

## Slot Milling, Grooving, Milling of Rib-Structures

**Milling Tools in New Dimensions  
of Performance for High-Strength  
Aluminum, Steel, Stainless Steel  
and Cast Iron**

**CNC Turning Machines:**

- Short Chips, Good Automation
- High Cutting Performance,  
Similar to Grooving

**CNC Machining centers:**

- Slot Milling with Interrupted Cut
- Inner and Outer Contours



# DeepMILL

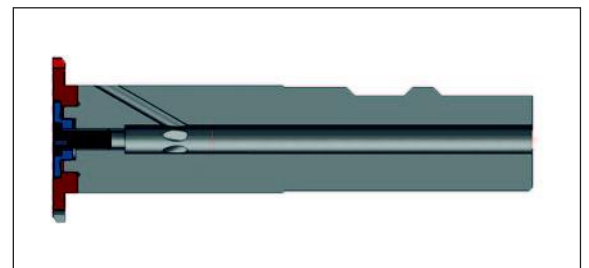
## Slot Milling, Grooving, Milling of Rib-Structures

With PolyMILL and TriMILL solid carbide inserts, mimatic offers a tool program for grooving and contour milling. More than a decade in applications of well-known customers worldwide have led to a wealth of experience and much expertise.

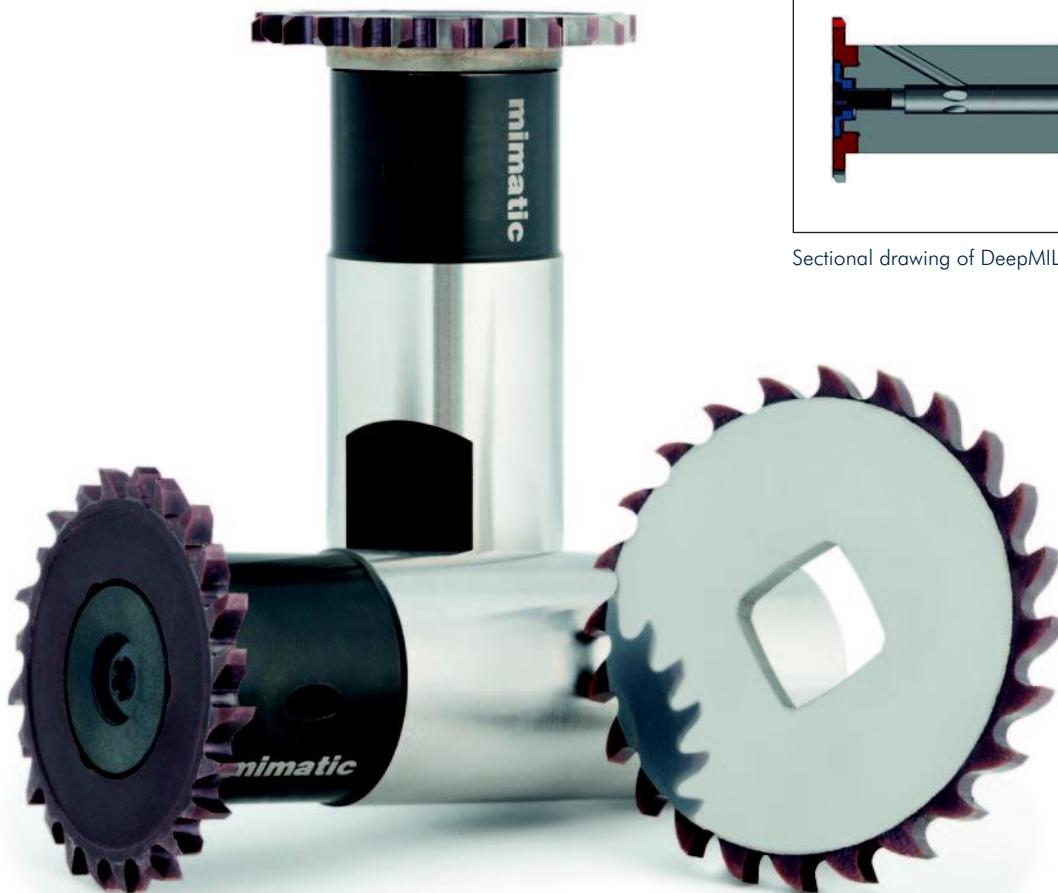
mimatic meets the permanent demand for higher power and larger cutting depths with new innovations. With the latest product development DeepMILL, the limit of the impossible has moved again by mimatic - and this time to a quantum leap.

