805
> M24	1,5	19,95	110	32	31,5	22	20	5	✓	170815	170816	170817
> M16	2,0	11,95	85	20	18	10	12	4	✓	170797	170798	170799
> M20	2,0	15,95	90	25	24	13	16	5	✓	170806	170807	170808
> M24	2,0	19,95	110	32	30	16	20	5	✓	170818	170819	170820
> M24	3,0	15,95	90	27	24	9	16	5	✓	170809	170810	170811
> M27	3,0	19,95	110	32	30	11	20	5	✓	170821	170822	170823

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SolidCUT

Solid Carbide Circular Thread Milling Cutter

- **Fixed size version with Chamfer type**
- **Cutting Data see page 168**

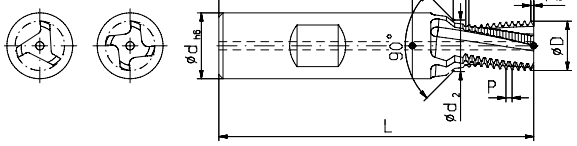
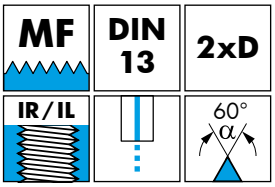
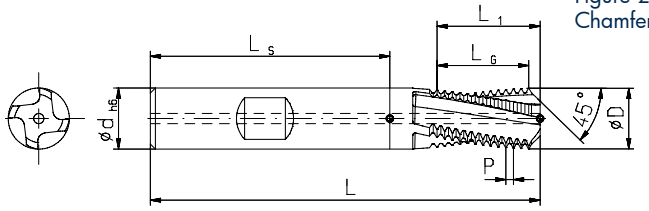


Figure 1:
Chamfer on the shank

Figure 2:
Chamfer on the face





Thread	P mm	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	dh6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB
M8x1	1,0	5,95	74	19	21	18	19	10	8,3	3	✓	1	171574	172376
M10x1	1,0	8,0	80	22	23,95	21	22	12	10,3	3	✓	1	171575	172377
M10x1,25	1,25	7,95	80	22,5	24,6	21,25	18	12	10,3	3	✓	1	171576	172378
M12x1	1,0	9,9	90	27	29	26	27	14	12,3	4	✓	1	171577	172379
M12x1,25	1,25	9,9	90	27,5	29,6	26,25	22	14	12,3	4	✓	1	171578	172380
M12x1,5	1,5	9,9	90	27	29,25	25,5	18	14	12,3	4	✓	1	171579	172381
M14x1	1,0	11,6	100	31	33,15	30	31	16	14,3	4	✓	1	171580	172382
M14x1,5	1,5	11,6	100	31,5	33,9	30	21	16	14,3	4	✓	1	171581	172383
M16x1,5	1,5	11,95	90	36,05		33	23	12		4	✓	2	171582	172384
M18x1,5	1,5	14,0	110	39	42,2	37,5	26	20	18,3	4	✓	1	171583	172385
M20x1,5	1,5	15,95	100	45,05		42	29	16		4	✓	2	171584	172386

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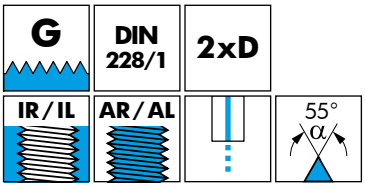
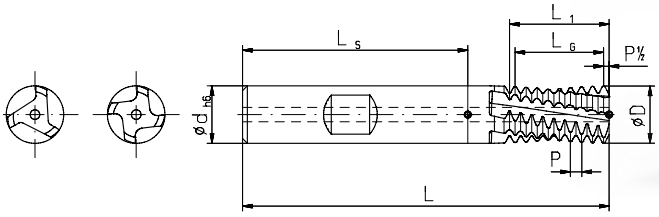
- **Fixed dimension type**
- **Cutting Data see page 168**





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	dh6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB	Order No. TINAMATIC DIN 6535 Form HE
G 1/16"	0,907	28	5,95	60	16,33	15,42	18	6	3	✓	196157 NEW	on request NEW	on request NEW
G 1/8"	0,907	28	7,95	70	20,8	20,86	24	8	3	✓	168371	168372	168373
G 1/4"	1,337	19	9,9	75	28,0	26,74	21	10	4	✓	168374	168375	168376
G 3/8"	1,337	19	13,95	90	36,1	34,762	27	14	4	✓	168377	168378	168379
G 1/2"	1,814	14	15,95	90	43,5	41,72	24	16	4	✓	168380	168381	168382

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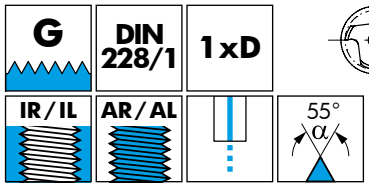
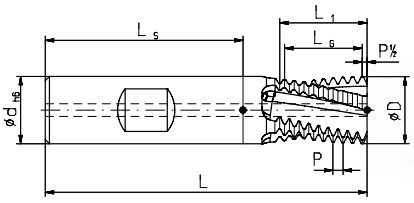
SolidCUT

Solid Carbide Circular Thread Milling Cutter

- Universal type
- Cutting Data see page 168





Thread from	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB
G 1/4 - 3/8"	1,337	19	9,95	75	16,0	14,71	12	10	4	✓	186224	187865
G 1/2 - 7/8"	1,814	14	15,95	90	25,4	23,58	14	16	5	✓	186225	187866
>= G 1"	2,309	11	19,95	110	32,3	30,02	14	20	5	✓	183759	177967

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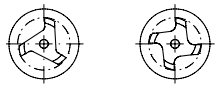
- Fixed size version with Chamfer type
- Cutting Data see page 168



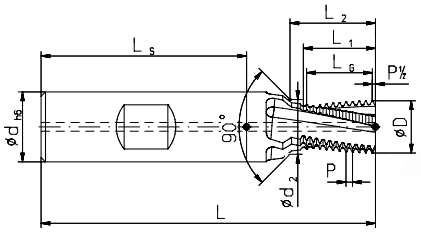
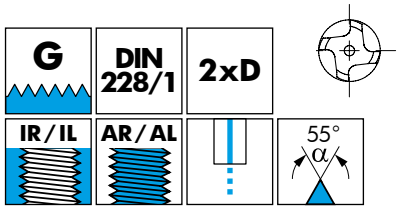
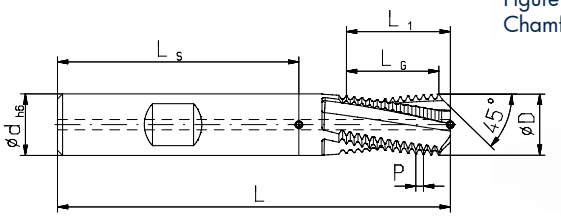


Figure 1:
Chamfer on the shank

Figure 2:
Chamfer on the face





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB
G 1/16"	0,907	28	6	74	16,3	18,1	15,42	18	10	8,0	3	✓	1	171585	172387
G 1/8"	0,907	28	7,95	80	21,8	23,5	20,86	24	12	10,0	3	✓	1	171586	172388
G 1/4"	1,337	19	9,9	100	28,0	30,8	26,74	21	16	13,5	4	✓	1	171587	172389
G 3/8"	1,337	19	13,95	90	37,5		34,76	27	14		4	✓	2	171588	172390
G 1/2"	1,814	14	15,95	100	46,75		43,54	25	16		5	✓	2	171589	172391
G 5/8"	1,814	14	17,95	110	51,0		47,16	27	18		5	✓	2	171590	172392

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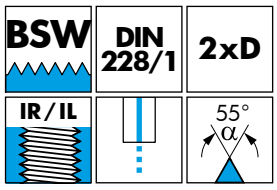
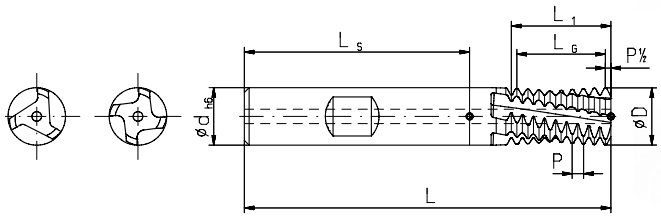
SolidCUT

Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 168

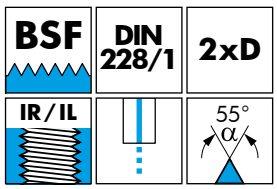


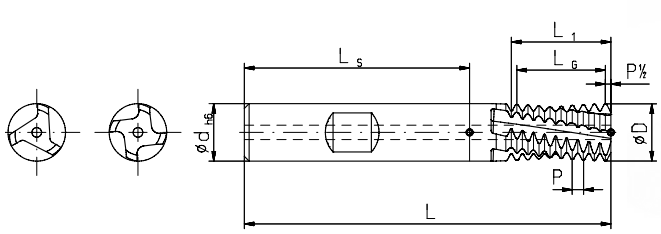


Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
5/16"	1,411	18	6,0	60	19,75	18,34	14	6	3	✓	168383	168384	168385
3/8"	1,588	16	5,95	60	20,60	19,06	13	6	3	✓	168386	168387	168388
7/16"	1,814	14	7,95	70	23,60	21,77	13	8	3	✓	168389	168390	168391
1/2"	2,117	12	7,95	70	23,30	21,17	11	8	3	✓	168392	168393	168394
5/8"	2,309	11	9,90	75	30,00	27,71	13	10	4	✓	168395	168396	168397

CLICK ME!

- Fixed dimension type
- Cutting Data see page 168





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
5/16"	1,155	22	5,95	60	19,6	18,48	17	6	3	✓	168398	168399	168400
3/8"	1,270	20	5,95	60	19,0	17,78	15	6	3	✓	168401	168402	168403
7/16"	1,411	18	7,95	70	22,6	21,17	16	8	3	✓	168404	168405	168406
1/2"	1,588	16	7,95	70	23,8	22,23	15	8	3	✓	168407	168408	168409
5/8"	1,814	14	9,90	75	29,0	27,21	16	10	4	✓	168410	168411	168412

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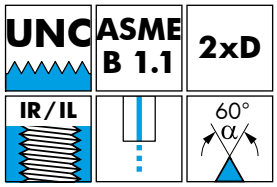
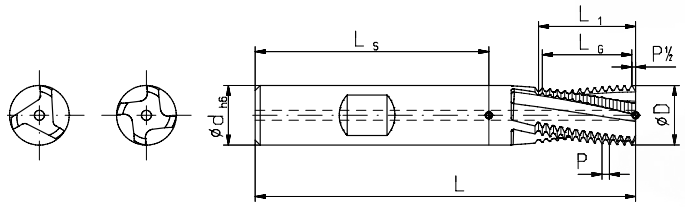
mimatic® Tool Systems

SolidCUT

Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 168





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/4"-20	1,270	20	4,8	55	14	12,7	11	6	3		168413	168414	168415
5/16"-18	1,411	18	5,95	60	19,7	18,34	14	6	3	✓	168416	168417	168418
3/8"-16	1,588	16	7,6	70	23,8	22,23	15	8	3	✓	168419	168420	168421
7/16"-14	1,814	14	7,95	70	23,6	21,77	13	8	3	✓	168422	168423	168424
1/2"-13	1,954	13	9,9	75	29,3	27,36	15	10	4	✓	168425	168426	168427

CLICK ME!

- Fixed size version with Chamfer type
- Cutting Data see page 168

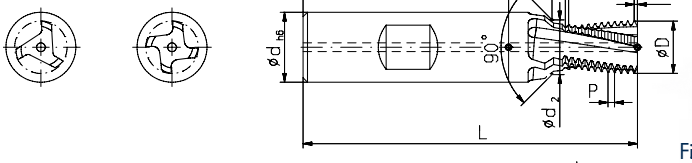
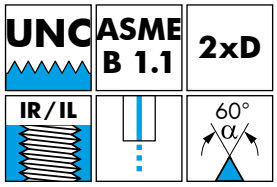


Figure 1: Chamfer on the front side



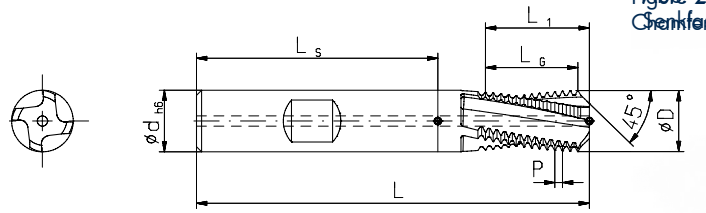


Figure 2: Chamfer on the edge

Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
1/4"-20	1,270	20	4,8	62	14,0	15,73	12,7	11	8	6,65	3		1	171591	172393
5/16"-18	1,411	18	5,95	74	19,7	21,9	18,34	14	10	8,25	3	✓	1	171592	172394
3/8"-16	1,588	16	7,95	80	23,8	25,85	22,23	15	12	9,83	3	✓	1	171593	172395
7/16"-14	1,814	14	7,95	90	23,6	26,5	21,77	13	14	11,43	3	✓	1	171594	172396
1/2"-13	1,954	13	9,9	90	29,3	32,1	27,36	15	14	13	4	✓	1	171595	172397
9/16"-12	2,117	12	11,8	100	33,9	36,6	31,76	16	16	14,61	4	✓	1	171596	172398
5/8"-11	2,309	11	12,7	90	38,4		34,63	16	14		4	✓	2	171597	172399
3/4"-10	2,540	10	15,2	110	40,6	44,3	38,1	16	20	19,35	5	✓	1	171598	172400

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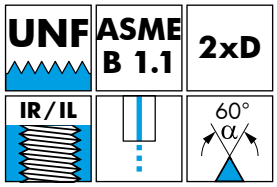
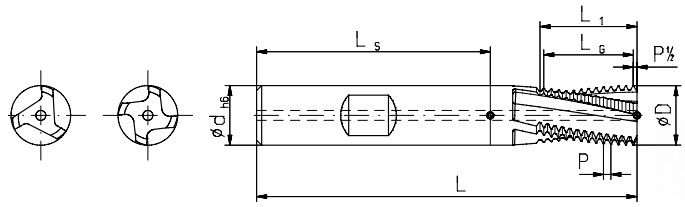
SolidCUT

Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 168





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/4"-28	0,907	28	4,8	55	14,5	13,61	16	6	3		168428	168429	168430
5/16"-24	1,058	24	5,95	60	19,0	17,99	18	6	3	✓	168431	168432	168433
3/8"-24	1,058	24	7,95	70	22,2	21,16	21	8	3	✓	168434	168435	168436
7/16"-20	1,270	20	7,95	70	22,8	21,59	18	8	3	✓	168437	168438	168439
1/2"-20	1,270	20	9,9	75	27,9	26,67	22	10	4	✓	168440	168441	168442

CLICK ME!

- Fixed size version with Chamfer type
- Cutting Data see page 168

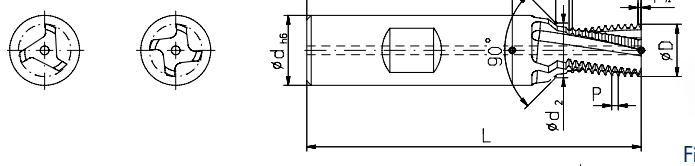
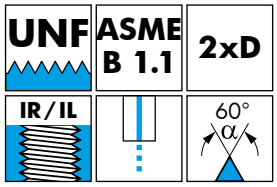


Figure 1: Chamfer on the leading edge



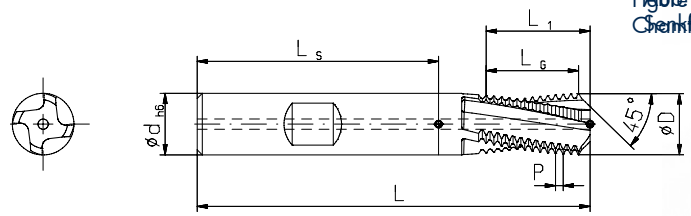


Figure 2: Chamfer on the edge

Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
1/4"-28	0,907	28	4,8	62	14,5	16,2	13,61	16	8	6,65	3		1	171599	172401
5/16"-24	1,058	24	5,95	74	19,0	21	17,99	18	10	8,25	3	✓	1	171600	172402
3/8"-24	1,058	24	7,6	80	22,2	23	21,16	21	12	9,83	3	✓	1	171601	172403
7/16"-20	1,270	20	7,95	90	22,8	25,5	21,59	18	14	11,4	3	✓	1	171602	172404
1/2"-20	1,270	20	9,9	90	27,9	30,43	26,67	22	14	13	4	✓	1	171603	172405
9/16"-18	1,411	18	12	100	31,0	33,35	29,63	22	16	14,61	4	✓	1	171604	172406
5/8"-18	1,411	18	13,5	90	36,8		33,86	25	14		4	✓	2	171605	172407
3/4"-16	1,588	16	17	110	39,7	42	38,11	25	20	19,35	5	✓	1	171606	172408

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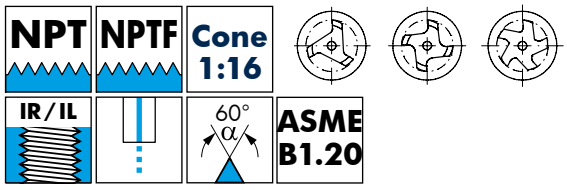
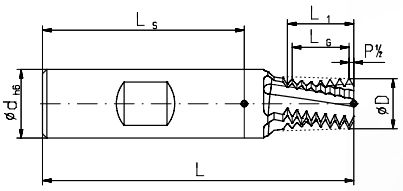
mimatic® Tool Systems

SolidCUT

Solid Carbide Circular Thread Milling Cutter

- **Fixed dimension type**
- **Cutting Data see page 168**
- **Designed for aluminum and cast iron materials**





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/16"	0,941	27	5,8	70	11,3	10,35	12	8	3	✓	170752	170753	170754
1/8"	0,941	27	7,6	75	11,3	10,35	12	10	3	✓	170755	170756	170757
1/4"	1,411	18	10,1	90	15,5	14,11	11	14	3	✓	170758	170759	170760
3/8"	1,411	18	12,8	90	16,7	14,11	11	16	4	✓	170761	170762	170763
1/2"	1,814	14	16,0	110	21,35	18,14	11	20	5	✓	170764	170765	170766
3/4"	1,814	14	18,5	110	19,95	18,14	11	20	5	✓	170767	170768	170769

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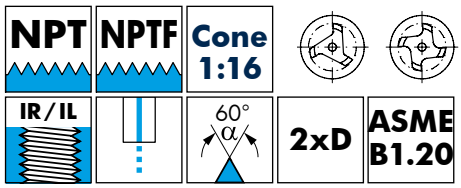
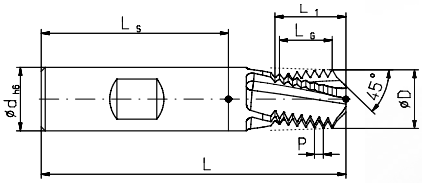
- **Chamfer type**
- **Cutting Data see page 168**





Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
1/4"	1,411	18	10,1	90	18,2	14,11	11	14	3	✓	171609	172411
3/8"	1,411	18	12,8	90	18,2	14,11	11	16	4	✓	171610	172412
1/2"	1,814	14	16,0	110	22,8	18,14	11	20	5	✓	171611	172413
3/4"	1,814	14	18,5	110	23,0	18,14	11	20	5	✓	171612	172414

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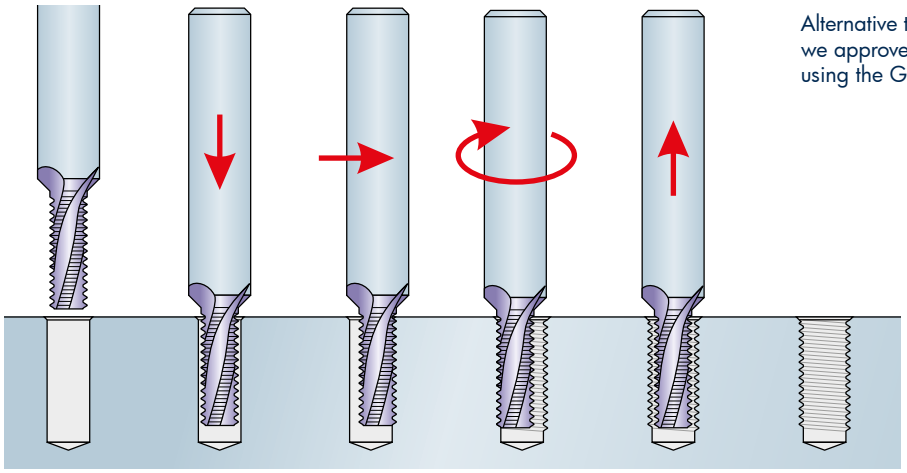
NPS and NPSM on request!

SolidCUT

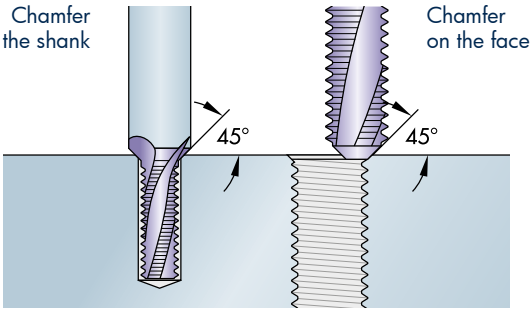
Machining Sequence



Starting position | Insertion on thread depth | Radial setting to nominal thread diameter (Start-up loop) | Circular thread milling | Radial back-setting to bore center and reverse stroke (Move out loop) | Thread is ready

Alternative to the radial infeed we approve In- and Outloops by using the G-functions.

Types with chamfer



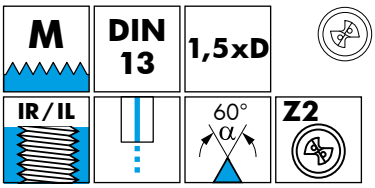
More information to circular thread milling see page 177

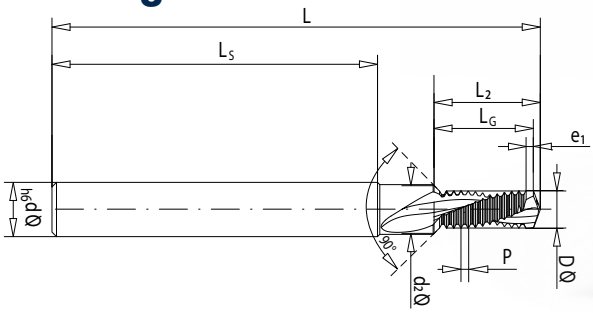
mimatic® Tool Systems

SolidCUT

Solid Carbide Thread Milling Cutter

- Cutting Data see page 61
- Designed for aluminum and cast iron materials

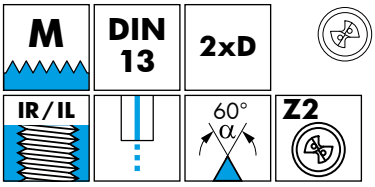


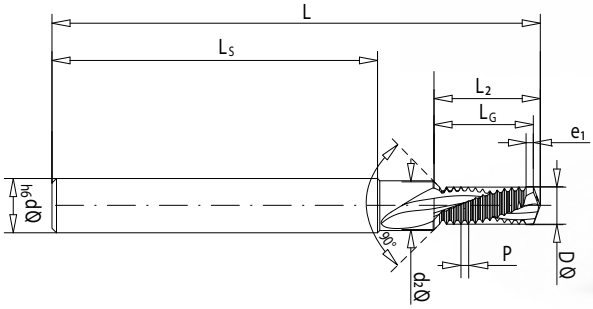


Thread	P mm	D±0,02 mm	Lg mm	Ls mm	L mm	dh6 mm	max. Senk-Ø d2 mm	Programming value for lowering L2 mm	Grooving width e1 mm	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	
M3	0,5	2,45	4,91	36	54	6	3,3	5,36	0,5		197862	NEW
M4	0,7	3,24	6,81	36	54	6	4,3	7,41	0,7	✓	197863	NEW
M5	0,8	4,1	8,58	36	54	6	5,3	9,35	0,8	✓	197864	NEW
M6	1	4,85	10,7	36	62	8	6,3	11,6	1	✓	197865	NEW
M8	1,25	6,45	13,56	40	74	10	8,3	14,8	1,25	✓	197866	NEW
M10	1,5	8,08	17,64	45	80	12	10,3	19,18	1,5	✓	197867	NEW
M12	1,75	9,74	20,39	45	90	14	12,3	22,26	1,75	✓	197868	NEW

CLICK ME!

- Cutting Data see page 61





Thread	P mm	D±0,02 mm	Lg mm	Ls mm	L mm	dh6 mm	max. Senk-Ø d2 mm	Programming value for lowering L2 mm	Grooving width e1 mm	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	
M3	0,5	2,45	6,91	36	54	6	3,3	7,36	0,5		197869	NEW
M4	0,7	3,24	8,9	36	54	6	4,3	9,5	0,7	✓	197870	NEW
M5	0,8	4,1	10,37	36	54	6	5,3	11,14	0,8	✓	197871	NEW
M6	1	4,85	13,7	36	62	8	6,3	14,6	1	✓	197872	NEW
M8	1,25	6,45	17,26	40	74	10	8,3	18,5	1,25	✓	197873	NEW
M10	1,5	8,08	22,14	45	80	12	10,3	23,68	1,5	✓	197874	NEW
M12	1,75	9,74	25,59	45	90	14	12,3	27,46	1,75	✓	197875	NEW

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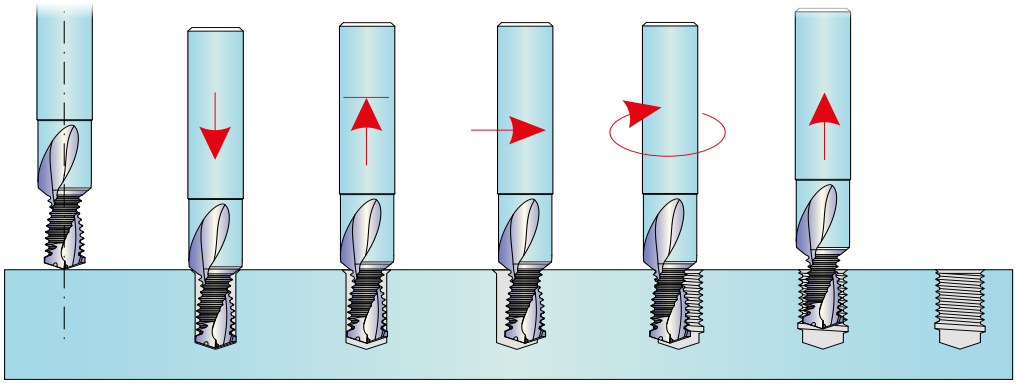
SolidCUT

Solid Carbide Thread Milling Cutter

Machining Sequence

Machining Sequence

Alternative to the radial infeed we suggest In- and Outloops by using the G-functions.



Ausgangsstellung *Starting position*

Bohren auf maximale Tiefe *Drilling to Maximum depth*

Zurücksetzen und freimachen der Bohrschneide *Resetting and clearing the drill cutting edge*

Radiale Zustellung auf Gewinde-nenndurchmesser *Radial setting to nominal thread diameter*

Zirkulares Gewindefräsen *Circular thread milling*

Radiales Zurückfahren auf Bohrungsmitte und herausfahren *Radial backsetting to bore center and reverse stroke*

Fertiges Gewinde *Thread is ready*

	Stahl Guss *Cast iron*			Aluminium *Aluminum*		
	Ø 2,4 - 3,9	**Ø 4 - 5**	**Ø 5,1 - 10**	**Ø 2,4 - 3,9**	**Ø 4 - 5**	**Ø 5,1 - 10**
Vc m/min	120	120	120	220	220	220
fn mm/U	0,1 - 0,15	0,15 - 0,2	0,25 - 0,3	0,1 - 0,15	0,15 - 0,2	0,25 - 0,3
fz mm	0,03 - 0,04	0,04 - 0,05	0,065 - 0,08	0,03 - 0,04	0,04 - 0,05	0,065 - 0,08

Benötigen Sie Hilfe bei der Programmierung?

Do you need help with programming?

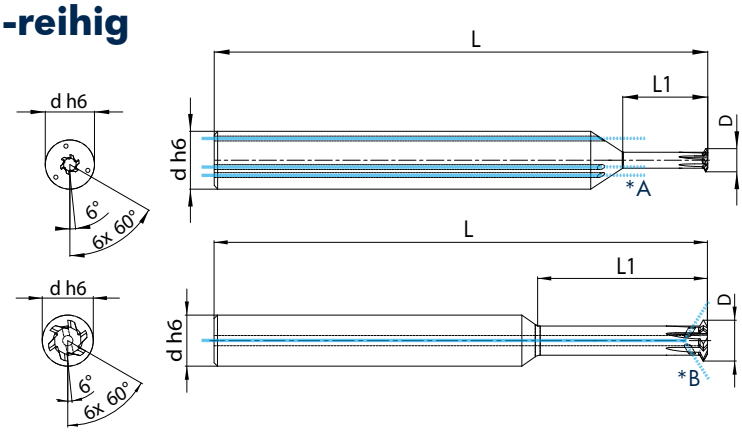
Further information on circular thread milling can be found from page 175

mimatic® Tool Systems

SolidCUT

VHM-Zirkular-Gewindefräser ein-reihig

M | MF | DIN 13 | ≤63 HRC | 60° α | IR/IL | Teilprofil | 3xD | DIN 6535 Form A



Thread	P mm	D mm	L mm	L1 mm	d h6 mm	Number of Teeth	Internal coolant supply	Order No. TINAMATIC	
≥ M1,0	0,25	0,72	40	4,1	4	4	Peripherie*A	204497	NEU
≥ M1,4	0,3	1,05	40	4,8	4	4	Peripherie*A	204498	NEU
≥ M1,6	0,35	1,2	40	6,1	4	4	Peripherie*A	204499	NEU
≥ M2	0,4	1,52	40	6,8	4	5	Peripherie*A	204500	NEU
≥ M2,5	0,45	1,95	40	8,4	4	5	Peripherie*A	204501	NEU
≥ M3	0,5	2,4	58	10,0	6	5	Peripherie*A	204502	NEU
≥ M3,5	0,6	2,7	58	11,7	6	6	Peripherie*A	204503	NEU
≥ M4	0,7	3,2	58	13,4	6	6	Peripherie*A	204504	NEU
≥ M5	0,8	4,05	58	16,6	6	6	Peripherie*A	204505	NEU
≥ M6	1	4,8	58	20,0	6	6	seitlich / sideways*B	204506	NEU
≥ M8	1,25	6,55	64	26,5	8	6	seitlich / sideways*B	204507	NEU
≥ M10	1,5	8,3	83	33,0	10	6	seitlich / sideways*B	204508	NEU
≥ M12	1,75	9,95	83	39,5	10	7	seitlich / sideways*B	204509	NEU
≥ M14	2	11,7	101	52,0	12	8	seitlich / sideways*B	204510	NEU

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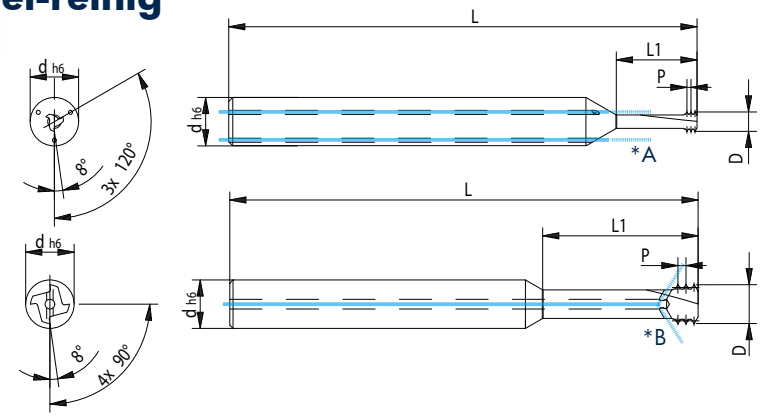
VHM-Zirkular-Gewindefräser drei-reihig

M | DIN 13 | ≤63 HRC | 60° α | IR/IL | Vollprofil | 3xD | DIN 6535 Form A



Thread	P mm	D mm	L mm	L1 mm	d h6 mm	Number of Teeth	Internal coolant supply	Order No. TINAMATIC	
M3	0,5	2,4	58	10,0	6	3	Peripherie*A	204416	NEU
M4	0,7	3,15	58	13,4	6	3	Peripherie*A	204480	NEU
M5	0,8	4	58	16,6	6	3	Peripherie*A	204481	NEU
M6	1	4,8	58	20,0	6	4	seitlich / sideways*B	204417	NEU
M8	1,25	5,95	64	26,5	8	4	seitlich / sideways*B	204482	NEU
M10	1,5	7,95	83	33,0	10	5	seitlich / sideways*B	204483	NEU
M12	1,75	9,9	83	39,5	10	5	seitlich / sideways*B	204419	NEU
M14/M16	2	11,6	101	52,0	12	6	seitlich / sideways*B	204484	NEU

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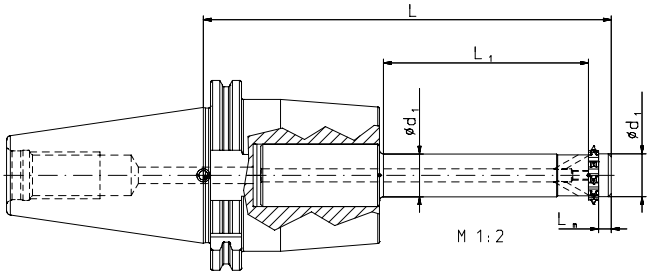
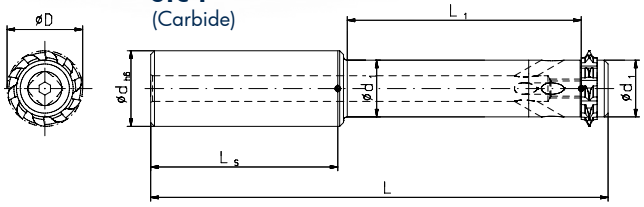
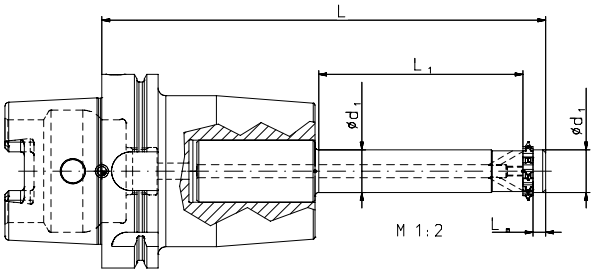
Milling System for Threads from Drill Hole Ø 20,5 mm (≥ M 24)

- Cutting data see page 166
- Recommendation plunging movements see page 180



STC 1
(Carbide)





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DIN 69893 | ISO 7388-1 | DIN 6535 Form A

Spare Parts

Holder	4 Clamping disc	2 Clamping screw	Screw-driver	Screw torques
182043	159784	163852	178296	SW3 6,0 Nm
182042	159785	163852	178296	SW3 6,0 Nm
160178				
156489	159786	114402	178640	SW6 24,5 Nm
156490				
160179				
156487	159787	114523	178640	SW6 24,5 Nm
156488				
160180				
156486	159788	114523	178640	SW6 24,5 Nm
156485				
182044				
182715	182775	114523	178640	SW6 24,5 Nm
182716				

Type	Shank	Complete holder without Inserts 1 Order No.	dh6 mm	L mm	L1 mm	LS mm	LM mm	D mm	d1 mm	Shaft
9	DIN 6535 A	182043	20	121	62,9	50	2,9	20	15	Carbide
13	DIN 6535 A	182042	20	141	82,9	50	2,9	24	19	Carbide
16	DIN 6535 A	160178	32	180,1	107,4	60	6,5	30	22	Carbide
	HSK 100	156489	–	229,1	107,4	110	6,5	30	22	Carbide
	SK 50	156490	–	209,1	107,4	90	6,5	30	22	Carbide
	DIN 6535 A	160179	32	200,9	127,15	60	7,0	36	30	Carbide
	HSK 100	156487	–	249,4	127,15	110	7,0	36	30	Carbide
	SK 50	156488	–	229,8	127,15	90	7,0	36	30	Carbide
19	DIN 6535 A	160180	32	221,1	147,9	60	7,0	40	32	Carbide
	HSK 100	156486	–	270	146,9	110	7,0	40	32	Carbide
	SK 50	156485	–	250	146,9	90	7,0	40	32	Carbide
25	DIN 6535 A	182044	40	299	196,4	88	7,4	50	39	Carbide
	HSK 100	182715	–	351	196,4	140	7,4	50	39	Carbide
	SK 50	182716	–	311	196,4	100	7,4	50	39	Carbide

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Milling Inserts③

Cutting Data see page 166

Full form | M | 60° α | DIN 13 | IR/IL

Type	Pitch mm	Thread	Number of teeth	D mm	t mm	LP1=LP2 mm	Order No TINAMATIC
9	3	M 24 / M 27	10	20	1,702	2,1	159757
13	3,5	M 30	10	24	1,982	2,1	159758
16	4	M 36	10	30	2,263	2,6	159759
	4,5	M 42	10	36	2,553	2,85	159760
19	5	M 48	10	40	2,836	3,1	159761
	5,5	M 56	10	40	3,106	3,1	159762
	6	M 64	10	40	3,415	3,1	159763

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Partial form | M | MF | UN | UNC | NPSM | 60° α | IR/IL | AR/AL

Type	Pitch mm	Pitch G/"	Number of teeth	D mm	t mm	G mm	LP1=LP2 mm	Order No TINAMATIC
9	1-3	24-9	10	20	2,25	0,10	2,10	181817
	2,5-5	10-5	10	20	3,20	0,25	2,10	181818
13	1-3	24-9	10	24	2,25	0,10	2,10	181726
	3-4	9-6	10	24	3,20	0,25	2,10	181730
16	1-3	24-9	10	30	2,25	0,10	2,60	181732
	3-4	9-6	10	30	3,80	0,25	2,60	181733
	1-3	24-9	10	36	2,25	0,10	2,85	182040
	3-6	9-6	10	36	3,80	0,25	2,85	182041
19	1-3	24-9	10	40	2,25	0,10	3,10	159836
	3-6	9-6	10	40	3,80	0,25	3,10	180440
25	1-3	24-9	12	50	2,25	0,10	3,60	181735
	3-6	9-4	12	50	3,80	0,25	3,60	181736
	5-8	6-3	12	50	5,30	0,40	3,60	181737

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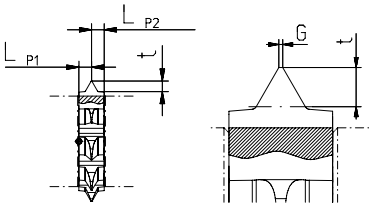

Full form | UNC | 60° α | IR/IL | ASME B1.1

Type	Pitch G/"	Number of teeth	D mm	t mm	LP1=LP2 mm	Thread	Order No TINAMATIC
9	8	10	20	1,809	2,1	1"	180331
	7	10	20	2,043	2,1		156760
	8	10	20	1,809	2,1	>1"	186515
16	6	10	28	2,454	2,6		156761
	5	10	36	2,979	2,85		156762

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Ask about our regrinding service!

