

# UP **2** DATE

## Stable roughing with turbo feeds!

Maximum process security including  
for difficult-to-access components.

### ... OUR LATEST HIGHLIGHTS

- ▲ The **MaxiMill – Tangent** rough milling system compatible with actively vibration-damped shell mill adapters
- ▲ The **WTX – Micropilot** drill for extremely demanding machining operations on the smallest components with maximum precision
- ▲ Robust side and face milling cutter, the **MaxiMill – Slot-SNHX** for extra-soft cuts

CERATIZIT is a high-technology engineering group specialised in cutting tools and hard material solutions.

**Tooling a Sustainable Future**

[ceratizit.com](http://ceratizit.com)



**CERATIZIT**  
GROUP

# Welcome!



It couldn't be easier

## Ordering via the Online Shop

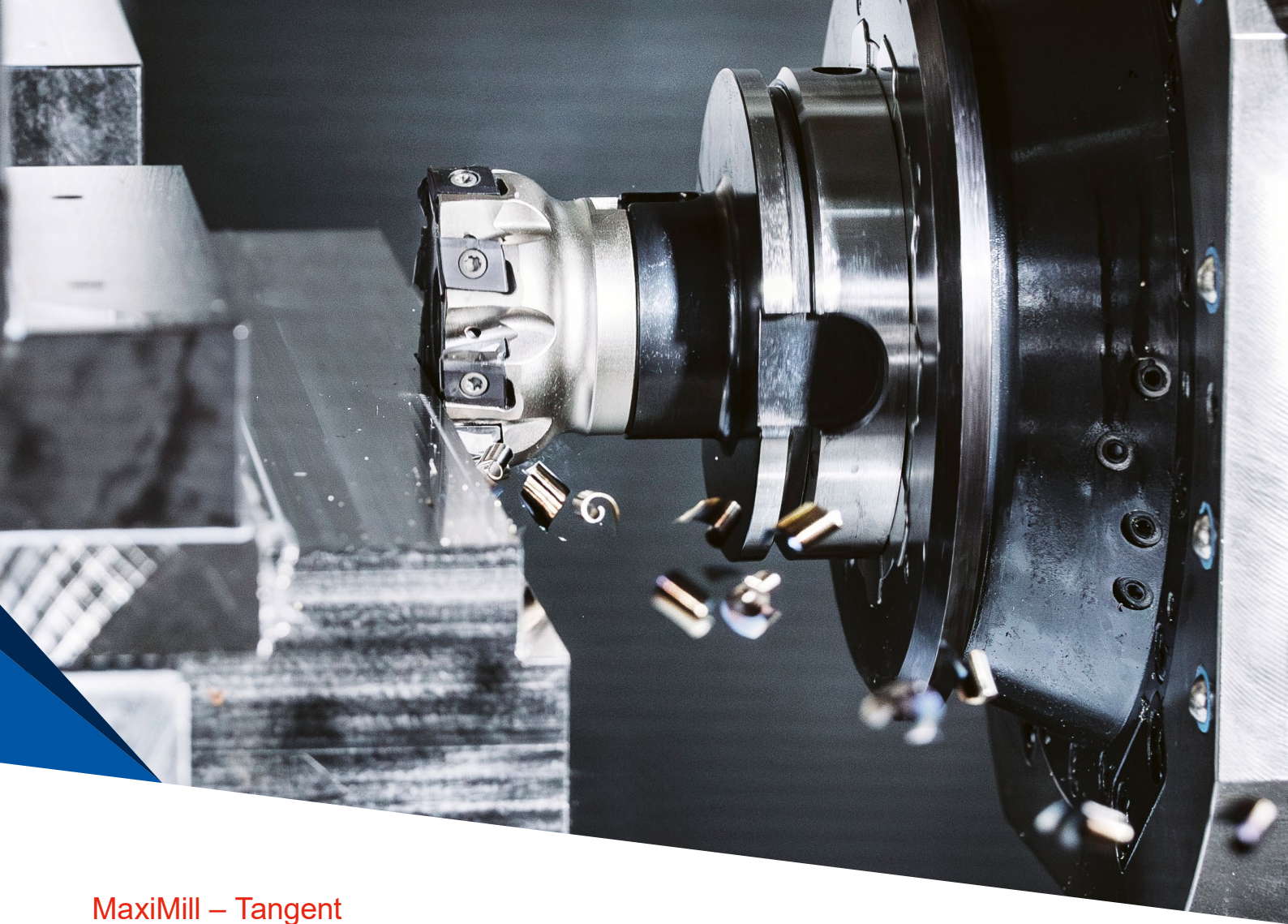
<https://cuttingtools.ceratizit.com>



On-site technical support

## Your Local Technical Sales Engineer

Your customer number



MaxiMill – Tangent

## Stable roughing of steel and cast iron

**CERATIZIT**


**Tangential indexable insert milling cutter with maximum tooth utilisation**

The MaxiMill – Tangent guarantees the best cutting edge stability for turbo feeds

Do you know that? Do you have to process a component and can't see the process because of all the disruptive contours? Face milling cutters are completely out of the running, especially when long overhang lengths make stable, low-vibration machining impossible.

What might at first glance appear an insoluble dilemma, just needs the right tool – like the new **MaxiMill – Tangent**. This tangential indexable insert cutter shows its true colours when machining steel and cast iron components.



 → from page 37  
You can find further information on the product here.

[cts.ceratizit.com/en/maximill-tangent](https://cts.ceratizit.com/en/maximill-tangent)

## The advantages of the MaxiMill – Tangent at a glance

- ▲ stable, soft-cutting system
- ▲ rugged design permits up to 50% greater feed rate per tooth
- ▲ wide variety of tool holders with different connections:  
G (thread) / A (shell mill adapter) / C (cylindrical shank)
- ▲ maximum number of teeth on the milling body thanks to tangential clamping
- ▲ the best axial and concentric run-out properties due to precision-ground inserts and tight manufacturing tolerances for the tool holder
- ▲ reduced vibration thanks to irregular tooth pitch
- ▲ better accessibility allows for rapid tool change

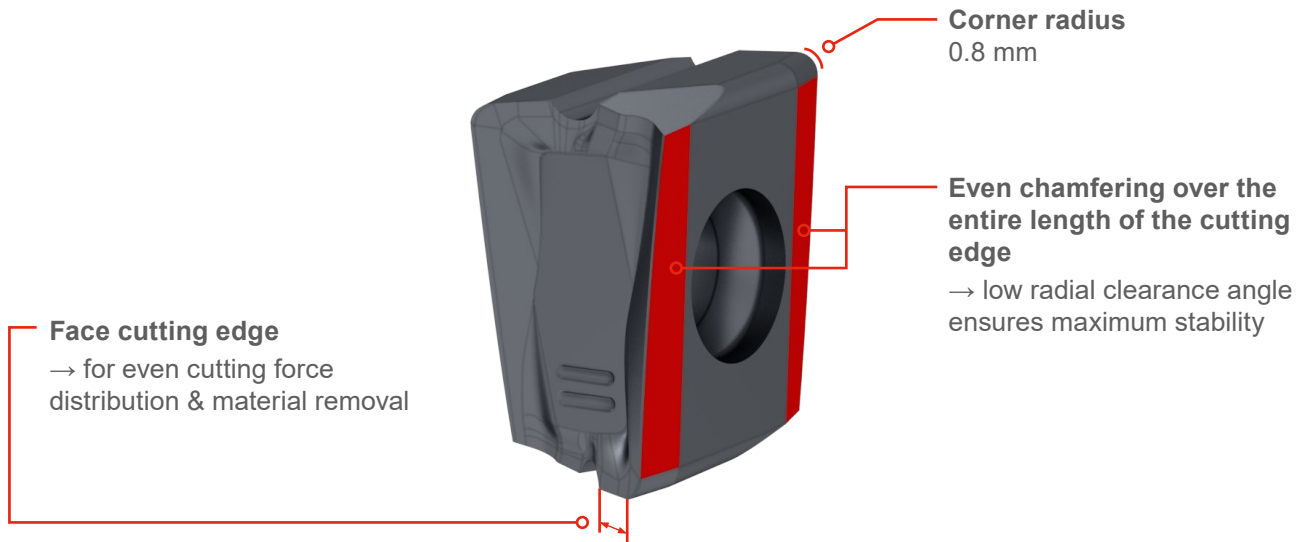
## ... also compatible with actively vibration-damped adapter

→ for maximum process security including for difficult-to-access components



## Ground indexable insert with extra-stable cutting edges

- ▲ Indexable inserts for diverse applications **P / K / S / M**
- ▲ 4 usable cutting edges
- ▲ Chip breakers: -F50 and -M50
- ▲ Precision-ground indexable inserts (size -09 and -13)
- ▲ Max. depth of cut:
  - with insert size -09 > 8 mm
  - with insert size -13 > 12 mm



Maximum cutting edge stability



High feed rates possible

Increased tool life



Increase in performance & productivity

“

„Thanks to the super-stable design, the powerful, four-edged indexable inserts and tangential clamping by the **MaxiMill – Tangent**, we are now able to machine components with interference contours easily and economically – using the integrated feed turbo.“

Robert Frei, Product Manager Indexable Insert Milling Systems



”

WTX – Micropilot

# Fewer tool changes, time and cost savings – with maximum precision

Our latest development, the WTX – Micropilot, makes the impossible possible. Whereas in the past, spot drilling on angled or curved surfaces would only have been possible with prior spot-facing for each milling cutter, now you only need one tool: the WTX – Micropilot. What if you want to produce a 90° countersink at the hole entrance, say? The WTX – Micropilot lets you do it in a single machining operation. So there is no need to change the tool, saving you time and money.

Perfectly adapted for use with our microdrill, the WTX – Micro (8xD – 30xD), the pilot drill is used up to a hole depth of 2.5xD. Its sophisticated end geometry with 160° point angle allows for clean plunging and avoids wandering by the main drill. The special Dragonskin coating ensures optimum chip evacuation and a longer tool life.



WNT



→ from page 12

You can find further information on the product here.



[cts.ceratizit.com/en/wtx-micro](https://cts.ceratizit.com/en/wtx-micro)

## The advantages of the WTX – Micropilot:

- ▲ State-of-the-art: substrate, geometry, coating
- ▲ WTX – Micropilot (pilot drill) and WTX – Micro (deep hole drill) are perfectly attuned to one another
- ▲ Extremely tight tolerances ensure the deep hole drill does not wander
- ▲ Optimum chip evacuation thanks to sophisticated end geometry and DPX74M Dragonskin coating
- ▲ 90° countersink at the hole entrance possible (with flat drilling application)

▶ **Maximum productivity and process security thanks to optimised geometry and high-performance coating**

- ▲ Direct spot drilling of straight, angled and curved surfaces with an angle of inclination of up to 50°

▶ **Significant saving in time and money as there is no need for an additional tool – 2 instead of 3 process steps**



Direct spot drilling of convex and concave surfaces possible

Direct spot drilling of angled surfaces up to 50° or 90° countersink with flat drilling application



MaxiMill – Slot-SNHX

## Robust side and face milling cutter system for soft cuts

**CERATIZIT**

### MaxiMill – Slot-SNHX: Slot milling like a knife through butter

Fabricators who need to produce slots in steel, stainless steel, cast material or aluminium frequently have to battle with unstable machining processes. The solution to this long-standing problem can be found in soft-cutting side and face milling cutters that are suitable for universal application to meet varied challenges while saving on costs per cut. The **MaxiMill – Slot SNHX system** steps up to the mark here, thanks to its wide-ranging portfolio of tool holders and indexable inserts, effectively covering cutting widths from 6 mm to 16 mm and diameters from 50 mm to 200 mm.



→ from page 43

You can find further information on the product here.



[cts.ceratizit.com/en/maximill-slot-snhx](https://cts.ceratizit.com/en/maximill-slot-snhx)

## Advantage/benefit

### Cutter body

- ▲ Wide variety of tool holders with different connections: G (thread), A (shell mill adapter) and C (cylindrical shank)
- ▲ Cutting widths from 6 mm to 16 mm and diameters from 50 mm to 200 mm
- ▲ Excellent performance and process security via demand-driven thro' coolant
- ▲ Reduced risk of chip jams due to cut distribution
- ▲ No disruptive contours on the face due to tight manufacturing tolerances for the tool holder
- ▲ System easily adapts to special sizes and special tools

### Indexable insert

- ▲ Reliable indexable inserts with wide range of applications **P / M / K / N**
- ▲ The best axial and concentric run-out properties due to precision-ground inserts
- ▲ Flat flute base and good clearance thanks to ground indexable inserts and adapted insert installation position in the tool holder
- ▲ Key feature of inserts and supports → ease of installation



**L** ●● left-hand insert

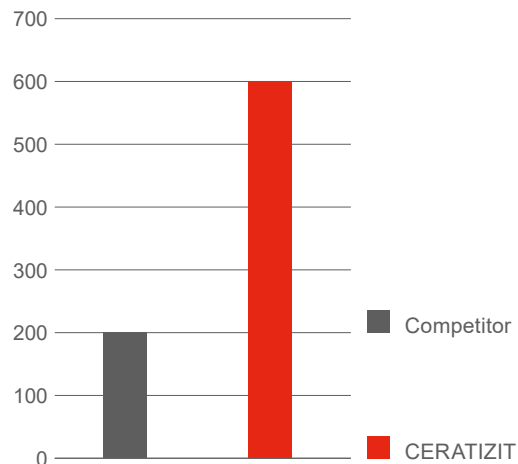
**R** ● right-hand insert

## The new MaxiMill – Slot SNHX in tool life test

<b>Application:</b>	Reverse-side machining
<b>Material:</b>	SG-Iron 500 / EN-GJS 500
<b>Tool:</b>	MaxiMill – Slot-SNHX
<b><math>a_p</math>:</b>	3 mm
<b><math>a_e</math>:</b>	42 mm
<b>Tool life:</b>	600 pieces

- ▲ Better handling thanks to large indexable insert clamping screw
- ▲ Softer cut than competitors due to ground cutting edge
- ▲ Less time and effort for setting up due to improved service life and fewer indexable inserts

Number of finished parts



### TEST RESULTS

Superior performance, tool life and ease of handling!



Pilot drill

## WTX – Micropilot

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Rough milling system

## MaxiMill – Tangent

Side and face milling cutter system

## MaxiMill – Slot-SNHX

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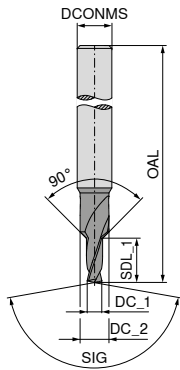
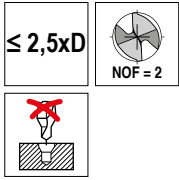
- 58–60 MNG base plates
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Actively vibration-damped  
shell mill adapter

# WTX – Pilot drill 90°

- ▲ Specialised pilot drill for WTX – Micro deep hole drill (8xD–30xD)
- ▲ Direct spot drilling of angled and curved surfaces up to 50° angle of inclination possible
- ▲ 90° countersink at hole entrance can be achieved on flat spot drilling surface



**NEW**  
MICRO  
PILOT  
DPX74M  
DRAGONSKIN



SIG 160°  
Solid carbide

**10 692 ...**

DC_1 <sub>m6</sub>	DC_2	DCONMS <sub>h6</sub>	OAL	SDL_1	
mm	mm	mm	mm	mm	
0,8	1,7	4	55	2,00	00800
0,9	1,7	4	55	2,25	00900
1,0	2,0	4	55	2,50	01000
1,1	2,0	4	55	2,75	01100
1,2	2,0	4	55	3,00	01200
1,3	2,5	4	55	3,25	01300
1,4	2,5	4	55	3,50	01400
1,5	3,0	4	55	3,75	01500
1,6	3,0	4	55	4,00	01600
1,7	3,0	4	55	4,25	01700
1,8	3,5	4	55	4,50	01800
1,9	3,5	4	55	4,75	01900
2,0	3,5	6	65	5,00	02000
2,1	3,5	6	65	5,25	02100
2,2	4,5	6	65	5,50	02200
2,3	4,5	6	65	5,75	02300
2,4	4,5	6	65	6,00	02400
2,5	4,5	6	65	6,25	02500
2,6	4,5	6	65	6,50	02600
2,7	5,0	6	65	6,75	02700
2,8	5,0	6	65	7,00	02800
2,9	5,0	6	65	7,25	02900

P	●
M	○
K	●
N	
S	●
H	
O	

→ v<sub>c</sub> Page 13  
→ Machining information: Page 14+15

# Cutting data standard values – WTX – Micropilot

Material sub-group	Index	Tensile strength N/mm <sup>2</sup> / HB / HRC	10 692 ... 2,5xD							
			without through coolant v <sub>c</sub> (m/min)	f (mm/rev)						
				≤ Ø 1	> Ø 1–1,25	> Ø 1,25–1,5	> Ø 1,5–2	> Ø 2–2,5	> Ø 2,5–3	
P	Unalloyed steel	P.1.1	420 N/mm <sup>2</sup> / 125 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
		P.1.2	640 N/mm <sup>2</sup> / 190 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
		P.1.3	840 N/mm <sup>2</sup> / 250 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
		P.1.4	910 N/mm <sup>2</sup> / 270 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
		P.1.5	1010 N/mm <sup>2</sup> / 300 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
	Low-alloy steel	P.2.1	610 N/mm <sup>2</sup> / 180 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
		P.2.2	930 N/mm <sup>2</sup> / 275 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
		P.2.3	1010 N/mm <sup>2</sup> / 300 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
		P.2.4	1200 N/mm <sup>2</sup> / 375 HB							
	High-alloy steel and high-alloy tool steel	P.3.1	680 N/mm <sup>2</sup> / 200 HB	60	0,010	0,013	0,015	0,019	0,022	0,025
		P.3.2	1100 N/mm <sup>2</sup> / 300 HB	50	0,010	0,013	0,015	0,019	0,022	0,025
		P.3.3	1300 N/mm <sup>2</sup> / 400 HB							
	Stainless steel	P.4.1	680 N/mm <sup>2</sup> / 200 HB	50	0,005	0,006	0,007	0,010	0,013	0,015
		P.4.2	1010 N/mm <sup>2</sup> / 300 HB	35	0,005	0,006	0,007	0,010	0,013	0,015
M	Stainless steel	M.1.1	610 N/mm <sup>2</sup> / 180 HB	40	0,005	0,006	0,007	0,010	0,013	0,015
		M.2.1	300 HB	40	0,005	0,006	0,007	0,010	0,013	0,015
		M.3.1	780 N/mm <sup>2</sup> / 230 HB	40	0,005	0,006	0,007	0,010	0,013	0,015
K	Grey cast iron	K.1.1	350 N/mm <sup>2</sup> / 180 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
		K.1.2	500 N/mm <sup>2</sup> / 260 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
	Spherulitic graphite cast iron	K.2.1	540 N/mm <sup>2</sup> / 160 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
		K.2.2	845 N/mm <sup>2</sup> / 250 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
	Malleable iron	K.3.1	440 N/mm <sup>2</sup> / 130 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
		K.3.2	780 N/mm <sup>2</sup> / 230 HB	70	0,010	0,013	0,015	0,019	0,022	0,025
N	Aluminium wrought alloy	N.1.1	60 HB							
		N.1.2	340 N/mm <sup>2</sup> / 100 HB							
	Cast aluminium alloy	N.2.1	250 N/mm <sup>2</sup> / 75 HB							
		N.2.2	300 N/mm <sup>2</sup> / 90 HB							
		N.2.3	440 N/mm <sup>2</sup> / 130 HB							
	Copper and copper alloys (bronze/brass)	N.3.1	375 N/mm <sup>2</sup> / 110 HB							
		N.3.2	300 N/mm <sup>2</sup> / 90 HB							
N.3.3	340 N/mm <sup>2</sup> / 100 HB									
N.4.1	Magnesium alloys	70 HB								
S	Heat-resistant alloys	S.1.1	680 N/mm <sup>2</sup> / 200 HB	15	0,005	0,006	0,007	0,010	0,013	0,015
		S.1.2	950 N/mm <sup>2</sup> / 280 HB	15	0,005	0,006	0,007	0,010	0,013	0,015
		S.2.1	840 N/mm <sup>2</sup> / 250 HB	10	0,005	0,006	0,007	0,010	0,013	0,015
		S.2.2	1180 N/mm <sup>2</sup> / 350 HB	10	0,005	0,006	0,007	0,010	0,013	0,015
		S.2.3	1080 N/mm <sup>2</sup> / 320 HB	10	0,005	0,006	0,007	0,010	0,013	0,015
	Titanium alloys	S.3.1	400 N/mm <sup>2</sup>	30	0,005	0,006	0,007	0,010	0,013	0,015
		S.3.2	1050 N/mm <sup>2</sup> / 320 HB	20	0,005	0,006	0,007	0,010	0,013	0,015
S.3.3	1400 N/mm <sup>2</sup> / 410 HB									
H	Hardened steel	H.1.1	46–55 HRC							
		H.1.2	56–60 HRC							
		H.1.3	61–65 HRC							
		H.1.4	66–70 HRC							
	Chilled iron	H.2.1	400 HB							
Hardened cast iron	H.3.1	55 HRC								
O	Non-metal materials	O.1.1	≤ 150 N/mm <sup>2</sup>							
		O.1.2	≤ 100 N/mm <sup>2</sup>							
		O.2.1	≤ 1000 N/mm <sup>2</sup>							
		O.2.2	≤ 1000 N/mm <sup>2</sup>							
		O.3.1								