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

**The result of mimatic development:  
DeepMILL with a up to tenfold cutting performance.**



Sectional drawing of DeepMILL-G

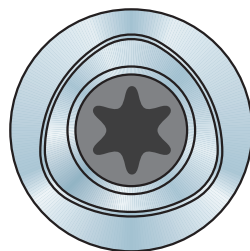


# DeepMILL

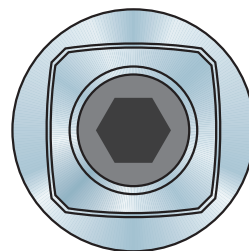
## Milling Tools in New Dimensions of Performance



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



mimatic  
Polygon Interface



mimatic  
Quadrogon\* Interface

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

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

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

With the development of the new tool systems DeepMILL and PolySAW, the development of the polygon interface has been continued also. Under the brand name mimatic Quadrogon, the

interface has been optimized specifically for the needs of this new mimatic high-performance tools. The transmission could be improved here again.

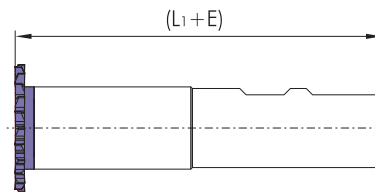
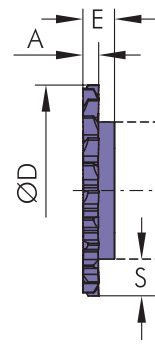
\* Patent right protection is requested.

## Slot Milling, Grooving, Milling of Rib-Structures – Up to Ground

- With DeepMILL-G can be milled up to ground
- Cutting edges on the face can be used for special machining operations
- On request: Increased cutting depths (S) with reduced transmissible moments

### + Re-sharpen-Service 2x

- + Minimum distance for operations to ground: 0,001 mm



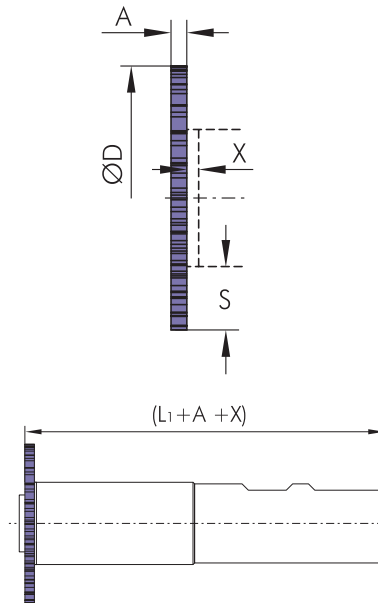
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

Milling depth max.

