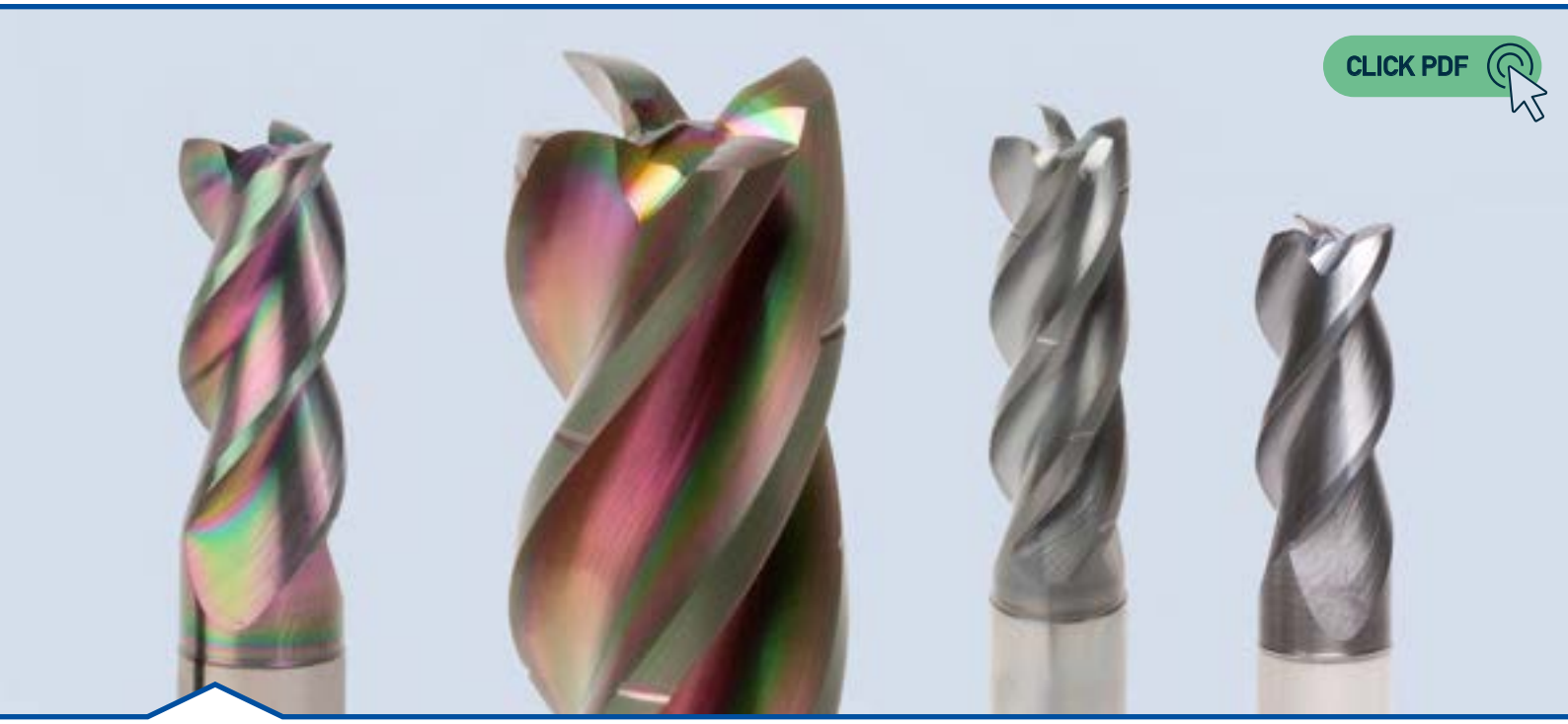


Your technology partner for cost-effective machining

OptiMill®-HPC-Pocket

OptiMill®-HPC-Pocket

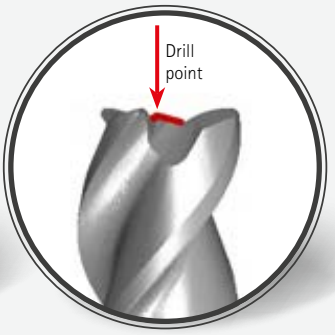
Maximum efficiency in pocket milling

The OptiMill-Uni-HPC-Pocket and OptiMill-Alu-HPC-Pocket milling tools stand for maximum precision and efficiency in pocket milling. Both tools are equipped with an integrated drill point, which is particularly suitable for versatile applications such as helical milling, grooving and inclined plunging. Large chip spaces on both milling cutters ensure fast and reliable chip evacuation, even with high cutting volumes, while a special cutting edge preparation and wear-resistant coating guarantee a long tool life and maximum process reliability.

The innovative geometry of the milling cutters prevents chip build-up and enables smooth machining, resulting in outstanding surface quality. Thanks to these advanced technical features, the OptiMill-Uni-HPC-Pocket and the OptiMill-Alu-HPC-Pocket are ideal tools for the efficient and precise machining of steel, cast iron and aluminium.

