

**NEW**

## **Machining Cast Iron**

The new MaxiMill – S-Power face milling system  
unleashes maximum cutting power

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

**Tooling a Sustainable Future**

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# Welcome!



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# Glide through cast iron with the maximum number of pockets



## MaxiMill – S-Power

### Smooth cutting of cast materials

Machining cast iron can be tricky. Heavy tool wear, extreme burr formation, or fractures on the edges of the workpiece can jeopardize efficiency.

Our new MaxiMill – S-Power is setting new standards in the face milling of cast iron materials. With a maximum number of pockets and double-sided indexable inserts, the cutter delivers top performance with an extremely stable, low-vibration design. The innovative double wedge clamp ensures the security of the inserts, making them easy to index and reducing your set-up time.



## MaxiMill – S-Power unleashes maximum cutting power

The milling cutters in the MaxiMill – S-Power series boast an impressive number of cutting edges. But how does it work? The **setting angle of 88°** permits a **maximum number of pockets** and compact chip spaces. **Double-sided indexable inserts** with eight true cutting edges made from selected substrates and with DRAGONSKIN coating ensure top performance and a **smooth cut**. The sturdy construction with **robust insert seat** and **double wedge clamp** guarantees a secure hold and **high axial and radial run-out accuracy**.



## Why MaxiMill – S-Power is the right solution for you



**Thicker indexable inserts than the competition**

Ensures maximum removal rates



**Feed rate reduction possible**

Prevents fractures in the casting wall



**Double wedge clamp as standard**

Easy handling and quick insert changes



**Positive cutting edge design**

Prevention of fractures or burr formation on the workpiece edges



**Maximum number of pockets on the milling cutter diameter**

High efficiency due to maximum speed



**Peripherally ground indexable inserts**

High axial and radial run-out accuracy



**Asymmetrical insert seat**

Reduced vibrations



**Wear-resistant indexable inserts with PVD or CVD coating**

Long tool life

# Machining cast iron

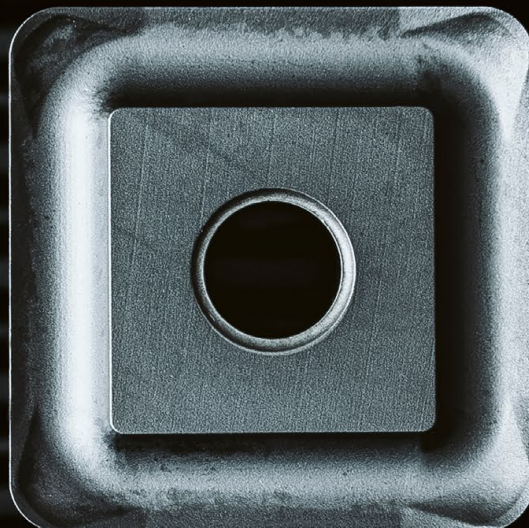
The MaxiMill – S-Power is an excellent addition to our face milling portfolio and is an absolute pro when it comes to cast parts made from ductile iron, compacted graphite iron, and gray cast iron. It is available as standard in diameters of 56-125 mm.

With a maximum depth of cut of around 8 mm and reduced feed values between 0.08 mm and 0.15 mm, fractures in the casting wall are minimized, while the high efficiency is maintained thanks to the high number of teeth.

The setting angle of 88° permits this maximum number of cutting edges to be achieved and the peripherally ground indexable inserts ensure narrow tolerances and a high surface quality.



- ▲ ISO-P / ISO-K indexable insert range
- ▲ Cutting edge geometries M
- ▲ Corner radii of 0.4 mm, 0.8 mm, and 1.2 mm
- ▲ Carbide grades CTPK220, CTCP230





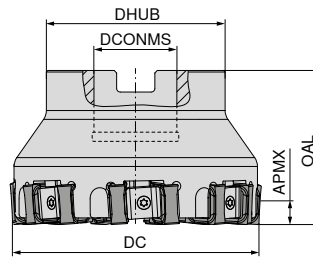
Are you looking to reduce your production time while boosting efficiency? Learn more about the MaxiMill – S-Power.



## MaxiMill – S-Power Face mills



$\kappa = 88^\circ$



50 687 ...

Designation	DC mm	ZNF	APMX mm	OAL mm	DCONMS <sub>H6</sub> mm	DHUB mm	Tightening torque Nm	Indexable insert	
APOW.56.R.10-SN12	56	10	8	40	22	43	3,2	SNHF 12..	05610
APOW.63.R.12-SN12	63	12	8	40	22	48	3,2	SNHF 12..	06312
APOW.80.R.14-SN12	80	14	8	50	27	58	3,2	SNHF 12..	08014
APOW.100.R.18-SN12	100	18	8	50	32	78	3,2	SNHF 12..	10018
APOW.125.R.24-SN12	125	24	8	63	40	88	3,2	SNHF 12..	12524

### Spare parts

DC	TORX® interchangeable blade 80 950 ...	Clamping Wedge 70 950 ...	Screwdriver 80 950 ...	Molykote 70 950 ...	Torque screw- driver 80 021 ...	Differential screw 70 950 ...
56	054	94400	120	303	032	71400
63	054	94300	120	303	032	71400
80	054	94200	120	303	032	71400
100	054	94100	120	303	032	71400
125	054	94000	120	303	032	71400