\* Tensile strength



The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

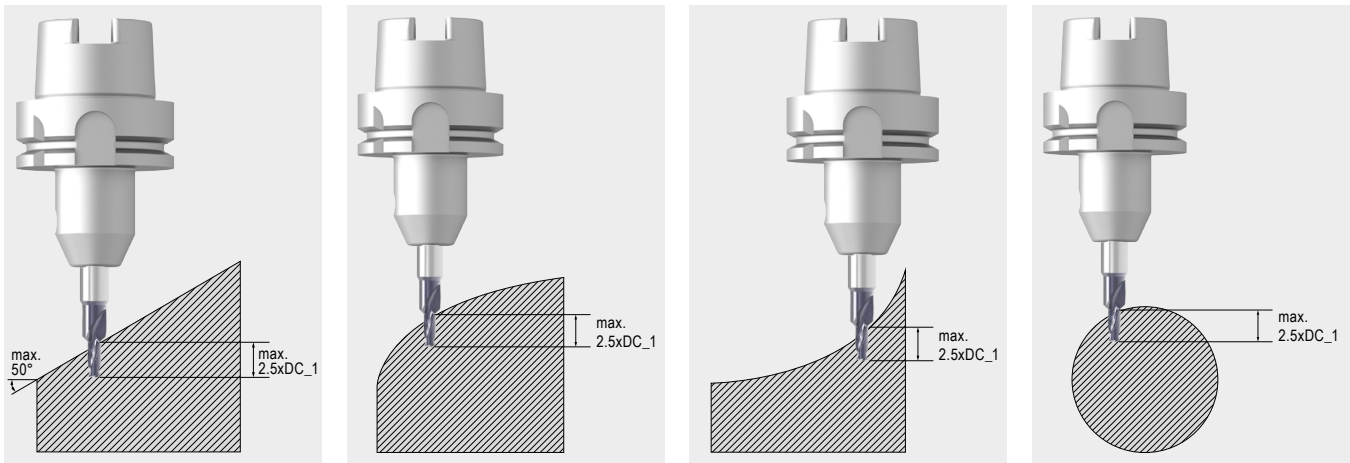
## WTX – Micropilot application recommendation

### General references

It is advisable to use the tool with external cooling. Be careful to ensure that the coolant is aimed directly at the tool tip. This will ensure that there is adequate cooling and effective chip evacuation. Apply our cutting data recommendations when using the tool.

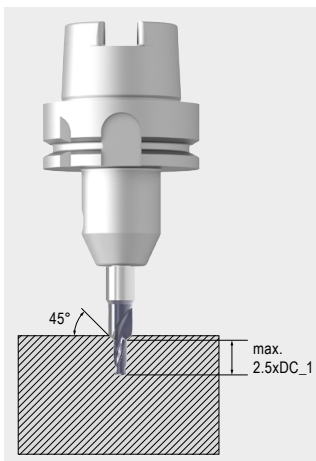
### 1. Pilot hole in angled or curved surfaces

Produce pilot hole in one go up to a maximum hole depth of  $2.5 \times D$ . Angled or curved surfaces can be machined up to a max. inclination of  $50^\circ$  without prior spot-facing. Applying a countersink at the hole entrance is not possible on angled or curved surfaces.



### 2. Pilot drill with $90^\circ$ chamfer

Produce pilot hole in a single sweep. If required, a  $90^\circ$  chamfer can additionally be produced at the hole entrance (with flat drilling application) after the  $2.5 \times D$  hole depth is reached.

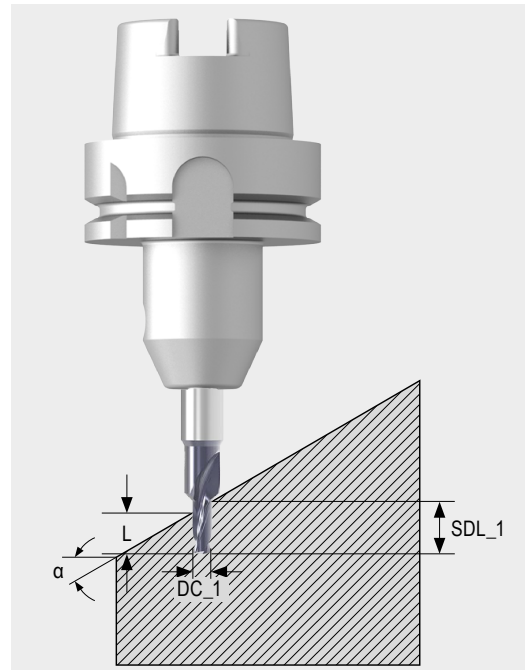


### Calculating pilot hole depth with angled drilling application

With an angled drilling application, the remaining depth of the pilot hole will change depending on the angle of inclination. This can be determined using the formula below:

$$L = \text{SDL}_1 - (\text{DC}_1 \times \tan(\alpha))$$

- DC\_1 = Cutting diameter
- SDL\_1 = Step length (max. 2.5xDC\_1)
- α = Component surface angle of inclination (max. 50°)
- L = Remaining pilot hole depth

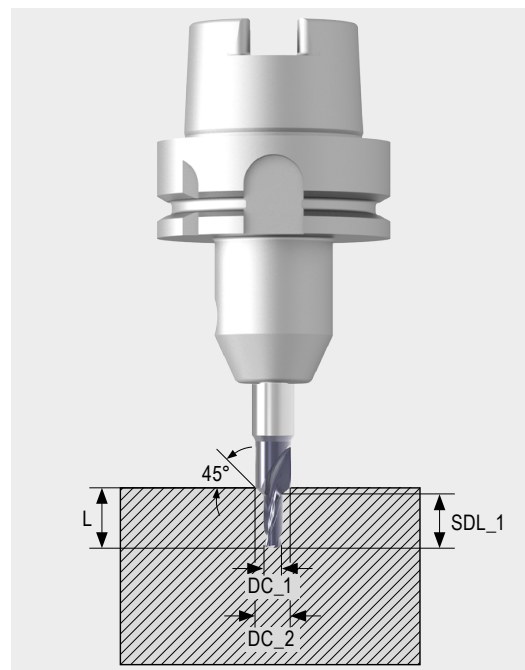


### Calculating maximum hole depth with 90° countersink

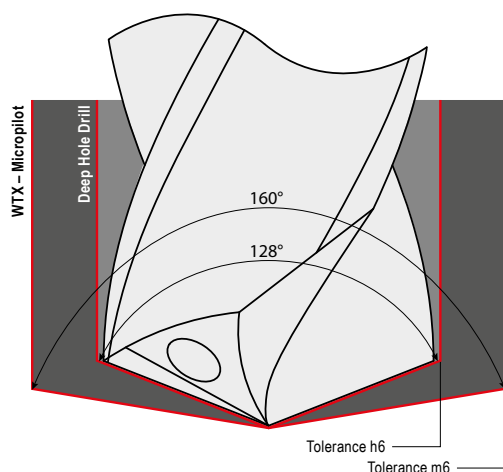
The maximum hole depth incl. 90° countersink can be found using the formula below.

$$L = \left( \frac{\text{DC}_2 - \text{DC}_1}{2} \right) + \text{SDL}_1$$

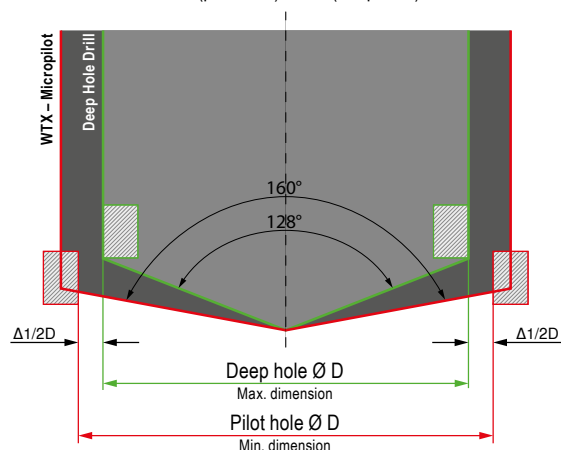
- DC\_1 = Cutting diameter
- DC\_2 = Max. countersink diameter
- SDL\_1 = Step length (max. 2.5xDC\_1)
- L = Max. hole depth incl. countersink



### Tolerances and angles

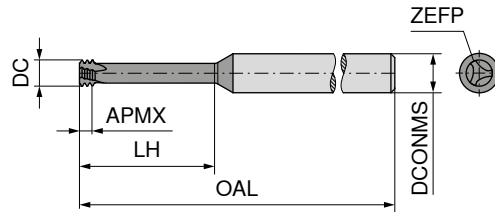
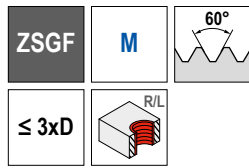


The following must apply to use the pilot and deep hole twist drill consecutively and without collisions:  
 $\Delta D = \text{ØD (pilot hole)} - \text{ØD (deep hole)} > 0$



# MonoThread – Circular shank thread milling cutter

▲ Profile corrected



NEW  
AlTiN



Solid carbide

50 545 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS <sub>h6</sub> mm	ZEFP	
1,53	M2	0,40	39	0,80	6,0	3	3	02000
2,37	M3	0,50	58	1,35	9,5	6	3	03000
3,10	M4	0,70	58	1,95	12,5	6	3	04000
3,80	M5	0,80	58	2,30	16,0	6	3	05000
4,65	M6	1,00	58	2,70	20,0	6	3	06000
6,00	M8	1,25	58	3,20	24,0	6	3	08000
7,80	M10	1,50	64	3,80	31,5	8	3	10000
9,00	M12	1,75	73	4,55	37,8	10	3	12000



NEW

50 550 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS <sub>h6</sub> mm	ZEFP	
1,53	M2	0,40	39	1,00	10,4	3	3	02000 <sup>1)</sup>
2,37	M3	0,50	39	1,30	12,5	3	3	03000
3,10	M4	0,70	58	1,80	16,7	6	3	04000
4,00	M5	0,80	58	2,10	20,8	6	3	05000
4,80	M6	1,00	58	2,55	25,0	6	3	06000
6,40	M8	1,25	64	3,15	33,5	8	3	08000
8,00	M10	1,50	76	3,85	41,5	8	3	10000

P	●
M	○
K	●
N	●
S	●
H	
O	●

1) 5xD

→ v<sub>c</sub>/f<sub>z</sub> Page 21

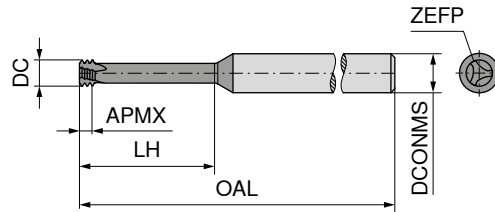
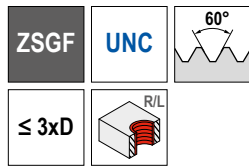


## → Chapter 7 – Circular and Thread Milling

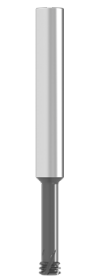
When calculating the feedrate for circular milling it is important to know whether contour feed v<sub>t</sub> or feed on the center path v<sub>fm</sub> is used.

# MonoThread – Circular shank thread milling cutter

▲ Profile corrected



**NEW**  
AITiN



Solid carbide

**50 557 ...**

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS <sub>h6</sub> mm	ZEFP	
3,678	UNC No.10-No.12	1,058	58	3,17	15,5	6	3	01000
4,697	UNC 1/4	1,27	58	3,81	19,0	6	3	01400
6,000	UNC 5/16	1,411	58	4,23	23,0	6	3	51600
7,345	UNC 3/8	1,588	64	4,76	30,2	8	3	03800
7,700	UNC 7/16	1,814	64	5,44	35,2	8	3	71600
9,376	UNC 1/2	1,954	73	5,86	40,1	10	3	01200
10,920	UNC 9/16	2,117	105	6,35	45,0	12	3	91600
11,419	UNC 5/8	2,309	105	6,93	50,0	12	3	05800
15,210	UNC 3/4	2,540	105	7,62	59,7	16	4	03400



**NEW**

**50 559 ...**

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS <sub>h6</sub> mm	ZEFP	
4,696	UNF 1/4	0,907	58	2,72	19,0	6	3	01400
6,217	UNF 5/16, 3/8	1,058	64	3,17	24,0	8	3	51600
7,994	UNF 7/16	1,270	64	3,81	34,5	8	3	71600
11,993	UNF 5/8	1,411	105	4,23	49,0	12	4	05800

P	●
M	○
K	●
N	●
S	●
H	●
O	●

→ v<sub>c</sub>/f<sub>z</sub> Page 21

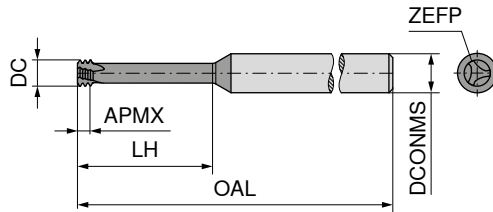
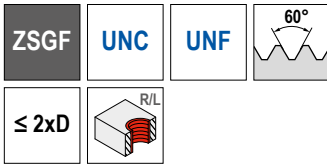


## → Chapter 7 – Circular and Thread Milling

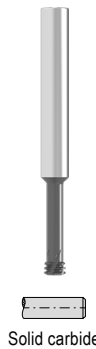
When calculating the feedrate for circular milling it is important to know whether contour feed v<sub>c</sub> or feed on the center path v<sub>fm</sub> is used.

# MonoThread – Circular shank thread milling cutter

▲ Profile corrected



**NEW**  
AlTiN



Solid carbide  
**50 568 ...**

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS <sub>h6</sub> mm	ZEFP	
1,400	UNC No.1 / UNF No.2	0,397	58	1,19	3,8	6	3	01200
1,646	UNC No.2 / UNF No.3	0,454	58	1,36	4,4	6	3	02300
1,901	UNC No.3 / UNF No.4	0,529	58	1,59	5,2	6	3	03400
2,034	UNC No.4	0,635	58	1,91	6,3	6	3	04000
2,416	UNC No.5 / UNF No.6	0,635	58	1,91	7,0	6	3	05600



**NEW**  
**50 569 ...**

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS <sub>h6</sub> mm	ZEFP	
7,790	G1/8	0,907	64	2,72	19,5	8	3	01800
10,015	G 1/4-3/8	1,337	73	4,01	30,0	10	4	01400
12,013	G 1/2-G7/8	1,814	84	5,44	37,0	12	4	01200
15,900	G 1-2	2,309	105	6,93	44,0	16	4	01000

P	●
M	○
K	●
N	●
S	●
H	●
O	●

→ v<sub>c</sub>/f<sub>z</sub> Page 21

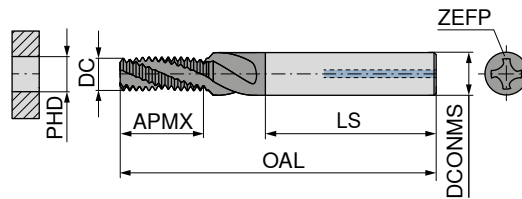
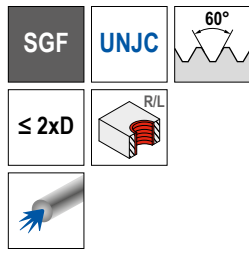


→ Chapter 7 – Circular and Thread Milling

When calculating the feedrate for circular milling it is important to know whether contour feed v<sub>f</sub> or feed on the center path v<sub>fm</sub> is used.

# MonoThread – Thread Milling Cutter

▲ Profile corrected



**NEW**  
AITiN



Solid carbide

**50 524 ...**

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS <sub>h6</sub> mm	ZEFP	PHD mm	
4,70	UNJC 1/4-20	0,907	55	14,27	36	6	4	5,6	01400
6,22	UNJC 5/16-18	1,411	62	16,32	36	8	4	7,0	05160
7,79	UNJC 3/8-16	1,588	74	20,01	40	10	4	8,6	03800
8,57	UNJC 7/16-14	1,814	79	22,87	45	12	4	10,0	07160
9,38	UNJC 1/2-13	1,270	79	26,75	45	12	5	11,5	01200



**NEW**

**50 533 ...**

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS <sub>h6</sub> mm	ZEFP	PHD mm	
2,44	UNJF 6-40	0,635	42	7,42	28	4	3	2,95	06000
3,14	UNJF 8-36	0,706	49	8,91	36	6	3	3,50	08000
3,95	UNJF 10-32	0,794	55	9,97	36	6	3	4,10	10000
4,70	UNJF 1/4-28	0,907	55	14,27	36	6	4	5,60	01400
6,22	UNJF 5/16-24	1,058	62	16,59	36	8	4	7,00	05160
7,79	UNJF 3/8-24	1,058	74	19,77	40	10	4	8,60	03800
9,32	UNJF 7/16-20	1,270	79	22,39	45	12	5	10,00	07160
9,38	UNJF 1/2-20	1,270	79	25,34	45	12	5	11,50	01200
12,90	UNJF 5/8-18	1,411	102	33,59	48	16	5	14,50	05800

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v<sub>c</sub>/f<sub>z</sub> Page 21



→ Chapter 7 – Circular and Thread Milling

When calculating the feedrate for circular milling it is important to know whether contour feed v<sub>f</sub> or feed on the center path v<sub>fm</sub> is used.

## Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment	Tensile strength N/mm <sup>2</sup> / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C Annealed	420 N/mm <sup>2</sup> / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C Annealed	640 N/mm <sup>2</sup> / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3	< 0,45 % C Tempered	840 N/mm <sup>2</sup> / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C Annealed	910 N/mm <sup>2</sup> / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5	< 0,75 % C Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1	Annealed	610 N/mm <sup>2</sup> / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2	Tempered	930 N/mm <sup>2</sup> / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3	Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4	Tempered	1200 N/mm <sup>2</sup> / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1	Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2	Hardened and tempered	1100 N/mm <sup>2</sup> / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3	Hardened and tempered	1300 N/mm <sup>2</sup> / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic Quenched	610 N/mm <sup>2</sup> / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)	780 N/mm <sup>2</sup> / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic	350 N/mm <sup>2</sup> / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)	500 N/mm <sup>2</sup> / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic	540 N/mm <sup>2</sup> / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic	845 N/mm <sup>2</sup> / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic	440 N/mm <sup>2</sup> / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic	780 N/mm <sup>2</sup> / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable	60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable Age-hardened	340 N/mm <sup>2</sup> / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable	250 N/mm <sup>2</sup> / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable Age-hardened	300 N/mm <sup>2</sup> / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable	440 N/mm <sup>2</sup> / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %	375 N/mm <sup>2</sup> / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn	300 N/mm <sup>2</sup> / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper	340 N/mm <sup>2</sup> / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys	70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2	Fe - basis Age-hardened	950 N/mm <sup>2</sup> / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis Annealed	840 N/mm <sup>2</sup> / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2	Ni or Co basis Age-hardened	1180 N/mm <sup>2</sup> / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3	Ni or Co basis Cast	1080 N/mm <sup>2</sup> / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium	400 N/mm <sup>2</sup>	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys Age-hardened	1050 N/mm <sup>2</sup> / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
S.3.3	Beta alloys	1400 N/mm <sup>2</sup> / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al		
H	Hardened steel	H.1.1	Hardened and tempered	46–55 HRC				
		H.1.2	Hardened and tempered	56–60 HRC				
		H.1.3	Hardened and tempered	61–65 HRC				
		H.1.4	Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1	Cast	400 HB				
Hardened cast iron	H.3.1	Hardened and tempered	55 HRC					
O	Non-metal materials	O.1.1	Plastics, duroplastic	≤ 150 N/mm <sup>2</sup>				
		O.1.2	Plastics, thermoplastic	≤ 100 N/mm <sup>2</sup>				
		O.2.1	Aramid fibre-reinforced	≤ 1000 N/mm <sup>2</sup>				
		O.2.2	Glass/carbon-fibre reinforced	≤ 1000 N/mm <sup>2</sup>				
		O.3.1	Graphite					

\* Tensile strength

## Cutting data standard values

Index	50 545 ..., 50 550 ..., 50 557 ..., 50 559 ..., 50 568 ..., 50 569 ...				50 524 ..., 50 533 ...			
	ZSGF	AITiN – Performance Solid carbide			SGF	AITiN – Performance Solid carbide		
		Ø 1,5 – 5,9	Ø 6,0 – 11,9	Ø 12,0 – 20,0		Ø 2,4 – 5,9	Ø 6,0 – 11,9	Ø 12,0 – 20,0
	$v_c$ (m/min)	$f_z$ (mm/tooth)			$v_c$ (m/min)	$f_z$ (mm/tooth)		
P.1.1	60–120	0,04–0,11	0,13–0,17	0,18–0,20	80–150	0,015–0,04	0,04–0,08	0,08–0,15
P.1.2	60–120	0,04–0,11	0,13–0,17	0,18–0,20	80–120	0,015–0,04	0,04–0,08	0,08–0,15
P.1.3	60–120	0,04–0,11	0,13–0,17	0,18–0,20	80–120	0,015–0,04	0,04–0,08	0,08–0,15
P.1.4	60–120	0,04–0,11	0,13–0,17	0,18–0,20	80–120	0,015–0,04	0,04–0,08	0,08–0,15
P.1.5	60–120	0,04–0,11	0,13–0,17	0,18–0,20	60–100	0,01–0,04	0,04–0,06	0,04–0,10
P.2.1	60–90	0,03–0,08	0,09–0,14	0,14–0,18	80–120	0,015–0,04	0,04–0,08	0,08–0,15
P.2.2	60–90	0,03–0,08	0,09–0,14	0,14–0,18	80–100	0,015–0,04	0,04–0,08	0,08–0,15
P.2.3	60–90	0,03–0,08	0,09–0,14	0,14–0,18	80–100	0,010–0,04	0,04–0,08	0,08–0,15
P.2.4	60–90	0,03–0,08	0,09–0,14	0,14–0,18	80–100	0,010–0,04	0,04–0,08	0,08–0,15
P.3.1	50–80	0,03–0,08	0,09–0,14	0,14–0,18	70–90	0,01–0,03	0,03–0,05	0,06–0,12
P.3.2	50–80	0,03–0,08	0,09–0,14	0,14–0,18	60–80	0,006–0,02	0,02–0,04	0,04–0,06
P.3.3	50–80	0,03–0,08	0,09–0,14	0,14–0,18	50–70	0,006–0,02	0,02–0,04	0,04–0,06
P.4.1	50–80	0,03–0,08	0,09–0,14	0,14–0,18	70–90	0,006–0,02	0,02–0,04	0,04–0,06
P.4.2	50–80	0,03–0,08	0,09–0,14	0,14–0,18	60–80	0,006–0,02	0,02–0,04	0,04–0,06
M.1.1	60–90	0,02–0,06	0,06–0,11	0,12–0,13	60–100	0,01–0,04	0,04–0,08	0,08–0,10
M.2.1	60–90	0,02–0,06	0,06–0,11	0,12–0,13	60–100	0,01–0,03	0,03–0,06	0,06–0,10
M.3.1	60–90	0,02–0,06	0,06–0,11	0,12–0,13	60–100	0,01–0,03	0,03–0,06	0,06–0,10
K.1.1	40–80	0,04–0,11	0,13–0,17	0,17–0,18	80–120	0,02–0,06	0,06–0,12	0,10–0,15
K.1.2	40–80	0,04–0,11	0,13–0,17	0,17–0,18	80–120	0,02–0,05	0,05–0,10	0,10–0,12
K.2.1	40–80	0,04–0,11	0,13–0,17	0,17–0,18	80–100	0,02–0,05	0,05–0,10	0,08–0,15
K.2.2	40–80	0,04–0,11	0,13–0,17	0,17–0,18	80–100	0,02–0,05	0,05–0,10	0,08–0,12
K.3.1	40–80	0,04–0,11	0,13–0,17	0,17–0,18	80–100	0,015–0,05	0,05–0,08	0,08–0,12
K.3.2	40–80	0,04–0,11	0,13–0,17	0,17–0,18	80–100	0,015–0,03	0,03–0,08	0,08–0,12
N.1.1	100–200	0,04–0,11	0,13–0,16	0,17–0,18	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.1.2	100–200	0,04–0,11	0,13–0,16	0,17–0,18	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.2.1	100–200	0,04–0,1	0,07–0,16	0,17–0,18	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.2.2	100–200	0,04–0,1	0,07–0,16	0,17–0,18	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.2.3	60–140	0,04–0,06	0,07–0,11	0,13–0,14	100–250	0,04–0,09	0,08–0,15	0,12–0,20
N.3.1	50–200	0,05–0,16	0,14–0,19	0,19–0,20	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.3.2	50–200	0,05–0,16	0,14–0,19	0,19–0,20	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.3.3	50–200	0,05–0,16	0,14–0,19	0,19–0,20	100–400	0,04–0,09	0,08–0,15	0,12–0,20
N.4.1	50–200	0,04–0,11	0,07–0,17	0,17–0,18	100–400	0,04–0,09	0,08–0,15	0,12–0,20
S.1.1	20–40	0,03–0,05	0,06–0,07	0,08	40–100	0,01–0,04	0,04–0,07	0,07–0,12
S.1.2	20–40	0,03–0,05	0,06–0,07	0,08				
S.2.1	20–40	0,03–0,05	0,06–0,07	0,08				
S.2.2	20–40	0,03–0,05	0,06–0,07	0,08				
S.2.3	20–40	0,03–0,05	0,06–0,07	0,08				
S.3.1	20–40	0,03–0,05	0,06–0,07	0,08	40–100	0,01–0,04	0,04–0,07	0,07–0,15
S.3.2	20–40	0,03–0,05	0,06–0,07	0,08				
S.3.3	20–40	0,03–0,05	0,06–0,07	0,08				
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	100–200	0,06–0,16	0,19–0,22	0,22–0,3	100–400	0,03–0,08	0,08–0,15	0,15–0,20
O.1.2	100–200	0,06–0,16	0,19–0,22	0,22–0,3	100–400	0,03–0,08	0,08–0,15	0,15–0,20
O.2.1	100–200	0,06–0,16	0,19–0,22	0,22–0,3	50–80	0,03–0,08	0,08–0,15	0,15–0,20
O.2.2	100–200	0,06–0,16	0,19–0,22	0,22–0,3	50–80	0,03–0,08	0,08–0,15	0,15–0,20
O.3.1	60–140	0,05–0,15	0,14–0,20	0,20–0,25				

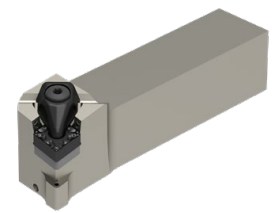
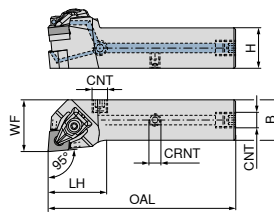


The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx.  $\pm 20\%$  according to the usage conditions.

# MaxiLock-D – DCLN 95° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



Illustrations show right-hand versions

**NEW** Left-hand **70 510 ...**  
**NEW** Right-hand **70 510 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 510 ...	70 510 ...
DCLN R/L 2020 X09 DC	20	20	94	25	25	M6	G1/8"	2	CN.. 0903	<b>52000</b>	<b>52001</b>
DCLN R/L 2020 X12 DC	20	20	101	32	25	M6	G1/8"	4	CN.. 1204	<b>62000</b>	<b>62001</b>
DCLN R/L 2525 X12 DC	25	25	116	32	32	M6	G1/8"	4	CN.. 1204	<b>62500</b>	<b>62501</b>
DCLN R/L 3225 X12 DC	32	25	132	32	32	M6	G1/8"	4	CN.. 1204	<b>63200</b>	<b>63201</b>
DCLN R/L 2525 X16 DC	25	25	122	38	32	M6	G1/8"	6,5	CN.. 1606	<b>72500</b>	<b>72501</b>
DCLN R/L 3232 X16 DC	32	32	142	42	40	M6	G1/8"	6,5	CN.. 1606	<b>73200</b>	<b>73201</b>
DCLN R/L 3232 X19 DC	32	32	142	42	40	M6	G1/8"	6,5	CN.. 1906	<b>83200</b>	<b>83201</b>
DCLN R/L 4040 X19 DC	40	40	167	42	50	M6	G1/8"	6,5	CN.. 1906	<b>94000</b>	<b>94001</b>



Clamping screw



Carbide type C



Grubscrew

**70 950 ...**

**70 950 ...**

**70 950 ...**

**Spare parts for Article no.**

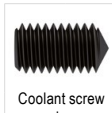
70 510 52000 / 70 510 52001	M3x7 - IP	<b>819</b>	<b>848</b>	M6x6	<b>86700</b>
70 510 62000 / 70 510 62001	M4,5x12 - IP	<b>820</b>	<b>810</b>	M6x6	<b>86700</b>
70 510 62500 / 70 510 62501	M4,5x12 - IP	<b>820</b>	<b>810</b>	M6x6	<b>86700</b>
70 510 63200 / 70 510 63201	M4,5x12 - IP	<b>820</b>	<b>810</b>	M6x6	<b>86700</b>
70 510 72500 / 70 510 72501	M5x14 - IP	<b>821</b>	<b>814</b>	M6x6	<b>86700</b>
70 510 73200 / 70 510 73201	M5x14 - IP	<b>821</b>	<b>814</b>	M6x6	<b>86700</b>
70 510 83200 / 70 510 83201	M5x14 - IP	<b>821</b>	<b>816</b>	M6x6	<b>86700</b>
70 510 94000 / 70 510 94001	M5x14 - IP	<b>821</b>	<b>816</b>	M6x6	<b>86700</b>



XPress type



Key D



Coolant screw plug

**70 950 ...**

**80 950 ...**

**70 950 ...**

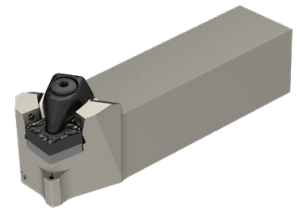
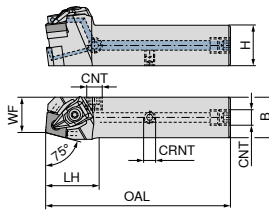
**Spare parts for Article no.**

70 510 52000 / 70 510 52001	<b>823</b>	T09 - IP	<b>126</b>	G 1/8"	<b>294</b>
70 510 62000 / 70 510 62001	<b>824</b>	T15 - IP	<b>128</b>	G 1/8"	<b>294</b>
70 510 62500 / 70 510 62501	<b>824</b>	T15 - IP	<b>128</b>	G 1/8"	<b>294</b>
70 510 63200 / 70 510 63201	<b>824</b>	T15 - IP	<b>128</b>	G 1/8"	<b>294</b>
70 510 72500 / 70 510 72501	<b>825</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>
70 510 73200 / 70 510 73201	<b>825</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>
70 510 83200 / 70 510 83201	<b>826</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>
70 510 94000 / 70 510 94001	<b>826</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>

# MaxiLock-D – DCBN 75° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



Illustrations show right-hand versions

**NEW** Left-hand **70 507 ...**  
**NEW** Right-hand **70 507 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 507 ...	70 507 ...
DCBN R/L 2525 X12 DC	25	25	114	30	22	M6	G1/8"	4	CN.. 1204	82500	82501
DCBN R/L 2525 X16 DC	25	25	120	36	22	M6	G1/8"	6,5	CN.. 1606	62500	62501

**Spare parts for Article no.**

Article no.	Clamping screw	Carbide type C	Grubscrew
70 507 82500 / 70 507 82501	M4,5x12 - IP 820	810	M6x6 86700
70 507 62500 / 70 507 62501	M5x14 - IP 821	814	M6x6 86700

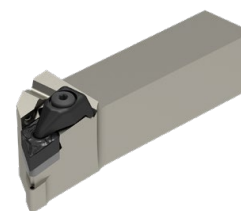
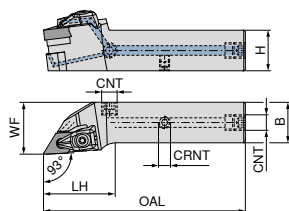
**Spare parts for Article no.**

Article no.	XPress type	Key D	Coolant screw plug
70 507 82500 / 70 507 82501	824	128	G 1/8" 294
70 507 62500 / 70 507 62501	825	129	G 1/8" 294

# MaxiLock-D – DDJN 93° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



Illustrations show right-hand versions

**NEW** Left-hand **70 546 ...**  
**NEW** Right-hand **70 546 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 546 ...	70 546 ...
DDJN R/L 2020 X11 DC	20	20	99	30	25	M6	G1/8"	2	DN.. 1104	<b>82000</b>	<b>82001</b>
DDJN R/L 2525 X11 DC	25	25	114	30	32	M6	G1/8"	2	DN.. 1104	<b>82500</b>	<b>82501</b>
DDJN R/L 2020 X15 DC	20	20	109	40	25	M6	G1/8"	4	DN.. 1504 / 1506	<b>72000</b>	<b>72001</b>
DDJN R/L 2525 X15 DC	25	25	124	40	32	M6	G1/8"	4	DN.. 1504 / 1506	<b>72500</b>	<b>72501</b>
DDJN R/L 3225 X15 DC	32	25	140	40	32	M6	G1/8"	4	DN.. 1504 / 1506	<b>73200</b>	<b>73201</b>

When using DN.. 1504 indexable inserts, use insert seat article no. **70 950 40000**.

**Spare parts for Article no.**

Article no.	Clamping screw	Solid Carbide Seat D	Grubscrew
70 546 82000 / 70 546 82001	M3x7 - IP <b>819</b>	<b>808</b> M6x6	<b>86700</b>
70 546 82500 / 70 546 82501	M3x7 - IP <b>819</b>	<b>808</b> M6x6	<b>86700</b>
70 546 72000 / 70 546 72001	M4,5x12 - IP <b>820</b>	<b>811</b> M6x6	<b>86700</b>
70 546 72500 / 70 546 72501	M4,5x12 - IP <b>820</b>	<b>811</b> M6x6	<b>86700</b>
70 546 73200 / 70 546 73201	M4,5x12 - IP <b>820</b>	<b>811</b> M6x6	<b>86700</b>

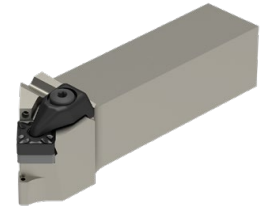
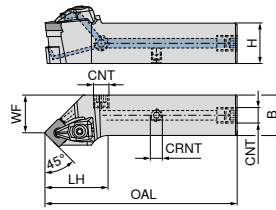
**Spare parts for Article no.**

Article no.	XPress type	Key D	Coolant screw plug
70 546 82000 / 70 546 82001	<b>835</b> T09 - IP	<b>126</b> G 1/8"	<b>294</b>
70 546 82500 / 70 546 82501	<b>835</b> T09 - IP	<b>126</b> G 1/8"	<b>294</b>
70 546 72000 / 70 546 72001	<b>824</b> T15 - IP	<b>128</b> G 1/8"	<b>294</b>
70 546 72500 / 70 546 72501	<b>824</b> T15 - IP	<b>128</b> G 1/8"	<b>294</b>
70 546 73200 / 70 546 73201	<b>824</b> T15 - IP	<b>128</b> G 1/8"	<b>294</b>

# MaxiLock-D – DSSN 45° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



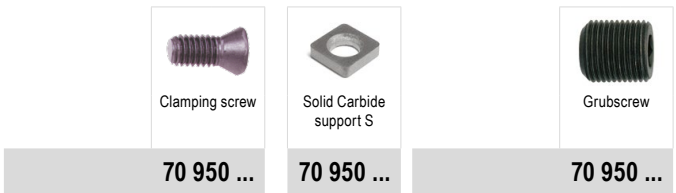
Illustrations show right-hand versions

**NEW** Left-hand **70 517 ...**  
**NEW** Right-hand **70 517 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 517 ...	70 517 ...
DSSN R/L 2020 X12 DC	20	20	104	35	16,7	M6	G1/8"	4	SN.. 1204	62000	62001
DSSN R/L 2525 X12 DC	25	25	119	35	24,2	M6	G1/8"	4	SN.. 1204	62500	62501
DSSN R/L 3225 X12 DC	32	25	135	35	24,2	M6	G1/8"	4	SN.. 1204	63200	63201

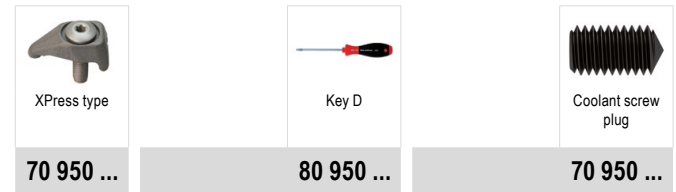
**Spare parts for Article no.**

70 517 62000 / 70 517 62001	M4,5x12 - IP	820	813	M6x6	86700
70 517 62500 / 70 517 62501	M4,5x12 - IP	820	813	M6x6	86700
70 517 63200 / 70 517 63201	M4,5x12 - IP	820	813	M6x6	86700



**Spare parts for Article no.**

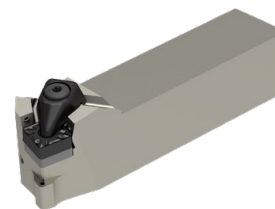
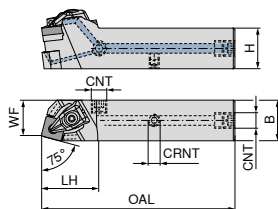
70 517 62000 / 70 517 62001	824	T15 - IP	128	G 1/8"	294
70 517 62500 / 70 517 62501	824	T15 - IP	128	G 1/8"	294
70 517 63200 / 70 517 63201	824	T15 - IP	128	G 1/8"	294



# MaxiLock-D – DSBN 75° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



**NEW**

Right-hand

**70 522 ...**

ISO designation	H	B	OAL	LH	WF	CRNT	CNT	torque moment	Insert	
	mm	mm	mm	mm	mm			Nm		
DSBN R 2020 X12 DC	20	20	104	35	17,2	M6	G1/8"	4	SN.. 1204	<b>62001</b>
DSBN R 2525 X12 DC	25	25	119	35	22,2	M6	G1/8"	4	SN.. 1204	<b>62501</b>
DSBN R 2525 X15 DC	25	25	127	33	22,3	M6	G1/8"	6,5	SN.. 1506	<b>72501</b>
DSBN R 3232 X15 DC	32	32	142	42	26,1	M6	G1/8"	6,5	SN.. 1506	<b>73201</b>
DSBN R 3232 X19 DC	32	32	148	48	27,3	M6	G1/8"	6,5	SN.. 1906	<b>83201</b>
DSBN R 4040 X19 DC	40	40	173	48	35,3	M6	G1/8"	6,5	SN.. 1906	<b>84001</b>



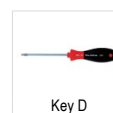
**70 950 ...**

**70 950 ...**

**70 950 ...**

**Spare parts for Article no.**

70 522 62001	M4,5x12 - IP	<b>820</b>	<b>813</b>	M6x6	<b>86700</b>
70 522 62501	M4,5x12 - IP	<b>820</b>	<b>813</b>	M6x6	<b>86700</b>
70 522 72501	M5x14 - IP	<b>821</b>	<b>833</b>	M6x6	<b>86700</b>
70 522 73201	M5x14 - IP	<b>821</b>	<b>833</b>	M6x6	<b>86700</b>
70 522 83201	M5x14 - IP	<b>821</b>	<b>817</b>	M6x6	<b>86700</b>
70 522 84001	M5x14 - IP	<b>821</b>	<b>817</b>	M6x6	<b>86700</b>



**70 950 ...**

**80 950 ...**

**70 950 ...**

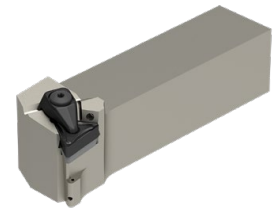
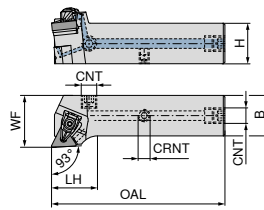
**Spare parts for Article no.**

70 522 62001	<b>824</b>	T15 - IP	<b>128</b>	G 1/8"	<b>294</b>
70 522 62501	<b>824</b>	T15 - IP	<b>128</b>	G 1/8"	<b>294</b>
70 522 72501	<b>825</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>
70 522 73201	<b>825</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>
70 522 83201	<b>826</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>
70 522 84001	<b>826</b>	T20 - IP	<b>129</b>	G 1/8"	<b>294</b>

# MaxiLock-D – DTJN 93° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



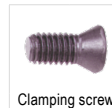
Illustrations show right-hand versions

**NEW** Left-hand **70 601 ...**  
**NEW** Right-hand **70 601 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 601 ...	70 601 ...
DTJN R/L 2020 X16 DC	20	20	92	23	25	M6	G1/8"	2	TNM. 1604	82000	82001
DTJN R/L 2525 X16 DC	25	25	107	23	32	M6	G1/8"	2	TNM. 1604	82500	82501

**Spare parts  
for Article no.**

70 601 82000 / 70 601 82001	M3x7 - IP	819	847	M6x6	86700
70 601 82500 / 70 601 82501	M3x7 - IP	819	847	M6x6	86700



Clamping screw



Solid Carbide  
Seat T



Grubscrew

70 950 ...