STC 2 & STC 3 on request

* **Included in delivery**

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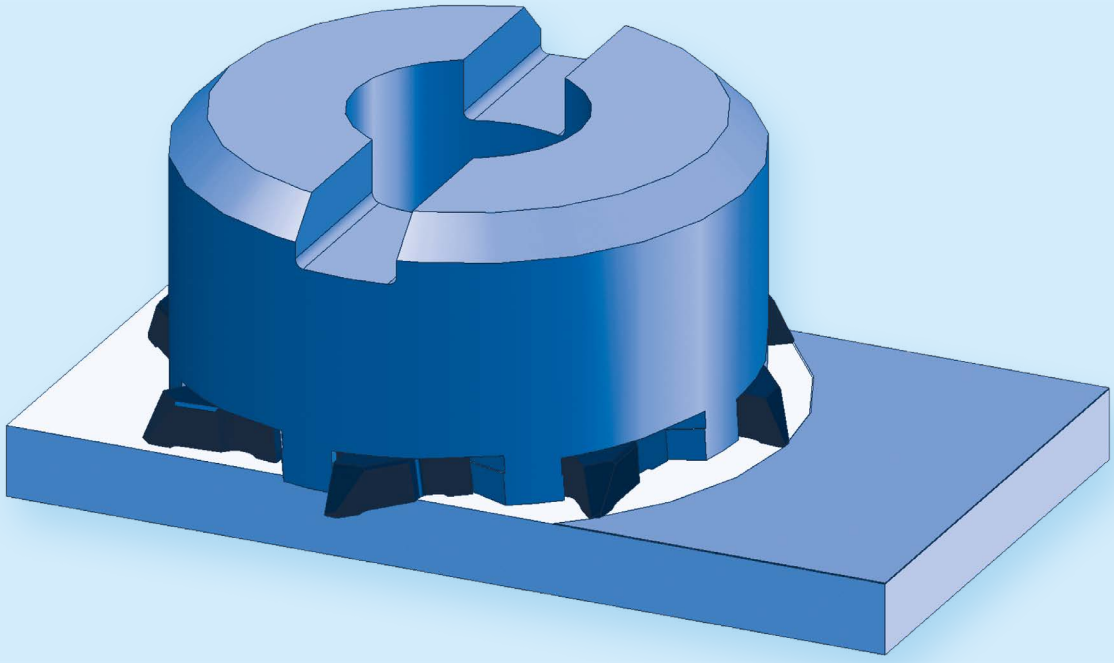
Face Finish Milling



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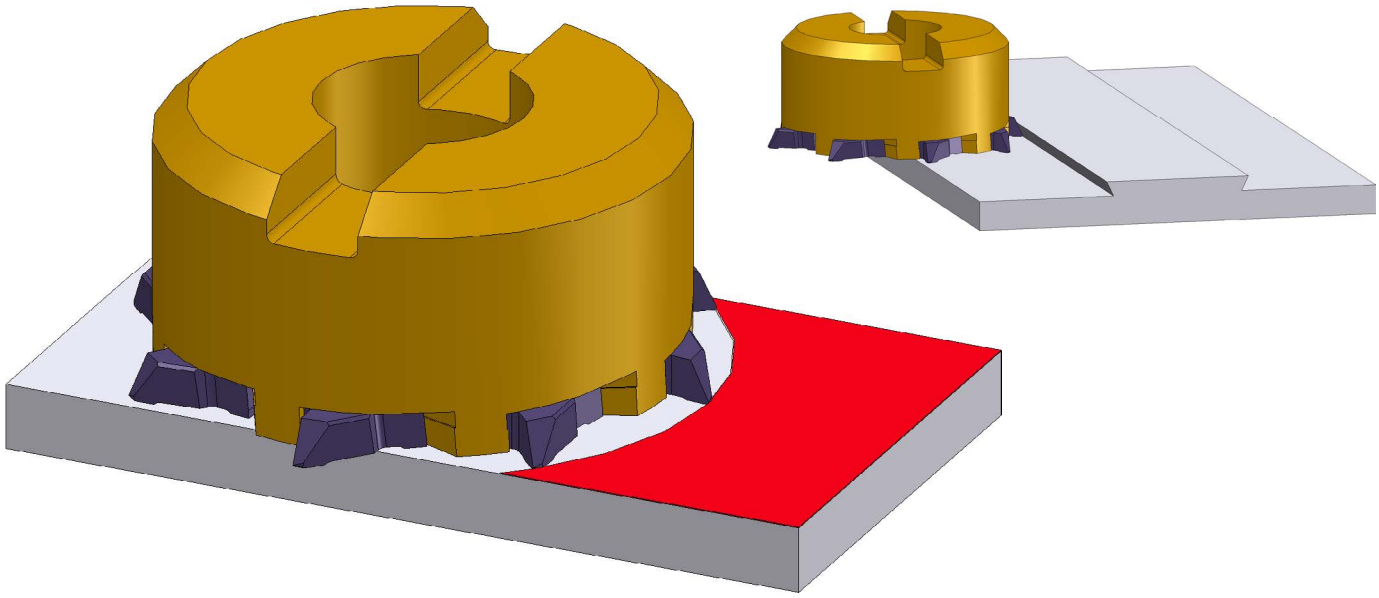
TriMILL

with Trailing Chamfer Edge for Very Good Surfaces wto Finish Milling

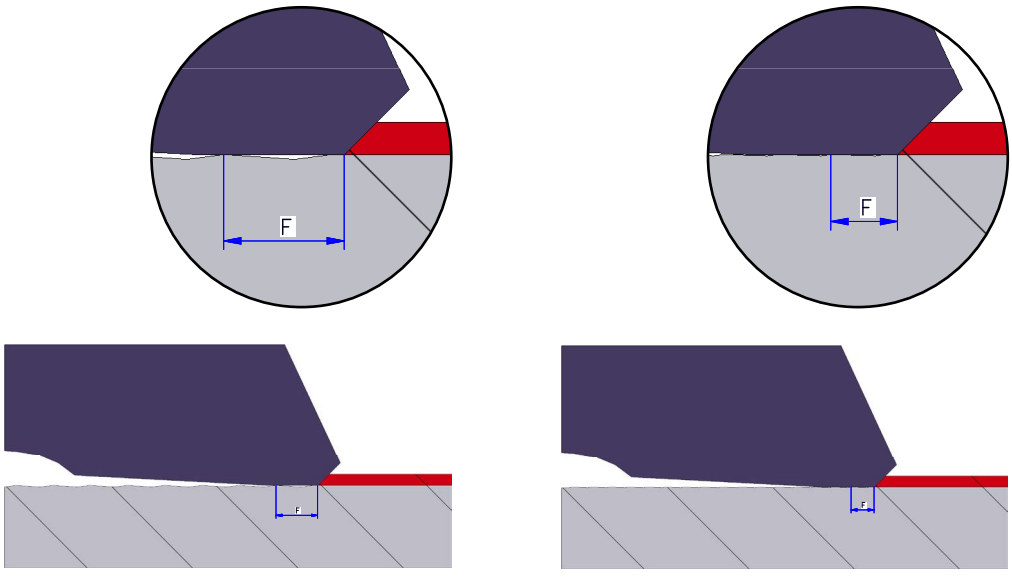
Advantages of indexable inserts with integrated trailing chamfer

compared to standard indexable inserts with normal corner radius at same depth of cut:

- **2-3 fold better surface quality** with the same feed rate
- **2-3 old higher feed rates** with the same surface quality



For high performance cutting in all areas, we have developed a variety of cutting geometries for internal and external milling operations. This trailing chamfer has the function of secondary cutting edge with minimal rear position and thus minimizes the secondary cutting edge angle to 0 °. Thus the surface automatically improves to 2-3 times compared with the calculated values.



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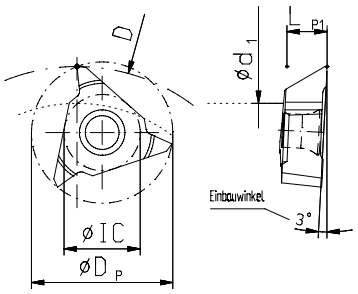
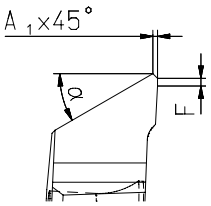
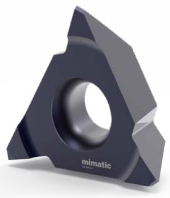
Slot Milling

- Insert holder see page 67-68
- Cutting data see page 166







Typ 023 | Typ 013

Type	DP mm	IC mm	LP1 mm	A1 x 45° mm	F mm	α	Order No. TINAMATIC
023	17,5	9,2	5	0,3	0,65	25°	149516
013	23	12,4	6,5	0,3	0,5	28°	149472

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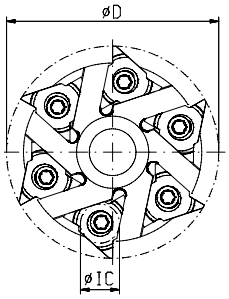
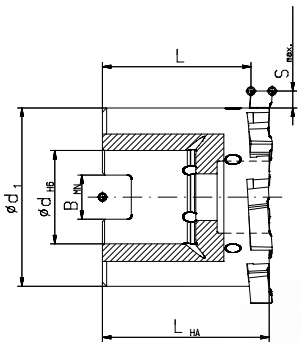
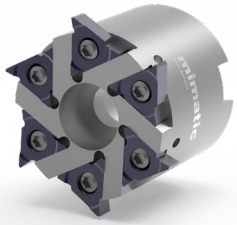
Circular Milling Tools

- Inserts see page 69
- Cutting data see page 166







Typ 023 | IC 9,2 | Ø min. 40 mm | S max. 4,0 mm

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Cutting edge	Accessories Key	Spare part No. Cutter fastening screw	Spare part No. T15 IP Screw-driver	Spare part No. Screw
123464	38	16	31	3,4	45,3	40,97	8,4	3	134984	114476*	111671*	107547*
123461	50	22	42	3,9	39,3	34,97	10,4	6		114684*	111671*	107547*
161485	63	27	55	4,0	39,3	34,97	12,4	8		114684*	111671*	107547*

Screw torque max. 3,8 Nm

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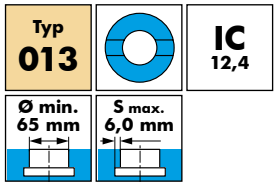
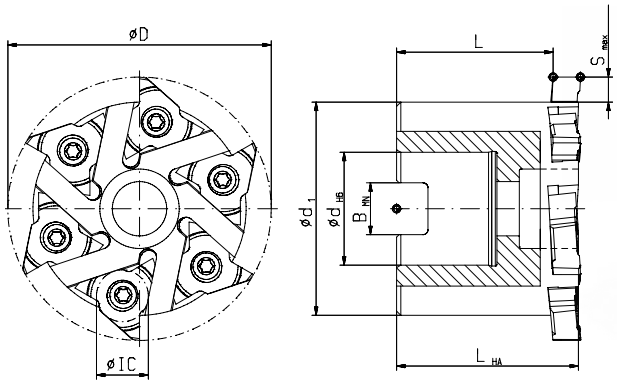
* Screwdriver and clamping screw included in delivery

TriMILL

Circular Milling Tools

- Inserts see page 69
- Cutting data see page 166





Order No.	D mm	d H6 mm	d1 mm	S max. mm	L HA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123435	63	27	51	6	43,5	37,5	12,4	6	111594	107551

Screw torque 5,5 Nm

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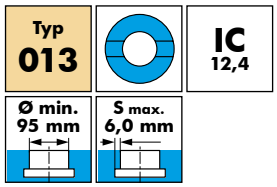
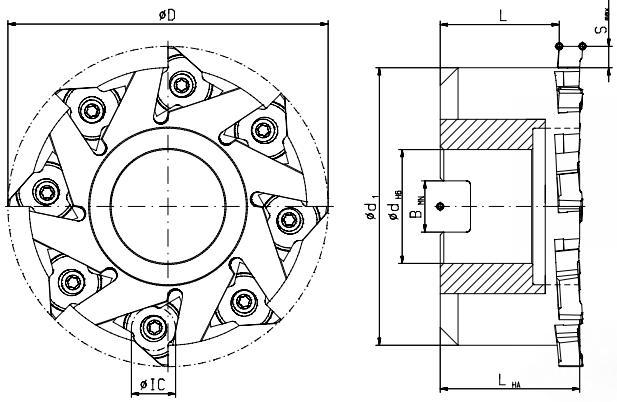
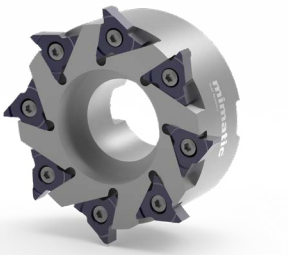
Cutter clamping screw internal hexagon
Order No. 114695







Order No.	D mm	d H6 mm	d1 mm	S max. mm	L HA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123436	90	32	78	6	39,2	33,5	14,4	8	111594	107551

Screw torque 5,5 Nm

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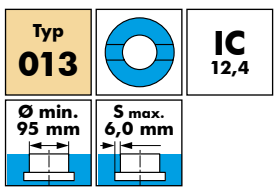

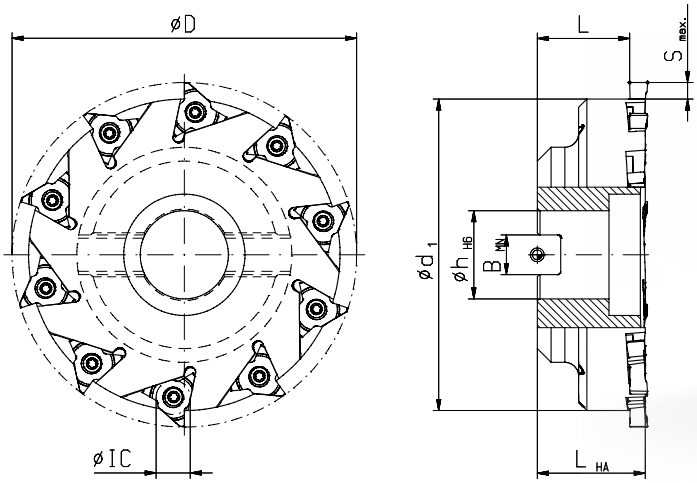

Order No.	D mm	d H6 mm	d1 mm	S max. mm	L HA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
134561	125	32	113	6,0	39,2	33,5	14,4	10	111594	107551

Screw torque 5,5 Nm

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* **Screwdriver and clamping screw included in delivery**

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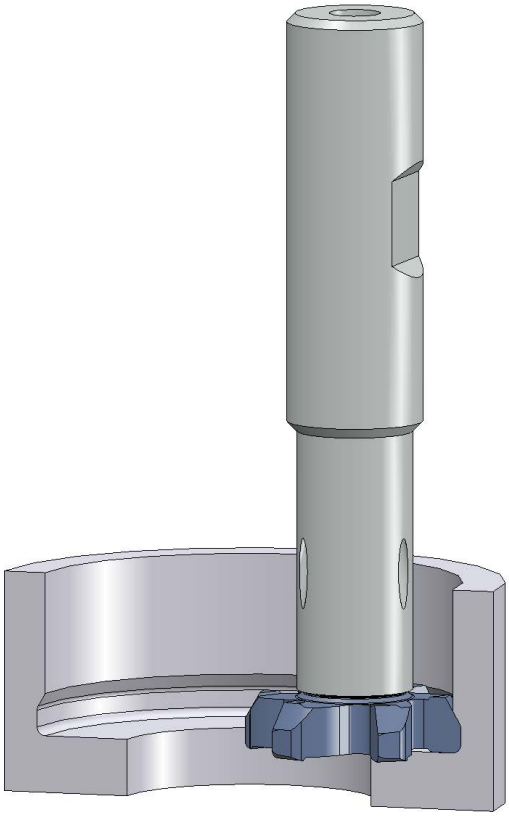
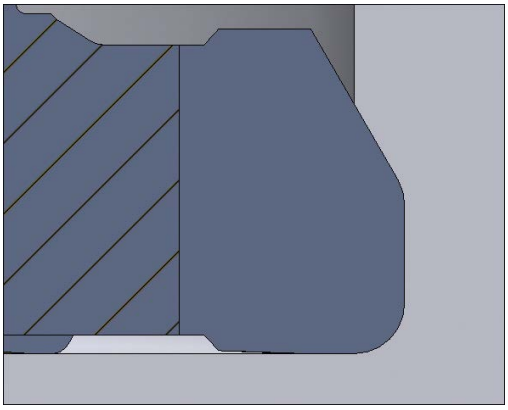
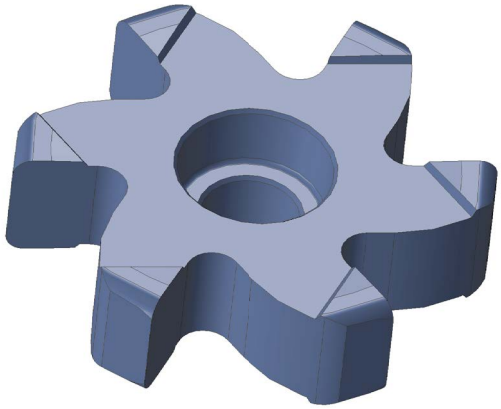
Face Finish Milling with PolyMILL on Request







Application example:

Milling valve seat

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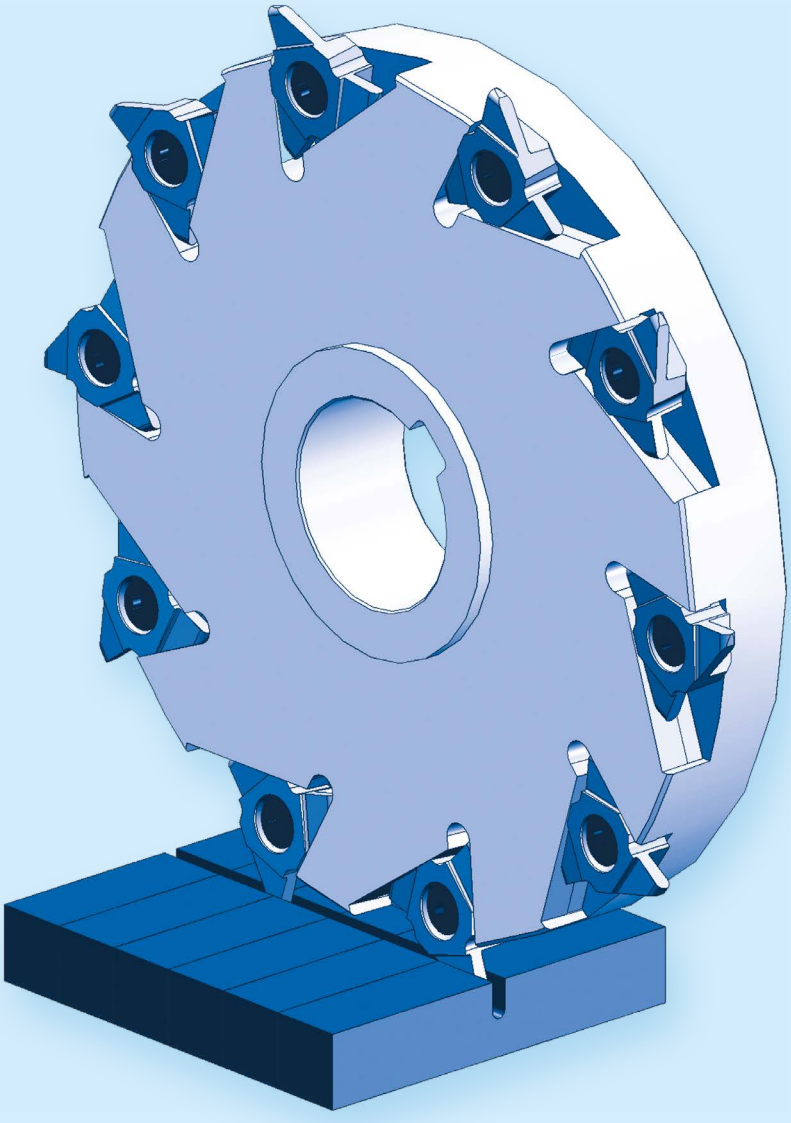
Notch Impact Test



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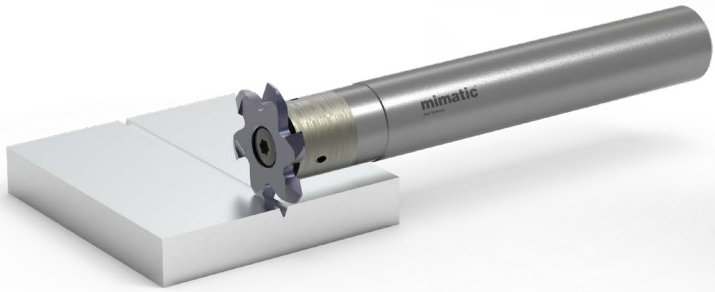
Notch Impact Test

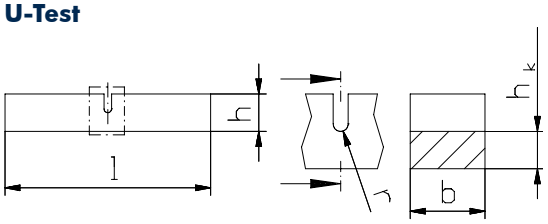
The impact test is a material testing method by Augustin Georges Albert Charpy established in 1905, according to DIN EN ISO 179-1(for metallic materials) and DIN EN ISO 148-1(for plastics) to determine relatively quickly and simple toughness properties of materials. There the behavior of an elongated cuboid, the notched side (usually V-notch, rarely U-notch) and the tempered state (cooled or heated) is investigated at high strain rate (impact stress). The experiment is that a pendulum hammer with a certain kinetic energy strikes the unnotched back of the sample and smashes it. There, at the moment of breaking the sample, a part of the kinetic energy of the hammer is absorbed by deformation processes in the sample.

The amount of energy varies depending on the material and temperature. According to the energy that is absorbed during the battering of the sample, the pendulum hammer swings less high on the other hand. Would it follow through without an inserted sample, it would reach almost the same height as the starting point.

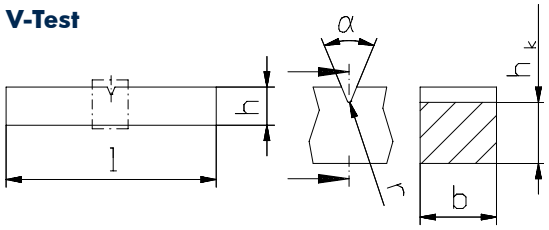


Notch Impact Test according to Charpy DIN EN ISO 148-1; 2011-01

U-Test



V-Test



Description	Notch form	l mm	lw mm	h mm	b mm	hk mm	r mm	α
Normal test	U	55	40	10	10	5	1,00	–
DVM test *	U	55	40	10	10	7	1,00	–
DVMK test *	U	44	30	6	6	4	0,75	–
Normal test	V	55	40	10	10	8	0,25	45°
Undersize test	V	55	40	10	7,5	8	0,25	45°
Undersize test	V	55	40	10	5	8	0,25	45°
KLST test **	V	27	22	4	3	3	0,10	60°

* DVM - Deutscher Verband für Materialprüfung
** KLST-test for plastics acc. to DIN EN ISO 179-1:2000

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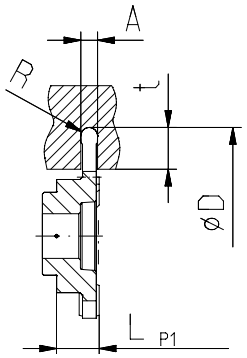
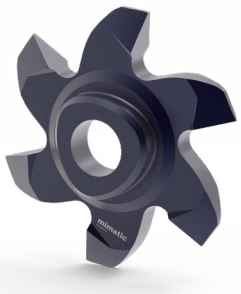
Notch Impact Test

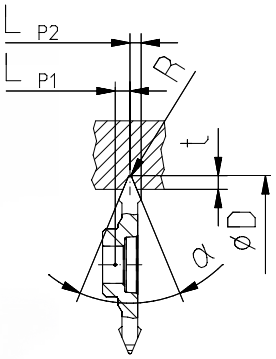
- Insert holder see page 74
- Cutting data see page 166

U-Test





V-Test



3

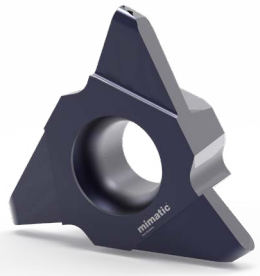
	Type	Notch form	A mm	R mm	α	t mm	LP1 mm	LP2 mm	Number of teeth	Order No. TINAMATIC
P20	P2022 *	U	2,0	1,0	–	5,0	4,9	0	6	171975
	P2022	U-DVM	2,0	1,0	–	3,0	4,9	0	6	171975
	P2022	U-DVMK	1,5	0,75	–	2,0	4,9	0	6	175889
	P2020	V	–	0,25	45°	2,0	2,15	1,675	6	182208
	P2020	V-KLST	–	0,1	60°	1,0	2,15	1,675	6	160808
P25	P2526	U	2,0	1,0	–	5,0	4,9	0	6	160909
	P2526	U-DVM	2,0	1,0	–	3,0	4,9	0	6	160909
	P2526	U-DVMK	1,5	0,75	–	2,0	4,9	0	6	162057
	P2526	V	–	0,25	45°	2,0	2,1	1,7	6	180815
	P2526	V-KLST	–	0,15	60°	1,0	2,7	1,8	6	184126

CLICK ME!

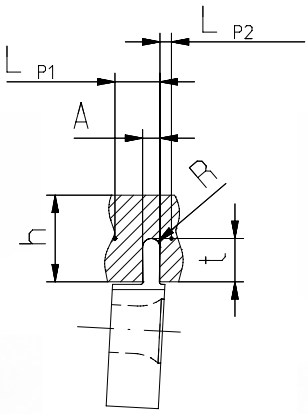
TriMILL

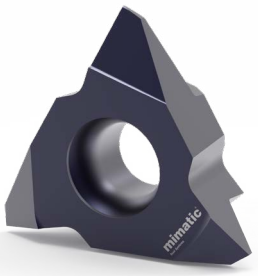
Notch Impact Test

- Insert holder see page 75
- Cutting data see page 166

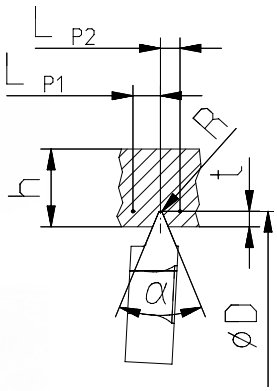


U-Test





V-Test



	Type	Notch form	A mm	R mm	α	t mm	LP1 mm	LP2 mm	Number of teeth	Order No. TINAMATIC
013	013	U	2,0	1,0	–	5,0	5,2	1,33	3	160730
	013	U-DVM	2,0	1,0	–	3,0	6,53	0	3	185159
	013	U-DVMK	1,5	0,75	–	2,0	6,53	0	3	162406
	013	V	–	0,25	45°	2,0	3,53	3	3	184439
	013	V-KLST	–	0,1	60°	1,0	2,73	3,8	3	161407

CLICK ME!

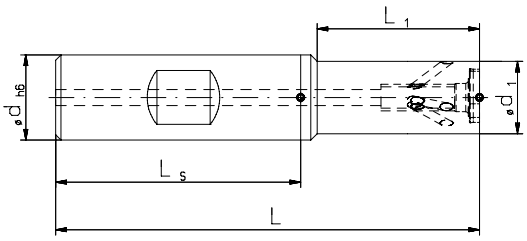
* Not suited for cutter 174314

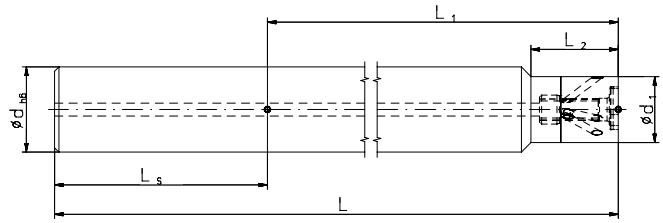
mimatic Tool Systems

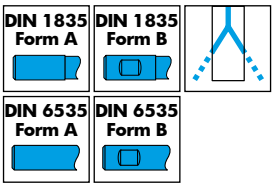
PolyMILL

Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 73
- Cutting data see page 166
- More cutters see page 28-29







Type	Order No.	Form	d h6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	L2 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P20	177178	A	12	11,5	21,7	5,1	62,4	14,4	-	Steel	T15 IP 111671	M4x13 107597
	123615	B	16	11,5	21,7	5,1	80	30	-	Steel		
	123616	B	16	11,5	21,7	5,1	80	30	-	Carbide		
	171794	A	16	11,5	21,7	5,1	80	30	-	Carbide		
	123617	B	16	11,5	21,7	5,1	100	50	-	Carbide		
	171796	A	16	11,5	21,7	5,1	100	50	-	Carbide		
	174314	A	16	15,5	21,7	3,1	105,5	57,5	20	Carbide		
P25	177182	A	16	13,6	27,7	7,05	69,6	20,4	-	Steel	T20 IP 111594	M5x13,5 107529
	123592	B	16	13,6	27,7	7,05	79,6	30,5	-	Steel		
	123598	B	16	13,6	27,7	7,05	79,6	30,5	-	Carbide		
	171855	A	16	13,6	27,7	7,05	79,6	30,5	-	Carbide		
	123600	B	16	13,6	27,7	7,05	94,6	45,5	-	Carbide		
	171857	A	16	13,6	27,7	7,05	94,6	45,5	-	Carbide		
	123603	B	16	13,6	27,7	7,05	109,6	60,5	-	Carbide		
	171859	A	16	13,6	27,7	7,05	109,6	60,5	-	Carbide		
	123609	A	16	15,5	27,7	6,1	105	57	21,5	Carbide		
	123611	A	16	15,5	27,7	6,1	149,5	101,5	21,5	Carbide		
	161205 NEW	A	20	15,5	27,7	6,1	100	52	21,5	Carbide		
	123613	A	20	15,5	27,7	6,1	174,45	128,5	21,5	Carbide		

Screw torques max.

107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

CLICK ME!

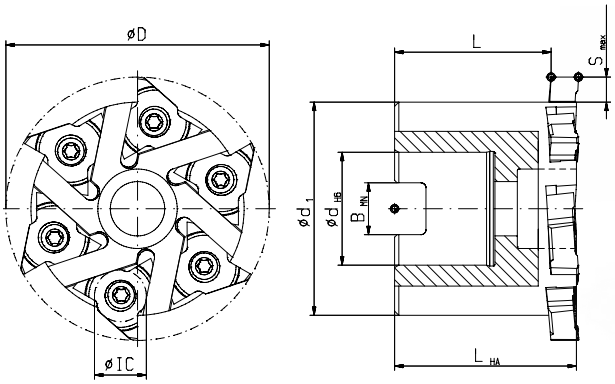
* Screwdriver and clamping screw included in delivery

TriMILL 013

Circular Milling Tools

Inserts see page 73
Cutting data see page 166

Typ 013 | IC 12,4 | Ø min. 65 mm | S max. 6,0 mm



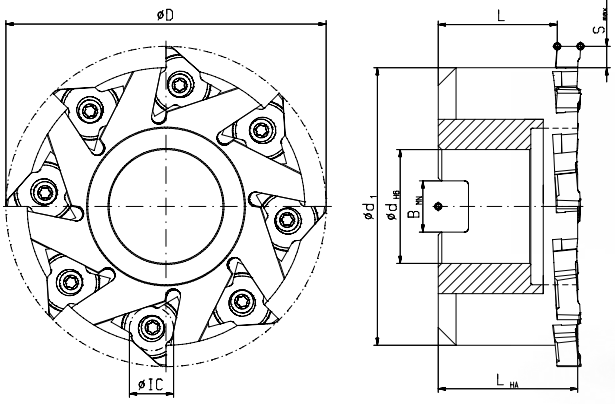
Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screwdriver *	Spare part No. Screw *
123435	63	27	51	6	43,5	37,5	12,4	6	111594	107551

Screw torque 5,5 Nm

Cutter clamping screw internal hexagon
Order No. 114695

CLICK ME!

Typ 013 | IC 12,4 | Ø min. 95 mm | S max. 6,0 mm

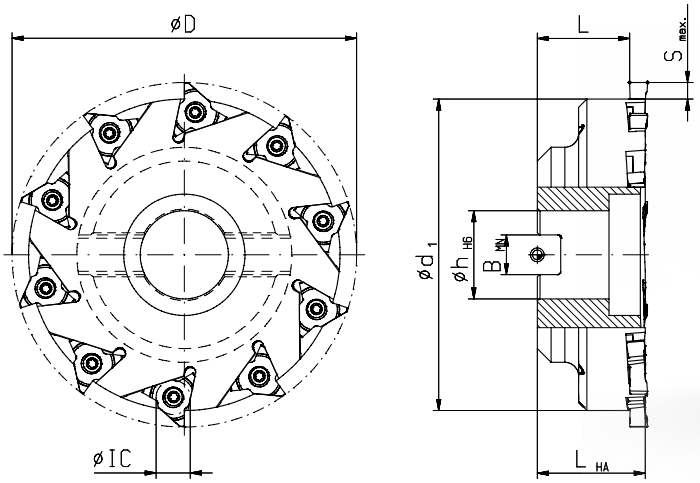


Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screwdriver *	Spare part No. Screw *
123436	90	32	78	6	39,2	33,5	14,4	8	111594	107551

Screw torque 5,5 Nm

CLICK ME!

Typ 013 | IC 12,4 | Ø min. 95 mm | S max. 6,0 mm



Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screwdriver *	Spare part No. Screw *
134561	125	32	113	6,0	39,2	33,5	14,4	10	111594	107551

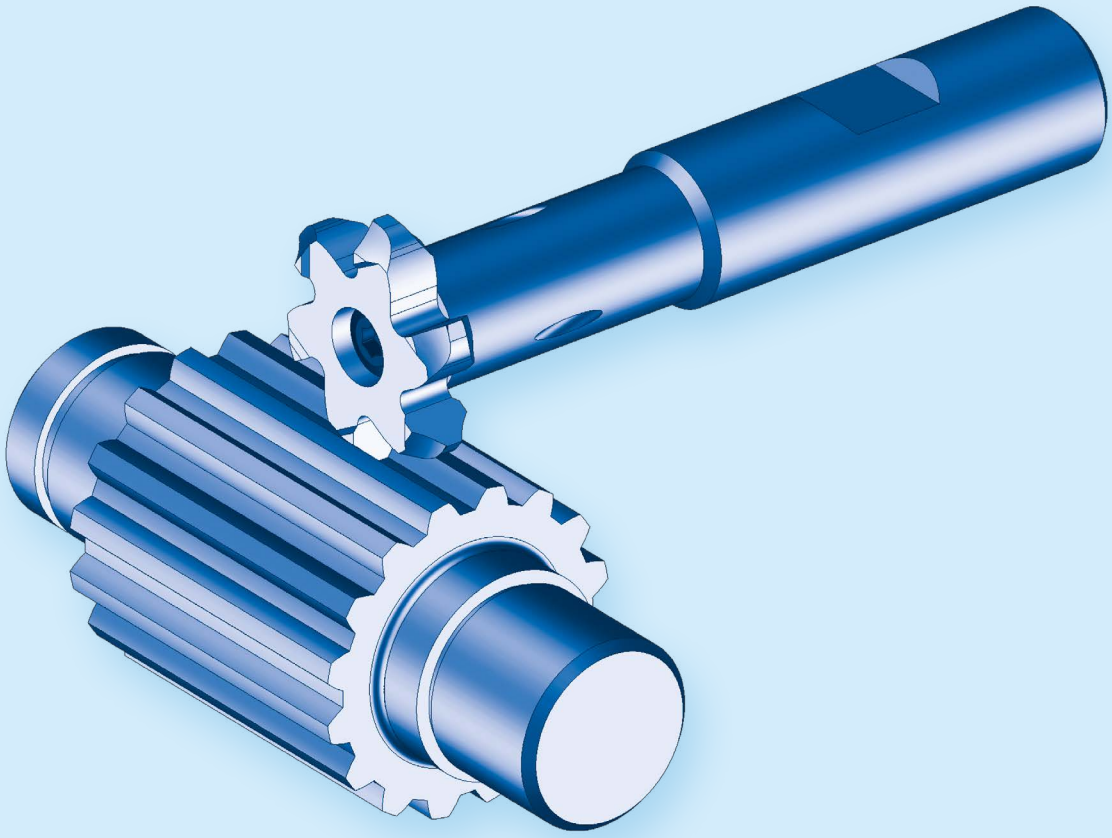
Screw torque 5,5 Nm

CLICK ME!

* **Screwdriver and clamping screw included in delivery**

mimatic®
Tool Systems

Gear Milling

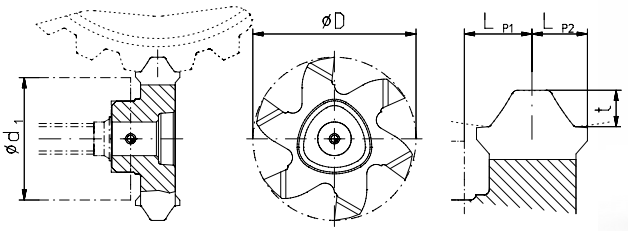


mimatic Tool Systems

PolyMILL

Gear Milling Inserts

- Insert holder see page 94
- Cutting data see page 166



Splined Shaft Connection

DIN 5480

	Type	Arbor		Module		Angle of action		N. of teeth Arbor	D±0,05 mm	Chip angle	LP1 mm	LP2 mm	t mm	N. of teeth Insert	Order No. TINAMATIC	
P16	P1616	W8	x	0,75	x	30°	x	9	16	6°	2,15	1,675	0,63	6	193023	NEW
	P1616	W9	x	0,8	x	30°	x	10	15,85	6°	2,05	1,775	0,71	6	184142	
	P1616	W11	x	0,8	x	30°	x	12	15,85	6°	2,05	1,775	0,8	6	174569	
	P1616	W14	x	0,8	x	30°	x	16	16	6°	2,05	1,775	0,8	6	169336	
	P1616	W16	x	0,8	x	30°	x	18	16	6°	2,05	1,775	0,8	6	169090	
	P1616	W18	x	1,0	x	30°	x	16	16	6°	2,15	1,675	0,93	6	192612	NEW
	P1616	W19	x	0,8	x	30°	x	22	16	6°	2,15	1,675	0,75	6	192691	NEW
	P1616	W20	x	0,8	x	30°	x	24	16	6°	2,05	1,775	0,8	6	168668	
	P1616	W20	x	1,25	x	30°	x	14	16	6°	2,65	2,175	1,45	6	182361	
	P1616	W20	x	1,5	x	30°	x	12	16	6°	2,65	2,175	1,36	6	190601	NEW
	P1616	W21	x	1,5	x	30°	x	12	16	6°	2,65	2,175	1,33	6	192610	NEW
	P1616	W22	x	0,8	x	30°	x	26	16	6°	2,15	1,675	0,77	6	191365	NEW
	P1616	W24	x	1,25	x	30°	x	18	16	6°	2,55	2,275	1,25	6	169340	
	P1616	W25	x	1,0	x	30°	x	24	16	6°	2,15	1,675	0,95	6	185309	
	P1616	W25	x	2,0	x	30°	x	11	16	8°	4,15	3,30	2,0	3	149415	
	P1616	W28	x	1,25	x	30°	x	21	16	6°	2,15	1,675	1,18	6	192905	NEW
	P1616	W30	x	1,25	x	30°	x	22	16	6°	2,55	2,275	1,25	6	176246	
	P1616	W31	x	0,8	x	30°	x	37	16	6°	2,15	1,675	0,78	6	189534	NEW
	P1616	W32	x	1,25	x	30°	x	24	16	6°	2,65	2,175	1,19	6	185305	
	P1616	W35	x	0,8	x	30°	x	42	16	6°	2,15	1,675	0,78	6	188287	
	P1616	W35	x	1,5	x	30°	x	22	16	6°	2,65	2,175	1,43	6	186028	
	P1616	W35	x	2,0	x	30°	x	16	16	6°	3,05	2,775	2,0	6	179140	
	P1616	W40	x	1,0	x	30°	x	38	16	6°	2,08	1,75	0,96	6	187909	
	P1616	W42	x	1,25	x	30°	x	32	16	6°	2,55	2,275	1,25	6	179651	
	P1616	W45	x	1,25	x	30°	x	34	16	6°	2,65	2,175	1,21	6	160731	NEW
	P1616	W50	x	1,0	x	30°	x	48	16	6°	2,65	2,175	0,88	6	160993	NEW
	P1616	W50	x	2,0	x	30°	x	24	16	6°	3,05	2,775	2,0	6	169687	
	P1616	W52	x	1,25	x	30°	x	40	16	6°	2,65	2,175	1,21	6	185304	
	P1616	W55	x	1,0	x	30°	x	54	16	6°	2,08	1,75	0,97	6	187910	
P25	P2526	W18	x	1,0	x	30°	x	16	26	6°	2,15	1,675	0,93	6	161670	NEW
	P2526	W21	x	1,5	x	30°	x	12	26	6°	2,65	2,175	1,33	6	161669	NEW
	P2526	W22	x	2,0	x	30°	x	9	26	6°	3,90	3,425	1,69	6	190309	NEW
	P2526	W25	x	1,25	x	30°	x	18	26	6°	2,65	2,175	1,28	6	189691	NEW
	P2526	W30	x	2,0	x	30°	x	13	26	6°	3,90	3,425	1,76	6	187574	
	P2526	W32	x	2,0	x	30°	x	14	26	6°	3,90	3,425	1,8	6	192784	NEW
	P2526	W38	x	2,0	x	30°	x	18	26	6°	3,90	3,425	2,21	6	189692	NEW
	P2526	W40	x	2,0	x	30°	x	18	26	6°	3,90	3,425	1,86	6	187575	
	P2526	W45	x	2,0	x	30°	x	21	26	6°	3,90	3,425	1,9	6	187576	
	P2526	W50	x	2,0	x	30°	x	24	26	6°	3,85	3,475	2,0	6	169786	
	P2526	W55	x	2,0	x	30°	x	26	26	6°	4,40	2,675	1,92	6	189521	NEW
	P2526	W65	x	2,0	x	30°	x	31	26	6°	4,40	2,675	1,93	6	193313	NEW
	P2526	W70	x	1,5	x	30°	x	45	26	6°	2,65	2,175	1,46	6	191807	NEW
	P2526	W70	x	2,5	x	30°	x	26	26	6°	3,90	3,425	2,39	6	192220	NEW
	P2526	W72	x	2,0	x	30°	x	34	26	6°	3,85	3,475	1,92	6	160321	
	P2526	W80	x	2,5	x	30°	x	30	26	6°	3,85	3,475	2,39	6	160323	
	P2526	W90	x	2,0	x	30°	x	44	26	6°	3,85	3,475	1,94	6	160322	
	P2526	W90	x	2,5	x	30°	x	34	26	6°	3,90	3,425	2,42	6	191806	NEW
	P2525	W90	x	3,0	x	30°	x	28	25	8°	4,60	4,10	2,89	3	189851	NEW
	P2525	W95	x	3,0	x	30°	x	30	25	8°	4,60	4,10	2,90	3	189852	NEW
	P2526	W100	x	3,0	x	30°	x	32	26	6°	3,90	3,425	2,91	6	192039	NEW
	P2526	W130	x	3,0	x	30°	x	42	26	6°	3,90	3,425	2,93	6	188629	NEW

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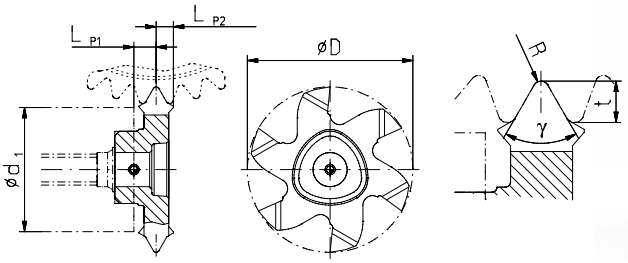
PolyMILL

Gear Milling Inserts

- Insert holder see page 94
- Cutting data see page 166

Spline

DIN 5481



Type		Arbor	R mm	Grap angle γ	N. of teeth Arbor	D±0,05 mm	Chip angle	LP1 mm	LP2 mm	t mm	N. of teeth Insert	Order No. TINAMATIC
P16	P1616	**12** x **14**	0,09	60°	31	16	6°	2,15	1,675	0,892	6	191837 NEW
P25	P2526	**26** x **30**	0,3	60°	35	26	6°	2,15	1,675	1,638	6	171358
	P2526	**40** x **44**	0,4	60°	38	26	6°	2,15	1,675	1,94	6	171359

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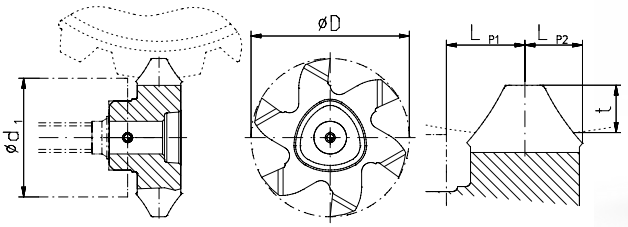
4

Splined Shaft Profile

DIN 5482



Type		Nominal profile width	Module	Angle of action	N. of teeth Arbor	D±0,05 mm	Chip angle	LP1 mm	LP2 mm	t mm	N. of teeth Insert	Order No. TINAMATIC
P16	P1616	**B15** x **12**	1,6	30°	8	16	6°	3,15	2,675	1,32	6	169337
	P1616	**B17** x **14**	1,6	30°	9	16	6°	3,15	2,675	1,33	6	169111
	P1616	**B20** x **17**	1,6	30°	12	16	6°	3,15	2,50	1,42	6	169101
	P1616	**B25** x **22**	1,6	30°	14	16	6°	3,15	2,53	1,54	6	169107
	P1616	**B40** x **36**	1,9	30°	20	16	6°	3,175	2,65	1,91	6	186842
P25	P2526	**B35** x **31**	1,75	30°	18	26	6°	3,85	3,475	2,0	6	178172
	P2526	**B38** x **34**	1,9	30°	19	26	6°	4,4	2,675	1,91	6	186398
	P2526	**B45** x **41**	2,0	30°	22	26	6°	3,85	3,475	1,91	6	179212
	P2526	**B50** x **45**	2,0	30°	24	26	6°	3,90	3,425	2,35	6	192242 NEW
	P2526	**B55** x **50**	2,0	30°	26	26	6°	3,85	3,475	2,75	6	173903
	P2526	**B58** x **53**	2,0	30°	27	26	6°	3,90	3,425	2,64	6	189652 NEW
	P2526	**B68** x **62**	2,1	30°	31	26	6°	4,40	2,675	2,81	6	192093 NEW
	P2526	**B70** x **64**	2,1	30°	32	26	6°	3,90	3,425	2,81	6	189848 NEW
	P2526	**B80** x **74**	2,1	30°	36	26	6°	3,90	3,425	2,82	6	189005 NEW

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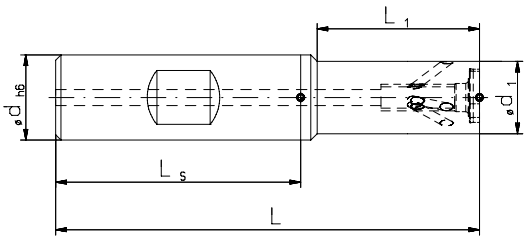
Further gear standards on request

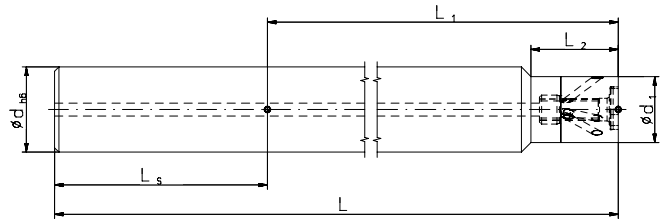
mimatic Tool Systems

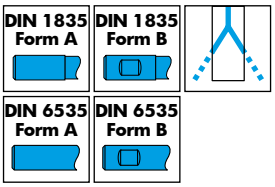
PolyMILL

Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 78-79
- Cutting data see page 166
- More cutters see page 28-29







CLICK ME!