# SNHF

Designation	IC mm	D1 mm	L mm	S mm
SNHF 1205..	12.7	3.3	12.7	5.56



# SNHF

ISO	RE mm
120504EN	0.4
120508EN	0.8
120512EN	1.2

P			●
M			
K		●	○
N			
S			
H			
O			





<b>-R30</b> CTPK220	<b>-R30</b> CTCP230
DRAGONSKIN	DRAGONSKIN
SNHF	SNHF
<b>51 292 ...</b>	<b>51 292 ...</b>
60400	00400
60800	00800
61200	01200

## Material examples for cutting data tables


	Material sub-group	Index	Composition / Structure / Heat treatment	Tensile strength lbf/in <sup>2</sup> / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C Annealed	60900 lbf/in <sup>2</sup> / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C Annealed	92800 lbf/in <sup>2</sup> / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3	< 0.45 % C Tempered	121800 lbf/in <sup>2</sup> / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C Annealed	132000 lbf/in <sup>2</sup> / 270 HB	1.1223	1060	1.0535	1055
		P.1.5	< 0.75 % C Tempered	146500 lbf/in <sup>2</sup> / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1	Annealed	88500 lbf/in <sup>2</sup> / 180 HB	1.7131	5115	1.6523	8620
		P.2.2	Tempered	134900 lbf/in <sup>2</sup> / 275 HB	1.7131	5115	1.6582	4340
		P.2.3	Tempered	146500 lbf/in <sup>2</sup> / 300 HB	1.7225	4142	1.7131	5115
		P.2.4	Tempered	174000 lbf/in <sup>2</sup> / 375 HB	1.7225	4142	1.7223	4140
	High-alloy steel and high-alloy tool steel	P.3.1	Annealed	98600 lbf/in <sup>2</sup> / 200 HB	1.4021	420	1.2379	D2
		P.3.2	Hardened and tempered	159500 lbf/in <sup>2</sup> / 300 HB	1.2343	H11	1.3343	M2
		P.3.3	Hardened and tempered	188500 lbf/in <sup>2</sup> / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic Annealed	98600 lbf/in <sup>2</sup> / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic Tempered	117500 lbf/in <sup>2</sup> / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic Quenched	88500 lbf/in <sup>2</sup> / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)	113100 lbf/in <sup>2</sup> / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic	88500 lbf/in <sup>2</sup> / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)	127600 lbf/in <sup>2</sup> / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic	78300 lbf/in <sup>2</sup> / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic	122600 lbf/in <sup>2</sup> / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic	63800 lbf/in <sup>2</sup> / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic	113100 lbf/in <sup>2</sup> / 230 HB	0.8170	70003		
N	Aluminum wrought alloy	N.1.1	Non-hardenable	60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable	49300 lbf/in <sup>2</sup> / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminum alloy	N.2.1	≤ 12 % Si, non-hardenable	36300 lbf/in <sup>2</sup> / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable	43500 lbf/in <sup>2</sup> / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable	63800 lbf/in <sup>2</sup> / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %	54400 lbf/in <sup>2</sup> / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn	43500 lbf/in <sup>2</sup> / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper	49300 lbf/in <sup>2</sup> / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys	70 HB	3.5612	MgAl6Zn		
	S	Heat-resistant alloys	S.1.1	Fe - basis Annealed	98600 lbf/in <sup>2</sup> / 200 HB	1.4864	X12NiCrSi 36-16	1.4864
S.1.2			137800 lbf/in <sup>2</sup> / 280 HB		1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
S.2.1			Ni or Co basis Annealed	121800 lbf/in <sup>2</sup> / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
S.2.2				171100 lbf/in <sup>2</sup> / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
S.2.3				Cast	156600 lbf/in <sup>2</sup> / 320 HB	2.4674	Nimocast PK24	2.4670
Titanium alloys		S.3.1	Pure titanium	5800 lbf/in <sup>2</sup>	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys	152300 lbf/in <sup>2</sup>	3.7165	TiAl6V4		
	S.3.3	Beta alloys	203100 lbf/in <sup>2</sup> / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr			
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	≤ 21800 lbf/in <sup>2</sup>				
		O.1.2	Plastics, thermoplastic	≤ 14500 lbf/in <sup>2</sup>				
		O.2.1	Aramid fibre-reinforced	≤ 145000 lbf/in <sup>2</sup>				
		O.2.2	Glass/carbon-fibre reinforced	≤ 145000 lbf/in <sup>2</sup>				
		O.3.1	Graphite					

\* Tensile Strength at Rupture (Rm)

## Cutting data standard values

Index	CTPK220		CTCP230	
	DRAGONSKIN		DRAGONSKIN	
				
	v <sub>c</sub> (m/min)			
P.1.1				
P.1.2				
P.1.3				
P.1.4				
P.1.5				
P.2.1				
P.2.2				
P.2.3				
P.2.4				
P.3.1				
P.3.2				
P.3.3				
P.4.1				
P.4.2				
M.1.1				
M.2.1				
M.3.1				
K.1.1	320	190	310	190
K.1.2	170	100	160	100
K.2.1	210	130	200	120
K.2.2	140	90	130	80
K.3.1	200	120	190	115
K.3.2	170	100	160	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				

	CTPK220 & CTCP230			
	f <sub>z</sub>		a <sub>p</sub>	
	min.	max.	min.	max.
<b>P</b>				
<b>M</b>				
<b>K</b>	0,1	0,25	0,5	8
<b>N</b>				
<b>S</b>				
<b>H</b>				
<b>O</b>				

 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 approximately  $\pm 20\%$  according to the usage conditions.



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