A* mm	S max. mm	S1 mm	D mm	E mm	DeepMILL-G Type	Holder Recom- mendation	Number of teeth	Order No. TINAMATIC	Deliverable
2	5,2	5,0	32	6	3213	13/21	20	164440	on request
2	6,6	5,0	32	6	3211	11/18	20	164402	on stock
2	7,0	5,0	40	6	4016	16/26	24	164444	on request
2	9,2	5,0	40	6	4013	13/21	24	164408	on stock
2	10,0	7,0	50	6	5019	19/30	24	164448	on request
2	12,0	7,0	50	6	5016	16/26	24	164414	on stock
2	12,4	8,0	63	6	6325	25/38	24	164452	on request
2	15,5	10,0	80	6	8035	35/49	24	164456	on request
2	16,5	8,0	63	6	6319	19/30	24	164420	on stock
2	20,9	10,0	80	6	8025	25/38	24	164426	on stock
3	5,2	5,0	32	6	3213	13/21	20	164441	on request
3	6,6	5,0	32	6	3211	11/18	20	164403	on stock
3	7,0	5,0	40	6	4016	16/26	24	164445	on request
3	9,2	5,0	40	6	4013	13/21	24	164409	on stock
3	10,0	7,0	50	6	5019	19/30	24	164449	on request
3	12,0	7,0	50	6	5016	16/26	24	164415	on stock
3	12,4	8,0	63	6	6325	25/38	24	164453	on request
3	15,5	10,0	80	6	8035	35/49	24	164457	on request
3	16,5	8,0	63	6	6319	19/30	24	164421	on stock
3	20,9	10,0	80	6	8025	25/38	24	164427	on stock
4	5,2	5,0	32	6	3213	13/21	20	164404	on stock
4	6,6	5,0	32	6	3211	11/18	20	164442	on request
4	7,0	5,0	40	6	4016	16/26	24	164410	on stock
4	9,2	5,0	40	6	4013	13/21	24	164446	on request
4	10,0	7,0	50	6	5019	19/30	24	164416	on stock
4	12,0	7,0	50	6	5016	16/26	24	164450	on request
4	12,4	8,0	63	6	6325	25/38	24	164422	on stock
4	15,5	10,0	80	6	8035	35/49	24	164428	on stock
4	16,5	8,0	63	6	6319	19/30	24	164454	on request
4	20,9	10,0	80	6	8025	25/38	24	164458	on request
5	5,2	5,0	32	6	3213	13/21	20	164405	on stock
5	6,6	4,0	32	6	3211	11/18	20	164443	on request
5	7,0	5,0	40	6	4016	16/26	24	164411	on stock
5	9,2	4,5	40	6	4013	13/21	24	164447	on request
5	10,0	7,0	50	6	5019	19/30	24	164417	on stock
5	12,0	7,0	50	6	5016	16/26	24	164451	on request
5	12,4	8,0	63	6	6325	25/38	24	164423	on stock
5	15,5	10,0	80	6	8035	35/49	24	164429	on stock
5	16,5	8,0	63	6	6319	19/30	24	164455	on request
5	20,9	10,0	80	6	8025	25/38	24	164459	on request

## Slot Milling, Grooving, Milling of Rib-Structures

- DeepMILL-ECO is the economical alternate to DeepMILL-G
  - + larger cutting depths
  - + more cost-effective
  - Minimum distance to counter contours: 1,8 mm
- On request: Increased cutting depths (S) with reduced transmissible moments
- Re-sharpen-Service: 1x



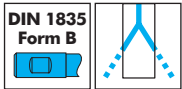
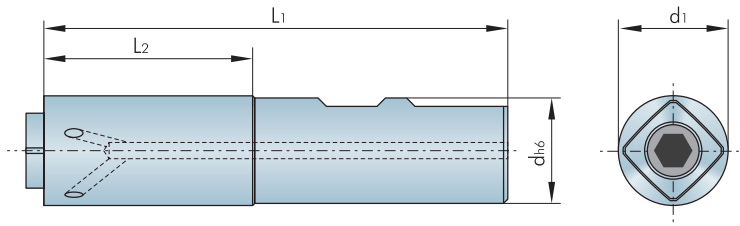
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>  
Milling depth max.