Type	Order No.	Form	d h6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	L2 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P20	177178	A	12	11,5	21,7	5,1	62,4	14,4	-	Steel	T15 IP 111671	M4x13 107597
	123615	B	16	11,5	21,7	5,1	80	30	-	Steel		
	123616	B	16	11,5	21,7	5,1	80	30	-	Carbide		
	171794	A	16	11,5	21,7	5,1	80	30	-	Carbide		
	123617	B	16	11,5	21,7	5,1	100	50	-	Carbide		
	171796	A	16	11,5	21,7	5,1	100	50	-	Carbide		
	174314	A	16	15,5	21,7	3,1	105,5	57,5	20	Carbide		
P25	177182	A	16	13,6	27,7	7,05	69,6	20,4	-	Steel	T20 IP 111594	M5x13,5 107529
	123592	B	16	13,6	27,7	7,05	79,6	30,5	-	Steel		
	123598	B	16	13,6	27,7	7,05	79,6	30,5	-	Carbide		
	171855	A	16	13,6	27,7	7,05	79,6	30,5	-	Carbide		
	123600	B	16	13,6	27,7	7,05	94,6	45,5	-	Carbide		
	171857	A	16	13,6	27,7	7,05	94,6	45,5	-	Carbide		
	123603	B	16	13,6	27,7	7,05	109,6	60,5	-	Carbide		
	171859	A	16	13,6	27,7	7,05	109,6	60,5	-	Carbide		
	123609	A	16	15,5	27,7	6,1	105	57	21,5	Carbide		
	123611	A	16	15,5	27,7	6,1	149,5	101,5	21,5	Carbide		
	161205 NEW	A	20	15,5	27,7	6,1	100	52	21,5	Carbide		
	123613	A	20	15,5	27,7	6,1	174,45	128,5	21,5	Carbide		

Screw torques max.

107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

* Screwdriver and clamping screw included in delivery

PolyMILL

Milling of Special Contours with PolyMILL Inserts

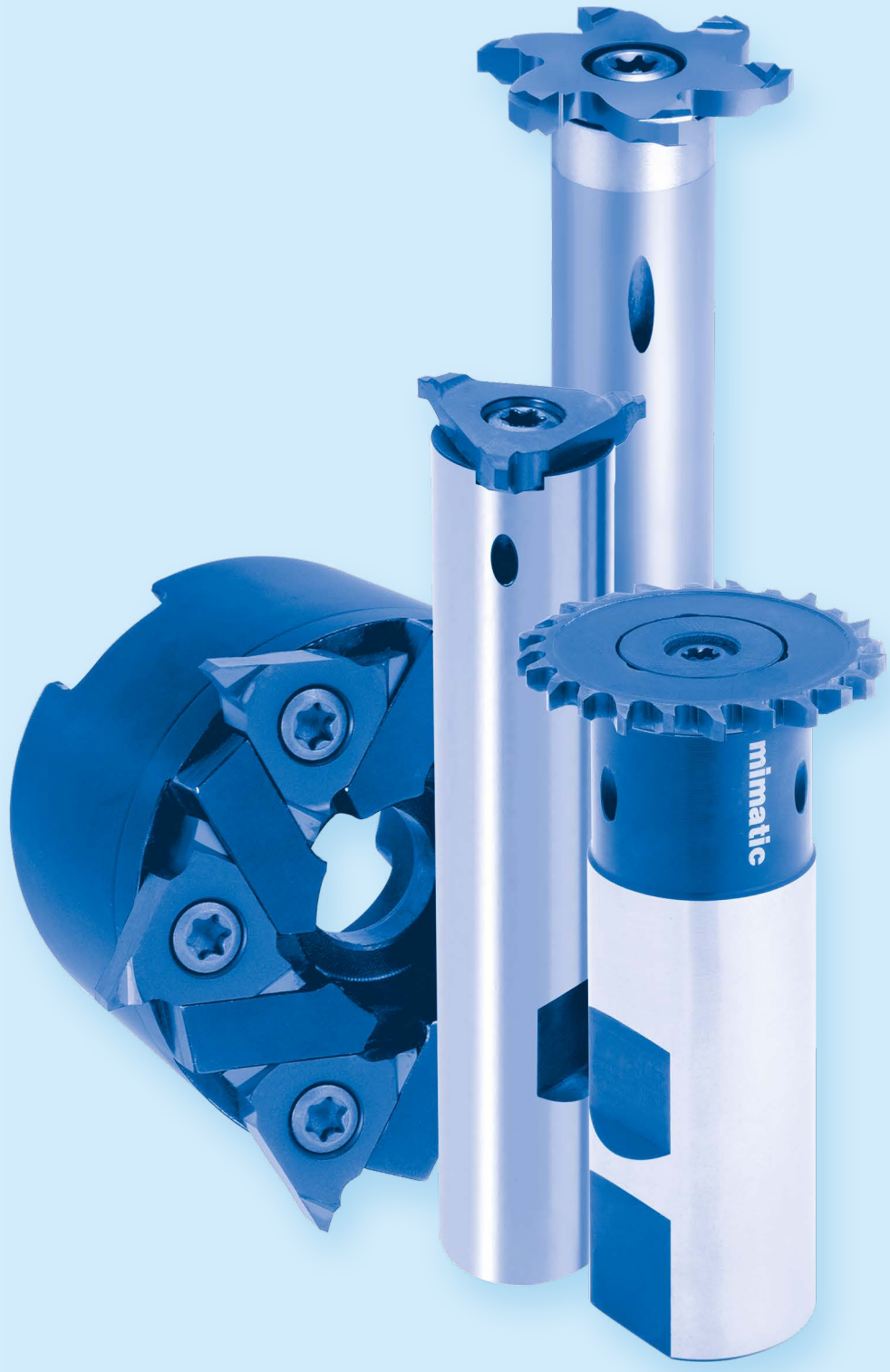
Milling an undercut according to DIN 509 Form E

Milling a thread undercut according to DIN 76

Milling a spindle with splines according to DIN 5480

mimatic®
Tool Systems

Slot Milling



mimatic® Tool Systems

Table of Contents

PolyMILL

TriMILL

DeepMILL

Keyway Slot Milling Cutter

Technical Data

mimatic® Tool Systems

Symbols

Type designation

Tool shank without clamping surface

Tool shank with Weldon clamping surface

Solid carbide shaft without clamping surface

Solid carbide shaft with Weldon clamping surface

Tool with Conical tool shank


Tool with tighening thread


Cutter with cross groove

Smallest necessary bore-diameter

Maximum cutting depth


Internal coolant supply

Blank inserts must be equipped with a clearance angle!

Inserts without profile, ready for use with clearance angle.


Inserts for guard ring slots

Inserts for O-ring slots

DIN standard

Inserts with chamfered edges

Inserts with chipbreakers from 5 mm cutting width


For chamfering and deburring


Number of inserts (Polygon Cutter)


Number of inserts (Polygon Cutter)

Thread depth max.


Edge radius


Full radius


Milling inserts for cutting off

Formula for Tool Lengths

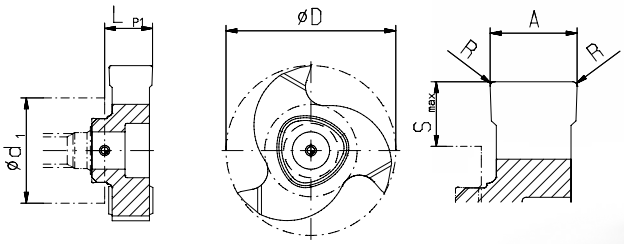
$$L_{WKZ} = L_{GK} + L_1 + L_{P1} (+L_{P2})$$

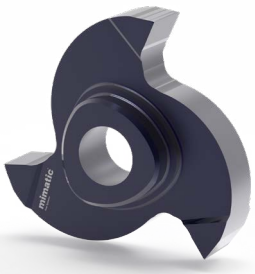
mimatic® Tool Systems

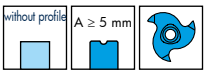
PolyMILL

Slot Milling

- Insert holder see page 90-92
- Cutting data see page 166

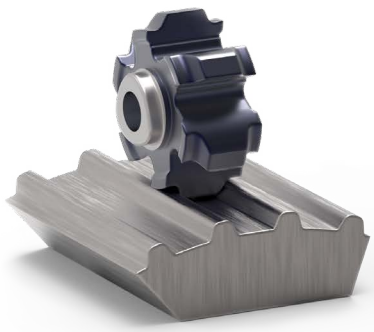


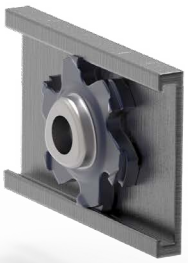




Type		A mm	A inch	D mm	Rake Angle	R mm	LP1 mm	LP2 mm	S max. mm	Number of teeth	Order No. TINAMATIC
P12	P1210	0,74	.029	9,6	6°	0,1	3,25	0,1	1,2	3	171915
	P1210	0,84	.033	9,6	6°	0,1	3,25	0,1	1,2	3	171916
	P1210	1	.039	9,6	6°	0,1	3,25	0,1	1,2	3	171917
	P1210	1,2	.047	9,6	6°	0,1	3,25	0,1	1,2	3	171918
	P1210	1,4	.055	9,6	6°	0,1	3,25	0,1	1,2	3	171919
	P1210	1,5	.059	9,6	6°	0,1	3,25	0,1	1,2	3	171920
	P1210	1,575	.062	9,6	6°	0,1	3,25	0,1	1,2	3	173937
	P1210	1,7	.067	9,6	6°	0,1	3,25	0,1	1,2	3	171921
	P1210	2	.079	9,6	6°	0,1	3,75	–	1,2	3	171922
	P1210	2,5	.098	9,6	6°	0,1	3,75	–	1,2	3	171923
	P1212	1,5	.059	11,7	6°	0,1	3,4	–	2,25	3	171862
	P1212	2	.079	11,7	6°	0,15	3,4	–	2,25	3	171863
	P1212	2,5	.098	11,7	6°	0,15	3,4	–	2,25	3	171865
	P1212	3	.118	11,7	6°	0,15	3,55	–	2,25	3	171866
	P1212	3,175	.125	11,7	6°	0,15	3,75	–	2,25	3	173938
P16	P1616	3,5	.138	16	0°	0,15	4,15	–	3,5	3	142531
	P1616	3,5	.138	16	8°	0,15	4,15	–	3,5	3	142486
	P1616	3,5	.138	16	12°	0,15	4,15	–	3,5	3	142526
	P1616	5	.197	16	0°	0,15	5,65	–	3,5	3	142511
	P1616	5	.197	16	8°	0,15	5,65	–	3,5	3	142541
	P1616	5	.197	16	12°	0,15	5,65	–	3,5	3	142457
P25	P2525	4	.157	25	0°	0,15	4,65	–	5,7	3	142556
	P2525	4	.157	25	8°	0,15	4,65	–	5,7	3	142546
	P2525	4	.157	25	12°	0,15	4,65	–	5,7	3	142579
	P2525	5	.197	25	8°	0,15	5,65	–	5,7	3	142538
	P2525	6	.236	25	8°	0,15	6,90	–	5,7	3	160907
	P2525	6,35	.250	25	8°	0,15	7,15	–	5,7	3	173939
	P2525	6,5	.256	25	0°	0,15	7,15	–	5,7	3	142582
	P2525	6,5	.256	25	8°	0,15	7,15	–	5,7	3	142610
	P2525	6,5	.256	25	12°	0,15	7,15	–	5,7	3	142574
	P2525	8	.315	25	0°	0,15	8,65	–	5,7	3	142558
	P2525	8	.315	25	8°	0,15	8,65	–	5,7	3	142578
	P2525	8	.315	25	12°	0,15	8,65	–	5,7	3	142588

CLICK ME!



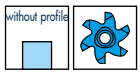


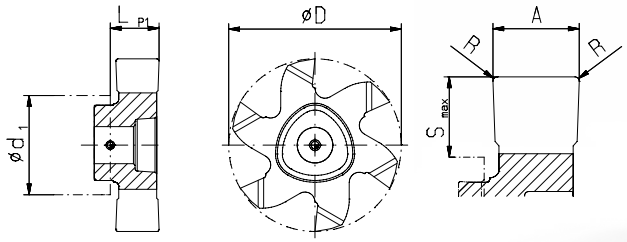
mimatic® Tool Systems

PolyMILL

Slot Milling, Straight Toothed

- Insert holder see page 90-92
- Cutting data see page 166





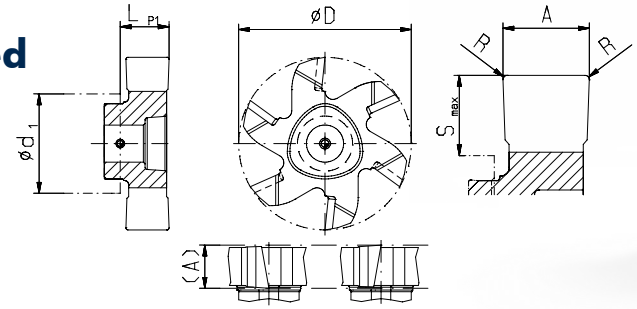
	Type	A mm	A inch	D mm	Rake Angle	R mm	LP1 mm	S max. mm	Number of teeth	Order No. TINAMATIC
P16	P1616	3,0	.118	16,0	6°	0,15	3,53	3,5	6	142494
	P1616	3,175	.125	16,0	6°	0,10	3,74	3,5	6	173929
	P1616	4,0	.157	16,0	6°	0,15	4,65	3,5	6	142565
	P1616	5,0	.197	16,0	6°	0,15	5,65	3,5	6	142586
	P1618	1,2	.047	17,7	6°	0,1	4,0	4,0	6	171937
	P1618	1,4	.055	17,7	6°	0,1	4,0	4,0	6	171938
	P1618	1,5	.059	17,7	6°	0,1	3,9	4,0	6	171939
	P1618	1,57	.062	17,7	6°	0,1	3,9	4,0	6	173928
	P1618	1,7	.067	17,7	6°	0,1	4,0	4,0	6	171940
	P1618	2,0	.079	17,7	6°	0,1	3,9	4,0	6	171941
	P1618	2,39	.094	17,7	6°	0,15	4,0	4,0	6	171942
	P1618	2,5	.098	17,7	6°	0,15	3,9	4,0	6	171943
P20	P2020	3,0	.118	20,0	6°	0,15	3,65	4,2	6	168673
	P2020	4,0	.157	20,0	6°	0,15	4,65	4,2	6	168674
	P2020	5,0	.197	20,0	6°	0,15	5,65	4,2	6	142655
	P2022	1,4	.055	21,7	6°	0,1	5,0	5,0	6	171956
	P2022	1,5	.059	21,7	6°	0,1	5,0	5,0	6	171957
	P2022	1,57	.062	21,7	6°	0,1	5,0	5,0	6	173930
	P2022	1,7	.067	21,7	6°	0,1	5,0	5,0	6	171958
	P2022	2,0	.079	21,7	6°	0,1	5,0	5,0	6	171959
	P2022	2,39	.094	21,7	6°	0,15	5,0	5,0	6	171960
	P2022	2,5	.098	21,7	6°	0,15	5,0	5,0	6	171961
	P2022	3,0	.118	21,7	6°	0,15	5,0	5,0	6	171962
	P2022	3,175	.125	21,7	6°	0,15	5,0	5,0	6	171963
	P2022	4,0	.157	21,7	6°	0,15	5,0	5,0	6	182370
	P2022	5,0	.197	21,7	6°	0,15	6,0	5,0	6	187947
P25	P2526	3,0	.118	26,0	6°	0,15	3,65	6,2	6	142601
	P2526	3,175	.125	26,0	6°	0,15	3,7	6,2	6	173932
	P2526	4,0	.157	26,0	6°	0,15	4,65	6,2	6	142677
	P2526	5,0	.197	26,0	6°	0,15	6,9	6,2	6	142589
	P2526	6,0	.236	26,0	6°	0,15	7,15	6,2	6	162646
	P2526	6,35	.250	26,0	6°	0,15	6,95	6,2	6	173931
	P2526	6,5	.256	26,0	6°	0,15	7,15	6,2	6	142618
	P2528	1,5	.059	27,7	6°	0,1	4,9	6,8	6	171981
	P2528	2,0	.079	27,7	6°	0,1	4,9	6,8	6	171982
	P2528	2,39	.094	27,7	6°	0,15	4,9	6,8	6	171983
	P2528	2,5	.098	27,7	6°	0,15	4,9	6,8	6	171984
	P2528	3,0	.118	27,7	6°	0,15	4,9	6,8	6	171985
	P2528	3,175	.125	27,7	6°	0,15	5,0	6,8	6	171986
	P2537	1,0	.039	37,0	6°	0,15	4,9	11,5	6	195886 NEW
	P2537	1,5	.059	37,0	6°	0,15	4,9	11,5	6	195900 NEW
	P2537	2,0	.079	37,0	6°	0,15	4,9	11,5	6	195903 NEW
	P2537	2,5	.098	37,0	6°	0,15	4,9	11,5	6	195904 NEW
	P2537	3,0	.118	37,0	6°	0,15	4,9	11,5	6	195905 NEW

mimatic® Tool Systems

PolyMILL

Slot Milling, Cross Toothed

- Insert holder see page 90-92
- Cutting data see page 166



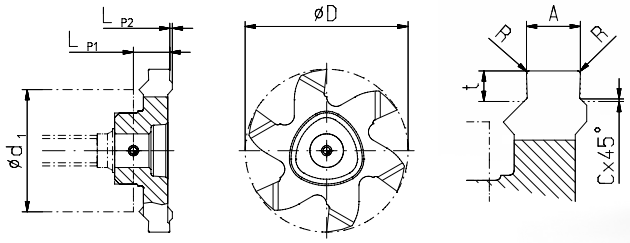
without profile

Type		A mm	A inch	D mm	Rake Angle	R mm	LP1 mm	S max. mm	Number of teeth	Order No. TINAMATIC
P16	P1616	5,0	.197	16,0	6°	0,15	5,65	3,5	6	171699
P20	P2020	5,0	.197	20,0	6°	0,15	5,65	4,2	6	171700
	P2022	4,0	.157	21,7	6°	0,15	5,0	5,0	6	163659
	P2022	5,0	.197	21,7	6°	0,15	6,0	5,0	6	187948
P25	P2526	5,0	.197	26,0	6°	0,15	6,9	6,2	6	171701
	P2526	6,5	.256	26,0	6°	0,15	7,15	6,2	6	171702
	P2528	4,0	.157	27,7	6°	0,15	5,9	6,8	6	177186
	P2528	5,0	.197	27,7	6°	0,15	5,9	6,8	6	177187
	P2528	1,5	.059	27,7	6°	0,1	4,9	6,8	6	201415 NEW
	P2528	2,0	.079	27,7	6°	0,1	4,9	6,8	6	201416 NEW
	P2528	2,39	.094	27,7	6°	0,15	4,9	6,8	6	201417 NEW
	P2528	2,5	.098	27,7	6°	0,15	4,9	6,8	6	201418 NEW
	P2528	3,0	.118	27,7	6°	0,15	4,9	6,8	6	201419 NEW
	P2528	3,175	.125	27,7	6°	0,15	5,0	6,8	6	201420 NEW
	P2537	1,0	.039	37,0	6°	0,15	4,9	11,5	6	195906 NEW
	P2537	1,5	.059	37,0	6°	0,15	4,9	11,5	6	195907 NEW
	P2537	2,0	.079	37,0	6°	0,15	4,9	11,5	6	195909 NEW
	P2537	2,5	.098	37,0	6°	0,15	4,9	11,5	6	195910 NEW
	P2537	3,0	.118	37,0	6°	0,15	4,9	11,5	6	195911 NEW

CLICK ME!

Circlip Grooves

- With chamfered edge
- Insert holder see page 90-92
- Cutting data see page 166



DIN 471/ 472

Type		DIN width H13	D mm	A -0,03 mm	t mm	C x 45° mm	R mm	LP1 mm	LP2 mm	Number of teeth	Order No TINAMATIC
P16	P1616	1,10	16	1,18	0,50	0,10	0,05	3,15	0,675	6	142423
	P1616	1,30	16	1,38	0,85	0,15	0,05	3,15	0,675	6	142528
	P1616	1,60	16	1,68	1,00	0,15	0,1	3,15	0,675	6	142561
	P1616	1,85	16	1,93	1,25	0,20	0,1	3,15	0,675	6	142562
P20	P2020	1,10	20	1,18	0,50	0,10	0,05	3,15	0,675	6	168675
	P2020	1,30	20	1,38	0,85	0,15	0,05	3,15	0,675	6	168676
	P2020	1,60	20	1,68	1,00	0,15	0,1	3,15	0,675	6	168677
	P2020	1,85	20	1,93	1,25	0,20	0,1	3,15	0,675	6	168678
	P2022	1,60	21,7	1,68	0,85	0,15	0,1	4,7	0,45	6	171968
	P2022	1,85	21,7	1,93	1,25	0,20	0,1	4,7	0,45	6	171969
	P2022	2,15	21,7	2,23	1,50	0,20	0,1	4,7	0,45	6	171970
	P2022	2,65	21,7	2,73	1,50	0,20	0,2	4,8	0,35	6	171971
P25	P2526	1,30	26	1,38	0,85	0,15	0,05	3,4	0,425	6	142646
	P2526	1,60	26	1,68	1,00	0,15	0,1	3,4	0,425	6	142660
	P2526	1,85	26	1,93	1,25	0,20	0,1	3,4	0,425	6	142607
	P2526	2,15	26	2,23	1,50	0,20	0,1	3,4	0,425	6	142591
	P2526	2,65	26	2,73	1,75	0,20	0,2	4,25	0,575	6	142597
	P2526	3,15	26	3,23	1,75	0,20	0,2	4,25	0,575	6	142661
	P2526	4,15	26	4,23	2,00	0,20	0,2	6,415	0,560	6	142622
	P2526	4,15	26	4,23	2,50	0,20	0,2	6,415	0,560	6	160893

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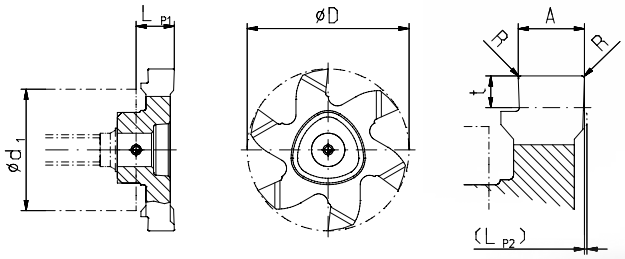
mimatic® Tool Systems

PolyMILL

Circlip Grooves

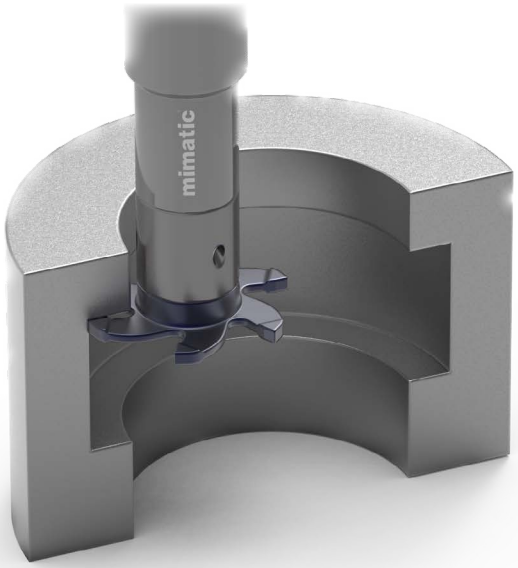
- Without chamfered edge
- Insert holder see page 90-92
- Cutting data see page 166

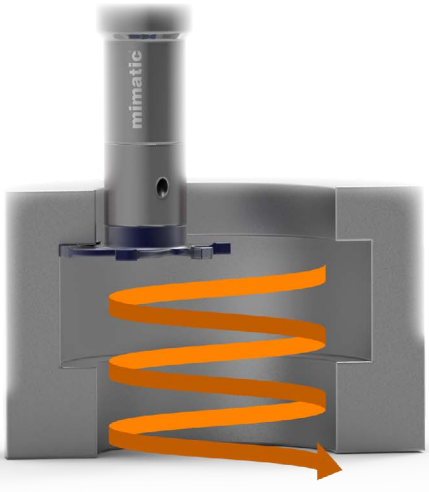


DIN 471/ 472

	Type	DIN width H13	D mm	A -0,03 mm	t mm	R mm	LP1 mm	LP2 mm	Number of teeth	Order No TINAMATIC
P12	P1210 *	0,90	9,6	0,98	1,20	0,05	3,25	0,1	3	172125
	P1212	1,10	11,7	1,18	0,90	0,05	3,55	–	3	171868
	P1212	1,30	11,7	1,38	1,10	0,05	3,55	–	3	171869
	P1212	1,60	11,7	1,68	1,00	0,1	3,55	–	3	171870
P16	P1616	1,10	16,0	1,18	0,90	0,05	3,45	–	6	142548
	P1616	1,30	16,0	1,38	1,10	0,05	3,45	–	6	142509
	P1616	1,60	16,0	1,68	1,25	0,1	3,45	–	6	142533
	P1616	1,85	16,0	1,93	1,25	0,1	3,45	–	6	142536
	P1618	1,10	17,7	1,18	0,90	0,05	4,0	–	6	171945
	P1618	1,30	17,7	1,38	1,10	0,05	4,0	–	6	171946
	P1618	1,60	17,7	1,68	1,25	0,1	3,9	–	6	171947
	P1618	1,85	17,7	1,93	1,25	0,1	4,0	–	6	171948
P20	P2020	1,10	20,0	1,18	0,90	0,05	3,65	–	6	168679
	P2020	1,30	20,0	1,38	1,10	0,05	3,65	–	6	168680
	P2020	1,60	20,0	1,68	1,25	0,1	3,65	–	6	168681
	P2020	1,85	20,0	1,93	1,25	0,1	3,65	–	6	168682
	P2022	1,60	21,7	1,68	1,25	0,1	5,0	–	6	171964
	P2022	1,85	21,7	1,93	1,25	0,1	5,0	–	6	171965
	P2022	2,15	21,7	2,23	1,75	0,1	5,0	–	6	171966
	P2022	2,65	21,7	2,73	1,75	0,2	5,0	–	6	171967
P25	P2526	1,30	26,0	1,38	1,10	0,05	3,65	–	6	142598
	P2526	1,60	26,0	1,68	1,25	0,1	3,65	–	6	142653
	P2526	1,85	26,0	1,93	1,25	0,1	3,65	–	6	142616
	P2526	2,15	26,0	2,23	1,75	0,1	3,65	–	6	142637
	P2526	2,65	26,0	2,73	1,75	0,2	3,65	–	6	142662
	P2526	3,15	26,0	3,23	2,20	0,2	4,55	–	6	142643
	P2526	4,15	26,0	4,23	2,50	0,2	6,80	–	6	160906

* **Not suited for cutter 177676**





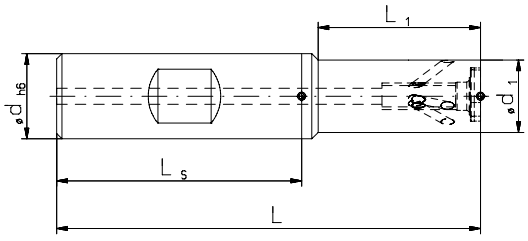
5
CLICK ME!

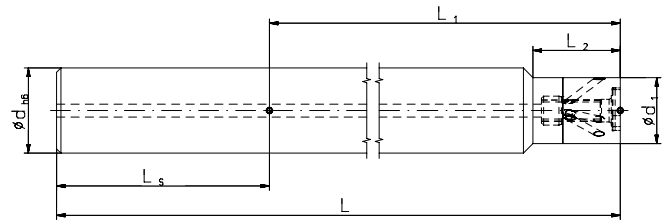
mimatic Tool Systems

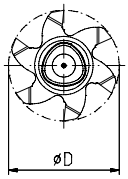
PolyMILL

Circular Milling Tools with Polygonal Insert Seat

■ Inserts see page 86-89
■ Cutting data see page 166







DIN 1835 Form A | DIN 1835 Form B

DIN 6535 Form A | DIN 6535 Form B

Type	Order No.	Form	d h6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	L2 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	11,7	2,35	54	8	-	Steel	T8 IP 111656	M2,5x7 107596
	123619	B	12	7,0	11,7	2,35	67,5	20	-	Steel		
	100228	B	12	7,0	11,7	2,35	67,5	20	-	Carbide		
	171778	A	12	7,0	11,7	2,35	67,5	20	-	Carbide		
	171780	B	12	7,0	11,7	2,35	80	30	-	Carbide		
	171781	A	12	7,0	11,7	2,35	80	30	-	Carbide		
	171783	B	12	7,0	11,7	2,35	100	40	-	Carbide		
	171784	A	12	7,0	11,7	2,35	100	40	-	Carbide		
P16	177174	A	10	9,0	17,7	4,35	60	11	-	Steel	T8 IP 111656	M3x12 143158
	123573	B	12	9,0	17,7	4,35	67,4	21	-	Steel		
	123577	B	12	9,0	17,7	4,35	67,4	21	-	Carbide		
	171787	A	12	9,0	17,7	4,35	67,4	21	-	Carbide		
	123580	B	12	9,0	17,7	4,35	82,4	36	-	Carbide		
	171789	A	12	9,0	17,7	4,35	82,4	36	-	Carbide		
	123584	A	12	9,0	17,7	4,35	100	30	-	Carbide		
	123588	A	12	11,5	17,7	2,85	82,4	37,4	13	Carbide		
	123590	A	12	12,0	17,7	2,85	122,5	77,5	-	Carbide		
P20	177178	A	12	11,5	21,7	5,1	62,4	14,4	-	Steel	T15 IP 111671	M4x13 107597
	123615	B	16	11,5	21,7	5,1	80	30	-	Steel		
	123616	B	16	11,5	21,7	5,1	80	30	-	Carbide		
	171794	A	16	11,5	21,7	5,1	80	30	-	Carbide		
	123617	B	16	11,5	21,7	5,1	100	50	-	Carbide		
	171796	A	16	11,5	21,7	5,1	100	50	-	Carbide		
	174314	A	16	15,5	21,7	3,1	105,5	57,5	20	Carbide		
P25	177182	A	16	13,6	27,7	7,05	69,6	20,4	-	Steel	T20 IP 111594	M5x13,5 107529
	123592	B	16	13,6	27,7	7,05	79,6	30,5	-	Steel		
	123598	B	16	13,6	27,7	7,05	79,6	30,5	-	Carbide		
	171855	A	16	13,6	27,7	7,05	79,6	30,5	-	Carbide		
	123600	B	16	13,6	27,7	7,05	94,6	45,5	-	Carbide		
	171857	A	16	13,6	27,7	7,05	94,6	45,5	-	Carbide		
	123603	B	16	13,6	27,7	7,05	109,6	60,5	-	Carbide		
	171859	A	16	13,6	27,7	7,05	109,6	60,5	-	Carbide		
	123609	A	16	15,5	27,7	6,1	105	57	21,5	Carbide		
	123611	A	16	15,5	27,7	6,1	149,5	101,5	21,5	Carbide		
	161205 NEW	A	20	15,5	27,7	6,1	100	52	21,5	Carbide		
	123613	A	20	15,5	27,7	6,1	174,45	128,5	21,5	Carbide		

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

CLICK ME!

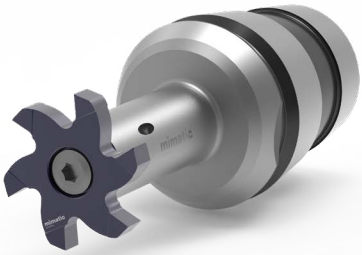
* Screwdriver and clamping screw included in delivery

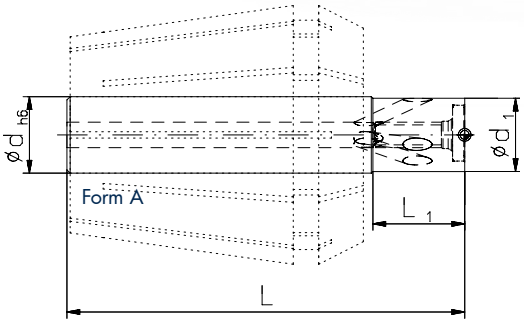
mimatic Tool Systems

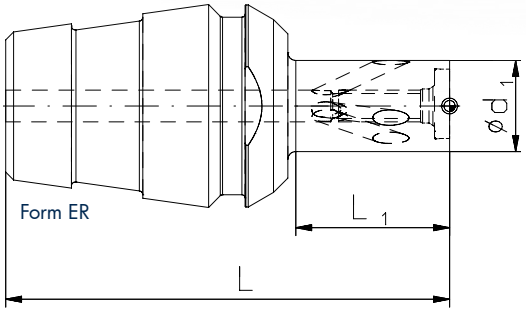
PolyMILL

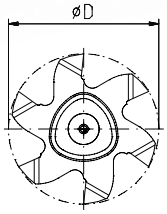
Circular Milling Tools for Driven Toolholders

■ Inserts see page 86-89
■ Cutting data see page 166









DIN 1835 Form A | DIN 6499

5

CLICK ME!

Type	Order No.	Form	d h6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	11,7	2,35	54	8	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16		7,0	11,7	2,35	37,5	8	Steel		
	177173	ER 20		7,0	11,7	2,35	47	13	Steel		
P16	177174	A	10	9,0	17,7	4,35	60	11	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16		9,0	17,7	4,35	41,4	11	Steel		
	177177	ER 20		9,0	17,7	4,35	51	16	Steel		
P20	177178	A	12	11,5	21,7	5,1	62,4	14,4	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20		11,5	21,7	5,1	49,5	14,5	Steel		
	177181	ER 25		11,5	21,7	5,1	56	19,4	Steel		
P25	177182	A	16	13,6	27,7	7,05	69,6	20,4	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25		13,6	27,7	7,05	56	19,4	Steel		
	177185	ER 32		13,6	27,7	7,05	73	30,4	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

Changing Inserts

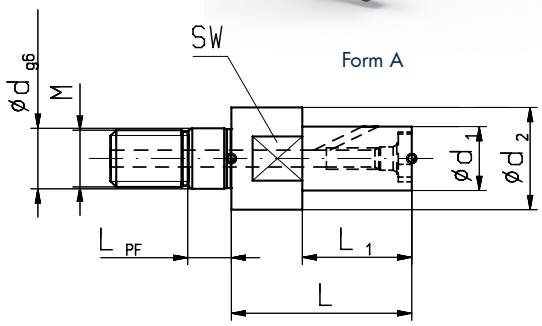
Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert.
Please use the appropriate TIP hex key for the tighening of the inserts and consider the screw tightening torques in the tables.

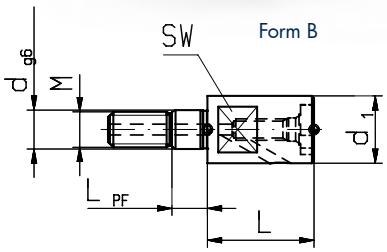
* **Screwdriver and clamping screw included in delivery**

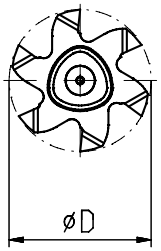
PolyMILL

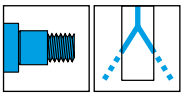
Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 86-89
- Cutting data see page 166









Please adapt cutting data to overhangs length

Spare part No.

Type	Order No.	Form	d1 mm	d2 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	M	dg6 mm	LPF mm	Screw-driver *	Screw *
P12***	177676	B	9,5	–	11,7	1,1	13,5	–	M5	5,5	5,0	111656	107596
P16	123586	A	9,0	14,4	17,7	4,35	29,5	19,5	M8	8,5	5,5	111656	143158
P16**	177683	B	9,5	–	17,7	4,1	18,5	–	M5	5,5	5,0	111656	143158
P16***	177698	B	11,0	–	17,7	3,35	18,5	–	M6	6,5	5,0	111656	143158
P20	123618	A	11,5	18,0	21,7	5,1	35,0	25,0	M10	10,5	5,5	111671	107597
P20**	177734	B	11,5	–	21,7	5,1	20,5	–	M6	6,5	5,0	111671	107597
P20***	177735	B	13,5	–	21,7	4,1	20,5	–	M8	8,5	5,5	111671	107597
P25	123605	A	13,6	22,5	27,7	7,05	42,5	29,5	M12	12,5	5,5	111594	107529
P25**	177747	B	13,6	–	27,7	7,05	22,6	–	M8	8,5	5,5	111594	107529
P25***	177767	B	18,0	–	27,7	4,85	22,6	–	M10	10,5	5,5	111594	107529

* Screwdriver and clamping screw included in delivery
** Slim design for thread milling
*** Reinforced design

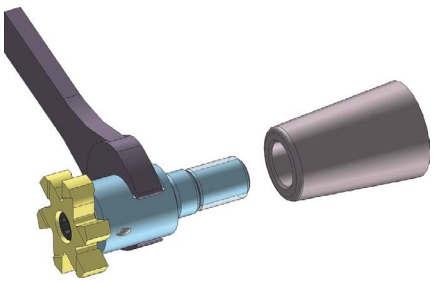
Screw torques max.

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

CLICK ME!

Assembling Instructions

- Recommended tightening torque for screw-in circular milling body
- End-wrench see page 163



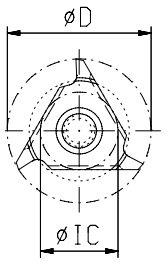
Thread size (M)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60
M16	24	80

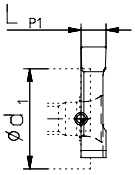
mimatic Tool Systems

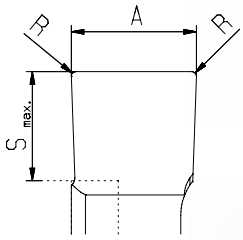
TriMILL

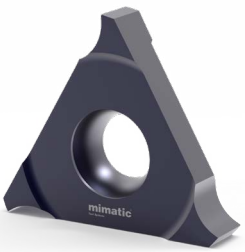
Slot Milling

- Insert holder see page 95
- Cutting data see page 166









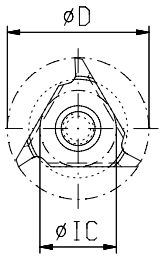
without profile

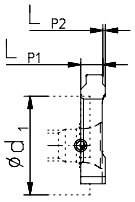
Type	A mm	D mm	IC mm	LP1 mm	Smax. mm	R mm	Order No. TINAMATIC
04	2,0	7,9	5,5	2,34	0,35	0,1	141719
03	2,34	10,6	5,5	2,36	1,6	0,15	141642
	3,0	10,6	5,5	3,02	1,6	0,15	141669
02	3,5	17,5	9,2	3,52	2,6	0,15	141533
	5,0	17,5	9,2	5,03	2,6	0,15	141535
	6,0	17,5	9,2	6,02	2,6	0,15	141544
01	4,0	23,0	12,4	4,03	3,45	0,15	141361
	6,5	23,0	12,4	6,53	3,45	0,15	141396

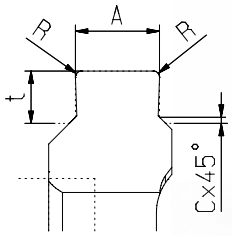
CLICK ME!

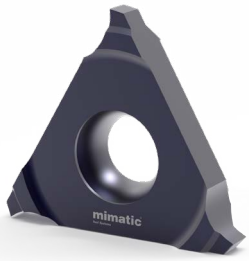
Circlip Grooves

- With chamfered edge
- Insert holder see page 95
- Cutting data see page 166









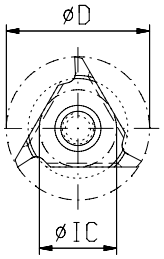
DIN 471/472

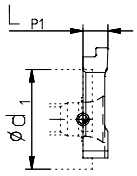
Type	G-Ring H13 width	D mm	IC mm	LP1 mm	LP2 mm	A -0,03 mm	t mm	Cx45° mm	R mm	Order No. TINAMATIC
03	1,10	10,6	5,5	2,13	0,21	1,18	0,5	0,1	0,05	141556
02	1,10	17,5	9,2	3,1	0,4	1,18	0,5	0,1	0,05	141427
	1,30	17,5	9,2	3,1	0,4	1,38	0,85	0,15	0,05	141387
	1,60	17,5	9,2	3,1	0,4	1,68	1,0	0,15	0,1	141399
	1,85	17,5	9,2	3,1	0,4	1,93	1,25	0,2	0,1	141409
	2,15	17,5	9,2	3,1	0,4	2,23	1,5	0,2	0,1	141333
	2,65	17,5	9,2	3,1	0,4	2,73	1,5	0,2	0,2	141388
01	1,10	23	12,4	3,6	0,4	1,18	0,5	0,1	0,05	141161
	1,30	23	12,4	3,6	0,4	1,38	0,7	0,15	0,05	141209
	1,30	23	12,4	3,6	0,4	1,38	0,85	0,15	0,1	141199
	1,60	23	12,4	3,6	0,4	1,68	0,85	0,15	0,1	141237
	1,60	23	12,4	3,6	0,4	1,68	1,0	0,15	0,1	141180
	1,85	23	12,4	3,6	0,4	1,93	1,25	0,2	0,1	141193
	2,15	23	12,4	3,6	0,4	2,23	1,5	0,2	0,1	141215
	2,65	23	12,4	3,6	0,4	2,73	1,5	0,2	0,2	141222
	2,65	23	12,4	3,6	0,4	2,73	1,75	0,2	0,2	141048
	3,15	23	12,4	3,6	0,4	3,23	1,75	0,2	0,2	141186
	4,15	23	12,4	5,5	1	4,23	2,0	0,2	0,2	141212

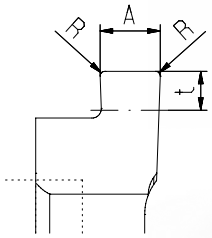
CLICK ME!