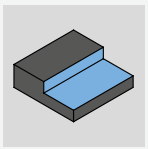
INNOVATIVE SHARPENING

Grooving (drilling) and ramps with very high feed rates

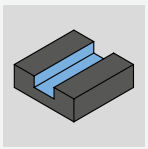


Integrated drill point especially for plunge milling

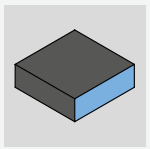
BROAD FIELD OF APPLICATION



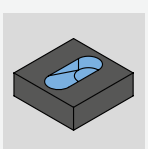
Shoulder milling



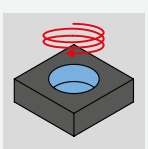
Groove milling



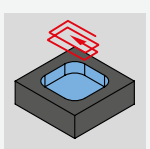
Trimming



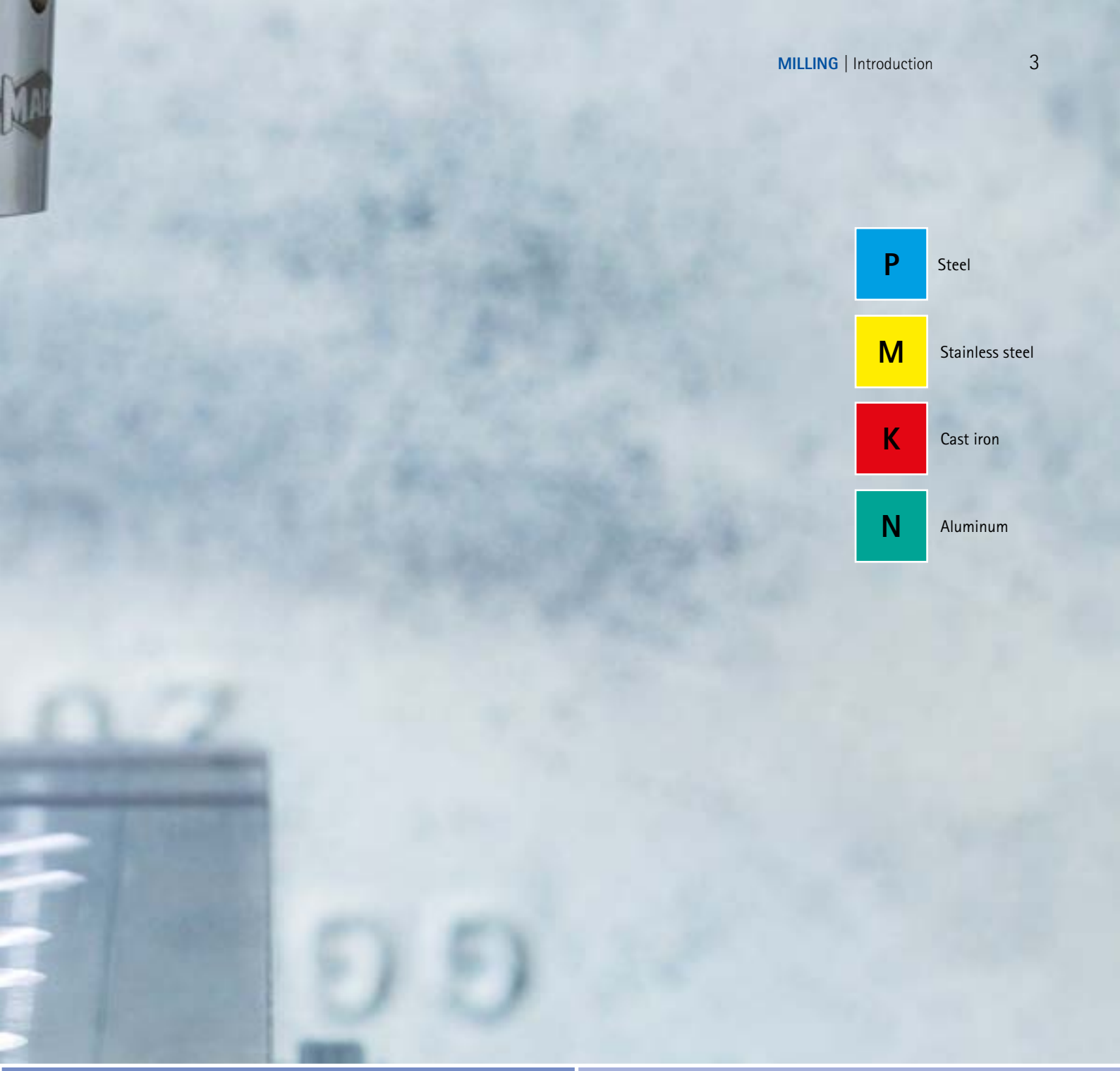
Ramps



Helix milling



Pocket milling



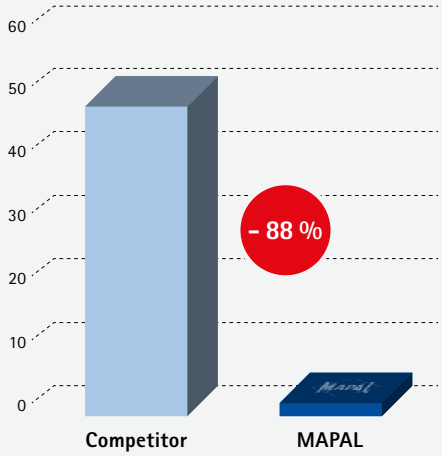
P Steel

M Stainless steel

K Cast iron

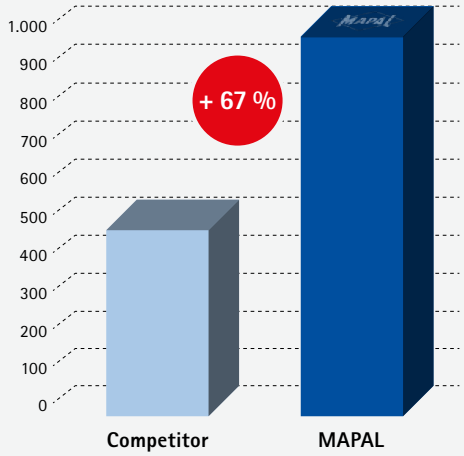
N Aluminum

PROCESSING TIME [SEC.]



RESULT: 88 % faster processing time.

TOOL LIFE [SEC.]



RESULT: 67 % longer tool life.

OptiMill®-Uni-HPC-Pocket

Efficient pocket milling

The OptiMill-Uni-HPC-Pocket corner milling cutter with integrated drill point was specially developed for pocket milling steel and cast iron. The specially developed pointing, together with three large chip spaces, guarantees optimum chip evacuation. The special core rise ensures optimum stability in the machining process, making the tool ideal for helical milling and grooving.

1 Integrated drill point
– Suitable for inclined plunging up to 45°, for helical milling and grooving

2 Large chip spaces
– Fast and reliable chip removal with large chip volumes

3 Special cutting edge preparation and wear-resistant coating
– Long tool life and maximum process safety

4 Innovative pointing
– Grooving (drilling) & ramping with very high feed rates

5 Three chip breakers per cutting edge with dimension 3xD
– Short chips for maximum process reliability

Features

Preferred series in stock:
- Design z=3: short, long, extra-long
- Design z=4: 3xD with neck
- ø-range: 3,80 - 20,00 mm
- Shank form: HB

Configurable features:
- ø-range: 3,80 - 20,00 mm
- Shank form: HA

OptiMill-Uni-HPC-Pocket

Short design, z=3

Long design with neck, z=3

Overlong design with neck, z=3

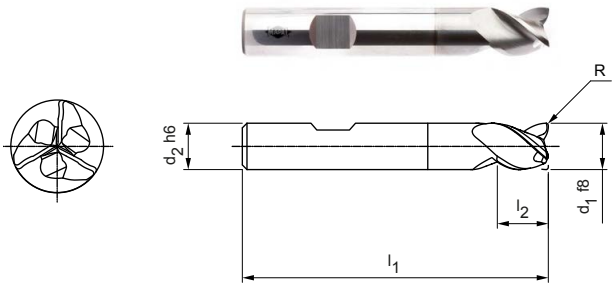
Maximum performance for peripheral milling.
3xD design, z=4

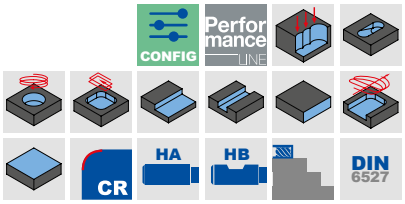
OptiMill®-Uni-HPC-Pocket

Shoulder milling cutter, short design
SCM840

Design:
Diameter of milling cutter: 3.80 – 20.00 mm
Cutting material: HP920
Number of cutting edges: 3
Helix angle: ~ 42°
Special features: Face geometry with integrated drill tip

Application:
Perfect for inclined plunging up to 45°, in helix milling and grooving.





Preferred series in stock

Dimensions						z	Specification	Order no.
d_1 f8	d_2 h6	l_1	l_2	l_5	R*			
3,80	6	54	5	10,5	0,12	3	SCM840-0380Z03R-R0012HB-HP920	31031129
4,00	6	54	5	10,5	0,12	3	SCM840-0400Z03R-R0012HB-HP920	31031140
4,80	6	54	6	12,5	0,2	3	SCM840-0480Z03R-R0020HB-HP920	31031141
5,00	6	54	6	12,5	0,2	3	SCM840-0500Z03R-R0020HB-HP920	31031142
5,70	6	54	7	14,5	0,2	3	SCM840-0570Z03R-R0020HB-HP920	30965832
6,00	6	54	7	–	0,2	3	SCM840-0600Z03R-R0020HB-HP920	30965833
6,70	8	58	8	16,5	0,2	3	SCM840-0670Z03R-R0020HB-HP920	30965834
7,00	8	58	8	17	0,2	3	SCM840-0700Z03R-R0020HB-HP920	30965835
7,70	8	58	9	18,5	0,2	3	SCM840-0770Z03R-R0020HB-HP920	30965836
8,00	8	58	9	–	0,2	3	SCM840-0800Z03R-R0020HB-HP920	30965837
8,70	10	66	10	20,5	0,32	3	SCM840-0870Z03R-R0032HB-HP920	30965838
9,00	10	66	10	21	0,32	3	SCM840-0900Z03R-R0032HB-HP920	30965839
9,70	10	66	11	22,5	0,32	3	SCM840-0970Z03R-R0032HB-HP920	30965840
10,00	10	66	11	–	0,32	3	SCM840-1000Z03R-R0032HB-HP920	30953712
11,70	12	73	12	24,5	0,32	3	SCM840-1170Z03R-R0032HB-HP920	30965841
12,00	12	73	12	–	0,32	3	SCM840-1200Z03R-R0032HB-HP920	30948678
13,70	14	75	14	26,5	0,32	3	SCM840-1370Z03R-R0032HB-HP920	30965842
14,00	14	75	14	–	0,32	3	SCM840-1400Z03R-R0032HB-HP920	30965843
15,50	16	82	16	30	0,32	3	SCM840-1550Z03R-R0032HB-HP920	30965844
16,00	16	82	16	–	0,32	3	SCM840-1600Z03R-R0032HB-HP920	30965845
17,50	18	84	18	32	0,32	3	SCM840-1750Z03R-R0032HB-HP920	30965846
19,50	20	92	20	38	0,5	3	SCM840-1950Z03R-R0050HB-HP920	30965848
20,00	20	92	20	–	0,5	3	SCM840-2000Z03R-R0050HB-HP920	30965849

* Corner radius especially for feather key milling according to DIN 6885.

Available on request

18,00	18	84	18	-	0,32	3	SCM840-1800Z03R-R0032HB-HP920	30965847

Configurable features

Shank form:
Shank form: HA

Specification:
SCM840-0380Z03R-R0012**[shank form]**-HP920

Example:
SCM840-0380Z03R-R0012**HA**-HP920
Shank form HA

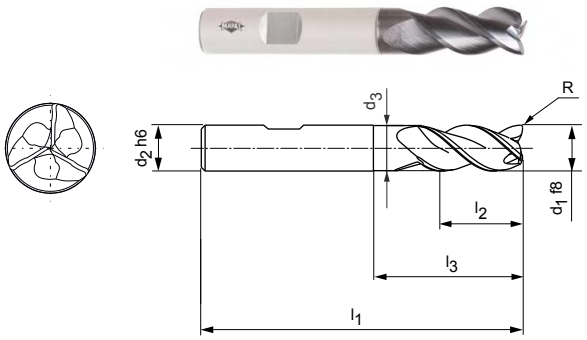
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

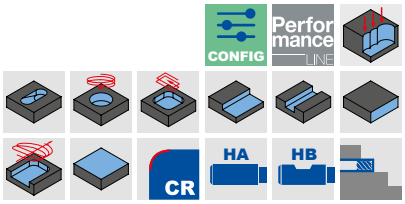
OptiMill®-Uni-HPC-Pocket

Shoulder milling cutter, long design with neck
SCM810

Design:
Diameter of milling cutter: 3.80 – 20.00 mm
Cutting material: HP920
Number of cutting edges: 3
Helix angle: ~ 42°
Special features: Face geometry with integrated drill tip

Application:
Perfect for inclined plunging up to 45°, in helix milling and grooving.