70 950 ...

70 950 ...

**Spare parts  
for Article no.**

70 601 82000 / 70 601 82001	823	T09 - IP	126	G 1/8"	294
70 601 82500 / 70 601 82501	823	T09 - IP	126	G 1/8"	294



XPress type

70 950 ...



Key D

80 950 ...



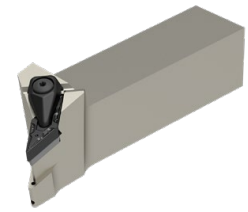
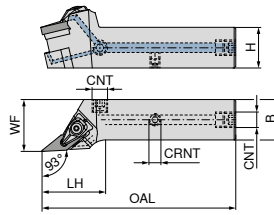
Coolant screw  
plug

70 950 ...

# MaxiLock-D – DVJN 93° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



Illustrations show right-hand versions

**NEW** Left-hand **70 511 ...**  
**NEW** Right-hand **70 511 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 511 ...	70 511 ...
DVJN R/L 2020 X16 DC	20	20	104	35	25	M6	G1/8"	2	VN.. 1604	62000	62001
DVJN R/L 2525 X16 DC	25	25	119	35	32	M6	G1/8"	2	VN.. 1604	62500	62501

**Spare parts for Article no.**

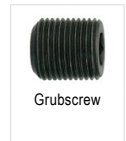
70 511 62000 / 70 511 62001	M3x7 - IP	819	806	M6x6	86700
70 511 62500 / 70 511 62501	M3x7 - IP	819	806	M6x6	86700



Clamping screw



Solid Carbide Seat V



Grubscrew

70 950 ...

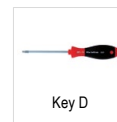
70 950 ...

70 950 ...



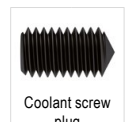
XPress type

70 950 ...



Key D

80 950 ...



Coolant screw plug

70 950 ...

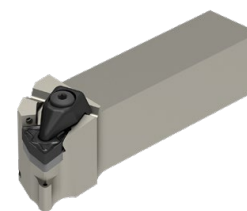
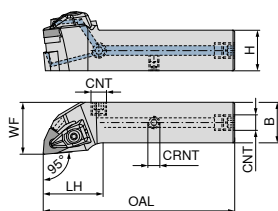
**Spare parts for Article no.**

70 511 62000 / 70 511 62001	835	T09 - IP	126	G 1/8"	294
70 511 62500 / 70 511 62501	835	T09 - IP	126	G 1/8"	294

# MaxiLock-D – DWLN 95° DC – Toolholder with top clamping

**Scope of supply:**

Tool holder with Torx key



Illustrations show right-hand versions

**NEW** Left-hand **70 547 ...**  
**NEW** Right-hand **70 547 ...**

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	CRNT	CNT	torque moment Nm	Insert	70 547 ...	70 547 ...
DWLN R/L 2020 X06 DC	20	20	94	25	25	M6	G1/8"	2	WN.. 0604	62000	62001
DWLN R/L 2525 X06 DC	25	25	109	25	32	M6	G1/8"	2	WN.. 0604	62500	62501
DWLN R/L 2020 X08 DC	20	20	100	31	25	M6	G1/8"	4	WN.. 0804	72000	72001
DWLN R/L 2525 X08 DC	25	25	118	34	32	M6	G1/8"	4	WN.. 0804	72500	72501



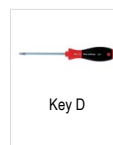
70 950 ...

70 950 ...

70 950 ...

**Spare parts for Article no.**

70 547 62000 / 70 547 62001	M3x7 - IP	819	807	M6x6	86700
70 547 62500 / 70 547 62501	M3x7 - IP	819	807	M6x6	86700
70 547 72000 / 70 547 72001	M4,5x12 - IP	820	812	M6x6	86700
70 547 72500 / 70 547 72501	M4,5x12 - IP	820	812	M6x6	86700



70 950 ...

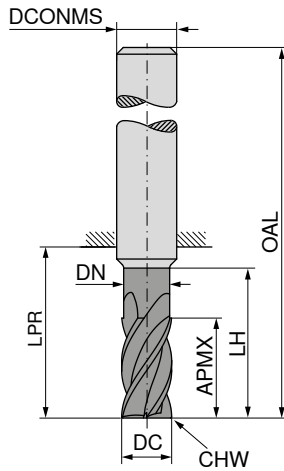
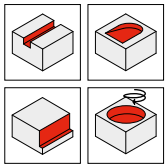
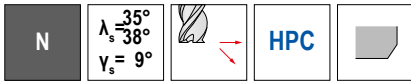
80 950 ...

70 950 ...

**Spare parts for Article no.**

70 547 62000 / 70 547 62001	823	T09 - IP	126	G 1/8"	294
70 547 62500 / 70 547 62501	823	T09 - IP	126	G 1/8"	294
70 547 72000 / 70 547 72001	824	T15 - IP	128	G 1/8"	294
70 547 72500 / 70 547 72501	824	T15 - IP	128	G 1/8"	294

# End milling cutter



**NEW**  
Ti1000



≈DIN 6527



**54 071 ...**

DC <sub>h10</sub> mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS <sub>h6</sub> mm	CHW mm	ZEFP	
6	13	5,8	21	21	57	6	0,1	4	06300
8	21	7,7	27	27	63	8	0,2	4	08300
10	22	9,7	32	32	72	10	0,2	4	10300
12	26	11,6	38	38	83	12	0,3	4	12300
14	26	11,6	38	38	83	14	0,3	4	14300
16	36	15,5	44	44	92	16	0,3	4	16300
18	36	17,5	44	44	92	18	0,3	4	18300
20	41	19,5	54	54	104	20	0,3	4	20300

P	●
M	●
K	●
N	○
S	○
H	
O	

→ v<sub>c</sub>/f<sub>z</sub> Page 32+33


# Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment	Tensile strength N/mm <sup>2</sup> / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C Annealed	420 N/mm <sup>2</sup> / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C Annealed	640 N/mm <sup>2</sup> / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3	< 0,45 % C Tempered	840 N/mm <sup>2</sup> / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C Annealed	910 N/mm <sup>2</sup> / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5	< 0,75 % C Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1	Annealed	610 N/mm <sup>2</sup> / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2	Tempered	930 N/mm <sup>2</sup> / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3	Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4	Tempered	1200 N/mm <sup>2</sup> / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1	Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2	Hardened and tempered	1100 N/mm <sup>2</sup> / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3	Hardened and tempered	1300 N/mm <sup>2</sup> / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic Quenched	610 N/mm <sup>2</sup> / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)	780 N/mm <sup>2</sup> / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic	350 N/mm <sup>2</sup> / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)	500 N/mm <sup>2</sup> / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic	540 N/mm <sup>2</sup> / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic	845 N/mm <sup>2</sup> / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic	440 N/mm <sup>2</sup> / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic	780 N/mm <sup>2</sup> / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable	60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable Age-hardened	340 N/mm <sup>2</sup> / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable	250 N/mm <sup>2</sup> / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable Age-hardened	300 N/mm <sup>2</sup> / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable	440 N/mm <sup>2</sup> / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %	375 N/mm <sup>2</sup> / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn	300 N/mm <sup>2</sup> / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper	340 N/mm <sup>2</sup> / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys	70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
	S	Heat-resistant alloys	S.1.1	Fe - basis Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4864	X12NiCrSi 36-16	1.4865
S.1.2			Fe - basis Age-hardened	950 N/mm <sup>2</sup> / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
S.2.1			Ni or Co basis Annealed	840 N/mm <sup>2</sup> / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
S.2.2			Ni or Co basis Age-hardened	1180 N/mm <sup>2</sup> / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
S.2.3			Ni or Co basis Cast	1080 N/mm <sup>2</sup> / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
Titanium alloys		S.3.1	Pure titanium	400 N/mm <sup>2</sup>	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys Age-hardened	1050 N/mm <sup>2</sup> / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
S.3.3	Beta alloys	1400 N/mm <sup>2</sup> / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al		
H	Hardened steel	H.1.1	Hardened and tempered	46–55 HRC				
		H.1.2	Hardened and tempered	56–60 HRC				
		H.1.3	Hardened and tempered	61–65 HRC				
		H.1.4	Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1	Cast	400 HB				
Hardened cast iron	H.3.1	Hardened and tempered	55 HRC					
O	Non-metal materials	O.1.1	Plastics, duroplastic	≤ 150 N/mm <sup>2</sup>				
		O.1.2	Plastics, thermoplastic	≤ 100 N/mm <sup>2</sup>				
		O.2.1	Aramid fibre-reinforced	≤ 1000 N/mm <sup>2</sup>				
		O.2.2	Glass/carbon-fibre reinforced	≤ 1000 N/mm <sup>2</sup>				
		O.3.1	Graphite					

\* Tensile strength

### Cutting data standard values – End mill

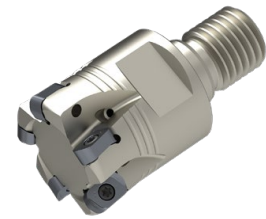
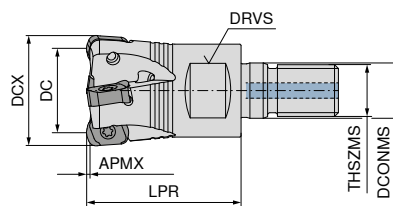
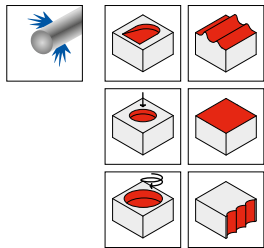
Index	Type short / long		54 071 ...														
	v <sub>c</sub> (m/min)	a <sub>p,max</sub> x DC	Ø DC (mm) =														
			3			4			5			6			8		
			a <sub>p</sub> 0,1–0,2 x DC	a <sub>p</sub> 0,3–0,4 x DC	a <sub>p</sub> 0,6–1,0 x DC	a <sub>p</sub> 0,1–0,2 x DC	a <sub>p</sub> 0,3–0,4 x DC	a <sub>p</sub> 0,6–1,0 x DC	a <sub>p</sub> 0,1–0,2 x DC	a <sub>p</sub> 0,3–0,4 x DC	a <sub>p</sub> 0,6–1,0 x DC	a <sub>p</sub> 0,1–0,2 x DC	a <sub>p</sub> 0,3–0,4 x DC	a <sub>p</sub> 0,6–1,0 x DC	a <sub>p</sub> 0,1–0,2 x DC	a <sub>p</sub> 0,3–0,4 x DC	a <sub>p</sub> 0,6–1,0 x DC
f <sub>z</sub> (mm)																	
P.1.1	210	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.1.2	200	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.1.3	200	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.1.4	190	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.1.5	190	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.2.1	200	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.2.2	190	1,0	0,022	0,018	0,011	0,030	0,024	0,015	0,038	0,030	0,019	0,046	0,037	0,023	0,062	0,050	0,031
P.2.3	180	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.2.4	170	1,0	0,022	0,018	0,011	0,030	0,024	0,015	0,038	0,030	0,019	0,046	0,037	0,023	0,062	0,050	0,031
P.3.1	180	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.3.2	170	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.3.3	140	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
P.4.1	100	1,0	0,017	0,014	0,009	0,024	0,019	0,012	0,031	0,025	0,016	0,038	0,030	0,019	0,052	0,042	0,026
P.4.2	80	1,0	0,017	0,014	0,009	0,024	0,019	0,012	0,031	0,025	0,016	0,038	0,030	0,019	0,052	0,042	0,026
M.1.1	100	1,0	0,017	0,014	0,009	0,024	0,019	0,012	0,031	0,025	0,016	0,038	0,030	0,019	0,052	0,042	0,026
M.2.1	100	1,0	0,017	0,014	0,009	0,024	0,019	0,012	0,031	0,025	0,016	0,038	0,030	0,019	0,052	0,042	0,026
M.3.1	100	1,0	0,017	0,014	0,009	0,024	0,019	0,012	0,031	0,025	0,016	0,038	0,030	0,019	0,052	0,042	0,026
K.1.1	200	1,0	0,037	0,030	0,019	0,048	0,038	0,024	0,060	0,048	0,030	0,070	0,056	0,035	0,094	0,075	0,047
K.1.2	180	1,0	0,037	0,030	0,019	0,048	0,038	0,024	0,060	0,048	0,030	0,070	0,056	0,035	0,094	0,075	0,047
K.2.1	190	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
K.2.2	170	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
K.3.1	180	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
K.3.2	160	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
N.1.1																	
N.1.2																	
N.2.1																	
N.2.2																	
N.2.3																	
N.3.1	350	1,0	0,037	0,030	0,019	0,048	0,038	0,024	0,060	0,048	0,030	0,070	0,056	0,035	0,094	0,075	0,047
N.3.2	350	1,0	0,037	0,030	0,019	0,048	0,038	0,024	0,060	0,048	0,030	0,070	0,056	0,035	0,094	0,075	0,047
N.3.3	280	1,0	0,037	0,030	0,019	0,048	0,038	0,024	0,060	0,048	0,030	0,070	0,056	0,035	0,094	0,075	0,047
N.4.1																	
S.1.1	30	1,0	0,015	0,012	0,008	0,020	0,016	0,010	0,025	0,020	0,013	0,030	0,024	0,015	0,040	0,032	0,020
S.1.2	30	1,0	0,015	0,012	0,008	0,020	0,016	0,010	0,025	0,020	0,013	0,030	0,024	0,015	0,040	0,032	0,020
S.2.1	30	1,0	0,015	0,012	0,008	0,020	0,016	0,010	0,025	0,020	0,013	0,030	0,024	0,015	0,040	0,032	0,020
S.2.2	30	1,0	0,015	0,012	0,008	0,020	0,016	0,010	0,025	0,020	0,013	0,030	0,024	0,015	0,040	0,032	0,020
S.2.3	30	1,0	0,015	0,012	0,008	0,020	0,016	0,010	0,025	0,020	0,013	0,030	0,024	0,015	0,040	0,032	0,020
S.3.1	90	1,0	0,028	0,022	0,014	0,038	0,030	0,019	0,049	0,039	0,025	0,060	0,048	0,030	0,080	0,064	0,040
S.3.2	50	1,0	0,017	0,014	0,009	0,024	0,019	0,012	0,031	0,025	0,016	0,038	0,030	0,019	0,052	0,042	0,026
S.3.3																	
H.1.1																	
H.1.2																	
H.1.3																	
H.1.4																	
H.2.1																	
H.3.1																	
O.1.1																	
O.1.2																	
O.2.1																	
O.2.2																	
O.3.1																	

 Plunging angle for ramping and helical milling: 3°

Index	54 071 ...												● 1st choice		
	Ø DC (mm) =												○ suitable		
	10			12			16			20			Emulsion	Compressed air	MQL
	$a_p$ 0,1-0,2 x DC	$a_p$ 0,3-0,4 x DC	$a_p$ 0,6-1,0 x DC	$a_p$ 0,1-0,2 x DC	$a_p$ 0,3-0,4 x DC	$a_p$ 0,6-1,0 x DC	$a_p$ 0,1-0,2 x DC	$a_p$ 0,3-0,4 x DC	$a_p$ 0,6-1,0 x DC	$a_p$ 0,1-0,2 x DC	$a_p$ 0,3-0,4 x DC	$a_p$ 0,6-1,0 x DC			
$f_z$ (mm)															
P.1.1	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.1.2	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.1.3	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.1.4	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.1.5	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.2.1	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.2.2	0,078	0,062	0,039	0,094	0,075	0,047	0,118	0,094	0,059	0,134	0,107	0,067	●	○	○
P.2.3	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.2.4	0,078	0,062	0,039	0,094	0,075	0,047	0,118	0,094	0,059	0,134	0,107	0,067	●	○	○
P.3.1	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.3.2	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.3.3	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
P.4.1	0,066	0,053	0,033	0,080	0,064	0,040	0,101	0,081	0,051	0,115	0,092	0,058	●		
P.4.2	0,066	0,053	0,033	0,080	0,064	0,040	0,101	0,081	0,051	0,115	0,092	0,058	●		
M.1.1	0,066	0,053	0,033	0,080	0,064	0,040	0,101	0,081	0,051	0,115	0,092	0,058	●		
M.2.1	0,066	0,053	0,033	0,080	0,064	0,040	0,101	0,081	0,051	0,115	0,092	0,058	●		
M.3.1	0,066	0,053	0,033	0,080	0,064	0,040	0,101	0,081	0,051	0,115	0,092	0,058	●		
K.1.1	0,116	0,093	0,058	0,140	0,112	0,070	0,173	0,138	0,087	0,196	0,157	0,098	●	○	○
K.1.2	0,116	0,093	0,058	0,140	0,112	0,070	0,173	0,138	0,087	0,196	0,157	0,098	●	○	○
K.2.1	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
K.2.2	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
K.3.1	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
K.3.2	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●	○	○
N.1.1															
N.1.2															
N.2.1															
N.2.2															
N.2.3															
N.3.1	0,116	0,093	0,058	0,140	0,112	0,070	0,173	0,138	0,087	0,196	0,157	0,098	●		
N.3.2	0,116	0,093	0,058	0,140	0,112	0,070	0,173	0,138	0,087	0,196	0,157	0,098	●		
N.3.3	0,116	0,093	0,058	0,140	0,112	0,070	0,173	0,138	0,087	0,196	0,157	0,098	●		
N.4.1															
S.1.1	0,050	0,040	0,025	0,060	0,048	0,030	0,075	0,060	0,038	0,084	0,067	0,042	●		
S.1.2	0,050	0,040	0,025	0,060	0,048	0,030	0,075	0,060	0,038	0,084	0,067	0,042	●		
S.2.1	0,050	0,040	0,025	0,060	0,048	0,030	0,075	0,060	0,038	0,084	0,067	0,042	●		
S.2.2	0,050	0,040	0,025	0,060	0,048	0,030	0,075	0,060	0,038	0,084	0,067	0,042	●		
S.2.3	0,050	0,040	0,025	0,060	0,048	0,030	0,075	0,060	0,038	0,084	0,067	0,042	●		
S.3.1	0,100	0,080	0,050	0,120	0,096	0,060	0,150	0,120	0,075	0,170	0,136	0,085	●		
S.3.2	0,066	0,053	0,033	0,080	0,064	0,040	0,101	0,081	0,051	0,115	0,092	0,058	●		
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

## MaxiMill – HFCD high-feed screw-in cutter

▲ Programmed radius r3D = 2.0 mm



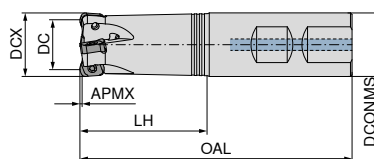
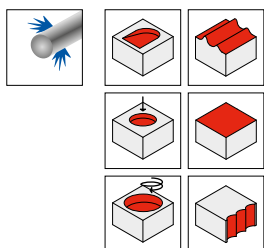
NEW

50 357 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
GHFCD.16.R.02-06	10	16	2	0,8	27	8,5	M8	10	23500	1,2	XNEU 06T3..	01602
GHFCD.20.R.03-06	14	20	3	0,8	33	10,5	M10	15	20200	1,2	XNEU 06T3..	02003
GHFCD.25.R.04-06	19	25	4	0,8	35	12,5	M12	17	18100	1,2	XNEU 06T3..	02504
GHFCD.32.R.05-06	26	32	5	0,8	35	17,0	M16	24	17300	1,2	XNEU 06T3..	03205
GHFCD.35.R.06-06	29	35	6	0,8	35	17,0	M16	24	16100	1,2	XNEU 06T3..	03506
GHFCD.42.R.06-06	36	42	6	0,8	35	17,0	M16	24	14100	1,2	XNEU 06T3..	04206

## MaxiMill – HFCD high-feed end mill

▲ Programmed radius r3D = 2.0 mm



NEW

NEW

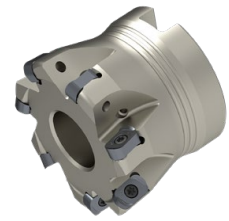
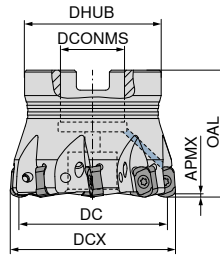
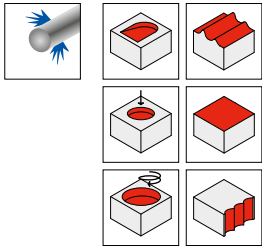
50 356 ...