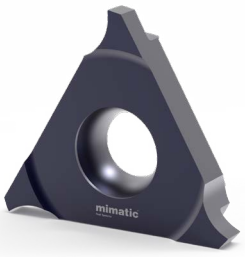
Circlip Grooves

- Without chamfered edge
- Insert holder see page 95
- Cutting data see page 166









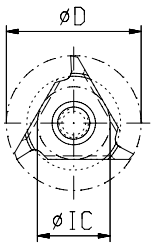
DIN 471/ 472

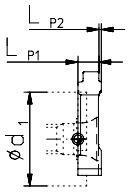
Type	G-Ring H13 width	D mm	IC mm	LP1 mm	A -0,03 mm	t mm	R mm	Order No. TINAMATIC
04	0,9	7,9	5,5	2,34	0,98	0,3	0,05	141726
03	0,9	10,6	5,5	2,34	0,98	0,7	0,05	141611
	1,1	10,6	5,5	2,34	1,18	0,9	0,05	141567
	1,3	10,6	5,5	2,34	1,38	1,1	0,05	141609
	1,6	10,6	5,5	2,34	1,68	1,25	0,1	141630
	1,85	10,6	5,5	2,34	1,93	1,25	0,1	141574
02	0,9	17,5	9,2	3,5	0,98	0,7	0,05	141416
	1,1	17,5	9,2	3,5	1,18	0,9	0,05	141435
	1,3	17,5	9,2	3,5	1,38	1,1	0,05	141431
	1,6	17,5	9,2	3,5	1,68	1,25	0,1	141454
	1,85	17,5	9,2	3,5	1,93	1,25	0,1	141436
	2,15	17,5	9,2	3,5	2,23	1,75	0,1	141437
	2,65	17,5	9,2	3,5	2,73	1,75	0,2	141477
	3,15	17,5	9,2	3,5	3,23	2,2	0,2	141440
01	0,9	23,0	12,4	4,0	0,98	0,7	0,05	141254
	1,1	23,0	12,4	4,0	1,18	0,9	0,05	141245
	1,3	23,0	12,4	4,0	1,38	1,1	0,05	141261
	1,6	23,0	12,4	4,0	1,68	1,25	0,1	141255
	1,85	23,0	12,4	4,0	1,93	1,25	0,1	141269
	2,15	23,0	12,4	4,0	2,23	1,75	0,1	141258
	2,65	23,0	12,4	4,0	2,73	1,75	0,2	141264
	3,15	23,0	12,4	4,0	3,23	2,2	0,2	141293
	4,15	23,0	12,4	6,5	4,23	2,5	0,2	141305

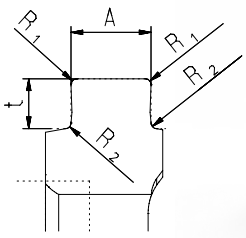
CLICK ME!

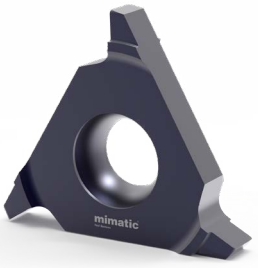
O-Ring Grooves

- Insert holder see page 95
- Cutting data see page 166









O-Ring DIN ISO 3601-2

Type	G-Ring width	D mm	IC mm	LP1 mm	LP2 mm	A -0,03 mm	t mm	R1 mm	R2 mm	Order No. TINAMATIC
03	1,8	10,6	5,5	2,6	0,4	2,28	1,45	0,2	0,2	141654
02	1,8	17,5	9,2	3,0	0,5	2,28	1,45	0,2	0,2	141510
	2,65	17,5	9,2	4,5	0,5	3,08	2,3	0,3	0,2	141470
01	1,8	23,0	12,4	3,5	0,5	2,28	1,45	0,2	0,2	141236
	2,65	23,0	12,4	3,5	0,5	3,08	2,3	0,3	0,2	141277
	3,55	23,0	12,4	5,5	1,0	4,08	3,1	0,4	0,2	141306

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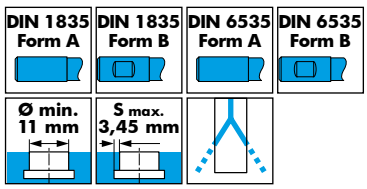
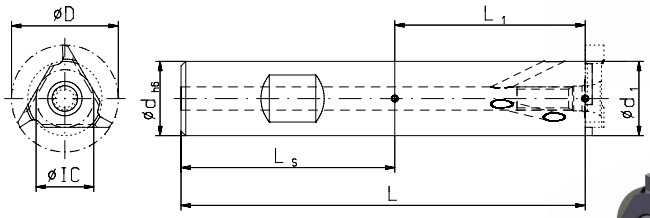
mimatic Tool Systems

TriMILL

Circular Milling Tools

■ Inserts see page 93-94
■ Cutting data see page 166





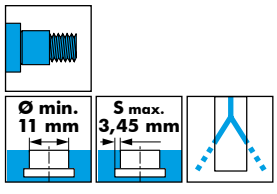
Type	Order No.	Form	D mm	IC mm	d h6 mm	d1 mm	S max. mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
04	123491 **	B	7,9	5,5	10	7,2	0,35	57,2	17,2	Steel	T6 IP 111705	107530
03	123477 **	B	10,6	5,5	10	7,4	1,6	57,2	17,2	Steel		
	123478 **	B	10,6	5,5	12	7,4	1,6	64,66	17,2	Steel		
	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	Carbide		
	123441	A	23,0	12,4	16	16	3,45	148,5	100	Carbide		

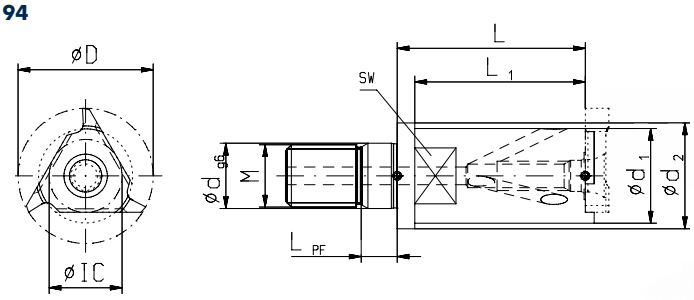
*** Without internal coolant supply** **** Also suitable as basic body for a tandem cutter.**

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 94





Please adapt cutting data to overhangs length

Limited max. cutting depth Smax

Type	Order No.	D mm	IC mm	d g6 mm	d1 mm	d2 mm	S max. mm	L mm	L1 mm	M	Spare part No. Screw-driver *	Spare part No. 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
** Without internal coolant supply
*** Also suitable as basic body for a tandem cutter

CLICK ME!

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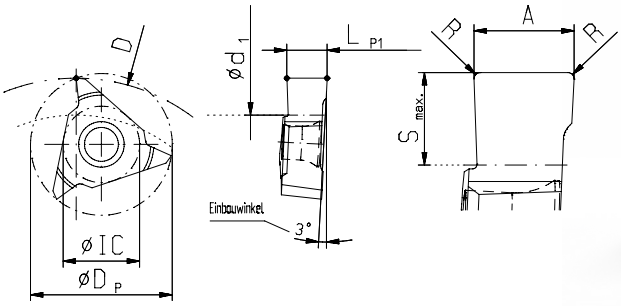
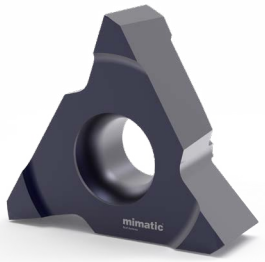
5

TriMILL

Slot Milling

- Insert holder see page 98-99
- Cutting data see page 166





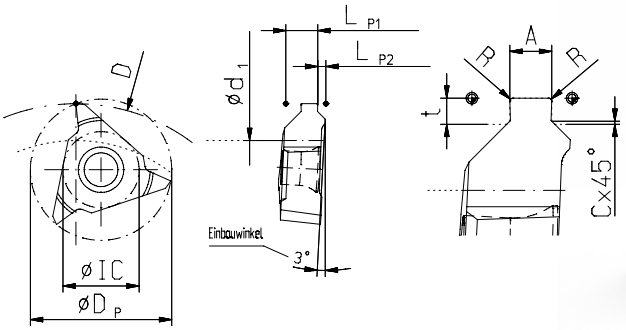
without profile | Typ 023 | Typ 013

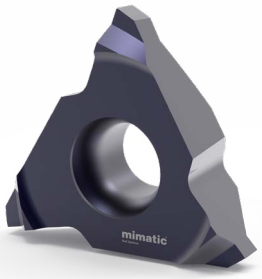
Type	A mm	DP mm	IC mm	LP1 mm	Smax. mm	R mm	Order No. TINAMATIC
023*	5,0	17,5	9,2	5,03	4	0,15	142060
013	6,5	23	12,4	6,53	6	0,15	141972

CLICK ME!

Circlip Grooves

- With chamfered edge
- Insert holder see page 98-99
- Cutting data see page 166





DIN 471/472 | Typ 023 | Typ 013

Type	G-Ring H13 width	DP mm	IC mm	LP1 mm	LP2 mm	A -0,03 mm	t mm	Cx45° mm	R mm	Order No. TINAMATIC
023	1,85	17,5	9,2	3,73	1,3	1,93	1,25	0,2	0,1	141946
	2,15	17,5	9,2	3,73	1,3	2,23	1,5	0,2	0,1	141949
	2,65	17,5	9,2	3,73	1,3	2,73	1,5	0,2	0,2	141997
	2,65	17,5	9,2	3,73	1,3	2,73	1,75	0,2	0,2	141970
	3,15	17,5	9,2	4,23	0,8	3,23	1,75	0,2	0,2	141993
	4,15	17,5	9,2	5,03	1,0	4,23	2,5	0,2	0,2	141973
013	1,85	23,0	12,4	5,2	1,33	1,93	1,25	0,2	0,1	141914
	2,15	23,0	12,4	5,2	1,33	2,23	1,5	0,2	0,1	141892
	2,65	23,0	12,4	5,2	1,33	2,73	1,5	0,2	0,2	141915
	2,65	23,0	12,4	5,2	1,33	2,73	1,75	0,2	0,2	141907
	3,15	23,0	12,4	5,2	1,33	3,23	1,75	0,2	0,2	141924
	4,15	23,0	12,4	5,2	1,33	4,23	2,0	0,2	0,2	141905
	4,15	23,0	12,4	5,2	1,33	4,23	2,5	0,2	0,2	141927

CLICK ME!

*** Please note the max. cutting depth (S) for insert holders type 023**

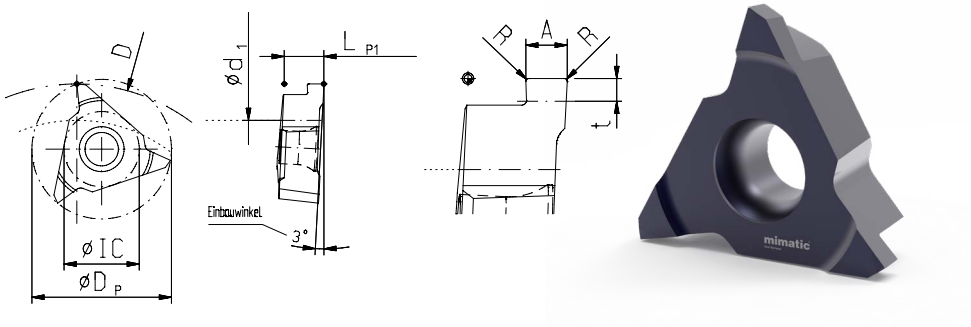
TriMILL

Circlip Grooves

- Without chamfered edge
- Insert holder see page 98-99
- Cutting data see page 166

DIN 471/472

Typ 023 | Typ 013



Type	G-Ring H13 width	DP mm	IC mm	LP1 mm	A -0,03 mm	t mm	R mm	Order No. TINAMATIC
023	1,85	17,5	9,2	5,03	1,93	1,25	0,1	141994
	2,15	17,5	9,2	5,03	2,23	1,75	0,1	141980
	2,65	17,5	9,2	5,03	2,73	1,75	0,2	141968
	3,15	17,5	9,2	5,03	3,23	2,2	0,2	142014
013	2,15	23	12,4	6,53	2,23	1,75	0,1	141937
	2,65	23	12,4	6,53	2,73	1,75	0,2	141925
	3,15	23	12,4	6,53	3,23	2,2	0,2	141930
	4,15	23	12,4	6,53	4,23	2,5	0,2	141934
	5,15	23	12,4	6,53	5,26	4,0	0,2	141932

CLICK ME!

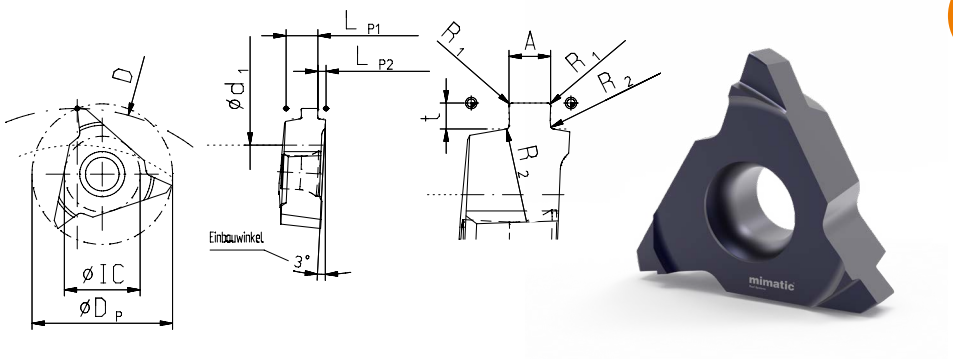
5

O-Ring Grooves

- Insert holder see page 98-99
- Cutting data see page 166

O-Ring DIN ISO 3601-2

Typ 023 | Typ 013



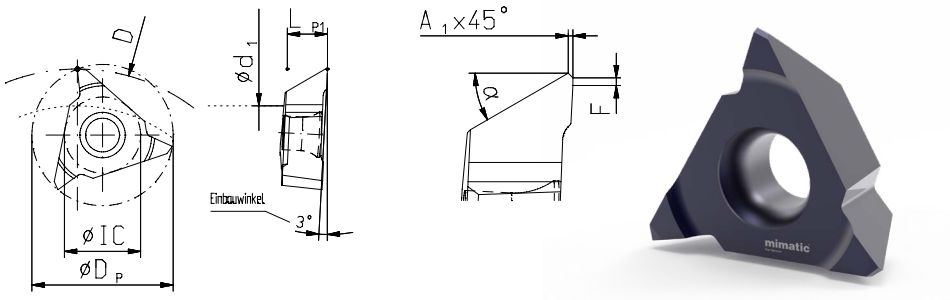
Type	G-Ring width	DP mm	IC mm	LP1 mm	LP2 mm	A -0,03 mm	t mm	R1 mm	R2 mm	Order No. TINAMATIC
023	1,8	17,5	9,2	4,03	1,0	2,28	1,45	0,3	0,2	142012
	2,65	17,5	9,2	4,03	1,0	3,08	2,3	0,3	0,2	142019
013	2,65	23	12,4	5,5	1,03	3,08	2,3	0,3	0,2	141919
	3,55	23	12,4	5,5	1,03	4,08	3,1	0,3	0,2	141916

CLICK ME!

Slot Milling

- Insert holder see page 98-99
- Cutting data see page 166

Typ 023 | Typ 013



Type	DP mm	IC mm	LP1 mm	A1 x 45° mm	F mm	α	Order No. TINAMATIC
023*	17,5	9,2	5	0,3	0,5	25°	149516
013	23	12,4	6,5	0,3	0,5	28°	149472

CLICK ME!

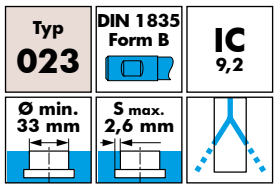
Further information on face finish milling see from page 66.

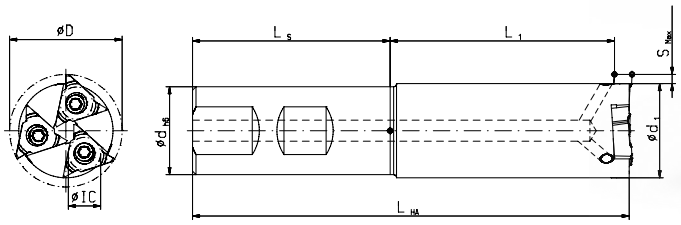
mimatic Tool Systems

TriMILL 023

Circular Milling Tools

■ Inserts see page 96-97
■ Cutting data see page 166





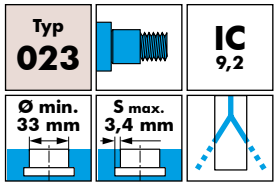
CLICK ME!

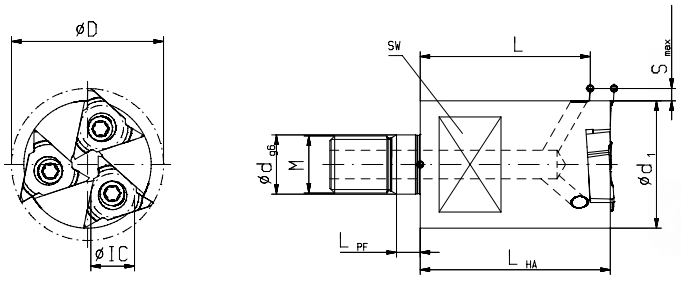
Order No.	D mm	d h6 mm	d1 mm	S max. mm	LHA mm	L mm	L1 mm	Inserts	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123462	32	25	26,8	2,6	124,2	119,97	61,97	3	Steel	111671	107547

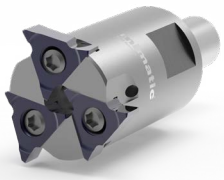
Screw torque max. 3,8 Nm

■ Tightening torques see page 94

Please adapt cutting data to overhangs length





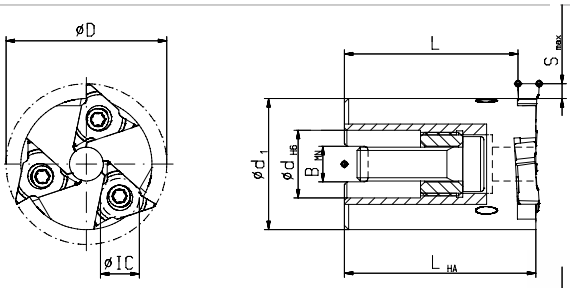


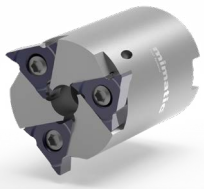
CLICK ME!

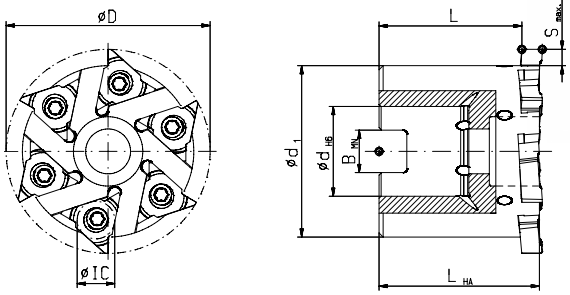
Order No.	D mm	d g6 mm	d1 mm	S max. mm	LHA mm	L mm	Inserts	M	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123465	32	12,5	24,3	3,8	40	34,97	3	M12	111671	107547

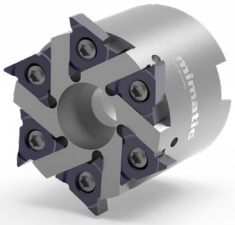
Screw torque max. 3,8 Nm

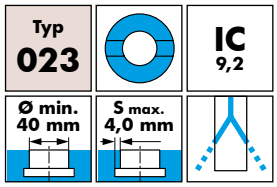
■ Assembly instruction see page 178











CLICK ME!

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Cutting edge	Accessories Key	Spare part No. Cutter fastening screw	Spare part No. T15 IP Screw-driver	Spare part No. Screw
123464	38	16	31	3,4	45,3	40,97	8,4	3	134984	114476*	111671*	107547*
123461	50	22	42	3,9	39,3	34,97	10,4	6		114684*	111671*	107547*
161485	63	27	55	4,0	39,3	34,97	12,4	8		114684*	111671*	107547*

Screw torque max. 3,8 Nm

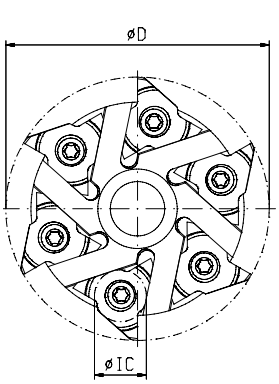
* **Screwdriver and clamping screw included in delivery**

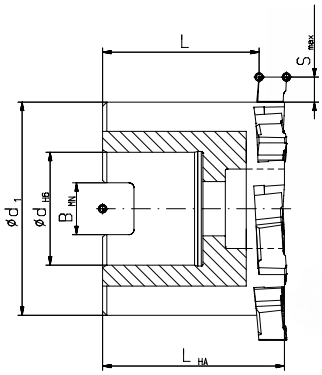
TriMILL 013

Circular Milling Tools

■ Inserts see page 96-97
■ Cutting data see page 166

Typ 013 | IC 12,4 | Ø min. 65 mm | S max. 6,0 mm





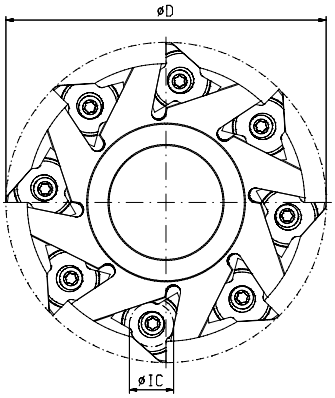
CLICK ME!

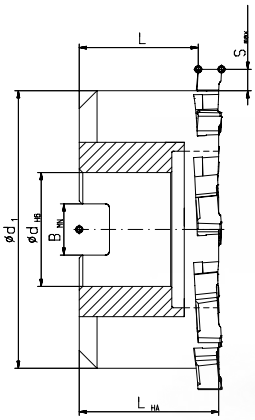
Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123435	63	27	51	6	43,18	37,5	12,4	6	111594	107551

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



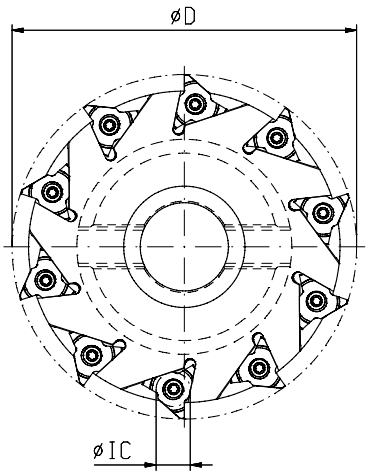


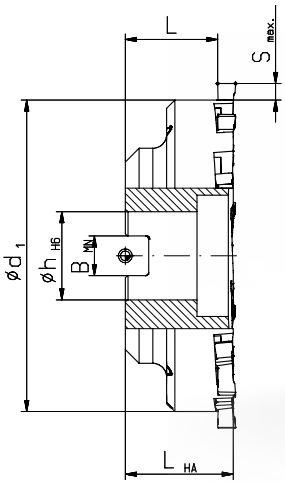
CLICK ME!

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123436	90	32	78	6	39,2	33,5	14,4	8	111594	107551

Screw torque 5,5 Nm

Typ 013 | IC 12,4 | Ø min. 95 mm | S max. 6,0 mm





CLICK ME!

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
134561	125	32	113	6,0	39,2	33,5	14,4	10	111594	107551

Screw torque 5,5 Nm

* **Screwdriver and clamping screw included in delivery**

mimatic
Tool Systems

DeepMILL

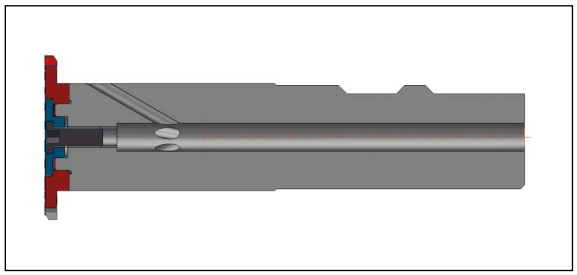
Slot Milling, Grooving, Milling of Cooling Fins

With PolyMILL and TriMILL solid carbide inserts, mimatic sets the bar for grooving and profile milling applications. With more then 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 → Quadrogon 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

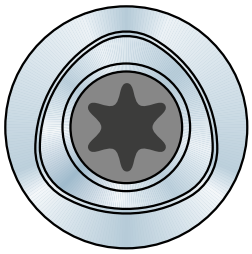
mimatic
Tool Systems

DeepMILL

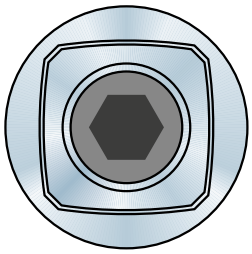
Milling Tools in New Dimensions of Performance

- With DeepMILL 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

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

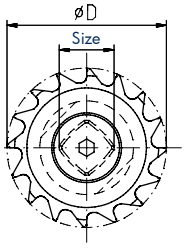
* patent-protected.

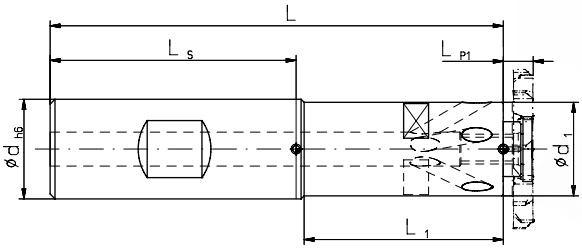
mimatic® Tool Systems

DeepMILL Ø 32

Basic Holders

Cutting data see page 166



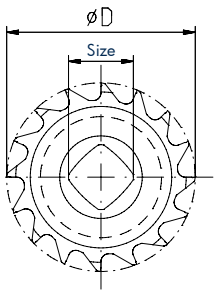


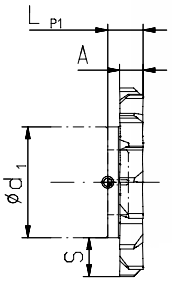
							Complete holder	Spare Parts ***	
Size	Type	d h6 mm	DIN	L mm	L1 mm	d1 mm	Order No.	Screwdriver *	Size
Ø 32	11	20	1835 B	91	40	18,8	163701	178296	SW 3
	11	20	1835 A	91	40	18,8	160050	178296	SW 3
	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4

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

CLICK ME!

Milling Discs





Ask about our regrinding service!

Size	Type	A** mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 32	13	2	5,2	32	6	16	164440	on request
	11	2	6,6	32	6	16	164402	on stock
	13	3	5,2	32	6	16	164441	on request
	11	3	6,6	32	6	16	164403	on stock
	13	4	5,2	32	6	16	164404	on stock
	11	4	6,6	32	6	16	164442	on request
	13	5	5,2	32	6	16	164405	on stock
	11	5	6,6	32	6	16	164443	on request

CLICK ME!

Milling discs with cutting widths of 1 and 1.5 mm see chapter "Sawing & Slotting

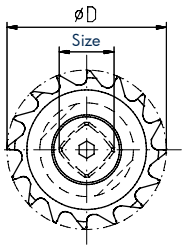
* Screwdriver and clamping screw included in delivery
** Narrower widths, see PolySAW see page 134
*** More spare parts see page 108

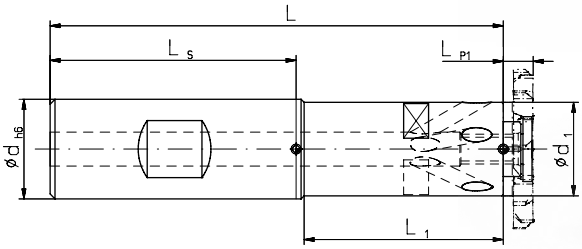
mimatic Tool Systems

DeepMILL Ø 40

Basic Holders

Cutting data see page 166





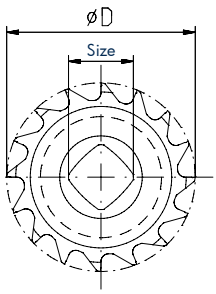
Size	Type	d h6 mm	DIN	L mm	L1 mm	d1 mm	Complete holder: Order No.	Spare Parts ***: Screwdriver *	Spare Parts ***: Size
Ø 40	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4
	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3

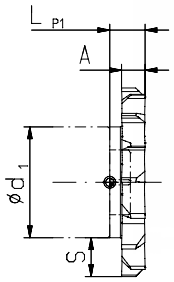
Screw torques max.
Type 13 = max. 24,5 Nm
Type 16 = max. 6 Nm

CLICK ME!

5

Milling Discs





Ask about our regrinding service!

Size	Type	A** mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 40	16	2	7,0	40	6	18	164444	on request
	13	2	9,2	40	6	18	164408	on stock
	16	3	7,0	40	6	18	164445	on request
	13	3	9,2	40	6	18	164409	on stock
	16	4	7,0	40	6	18	164410	on stock
	13	4	9,2	40	6	18	164446	on request
	16	5	7,0	40	6	18	164411	on stock
	13	5	9,2	40	6	18	164447	on request

CLICK ME!

Milling discs with cutting widths of 1 and 1.5 mm see chapter "Sawing & Slotting

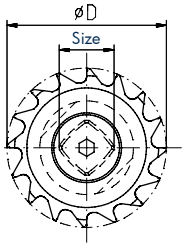
* Screwdriver and clamping screw included in delivery
** Narrower widths, see PolySAW see page 134
*** More spare parts see page 108

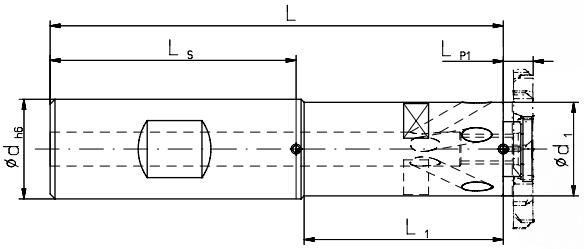
mimatic Tool Systems

DeepMILL Ø 50

Basic Holders

Cutting data see page 166



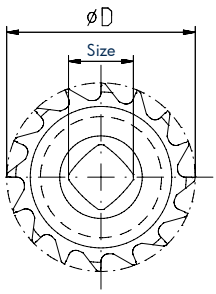


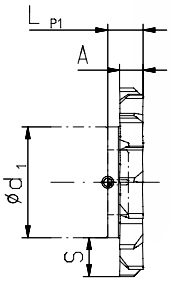
							Complete holder	Spare Parts ***	
Size	Type	d h6 mm	DIN	L mm	L1 mm	d1 mm	Order No.	Screwdriver *	Size
Ø 50	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3
	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3

CLICK ME!

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

Milling Discs





Ask about our regrinding service!

Size	Type	A ** mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 50	19	2	10	50	6	24	164448	on request
	16	2	12	50	6	24	164414	on stock
	19	3	10	50	6	24	164449	on request
	16	3	12	50	6	24	164415	on stock
	19	4	10	50	6	24	164416	on stock
	16	4	12	50	6	24	164450	on request
	19	5	10	50	6	24	164417	on stock
	16	5	12	50	6	24	164451	on request

CLICK ME!

Milling discs with cutting widths of 1 and 1.5 mm see chapter "Sawing & Slotting

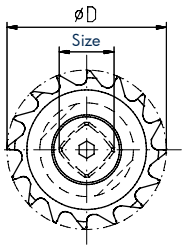
* Screwdriver and clamping screw included in delivery
** Narrower widths, see PolySAW see page 134
*** More spare parts see page 108

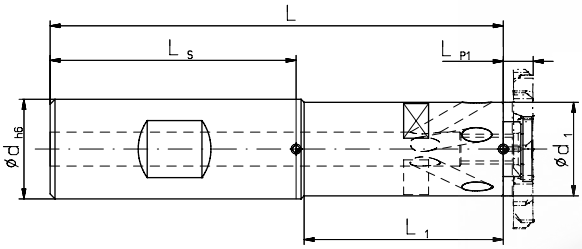
mimatic® Tool Systems

DeepMILL Ø 63

Basic Holders

Cutting data see page 166





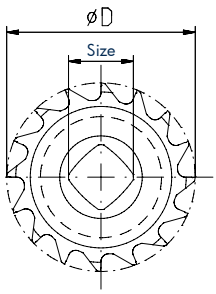
							Complete holder	Spare Parts ***	
Size	Type	d h6 mm	DIN	L mm	L1 mm	d1 mm	Order No.	Screwdriver *	Size
Ø 63	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
	25	32	1835 B	127	60	38	163705	178297	SW 4
	25	32	1835 A	127	60	38	160054	178297	SW 4

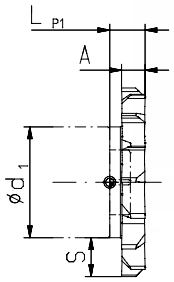
Screw torques max.
Type 19 = max. 10,5 Nm
Type 25 = max. 24,5 Nm

CLICK ME!

5

Milling Discs





Ask about our regrinding service!

Size	Type	A** mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 63	25	2	12,4	63	6	24	164452	on request
	19	2	16,5	63	6	24	164420	on stock
	25	3	12,4	63	6	24	164453	on request
	19	3	16,5	63	6	24	164421	on stock
	25	4	12,4	63	6	24	164422	on stock
	19	4	16,5	63	6	24	164454	on request
	25	5	12,4	63	6	24	164423	on stock
	19	5	16,5	63	6	24	164455	on request

CLICK ME!

Milling discs with cutting widths of 1 and 1.5 mm see chapter "Sawing & Slotting

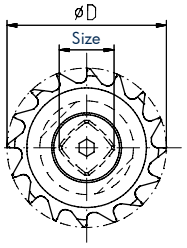
* Screwdriver and clamping screw included in delivery
** Narrower widths, see PolySAW see page 134
*** More spare parts see page 108

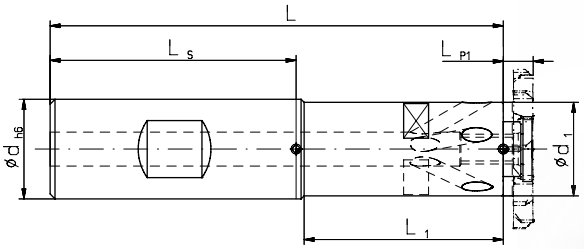
mimatic® Tool Systems

DeepMILL Ø 80

Basic Holders

Cutting data see page 166



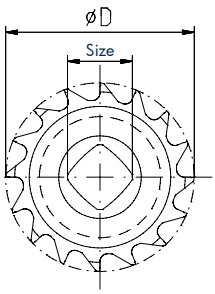


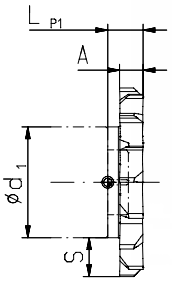
Size	Type	d h6 mm	DIN	L mm	L1 mm	d1 mm	Complete holder: Order No.	Spare Parts ***: Screwdriver *	Spare Parts ***: Size
Ø 80	35	32	1835 B	132	65	49	163706	178297	SW 4
	35	32	1835 A	132	65	49	160055	178297	SW 4
	25	32	1835 B	127	60	38,2	163705	178297	SW 4
	25	32	1835 A	127	60	38,2	160054	178297	SW 4

CLICK ME!

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

Milling Discs





Ask about our regrinding service!

Size	Type	A** mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 80	35	2	15,5	80	6	24	164456	on request
	25	2	20,9	80	6	24	164426	on stock
	35	3	15,5	80	6	24	164457	on request
	25	3	20,9	80	6	24	164427	on stock
	35	4	15,5	80	6	24	164428	on stock
	25	4	20,9	80	6	24	164458	on request
	35	5	15,5	80	6	24	164429	on stock
	25	5	20,9	80	6	24	164459	on request

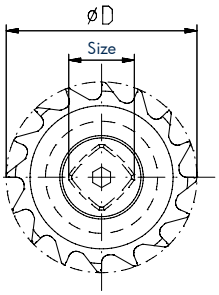
CLICK ME!

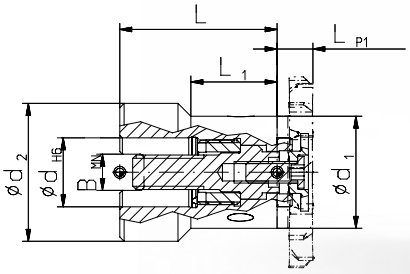
Milling discs with cutting widths of 1 and 1.5 mm see chapter "Sawing & Slotting

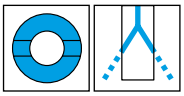
* Screwdriver and clamping screw included in delivery
** Narrower widths, see PolySAW see page 134
*** More spare parts see page 108

Basic Holders with Location Bore

- Cutting data see page 166
- Assembly instruction see page 178







Type	dH6 mm	BMN mm	L mm	L1 mm	d1 mm	d2 mm	Complete holder: Order No.	Accessories: Key	Spare Parts ***: Screwdriver *	Size
16	16	8,4	36,5	20	26	32	179727	134984	178296	SW 3
19	16	8,4	36,5	20	30	32	179728	134984	178296	SW 3
25	16	8,4	36,5	20	29	32	156493		178297	SW 4
25	22	10,4	50	20	38,2	40	179817 NEW		178297	SW4

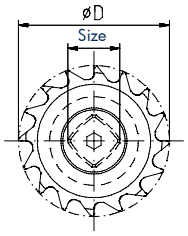
Screw torques max.
Type 16 = max. 6 Nm
Type 19 = max. 10,5 Nm
Type 25 = max. 24,5 Nm

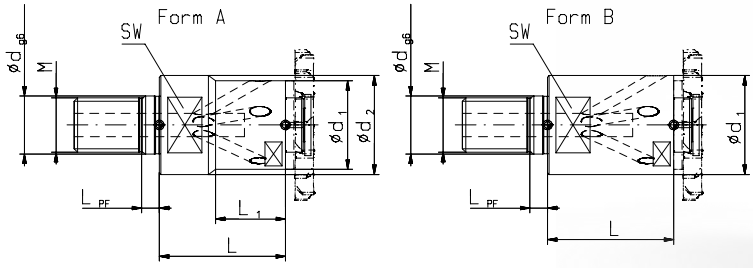
CLICK ME!

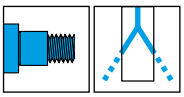
5

Basic Holders with Screw-in Thread

- Cutting data see page 166







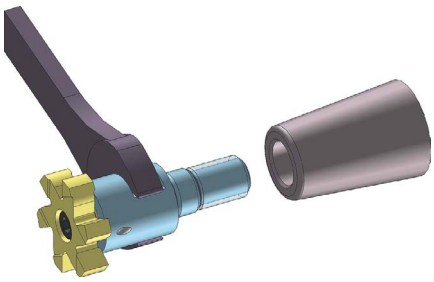
Please adapt cutting data to overhangs length

Type	Order No.	Form	d1 mm	d2 mm	L mm	L1 mm	M	dg6	LPF	Spare part No.: Screw-driver *	Size
16	191777 NEW	A	26	29	36,5	20	M16	17	5,5	178296	SW3
19	191778 NEW	B	30	-	36,5	-	M16	17	5,5	178296	SW3
25	206004 NEW	B	30	-	36,5	-	M16	17	-	178297	SW3

Screw torque max. 3,8 Nm

CLICK ME!

- Recommended tightening torque for screw-in circular milling body
- End-wrench see page 163



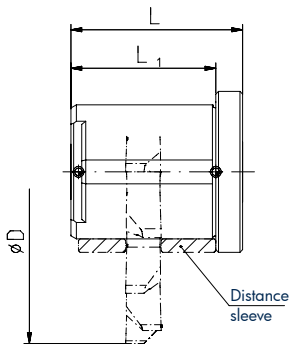
Thread size (M)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60
M16	24	80

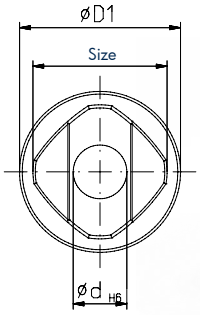
* Screwdriver and clamping screw included in delivery
** Narrower widths, see PolySAW see page 134
*** More spare parts see page 108

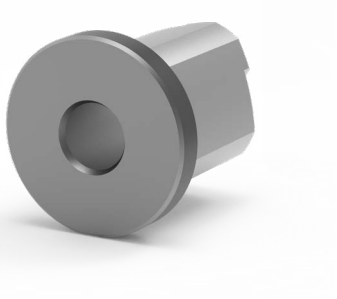
DeepMILL

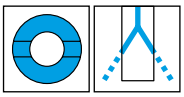
Saw Blade Arbors for mimatic Saw Blade Holders

Cutting data see page 166







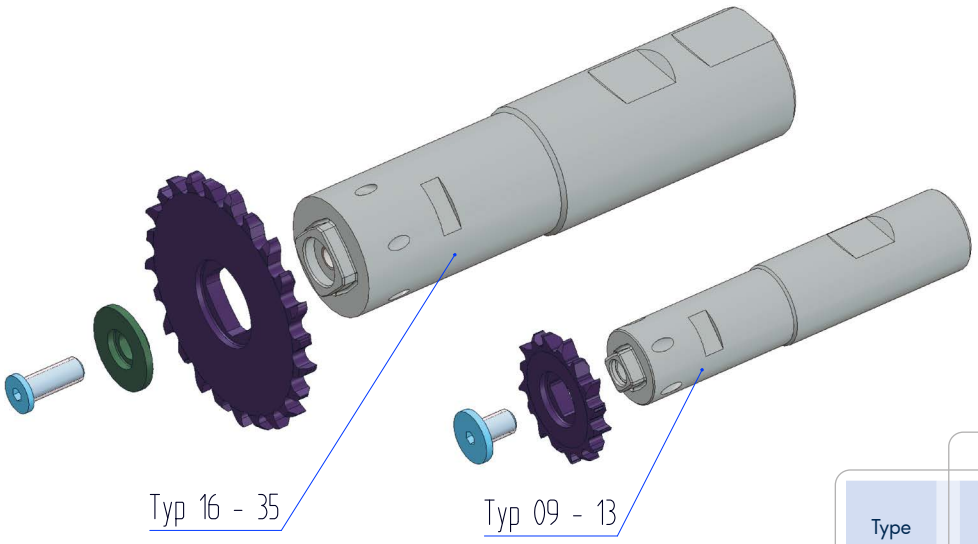


When using PolySaw ECO, as well as DeepMill ECO, the cutting depth is reduced by 6 or 7 mm

System	Typ	d H6 mm	L mm	L1 mm	D1 mm	Complete holder Order No.
ECO	25	10	32	27	30	179252
	35	10	32	27	30	180316

CLICK ME!