Preferred series in stock

Dimensions							z	Specification	Order no.
d_1 f8	d_2 h6	d_3	l_1	l_2	l_3	R			
3,80	6	3,6	57	10	13	0,19	3	SCM810-0380Z03R-R0019HB-HP920	31031147
4,00	6	3,8	57	11	13	0,2	3	SCM810-0400Z03R-R0020HB-HP920	31031148
4,80	6	4,6	57	11	15,5	0,24	3	SCM810-0480Z03R-R0024HB-HP920	31031149
5,00	6	4,8	57	13	15,5	0,25	3	SCM810-0500Z03R-R0025HB-HP920	31031150
5,70	6	5,5	57	13	19	0,29	3	SCM810-0570Z03R-R0029HB-HP920	30788023
6,00	6	5,8	57	13	19	0,3	3	SCM810-0600Z03R-R0030HB-HP920	30788024
6,70	8	6,5	63	16	25	0,34	3	SCM810-0670Z03R-R0034HB-HP920	30788025
7,00	8	6,8	63	16	25	0,35	3	SCM810-0700Z03R-R0035HB-HP920	30788026
7,70	8	7,5	63	19	25	0,39	3	SCM810-0770Z03R-R0039HB-HP920	30788027
8,00	8	7,8	63	19	25	0,4	3	SCM810-0800Z03R-R0040HB-HP920	30788028
8,70	10	8,5	72	22	30	0,44	3	SCM810-0870Z03R-R0044HB-HP920	30788029
9,00	10	8,8	72	22	30	0,45	3	SCM810-0900Z03R-R0045HB-HP920	30788030
9,70	10	9,5	72	22	30	0,49	3	SCM810-0970Z03R-R0049HB-HP920	30788031
10,00	10	9,8	72	22	30	0,5	3	SCM810-1000Z03R-R0050HB-HP920	30788032
11,70	12	11,5	83	26	36	0,59	3	SCM810-1170Z03R-R0059HB-HP920	30788033
12,00	12	11,8	83	26	36	0,6	3	SCM810-1200Z03R-R0060HB-HP920	30788034
13,70	14	13,5	83	26	36	0,69	3	SCM810-1370Z03R-R0069HB-HP920	30788035
14,00	14	13,8	83	26	36	0,7	3	SCM810-1400Z03R-R0070HB-HP920	30788036
15,50	16	15,3	92	31	42	0,78	3	SCM810-1550Z03R-R0078HB-HP920	30788037
16,00	16	15,8	92	31	42	0,8	3	SCM810-1600Z03R-R0080HB-HP920	30788038
17,50	18	17,3	92	31	42	0,88	3	SCM810-1750Z03R-R0088HB-HP920	30788039
18,00	18	17,8	92	31	42	0,9	3	SCM810-1800Z03R-R0090HB-HP920	30788040
19,50	20	19,3	104	41	52	0,98	3	SCM810-1950Z03R-R0098HB-HP920	30788041
20,00	20	19,8	104	41	52	1	3	SCM810-2000Z03R-R0100HB-HP920	30788042

Configurable features

Shank form:
Shank form: HA

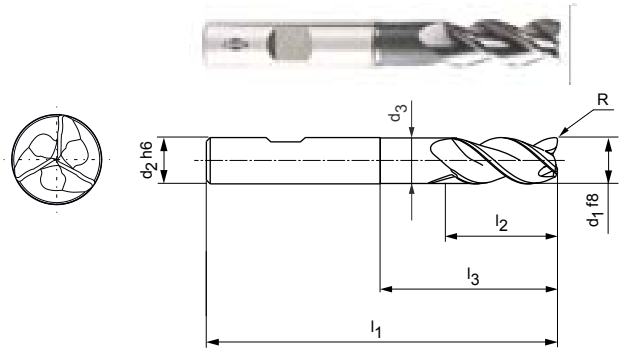
Specification:
SCM810-0380Z03R-R0019**[shank form]**-HP920

Example:
SCM810-0380Z03R-R0019**HA**-HP920
Shank form HA

Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

OptiMill®-Uni-HPC-Pocket

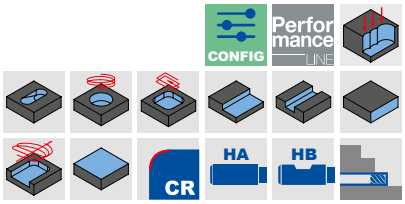
Shoulder milling cutter, overlong design with neck
SCM800



Design:

Diameter of milling cutter:	5.00 – 20.00 mm
Cutting material:	HP920
Number of cutting edges:	3
Helix angle:	~ 42°
Special features:	Face geometry with integrated drill tip

Application:
Perfect for inclined plunging up to 45°, in helix milling and grooving.



Preferred series in stock

Dimensions							z	Specification	Order no.
d_1 f8	d_2 h6	d_3	l_1	l_2	l_3	R			
5,00	6	4,8	62	13	24	0,25	3	SCM800-0500Z03R-R0025HB-HP920	31031146
5,70	6	5,5	62	13	24	0,29	3	SCM800-0570Z03R-R0029HB-HP920	30787957
6,00	6	5,8	62	13	24	0,3	3	SCM800-0600Z03R-R0030HB-HP920	30787958
6,70	8	6,4	68	16	30	0,34	3	SCM800-0670Z03R-R0034HB-HP920	30787959
7,00	8	6,7	68	16	30	0,35	3	SCM800-0700Z03R-R0035HB-HP920	30787960
7,70	8	7,4	68	21	30	0,39	3	SCM800-0770Z03R-R0039HB-HP920	30787961
8,00	8	7,7	68	21	30	0,4	3	SCM800-0800Z03R-R0040HB-HP920	30787962
8,70	10	8,4	80	22	38	0,44	3	SCM800-0870Z03R-R0044HB-HP920	30787963
9,00	10	8,7	80	22	38	0,45	3	SCM800-0900Z03R-R0045HB-HP920	30787964
9,70	10	9,4	80	22	38	0,49	3	SCM800-0970Z03R-R0049HB-HP920	30787965
10,00	10	9,7	80	22	38	0,5	3	SCM800-1000Z03R-R0050HB-HP920	30787966
11,70	12	11,3	93	26	46	0,59	3	SCM800-1170Z03R-R0059HB-HP920	30787967
12,00	12	11,6	93	26	46	0,6	3	SCM800-1200Z03R-R0060HB-HP920	30787968
13,70	14	13,3	99	26	52	0,69	3	SCM800-1370Z03R-R0069HB-HP920	30787969
14,00	14	13,6	99	26	52	0,7	3	SCM800-1400Z03R-R0070HB-HP920	30787970
15,50	16	15	108	36	58	0,78	3	SCM800-1550Z03R-R0078HB-HP920	30787971
16,00	16	15,5	108	36	58	0,8	3	SCM800-1600Z03R-R0080HB-HP920	30787972
17,50	18	17	117	36	67	0,88	3	SCM800-1750Z03R-R0088HB-HP920	30787973
18,00	18	17,5	117	36	67	0,9	3	SCM800-1800Z03R-R0090HB-HP920	30787974
19,50	20	19	126	41	74	0,98	3	SCM800-1950Z03R-R0098HB-HP920	30787975
20,00	20	19,5	126	41	74	1	3	SCM800-2000Z03R-R0100HB-HP920	30787976

Configurable features

Shank form:
Shank form: HA

Specification:
SCM800-0500Z03R-R0025**[shank form]**-HP920

Example:
SCM800-0500Z03R-R0025**HA**-HP920
Shank form HA

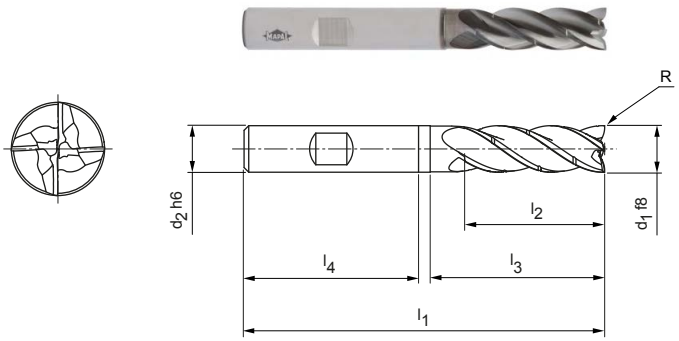
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

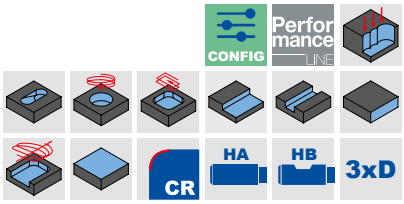
OptiMill®-Uni-HPC-Pocket

Shoulder milling cutter, 3xD design
SCM813

Design:
Diameter of milling cutter: 5.00 – 20.00 mm
Cutting material: HP920
Number of cutting edges: 4
Helix angle: 35°/36°
Special features: Face geometry with integrated drill tip

Application:
Perfect for inclined plunging up to 45°, in helix milling and grooving.