50 356 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS <sub>h6</sub> mm	RPMX 1/min.	torque moment Nm	Insert		
CHFCD.16.R.02-06-B-40	10	16	2	0,8	89	40	16	21700	1,2	XNEU 06T3..		11602
CHFCD.16.R.02-06-A-40	10	16	2	0,8	89	40	16	21700	1,2	XNEU 06T3..	01602	
CHFCD.16.R.02-06-A-40-200	10	16	2	0,8	200	40	16	12300	1,2	XNEU 06T3..	21602	
CHFCD.20.R.03-06-B-50	14	20	3	0,8	101	50	20	17000	1,2	XNEU 06T3..		12003
CHFCD.20.R.03-06-A-50	14	20	3	0,8	101	50	20	17000	1,2	XNEU 06T3..	02003	
CHFCD.20.R.03-06-A-50-225	14	20	3	0,8	225	50	20	8700	1,2	XNEU 06T3..	22003	
CHFCD.25.R.04-06-B-50	19	25	4	0,8	107	50	25	15400	1,2	XNEU 06T3..		12504
CHFCD.25.R.04-06-A-50	19	25	4	0,8	107	50	25	15400	1,2	XNEU 06T3..	02504	
CHFCD.25.R.04-06-A-50-225	19	25	4	0,8	225	50	25	7100	1,2	XNEU 06T3..	22504	
CHFCD.32.R.05-06-B25-50	26	32	5	0,8	107	50	25	14400	1,2	XNEU 06T3..		13205
CHFCD.32.R.05-06-A25-50	26	32	5	0,8	107	50	25	14400	1,2	XNEU 06T3..	03205	
CHFCD.32.R.05-06-A25-50-225	26	32	5	0,8	225	50	25	6400	1,2	XNEU 06T3..	23205	

# MaxiMill – HFCD high-feed face mill

▲ Programmed radius r3D = 2.0 mm








**NEW**

**50 358 ...**

Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS <sub>H6</sub> mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert	
AHFCD.32.R.05-06	26	32	5	0,8	40	16	38	17300	1,2	XNEU 06T3..	<b>03205</b>
AHFCD.35.R.05-06	29	35	5	0,8	40	16	38	16100	1,2	XNEU 06T3..	<b>03505</b>
AHFCD.40.R.06-06	34	40	6	0,8	40	16	38	14600	1,2	XNEU 06T3..	<b>04006</b>
AHFCD.42.R.06-06	36	42	6	0,8	40	16	38	14100	1,2	XNEU 06T3..	<b>04206</b>
AHFCD.50.R.07-06	44	50	7	0,8	40	22	43	12500	1,2	XNEU 06T3..	<b>05007</b>
AHFCD.52.R.08-06	46	52	8	0,8	40	22	43	12200	1,2	XNEU 06T3..	<b>05208</b>
AHFCD.63.R.09-06	57	63	9	0,8	40	22	48	10800	1,2	XNEU 06T3..	<b>06309</b>
AHFCD.66.R.10-06	60	66	10	0,8	40	22	48	10500	1,2	XNEU 06T3..	<b>06610</b>

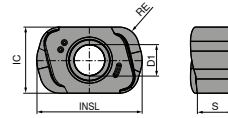
**Spare parts**  
**Insert**

XNEU 06T3..

				
TORX® blade	Key D	Molykote	Clamping screw	Torque screwdriver
<b>80 950 ...</b>	<b>80 950 ...</b>	<b>70 950 ...</b>	<b>70 950 ...</b>	<b>80 950 ...</b>
<b>033</b>	<b>110</b>	<b>303</b>	<b>13800</b>	<b>192</b>

# XNEU

Designation	IC mm	D1 mm	INSL mm	r3D mm	S mm
XNEU 06T3..	6,05	2,8	9,65	2	3,0



# XNEU

NEW	NEW	NEW	NEW	NEW
<b>-M50</b> CTCP230	<b>-M50</b> CTPP235	<b>-F50</b> CTPM240	<b>-M50</b> CTPM240	<b>-F50</b> CTPM245
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
XNEU	XNEU	XNEU	XNEU	XNEU
51 261 ...	51 261 ...	51 260 ...	51 261 ...	51 260 ...
01800	11800	41800	41800	41801

ISO	RE mm
06T318SER	1,8

P	●	●	○	○	●
M	●	○	●	●	●
K	○	○	●	●	●
N	○	○	○	○	○
S	○	○	○	○	○
H	○	○	○	○	○
O	○	○	○	○	○

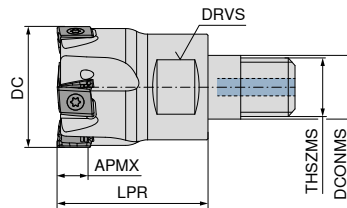
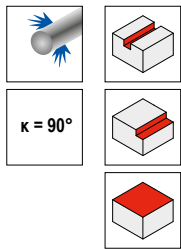
# XNEU

NEW	NEW	NEW	NEW	NEW
<b>-F50</b> CTCM245	<b>-R50</b> CTCK215	<b>-R50</b> CTPK220	<b>-F40</b> CTC5240	<b>-F40</b> CTCS245
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
XNEU	XNEU	XNEU	XNEU	XNEU
51 260 ...	51 262 ...	51 262 ...	51 259 ...	51 259 ...
91801	51800	61800	11801	51801

ISO	RE mm
06T318ER	1,8
06T318SER	1,8

P	●	●	○	○	○
M	●	○	●	●	●
K	○	○	●	●	●
N	○	○	○	○	○
S	○	○	○	○	○
H	○	○	○	○	○
O	○	○	○	○	○

## MaxiMill – Tangent-09 screw-in cutter

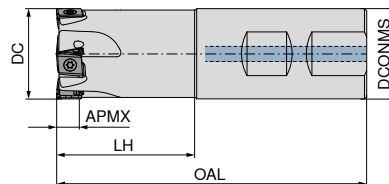
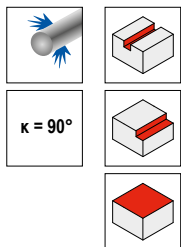


NEW

50 355 ...

Designation	DC mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
GTANG.25.R.03-09-M12	25	3	8	35	12,5	M12	17	39600	2,2	LN.U 0904	02503
GTANG.25.R.04-09-M12	25	4	8	35	12,5	M12	17	39600	2,2	LN.U 0904	02504
GTANG.32.R.04-09-M16	32	4	8	40	17,0	M16	24	35000	2,2	LN.U 0904	03204
GTANG.32.R.05-09-M16	32	5	8	40	17,0	M16	24	35000	2,2	LN.U 0904	03205

## MaxiMill – Tangent-09 end mill



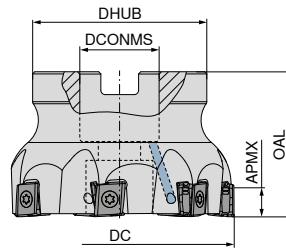
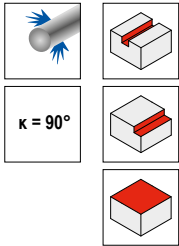
NEW



50 354 ...

Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS <sub>h6</sub> mm	RPMX 1/min.	torque moment Nm	Insert	
CTANG.25.R.03-09-B-43-100	25	3	8	100	43	25	39600	2,2	LN.U 0904	02503
CTANG.25.R.04-09-B-43-100	25	4	8	100	43	25	39600	2,2	LN.U 0904	02504
CTANG.32.R.04-09-B-49-110	32	4	8	110	49	32	35000	2,2	LN.U 0904	03204
CTANG.32.R.05-09-B-49-110	32	5	8	110	49	32	35000	2,2	LN.U 0904	03205
CTANG.40.R.04-09-B32-49-110	40	4	8	110	49	32	31300	2,2	LN.U 0904	04004
CTANG.40.R.06-09-B32-49-110	40	6	8	110	49	32	31300	2,2	LN.U 0904	04006

# MaxiMill – Tangent-09 face mill



**NEW**

**NEW**

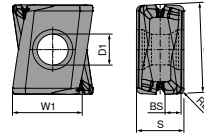
Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS <sub>H6</sub> mm	RPMX 1/min.	torque moment Nm	Insert	50 353 ...	50 353 ...
ATANG.40.R.04-09-A16	40	4	8	40	38	16	31300	2,2	LN.U 0904		04004
ATANG.40.R.06-09-A16	40	6	8	40	38	16	31300	2,2	LN.U 0904	04006	
ATANG.50.R.05-09-A22	50	5	8	40	43	22	28000	2,2	LN.U 0904		05005
ATANG.50.R.07-09-A22	50	7	8	40	43	22	28000	2,2	LN.U 0904	05007	
ATANG.63.R.07-09-A22	63	7	8	40	48	22	25000	2,2	LN.U 0904		06307
ATANG.63.R.10-09-A22	63	10	8	40	48	22	25000	2,2	LN.U 0904	06310	
ATANG.80.R.08-09-A27	80	8	8	50	58	27	21000	2,2	LN.U 0904		08008
ATANG.80.R.11-09-A27	80	11	8	50	58	27	21000	2,2	LN.U 0904	08011	

Spare parts  
Insert  
LN.U 0904

Key D	Molykote	Clamping screw	Torque screwdriver
80 950 ...	70 950 ...	70 950 ...	80 950 ...
119	303	710	193

# LNHU

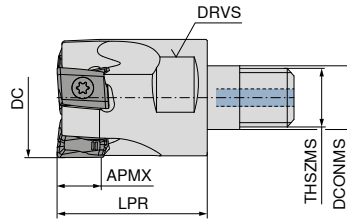
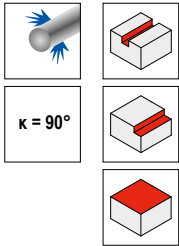
Designation	D1 mm	L mm	BS mm	S mm	W1 mm
LNHU 0904..	3,45	9,3	1	4,8	8



# LNHU

ISO	RE mm	NEW	NEW	NEW	NEW	NEW	NEW	
090404	0,4	-M50 CTCP230	-M50 CTPP235	-M50 CTPM240	-M50 CTCM245	-M50 CTCK215	-M50 CTPK220	-F40 CTC5240
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		LNHU	LNHU	LNHU	LNHU	LNHU	LNHU	LNHU
		51 257 ...	51 257 ...	51 257 ...	51 257 ...	51 257 ...	51 257 ...	51 258 ...
		00400	10400	40400	40401	50400	60400	10401
P		●	●	○	●			
M			○	●	●			
K		○	○			●	●	
N								
S					○			●
H								
O								

## MaxiMill – Tangent-13 screw-in cutter

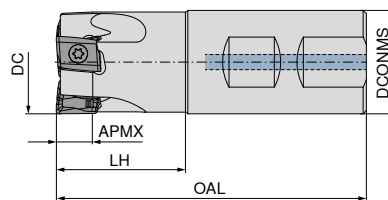
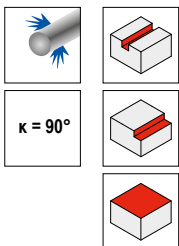


NEW

50 352 ...

Designation	DC mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
GTANG.32.R.03-13-M16	32	3	12	35	17	M16	24	25000	5,0	LN.U 1306	03203
GTANG.40.R.04-13-M16	40	4	12	40	17	M16	27	22500	5,0	LN.U 1306	04004

## MaxiMill – Tangent-13 end mill



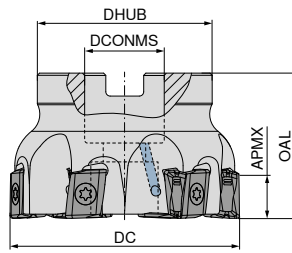
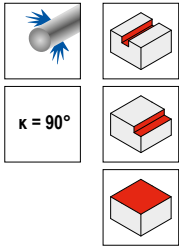
NEW



50 351 ...

Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS <sub>h6</sub> mm	RPMX 1/min.	torque moment Nm	Insert	
CTANG.32.R.03-13-B32-40	32	3	12	96	40	32	25000	5,0	LN.U 1306	03203
CTANG.40.R.04-13-B32-50	40	4	12	110	50	32	22500	5,0	LN.U 1306	04004

# MaxiMill – Tangent-13 face mill



**NEW**






**NEW**

Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS <sub>H6</sub> mm	RPMX 1/min.	torque moment Nm	Insert
ATANG.40.R.04-13-A16	40	4	12	40	38	16	22500	5,0	LN.U 1306
ATANG.40.R.05-13-A16	40	5	12	40	38	16	22500	5,0	LN.U 1306
ATANG.40.R.05-13-A22	40	5	12	40	38	22	22500	5,0	LN.U 1306
ATANG.50.R.05-13-A22	50	5	12	40	43	22	20200	5,0	LN.U 1306
ATANG.50.R.06-13-A22	50	6	12	40	43	22	20200	5,0	LN.U 1306
ATANG.50.R.06-13-A27	50	6	12	45	48	27	20200	5,0	LN.U 1306
ATANG.63.R.06-13-A22	63	6	12	40	48	22	18000	5,0	LN.U 1306
ATANG.63.R.08-13-A22	63	8	12	40	48	22	18000	5,0	LN.U 1306
ATANG.63.R.08-13-A27	63	8	12	45	48	27	18000	5,0	LN.U 1306
ATANG.80.R.07-13-A27	80	7	12	50	58	27	15900	5,0	LN.U 1306
ATANG.80.R.10-13-A27	80	10	12	50	58	27	15900	5,0	LN.U 1306
ATANG.100.R.09-13-A32	100	9	12	50	78	32	14200	5,0	LN.U 1306
ATANG.100.R.13-13-A32	100	13	12	50	78	32	14200	5,0	LN.U 1306
ATANG.125.R.11-13-A40	125	11	12	63	88	40	12700	5,0	LN.U 1306
ATANG.125.R.16-13-A40	125	16	12	63	88	40	12700	5,0	LN.U 1306

50 350 ...	50 350 ...
	04004
04005	
14005	
	05005
05006	
15006	
	06306
06308	
16308	
	08007
08010	
10013	
	12511
12516	

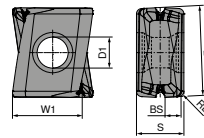
**Spare parts**  
Insert

LN.U 1306

 TORX® blade	 Key D	 Molykote	 Clamping screw	 Torque screwdriver
80 950 ...	80 950 ...	70 950 ...	70 950 ...	80 950 ...
054	120	303	134	193

# LNHU

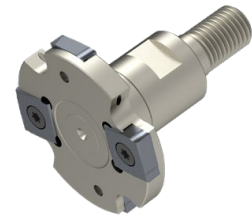
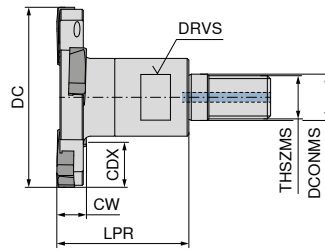
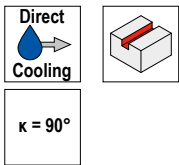
Designation	D1 mm	L mm	BS mm	S mm	W1 mm
LNHU 1306..	4,5	13,3	1,5	7,0	10,2



# LNHU

		NEW	NEW	NEW	NEW	NEW	NEW	NEW
		-M50 CTCP230	-M50 CTPP235	-F50 CTPM240	-F50 CTCM245	-M50 CTCK215	-M50 CTPK220	-F50 CTC5240
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		LNHU	LNHU	LNHU	LNHU	LNHU	LNHU	LNHU
		51 255 ...	51 255 ...	51 256 ...	51 256 ...	51 255 ...	51 255 ...	51 256 ...
ISO	RE mm	00800	10800	40800	40801	50800	60800	10801
130608	0,8							
P		●	●	○	●			
M			○	●	●			
K		○	○			●	●	
N								
S					○			●
H								
O								

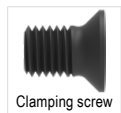
# MaxiMill – Slot-SNHX screw-in multipurpose milling cutter



NEW

50 373 ...

Designation	DC mm	CW mm	CDX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	ZNF	Insert	
GSLOT.50.R.04-SN13-06-DC-M12	50	6	13	35	12,5	M12	17	4	SNHX 1303..	05006
GSLOT.63.R.06-SN13-06-DC-M12	63	6	18	35	12,5	M12	17	6	SNHX 1303..	06306
GSLOT.80.R.08-SN13-06-DC-M16	80	6	21	35	17,0	M16	24	8	SNHX 1303..	08006
GSLOT.50.R.04-SN13-08-DC-M12	50	8	13	35	12,5	M12	17	4	SNHX 1304..	05008
GSLOT.63.R.06-SN13-08-DC-M12	63	8	18	35	12,5	M12	17	6	SNHX 1304..	06308
GSLOT.80.R.08-SN13-08-DC-M16	80	8	21	35	17,0	M16	24	8	SNHX 1304..	08008

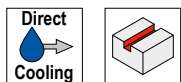


50 950 ...

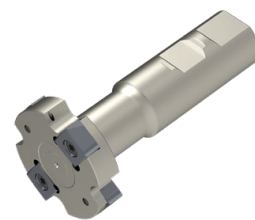
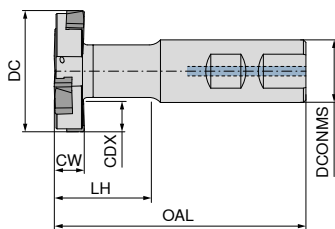
Spare parts  
for Article no.