Assembly and Spare Parts



Type	Spare Parts Screw	Clamping disc
09	163842	–
11	163843	–
13	163844	–
16	163850	175027
19	163848	163845
25	163849	163846
35	163849	163847

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Screw torques max.

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

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.


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Contour and Radius Milling
Chamfering and Deburring

mimatic® Tool Systems

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PolyMILL

NEW Radius milling extended program

TriMILL

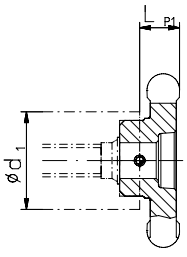
NEW Radius milling

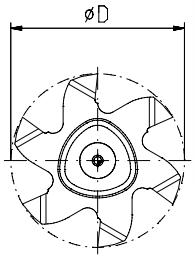
mimatic Tool Systems

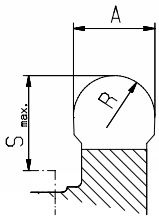
PolyMILL

Radius Milling, Convex Shapes

- Insert holder see page 117-119
- Cutting data see page 166







	Type	A mm	A inch	R mm	D mm	LP1 mm	LP2 mm	Smax. mm	Number of teeth	Order No. TINAMATIC
P12	P1210	1,0	.039	0,5	9,6	3,25	0,1	1,2	3	160770
	P1210	2,2	.087	1,1	9,6	3,3	0,05	1,2	3	171924
	P1212	2,0	.079	1,0	11,7	3,45	–	2,25	3	160445
	P1212	2,2	.087	1,1	11,7	3,55	–	2,25	3	171874
P16	P1616	1,0	.039	0,5	16	3,55	–	1,5	6	160768
	P1616	2,0	.079	1,0	16	3,55	–	2,0	6	160431
	P1616	3,0	.118	1,5	16	3,55	–	3,5	6	160436
	P1616	4,0	.157	2,0	16	4,65	–	3,5	6	170360
	P1616	5,0	.197	2,5	16	5,65	–	3,5	6	178162
	P1618	1,0	.039	0,5	17,7	3,95	–	2,5	6	185358
	P1618	1,57	.062	0,785	17,7	3,9	–	4,2	6	171952 NEW
	P1618	2,2	.087	1,1	17,7	4,0	–	4,2	6	171953
P20	P2020	3,0	.118	1,5	20,0	3,65	–	4,2	6	161050
	P2020	4,0	.157	2,0	20,0	4,65	–	4,2	6	161694
	P2020	5,0	.197	2,5	20,0	5,65	–	4,2	6	162112
	P2022	1,0	.039	0,5	21,7	4,675	0,15	2,0	6	175988
	P2022	1,5	.059	0,75	21,7	4,9	–	5,0	6	175889
	P2022	1,57	.062	0,785	21,7	4,95	–	5,0	6	171974
	P2022	2,0	.079	1,0	21,7	4,9	–	5,0	6	171975
	P2022	2,4	.094	1,2	21,7	4,85	–	5,0	6	171976
	P2022	2,6	.102	1,3	21,7	4,95	–	5,0	6	175888
	P2022	2,8	.110	1,4	21,7	5,05	–	5,0	6	171977
	P2022	3,0	.118	1,5	21,7	4,9	–	5,0	6	171978
	P2022	4,0	.157	2,0	21,7	4,95	–	5,0	6	182543
P25	P2526	1,5	.059	0,75	26	4,9	–	6,0	6	162057
	P2526	1,6	.063	0,8	26	3,45	–	2,0	6	176862
	P2526	2,0	.079	1,0	26	4,9	–	5,0	6	160909
	P2526	3,0	.118	1,5	26	3,7	–	6,2	6	178289
	P2526	3,2	.126	1,6	26	3,75	–	6,2	6	160144
	P2526	3,4	.134	1,7	26	4,6	–	6,2	6	160442
	P2526	3,5	.138	1,75	26	4,375	–	6,2	6	161742
	P2526	3,8	.150	1,9	26	4,6	–	6,2	6	160443
	P2526	4,0	.157	2,0	26	4,65	–	6,2	6	160444
	P2526	4,6	.181	2,3	26	6,7	–	6,2	6	161795
	P2526	5,0	.197	2,5	26	6,9	–	6,2	6	175075
	P2526	5,74	.226	2,87	26	7,1	–	6,2	6	160894
	P2526	6,0	.236	3,0	26	6,9	–	6,2	6	150085
	P2528	1,65	.065	0,825	27,7	5,0	–	6,8	6	160424
	P2528	4,0	.157	2,0	27,7	5,9	–	7,05	6	160449

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6

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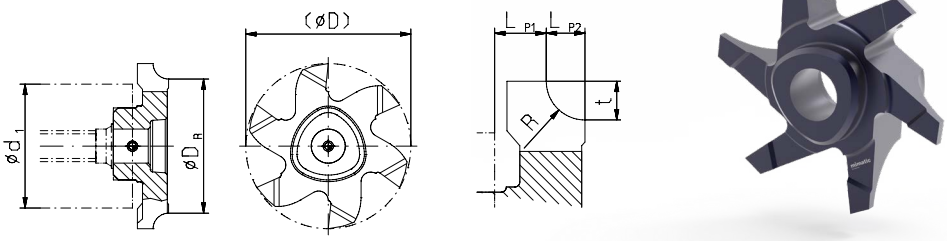
Further radius widths on request

mimatic Tool Systems

PolyMILL

Radius Milling, Concave Shapes

- Insert holder see page 117-119
- Cutting data see page 166



	Type	R mm	(D) mm	DR mm	LP1 mm	LP2 mm	t mm	Number of teeth	Order No. TINAMATIC
P25	P2526	0,5	26	25	3,15	0,5	0,5	6	179425
	P2526	1,0	26	24	2,65	1,0	1,0	6	179426
	P2526	1,5	26	23	3,15	1,5	1,5	6	179427
	P2526	2,0	26	22	2,65	2,0	2,0	6	177120
	P2526	2,5	26	21	2,15	2,5	2,5	6	179428
	P2526	3,0	26	20	1,65	3,0	3,0	6	177119
	P2526	4,0	26	18	2,55	4,0	4,0	6	179690
	P2526	5,0	26	16	1,55	5,0	5,0	6	179429
	P2526	6,0	26	13,7	2,05	6,0	6,15	3	199560 NEW

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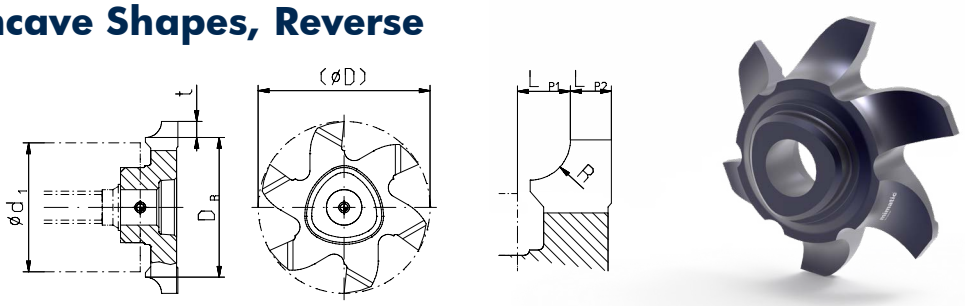
Radius Milling, Concave Shapes, Reverse



	Type	R mm	(D) mm	DR mm	LP1 mm	LP2 mm	t mm	Number of teeth	Order No. TINAMATIC
P25	P2526	0,5	26	24,3	1,15	2,5	0,5	6	174009
	P2526	1,0	26	23,3	1,65	2,0	1,0	6	174011
	P2526	1,5	26	22,3	2,15	1,5	1,5	6	174012
	P2526	2,0	26	21,3	2,65	1,0	2,0	6	174013
	P2526	2,5	26	20,3	3,15	1,5	2,5	6	174014
	P2526	3,0	26	19,3	5,4	1,5	3,0	6	174015
	P2526	4,0	26	17,3	5,15	2,0	4,0	6	189160
	P2526	5,0	26	15,7	6,15	1,0	5,0	6	182721
	P2526	6,0	26	13,7	7,25	1,4	6,15	6	199552 NEW

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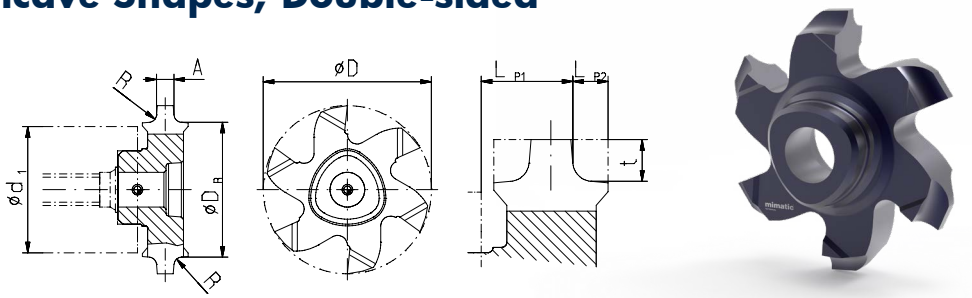
Radius Milling, Concave Shapes, Double-sided

- Insert holder see page 117-119
- Cutting data see page 166



	Type	R mm	(D) mm	DR mm	LP1 mm	LP2 mm	A mm	t mm	Number of teeth	Order No. TINAMATIC
P25	P2526	0,5	26	25	3,15	0,5	2,0	0,5	6	199386 NEW
	P2526	1,0	26	24	2,65	1,0	1,0	1,0	6	160471
	P2526	1,5	26	23	3,10	1,5	1,0	1,5	6	184889
	P2526	2,0	26	22	4,90	2,0	1,0	2,0	6	162189 NEW
	P2526	2,5	26	21	4,65	2,5	1,5	2,5	6	194311 NEW

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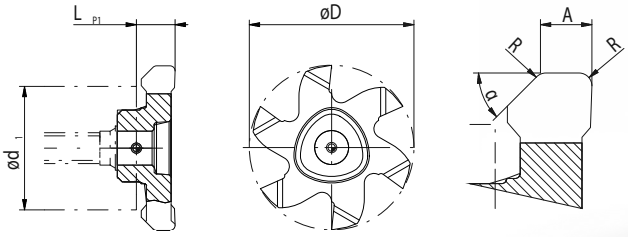
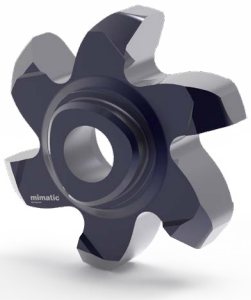
PolyMILL

Thread undercut according to DIN 76

- Insert holder see page 117-119
- Cutting data see page 166



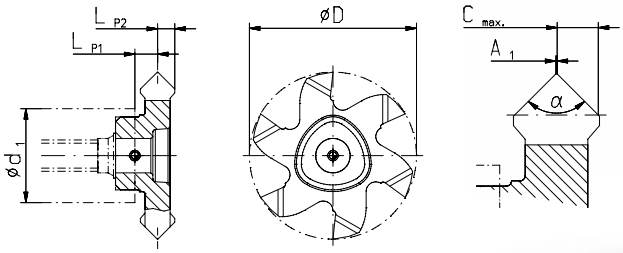


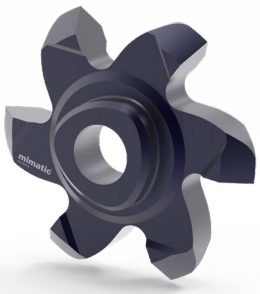
DIN 76

	Type	D mm	P mm	A mm	α	LP1 mm	R mm	Number of teeth	Order No. TINAMATIC	
P12	P1212	11,7	1,0-1,5	2,0	45°	3,8	0,7	3	194197	NEW
P16	P1616	16,0	1,0-1,5	2,5	45°	4,65	0,7	6	194199	NEW
	P1616	16,0	1,75-2-2,5	3,35	45°	5,65	1,1	6	194200	NEW
P25	P2526	26,0	3,0-3,5	4,25	45°	7,15	1,6	6	194201	NEW

CLICK ME!

Chamfering and Deburring





90° α

	Type	D mm	Cmax. x 45° mm	A1 mm	α	LP1 mm	LP2 mm	Number of teeth	Order No. TINAMATIC
P12	P1210	9,6	1,2	0,05	90°	2,125	1,525	3	171914
	P1212	11,7	1,35	0,05	90°	2,125	1,525	3	171913
P16	P1616	16,0	1,9	0,05	90°	2,65	1,95	6	142521
	P1616	16,0	1,43	0,05	120°	3,18	2,68	6	166997
	P1616	16,0		0,05	150°	3,18	2,68	6	206467
	P1618	17,7	1,3	0,05	90°	2,65	1,45	6	171955
P20	P2020	20,0	1,9	0,05	90°	3,15	2,675	6	168689
	P2022	21,7	1,95	0,05	90°	2,95	2,15	6	171979
P25	P2526	26,0	2,1	0,05	90°	2,75	2,075	6	142676
	P2526	26,0	3,4	0,05	90°	4,65	3,62	6	201771
	P2526	26,0	2,3	0,05	120°	4,65	4,175	6	203344
	P2526	26,0	1,0	0,05	150°	4,65	4,174	6	206406

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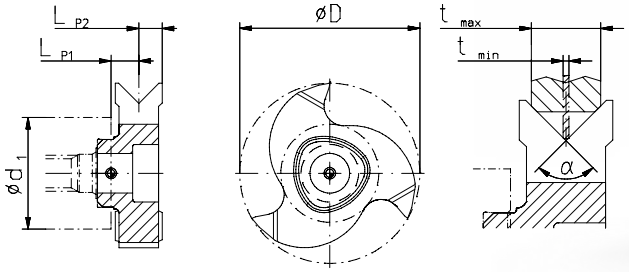
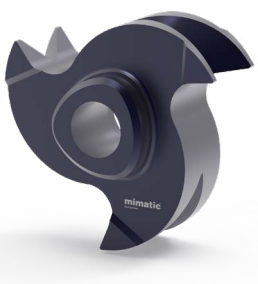
6

Chamfering of Sheet Metal





α

	Type	D mm	α	t max. mm	t min. mm	LP1 mm	LP2 mm	Number of teeth	Order No. TINAMATIC
P25	P2525	25,0	90°	6,0	0,5	4,55	4,0	3	161083

CLICK ME!

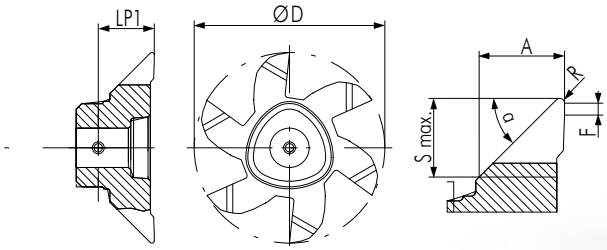
Additional sizes and angles on request!

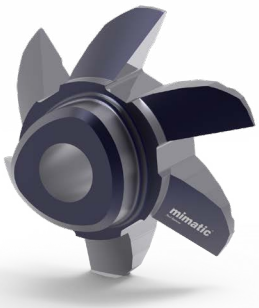
mimatic Tool Systems

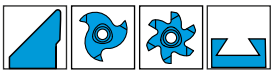
PolyMILL

Radius Milling, Convex Shapes

- Insert holder see page 117-119
- Cutting data see page 166





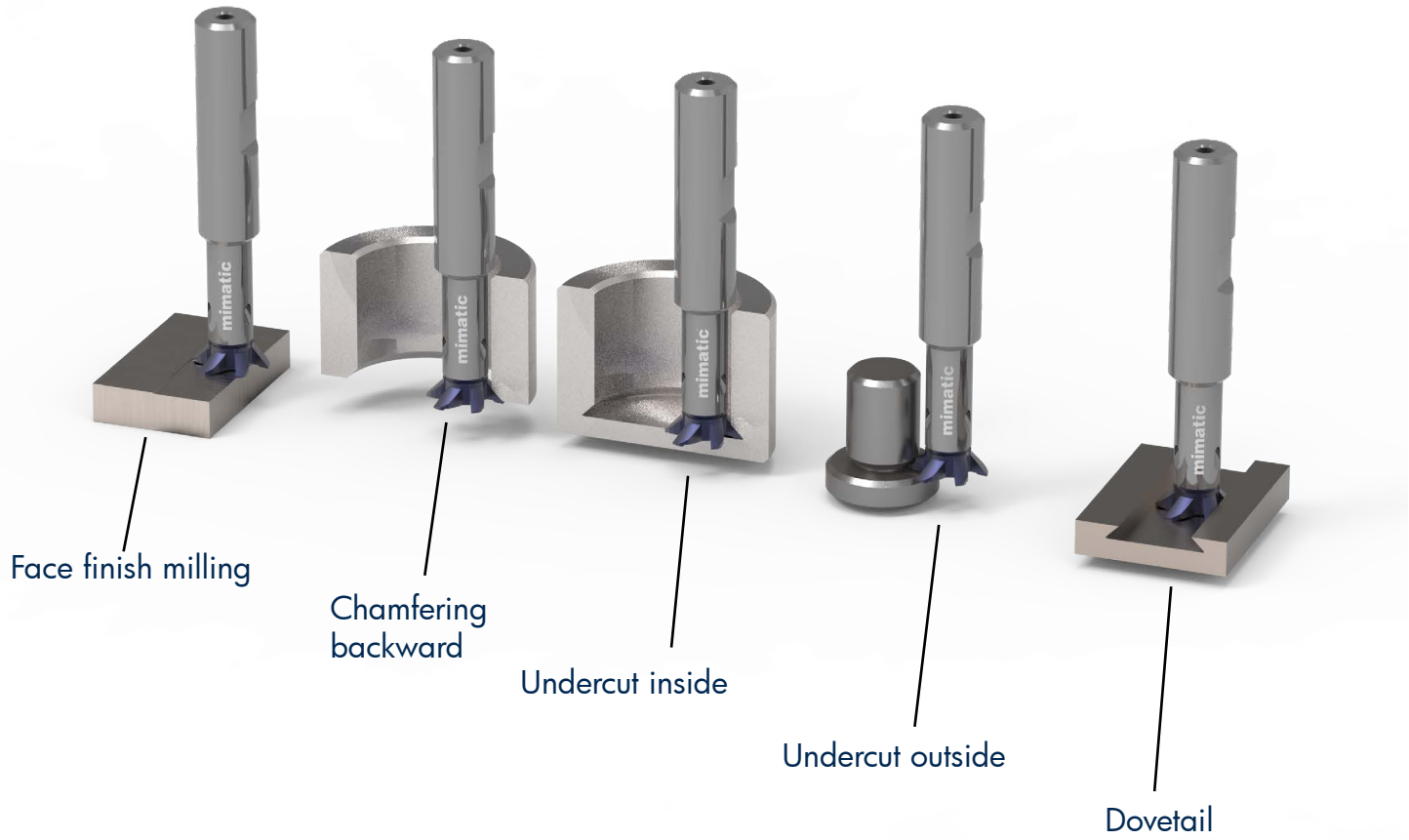


	Type	D mm	α	LP1 mm	A mm	S max. mm	R mm	F mm	Number of teeth	Order No. TINAMATIC
P12	P1210	11,7	15°	3,75	3,20	0,80	0,20	0,50	3	199352
	P1210	11,7	30°	3,75	2,80	1,45	0,20	0,50	3	199354
	P1212	11,7	45°	3,75	2,50	2,20	0,20	0,50	3	199361
P16	P1616	16	15°	5,70	5,00	1,30	0,20	0,50	6	199366
	P1616	16	30°	5,70	4,50	2,45	0,20	0,50	6	199367
	P1616	16	45°	4,70	3,60	3,30	0,20	0,50	6	199369
P20	P2020	20	15°	5,65	5,00	1,30	0,20	0,50	6	199372
	P2020	20	30°	5,65	5,00	2,75	0,20	0,50	6	199373
	P2020	20	45°	5,65	4,50	4,20	0,20	0,50	6	199374
P25	P2526	26	15°	7,10	6,40	1,65	0,20	0,50	6	199375
	P2526	26	30°	7,10	6,10	3,40	0,20	0,50	6	199376
	P2526	26	45°	7,10	5,90	5,60	0,20	0,50	6	199377

CLICK ME!

Other dimensions on request

The following machining operations can be performed with these inserts:

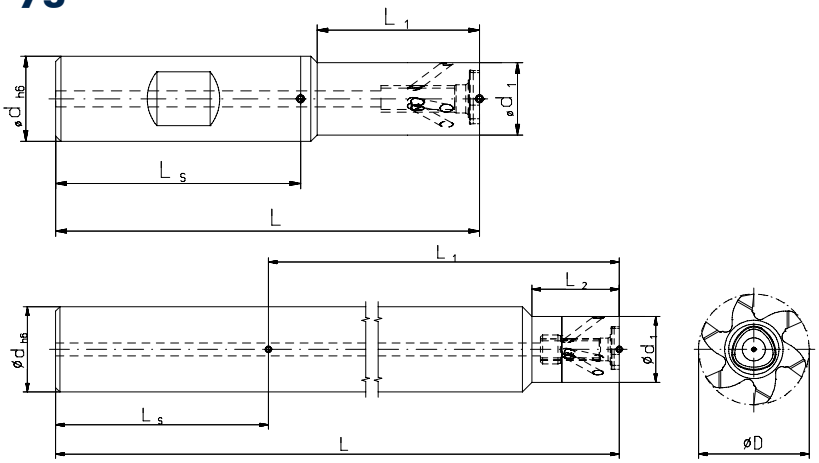


mimatic Tool Systems

PolyMILL

Circular Milling Tools with Polygonal Insert Seat

■ Inserts see page 113-116
■ Cutting data see page 166



DIN 1835 Form A | DIN 1835 Form B | DIN 6535 Form A | DIN 6535 Form B

Type	Order No.	Form	d h6 mm	d1 mm	S max. (D-d1)/2 mm	L mm	L1 mm	L2 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	3,5	54	8	-	Steel	T8 IP 111656	M2,5x7 107596
	123619	B	12	7,0	3,5	67,5	20	-	Steel		
	100228	B	12	7,0	3,5	67,5	20	-	Carbide		
	171778	A	12	7,0	3,5	67,5	20	-	Carbide		
	171780	B	12	7,0	3,5	80	30	-	Carbide		
	171781	A	12	7,0	3,5	80	30	-	Carbide		
	171783	B	12	7,0	3,5	100	40	-	Carbide		
	171784	A	12	7,0	3,5	100	40	-	Carbide		
P16	177174	A	10	9,0	6,5	60	11	-	Steel	T8 IP 111656	M3x12 143158
	123573	B	12	9,0	6,5	67,4	21	-	Steel		
	123577	B	12	9,0	6,5	67,4	21	-	Carbide		
	171787	A	12	9,0	6,5	67,4	21	-	Carbide		
	123580	B	12	9,0	6,5	82,4	36	-	Carbide		
	171789	A	12	9,0	6,5	82,4	36	-	Carbide		
	123584	A	12	9,0	6,5	100	30	-	Carbide		
	123588	A	12	11,5	5,25	82,4	37,4	13	Carbide		
	123590	A	12	12,0	5,0	122,5	77,5	-	Carbide		
P20	177178	A	12	11,5	10,25	62,4	14,4	-	Steel	T15 IP 111671	M4x13 107597
	123615	B	16	11,5	10,25	80	30	-	Steel		
	123616	B	16	11,5	10,25	80	30	-	Carbide		
	171794	A	16	11,5	10,25	80	30	-	Carbide		
	123617	B	16	11,5	10,25	100	50	-	Carbide		
	171796	A	16	11,5	10,25	100	50	-	Carbide		
	174314	A	16	15,5	8,25	105,5	57,5	20	Carbide		
P25	177182	A	16	13,6	11,7	69,6	20,4	-	Steel	T20 IP 111594	M5x13,5 107529
	123592	B	16	13,6	11,7	79,6	30,5	-	Steel		
	123598	B	16	13,6	11,7	79,6	30,5	-	Carbide		
	171855	A	16	13,6	11,7	79,6	30,5	-	Carbide		
	123600	B	16	13,6	11,7	94,6	45,5	-	Carbide		
	171857	A	16	13,6	11,7	94,6	45,5	-	Carbide		
	123603	B	16	13,6	11,7	109,6	60,5	-	Carbide		
	171859	A	16	13,6	11,7	109,6	60,5	-	Carbide		
	123609	A	16	15,5	10,75	105	57	21,5	Carbide		
	123611	A	16	15,5	10,75	149,5	101,5	21,5	Carbide		
	161205 NEW	A	20	15,5	10,75	100	52	21,5	Carbide		
	123613	A	20	15,5	10,75	174,45	128,5	21,5	Carbide		

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

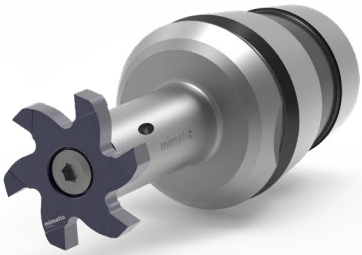
* **Screwdriver and clamping screw included in delivery**

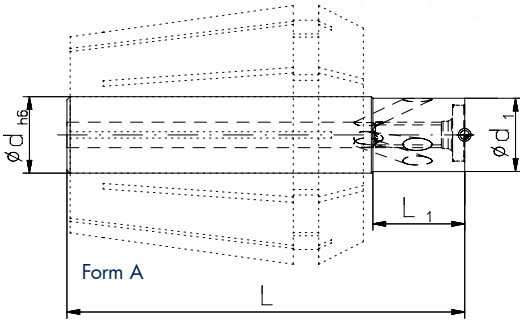
mimatic Tool Systems

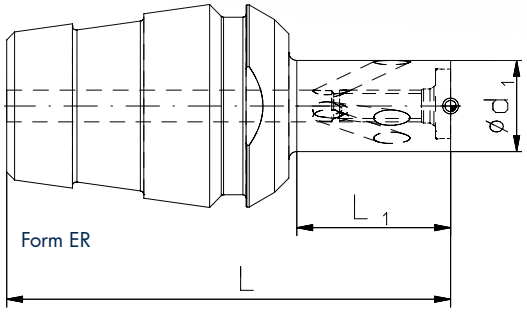
PolyMILL

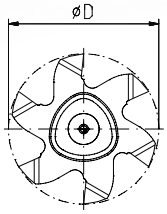
Circular Milling Tools for Driven Toolholders

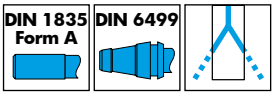
Cutting data see page 166











Type	Order No.	Form	d h6 mm	d1 mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	3,5	54	8	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16		7,0	3,5	37,5	8	Steel		
	177173	ER 20		7,0	3,5	47	13	Steel		
P16	177174	A	10	9,0	6,5	60	11	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16		9,0	6,5	41,4	11	Steel		
	177177	ER 20		9,0	6,5	51	16	Steel		
P20	177178	A	12	11,5	10,25	62,4	14,4	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20		11,5	10,25	49,5	14,5	Steel		
	177181	ER 25		11,5	10,2	56	19,4	Steel		
P25	177182	A	16	13,6	11,7	69,6	20,4	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25		13,6	11,7	56	19,4	Steel		
	177185	ER 32		13,6	11,7	73	30,4	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

CLICK ME!

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 tighening of the inserts and consider the screw tightening torques in the tables.

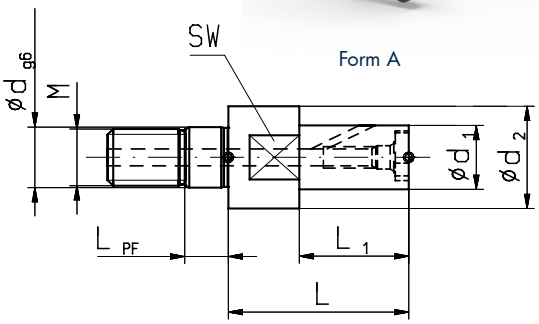
* **Screwdriver and clamping screw included in delivery**

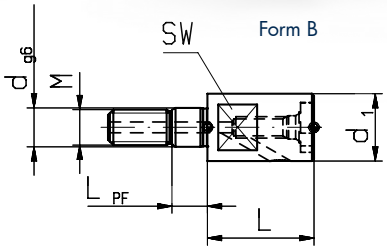
mimatic® Tool Systems

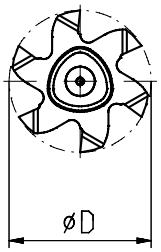
PolyMILL

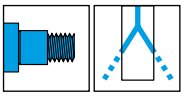
Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 113-116
- Cutting data see page 166









Please adapt cutting data to overhangs length

Type	Order No.	Form	d1 mm	d2 mm	S max. (D-d1)/2 mm	L mm	L1 mm	M	dg6 mm	LPF mm	Spare part No. Screw-driver *	Spare part No. Screw *
P12***	177676	B	9,5	–	2,25	10,0	–	M5	5,5	5,0	111656	107596
P16	123586	A	9,0	14,4	6,5 / 3,8	25,4	15,4	M8	8,5	5,5	111656	143158
P16**	177683	B	9,5	–	6,25	15,0	–	M5	5,5	5,0	111656	143158
P16***	177698	B	11,0	–	5,5	15,0	–	M6	6,5	5,0	111656	143158
P20	123618	A	11,5	18,0	10,25 / 7	29,4	19,4	M10	10,5	5,5	111671	107597
P20**	177734	B	11,5	–	10,25	15,0	–	M6	6,5	5,0	111671	107597
P20***	177735	B	13,5	–	9,25	15,0	–	M8	8,5	5,5	111671	107597
P25	123605	A	13,6	22,5	11,7 / 7,25	37,9	24,9	M12	12,5	5,5	111594	107529
P25**	177747	B	13,6	–	11,7	18,0	–	M8	8,5	5,5	111594	107529
P25***	177767	B	18,0	–	9,5	18,0	–	M10	10,5	5,5	111594	107529

* Screwdriver and clamping screw included in delivery
** Slim design for thread milling
*** Reinforced design

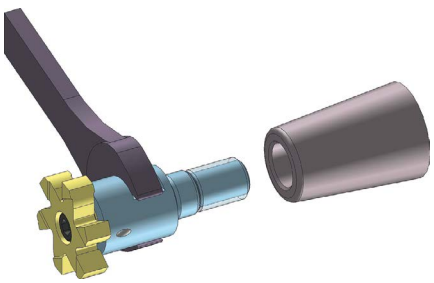
Screw torques max.

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

6 CLICK ME!

Assembling Instructions

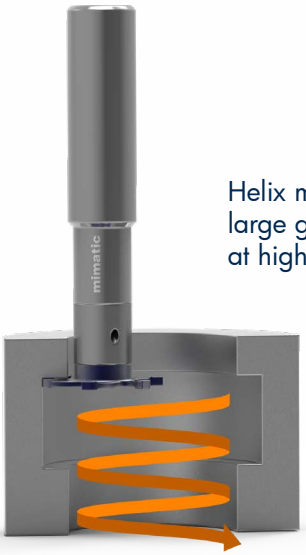
- Recommended tightening torque for screw-in circular milling body
- End-wrench see page 163



Thread size (M)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60
M16	24	80

mimatic Tool Systems

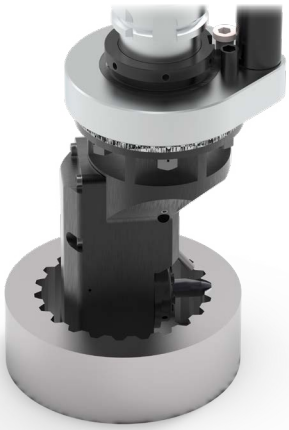
Examples of applications:



Helix milling - large groove widths at high depths

Application with sheet metal bevel plate - Application of chamfers on both sides

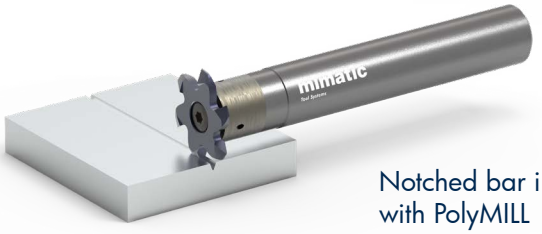
Axial recesses - 2-bladed Poly-MILL plate (inner diameter min. 5 mm - outer diameter max. 28.5 mm)



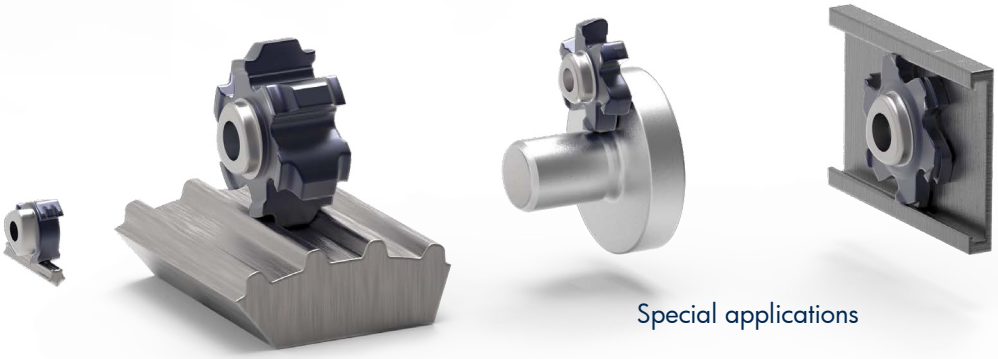
Milling of gears with PolyMILL (DIN5480 / DIN5481 / DIN5482 / ANSI / BS / JS / ...)

Milling of tooth hub profiles with angle head and carbide tooth form cutter

Milling of an external toothing with carbide tooth form cutter and 3-jaw chuck



Notched bar impact tests with PolyMILL



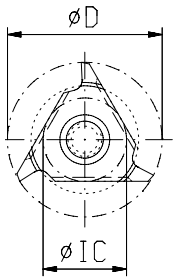
Special applications

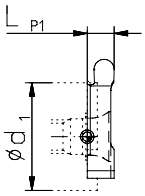
mimatic Tool Systems

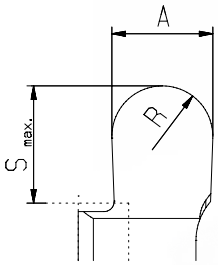
TriMILL

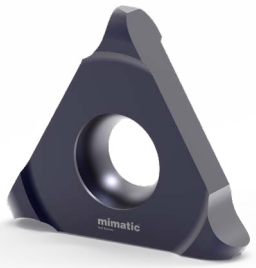
Radius Milling, Convex Shapes

- Insert holder see page 122
- Cutting data see page 166
- Other sizes on request









Type	A mm	A inch	R mm	D mm	IC mm	LP1 mm	Smax. mm	Order No. TINAMATIC
03	1,0	.039	0,50	10,6	5,5	2,34	1,6	160866
	1,5	.059	0,75	10,6	5,5	2,34	1,6	146583
	2,0	.079	1,00	10,6	5,5	2,34	1,6	161574
	2,5	.098	1,25	10,6	5,5	3,0	1,6	On request
	3,0	.118	1,50	10,6	5,5	3,02	1,6	151643
02	1,0	.039	0,50	17,5	9,2	3,5	1,0	On request
	1,5	.059	0,75	17,5	9,2	3,5	1,0	149560
	2,0	.079	1,00	17,5	9,2	3,5	2,6	150641
	2,5	.098	1,25	17,5	9,2	3,5	2,6	190190
	3,0	.118	1,50	17,5	9,2	3,5	2,6	150011
	3,5	.138	1,75	17,5	9,2	3,52	2,6	182015
	4,0	.157	2,00	17,5	9,2	5,0	2,6	190192
	5,0	.197	2,50	17,5	9,2	5,02	2,6	150798
01	1,0	.039	0,50	23,0	12,4	4,0	2,0	On request
	1,5	.059	0,75	23,0	12,4	4,0	2,0	On request
	2,0	.079	1,00	23,0	12,4	4,0	3,45	171373
	2,5	.098	1,25	23,0	12,4	4,0	3,45	On request
	3,0	.118	1,50	23,0	12,4	4,0	3,45	169226
	3,5	.138	1,75	23,0	12,4	4,0	3,45	190191
	4,0	.157	2,00	23,0	12,4	4,02	3,45	150617
	5,0	.197	2,50	23,0	12,4	5,2	3,45	150006
	6,0	.236	3,00	23,0	12,4	6,5	3,45	146243 NEW

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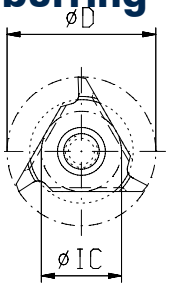
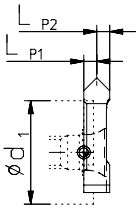
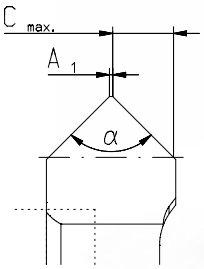
6

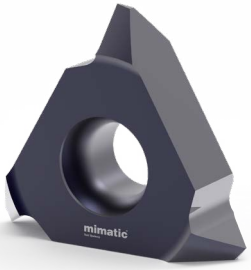
Chamfering and Deburring

- Insert holder see page 122
- Cutting data see page 166









Type	D mm	IC mm	Cmax. x 45° mm	A1 mm	LP1 mm	LP2 mm	Order No. TINAMATIC
04	7,9	5,5	0,3	0,05	1,05	1,29	141690
03	10,6	5,5	1,5	0,05	1,5	1,5	141694
02	17,5	9,2	2,2	0,05	2,5	2,5	141495
01	23,0	12,4	3,1	0,05	3,2	3,3	141382

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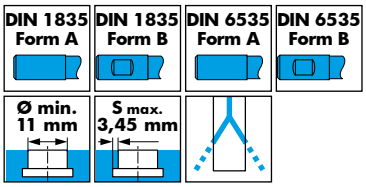
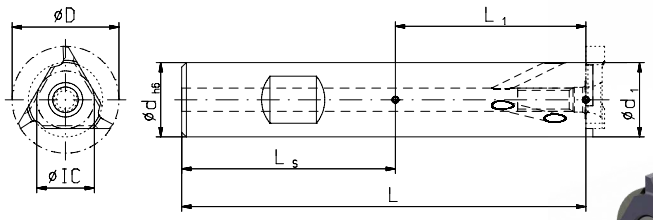
mimatic Tool Systems

TriMILL

Circular Milling Tools

■ Inserts see page 95-96
■ Cutting data see page 166





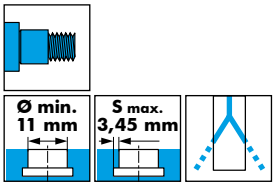
Type	Order No.	Form	D mm	IC mm	d h6 mm	d1 mm	S max. mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
04	123491 **	B	7,9	5,5	10	7,2	0,35	57,2	17,2	Steel	T6 IP 111705	107530
03	123477 **	B	10,6	5,5	10	7,4	1,6	57,2	17,2	Steel		
	123478 **	B	10,6	5,5	12	7,4	1,6	64,66	17,2	Steel		
	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	Carbide		
	123441	A	23,0	12,4	16	16	3,45	148,5	100	Carbide		

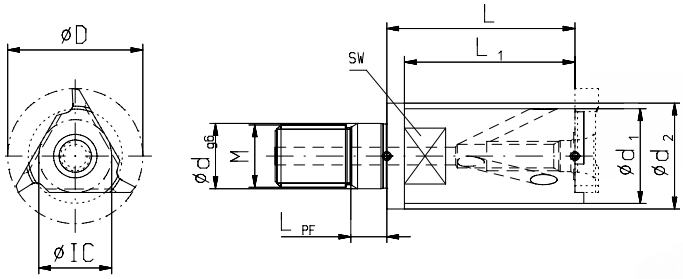
*** Without internal coolant supply** **** Also suitable as basic body for a tandem cutter.**

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 94





Please adapt cutting data to overhangs length

Limited max. cutting depth Smax

Type	Order No.	D mm	IC mm	d g6 mm	d1 mm	d2 mm	S max. mm	L mm	L1 mm	M	Spare part No. Screw-driver *	Spare part No. 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

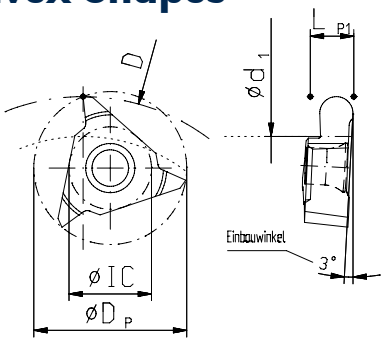
* Screwdriver and clamping screw included in delivery
** Without internal coolant supply
*** Also suitable as basic body for a tandem cutter

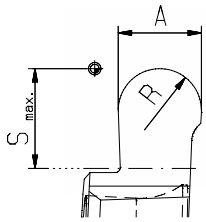
CLICK ME!

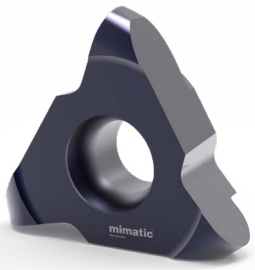
CLICK ME!