Preferred series in stock

Dimensions							z	Specification	Order no.
d_1 f8	d_2 h6	d_3	l_1	l_2	l_3	R			
5,00	6	4,8	62	17	-	0,20	4	SCM813-0500Z04R-R0020HB3-HP920	31515907
6,00	6	5,8	62	18	25	0,20	4	SCM813-0600Z04R-R0020HB3-HP920	31515908
8,00	8	7,7	68	24	30	0,20	4	SCM813-0800Z04R-R0020HB3-HP920	31515909
10,00	10	9,7	80	30	35	0,32	4	SCM813-1000Z04R-R0032HB3-HP920	31516050
12,00	12	11,6	93	36	45	0,32	4	SCM813-1200Z04R-R0032HB3-HP920	31516051
16,00	16	15,5	108	48	56	0,32	4	SCM813-1600Z04R-R0032HB3-HP920	31516053
20,00	20	19,5	126	60	70	0,50	4	SCM813-2000Z04R-R0050HB3-HP920	31516055

Available on request

14,00	14	13,6	99	42	50	0,32	4	SCM813-1400Z04R-R0032HB3-HP920	31516052
18,00	18	17,5	117	54	67	0,32	4	SCM813-1800Z04R-R0032HB3-HP920	31516054

Configurable features

Shank form:
Shank form: HA

Specification:
SCM813-1200Z03R-R0032**[shank form]**3-HP920

Example:
SCM813-1200Z03R-R0032**HA**3-HP920
Shank form HA

Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

OptiMill®-Alu-HPC-Pocket

Unique face geometry with integrated drill point

The three-edged solid carbide milling cutter OptiMill-Alu-HPC-Pocket has an integrated drill point and is extremely versatile. The OptiMill-Alu-HPC-Pocket is particularly efficient when it comes to producing pockets, inclined plunging or so-called plunging.

1 Innovative face geometry
- Prevents chip build-up during grooving

2 Adapted pitch
- Smooth machining in all applications for the best possible surface quality

3 Ultra-fine ground flutes
- Fast and reliable chip evacuation

4 Large chip spaces
- Fast and reliable chip evacuation with large chip volumes

5 Innovative pointing
- Grooving (drilling) & ramping with very high feed rates

Features

Preferred series in stock:
- Design: long version with neck, 3xD with neck and chip breaker
- ø-range: 5,00 - 20,00 mm
- Number of cutting edges: 3 / 4
- Shank form: HB

Configurable features:
- ø-range: 5,00 - 20,00 mm
- Shank form: HA

OptiMill-Alu-HPC-Pocket

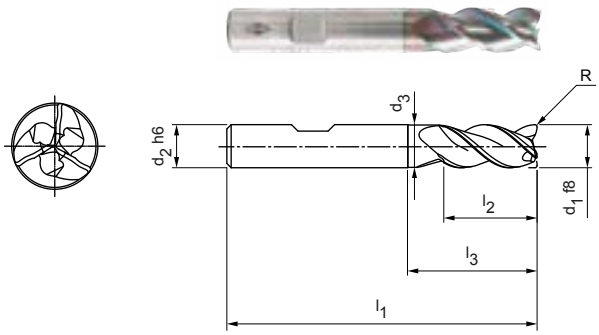
Long design with neck, z=3

NEW

Maximum performance for peripheral milling.
3xD design, z=4

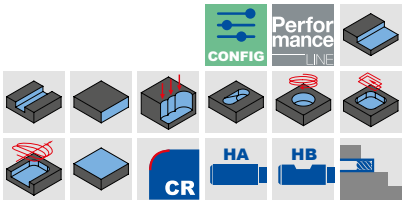
OptiMill®-Alu-HPC-Pocket

Shoulder milling cutter, long design with neck
SCM850



Design:
Diameter of milling cutter: 5.00 - 20.00 mm
Cutting material: HP913
Number of cutting edges: 3
Helix angle: 42°
Special features: Face geometry with integrated drill tip

Application:
Perfect for inclined plunging up to 45°, in helix milling and grooving.



Preferred series in stock

Dimensions							z	Specification	Order no.
d_1 f8	d_2 h6	d_3	l_1	l_2	l_3	R			
5,00	6	4,8	57	13	–	0,2	3	SCM850-0500Z03R-R0020HB-HP913	31054950
6,00	6	5,8	57	13	19	0,2	3	SCM850-0600Z03R-R0020HB-HP913	31054952
8,00	8	7,8	63	19	25	0,2	3	SCM850-0800Z03R-R0020HB-HP913	31054956
10,00	10	9,8	72	22	30	0,32	3	SCM850-1000Z03R-R0032HB-HP913	31054960
12,00	12	11,8	83	26	36	0,32	3	SCM850-1200Z03R-R0032HB-HP913	31054962
14,00	14	13,8	83	26	36	0,32	3	SCM850-1400Z03R-R0032HB-HP913	31054964
16,00	16	15,8	92	31	42	0,32	3	SCM850-1600Z03R-R0032HB-HP913	31054966
20,00	20	19,8	104	41	52	0,5	3	SCM850-2000Z03R-R0050HB-HP913	31054970

Undersize cutters available on request.

Configurable features

Shank form:
Shank form: HA

Specification:
SCM850-0500Z03R-R0020**[shank form]**-HP913

Example:
SCM850-0500Z03R-R0020**HA**-HP913
Shank form HA

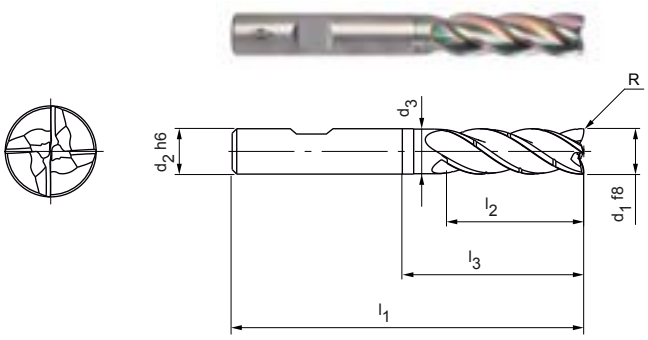
Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

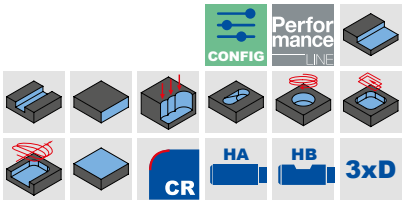
OptiMill®-Alu-HPC-Pocket

Shoulder milling cutter, 3xD design with neck, includes chip breaker SCM854

Design:
Diameter of milling cutter: 5.00 - 20.00 mm
Cutting material: HP913
Number of cutting edges: 4
Helix angle: 36°
Special features: Face geometry with integrated drill tip

Application:
Perfect for inclined plunging up to 45°, in helix milling and grooving.