50 373 05006 / 50 373 06306	00500
50 373 05008 / 50 373 06308	00600
50 373 08006	00500
50 373 08008	00600

# MaxiMill – Slot-SNHX cylindrical shank saw



$\kappa = 90^\circ$



**NEW**

**50 372 ...**

Designation	DC mm	CW mm	CDX mm	OAL mm	LH mm	DCONMS mm	ZNF	Insert	
CSLOT.50.R.04-SN13-06-DC-B20-42	50	6	13	95	42	20	4	SNHX 1303..	<b>05006</b>
CSLOT.63.R.06-SN13-06-DC-B25-41	63	6	18	100	41	25	6	SNHX 1303..	<b>06306</b>
CSLOT.80.R.08-SN13-06-DC-B32-48	80	6	22	110	48	32	8	SNHX 1303..	<b>08006</b>
CSLOT.100.R.10-SN13-06-DC-B40-52	100	6	29	125	52	40	10	SNHX 1303..	<b>10006</b>
CSLOT.50.R.04-SN13-08-DC-B20-42	50	8	13	95	42	20	4	SNHX 1304..	<b>05008</b>
CSLOT.63.R.06-SN13-08-DC-B25-41	63	8	18	100	41	25	6	SNHX 1304..	<b>06308</b>
CSLOT.80.R.08-SN13-08-DC-B32-48	80	8	22	110	48	32	8	SNHX 1304..	<b>08008</b>
CSLOT.100.R.10-SN13-08-DC-B40-52	100	8	29	125	52	40	10	SNHX 1304..	<b>10008</b>
CSLOT.50.R.04-SN13-10-DC-B20-42	50	10	13	95	42	20	4	SNHX 1305..	<b>05010</b>
CSLOT.63.R.06-SN13-10-DC-B25-41	63	10	18	100	41	25	6	SNHX 1305..	<b>06310</b>
CSLOT.80.R.08-SN13-10-DC-B32-48	80	10	22	110	48	32	8	SNHX 1305..	<b>08010</b>
CSLOT.100.R.10-SN13-10-DC-B40-52	100	10	29	125	52	40	10	SNHX 1305..	<b>10010</b>
CSLOT.50.R.04-SN13-12-DC-B20-42	50	12	13	95	42	20	4	SNHX 1307..	<b>05012</b>
CSLOT.63.R.06-SN13-12-DC-B25-41	63	12	18	100	41	25	6	SNHX 1307..	<b>06312</b>
CSLOT.80.R.08-SN13-12-DC-B32-48	80	12	22	110	48	32	8	SNHX 1307..	<b>08012</b>
CSLOT.100.R.10-SN13-12-DC-B40-52	100	12	29	125	52	40	10	SNHX 1307..	<b>10012</b>



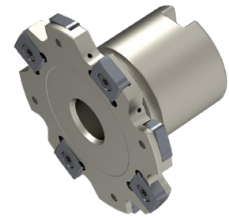
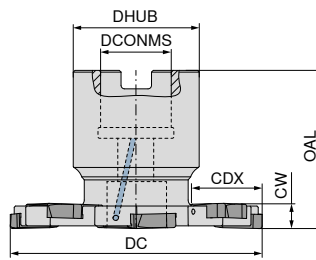
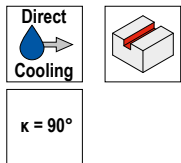
Clamping screw

**50 950 ...**

**Spare parts  
for Article no.**

50 372 05006 / 50 372 06306	<b>00500</b>
50 372 05008 / 50 372 06308	<b>00600</b>
50 372 05010 / 50 372 06310	<b>00700</b>
50 372 05012 / 50 372 06312	<b>00800</b>
50 372 08006 / 50 372 10006	<b>00500</b>
50 372 08008 / 50 372 10008	<b>00600</b>
50 372 08010 / 50 372 10010	<b>00700</b>
50 372 08012 / 50 372 10012	<b>00800</b>

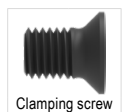
# MaxiMill – Slot-SNHX slot milling and parting off cutter



NEW

50 374 ...

Designation	DC mm	CW mm	CDX mm	OAL mm	DCONMS mm	DHUB mm	ZNF	Insert	
ASLOT.80.R.08-SN13-06-DC-A22	80	6	22,0	50	22	40	8	SNHX 1303..	08006
ASLOT.100.R.10-SN13-06-DC-A27	100	6	25,0	50	27	48	10	SNHX 1303..	10006
ASLOT.125.R.12-SN13-06-DC-A32	125	6	31,5	50	32	58	12	SNHX 1303..	12506
ASLOT.160.R.16-SN13-06-DC-A40	160	6	41,5	50	40	70	16	SNHX 1303..	16006
ASLOT.200.R.18-SN13-06-DC-A40	200	6	52,0	50	40	88	18	SNHX 1303..	20006
ASLOT.80.R.08-SN13-08-DC-A22	80	8	22,0	50	22	40	8	SNHX 1304..	08008
ASLOT.100.R.10-SN13-08-DC-A27	100	8	25,0	50	27	48	10	SNHX 1304..	10008
ASLOT.125.R.12-SN13-08-DC-A32	125	8	31,5	50	32	58	12	SNHX 1304..	12508
ASLOT.160.R.16-SN13-08-DC-A40	160	8	41,5	50	40	70	16	SNHX 1304..	16008
ASLOT.200.R.18-SN13-08-DC-A40	200	8	52,0	50	40	88	18	SNHX 1304..	20008
ASLOT.80.R.08-SN13-10-DC-A22	80	10	22,0	50	22	40	8	SNHX 1305..	08010
ASLOT.100.R.10-SN13-10-DC-A27	100	10	25,0	50	27	48	10	SNHX 1305..	10010
ASLOT.125.R.12-SN13-10-DC-A32	125	10	31,5	50	32	58	12	SNHX 1305..	12510
ASLOT.160.R.16-SN13-10-DC-A40	160	10	41,5	50	40	70	16	SNHX 1305..	16010
ASLOT.200.R.18-SN13-10-DC-A40	200	10	52,0	50	40	88	18	SNHX 1305..	20010
ASLOT.80.R.08-SN13-12-DC-A22	80	12	22,0	50	22	40	8	SNHX 1307..	08012
ASLOT.100.R.10-SN13-12-DC-A27	100	12	25,0	50	27	48	10	SNHX 1307..	10012
ASLOT.125.R.12-SN13-12-DC-A32	125	12	31,5	50	32	58	12	SNHX 1307..	12512
ASLOT.160.R.16-SN13-12-DC-A40	160	12	41,5	50	40	70	16	SNHX 1307..	16012
ASLOT.200.R.18-SN13-12-DC-A40	200	12	52,0	50	40	88	18	SNHX 1307..	20012
ASLOT.80.R.08-SN13-14-DC-A22	80	14	22,0	50	22	40	8	SNHX 1309..	08014
ASLOT.100.R.10-SN13-14-DC-A27	100	14	25,0	50	27	48	10	SNHX 1309..	10014
ASLOT.125.R.12-SN13-14-DC-A32	125	14	31,5	50	32	58	12	SNHX 1309..	12514
ASLOT.160.R.16-SN13-14-DC-A40	160	14	41,5	50	40	70	16	SNHX 1309..	16014
ASLOT.200.R.18-SN13-14-DC-A40	200	14	52,0	50	40	88	18	SNHX 1309..	20014
ASLOT.80.R.08-SN13-16-DC-A22	80	16	22,0	50	22	40	8	SNHX 1309..	08016
ASLOT.100.R.10-SN13-16-DC-A27	100	16	25,0	50	27	48	10	SNHX 1309..	10016
ASLOT.125.R.12-SN13-16-DC-A32	125	16	31,5	50	32	58	12	SNHX 1309..	12516
ASLOT.160.R.16-SN13-16-DC-A40	160	16	41,5	50	40	70	16	SNHX 1309..	16016
ASLOT.200.R.18-SN13-16-DC-A40	200	16	52,0	50	40	88	18	SNHX 1309..	20016



50 950 ...

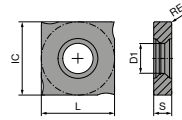
50 950 ...

Spare parts  
for Article no.

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50 374 08008	01000	00600
50 374 08010	01000	00700
50 374 08012	01000	00800
50 374 08014 / 50 374 08016	01000	00900
50 374 10006	01100	00500
50 374 10008	01100	00600
50 374 10010	01100	00700
50 374 10012	01100	00800
50 374 10014 / 50 374 10016	01100	00900
50 374 12506	01200	00500
50 374 12508	01200	00600
50 374 12510	01200	00700
50 374 12512	01200	00800
50 374 12514 / 50 374 12516	01200	00900
50 374 16006 / 50 374 20006	01300	00500
50 374 16008 / 50 374 20008	01300	00600
50 374 16010 / 50 374 20010	01300	00700
50 374 16012 / 50 374 20012	01300	00800
50 374 16014 / 50 374 16016	01300	00900
50 374 20014 / 50 374 20016	01300	00900

# SNHX

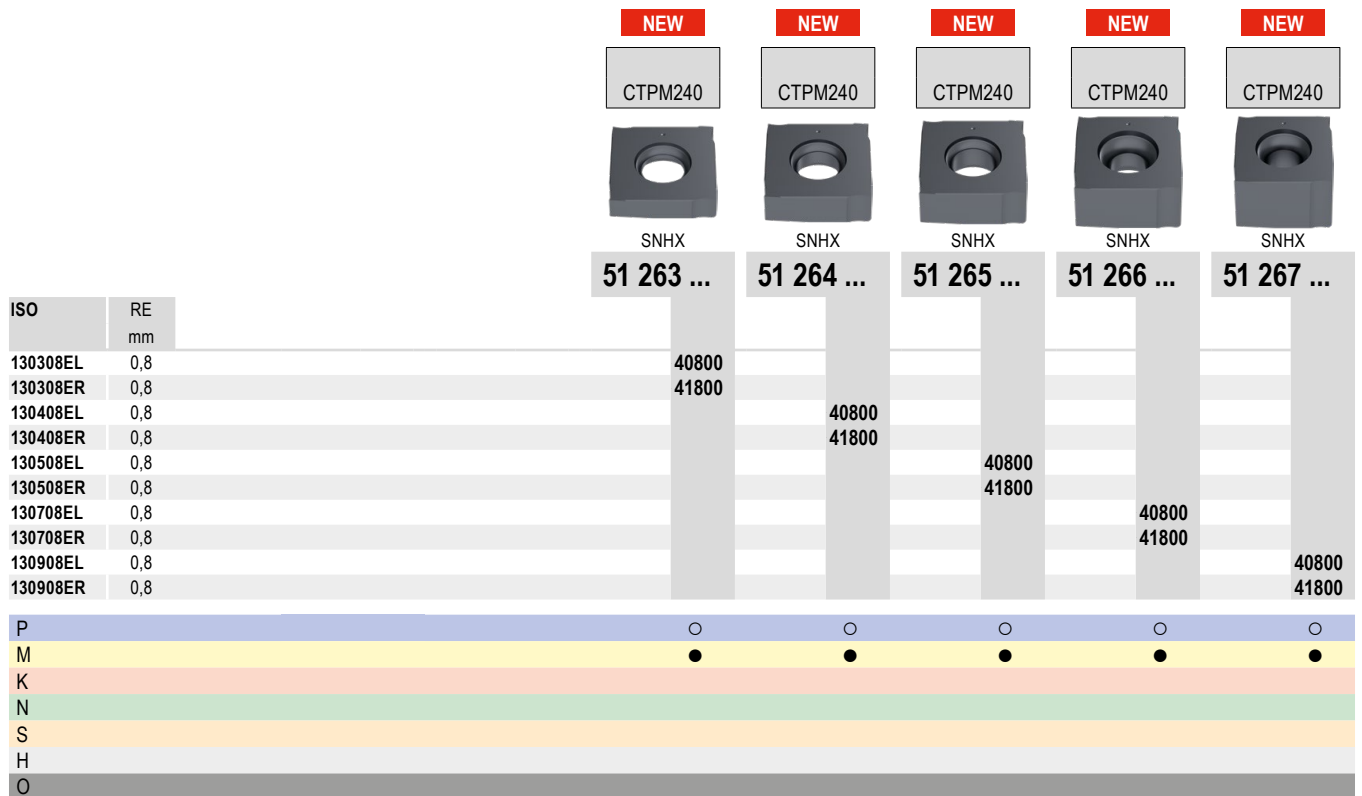
Designation	IC mm	D1 mm	L mm	S mm
SNHX 1303..	13	5,3	13	3,2
SNHX 1304..	13	5,3	13	4,5
SNHX 1305..	13	5,3	13	5,4
SNHX 1307..	13	5,3	13	7,0
SNHX 1309..	13	5,3	13	9,0



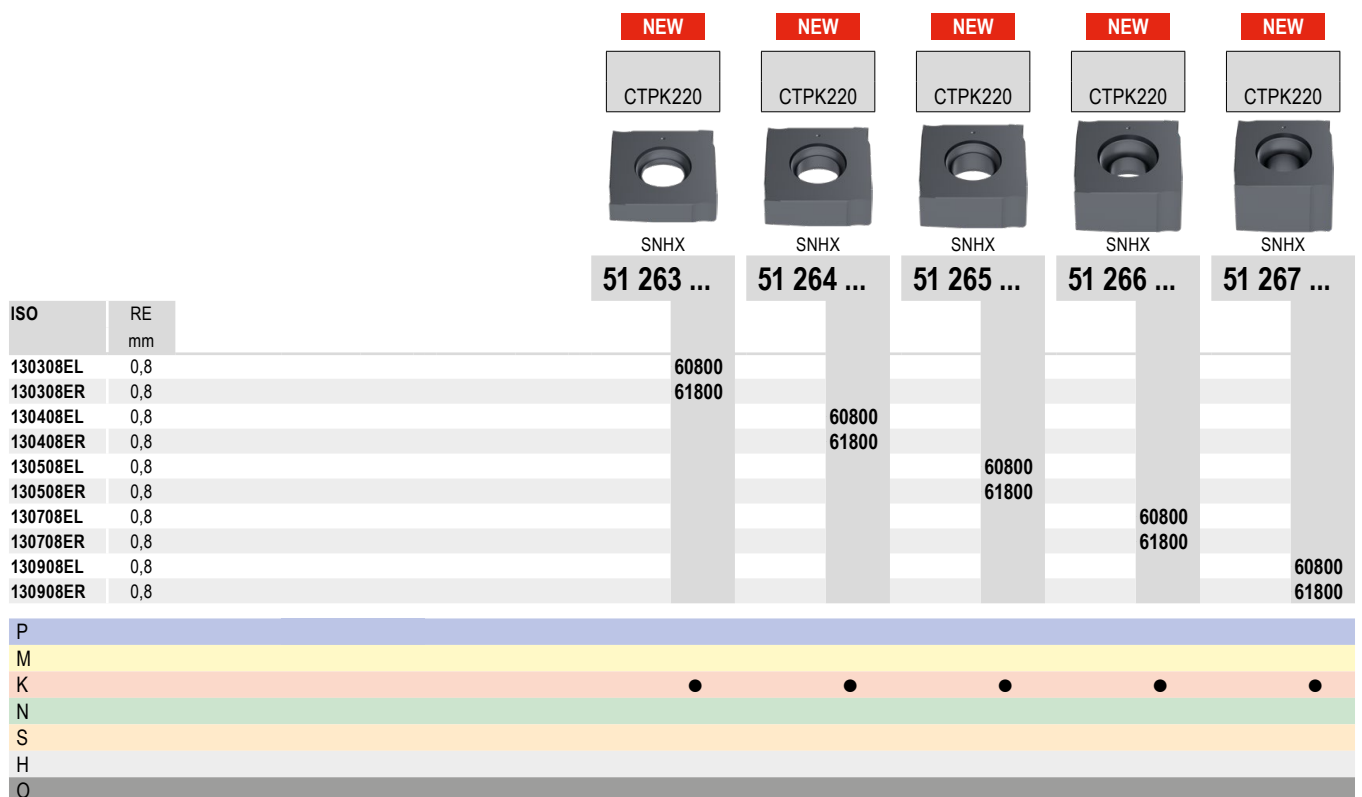
# SNHX

ISO	RE mm	51 263 ...	51 264 ...	51 265 ...	51 266 ...	51 267 ...
130308EL	0,8	10800				
130308ER	0,8	11800				
130408EL	0,8		10800			
130408ER	0,8		11800			
130508EL	0,8			10800		
130508ER	0,8			11800		
130708EL	0,8				10800	
130708ER	0,8				11800	
130908EL	0,8					10800
130908ER	0,8					11800
P		●	●	●	●	●
M		○	○	○	○	○
K		○	○	○	○	○
N						
S						
H						
O						

# SNHX



# SNHX



# Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment	Tensile strength N/mm <sup>2</sup> / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C Annealed	420 N/mm <sup>2</sup> / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C Annealed	640 N/mm <sup>2</sup> / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3	< 0,45 % C Tempered	840 N/mm <sup>2</sup> / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C Annealed	910 N/mm <sup>2</sup> / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5	< 0,75 % C Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1	Annealed	610 N/mm <sup>2</sup> / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2	Tempered	930 N/mm <sup>2</sup> / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3	Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4	Tempered	1200 N/mm <sup>2</sup> / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1	Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2	Hardened and tempered	1100 N/mm <sup>2</sup> / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3	Hardened and tempered	1300 N/mm <sup>2</sup> / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic Tempered	1010 N/mm <sup>2</sup> / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic Quenched	610 N/mm <sup>2</sup> / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)	780 N/mm <sup>2</sup> / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic	350 N/mm <sup>2</sup> / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)	500 N/mm <sup>2</sup> / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic	540 N/mm <sup>2</sup> / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic	845 N/mm <sup>2</sup> / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic	440 N/mm <sup>2</sup> / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic	780 N/mm <sup>2</sup> / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable	60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable Age-hardened	340 N/mm <sup>2</sup> / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable	250 N/mm <sup>2</sup> / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable Age-hardened	300 N/mm <sup>2</sup> / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable	440 N/mm <sup>2</sup> / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %	375 N/mm <sup>2</sup> / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn	300 N/mm <sup>2</sup> / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper	340 N/mm <sup>2</sup> / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys	70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
	S	Heat-resistant alloys	S.1.1	Fe - basis Annealed	680 N/mm <sup>2</sup> / 200 HB	1.4864	X12NiCrSi 36-16	1.4865
S.1.2			Fe - basis Age-hardened	950 N/mm <sup>2</sup> / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
S.2.1			Ni or Co basis Annealed	840 N/mm <sup>2</sup> / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
S.2.2			Ni or Co basis Age-hardened	1180 N/mm <sup>2</sup> / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
S.2.3			Ni or Co basis Cast	1080 N/mm <sup>2</sup> / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
Titanium alloys		S.3.1	Pure titanium	400 N/mm <sup>2</sup>	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys Age-hardened	1050 N/mm <sup>2</sup> / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
S.3.3	Beta alloys	1400 N/mm <sup>2</sup> / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al		
H	Hardened steel	H.1.1	Hardened and tempered	46–55 HRC				
		H.1.2	Hardened and tempered	56–60 HRC				
		H.1.3	Hardened and tempered	61–65 HRC				
		H.1.4	Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1	Cast	400 HB				
Hardened cast iron	H.3.1	Hardened and tempered	55 HRC					
O	Non-metal materials	O.1.1	Plastics, duroplastic	≤ 150 N/mm <sup>2</sup>				
		O.1.2	Plastics, thermoplastic	≤ 100 N/mm <sup>2</sup>				
		O.2.1	Aramid fibre-reinforced	≤ 1000 N/mm <sup>2</sup>				
		O.2.2	Glass/carbon-fibre reinforced	≤ 1000 N/mm <sup>2</sup>				
		O.3.1	Graphite					

\* Tensile strength

# Cutting data standard values for MaxiMill – Slot-SNHX

Index	CTPP235		CTPM240		CTPK220	
	DRAGONSKIN					
Cutting Material hard (v <sub>c↑</sub> ) → tough (v <sub>c↓</sub> )						
v <sub>c</sub> (m/min)						
P.1.1	246	137	226	141		
P.1.2	208	121	188	126		
P.1.3	172	106	152	112		
P.1.4	160	101	140	107		
P.1.5	143	94	123	100		
P.2.1	214	123	194	128		
P.2.2	157	100	137	106		
P.2.3	143	94	123	100		
P.2.4	98	76	78	83		
P.3.1	121	97	126	105		
P.3.2	108	83	112	95		
P.3.3	96	69	98	85		
P.4.1	121	97	126	105		
P.4.2	114	90	119	100		
M.1.1	121	97	126	105		
M.2.1	108	83	112	95		
M.3.1	117	93	121	102		
K.1.1	160	110			320	190
K.1.2	150	110			170	100
K.2.1	150	110			210	130
K.2.2	150	110			140	90
K.3.1					200	120
K.3.2					170	100
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

average chip thickness  
h<sub>m</sub> in mm

$$h_m = \frac{f_z}{2} \sqrt{\frac{a_e}{DC}}$$

DC = Ø of the disc cutters

ZNF = Number of teeth of the cutter

Feed per tooth  
f<sub>z</sub> in mm

$$f_z = h_m \sqrt{\frac{DC}{a_e}}$$

Feed rate  
v<sub>f</sub> in mm/min

$$v_f = f_z \times ZNF \times n$$

Reference tool 50 374 12506 – ASLOT.125.R.12-SN13-06-DC-A32				
a <sub>e</sub>	10	20	30	
h <sub>m</sub>	f <sub>z</sub> in mm			
P	0,11	0,39	0,28	0,22
M	0,08	0,28	0,20	0,16
K	0,13	0,46	0,33	0,27
N				
S				
H				
O				

ASLOT.125.R.12-SN13-06-DC-A32

Tool tooth count (Z)	12
Effective tooth count (Z/2)	6

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. ±20% according to the usage conditions.