Radius Milling, Convex Shapes

- Insert holder see page 124-125
- Cutting data see page 166
- Other sizes on request







Typ 023 | Typ 013

Type	A mm	A inch	R mm	DP mm	IC mm	LP1 mm	LP2* mm	S max. mm	Order No. TINAMATIC
023	1,0	.039	0,50	17,5	9,2	4,03	1	2,0	On request
	1,5	.059	0,75	17,5	9,2	4,03	1	3,0	On request
	2,0	.079	1,00	17,5	9,2	4,7	–	4,0	176709
	2,5	.098	1,25	17,5	9,2	5,0	–	3,0	159832
	3,0	.118	1,50	17,5	9,2	5,0	–	2,0	149845
	3,5	.138	1,75	17,5	9,2	5,03	–	3,0	On request
	4,0	.157	2,00	17,5	9,2	5,03	–	3,0	201053 NEW
	5,0	.197	2,50	17,5	9,2	5,43	–	3,0	149780
	6,0	.236	3,00	17,5	9,2	–	–	4,0	On request
013	1,0	.039	0,50	23,0	12,4	6,53	–	2,0	On request
	1,5	.059	0,75	23,0	12,4	6,53	–	2,0	162406
	2,0	.079	1,00	23,0	12,4	5,20	1,33	5,00	160730
	2,5	.098	1,25	12,0	12,4	6,53	–	4,00	On request
	3,0	.118	1,50	23,0	12,4	6,53	–	4,00	160956
	3,5	.138	1,75	23,0	12,4	6,53	–	4,00	On request
	4,0	.157	2,00	23,0	12,4	6,50	–	2,00	186708
	5,0	.197	2,50	23,0	12,4	6,08	–	3,00	149838
	6,0	.236	3,00	23,0	12,4	5,88	–	6,00	149926

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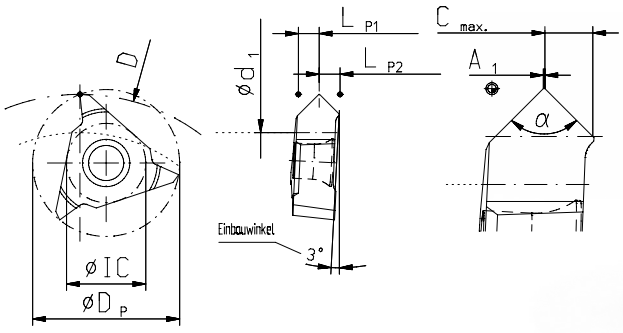
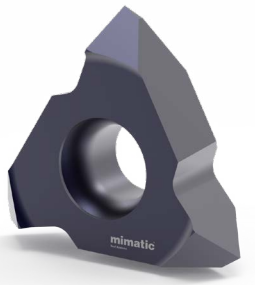
6

* not face cutting

Chamfering and Deburring

- Insert holder see page 124-125
- Cutting data see page 166





Typ 023 | Typ 013 | 90° α

Type	D mm	IC mm	Cmax. x 45° mm	A1 mm	LP1 mm	LP2 mm	Order No. TINAMATIC
023	17,5	9,2	2,3	0,05	2,52	2,51	142033
013	23,0	12,4	3,0	0,05	3,25	3,28	177222

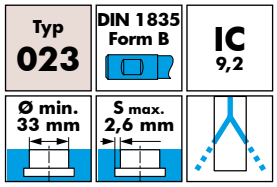
CLICK ME!

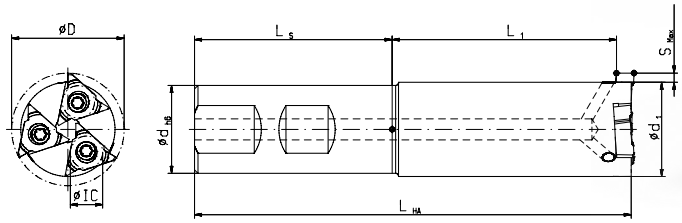
mimatic Tool Systems

TriMILL 023

Circular Milling Tools

■ Inserts see page 98-99
■ Cutting data see page 166





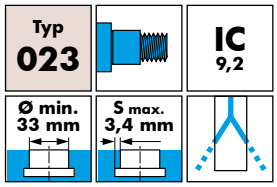
CLICK ME!

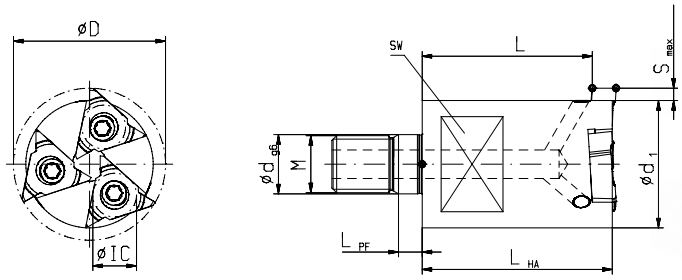
Order No.	D mm	d h6 mm	d1 mm	S max. mm	LHA mm	L mm	L1 mm	Inserts	Shaft	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123462	32	25	26,8	2,6	124,2	119,97	61,97	3	Steel	111671	107547

Screw torque max. 3,8 Nm

■ Tightening torques see page 94

Please adapt cutting data to overhangs length



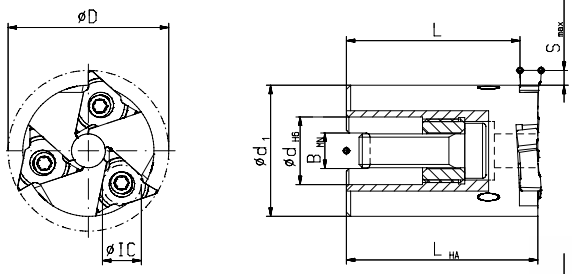


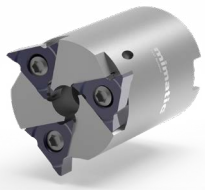
CLICK ME!

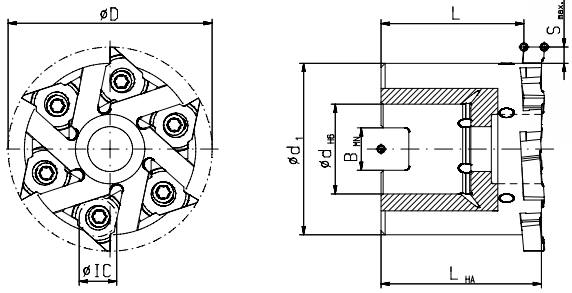
Order No.	D mm	d g6 mm	d1 mm	S max. mm	LHA mm	L mm	Inserts	M	Spare part No. T15 IP Screw-driver *	Spare part No. Screw *
123465	32	12,5	24,3	3,8	40	34,97	3	M12	111671	107547

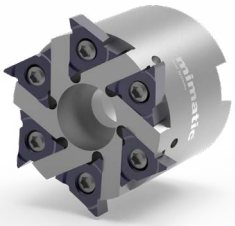
Screw torque max. 3,8 Nm

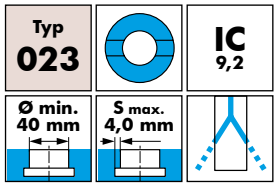
■ **Assembly instruction see page 178**











CLICK ME!

Order No.	D mm	d H6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Cutting edge	Accessories Key	Spare part No. Cutter fastening screw	Spare part No. T15 IP Screw-driver	Spare part No. Screw
123464	38	16	31	3,4	45,3	40,97	8,4	3	134984	114476*	111671*	107547*
123461	50	22	42	3,9	39,3	34,97	10,4	6		114684*	111671*	107547*
161485	63	27	55	4,0	39,3	34,97	12,4	8		114684*	111671*	107547*

Screw torque max. 3,8 Nm

* **Screwdriver and clamping screw included in delivery**

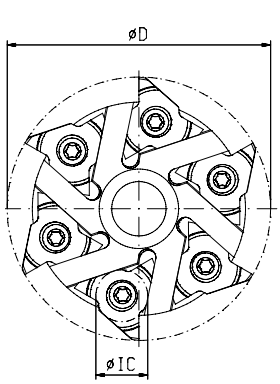
mimatic Tool Systems

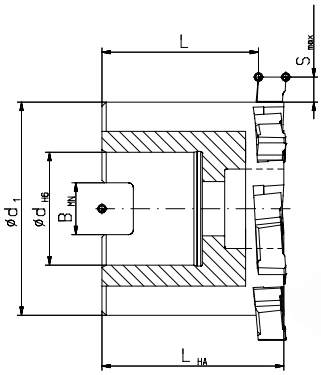
TriMILL 013

Circular Milling Tools

■ Inserts see page 98-99
■ Cutting data see page 166

Typ 013 | IC 12,4 | Ø min. 65 mm | S max. 6,0 mm





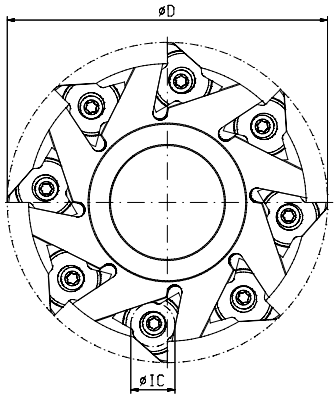
CLICK ME!

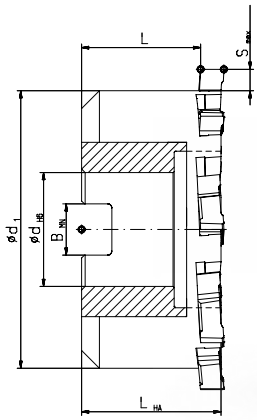
Order No.	D mm	dH6 mm	d1 mm	S max. mm	LHA mm	L mm	BMN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123435	63	27	51	6	43,18	37,5	12,4	6	111594	107551

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



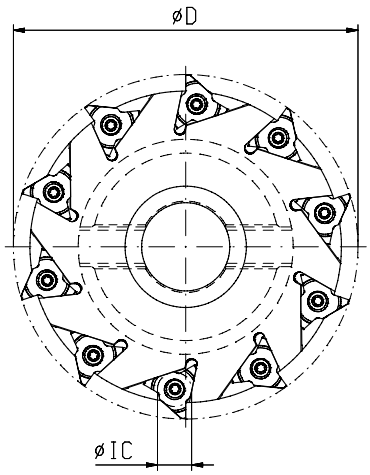


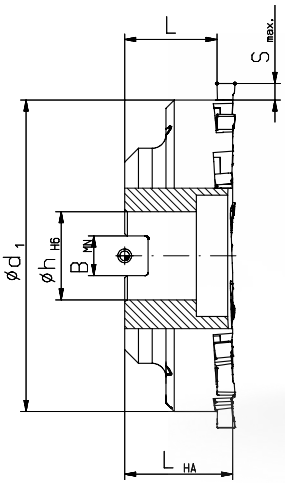
CLICK ME!

Order No.	D mm	dH6 mm	d1 mm	S max. mm	LHA mm	L mm	BMN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
123436	90	32	78	6	39,2	33,5	14,4	8	111594	107551

Screw torque 5,5 Nm

Typ 013 | IC 12,4 | Ø min. 95 mm | S max. 6,0 mm





CLICK ME!

Order No.	D mm	dH6 mm	d1 mm	S max. mm	LHA mm	L mm	BMN mm	Inserts	Spare part No. T20 IP Screw-driver *	Spare part No. Screw *
134561	125	32	113	6,0	39,2	33,5	14,4	10	111594	107551

Screw torque 5,5 Nm

* **Screwdriver and clamping screw included in delivery**

6

mimatic®
Tool Systems

Sawing, Cutting, Slitting

PolyMILL

Cutting, Sawing, Slitting

Our best-selling system, mostly used as a circular cutter, also proves itself in linear applications such as cutting off, sawing, slitting with high precision.
The polygonal connection of insert and cutter body significantly improves the efficiency and precision of the machining process by:

- Longer tool life
- Defined tooth and cutting edge geometry
- Higher metal removal rates
- Higher feed rates
- Shorter machining times
- High stability
- High safety in case of interrupted cut

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 → Quadrogon interface
- High performance coatings
- Internal coolant direct to the edges
- Clamping with only one center screw

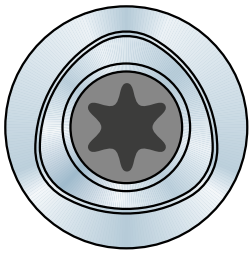
These technical parameters resulted in the mimatic development result PolySAW with a up to tenfold cutting performance in comparsion to conventional solid carbide circular saws.

PolySAW

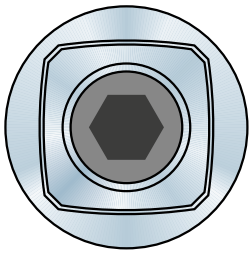
Sawing Tools in New Dimensions of Performance

- With PolySAW 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

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

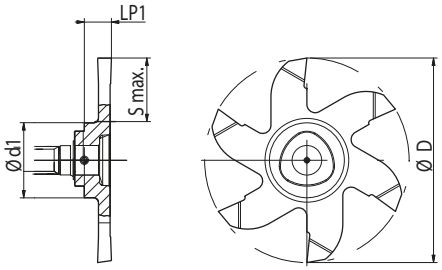
* patent-protected.

mimatic Tool Systems

PolyMILL

Slitting/Splitting, straight toothed

- Insert holder see page 132
- Cutting data see page 166



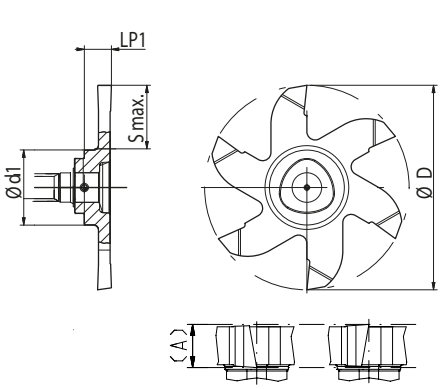
Non profile

CLICK ME!

	Type	A mm	A inch	D mm	Chip angle	R mm	LP1 mm	S max. mm	Number of teeth	Order No. TINAMATIC	
P25	P2528	1,5	.059	27,7	6°	0,1	4,9	6,8	6	171981	
	P2528	2,0	.079	27,7	6°	0,1	4,9	6,8	6	171982	
	P2528	2,39	.094	27,7	6°	0,15	4,9	6,8	6	171983	
	P2528	2,5	.098	27,7	6°	0,15	4,9	6,8	6	171984	
	P2528	3,0	.118	27,7	6°	0,15	4,9	6,8	6	171985	
	P2528	3,175	.125	27,7	6°	0,15	5,0	6,8	6	171986	
	P2537	1,0	.039	37,0	6°	0,15	4,9	11,5	6	195886	NEW
	P2537	1,5	.059	37,0	6°	0,15	4,9	11,5	6	195900	NEW
	P2537	2,0	.079	37,0	6°	0,15	4,9	11,5	6	195903	NEW
	P2537	2,5	.098	37,0	6°	0,15	4,9	11,5	6	195904	NEW
	P2537	3,0	.118	37,0	6°	0,15	4,9	11,5	6	195905	NEW

Slitting/separating, cross-toothed

- Insert holder see page 132
- Cutting data see page 166



Non profile

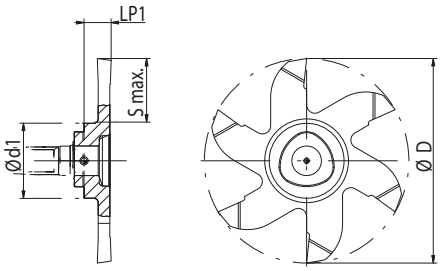
CLICK ME!

	Type	A mm	A inch	D mm	Chip angle	R mm	LP1 mm	S max. mm	Number of teeth	Order No. TINAMATIC	
P25	P2528	1,5	.059	27,7	6°	0,1	4,9	6,8	6	201415	
	P2528	2,0	.079	27,7	6°	0,1	4,9	6,8	6	201416	
	P2528	2,39	.094	27,7	6°	0,15	4,9	6,8	6	201417	
	P2528	2,5	.098	27,7	6°	0,15	4,9	6,8	6	201418	
	P2528	3,0	.118	27,7	6°	0,15	4,9	6,8	6	201419	
	P2528	3,175	.125	27,7	6°	0,15	5,0	6,8	6	201420	
	P2537	1,0	.039	37,0	6°	0,15	4,9	11,5	6	195906	NEW
	P2537	1,5	.059	37,0	6°	0,15	4,9	11,5	6	195907	NEW
	P2537	2,0	.079	37,0	6°	0,15	4,9	11,5	6	195909	NEW
	P2537	2,5	.098	37,0	6°	0,15	4,9	11,5	6	195910	NEW
	P2537	3,0	.118	37,0	6°	0,15	4,9	11,5	6	195911	NEW

PolyMILL

Slitting/Splitting, with 8° bevel for burr-free cutting

- Insert holder see page 132
- Cutting data see page 166

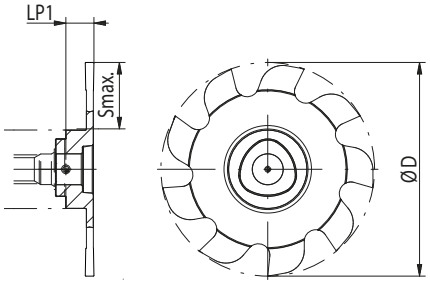


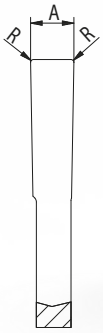
Type		A mm	D mm	a mm	Number of teeth	S max.	Order No. TINAMATIC
P25	P2537	1,0	37	8°	6	11,5	199222 NEW
	P2537	1,5	37	8°	6	11,5	199702 NEW
	P2537	2,0	37	8°	6	11,5	199281 NEW
	P2537	2,5	37	8°	6	11,5	199705 NEW

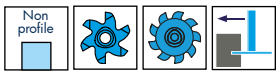
CLICK ME!

Slitting/Splitting, z max for separating

- Insert holder see page 132
- Cutting data see page 166



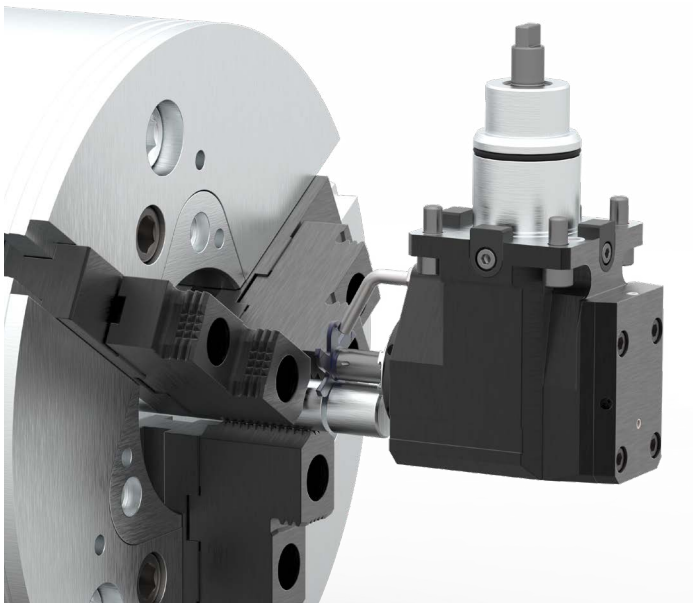




Type		D mm	LP1 mm	A mm	R mm	Number of teeth	S max.	Order No. TINAMATIC
P12	P1214	14	3,5	1,5	0,1	6	3,4	198336 NEW
P16	P1622	22	3,9	1,5	0,1	9	6,4	198337 NEW
P20	P2032	32	4,9	1,5	0,1	9	10,2	198338 NEW
P25	P2537	37	4,9	1,5	0,1	9	11,5	198339 NEW

CLICK ME!

7

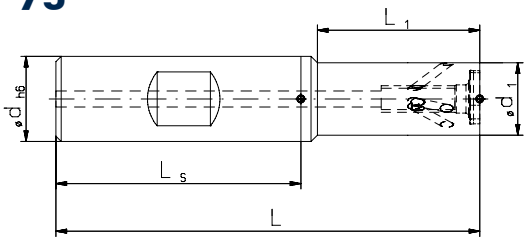


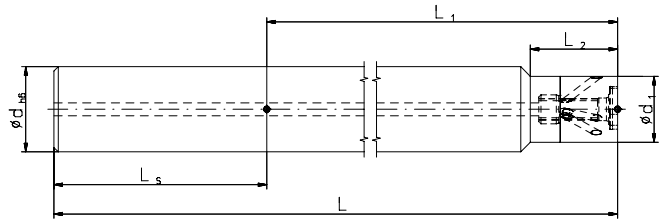
mimatic Tool Systems

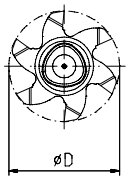
PolyMILL

Circular Milling Tools with Polygonal Insert Seat

■ Inserts see page 20-26
■ Cutting data see page 166







DIN 1835 Form A | DIN 1835 Form B | DIN 6535 Form A | DIN 6535 Form B

Type	Order No.	Form	dh6 mm	d1 mm	S max. (D-d1)/2 mm	L mm	L1 mm	L2 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	3,5	54	8	-	Steel	T8 IP 111656	M2,5x7 107596
	123619	B	12	7,0	3,5	67,5	20	-	Steel		
	100228	B	12	7,0	3,5	67,5	20	-	Carbide		
	171778	A	12	7,0	3,5	67,5	20	-	Carbide		
	171780	B	12	7,0	3,5	80	30	-	Carbide		
	171781	A	12	7,0	3,5	80	30	-	Carbide		
	171783	B	12	7,0	3,5	100	40	-	Carbide		
	171784	A	12	7,0	3,5	100	40	-	Carbide		
P16	177174	A	10	9,0	6,5	60	11	-	Steel		
	123573	B	12	9,0	6,5	67,4	21	-	Steel		
	123577	B	12	9,0	6,5	67,4	21	-	Carbide		
	171787	A	12	9,0	6,5	67,4	21	-	Carbide		
	123580	B	12	9,0	6,5	82,4	36	-	Carbide	T8 IP 111656	M3x12 143158
	171789	A	12	9,0	6,5	82,4	36	-	Carbide		
	123584	A	12	9,0	6,5	100	30	-	Carbide		
	123588	A	12	11,5	5,25	82,4	37,4	13	Carbide		
	123590	A	12	12,0	5,0	122,5	77,5	-	Carbide		
P20	177178	A	12	11,5	10,25	62,4	14,4	-	Steel		
	123615	B	16	11,5	10,25	80	30	-	Steel		
	123616	B	16	11,5	10,25	80	30	-	Carbide		
	171794	A	16	11,5	10,25	80	30	-	Carbide	T15 IP 111671	M4x13 107597
	123617	B	16	11,5	10,25	100	50	-	Carbide		
	171796	A	16	11,5	10,25	100	50	-	Carbide		
	174314	A	16	15,5	8,25	105,5	57,5	20	Carbide		
P25	177182	A	16	13,6	11,7	69,6	20,4	-	Steel		
	123592	B	16	13,6	11,7	79,6	30,5	-	Steel		
	123598	B	16	13,6	11,7	79,6	30,5	-	Carbide		
	171855	A	16	13,6	11,7	79,6	30,5	-	Carbide		
	123600	B	16	13,6	11,7	94,6	45,5	-	Carbide		
	171857	A	16	13,6	11,7	94,6	45,5	-	Carbide		
	123603	B	16	13,6	11,7	109,6	60,5	-	Carbide	T20 IP 111594	M5x13,5 107529
	171859	A	16	13,6	11,7	109,6	60,5	-	Carbide		
	123609	A	16	15,5	10,75	105	57	21,5	Carbide		
	123611	A	16	15,5	10,75	149,5	101,5	21,5	Carbide		
	161205 NEW	A	20	15,5	10,75	100	52	21,5	Carbide		
	123613	A	20	15,5	10,75	174,45	128,5	21,5	Carbide		

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

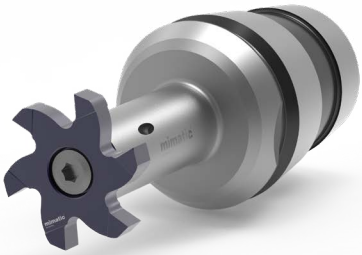
CLICK ME!

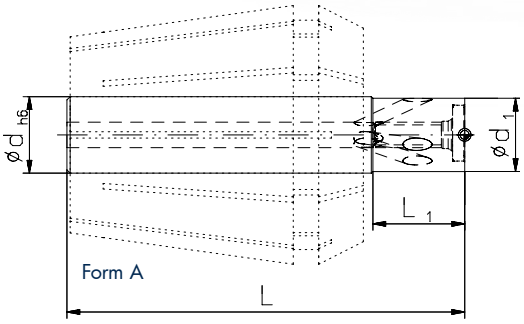
* Screwdriver and clamping screw included in delivery

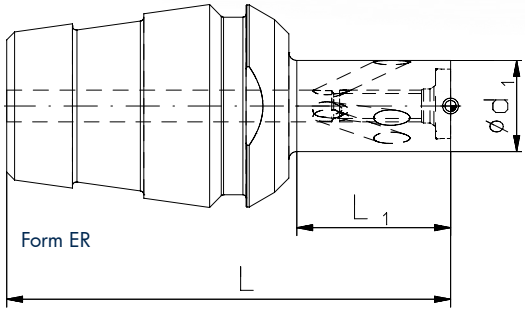
PolyMILL

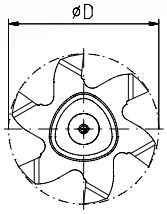
Circular Milling Tools for Driven Toolholders

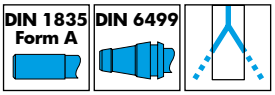
- Inserts see page 20-26
- Cutting data see page 166











Type	Order No.	Form	d h6 mm	d1 mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver *	Spare part No. Screw *
P12	177170	A	10	7,0	3,5	54	8	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16		7,0	3,5	37,5	8	Steel		
	177173	ER 20		7,0	3,5	47	13	Steel		
P16	177174	A	10	9,0	6,5	60	11	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16		9,0	6,5	41,4	11	Steel		
	177177	ER 20		9,0	6,5	51	16	Steel		
P20	177178	A	12	11,5	10,25	62,4	14,4	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20		11,5	10,25	49,5	14,5	Steel		
	177181	ER 25		11,5	10,2	56	19,4	Steel		
P25	177182	A	16	13,6	11,7	69,6	20,4	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25		13,6	11,7	56	19,4	Steel		
	177185	ER 32		13,6	11,7	73	30,4	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

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 tighening of the inserts and consider the screw tightening torques in the tables.

* **Screwdriver and clamping screw included in delivery**

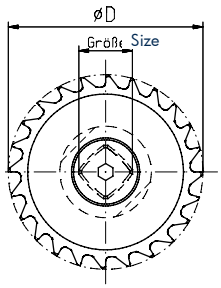
CLICK ME!
7

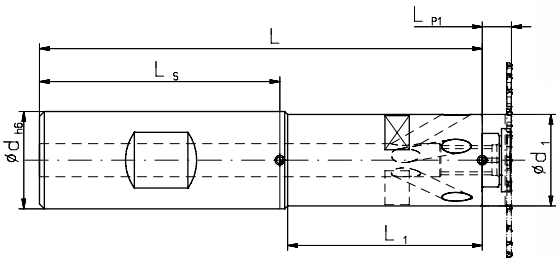
mimatic Tool Systems

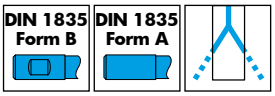
PolySAW Ø 32

Basic Holders

Cutting data see page 166





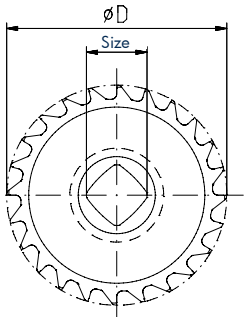


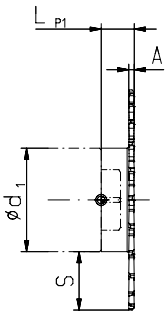
							Complete holder	Spare Parts **	
Size	Typ	dh6 mm	DIN	L mm	L1 mm	d1 mm	Bestell-Nr.	Screwdriver *	Size
Ø 32	11	20	1835 B	91	40	18,8	163701	178296	SW 3
	11	20	1835 A	91	40	18,8	160050	178296	SW 3
	9	20	1835 B	86	35	16,8	163700	178297	SW 4
	9	20	1835 A	86	35	16,8	160049	178297	SW 4

Screw torques max.
Typ 09 = M4 max. 3,8 Nm
Typ 11 = M6 max. 10,5 Nm

CLICK ME!

Milling Discs





Ask about our regrinding service!

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 32	11	1,0	6,6	32	6	18	164430	on request
	9	1,0	7,6	32	6	18	164400	on stock
	11	1,5	6,6	32	6	18	164431	on request
	9	1,5	7,6	32	6	18	164401	on stock
Especially for aluminium processing:								
Ø 32	9	1,0	7,6	32	6	16	179693	on stock
	9	1,5	7,6	32	6	16	179698	on stock
With 8° bevel for aluminium and steel machining								
Ø 32	9	1,5	7,6	32	6	16	204272	on stock

CLICK ME!

Milling discs with larger cutting widths see chapter "Groove milling".

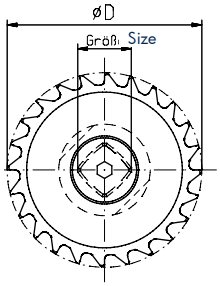
* **Screwdriver and clamping screw included in delivery**
** **More spare parts see page 153**

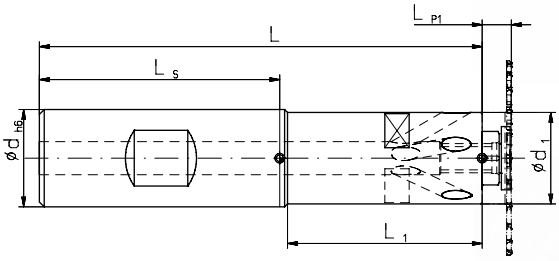
mimatic Tool Systems

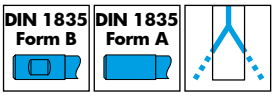
PolySAW Ø 40

Basic Holders

Cutting data see page 166





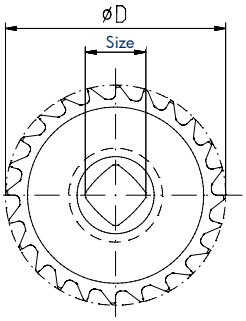


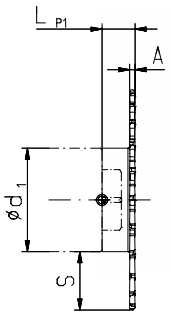
Size	Typ	dh6 mm	DIN	L mm	L1 mm	d1 mm	Complete holder: Bestell-Nr.	Spare Parts **: Screwdriver *	Spare Parts **: Size
Ø 40	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4
	11	20	1835 B	91	40	18,8	163701	178296	SW 3
	11	20	1835 A	91	40	18,8	160050	178296	SW 3

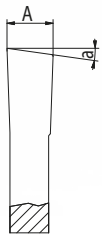
Screw torques max.
Typ 11 = M6 max. 10,5 Nm
Typ 13 = M8 max. 24,5 Nm

CLICK ME!

Milling Discs







Ask about our regrinding service!

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 40	13	1,0	9,2	40	6	24	164432	on request
	11	1,0	10,6	40	6	24	164406	on stock
	13	1,5	9,2	40	6	24	164433	on request
	11	1,5	10,6	40	6	24	164407	on stock
Especially for aluminium processing:								
Ø 40	11	1,0	10,6	40	6	20	179694	on stock
	11	1,5	10,6	40	6	20	179699	on stock
With 8° bevel for aluminium and steel machining								
Ø 40	11	1,5	10,6	40	6	20	204273	on stock

CLICK ME!

Milling discs with larger cutting widths see chapter "Groove milling".

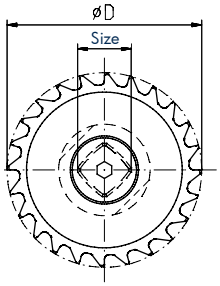
* **Screwdriver and clamping screw included in delivery**
** **More spare parts see page 153**

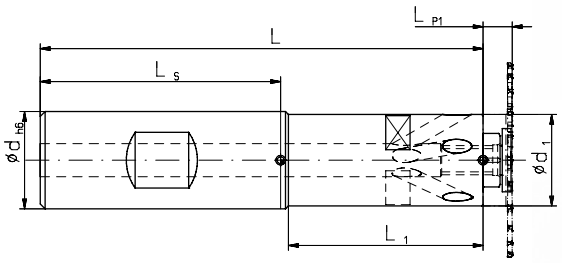
mimatic Tool Systems

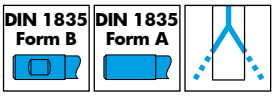
PolySAW Ø 50

Basic Holders

Cutting data see page 166





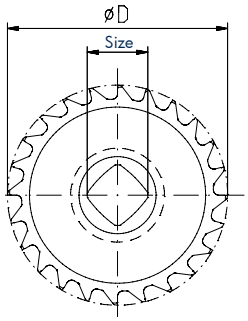


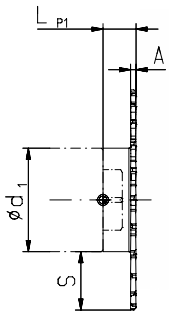
							Complete holder	Spare Parts **	
Size	Typ	dh6 mm	DIN	L mm	L1 mm	d1 mm	Bestell-Nr.	Screwdriver *	Size
Ø 50	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3
	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4

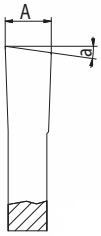
Screw torques max.
Type 13 = max. 24,5 Nm
Type 16 = max. 6 Nm

CLICK ME!

Milling Discs







Ask about our regrinding service!

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 50	16	1,0	12,0	50	6	32	164434	on request
	13	1,0	14,2	50	6	32	164412	on stock
	16	1,5	12,0	50	6	32	164435	on request
	13	1,5	14,2	50	6	32	164413	on stock
Especially for aluminium processing:								
Ø 50	13	1,0	14,2	50	6	20	179695	on stock
	13	1,5	14,2	50	6	20	179700	on stock
With 8° bevel for aluminium and steel machining								
Ø 50	13	1,5	14,2	50	6	20	204274	on stock

CLICK ME!

Milling discs with larger cutting widths see chapter "Groove milling".

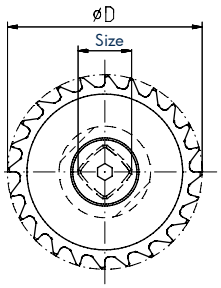
* **Screwdriver and clamping screw included in delivery**
** **More spare parts see page 153**

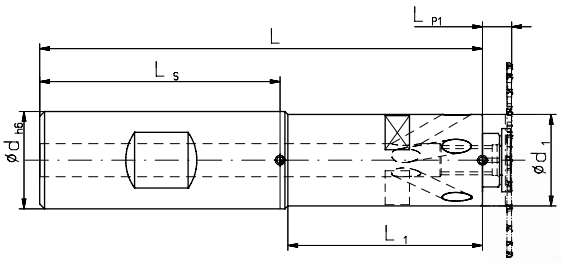
mimatic® Tool Systems

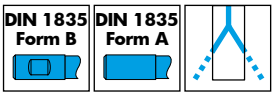
PolySAW Ø 63

Basic Holders

Cutting data see page 166





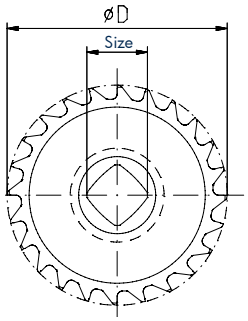


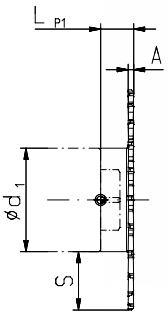
Size	Typ	dh6 mm	DIN	L mm	L1 mm	d1 mm	Complete holder: Bestell-Nr.	Spare Parts **: Screwdriver *	Spare Parts **: Size
Ø 63	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3

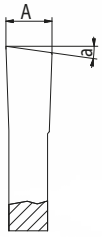
Screw torques max.
Type 16 = max. 6 Nm
Type 19 = max. 10,5 Nm

CLICK ME!

Milling Discs







Ask about our regrinding service!

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 63	19	1,0	16,5	63	6	40	164436	on request
	16	1,0	18,5	63	6	40	164418	on stock
	19	1,5	16,5	63	6	40	164437	164437
	16	1,5	18,5	63	6	40	164419	on stock
Especially for aluminium processing:								
Ø 63	16	1,0	18,5	63	6	24	179696	on stock
	16	1,5	18,5	63	6	24	179701	on stock
With 8° bevel for aluminium and steel machining								
Ø 63	16	1,5	18,5	63	6	24	204275	on stock

CLICK ME!

Milling discs with larger cutting widths see chapter "Groove milling".

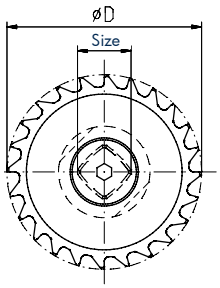
* **Screwdriver and clamping screw included in delivery**
** **More spare parts see page 153**

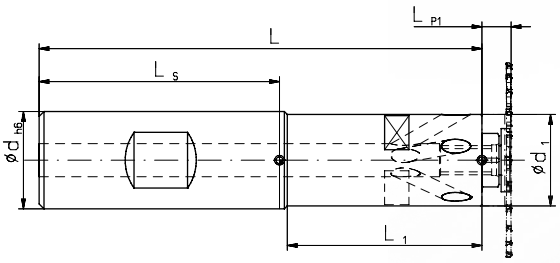
mimatic Tool Systems

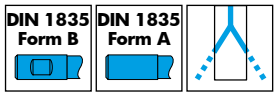
PolySAW Ø 80

Basic Holders

Cutting data see page 166





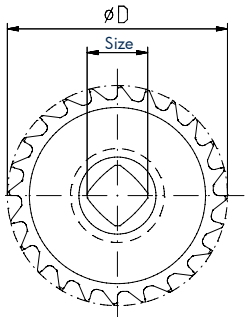


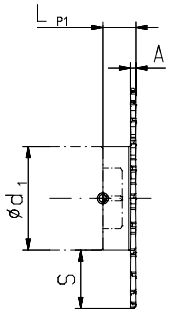
Size	Typ	dh6 mm	DIN	L mm	L1 mm	d1 mm	Complete holder: Bestell-Nr.	Spare Parts **: Screwdriver *	Spare Parts **: Size
Ø 80	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
	25	32	1835 B	127	60	38,2	163705	178297	SW 4
	25	32	1835 A	127	60	38,2	160054	178297	SW 4

Screw torques max.
Type 19 = M6 max. 10,5 Nm
Type 25 = M8 max. 24,5 Nm

CLICK ME!

Milling Discs





Ask about our regrinding service!

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 80	25	1,0	20,9	80	6	40	164438	on stock
	19	1,0	25,0	80	6	40	164424	on stock
	25	1,5	20,9	80	6	40	164439	on request
	19	1,5	25,0	80	6	40	164425	on stock
Especially for aluminium processing:								
Ø 80	19	1,0	25,0	80	6	24	179697	on stock
	19	1,5	25,0	80	6	24	179702	on stock
With 8° bevel for aluminium and steel machining								
Ø 80	19	1,5	25,0	80	6	24	204276	on stock

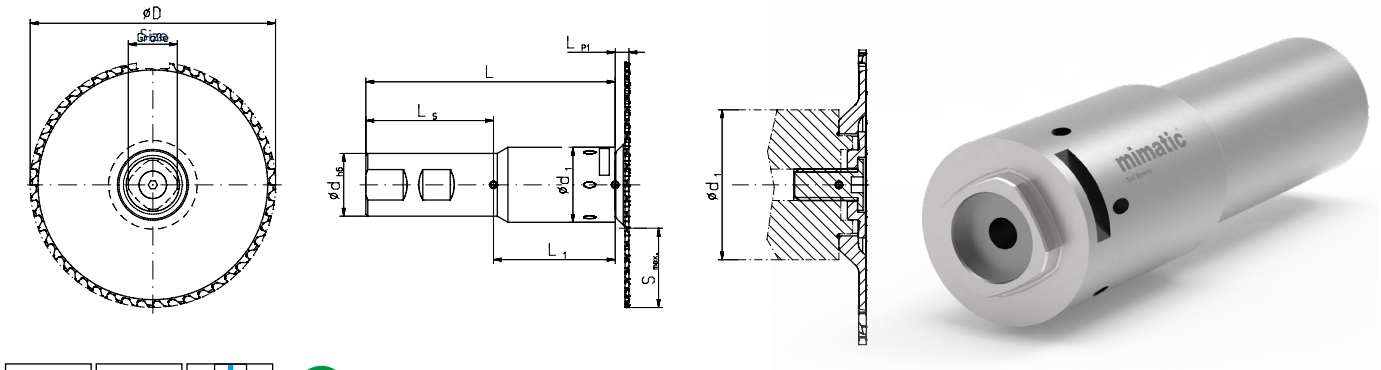
CLICK ME!

Milling discs with larger cutting widths see chapter "Groove milling".

PolySAW Ø 100+125

Basic Holders

Cutting data see page 166



DIN 1835 Form B | DIN 1835 Form A

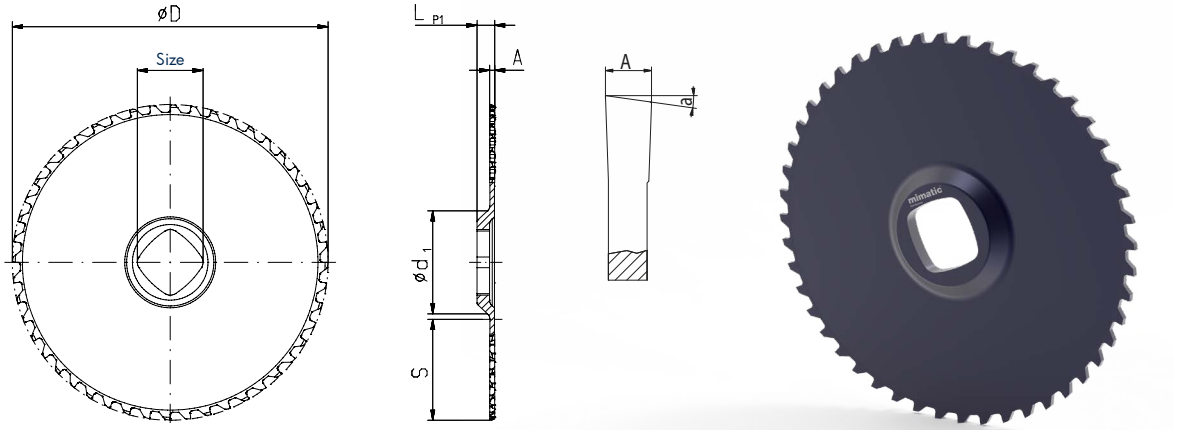
Interface 25L, optimised for large diameters!

Size	Typ	dh6 mm	DIN	L mm	L1 mm	d1 mm	Complete holder Bestell-Nr.	Spare Parts ** Screwdriver *	Size
Ø 100+125	25	32	1835 B	127	60	38,2	160870	178297	SW 4
	25	32	1835 A	127	60	38,2	160888	178297	SW 4

Screw torques max.
Type 25 = M8 max. 24,5 Nm

CLICK ME!

Milling Discs



Ask about our regrinding service!

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 100	25L	2	30	100	7	44	188390	on stock
Ø 125	25L	2	40	125	7	48	187340	on stock

CLICK ME!

As above with 8° bevel for burr-free cutting

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 100	25L	2	30	100	7	44	205802	on stock
Ø 125	25L	2	40	125	7	48	205803	on stock

CLICK ME!

Specially designed for aluminium processing

Size	Type	A mm	S max. mm	D mm	LP1 mm	Number of teeth	Order No. TINAMATIC	Deliverable
Ø 100	25L	2	30	100	7	44	206822	on stock
Ø 125	25L	2	40	125	7	48	206823	on stock

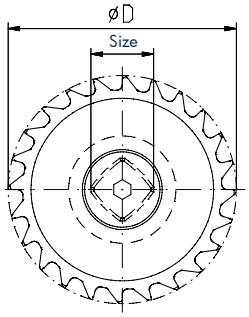
CLICK ME!