P	1	2	3	4	5	6	M	1	2	3	K	1	2	3	N	1	2	3	4	S	1	2	3	4	5	H	1	2	3
																■	■		■										

Preferred series in stock

Dimensions							z	Specification	Order no.
d_1 f8	d_2 h6	d_3	l_1	l_2	l_3	R			
5,00	6	4,8	62	17	-	0,20	4	SCM854-0500Z04R-R0020HB-HP913	31302680
6,00	6	5,8	62	18	25	0,20	4	SCM854-0600Z04R-R0020HB-HP913	31302681
8,00	8	7,7	68	24	30	0,20	4	SCM854-0800Z04R-R0020HB-HP913	31302682
10,00	10	9,7	80	30	35	0,32	4	SCM854-1000Z04R-R0032HB-HP913	31302683
12,00	12	11,6	93	36	45	0,32	4	SCM854-1200Z04R-R0032HB-HP913	31302684
14,00	14	13,6	99	42	50	0,32	4	SCM854-1400Z04R-R0032HB-HP913	31302685
16,00	16	15,5	108	48	56	0,32	4	SCM854-1600Z04R-R0032HB-HP913	31302686
20,00	20	19,5	126	60	70	0,50	4	SCM854-2000Z04R-R0050HB-HP913	31302688

Available on request

18,00	18	17,5	117	54	67	0,32	4	SCM854-1800Z04R-R0032HB-HP913	31302687

Configurable features

Shank form:
Shank form: HA

Specification:
SCM854-0500Z04R-R0020**[shank form]**-HP913

Example:
SCM854-0500Z04R-R0020**HA**-HP913
Shank form HA

Dimensions in mm.
For cutting data recommendations, see end of chapter.
Special designs and other coatings available upon request.

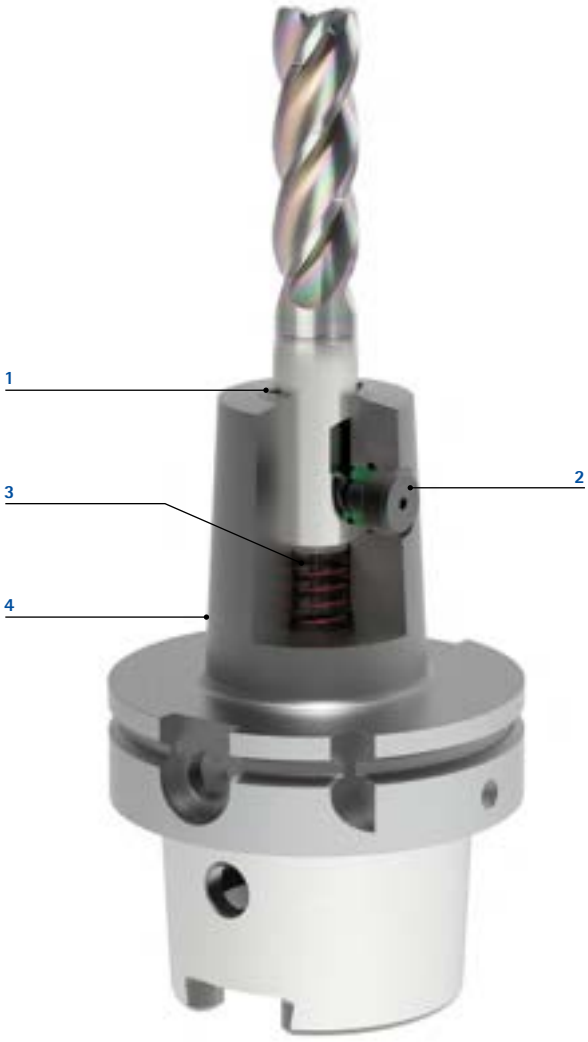
A strong team: OptiMill®-Alu-HPC-Pocket and MillChuck HB

1 Decentralised coolant channels
– Optimal coolant supply

2 Differential screw
– Easy to handle

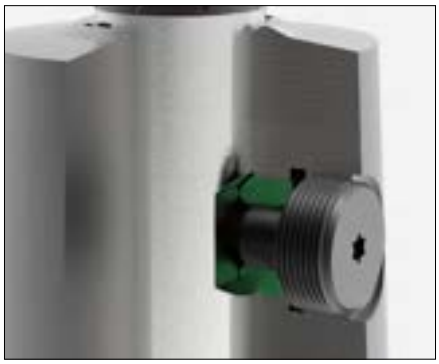
3 Spring package
– Perfect connection to the HB clamping surface

4 Contour
– Application-optimised contour for maximum rigidity



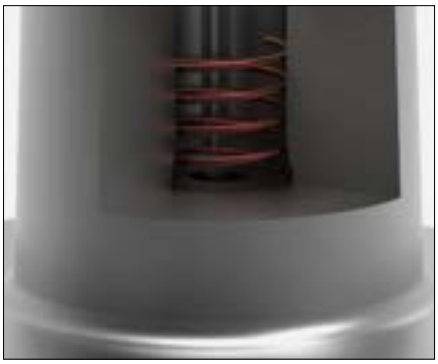
Optimal coolant supply

– Decentralised coolant channels
– Use of standard tools without internal cooling
– Tool life improved thanks to optimal cooling



Process-reliable tool clamping

– High clamping force thanks to two-part clamping element
– Differential screw for reduced tightening torque
– Process-reliable clamping through self-locking

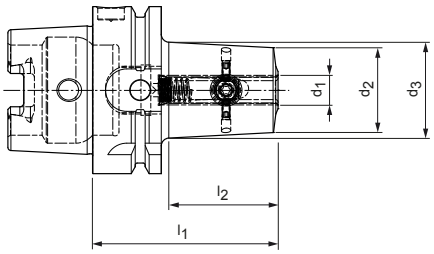


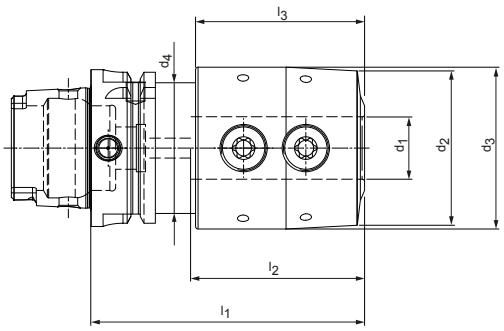
Defined milling cutter positioning

– Perfect connection to the HB clamping surface
– Form fit between tool and adapter
– Prevents any pull-out during machining

MillChuck, HB

HSK-A (hollow shank taper form A) shank according to DIN 69893-1





HSK-A	Dimensions							Specification	Order no.
	d_1	d_2	d_3	d_4	l_1	l_2	l_3		
63	6,0	22,5	26,2	-	65,0	36,2	-	MWC-HSK-A063-06-065-1-0-W	30941344
63	8,0	25,0	28,7	-	65,0	36,2	-	MWC-HSK-A063-08-065-1-0-W	30941345
63	10,0	32,0	36,2	-	70,0	41,2	-	MWC-HSK-A063-10-070-1-0-W	30941346
63	12,0	37,5	42,7	-	80,0	51,2	-	MWC-HSK-A063-12-080-1-0-W	30941347
63	16,0	43,0	48,3	-	80,0	52,2	-	MWC-HSK-A063-16-080-1-0-W	30941349
63	20,0	46,5	52,0	-	80,0	54,0	-	MWC-HSK-A063-20-080-1-0-W	30941371
63	25,0	62,0	65,0	52,5	110,0	69,9	68,0	MWC-HSK-A063-25-110-1-0-W	30941372
63	32,0	69,0	72,0	52,5	110,0	69,9	68,0	MWC-HSK-A063-32-110-1-0-W	30941373
100	6,0	22,5	27,5	-	80,0	48,2	-	MWC-HSK-A100-06-080-1-0-W	30941374
100	8,0	25,0	30,0	-	80,0	48,2	-	MWC-HSK-A100-08-080-1-0-W	30941375
100	10,0	32,0	36,9	-	80,0	48,2	-	MWC-HSK-A100-10-080-1-0-W	30941376
100	12,0	37,5	42,9	-	85,0	53,2	-	MWC-HSK-A100-12-085-1-0-W	30941377
100	16,0	43,0	50,0	-	100,0	68,2	-	MWC-HSK-A100-16-100-1-0-W	30941379
100	20,0	46,5	53,5	-	100,0	68,2	-	MWC-HSK-A100-20-100-1-0-W	30941381
100	25,0	62,0	65,0	-	100,0	68,1	-	MWC-HSK-A100-25-100-1-0-W	30941382
100	32,0	69,0	72,0	-	110,0	78,1	-	MWC-HSK-A100-32-110-1-0-W	30925430

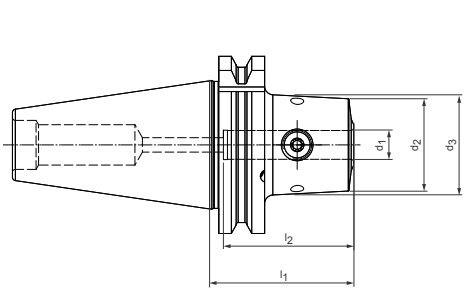
Dimensions in mm.
Additional dimensions available upon request.