### Cutting data standard values

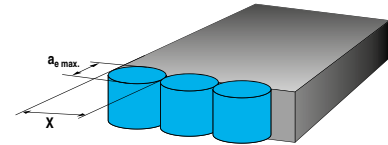
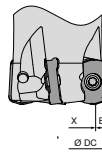
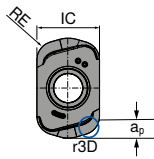
Index	CTCP230		CTPP235		CTPM240		CTPM245		CTCM245		CTCK215		CTC5240		CTCS245	
	DRAGONSKIN															
	Cutting Material hard (v <sub>c</sub> ↑) → tough (v <sub>c</sub> ↓) v <sub>c</sub> (m/min)															
P.1.1	286	150	246	137	226	141	244	139	279	134						
P.1.2	242	133	208	121	188	126	207	124	242	119						
P.1.3	202	118	172	106	152	112	173	109	208	104						
P.1.4	189	112	160	101	140	107	161	104	196	99						
P.1.5	169	105	143	94	123	100	144	97	179	92						
P.2.1	249	136	214	123	194	128	212	126	247	121						
P.2.2	185	111	157	100	137	106	158	103	193	98						
P.2.3	169	105	143	94	123	100	144	97	179	92						
P.2.4	118	85	98	76	78	83	101	78	136	73						
P.3.1	140	87	121	97	126	105	155	107	175	122						
P.3.2	90	55	108	83	112	95	143	93	163	108						
P.3.3	40	22	96	69	98	85	131	79	151	94						
P.4.1	140	87	121	97	126	105	155	107	175	122						
P.4.2	115	71	114	90	119	100	149	100	169	115						
M.1.1			121	97	126	105	155	107	175	122						
M.2.1			108	83	112	95	143	93	163	108						
M.3.1			117	93	121	102	152	103	172	118						
K.1.1	310	190	160	110							360	210				
K.1.2	160	100	150	110							220	130				
K.2.1	200	120	150	110							230	140				
K.2.2	130	80	150	110							160	100				
K.3.1	190	115									250	150				
K.3.2	160	100									210	130				
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1																
N.3.2																
N.3.3																
N.4.1																
S.1.1									80				80		64	
S.1.2									70				70		56	
S.2.1									35				35		28	
S.2.2									25				25		20	
S.2.3									30				30		24	
S.3.1									80				80		64	
S.3.2									50				50		40	
S.3.3									40				40		32	
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. ±20% according to the usage conditions.

# MaxiMill HFCD-06 system

## Machining strategy

Programmed radius  $r3D = 2.0\text{ mm}$



Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\text{ max}}$ in mm	DCX in mm	X in mm	B in mm	$a_{e\text{ max}}$ in mm	$f_z$ in mm		X	
							initial	min.	max.	
6,05	1,8	0,8	16–66	$DCX - (2 \times B)$	4,3	5,3	0,10	0,08	0,15	$< 0,7 \times DCX$



DCX mm	circular Helical plunging (helical plunging into solid material)		
	$D_{\text{min}}$ mm	$D_{\text{max}}$ mm	$\alpha_{R\text{ max}}$ °
16	29	31	1,2°
20	36	39	1°
25	45	49	0,9°
32	59	63	0,65°
35	64	69	0,6°
40	74	79	0,5°
42	78	83	0,45°
50	94	99	0,35°
52	98	103	0,35°
63	120	125	0,3°
66	126	131	0,25°

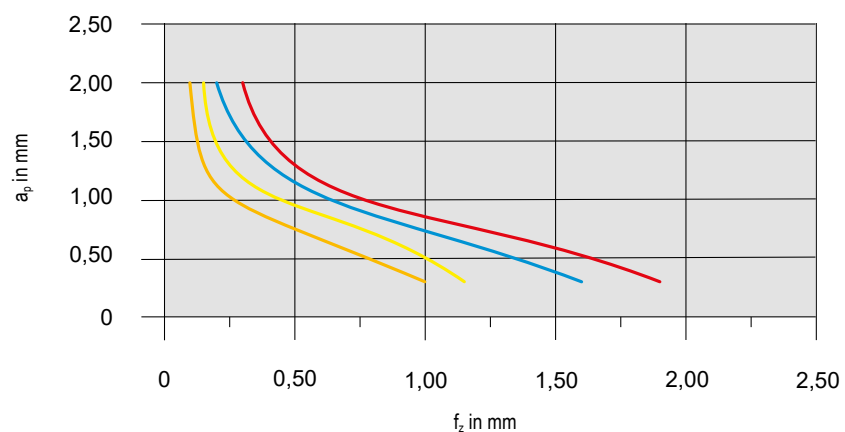


DCX mm	axial		Angled
	Plunging		
	$X_{\text{max}}$ mm	$\alpha_{R\text{ max}}$ °	
16	0,2	1,5°	
20		1,4°	
25		1,1°	
32		0,9°	
35		0,7°	
40	0,25	0,65°	
42		0,6°	
50		0,5°	
52		0,45°	
63		0,4°	
66		0,35°	

## Starting Parameter



XNEU 06



Material			Inserts		$v_c$ in m/min	Cooling
Steel	P.2.2	40CrMnMoS 8-6	XNEU 06T318SR-M50	CTPP235	200	Dry
Stainless steel	M.1.1	X6CrNiMoTi 1712 2	XNEU 06T318SR-F50	CTPM240	180	Dry
Cast iron	K.1.1	EN-GJL-250 (GG25)	XNEU 06T318SR-R50	CTCK215	250	Dry
Heat-resistant	S.2.2	Inconel 718	XNEU 06T318ER-F40	CTC5240	35	Emulsion

Detailed information on cutting speed for each grade can be found on → page 49+50  
From  $v_c > 400\text{ m/min}$ , the tool must be balanced!

# System MaxiMill – Tangent-09

## Machining strategy

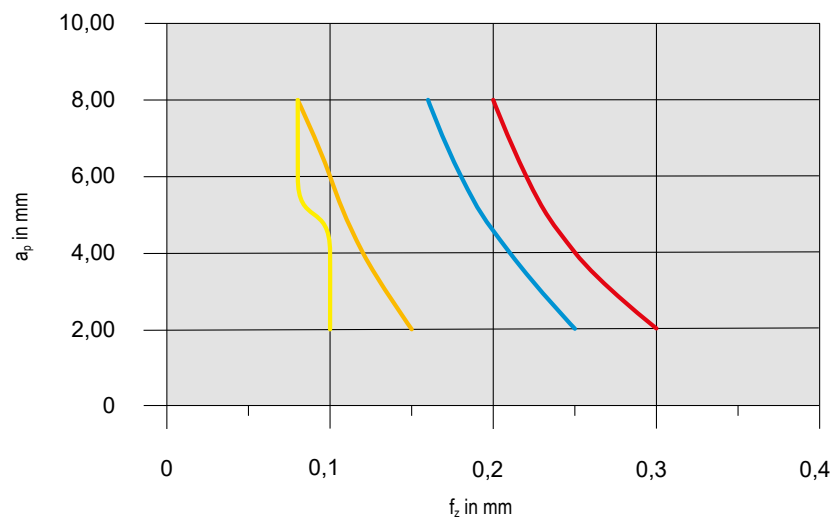
### LNHU 09 – DC/a<sub>e</sub> Ratio (Dry machining at a<sub>p max.</sub>)

DC	ZNF	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%		
25	3	P																					
		M																					
		K																					
	4	P																					
		M																					
		K																					
32	4	P																					
		M																					
		K																					
	5	P																					
		M																					
		K																					
40	4	P																					
		M																					
		K																					
	6	P																					
		M																					
		K																					
50	5	P																					
		M																					
		K																					
	7	P																					
		M																					
		K																					
63	7	P																					
		M																					
		K																					
	10	P																					
		M																					
		K																					
80	8	P																					
		M																					
		K																					
	11	P																					
		M																					
		K																					

## Starting Parameter



LNHU 09



Material			Inserts		v <sub>c</sub> in m/min	Cooling
Steel	P.2.2	40CrMnMoS 8-6	LNHU 090404-M50	CTPP235	200	Dry
Stainless steel	M.1.1	X6CrNiMoTi 1712 2	LNHU 090404-M50	CTPM240	120	Emulsion
Cast iron	K.1.1	EN-GJL-250 (GG25)	LNHU 090404-M50	CTCK215	250	Dry
Heat-resistant	S.2.2	Inconel 718	LNHU 090404-F40	CTC5240	35	Emulsion



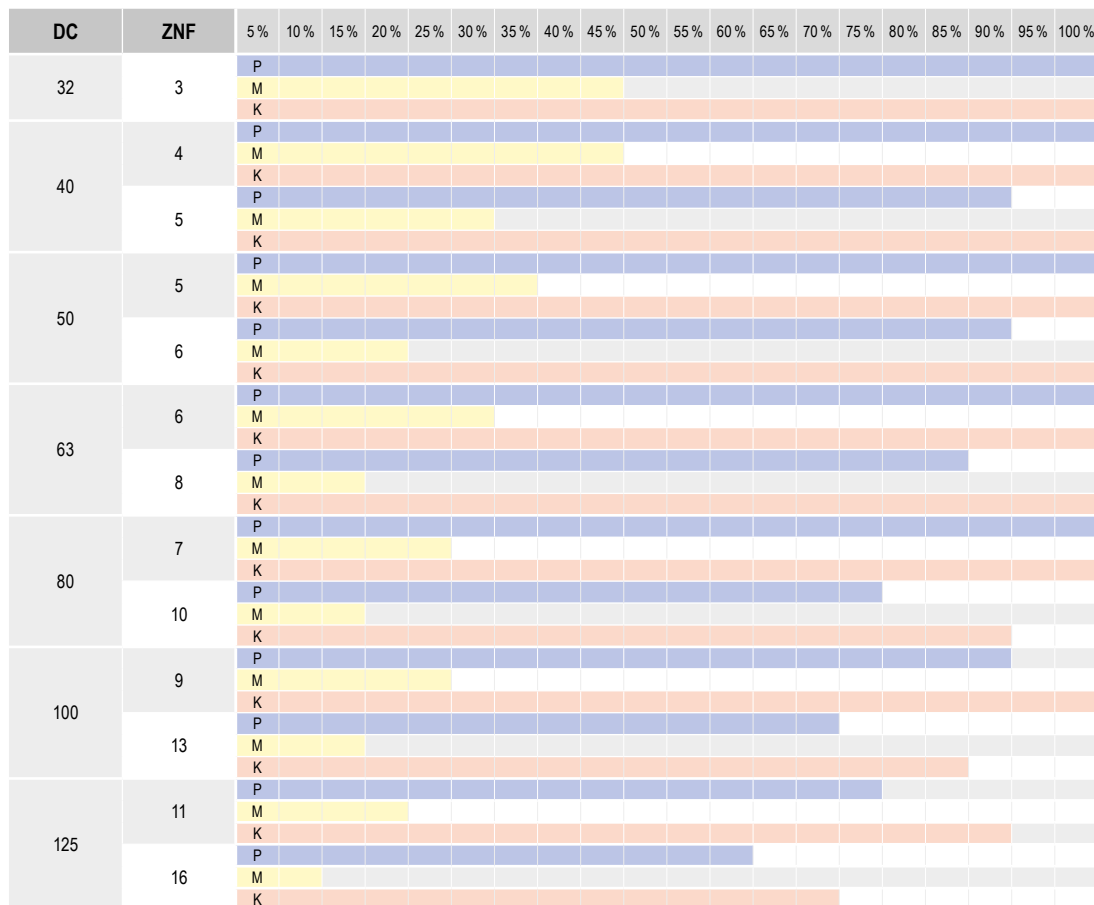
Detailed information on cutting speed for each grade can be found on → page 49+50

From v<sub>c</sub> > 400 m/min, the tool must be balanced!

# System MaxiMill – Tangent-13

## Machining strategy

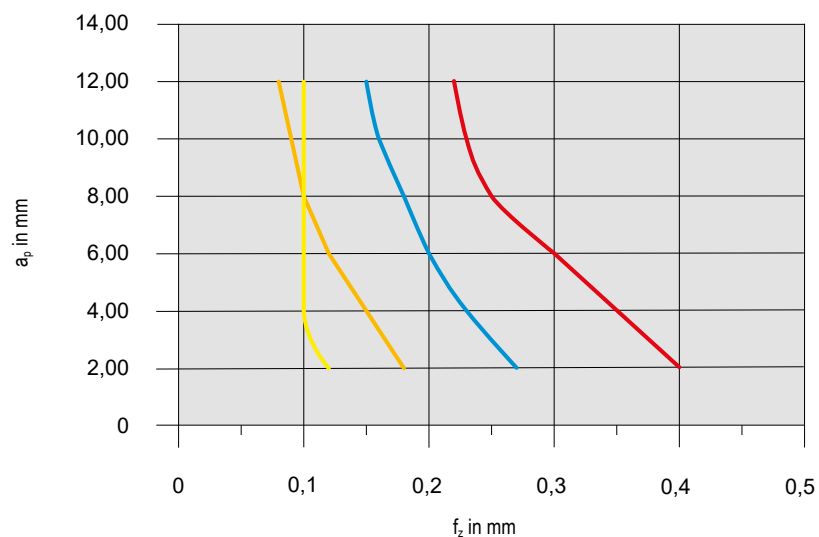
### LNHU 13 – DC/a<sub>p</sub> Ratio (Dry machining at a<sub>p max.</sub>)



## Starting Parameter



LNHU 13



Material			Inserts		v <sub>c</sub> in m/min	Cooling
Steel	P.2.2	40CrMnMoS 8-6	LNHU 130608-M50	CTPP235	200	Dry
Stainless steel	M.1.1	X6CrNiMoTi 1712 2	LNHU 130608-F50	CTPM240	120	Emulsion
Cast iron	K.1.1	EN-GJL-250 (GG25)	LNHU 130608-M50	CTCK215	250	Dry
Heat-resistant	S.2.2	Inconel 718	LNHU 130608-F50	CTC5240	35	Emulsion



Detailed information on cutting speed for each grade can be found on → page 49+50

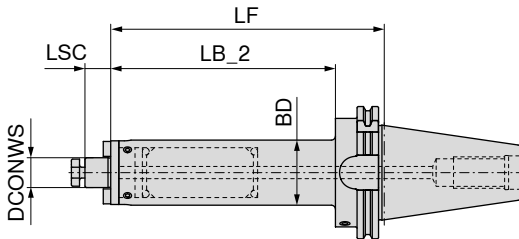
From v<sub>c</sub> > 400 m/min, the tool must be balanced!

## Actively vibration-damped shell mill adapter

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool service life
- ▲ Screwed drive dogs
- ▲ Also available with Balluff chip **on request**

### Scope of supply:

Base body with retaining screw and drive dog



AD  
G 2,5 n<sub>max</sub> 25000

**84 752 ...**

Adapter	DCONWS	LB_2	LF	BD	LSC	
	mm	mm	mm	mm	mm	
SK 40	16	180,9	200	39	17	51679
SK 40	22	180,9	200	48	19	52279
SK 50	16	180,9	200	39	17	51678
SK 50	22	180,9	200	48	19	52278
SK 50	27	180,9	200	58	21	52778



Screw for drivers



Driver



Cross screw



clamping screw

**83 950 ...**

**83 950 ...**

**83 367 ...**

**83 950 ...**

### Spare parts

DCONWS								
16	M3x8	<b>296</b>	8x9x17,5	<b>120</b>	M8	<b>016</b>	M8x25	<b>113</b>
22	M4x12	<b>297</b>	10x11x20,5	<b>121</b>	M10	<b>022</b>	M10x25	<b>124</b>
27	M5x12	<b>136</b>	12x13x24,3	<b>122</b>	M12	<b>027</b>	M12x30	<b>125</b>

### Accessories



→ 58, 60



→ 284

Pull stud

Others

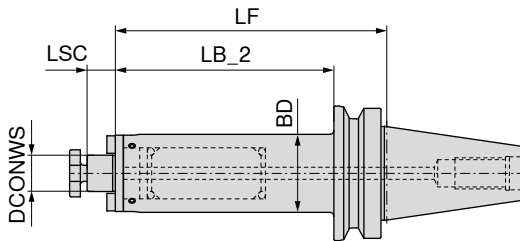
Accessories can be found in the clamping technology catalogue  
→ **Chapter 16, Adapters and accessories**

## Actively vibration-damped shell mill adapter

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool service life
- ▲ Screwed drive dogs
- ▲ Also available with Balluff chip **on request**

### Scope of supply:

Base body with retaining screw and drive dog



AD  
G 2,5  $n_{max}$  25000

**84 752 ...**

Adapter	DCONWS	LB_2	LF	BD	LSC	
	mm	mm	mm	mm	mm	
BT 40	16	173,0	200	39	17	51669
BT 40	22	173,0	200	48	19	52269
BT 50	16	162,5	200	39	17	51668
BT 50	22	162,0	200	48	19	52268
BT 50	27	162,0	200	58	21	52768



Screw for drivers



Driver



Cross screw



clamping screw

**83 950 ...**

**83 950 ...**

**83 367 ...**

**83 950 ...**

### Spare parts

#### DCONWS

16	M3x8	<b>296</b>	8x9x17,5	<b>120</b>	M8	<b>016</b>	M8x25	<b>113</b>
22	M4x12	<b>297</b>	10x11x20,5	<b>121</b>	M10	<b>022</b>	M10x25	<b>124</b>
27	M5x12	<b>136</b>	12x13x24,3	<b>122</b>	M12	<b>027</b>	M12x30	<b>125</b>

### Accessories



→ 110+111



→ 284

Pull stud

Others

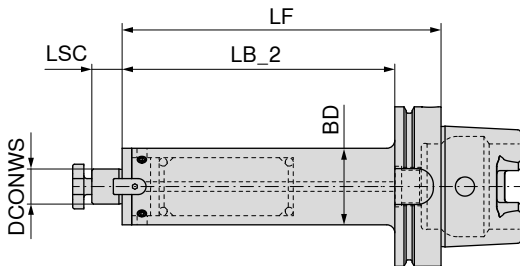
Accessories can be found in the clamping technology catalogue  
→ **Chapter 16, Adaptors and accessories**

## Actively vibration-damped shell mill adapter

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool service life
- ▲ Screwed drive dogs
- ▲ Also available with Balluff chip **on request**

### Scope of supply:

Base body with retaining screw and drive dog



**NEW**



AD

G 2,5 n<sub>max</sub> 25000

**84 752 ...**

Adapter	DCONWS	LB_2	LF	BD	LSC	
	mm	mm	mm	mm	mm	
HSK-A 63	16	174	200	39	17	51657
HSK-A 63	22	174	200	48	19	52257
HSK-A 100	16	171	200	39	17	51655
HSK-A 100	22	171	200	48	19	52255
HSK-A 100	27	171	200	58	21	52755

### Spare parts

#### DCONWS

DCONWS	Screw for drivers	Driver	Cross screw	clamping screw
16	296	120	016	113
22	297	121	022	124
27	136	122	027	125

Screw for drivers	Driver	Cross screw	clamping screw
<b>83 950 ...</b>	<b>83 950 ...</b>	<b>83 367 ...</b>	<b>83 950 ...</b>