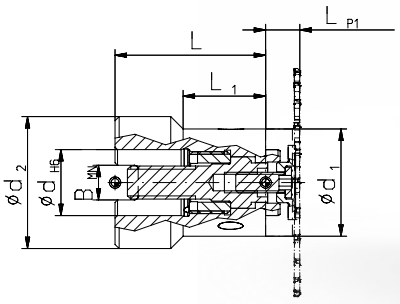
* Screwdriver and clamping screw included in delivery
** More spare parts see page 153

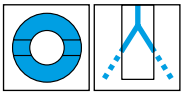
PolySAW

Basic Holders with Location Bore

Cutting data see page 166







Type	dH6 mm	BMN mm	L mm	L1 mm	d1 mm	d2 mm	Complete holder Bestell-Nr.	Accessories Key	Spare Parts ** Screwdriver *	Size
16	16	8,4	36,5	20	26	32	179727	134984	178296	SW 3
19	16	8,4	36,5	20	30	32	179728	134984	178296	SW 3
25*	16	8,4	36,5	20	29	32	156493		178297	SW 4
25*	22	10,4	50,0	20	38,2	40	179817 NEW		178297	SW 4
25L	22	10,4	50,0	20	38,2	40	206741		178297	SW 4

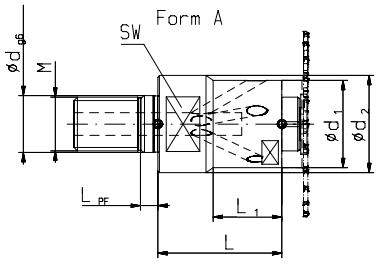
CLICK ME!

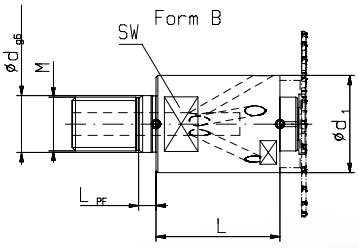
* not suitable for Ø100 and Ø125

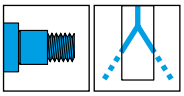
Screw torques max.
Type 16 = M5 max. 6 Nm
Type 19 = M6 max. 10,5 Nm
Type 25 = M8 max. 24,5 Nm

Basic Holders with Screw-in Thread

Cutting data see page 166







Please adapt cutting data to overhangs length

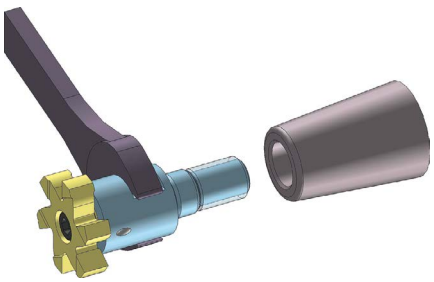
Type	Order No.	Form	d1 mm	d2 mm	L mm	L1 mm	M	dg6	LPF	Spare part No. Screw-driver *	Size
16	191777 NEW	A	26	29	36,5	20	M16	17	5,5	178296	SW3
19	191778 NEW	B	30	-	36,5	-	M16	17	5,5	178296	SW3
25*	206004	B	30	-	36,5	-	M16	17	-	178297	SW4
25L	206730	B	30	-	36,5	-	M16	17	-	178297	SW4

CLICK ME!

* not suitable for Ø100 and Ø125

Screw torque max. 3,8 Nm

Recommended tightening torque for screw-in circular milling body
End-wrench see page 163



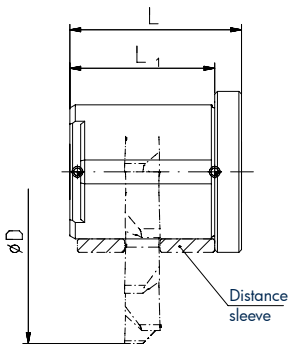
Thread size (M)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60
M16	24	80

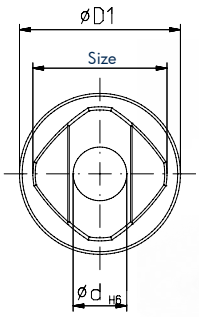
* Screwdriver and clamping screw included in delivery
** More spare parts see page 153

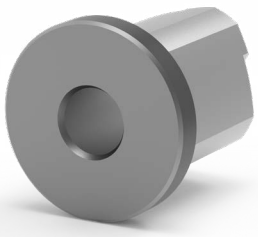
PolySAW

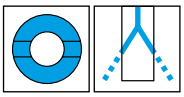
Saw Blade Arbors for mimatic Saw Blade Holders

Cutting data see page 166









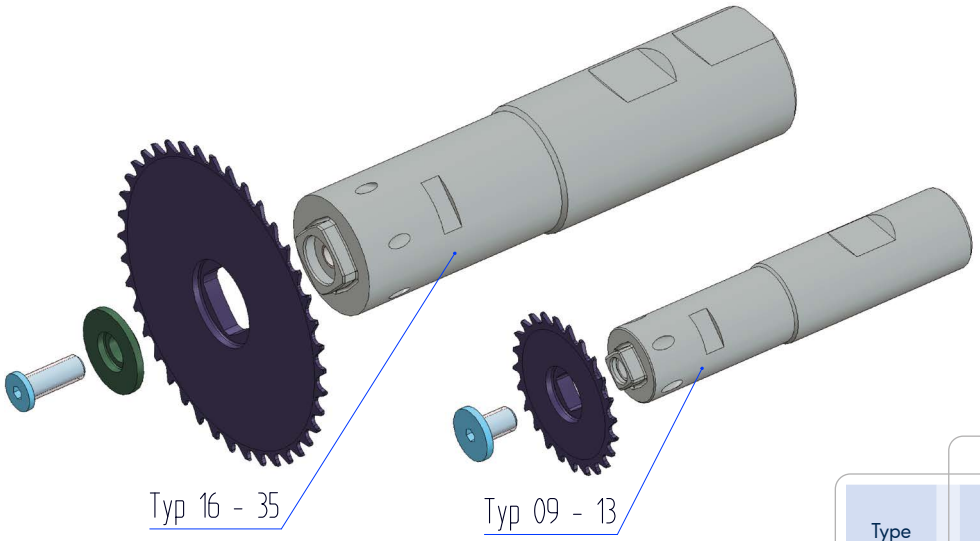
When using PolySaw ECO, as well as DeepMill ECO, the cutting depth is reduced by 6 or 7 mm

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

Screw torques max.
Type 35 = M8 max. 24,5 Nm
Type 25 = M8 max. 24,5 Nm

CLICK ME!

Assembly and Spare Parts



Type	Spare Parts Screw	Clamping disc
09	163842	–
11	163843	–
13	163844	–
16	163850	175027
19	163848	163845
25	163849	163846
35	163849	163847

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

CLICK ME!

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.

Turn Cut Milling with PolySAW

Turn Cut Milling instead of parting off: Faster parting off than anybody else!

The new process technology from mimatic is called Turn Cut Milling with PolySAW: Turn Cut Milling instead of parting off! This is the combined know how of live tools and cutting tools by mimatic.

PolySAW turn cut milling is enabled by the new QUADROGON interface developed by mimatic. Quadrogon safely and reliable transmits the high performance during Turn Cut Milling.

The high number of cutting-teeth of the PolySAW milling cutter also has a positive effect when machining asymmetric or thin components. Due to its continuous and uninterrupted tooth engagement and the resulting smooth machining process.

PolySAW milling cutters may look like conventional saws on first sight, however, mimatic has provided PolySAW with all the properties of high-value milling tools. The process reliability and performance of PolySAW is unmatched by conventional saws.

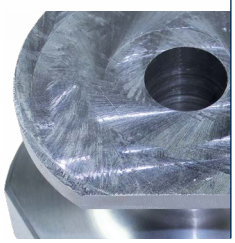
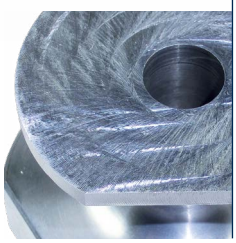
- Short process times
- Process reliability
- Material saving
- Surface quality
- Absence of burrs
- Short chips

PolySAW

Examples for high quality TurnCut Milling

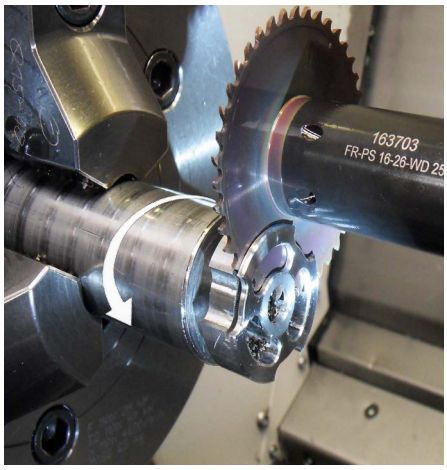
Material: steel	Material: aluminium	Material: aluminium	Material: aluminium
R_z=1,0 - 2,7	R_z=1,7 - 2,8	R_z=1,7-4,0	R_z=1,6-3,2
R_a=0,17 - 0,53	R_a=0,36 - 0,6	R_a=0,39-0,85	R_a=0,38-0,62
f_z =0,015 - 0,03 mm	f_z =0,02 - 0,03 mm	f_z =0,02 - 0,03 mm	f_z =0,02 - 0,03 mm
V_c=120-200 m/min	V_c=200-600 m/min	V_c=200-600 m/min	V_c=200-600 m/min



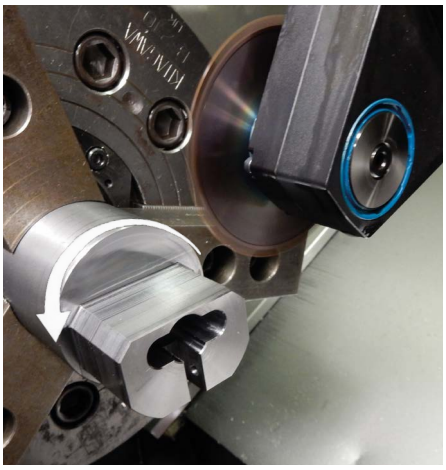



Turn Cut Milling with PolySAW

Turn Cut Milling instead of parting off:
Faster parting off than anybody else!

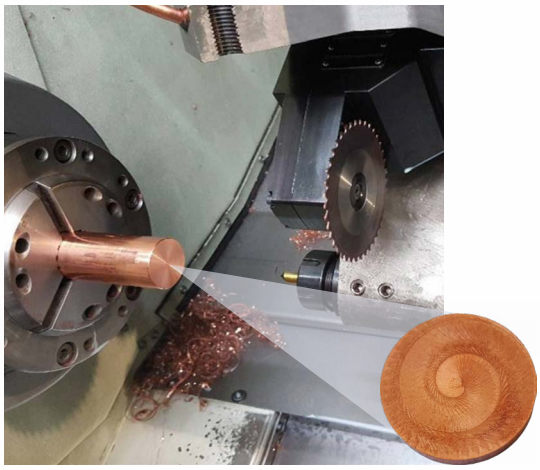


Cutting of VA structured components
Vc = 160 m/min
Fz = 0,1 mm



Turn Cut Milling : steel 16MnCrS5
Vc = 160 m/min
Fz = 0,05 mm bei 40 Zähnen

Turn Cut Milling: aluminium
Vc = 800 m/min
feed = 7m / min



Turn Cut Milling: copper ETP
Vc = 300 m/min
Fz = 0,08 mm

videos to be found on youtube:

7

mimatic®
Tool Systems

Reaming

mimatic® Tool Systems

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

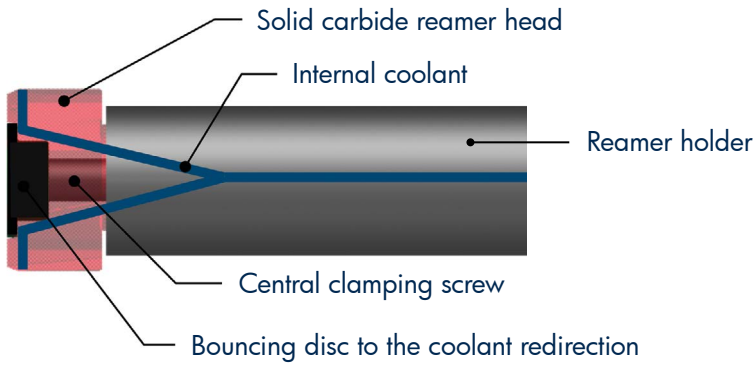
- Shank sizes 16 / 20 mm
- Lengths design short / long
- Left-hand twist for through holes
- Straight grooves for blind bores
- Diameter sizes: 12,00 - 20,20 mm
- Any gate geometries
- Any tolerances
- Cutting materials: carbide
- Coatings: TINAMATIC

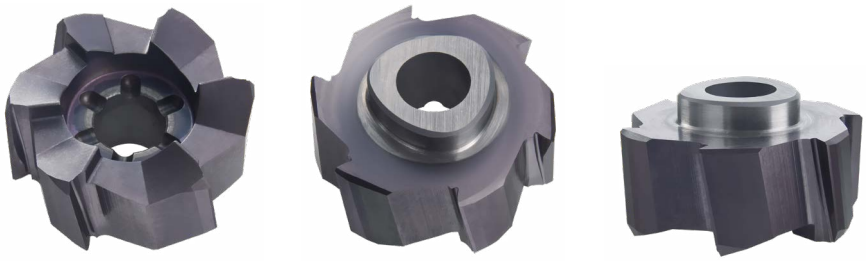
Order-Key for Your Individual Customizing of Reamers

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 RPK 44 = Right-hand twist	J = 16 M = 20 G = 12 (P12) N>20 (P25)	Specifying in mm Reamers P25	• +10 -10 • H7	see page 152 and in the table below	1 = Carbide	0 = without (blank) 1 = TINAMATIC (Thin layer)

Example:											
R	P	K	4 0	M	2 0, 1 0 0	+10 -12	L	B	G	1	1



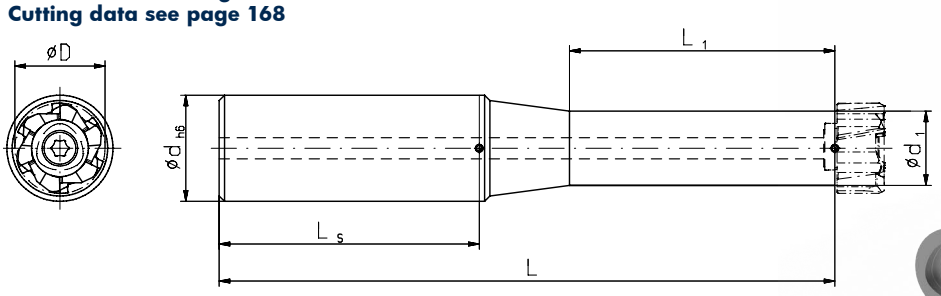


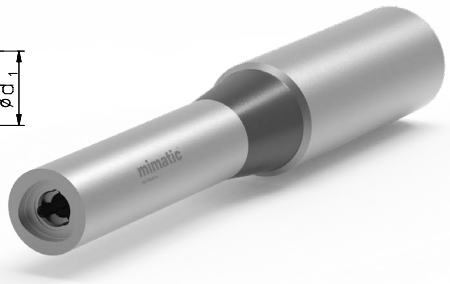
mimatic Tool Systems

PolyREAM

Reamer Holders with Polygonal Interface

- Gate Geometries Page 152
- Cutting data see page 168





Typ RPS 400 | DIN 1835 Form A

Shank size	Order No.	D min.-max.	Drilling depth	d h6 mm	d1 mm	E mm	L mm	L1 mm	Description	Shank mat.	Spare part No. T15 / T20 IP Screw-driver *	Spare part No. Screw *	Spare part No. Bouncing disc
J	169208	12,00-16,20	3 x D	16	11	9	101	38	RPS400J3D6	Steel	111671	107473	107536
J	169209	12,00-16,20	5 x D	16	11	9	131	68	RPS400J5D6	Steel	111671	107473	107536
M	169210	16,21-20,20	3 x D	20	14	9	116	50	RPS400M3D6	Steel	111594	169815	169812
M	169211	16,21-20,20	5 x D	20	14	9	166	100	RPS400M5D6	Steel	111594	169815	169812

CLICK ME!

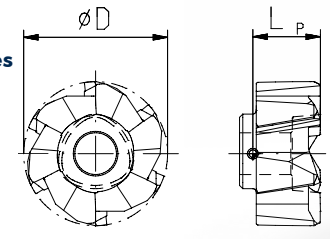
* **Screwdriver and clamping screw included in delivery**

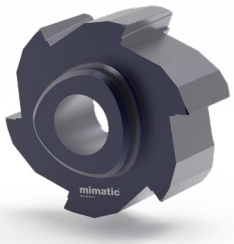
Screw torques max.

107473	T15 IP	3,8 Nm
169815	T20 IP	5,5 Nm

Reamer Heads with Polygonal Interface

- Chip grooves with left-hand twist for through holes
- For steel materials (P, M)
- Cutting data see page 168





Please generate order-key for individual customizing and intermediate sizes (see page 149)

Shank size	Type	D mm	Tolerance	LP mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 42	12,00	H7	9,4	6	LBG	RPK42J12,00H7LBG11	169490
J	RPK 42	13,00	H7	9,4	6	LBG	RPK42J13,00H7LBG11	169492
J	RPK 42	14,00	H7	9,4	6	LBG	RPK42J14,00H7LBG11	169494
J	RPK 42	15,00	H7	9,4	6	LBG	RPK42J15,00H7LBG11	169496
J	RPK 42	16,00	H7	9,4	6	LBG	RPK42J16,00H7LBG11	169498
M	RPK 42	17,00	H7	9,4	6	LBG	RPK42M17,00H7LBG11	169500
M	RPK 42	18,00	H7	9,4	6	LBG	RPK42M18,00H7LBG11	169502
M	RPK 42	19,00	H7	9,4	6	LBG	RPK42M19,00H7LBG11	169504
M	RPK 42	20,00	H7	9,4	6	LBG	RPK42M20,00H7LBG11	169506

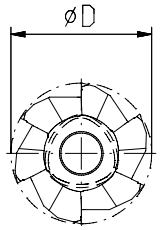
CLICK ME!

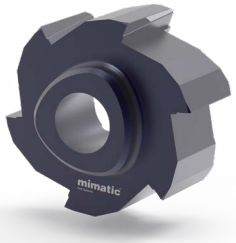
mimatic Tool Systems

PolyREAM

Reamer Heads with Polygonal Interface

- Straight chip grooves for blind bores
- For steel materials (P, M)
- Cutting data see page 168



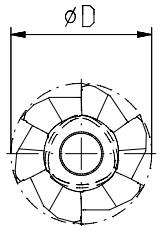


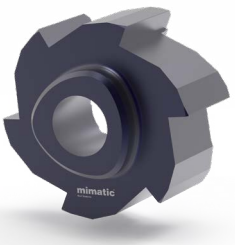
Please generate order-key for individual customizing and intermediate sizes (see page 149)

Shank size	Type	D mm	Tolerance	LP mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 40	12,00	H7	9,4	6	LBG	RPK40J12,00H7LBG11	169489
J	RPK 40	13,00	H7	9,4	6	LBG	RPK40J13,00H7LBG11	169491
J	RPK 40	14,00	H7	9,4	6	LBG	RPK40J14,00H7LBG11	169493
J	RPK 40	15,00	H7	9,4	6	LBG	RPK40J15,00H7LBG11	169495
J	RPK 40	16,00	H7	9,4	6	LBG	RPK40J16,00H7LBG11	169497
M	RPK 40	17,00	H7	9,4	6	LBG	RPK40M17,00H7LBG11	169499
M	RPK 40	18,00	H7	9,4	6	LBG	RPK40M18,00H7LBG11	169501
M	RPK 40	19,00	H7	9,4	6	LBG	RPK40M19,00H7LBG11	169503
M	RPK 40	20,00	H7	9,4	6	LBG	RPK40M20,00H7LBG11	169505

CLICK ME!

- Straight chip grooves for blind bores
- For cast iron materials (K)
- Cutting data see page 168





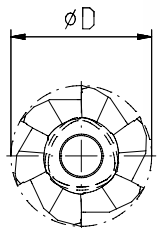
Please generate order-key for individual customizing and intermediate sizes (see page 149)

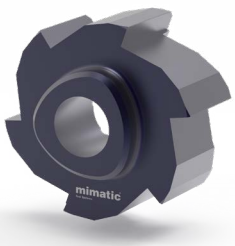
Shank size	Type	D mm	Tolerance	LP mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 40	12,00	H7	9,4	6	CND	RPK40J12,00H7CND11	169945
J	RPK 40	13,00	H7	9,4	6	CND	RPK40J13,00H7CND11	169947
J	RPK 40	14,00	H7	9,4	6	CND	RPK40J14,00H7CND11	169949
J	RPK 40	15,00	H7	9,4	6	CND	RPK40J15,00H7CND11	169951
J	RPK 40	16,00	H7	9,4	6	CND	RPK40J16,00H7CND11	169953
M	RPK 40	17,00	H7	9,4	6	CND	RPK40M17,00H7CND11	169955
M	RPK 40	18,00	H7	9,4	6	CND	RPK40M18,00H7CND11	169957
M	RPK 40	19,00	H7	9,4	6	CND	RPK40M19,00H7CND11	169959
M	RPK 40	20,00	H7	9,4	6	CND	RPK40M20,00H7CND11	169961

CLICK ME!

8

- Straight chip grooves for blind bores
- For aluminium cast alloys (N)
- Cutting data see page 168



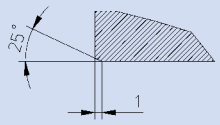
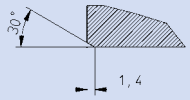
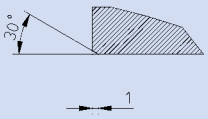
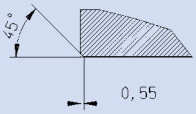
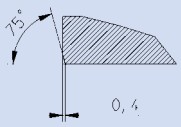
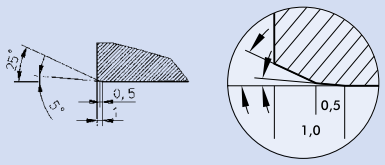
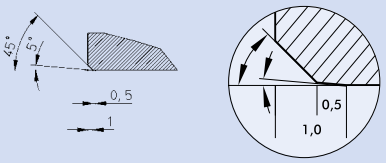
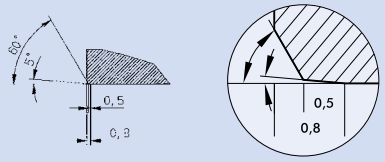


Please generate order-key for individual customizing and intermediate sizes (see page 149)

Shank size	Type	D mm	Tolerance	LP mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 40	12,00	H7	9,4	6	CNG	RPK40J12,00H7CNG11	169946
J	RPK 40	13,00	H7	9,4	6	CNG	RPK40J13,00H7CNG11	169948
J	RPK 40	14,00	H7	9,4	6	CNG	RPK40J14,00H7CNG11	169950
J	RPK 40	15,00	H7	9,4	6	CNG	RPK40J15,00H7CNG11	169952
J	RPK 40	16,00	H7	9,4	6	CNG	RPK40J16,00H7CNG11	169954
M	RPK 40	17,00	H7	9,4	6	CNG	RPK40M17,00H7CNG11	169956
M	RPK 40	18,00	H7	9,4	6	CNG	RPK40M18,00H7CNG11	169958
M	RPK 40	19,00	H7	9,4	6	CNG	RPK40M19,00H7CNG11	169960
M	RPK 40	20,00	H7	9,4	6	CNG	RPK40M20,00H7CNG11	169962

CLICK ME!

Gate Geometries

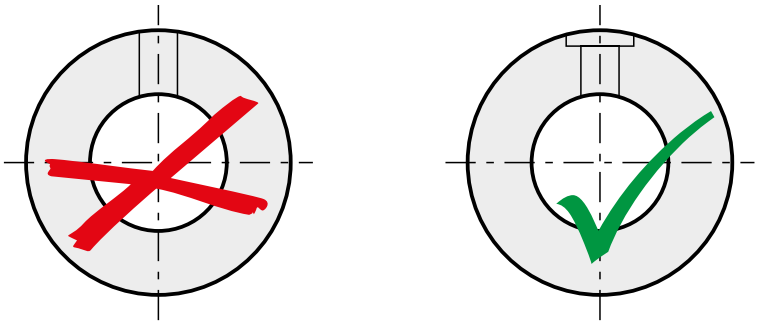
Gate geometry	Code	Chip breaker	Code	Chip angle	Code	Gate code
	L	YES	B	0°	D	LBD
		NO	N			LND
		YES	B	6°	G	LBG
		NO	N			LNG
		YES	B	12°	R	LBR
		NO	N			LNR
	E	YES	B	0°	D	EBD
		NO	N			END
		YES	B	6°	G	EBG
		NO	N			ENG
		YES	B	12°	R	EBR
		NO	N			ENR
	G	YES	B	0°	D	GBD
		NO	N			GND
		YES	B	6°	G	GBG
		NO	N			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

Accessories: Screw Driver and Wrenches

Size	Torx PLUS® driver	Size	Torx® driver	Size	Allen wrench DIN 911	Size	Open-end wrench DIN 894
T6IP	111705	T6	111674	SW2	107577	SW10	107525
T8IP	111656	T8	111544	SW2,5	107583	SW13	107526
T15IP	111671	T15	111651	SW3	107578	SW16	107579
T20IP	111594	T20	111684	SW4	107620	SW17	107575
				SW5	107584	SW19	107533
				SW6	107601	SW22	107633
				SW8	107556	SW24	107627

mimatic®
Tool Systems

Axial Grooving, adjustable

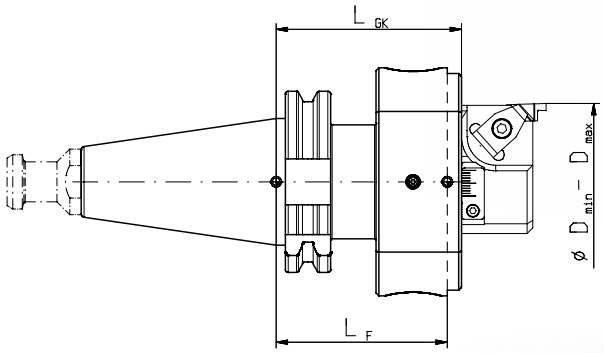
mimatic®
Tool Systems

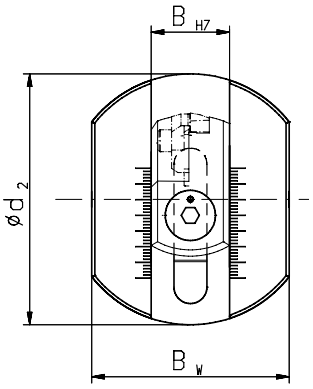
Axial Cutting Tools

- with scalable cutting diameter and fine-adjustment
- all Axial-Cutting Tools without Insert Holders

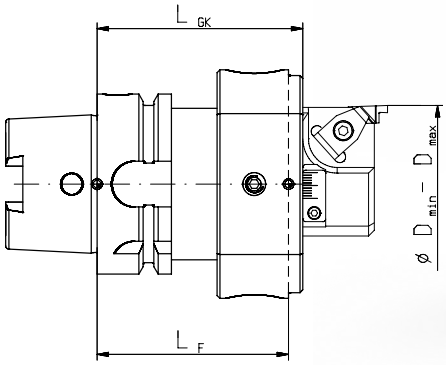
Up to diameter Ø 28 also as PolyMILL fixed size

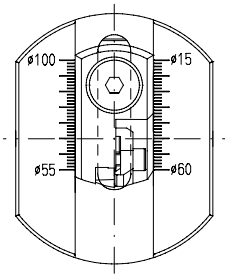
ISO 7388-1 | ISO 7388-1 (MAS-BT)





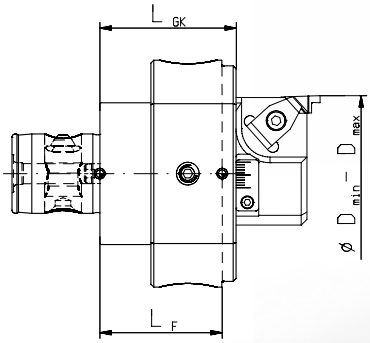
HSK-A DIN 69893



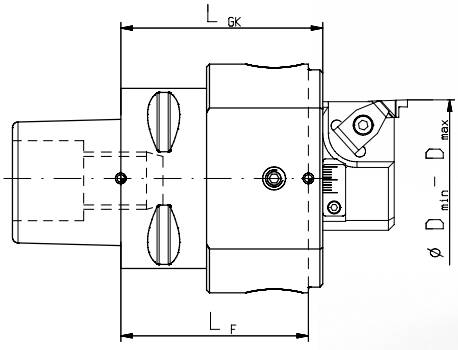


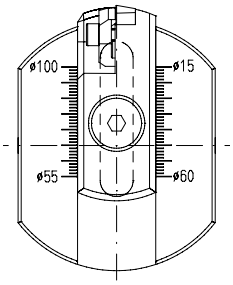
Adjustment Range
15–60 mm

Komet® ABS



ISO 26623-1 Capto





Adjustment Range
55–100 mm

Axial Cutting Tools

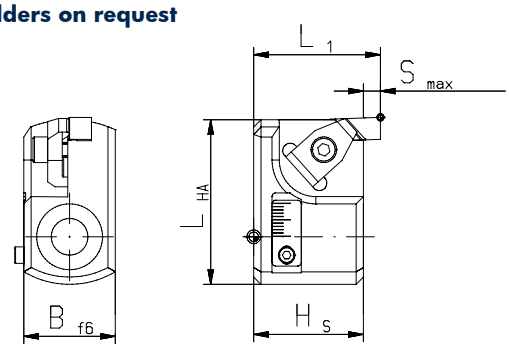
- with scalable cutting diameter and fine-adjustment
- all Axial-Cutting Tools without Insert Holders

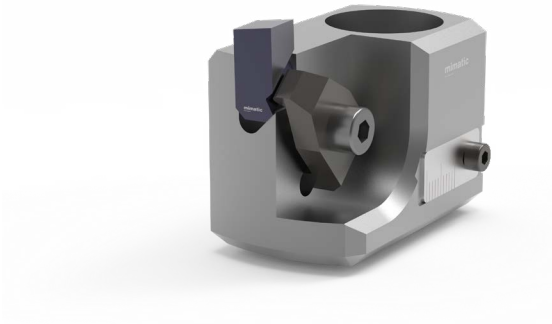
Order No.	Adjustment Range Ø mm	Shank size	LF mm	LGK mm	d2 mm	BW mm	BH7 mm	Spare part No. Fitting Screw DIN 7379	Spare part No. Size
133134	15 – 100	SK 40	60	65	80	63	25	114445	10M8x20
133151	15 – 100	SK 50	60	65	80	63	25	114445	10M8x20
133109	15 – 100	BT 40	60	65	80	63	25	114445	10M8x20
133118	15 – 100	HSK 63	72	65	80	63	25	114445	10M8x20
133096	15 – 100	ABS 50	48	43	80	63	25	114445	10M8x20
133135	15 – 100	ABS 63	50	45	80	63	25	114445	10M8x20
167985	15 – 100	C6	70,6	65,6	80	63	25	114445	10M8x20

CLICK ME!

Insert Holders

- Special-Insert holders on request

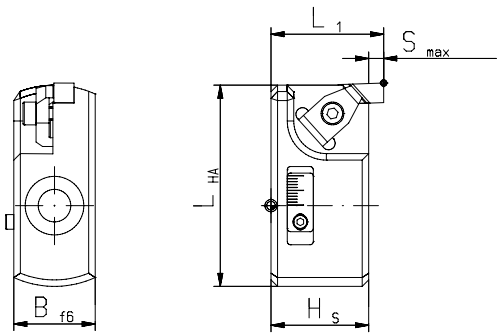


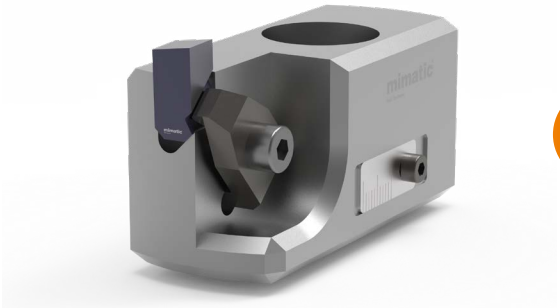


Order No.	Adjustment Range Ø mm	LHA mm	Bf6 mm	HS mm	l1 mm	Smax. mm	Spare part No. Clamping claw	Spare part No. Screw *	Spare part No. Screw-driver *
133117	15 – 60	45	25	30	34	4	107540	114688	178296

Screw torque 5 Nm

CLICK ME!





Order No.	Adjustment Range Ø mm	LHA mm	Bf6 mm	HS mm	l1 mm	Smax. mm	Spare part No. Clamping claw	Spare part No. Screw *	Spare part No. Screw-driver *
133090	55-100	62	25	30	34	4	107540	114688	178296

Screw torque 5 Nm

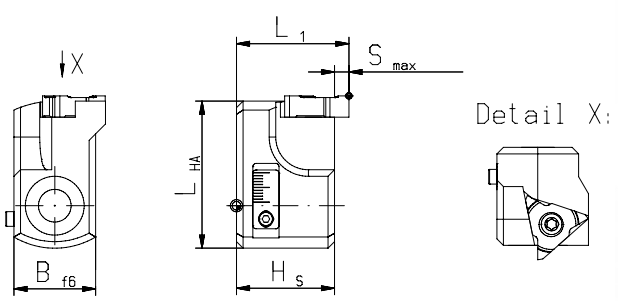
CLICK ME!

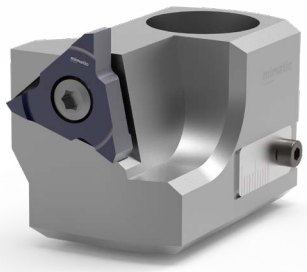
* **Screwdriver and clamping screw included in delivery**

mimatic
Tool Systems

Insert Holders

■ **Special-Insert holders on request**





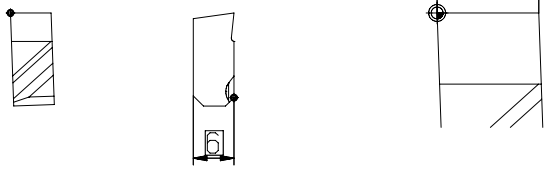
Order No.	Adjustment Range Ø mm	LHA mm	Bf6 mm	Hs mm	l1 mm	Smax. mm	Spare part No. Clamping claw	Spare part No. Screw *	Spare part No. Screw-driver *
143487	15-60 / 55-100	45	25	30	34,4	4	–	107551	111594

Screw torque 5,5 Nm

CLICK ME!

Unprofiled Carbide Inserts

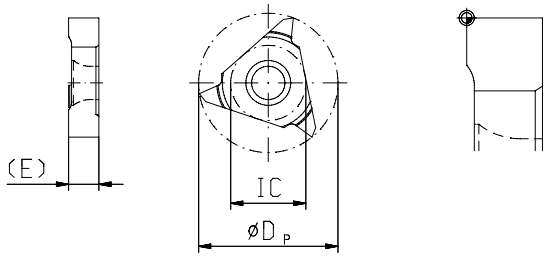
■ **Cutting data see page 171**

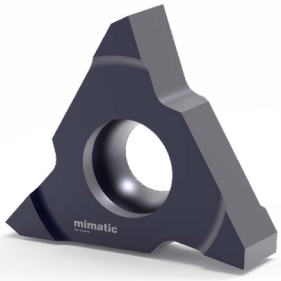


without profile

Size	E mm	Height mm	Smax. mm	FKN		
A 6R	6	6	4	142855		

CLICK ME!





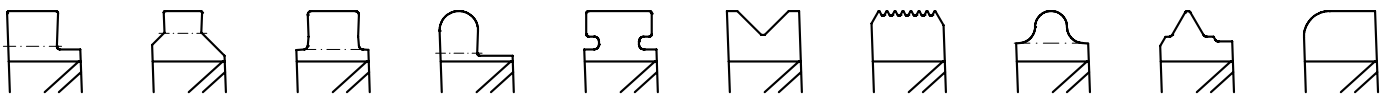
without profile

Size	E mm	Smax. mm	FKN		
01AX LI	4	4	162201		
01AX LI	5	4	162202		
01AX LI	6,5	4	162203		

CLICK ME!

* **Screwdriver and clamping screw included in delivery**

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



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

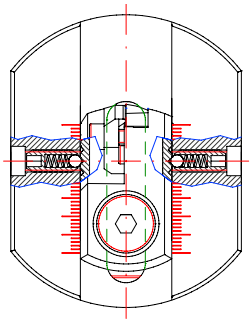
Making grooves (DIN- or special grooves) up to a
- Cutting depth of max. 4,0 mm
- Cutting width of max. 6,5 mm

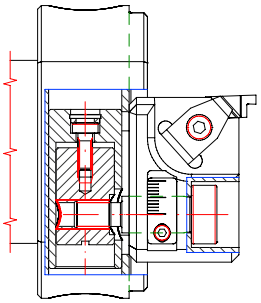
Rough Adjustment

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



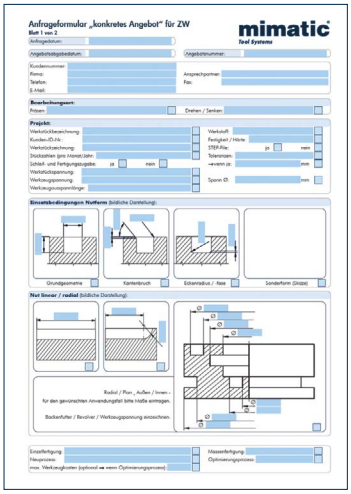


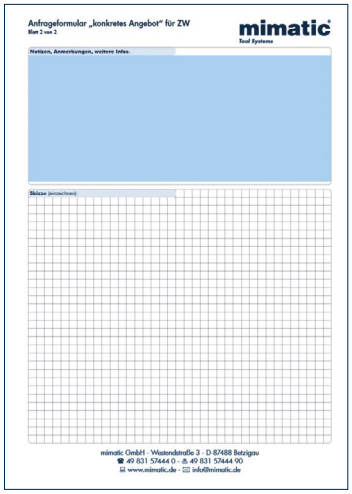
On request:
Axial grooving with PolyMILL

Request Form for Grooving

Please download our fillable PDF form for a detailed grooving request send us back via email: **info@mimatic.de**

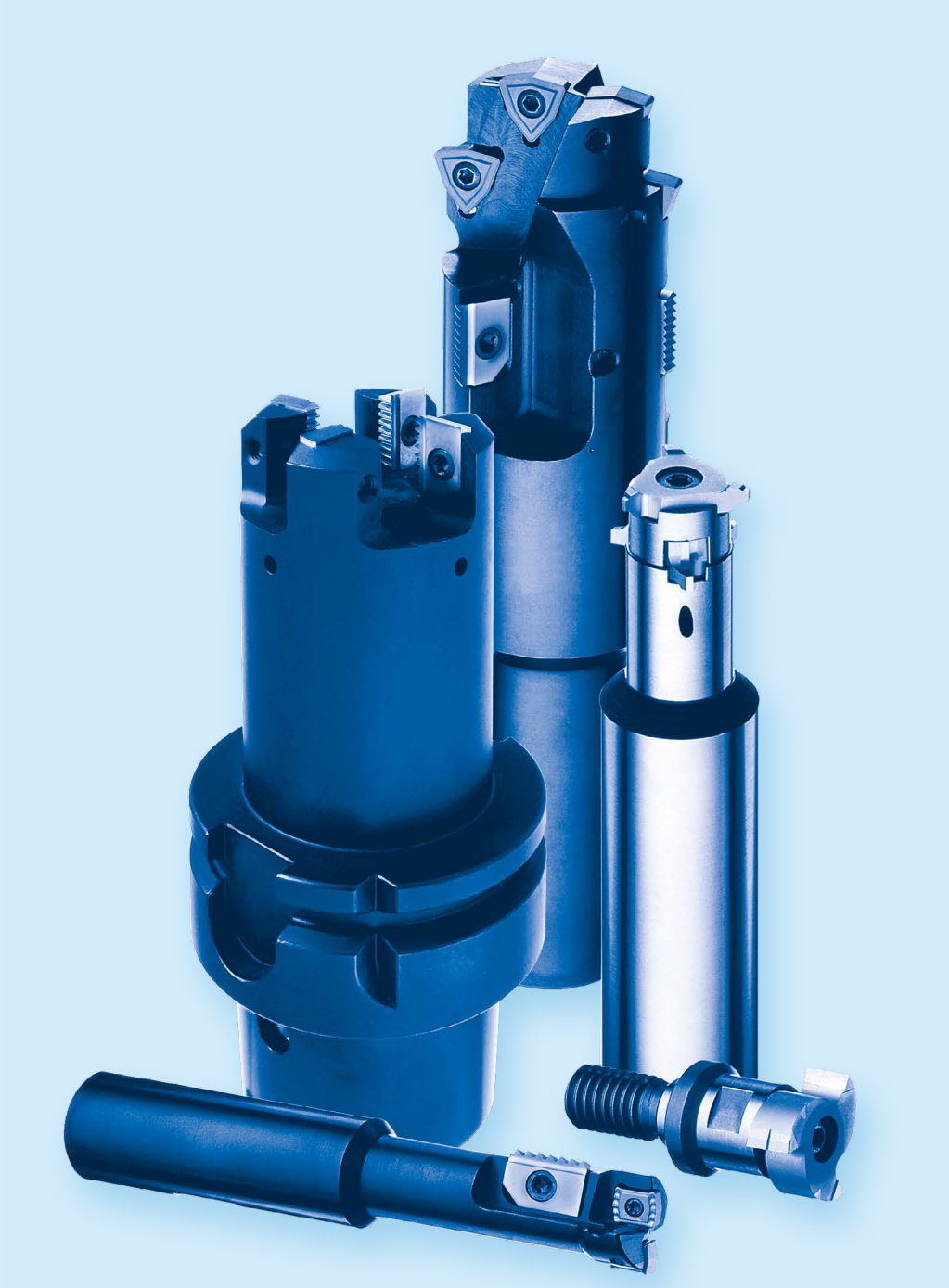
Request form:
www.mimatic.de/Nut_DE.pdf





mimatic®
Tool Systems

Special- and Combination Tools



Special Solutions

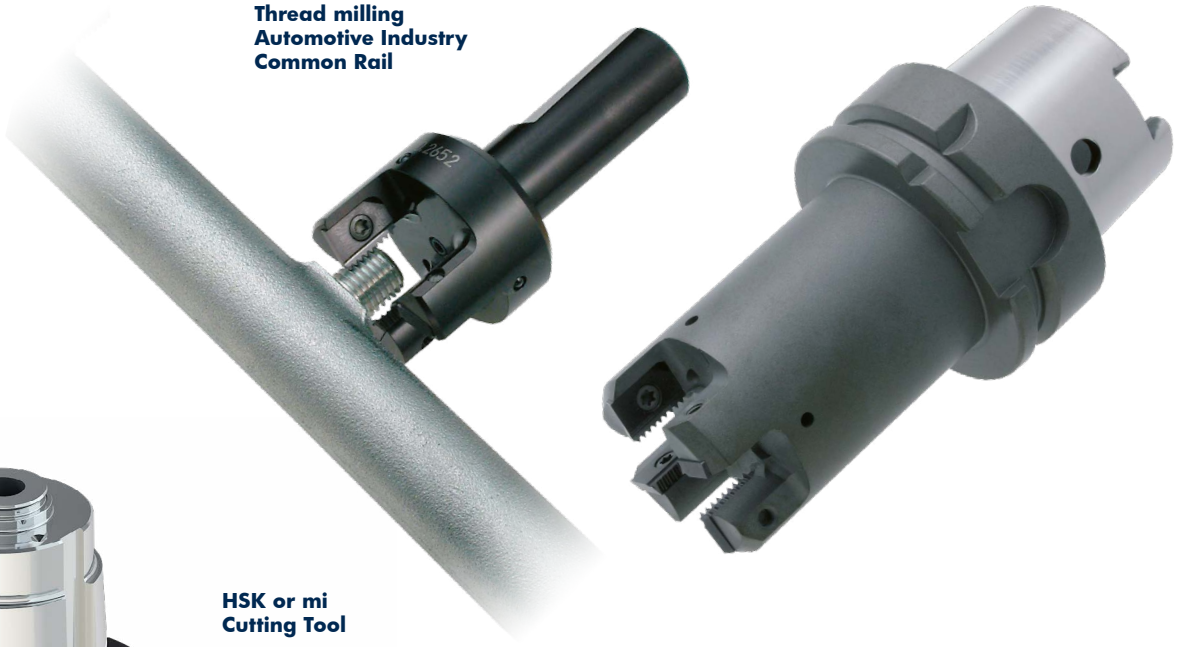
Here you see examples of our products and our expertise in the area of special cutting tools.
Do you have a special application or a production problem?