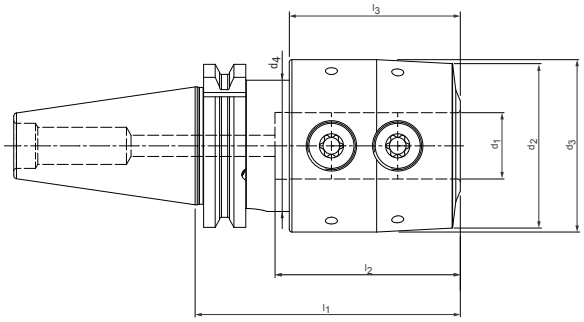
Use: For clamping milling cutters with cylindrical shank and lateral drive area according to DIN 1835 Form B and DIN 6535 Form HB.
Scope of delivery: With built-in clamping screw, without coolant tube.
Design: Permissible run-out variation of the taper to the location bore d_1 = 3 µm.

The bore tolerance is much more restricted than DIN 1835 in order to achieve machining accuracies of the highest quality.
Note: There are two clamping screws from clamping diameter d_1 = 25 mm.
Balancing quality: G 2.5 with 16,000 rpm in delivery status.

MillChuck, HB

Shank SK according to ISO 7388-1 Form AD/AF





Steep taper	Dimensions							Specification	Order no.
	d_1	d_2	d_3	d_4	l_1	l_2	l_3		
40	6,0	22,5	25,4	-	50,0	28,1	-	MWC-SK040-06-050-3-0-W	31059420
40	8,0	25,0	27,9	-	50,0	28,1	-	MWC-SK040-08-050-3-0-W	31059421
40	10,0	32,0	34,8	-	50,0	28,1	-	MWC-SK040-10-050-3-0-W	31059422
40	12,0	37,5	40,3	-	50,0	28,1	-	MWC-SK040-12-050-3-0-W	31059423
40	16,0	43,0	47,3	-	63,0	43,0	-	MWC-SK040-16-063-3-0-W	31059425
40	20,0	46,5	49,5	-	63,0	43,0	-	MWC-SK040-20-063-3-0-W	31059427
40	25,0	62,0	65,0	49,5	100,0	69,9	64,5	MWC-SK040-25-100-3-0-W	31059428
40	32,0	69,0	72,0	49,5	100,0	69,9	64,5	MWC-SK040-32-100-3-0-W	31059429
50	6,0	22,5	26,7	-	63,0	41,1	-	MWC-SK050-06-063-3-0-W	31059430
50	8,0	25,0	29,2	-	63,0	41,1	-	MWC-SK050-08-063-3-0-W	31059431
50	10,0	32,0	36,2	-	63,0	41,1	-	MWC-SK050-10-063-3-0-W	31059432
50	12,0	37,5	41,7	-	63,0	41,1	-	MWC-SK050-12-063-3-0-W	31059433
50	16,0	43,0	47,1	-	63,0	41,1	-	MWC-SK050-16-063-3-0-W	31059435
50	20,0	46,5	50,6	-	63,0	41,1	-	MWC-SK050-20-063-3-0-W	31059437
50	25,0	62,0	67,8	-	80,0	58,1	-	MWC-SK050-25-080-3-0-W	31059438
50	32,0	69,0	76,9	-	100,0	78,1	-	MWC-SK050-32-100-3-0-W	31059439

Dimensions in mm.
Additional dimensions available upon request.

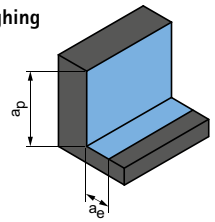
Use: For clamping milling cutters with cylindrical shank and lateral drive area according to DIN 1835 Form B and DIN 6535 Form HB.
Scope of delivery: Built-in clamping screw, does not include pull stud.
Design: Permissible run-out variation of the taper to the location bore d_1 = 3 µm.

The bore tolerance is much more restricted than DIN 1835 in order to achieve machining accuracies of the highest quality.
Note: There are two clamping screws from clamping diameter d_1 = 25 mm.
Balancing quality: G 2.5 with 16,000 rpm in delivery status.

Cutting data recommendations for shoulder milling cutters

Feed and cutting speed

Roughing



a_p = 1.5xD
a_e = 0.25xD

OptiMill-Uni-HPC-Pocket | SCM800, 810, 813, 840

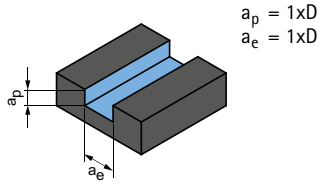
MMG*			Workpiece material	Strength/ hardness [N/mm²] [HRC]	Cooling			v_c [m/min]	f_z [mm]						
									Diameter of milling cutter [mm]						
					MQL/Air	Dry	Coolant		3.80	6.00	8.00	10.00	12.00	16.00	20.00
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	✓	✓	✓	**465**	0.053	0.079	0.101	0.122	0.140	0.171	0.195
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	✓	✓	✓	**380**	0.049	0.074	0.095	0.113	0.130	0.159	0.182
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	✓	✓	✓	**425**	0.053	0.079	0.101	0.122	0.140	0.171	0.195
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	✓		✓	**295**	0.044	0.066	0.085	0.101	0.116	0.142	0.163
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	✓	✓	✓	**275**	0.051	0.077	0.098	0.117	0.135	0.165	0.189
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	✓		✓	**255**	0.048	0.073	0.093	0.111	0.128	0.156	0.179
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	✓		✓	**235**	0.046	0.069	0.088	0.105	0.121	0.148	0.169
	P4	P4.1	Stainless steels, ferritic and martensitic		✓		✓	**190**	0.035	0.053	0.068	0.081	0.093	0.114	0.130
	P5	P5.1	Cast steel				✓	**285**	0.051	0.077	0.098	0.117	0.135	0.165	0.189
	P6	P6.1	Stainless cast steel, ferritic and martensitic				✓	**190**	0.025	0.037	0.047	0.057	0.065	0.080	0.091
M	M1	M1.1	Stainless steels, austenitic	< 700	✓		✓	**125**	0.031	0.046	0.059	0.071	0.081	0.100	0.114
		M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000			✓	**120**	0.025	0.038	0.049	0.059	0.068	0.082	0.094
	M2	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	✓		✓	**140**	0.033	0.050	0.064	0.077	0.088	0.108	0.124
	M3	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000			✓	**125**	0.026	0.040	0.051	0.061	0.070	0.085	0.098
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	✓	✓	✓	**510**	0.088	0.132	0.169	0.203	0.233	0.284	0.325
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	✓	✓	✓	**465**	0.075	0.113	0.144	0.172	0.198	0.242	0.276
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	✓	✓	✓	**380**	0.062	0.093	0.118	0.142	0.163	0.199	0.228
		K2.3	Cast iron with spheroidal graphite, GJS	> 800	✓	✓	✓	**210**	0.035	0.053	0.068	0.081	0.093	0.114	0.130
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	✓	✓	✓	**340**	0.062	0.093	0.118	0.142	0.163	0.199	0.228
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	✓	✓	✓	**315**	0.053	0.079	0.101	0.122	0.140	0.171	0.195

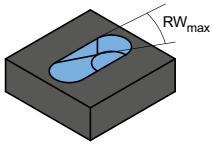
Tool length/correction factor

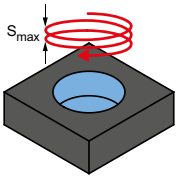
Length	f_z & v_c
Short	1
Long	1
Overlong	0.8
Extra long	–

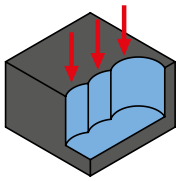
* MAPAL machining groups
** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.

Groove milling









v_c [m/min]	f_z [mm]							Ramps	Helix milling			Drilling
	Diameter of milling cutter [mm]							RW_{max}	S_{max}	EW_{max}		f_z factor
	3.80	6.00	8.00	10.00	12.00	16.00	20.00			G = 1.5	G = 1.8	
230	0.031	0.047	0.060	0.072	0.082	0.101	0.115	45°	0.75xD	25°	16°	0.9
185	0.029	0.044	0.056	0.067	0.077	0.094	0.107	45°	0.75xD	25°	16°	0.8
205	0.031	0.047	0.060	0.072	0.082	0.101	0.115	45°	0.75xD	25°	16°	0.8
145	0.026	0.039	0.050	0.060	0.069	0.084	0.096	45°	0.75xD	25°	16°	0.7
135	0.030	0.045	0.058	0.069	0.080	0.097	0.111	30°	0.5xD	18°	11°	0.8
125	0.029	0.043	0.055	0.066	0.075	0.092	0.105	30°	0.5xD	18°	11°	0.7
115	0.027	0.041	0.052	0.062	0.071	0.087	0.100	30°	0.5xD	18°	11°	0.7
95	0.021	0.031	0.040	0.048	0.055	0.067	0.077	15°	0.5xD	18°	11°	
140	0.030	0.045	0.058	0.069	0.080	0.097	0.111	30°	0.5xD	18°	11°	
95	0.015	0.022	0.028	0.033	0.038	0.047	0.054	15°	0.5xD	18°	11°	
60	0.018	0.027	0.035	0.042	0.048	0.059	0.067	15°	0.5xD	18°	11°	
60	0.015	0.023	0.029	0.035	0.040	0.049	0.056	15°	0.5xD	18°	11°	
70	0.020	0.030	0.038	0.045	0.052	0.064	0.073	15°	0.5xD	18°	11°	
60	0.016	0.023	0.030	0.036	0.041	0.050	0.058	15°	0.5xD	18°	11°	
250	0.052	0.078	0.100	0.119	0.137	0.168	0.192	45°	0.75xD	25°	16°	0.8
230	0.044	0.066	0.085	0.102	0.117	0.143	0.163	45°	0.75xD	25°	16°	0.8
185	0.036	0.055	0.070	0.084	0.096	0.117	0.134	45°	0.75xD	25°	16°	0.8
105	0.021	0.031	0.040	0.048	0.055	0.067	0.077	45°	0.75xD	25°	16°	0.8
165	0.036	0.055	0.070	0.084	0.096	0.117	0.134	45°	0.75xD	25°	16°	0.8
155	0.031	0.047	0.060	0.072	0.082	0.101	0.115	45°	0.75xD	25°	16°	0.8