### Accessories



→ 156



→ 284

Pull stud

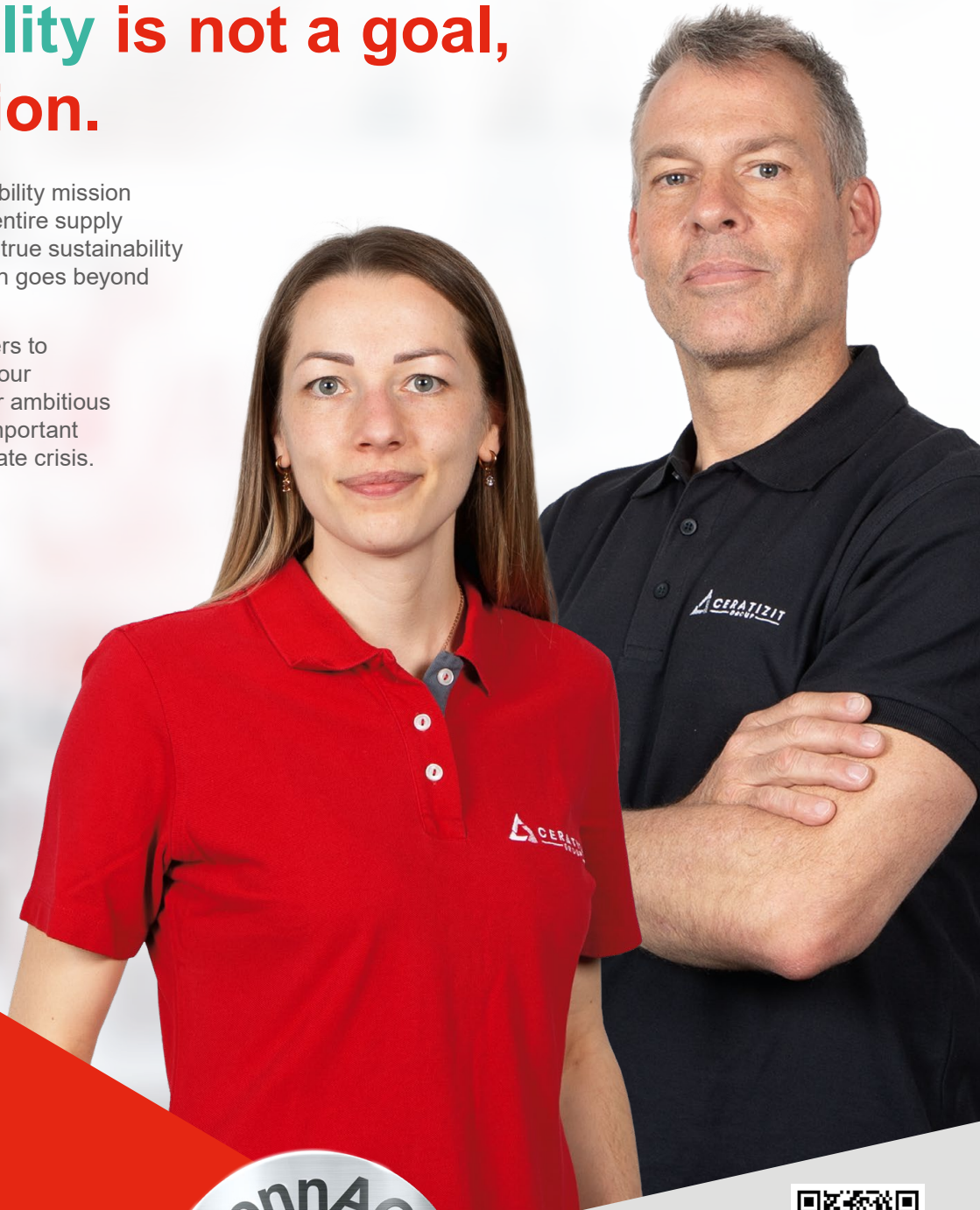
Others

Accessories can be found in the clamping technology catalogue  
→ **Chapter 16, Adapters and accessories**

# Sustainability is not a goal, it's a mission.

We have an ambitious sustainability mission that will affect and change the entire supply chain. But we can only achieve true sustainability together. That's why our mission goes beyond our own scope:

We want to enable our customers to produce more sustainably with our products and services. With our ambitious mission, we want to make an important contribution to tackling the climate crisis.



**Mission #1:**  
Climate neutral by 2025



**Mission #2:**  
Minimise the use of  
virgin raw materials



[cutting.tools/int/en/sustainability](https://cutting.tools/int/en/sustainability)

CERATIZIT is a high-technology engineering group specialised in cutting tools and hard material solutions.

**Tooling a Sustainable Future**

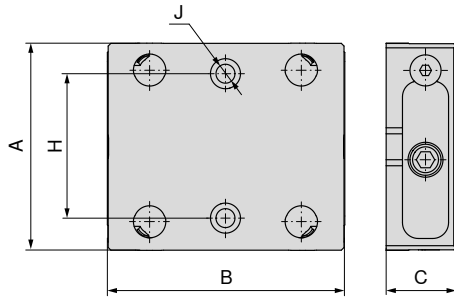
[ceratizit.com](https://ceratizit.com)



## MNG mini – Base plate, rectangular, 52 x 52 mm

▲ Order mounting bolts separately

**MNG mini** 52 x 52



**NEW**

80 915 ...

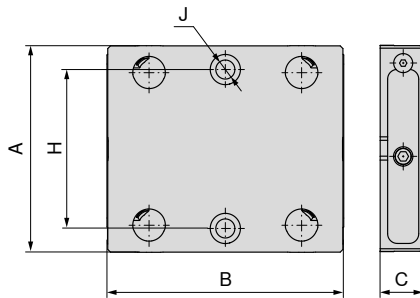
Size	A mm	B mm	C <sub>±0,005</sub> mm	H <sub>±0,01</sub> mm	J <sub>F7</sub> mm	WT kg
52 x 52	80	100	27	50	12	1,36

75200

## MNG mini – Base plate, rectangular, 96 x 96 mm

▲ Order mounting bolts separately

**MNG mini** 96 x 96



**NEW**

80 915 ...

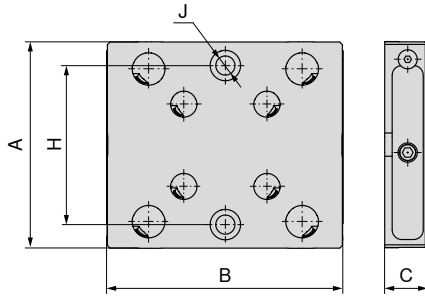
Size	A mm	B mm	C <sub>±0,005</sub> mm	H <sub>±0,01</sub> mm	J <sub>F7</sub> mm	WT kg
96 x 96	130	148	27	100	12	3,59

79600

## MNG mini – combi-insert, 52 x 52 mm and 96 x 96 mm

▲ Order mounting bolts separately

MNG mini	52 x 52	96 x 96
----------	---------	---------



NEW

80 915 ...

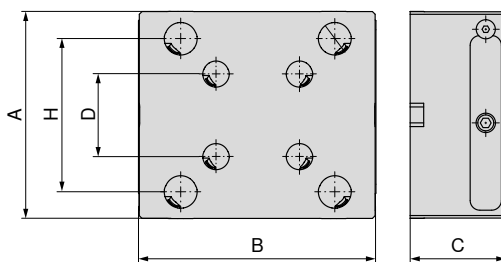
Size	A mm	B mm	C <sub>±0.005</sub> mm	H <sub>±0.01</sub> mm	J <sub>F7</sub> mm	WT kg
52 x 52 / 96 x 96	130	148	27	100	12	3,43

75900

## MNG mini – combi-5-axis-increase, 52 x 52 mm and 96 x 96 mm

▲ Order mounting bolts separately

MNG mini	52 x 52	96 x 96
----------	---------	---------



NEW

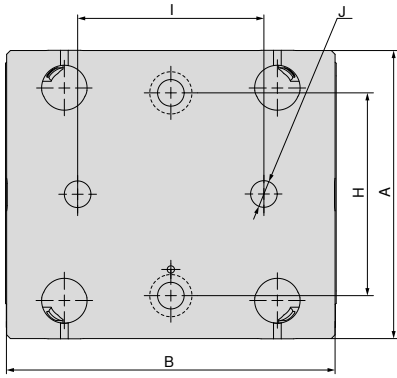
80 915 ...

A mm	B mm	C mm	D mm	H mm
130	148	60	52	96
130	148	100	52	96

56000

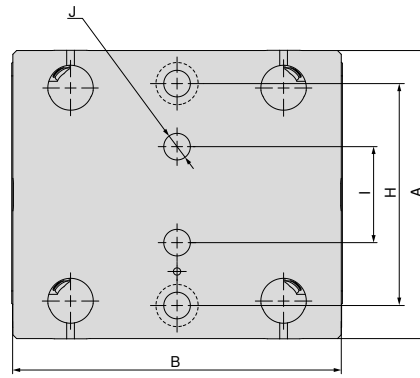
51000

### MNG mini underside dimensions



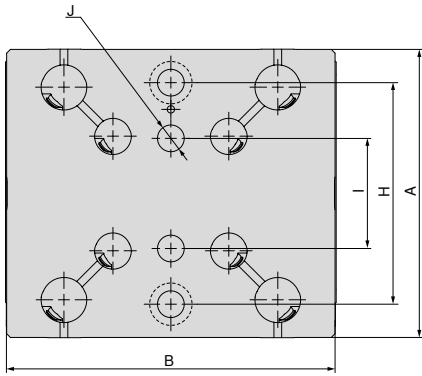
Base plate, rectangular, 52 x 52 mm

A	B	H	I <sub>±0.01</sub>	J <sub>H7</sub>
mm	mm	mm	mm	mm
80	100	50	40	12



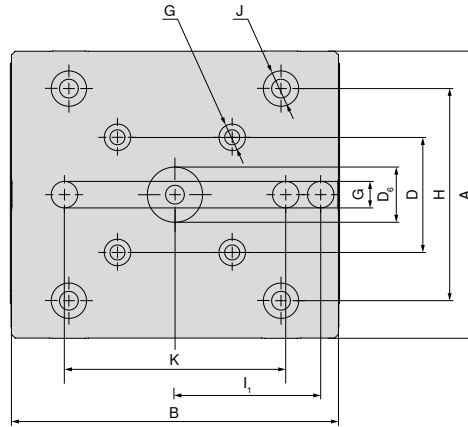
Base plate, rectangular, 96 x 96 mm

A	B	H	I <sub>±0.01</sub>	J <sub>H7</sub>
mm	mm	mm	mm	mm
130	148	100	50	12



Combi-insert 1-sided,  
52 x 52 mm and 96 x 96 mm

A	B	H	I <sub>±0.01</sub>	J <sub>H7</sub>
mm	mm	mm	mm	mm
130	148	100	50	12



Combi-5-axis-increase,  
52 x 52 mm and 96 x 96 mm

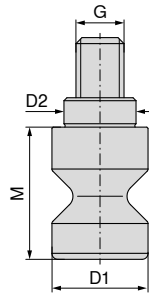
A	B	D	D <sub>6 H7</sub>	G <sub>H7</sub>	H	I <sub>1 ±0.01</sub>	J <sub>H7</sub>	K
mm	mm	mm	mm	mm	mm	mm	mm	mm
130	148	52	25	12	96	66	16	100

# MNG mini mounting bolt set

Scope of supply:

Set contains four mounting bolts

**MNG mini** 96 x 96



**NEW**

80 915 ...

D <sub>1 h6</sub> mm	D <sub>2 h6</sub> mm	M mm	G mm	TQX Nm	Clamping force kN	for
20	16	22	M10	18	15	96 x 96

51100

## Expansion aid

**MNG mini**



**NEW**

80 915 ...

D <sub>1</sub> mm	M mm
15	40

51300

## Clamping Screw Set for T-slot for MNG mini

Scope of supply:

Clamping screw and T-Nuts

**MNG mini**



**NEW**

80 915 ...

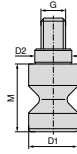
for slot width mm	G	
14	M12	62400
16	M12	62600
18	M12	62800

## Mounting bolt set – LANG / HWR

**Scope of supply:**

Set contains four mounting bolts

**MNG  
mini**



**NEW**

**80 915 ...**

TQX Nm	Clamping force kN	D <sub>1</sub> h6 mm	D <sub>2</sub> h6 mm	M mm	for	
18	15	15	12	22	52 x 52	51500
18	15	19	16	22	96 x 96	51400

## Alignment/centering set for T-slots

▲ A = groove spacing

**Scope of supply:**

1 Terminal block, 2 T-nuts, 2 screws, 2 washers for width 12 mm, without clamping strip!

**MNG  
mini**



**NEW**

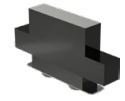
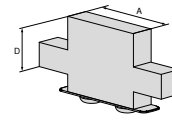
**80 915 ...**

for slot width mm	A mm	G	
12	35	M10	82200
14	35	M10	82400
16	35	M10	82600
18	40	M10	82800

## Workpiece supports overview – Verso

### Workpiece supports, offset

▲ Price for 2 pieces



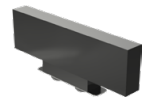
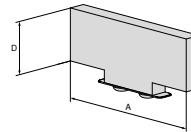
For vice width	A	A <sub>1</sub>	D	D <sub>1</sub>	D <sub>2</sub>	E	M	M <sub>1</sub>	M <sub>2</sub>
90	40		22						

**NEW**

80 914 70300	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
										●	

### Workpiece supports, offset

▲ Price for 2 pieces



For vice width	A	A <sub>1</sub>	D	D <sub>1</sub>	D <sub>2</sub>	E	M	M <sub>1</sub>	M <sub>2</sub>
90	90		22						

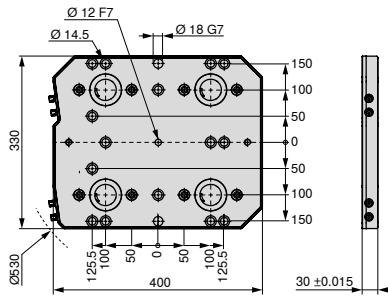
**NEW**

80 914 72500	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
										●	

## MNG – base plate 4-sided with indexing, 330 x 400 mm

- ▲ MNG – Mechanical zero point clamping system
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on each clamping bolt
- ▲ 15 x M12 mounting holes for T-slot spacing 50, 63, 100, 125 mm
- ▲ 2 x locating holes Ø18 G7 for positioning
- ▲ 1 x locating hole Ø12 F7 for positioning

MNG



NEW

80 899 ...

Size	WT
330x400 mm	28

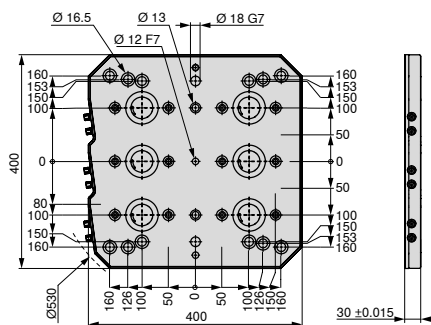
64200<sup>1)</sup>

1) Not ex-stock

## MNG – base plate 6-sided with indexing, 400 x 400 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ 14 x mounting holes for M16, for T-slot spacing 63, 80, 100, 125 mm
- ▲ 2 x mounting holes for M12
- ▲ 2 x mating holes Ø18 G7 for positioning
- ▲ 1 x mating holes Ø12 F7 for positioning

MNG



NEW

80 899 ...

Size	WT
400x400 mm	33

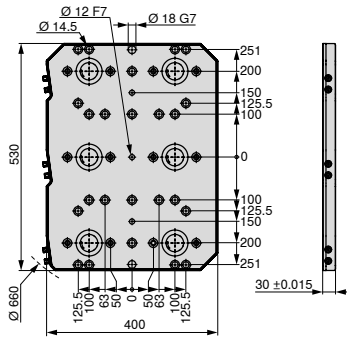
64300<sup>1)</sup>

1) Not ex-stock

## MNG – base plate 6-sided with indexing, 400 x 530 mm

- ▲ MNG – Mechanical zero point clamping system
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on each clamping bolt
- ▲ 24 x M12 mounting holes for T-slot spacing 63, 100, 125 mm
- ▲ 2 x locating holes Ø18 G7 for positioning
- ▲ 1 x locating hole Ø12 F7 for positioning

MNG



NEW

80 899 ...

Size	WT kg
400x530 mm	45

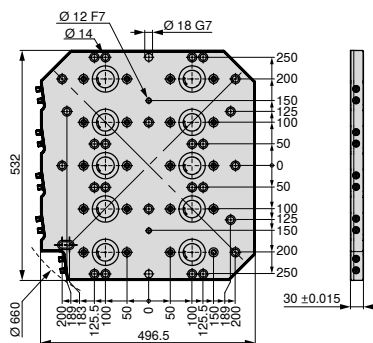
64400<sup>1)</sup>

1) Not ex-stock

## MNG – base plate 10-sided with indexing, 496.5 x 532 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ 27 x mounting holes M12 for T-slot spacing 50, 63, 100, 125 mm and star slots 45°
- ▲ 2 x mating holes Ø18 G7 for positioning
- ▲ 1 x mating holes Ø12 F7 for positioning

MNG



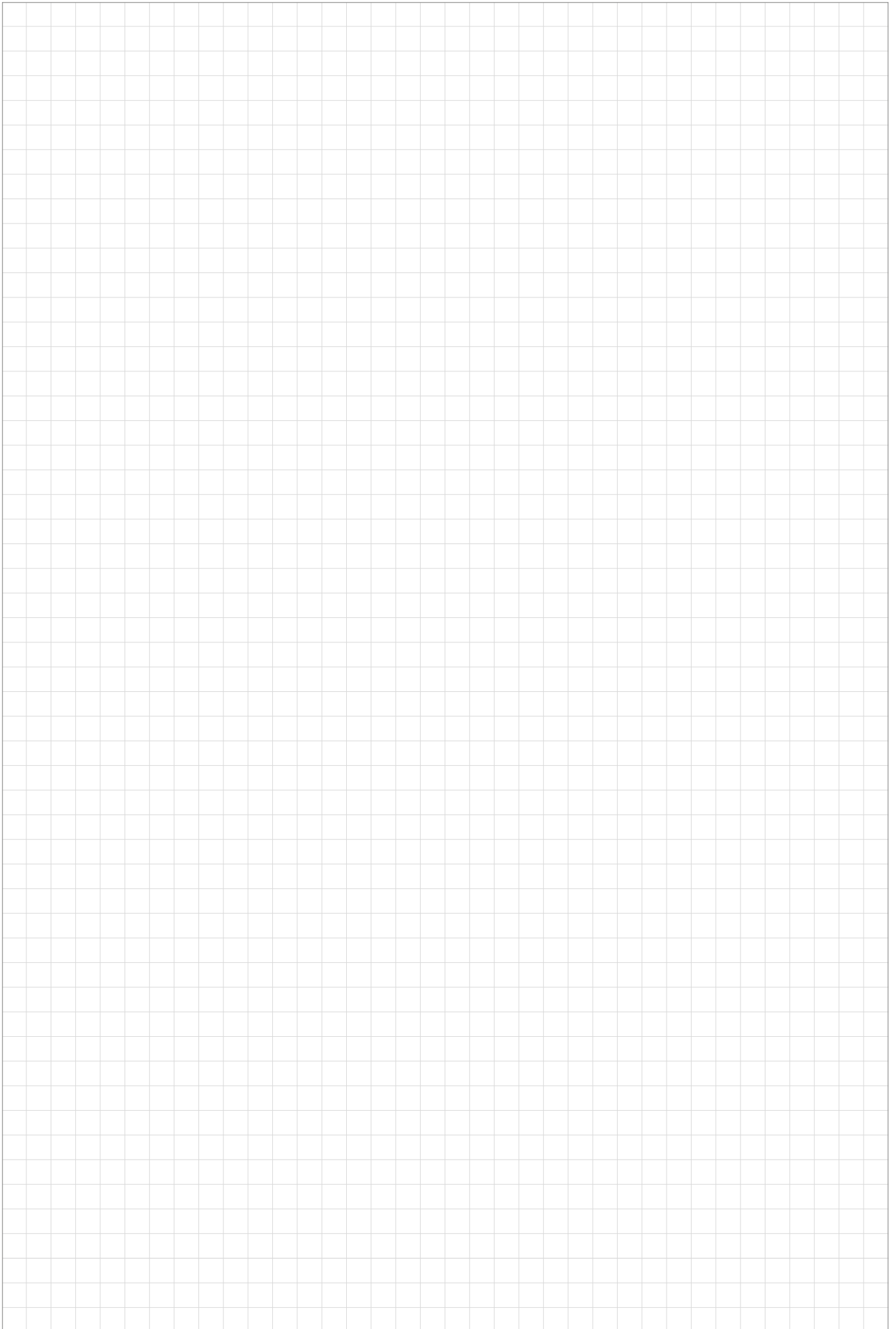
NEW

80 899 ...


Size	WT kg
496,5x532 mm	54

64500<sup>1)</sup>

1) Not ex-stock







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