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

- jiggering
- chamfering

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

HSK or mi
Cutting Tool

- drilling
- face milling
- Solid carbide twist drill
- chamfering

HSK or mi
Milling Tool

5 different inserts for
- chamfering
- thread milling
- face milling
- counterboring

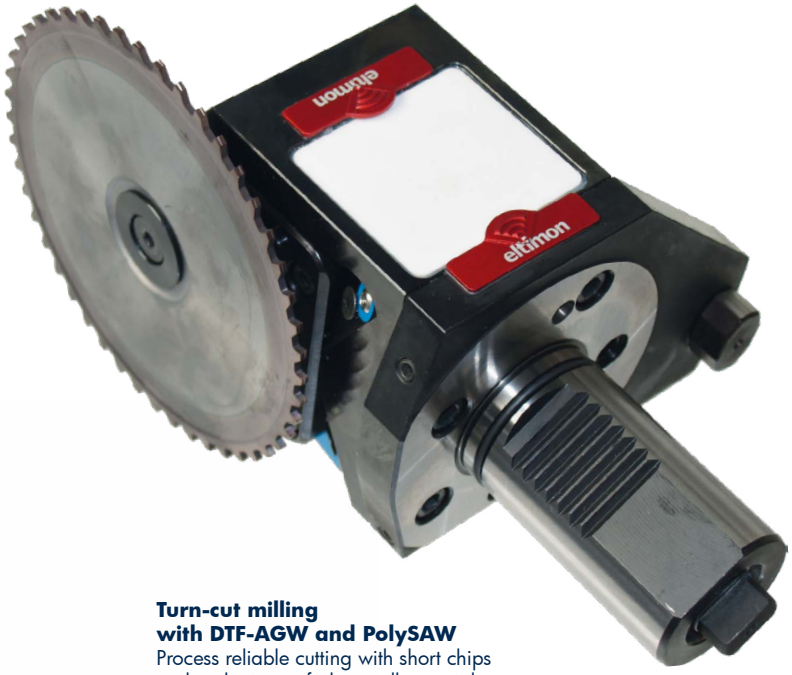
Material:
AlMgSi1 (DIN 3.2315)

HSK or mi
Milling Tool

- contour milling

Material: 16MnCrS5

Special Solutions



Turn-cut milling
with DTF-AGW and PolySAW
Process reliable cutting with short chips and cycle times of almost all materials and geometries.

Large thread milling
M330x6 with STC1
Material: S355JR

Countersinking and circular milling
of a brake body with DE inserts
Material: GGG50

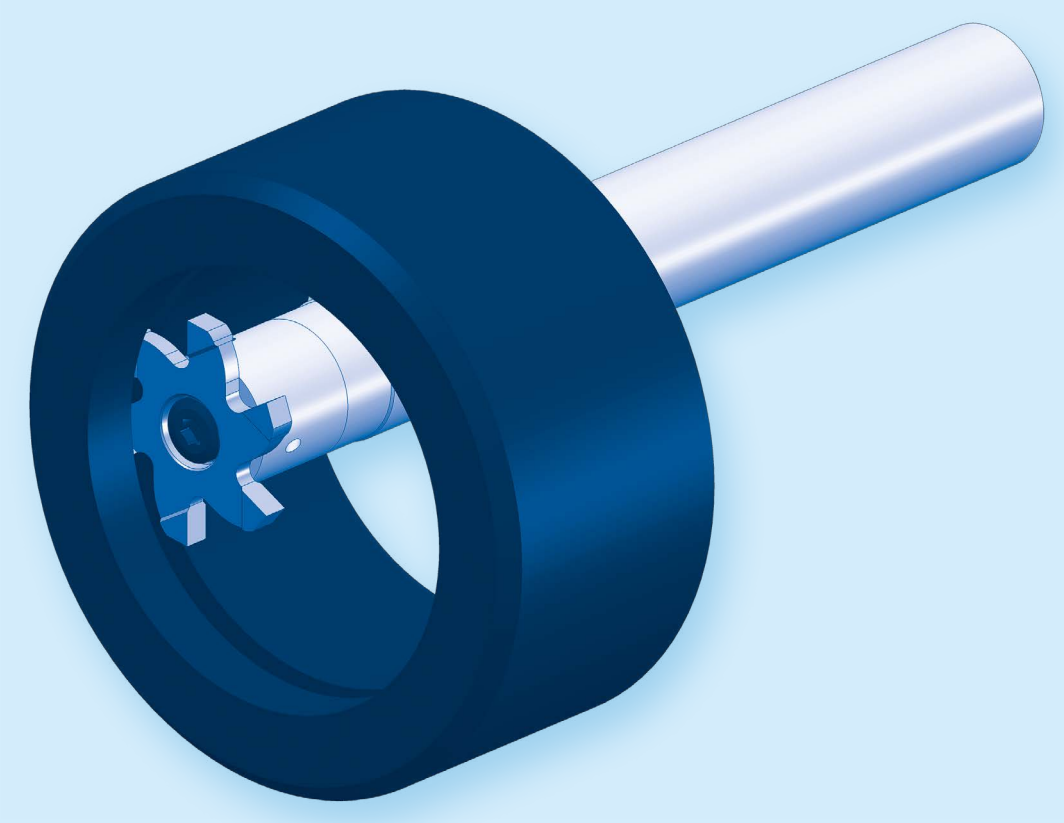
Gear milling with STC
Material: 58CrV4

Milling of hold grooves in conrods with STC

Milling of flanges of motor blocks with TriMILL

mimatic®
Tool Systems

Cutting Data and Technical Information



mimatic® Tool Systems

Cutting Data Reference Values

		Material	Strength	PolyREAM		SolidCUT			
				TINAMATIC	Measurement at Ø 0,2 mm	TINAMATIC	Ø 2,4 - 3,15	Ø 4	Ø 4,8 - 20
				Vc (m/min.)	fz mm	Vc (m/min.)	fz mm	fz mm	fz mm
P	1.1	General construction steel	< 800 N/mm²	180-200	0,20-0,25	80-250	0,03-0,04	0,03-0,06	0,05-0,15
	1.2	Free cutting steel	< 800 N/mm²	180-200	0,20-0,25	80-250	0,03-0,04	0,03-0,06	0,05-0,15
	1.3	Unalloyed cementation steel	< 800 N/mm²	180-200	0,20-0,25	80-250	0,03-0,04	0,03-0,06	0,05-0,15
	1.4	Alloyed cementation steels	< 1000 N/mm²	160-180	0,15-0,20	60-120	0,01-0,02	0,01-0,03	0,05-0,10
	1.5	Unalloyed heat-treatable steel	< 850 N/mm²	180-200	0,20-0,25	60-120	0,01-0,02	0,01-0,03	0,05-0,10
	1.6	Unalloyed heat-treatable steel	< 1000 N/mm²	160-180	0,15-0,20	60-120	0,01-0,02	0,01-0,03	0,05-0,10
	1.7	Alloyed heat-treatable steel	< 800 N/mm²	180-200	0,20-0,25	80-200	0,03-0,04	0,03-0,06	0,05-0,10
	1.8	Alloyed heat-treatable steel	< 1300 N/mm²	140-160	0,12-0,18	40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.9	Cast Steel	< 850 N/mm²	180-200	0,20-0,25	60-120	0,01-0,02	0,04-0,07	0,05-0,10
	1.10	Nitriding steel	< 1000 N/mm²	160-180	0,15-0,20	60-120	0,01-0,02	0,04-0,07	0,05-0,10
	1.11	Nitriding steel	< 1200 N/mm²	150-170	0,15-0,20	40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.12	Ball bearing steel	< 1200 N/mm²	150-170	0,15-0,20	40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.13	Spring steel	< 1200 N/mm²	150-170	0,15-0,20	40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.14	Rapid steel	< 1300 N/mm²	140-160	0,12-0,18	40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.15	Cold work tool steel	< 1300 N/mm²	140-160	0,12-0,18	40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.16	Hot work tool steel	< 1300 N/mm²	140-160	0,12-0,18	40-100	0,01-0,02	0,03-0,05	0,04-0,06
M	2.1	Stainless steel, sulphured	< 850 N/mm²	180-200	0,20-0,25	50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.2	Stainless steel, ferritic	< 750 N/mm²	180-200	0,20-0,25	50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.3	Stainless steel, martensitic	< 900 N/mm²	160-180	0,15-0,20	50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.4	Stainless steel, ferritic/martensitic	<1100 N/mm²	150-170	0,15-0,20	50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.5	Stainless steel, austenitic/ferritic	< 850 N/mm²	180-200	0,20-0,25	50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.6	Stainless steel, austenitic	< 750 N/mm²	180-200	0,20-0,25	50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.7	Heat-resisting steel	< 1100 N/mm²	150-170	0,15-0,20	50-150	0,03-0,04	0,03-0,04	0,05-0,12
K	3.1	Flake-graphite cast iron	100-350 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.2	Flake-graphite cast iron	300-1000 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.3	Spheroidal graphite cast iron	300-500 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.4	Spheroidal graphite cast iron	550-800 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.5	Whiteheart malleable cast iron	350-450 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.6	Whiteheart malleable cast iron	500-650 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.7	Blackheart malleable cast iron	350-450 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.8	Blackheart malleable cast iron	500-700 N/mm²	200-220	0,20-0,25	100-200	0,03-0,07	0,03-0,07	0,04-0,08
N	4.1	Aluminium (unalloyed, low alloyed)	< 350 N/mm²	350-400	0,20-0,25	250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.2	Aluminium alloys < 0,5% Si	< 500 N/mm²	300-400	0,20-0,25	250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.3	Aluminium alloys 0,5-10% Si	< 400 N/mm²			250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.4	Aluminium alloys 10-15% Si	< 400 N/mm²			250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.5	Aluminium alloys > 15% Si	< 400 N/mm²			180-250	0,05-0,07	0,05-0,07	0,06-0,12
	4.6	Cooper (unalloyed, low alloyed)	< 350 N/mm²	350-400	0,20-0,25	250-300	0,05-0,07	0,05-0,07	0,06-0,08
	4.7	Copper wrought alloys	< 700 N/mm²						
	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/mm²	200-300	0,20,0,25	250-300	0,05-0,07	0,05-0,07	0,06-0,08
	4.12	Brass, long-chipping	< 600 N/mm²						
	4.13	Thermoplastic				350-450	0,08-0,1	0,08-0,1	0,1-0,12
	4.14	Thermosetting plastic				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/mm²						
	4.17	Graphite							
	4.18	Wolfram and wolfram alloys							
	4.19	Molybdenum and molybdenum alloys							
S	5.1	Pure nickel							
	5.2	Nickel alloys		180-200	0,20-0,25				
	5.3	Nickel alloys	< 850 N/mm²	180-200	0,20-0,25	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/mm²						
	5.6	Nickel- and cobalt alloys	< 1300 N/mm²						
	5.7	High temperature alloys	< 1300 N/mm²						
	5.8	Nickel-cobalt-(chrome-) alloys	< 1400 N/mm²						
	5.9	Pure Titanium	< 900 N/mm²						
	5.10	Titanium alloys	< 700 N/mm²	140-160	0,15-0,20				
	5.11	Titanium alloys	< 1200 N/mm²	120-140	0,12-0,18	50-80	0,01-0,03	0,01-0,03	0,01-0,03
H	6.1	Hardened steel	< 45 HRc	80-100	0,04-0,06	40-60		0,03-0,05	0,03-0,05
	6.2		46-55 HRc	70-90	0,04-0,06	40-50		0,03-0,05	0,03-0,05
	6.3		56-60 HRc	60-80	0,03-0,05	30-40		0,02-0,04	0,02-0,04
	6.4		61-65 HRc	50-70	0,03-0,05				
	6.5		65-70 HRc	40-60	0,02-0,04				

*** 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	
	TINAMATIC	12, 14,5, 15, 17, 20, 25	21, 26	TINAMATIC		TINAMATIC	
	Vc (m/min.)	fz mm	fz mm	Vc (m/min.)	fz mm	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	130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	120-180	0,05-0,12
3.2	130-200	0,1-0,3	0,05-0,3	120	0,05-0,25	120-180	0,05-0,12
3.3	130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	120-180	0,05-0,12
3.4	130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	120-150	0,05-0,12
3.5	130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	120-180	0,05-0,12
3.6	130-200	0,1-0,3	0,05-0,3	120	0,05-0,25	120-180	0,05-0,12
3.7	130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	120-180	0,05-0,12
3.8	130-200	0,1-0,3	0,05-0,3	120	0,05-0,25	120-180	0,05-0,12
4.1	400-600	0,1-0,3	0,05-0,3	160-400	0,05-0,12		0,05-0,25
4.2	400-600	0,1-0,3	0,05-0,3	160-400	0,05-0,12		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							

mimatic® Tool Systems

Cutting Data Reference Values

		Material	Strength	STC		PolySAW / DeepMILL			
				TINAMA-TIC	STC-1	TINAMA-TIC	0,3 x S max.	0,6 x S max.	S max.
				Vc (m/min.)	fz mm	Vc (m/min.)	fz mm	fz mm	fz mm
P	1.1	General construction steel	< 800 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	1.2	Free cutting steel	< 800 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	1.3	Unalloyed cementation steel	< 800 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	1.4	Alloyed cementation steels	< 1000 N/mm²	100-120	0,05-0,2	100-120	0,03-0,05	0,02-0,04	0,015-0,03
	1.5	Unalloyed heat-treatable steel	< 850 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	1.6	Unalloyed heat-treatable steel	< 1000 N/mm²	100-120	0,05-0,2	100-120	0,03-0,05	0,02-0,04	0,015-0,03
	1.7	Alloyed heat-treatable steel	< 800 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	1.8	Alloyed heat-treatable steel	< 1300 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	1.9	Cast Steel	< 850 N/mm²	100-120	0,05-0,2	100-120	0,03-0,05	0,02-0,04	0,015-0,03
	1.10	Nitriding steel	< 1000 N/mm²	100-120	0,05-0,2	100-120	0,03-0,05	0,02-0,04	0,015-0,03
	1.11	Nitriding steel	< 1200 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	1.12	Ball bearing steel	< 1200 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	1.13	Spring steel	< 1200 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	1.14	Rapid steel	< 1300 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	1.15	Cold work tool steel	< 1300 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	1.16	Hot work tool steel	< 1300 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
M	2.1	Stainless steel, sulphured	< 850 N/mm²	120-150	0,05-0,2	120-150	0,03-0,05	0,02-0,04	0,015-0,03
	2.2	Stainless steel, ferritic	< 750 N/mm²	120-150	0,05-0,2	120-150	0,03-0,05	0,02-0,04	0,015-0,03
	2.3	Stainless steel, martensitic	< 900 N/mm²	100-120	0,05-0,2	100-120	0,03-0,05	0,02-0,04	0,015-0,03
	2.4	Stainless steel, ferritic/martensitic	<1100 N/mm²	100-120	0,05-0,2	100-120	0,03-0,05	0,02-0,04	0,015-0,03
	2.5	Stainless steel, austenitic/ferritic	< 850 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	2.6	Stainless steel, austenitic	< 750 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	2.7	Heat-resisting steel	< 1100 N/mm²	80-100	0,05-0,2	80-100	0,03-0,05	0,02-0,04	0,015-0,03
K	3.1	Flake-graphite cast iron	100-350 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	3.2	Flake-graphite cast iron	300-1000 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	3.3	Spheroidal graphite cast iron	300-500 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	3.4	Spheroidal graphite cast iron	550-800 N/mm²	120-150	0,05-0,2	120-150	0,03-0,05	0,02-0,04	0,015-0,03
	3.5	Whiteheart malleable cast iron	350-450 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	3.6	Whiteheart malleable cast iron	500-650 N/mm²	120-180	0,05-0,5	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	3.7	Blackheart malleable cast iron	350-450 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
	3.8	Blackheart malleable cast iron	500-700 N/mm²	120-180	0,05-0,2	120-180	0,03-0,05	0,02-0,04	0,015-0,03
N	4.1	Aluminium (unalloyed, low alloyed)	< 350 N/mm²	160-400	0,05-0,2	160-400	0,03-0,05	0,02-0,04	0,015-0,03
	4.2	Aluminium alloys < 0,5% Si	< 500 N/mm²	160-400	0,05-0,2	160-400	0,03-0,05	0,02-0,04	0,015-0,03
	4.3	Aluminium alloys 0,5-10% Si	< 400 N/mm²						
	4.4	Aluminium alloys 10-15% Si	< 400 N/mm²						
	4.5	Aluminium alloys > 15% Si	< 400 N/mm²						
	4.6	Cooper (unalloyed, low alloyed)	< 350 N/mm²	300-500	0,1-0,25	300-500	0,03-0,05	0,02-0,04	0,015-0,03
	4.7	Copper wrought alloys	< 700 N/mm²						
	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/mm²	200-300	0,1-0,25	200-300	0,03-0,05	0,02-0,04	0,015-0,03
	4.12	Brass, long-chipping	< 600 N/mm²						
	4.13	Thermoplastic		300-500	0,1-0,25	300-500	0,03-0,05	0,02-0,04	0,015-0,03
	4.14	Thermosetting plastic		300-500	0,1-0,25	300-500	0,03-0,05	0,02-0,04	0,015-0,03
	4.15	Fibre-reinforced plastics							
	4.16	Magnesium and magnesium alloys	< 850 N/mm²						
	4.17	Graphite		300-500	0,1-0,25	300-500	0,03-0,05	0,02-0,04	0,015-0,03
	4.18	Wolfram and wolfram alloys							
	4.19	Molybdenum and molybdenum alloys							
S	5.1	Pure nickel							
	5.2	Nickel alloys		80-120	0,05-0,2	80-120	0,03-0,05	0,02-0,04	0,015-0,03
	5.3	Nickel alloys	< 850 N/mm²	80-120	0,05-0,2	80-120	0,03-0,05	0,02-0,04	0,015-0,03
	5.4	Nickel-chrome alloys							
	5.5	Nickel- and cobalt alloys	< 1300 N/mm²						
	5.6	Nickel- and cobalt alloys	< 1300 N/mm²						
	5.7	High temperature alloys	< 1300 N/mm²						
	5.8	Nickel-cobalt-(chrome-) alloys	< 1400 N/mm²						
	5.9	Pure Titanium	< 900 N/mm²						
	5.10	Titanium alloys	< 700 N/mm²	70-100	0,01-0,08	70-100	0,03-0,05	0,02-0,04	0,015-0,03
	5.11	Titanium alloys	< 1200 N/mm²	60-90	0,01-0,08	60-90	0,03-0,05	0,02-0,04	0,015-0,03
H	6.1	Hardened steel	< 45 HRc	80-100	0,03-0,1	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	6.2		46-55 HRc	80-100	0,03-0,1	80-100	0,03-0,05	0,02-0,04	0,015-0,03
	6.3		56-60 HRc	40-50	0,01-0,05	40-50	0,03-0,05	0,02-0,04	0,015-0,03
	6.4		61-65 HRc	30-40	0,01-0,04	30-40	0,03-0,05	0,02-0,04	0,015-0,03
	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%**

	Axial Cutting (adjustable)			CT-Counterboring					TrioCUT Drill Milling	
	FKN	TINAMATIC		7xD Carbide shaft	6xD Steel shaft	3xD Carbide shaft	3xD Steel shaft		TINAMATIC	
	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		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4
1.2		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4
1.3		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4
1.4		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-220	0,2-0,4
1.5		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4
1.6		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-220	0,2-0,4
1.7		100-140	0,05-0,12	100-140	50-60	150-250	150-250	0,1	180-260	0,2-0,4
1.8		60-110	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
1.9		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1	180-260	0,2-0,4
1.10		60-110	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
1.11		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
1.12		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
1.13		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
1.14		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-120	0,15-0,3
1.15		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
1.16		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3
2.1		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1		
2.2		120-150	0,05-0,12	100-140	50-60	150-250	150-250	0,1		
2.3		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1	130-180	0,2-0,4
2.4		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1		
2.5		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1		
2.6		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	40-60	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	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	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4
3.4	30-40	50-60	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4
3.5	40-60	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	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4
3.7	40-60	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	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4
4.1	150-200	200-450	0,05-0,12	100-140	50-60	150-280	150-200	0,1	400-600	0,2-0,4
4.2	150-200	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	100-140	100-140	0,05-0,12	100-140	50-60	150-280	150-200	0,1		
4.7	100-140	100-140	0,05-0,12	100-140	50-60	150-280	150-200	0,1		
4.8	100-140	100-140	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										

mimatic® Tool Systems

Material Examples
Steel

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm²	Hardness HB	AISI / SAE / ASTM
Unalloyed steel ≤ 800 N/mm²	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/mm²	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/mm²	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	

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Material Examples
Steel

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm²	Hardness HB	AISI / SAE / ASTM
Unalloyed and alloyed steel ≤ 1200 N/mm²	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/mm²	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	
		GX20Cr 14	1.4027	450 - 1100	130 - 320	
		GX5CrNI 19-10	1.4308	450 - 1100	130 - 320	CF-8
		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

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Material Examples
Steel

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm²	Hardness HB	AISI / SAE / ASTM
Stainless steel (V2A)	standard alloyed	X15Cr 13	1.4024	450 - 1100	130 - 320	
		X2CrNi 18-9	1.4306	450 - 1100	130 - 320	304L
		X20Cr 13	1.4021	450 - 1100	130 - 320	
		X17CrNi 16-2	1.4057	450 - 1100	130 - 320	431
		X22CrNi 17	1.4057	450 - 1100	130 - 320	431
		X3CrNiN 17-8	1.4319	450 - 1100	130 - 320	302
		X30Cr 13	1.4028	450 - 1100	130 - 320	420F
		X39Cr 13	1.4031	450 - 1100	130 - 320	
		X46Cr13	1.4034	450 - 1100	130 - 320	
		X5CrNi 13-4	1.4313	450 - 1100	130 - 320	CA6-NM
		X5CrNi 18-12	1.4303	450 - 1100	130 - 320	305
		X5CrNi 18 10	1.4301	450 - 1100	130 - 320	304
		X6CrAl 13	1.4002	450 - 1100	130 - 320	405
		X6CrMo 17-1	1.4113	450 - 1100	130 - 320	434
		X6 Cr 13	1.4000	450 - 1100	130 - 320	403
		X6Cr 17	1.4016	450 - 1100	130 - 320	430
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	
		X1NiCrMoCuN 25-20-5	1.4539	450 - 1100	130 - 320	UNSN08904
		X6CrNiTi 18-10	1.4541	450 - 1100	130 - 320	321
		X2CrMoTi 18-2	1.4521	450 - 1100	130 - 320	443
		X2CrNiMo 17 13 2	1.4404	450 - 1100	130 - 320	316L
		X2CrNiMo 18 16 4	1.4438	450 - 1100	130 - 320	317L
		X2CrNiMoN 17 12 2	1.4406	450 - 1100	130 - 320	316LN
		X2CrNiMo 17-13-2	1.4429	450 - 1100	130 - 320	
		X2CrNiMoN 22-5-3	1.4462	450 - 1100	130 - 320	S31803
		X4CrNiMoN 27-5-2	1.4460	450 - 1100	130 - 320	329
		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	
		X5CrNiNb 18-10	1.4546	450 - 1100	130 - 320	348
		X6CrNb 17	1.4511	450 - 1100	130 - 320	
		X6CrNiMoTi 17-12-2	1.4571	450 - 1100	130 - 320	316Ti
		X6CrNiNb 18-10	1.4550	450 - 1100	130 - 320	347
		X6CrTi 12	1.4512	450 - 1100	130 - 320	409
		X6CrTi 17	1.4510	450 - 1100	130 - 320	439
	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
		S6-5-2	1.3343			M2
		S6-5-2-5	1.3243			
		S7-4-2-5	1.3246			M41
		SC6-5-2	1.3342			M3

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Material Examples
Cast Iron, Nonferrous Metals

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm²	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/mm²	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	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	
	Bronze hard	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

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Material Examples Nonferrous Metals

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm²	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				

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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)

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

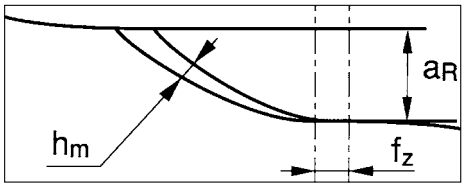
Plunge in feed „Plunge in the arc“

$$v_f = v_{f3}$$

Calculation of the middle chip thickness

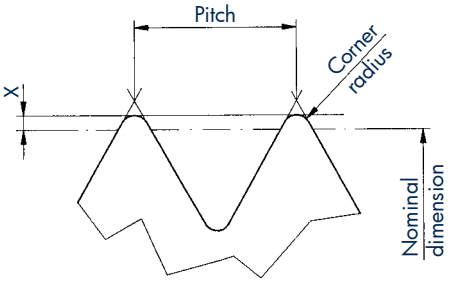
$$h_m = \frac{f_z}{\sqrt{\frac{d}{a_r}}}$$

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



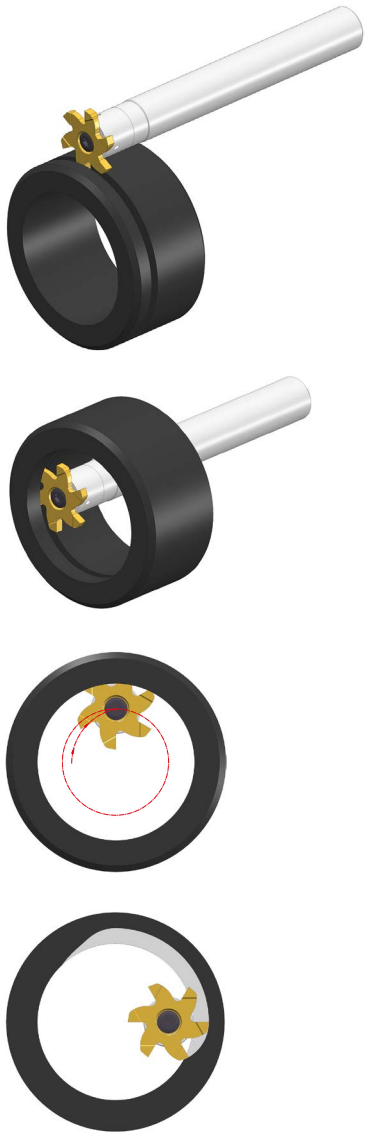
Middle chip thickness
$h_m \approx 0{,}05$ mm/rev.

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)	Middle chip thickness



Note

Internal threads are programmed to the nominal dimension.
In order to achieve the exact thread size desired, there is a correction value for any given pitch. This correction value must be deducted from the radius of the cutter when programming.

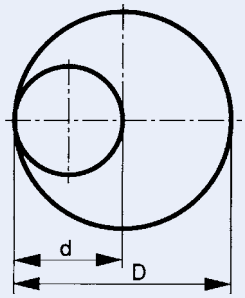


Correction Values for Internal Thread Milling

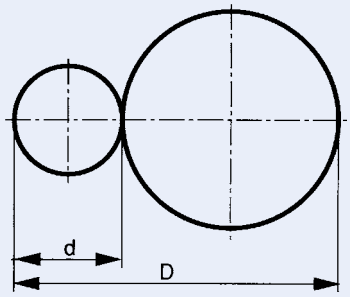
Pitch	Correction Value X
0,50	0,017
0,75	0,031
0,80	0,035
1,00	0,036
1,25	0,045
1,50	0,052
1,75	0,059
2,00	0,076
2,50	0,091
3,00	0,104
3,50	0,129
4,00	0,143
4,50	0,166
5,00	0,181
5,50	0,205
6,00	0,219

Information about Circular Milling

Internal milling



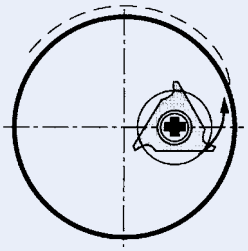
External milling



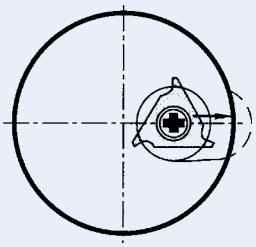
The best relation between bore diameter and cutter diameter is 2:1 due to smaller angle of contact, which results in a smooth machining.

Synchronous milling is recommended.

Plunge in with a circle

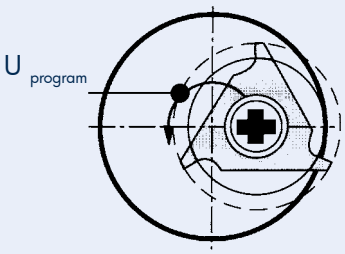


Straight plunge in

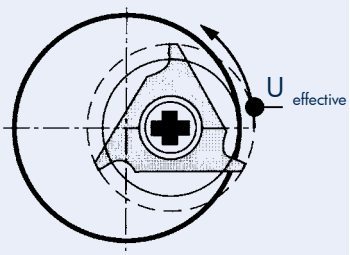


If possible, always plunge in with a circle. If plunging in straight, only use 1/3 of the feed. After having reached the plunge depth, move with full speed.

Programmed feed regarding to cutter center



Effective feed regarding to cutter O.D.

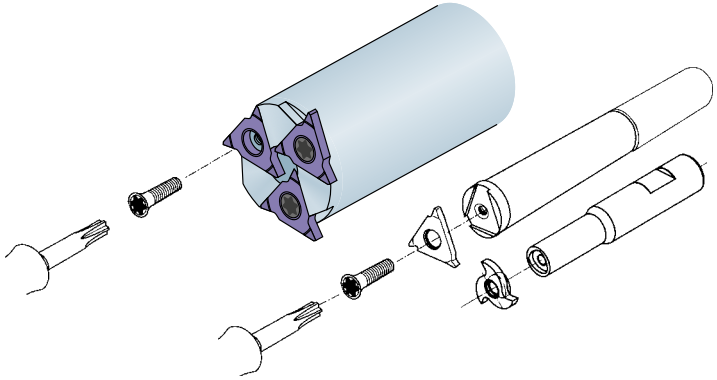


Always check the real feed speed at cutter O.D.

Assembling Instructions

Changing Inserts

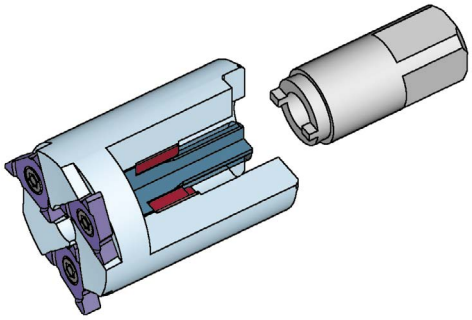
Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert.
Please use the appropriate TIP hex key for the tighening of the inserts.



Changing Clamping Screws

Only for circular milling cutter no.

- 123464
- 135203
- 179727
- 179728



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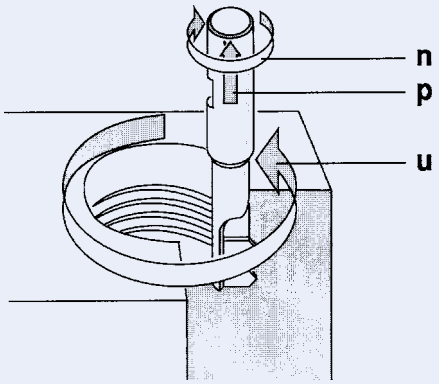
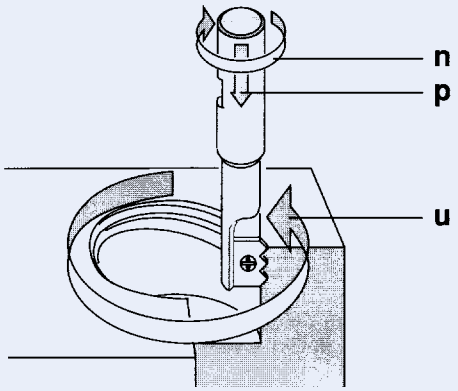
Information about Circular Thread Milling

Internal Thread

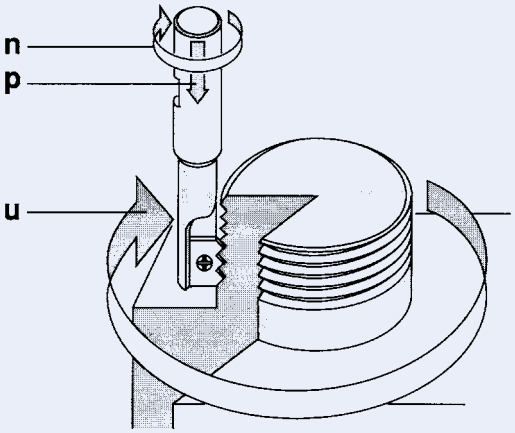


Right-hand Thread (climb milling)
Left-hand Thread (up-cut milling)

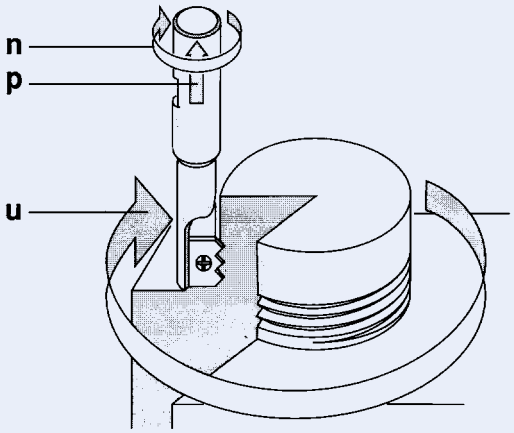


Left-hand Thread (climb milling)
Right-hand Thread (up-cut milling)

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).

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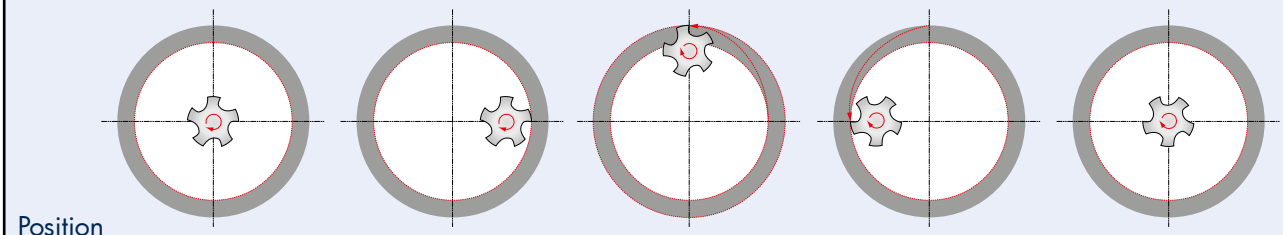
Plunge-in Ramps
Effect of In- and Outward Movements

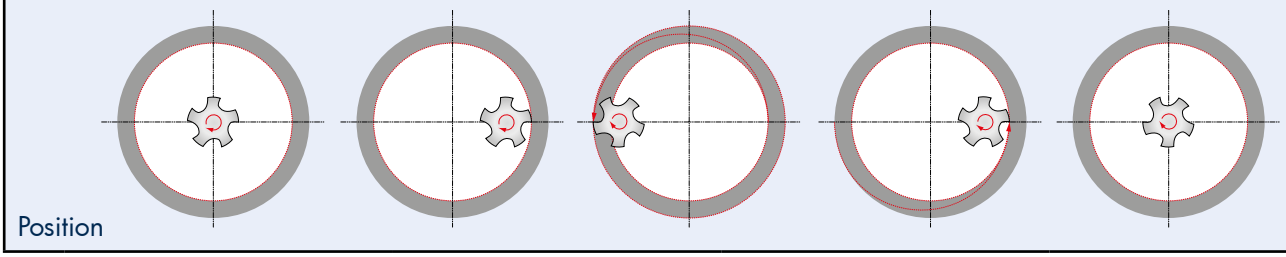
- 90° plunge-in
- 180° plunge-in
- Straight plunge-in

a	Plunge-in and -out	Processing time	Surface quality	Tool life
	90°	++	++	+



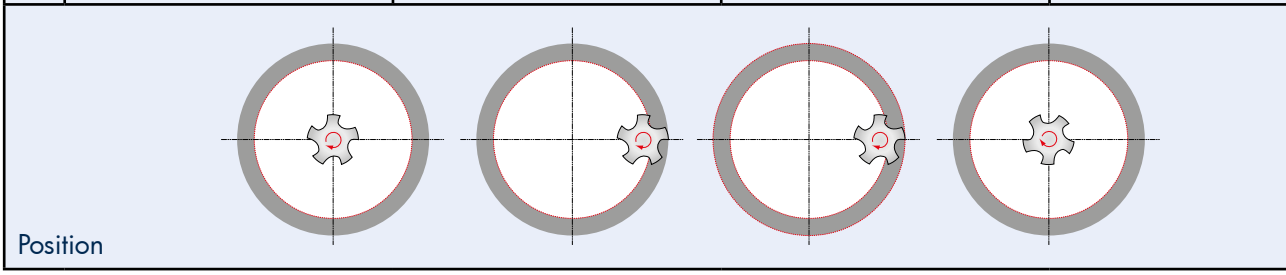
⚠ Always recommended whenever possible.

a	Plunge-in and -out	Processing time	Surface quality	Tool life
	180°	+	+++	+++



⚠ To be used for large tool diameters in relation to the core diameter, e.g. for all STC tools.

a	Plunge-in and -out	Processing time	Surface quality	Tool life
	straight	+++	– – –	– – –

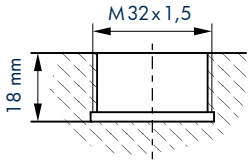


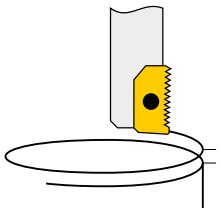
⚠ Not recommended. When straight plunge-in, use only 1/3 of feed. After reaching the depth of grooving, give full feed.

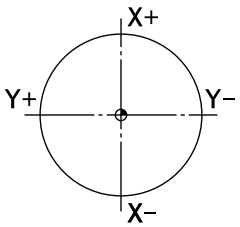
Programming Example Drill Thread Milling

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
N30	G43	X-15.15						up to the outline
N40	G41							Cutting edge radius adjustment, left of the outline
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

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K

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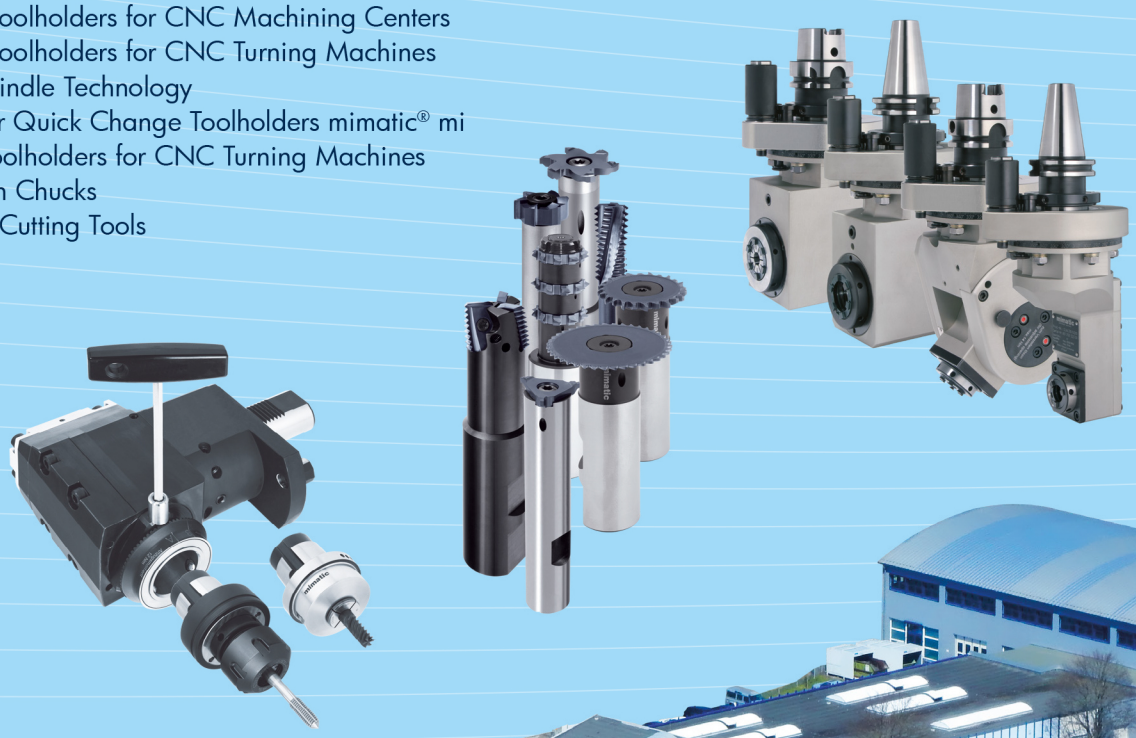

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