Explanation of terms:

RW_{max} = Maximum angle of the ramp
S_{max} = Maximum slope of the helix
G = Ratio of circular pocket Ø when plunging to the tool Ø
E.g.: Tool Ø 12 mm at G=1.5 results in a pocket Ø of 18 mm
EW_{max} = Slope angle of the helix (results from G and S_{max})

The specified machining values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendations for shoulder milling cutters

Feed and cutting speed

OptiMill-Uni-HPC-Pocket | SCM800, 810, 813, 840

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]	Cooling		
					MQL/Air	Dry	Coolant
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	✓	✓	✓
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	✓	✓	✓
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	✓	✓	✓
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	✓		✓
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	✓	✓	✓
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	✓		✓
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	✓		✓
	P4	P4.1	Stainless steels, ferritic and martensitic		✓		✓
	P5	P5.1	Cast steel				
	P6	P6.1	Stainless cast steel, ferritic and martensitic				✓
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	✓	✓	✓
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	✓	✓	✓
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	✓	✓	✓
		K2.3	Cast iron with spheroidal graphite, GJS	> 800	✓	✓	✓
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	✓	✓	✓
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	✓	✓	✓

Calculation example for 42CrMo4 ø 12 mm:

$f_z \mid a_e \mid h_m$ max. = $\frac{D}{100}$ · See table for value

								①	②	③
P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1400	✓		✓	**280 - 380**		1.0 - 1.6	8 - 12	0.56 - 0.68

① $f_z = \frac{12\ mm}{100} \cdot 1{,}2 = 0{,}144\ mm$

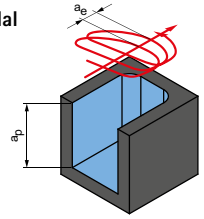
② $a_e = \frac{12\ mm}{100} \cdot 10 = 1{,}2\ mm$

③ h_m max. = $\frac{12\ mm}{100} \cdot 0{,}6 = 0{,}072\ mm$

Note:
In the case of trochoidal milling, the specified cutting conditions change during the machining process. This also depends on the CAM software used and the machining position of the tool in the workpiece. The feed and cutting width or contact angle are constantly changing during machining in order to achieve, as far as is possible, the most constant average chip thickness depending on the contour.

* MAPAL machining groups
** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.

Trochoidal milling



a_p = depending on max. machining depth of the tool
a_e = depending on the workpiece material

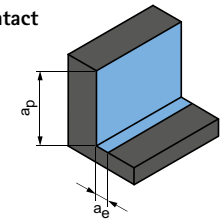
v_c [m/min]	f_z [mm] in % of D	a_e [mm] in % of D	h_m max. [mm] in % of D	Machining example	
380 – 520	1.4 - 2.0	14 - 18	0.66 - 0.80		
320 – 460	1.2 - 1.8	12 - 16	0.62 - 0.76		
340 – 480	1.2 - 1.8	10 - 14	0.58 - 0.71	**16MnCr5**	**42CrMo4**
280 – 380	1.0 - 1.6	8 - 12	0.56 - 0.68		
250 – 360	1.1 - 1.7	9 - 15	0.56 - 0.67	ø = 12 mm v_c = 500 m/min f_z = 0.28 mm a_e = 1.8 mm a_p = 32 mm	ø = 12 mm v_c = 375 m/min f_z = 0.17 mm a_e = 1.2 mm a_p = 32 mm
230 – 340	0.9 - 1.5	8 - 13	0.54 - 0.64		
210 – 320	0.8 - 1.4	6 - 12	0.52 - 0.62		
180 – 260	0.8 - 1.2	6 - 12	0.50 - 0.60		
220 – 300	1.2 - 1.8	8 - 12	0.54 - 0.62		
160 – 240	0.8 - 1.4	6 - 12	0.50 - 0.60		
400 – 500	2.0 - 2.6	15 - 20	0.64 - 0.78		
340 – 500	1.8 - 2.4	12 - 16	0.62 - 0.7		
300 – 440	1.6 - 2.2	10 - 14	0.58 - 0.68		
180 – 260	1.4 - 2.0	8 - 12	0.56 - 0.68		
280 – 360	1.6 - 2.2	10 - 16	0.6 - 0.68		
210 – 340	1.4 - 2.0	10 - 16	0.58 - 0.66		

The specified machining values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendations for shoulder milling cutters

Feed and cutting speed

Part-contact cutting

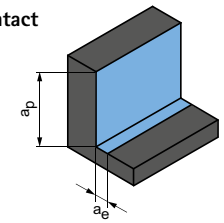


a_p = 1.5xD
a_e = 0.25xD

OptiMill-Alu-HPC-Pocket | SCM850

MMG*			Workpiece material	Strength/ hardness [N/mm²] [HRC]	Cooling			v_c [m/min]	f_z [mm]					
					MQL/Air	Dry	Coolant		Diameter of milling cutter [mm]					
									5.00	8.00	10.00	12.00	16.00	20.00
N	N1	N1.1	Aluminium, non-alloy and alloy < 3 % Si		✓	✓	✓	**945**	0.080	0.120	0.145	0.169	0.210	0.243
		N1.2	Aluminium, alloy ≤ 7 % Si		✓	✓	✓	**625**	0.084	0.126	0.152	0.177	0.221	0.256
		N1.3	Aluminium, alloy > 7-12 % Si		✓	✓	✓	**500**	0.088	0.132	0.160	0.186	0.231	0.268
		N1.4	Aluminium, alloy > 12 % Si		✓	✓	✓	**360**	0.096	0.144	0.174	0.202	0.252	0.292
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	✓	✓	✓	**360**	0.064	0.096	0.116	0.135	0.168	0.195
		N2.2	Copper, alloy	> 300	✓	✓	✓	**270**	0.064	0.096	0.116	0.135	0.168	0.195
		N2.3	Brass, bronze, gunmetal	< 1,200	✓	✓	✓	**450**	0.040	0.060	0.073	0.084	0.105	0.122
	N4	N4.1	Plastic, thermoplastics		✓	✓	✓	**125**	0.040	0.060	0.073	0.084	0.105	0.122
		N4.2	Plastic, thermosets		✓	✓	✓	**185**	0.040	0.060	0.073	0.084	0.105	0.122
		N4.3	Plastic, foams		✓	✓		**565**	0.024	0.036	0.044	0.051	0.063	0.073

Part-contact cutting



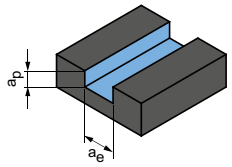
a_p = 3xD
a_e = 0.1xD

OptiMill-Alu-HPC-Pocket | SCM854

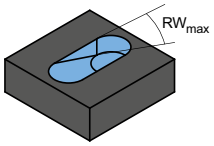
MMG*			Workpiece material	Strength/ hardness [N/mm²] [HRC]	Cooling			v_c [m/min]	f_z [mm]							
					MQL/Air	Dry	Coolant		Diameter of milling cutter [mm]							
									5.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00
N	N1	N1.1	Aluminium, non-alloy and alloy < 3 % Si		✓	✓	✓	**915**	0.061	0.091	0.110	0.126	0.141	0.154	0.166	0.176
		N1.2	Aluminium, alloy ≤ 7 % Si		✓	✓	✓	**610**	0.064	0.096	0.115	0.132	0.148	0.162	0.174	0.185
		N1.3	Aluminium, alloy > 7-12 % Si		✓	✓	✓	**485**	0.067	0.101	0.121	0.139	0.155	0.169	0.182	0.193
		N1.4	Aluminium, alloy > 12 % Si		✓	✓	✓	**350**	0.073	0.110	0.131	0.151	0.169	0.185	0.199	0.211
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	✓	✓	✓	**350**	0.049	0.073	0.088	0.101	0.113	0.123	0.132	0.141
		N2.2	Copper, alloy	> 300	✓	✓	✓	**265**	0.049	0.073	0.088	0.101	0.113	0.123	0.132	0.141
		N2.3	Brass, bronze, gunmetal	< 1,200	✓	✓	✓	**440**	0.030	0.046	0.055	0.063	0.070	0.077	0.083	0.088
	N4	N4.1	Plastic, thermoplastics		✓	✓	✓	**120**	0.030	0.046	0.055	0.063	0.070	0.077	0.083	0.088
		N4.2	Plastic, thermosets		✓	✓	✓	**180**	0.030	0.046	0.055	0.063	0.070	0.077	0.083	0.088
		N4.3	Plastic, foams		✓	✓		**315**	0.018	0.027	0.033	0.038	0.042	0.046	0.050	0.053