A* mm	S max. mm	S1 mm	D mm	X mm	DeepMILL-ECO Type	Holder Recommendation	Number of teeth	Order No. TINAMATIC	Deliverable
2	7,5	5,0	32	2,15	3213	13/17	20	164542	on request
2	8,5	5,0	32	2,15	3211	11/15	20	164502	on stock
2	10,0	5,0	40	2,15	4016	16/20	24	164546	on request
2	11,5	5,0	40	2,15	4013	13/17	24	164508	on stock
2	13,5	5,0	50	2,15	5019	19/23	32	164550	on request
2	15,0	5,0	50	2,15	5016	16/20	32	164514	on stock
2	17,0	5,0	63	2,15	6325	25/29	40	164554	on request
2	20,0	5,0	63	2,15	6319	19/23	40	164520	on stock
2	20,5	6,0	80	2,15	8035	35/39	40	164558	on request
2	25,5	6,0	80	2,15	8025	25/29	40	164526	on stock
3	7,5	5,0	32	0,65	3213	13/17	20	164543	on request
3	8,5	5,0	32	0,65	3211	11/15	20	164503	on stock
3	10,0	5,0	40	0,65	4016	16/20	24	164547	on request
3	11,5	5,0	40	0,65	4013	13/17	24	164509	on stock
3	13,5	7,0	50	0,65	5019	19/23	32	164551	on request
3	15,0	7,0	50	0,65	5016	16/20	32	164515	on stock
3	17,0	6,0	63	0,65	6325	25/29	32	164555	on request
3	20,0	6,0	63	0,65	6319	19/23	40	164521	on stock
3	20,5	6,0	80	0,65	8035	35/39	40	164559	on request
3	25,5	6,0	80	0,65	8025	25/29	40	164527	on stock
4	7,5	5,5	32	0	3213	13/17	18	164504	on stock
4	8,5	5,0	32	0	3211	11/15	18	164540	on request
4	10,0	6,0	40	0	4016	16/20	20	164510	on stock
4	11,5	6,0	40	0	4013	13/17	20	164544	on request
4	13,5	7,0	50	0	5019	19/23	24	164516	on stock
4	15,0	7,0	50	0	5016	16/20	24	164548	on request
4	17,0	6,0	63	0	6325	25/29	32	164522	on stock
4	20,0	6,0	63	0	6319	19/23	32	164552	on request
4	20,5	8,0	80	0	8035	35/39	32	164528	on stock
4	25,5	8,0	80	0	8025	25/29	32	164556	on request
5	7,5	4,0	32	0	3213	13/17	18	164505	on stock
5	8,5	4,0	32	0	3211	11/15	18	164541	on request
5	10,0	6,0	40	0	4016	16/20	20	164511	on stock
5	11,5	4,5	40	0	4013	13/17	20	164545	on request
5	13,5	7,0	50	0	5019	19/23	24	164517	on stock
5	15,0	6,5	50	0	5016	16/20	24	164549	on request
5	17,0	8,0	63	0	6325	25/29	24	164523	on stock
5	20,0	8,0	63	0	6319	19/23	24	164553	on request
5	20,5	8,0	80	0	8035	35/39	32	164529	on stock
5	25,5	8,0	80	0	8025	25/29	32	164557	on request

\* narrower widths, see PolySAW

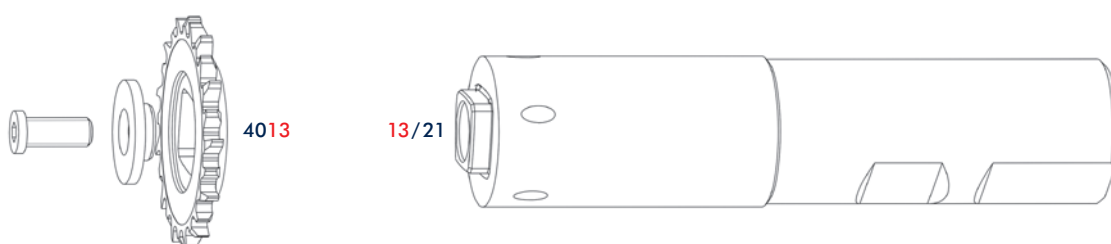
## Basic Holder

- Inserts see page 4-5
- Cutting data see page 7
- Carbide coating see page 7



Type	Order No.	d1 mm	Dh6 mm	L1 mm	L2 mm	Recom- mendation for System	Accessories			Spare Part	
							Screw	-G Clamping disc	-ECO Set Clamping discs	Screw- driver	Size
09/16	163700	16,8	WD 20	86	35	-G	163842	-	163801	178296	SW 3
09/13	163707	13,0	WD 16	70	20	-ECO	163842	-	163800	178296	SW 3
11/18	163701	18,8	WD 20	91	40	-G	163843	-	163803	178296	SW 3
11/15	163708	15,0	WD 16	80	30	-ECO	163843	-	163802	178296	SW 3
13/21	163702	21,6	WD 25	105	45	-G	163844	-	163805	178297	SW 4
13/17	163709	17,0	WD 20	86	35	-ECO	163844	-	163804	178297	SW 4
16/26	163703	26,0	WD 25	110	50	-G	163850	175027	163807	178296	SW 3
16/20	163710	20,0	WD 20	91	40	-ECO	163850	175027	163806	178296	SW 3
19/30	163704	30,0	WD 32	122	55	-G	163848	163845	163809	178296	SW 3
19/23	163711	23,0	WD 25	105	45	-ECO	163848	163845	163808	178296	SW 3
25/38	163705	38,2	WD 32	127	60	-G	163849	163846	163811	178297	SW 4
25/29	163712	29,0	WD 32	122	55	-ECO	163849	163846	163810	178297	SW 4
35/49	163706	49,0	WD 32	132	65	-G	163849	163847	163816	178297	SW 4
35/39	163713	39,0	WD 32	127	60	-ECO	163849	163847	163812	178297	SW 4

## DeepMILL Interface Compatibility



The compatibility between DeepMILL insert and basic holder is given, when the two-digit final type number of the insert and the two-digit starting type number of basic holder match. This match you can also find in the table of the DeepMILL inserts.