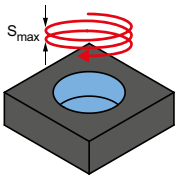
* MAPAL machining groups

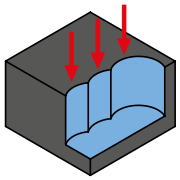
Full cutting



a_p = 1xD
a_e = 1xD

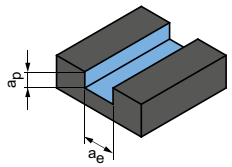




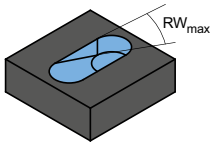


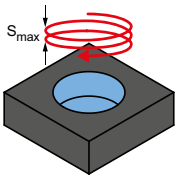
v_c [m/min]	f_z [mm]						Ramps	Helix milling			Drilling
	Diameter of milling cutter [mm]						RW_{max}	S_{max}	EW_{max}		f_z factor
	5.00	8.00	10.00	12.00	16.00	20.00			G = 1.5	G = 1.8	
610	0.047	0.071	0.086	0.099	0.124	0.144	45°	0.75xD	25°	16°	0.8
405	0.049	0.074	0.090	0.104	0.130	0.151	45°	0.75xD	25°	16°	0.8
325	0.052	0.078	0.094	0.109	0.136	0.158	45°	0.75xD	25°	16°	0.8
235	0.057	0.085	0.103	0.119	0.149	0.172	45°	0.75xD	25°	16°	0.8
235	0.038	0.057	0.068	0.080	0.099	0.115	45°	0.75xD	25°	16°	0.8
175	0.038	0.057	0.068	0.080	0.099	0.115	45°	0.75xD	25°	16°	0.8
295	0.024	0.035	0.043	0.050	0.062	0.072	45°	0.75xD	25°	16°	0.8
80	0.024	0.035	0.043	0.050	0.062	0.072	45°	0.75xD	25°	16°	0.8
120	0.024	0.035	0.043	0.050	0.062	0.072	45°	0.75xD	25°	16°	0.8
365	0.014	0.021	0.026	0.030	0.037	0.043	45°	0.75xD	25°	16°	0.8

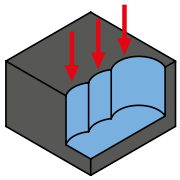
Full cutting



a_p = 1xD
a_e = 1xD







v_c [m/min]	f_z [mm]								Ramps	Helix milling			Grooving
	Diameter of milling cutter [mm]								RW_{max}	S_{max}	EW_{max}		f_z factor
	5.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00			G = 1.5	G = 1.8	
495	0.045	0.068	0.081	0.093	0.104	0.114	0.123	0.130	45°	0.75xD	25°	16°	0.8
330	0.047	0.071	0.085	0.098	0.109	0.120	0.129	0.137	45°	0.75xD	25°	16°	0.8
265	0.050	0.075	0.089	0.103	0.115	0.125	0.135	0.143	45°	0.75xD	25°	16°	0.8
190	0.054	0.081	0.097	0.112	0.125	0.137	0.147	0.156	45°	0.75xD	25°	16°	0.8
190	0.036	0.054	0.065	0.075	0.083	0.091	0.098	0.104	45°	0.75xD	25°	16°	0.8
145	0.036	0.054	0.065	0.075	0.083	0.091	0.098	0.104	45°	0.75xD	25°	16°	0.8
240	0.023	0.034	0.041	0.047	0.052	0.057	0.061	0.065	45°	0.75xD	25°	16°	0.8
65	0.023	0.034	0.041	0.047	0.052	0.057	0.061	0.065	45°	0.75xD	25°	16°	0.8
100	0.023	0.034	0.041	0.047	0.052	0.057	0.061	0.065	45°	0.75xD	25°	16°	0.8
170	0.014	0.020	0.024	0.028	0.031	0.034	0.037	0.039	45°	0.75xD	25°	16°	0.8

Explanation of terms:

RW_{max} = Maximum angle of the ramp
S_{max} = Maximum slope of the helix
G = Ratio of circular pocket Ø when plunging to the tool Ø
E.g.: Tool Ø 12 mm at G=1.5 results in a pocket Ø of 18 mm
EW_{max} = Slope angle of the helix (results from G and S_{max})

Cutting data recommendations for shoulder milling cutters

Feed and cutting speed

OptiMill-Alu-HPC-Pocket | SCM854

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]	Cooling		
					MQL/Air	Dry	Coolant
N	N1	N1.1	Aluminium, non-alloy and alloy < 3 % Si		✓	✓	✓
		N1.2	Aluminium, alloy ≤ 7 % Si		✓	✓	✓
		N1.3	Aluminium, alloy > 7-12 % Si		✓	✓	✓
		N1.4	Aluminium, alloy > 12 % Si		✓	✓	✓
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	✓	✓	✓
		N2.2	Copper, alloy	> 300	✓	✓	✓
		N2.3	Brass, bronze, gunmetal	< 1,200	✓	✓	✓
	N4	N4.1	Plastic, thermoplastics		✓	✓	✓
		N4.2	Plastic, thermosets		✓	✓	✓
		N4.3	Plastic, foams		✓	✓	

Calculation example for AL99 ø 12 mm:

$f_z \mid h_m$ max. = $\frac{D}{100}$ · See table for value

							①	②
N1.1	Aluminium, non-alloy and alloy < 3 % Si		✓	✓	✓	**810**	0.7 - 0.9	1.12

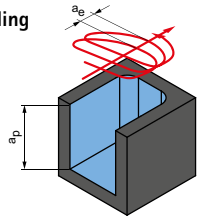
① $f_z = \frac{12\ mm}{100} \cdot 0{,}8 = 0{,}096\ mm$

② h_m max. = $\frac{12\ mm}{100} \cdot 1{,}12 = 0{,}134\ mm$

Note:
In the case of trochoidal milling, the specified cutting conditions change during the machining process. This also depends on the CAM software used and the machining position of the tool in the workpiece. The feed and cutting width or contact angle are constantly changing during machining in order to achieve, as far as is possible, the most constant average chip thickness depending on the contour.

* MAPAL machining groups

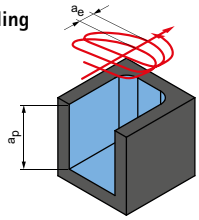
Trochoidal milling



a_p = 3xD
a_e = 0.1xD

v_c [m/min]	f_z [mm] in % of D	h_{max} [mm] in % of D
915	0.1 - 1.4	0.84
610	0.1 - 1.5	0.90
485	1.0 - 1.3	0.78
350	1.1 - 1.5	0.90
350	0.7 - 1.0	0.60
265	0.7 - 1.0	0.60
440	0.4 - 0.6	0.36
120	0.4 - 0.6	0.36
180	0.4 - 0.6	0.36
315	0.3 - 0.4	0.24

Trochoidal milling



a_p = 3xD
a_e = 0.2xD

v_c [m/min]	f_z [mm] in % of D	h_{max} [mm] in % of D
810	0.7 - 0.9	1.12
540	0.7 - 1.0	1.20
430	0.8 - 1.0	1.04
310	0.8 - 1.1	1.20
310	0.5 - 0.8	0.80
235	0.5 - 0.8	0.80
390	0.3 - 0.5	0.48
105	0.3 - 0.5	0.48
160	0.3 - 0.5	0.48
280	0.2 - 0.3	0.32

Explanation of terms:

RW_{max} = Maximum angle of the ramp
S_{max} = Maximum slope of the helix
G = Ratio of circular pocket Ø when plunging to the tool Ø
E.g.: Tool Ø 12 mm at G=1.5 results in a pocket Ø of 18 mm
EW_{max} = Slope angle of the helix (results from G and S_{max})

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