# DeepMILL

## DeepMILL-G

## PolySAW-ECO

① + ② + ③ :  
Set clamping discs (-ECO)

④ :  
Screw (-G + -ECO)

### Assembly notes

Please tighten the clamping screw with the specified torque.

In the selection of the DeepMILL basic holder and machine tool holder should be chosen the shortest possible setup.

### Service

Please don't hesitate to take the advantage of the mimatic service.

We give recommendations to exactly your chipping task so that your success will be visible soon.

## Carbide Coating

### TINAMATIC

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

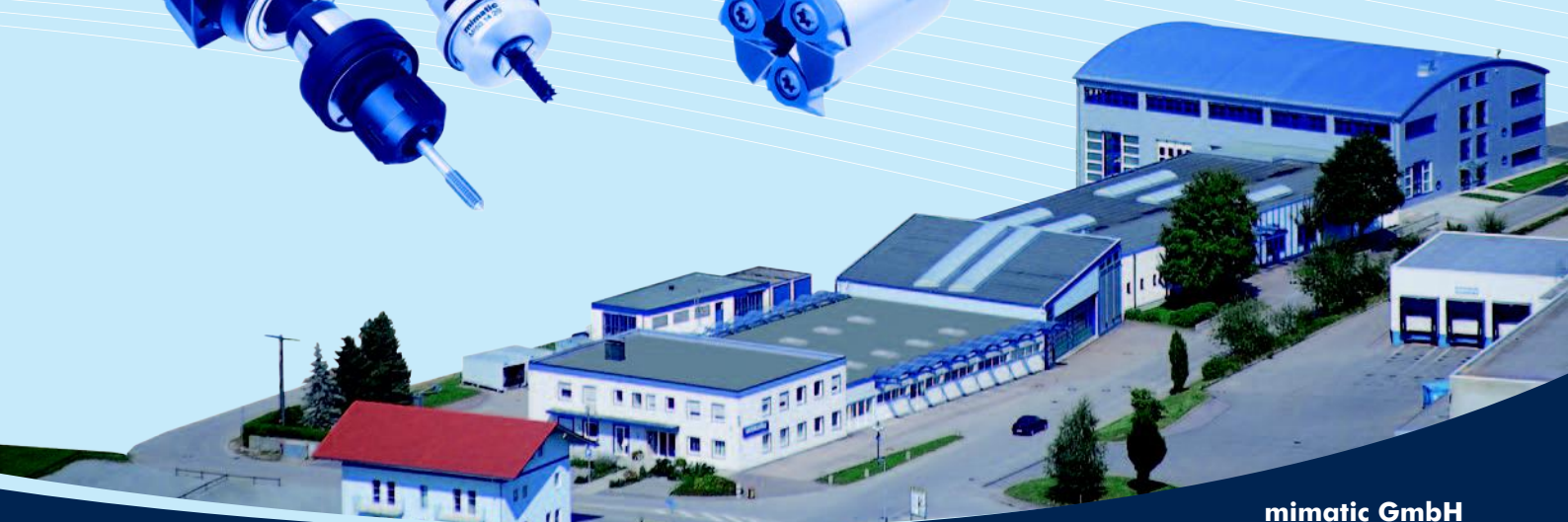
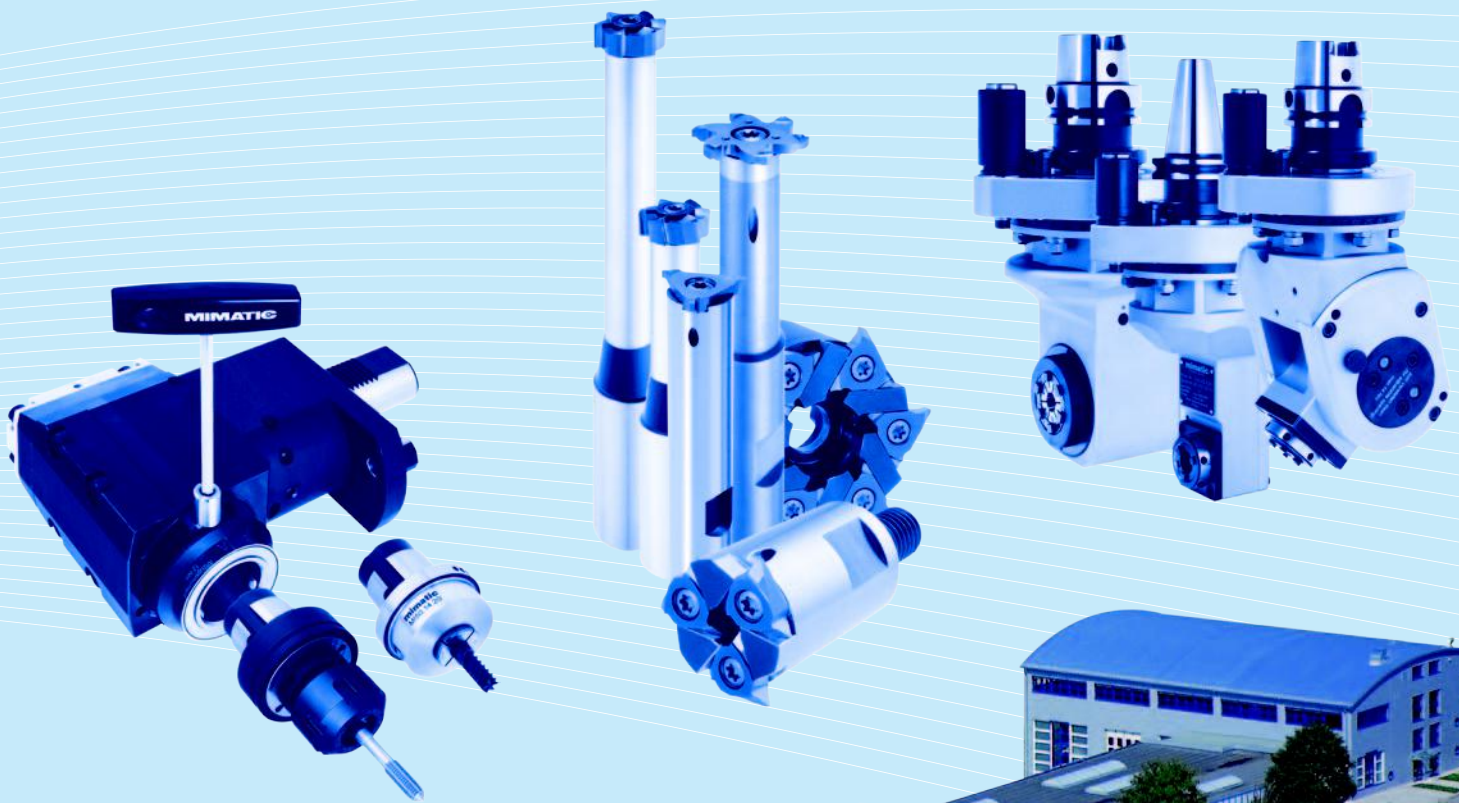
## Cutting Data Reference Values

Material to be machined	Strength N/mm <sup>2</sup>	TINAMATIC	
		Feed per tooth fz mm	Cutting speed Vc (m/min.)
Steel	≤ 800	0,05–0,25	120–200
Stainless steel	≤ 850	0,05–0,15	90–160
Cast iron	950	0,05–0,25	100–180
Aluminium	600	0,05–0,40	250–600

The maximum cutting depth can vary greatly depending on part geometry.

- Circular- and Thread Milling Tools
- Reamers with Polygonal Interface
- Driven Toolholders for CNC Machining Centers
- Driven Toolholders for CNC Turning Machines
- Multi-Spindle Technology
- Modular Quick Change Toolholders mimatic® mi
- Static Toolholders for CNC Turning Machines
- Precision Chucks
- Special Cutting Tools

# mimatic® Home of Innovations



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