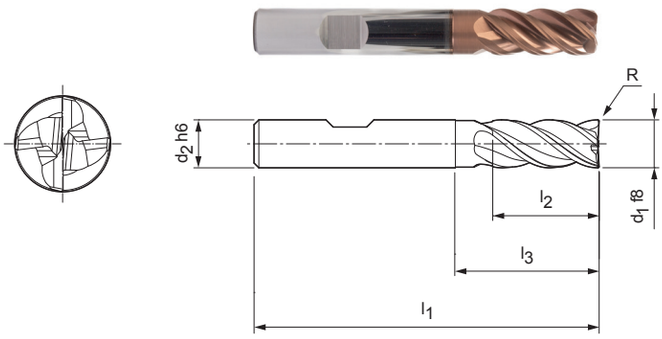
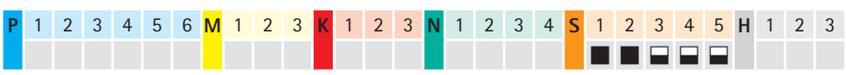
OptiMill®-Titan-HPC

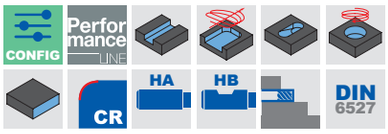
Shoulder milling cutter, long design with neck
SCM394

Design:

Diameter of milling cutter:	6,00 - 25,00 mm
Cutting material:	HP826
Number of cutting edges:	4
Helix angle:	43°
Special features:	Unequal spacing







Preferred series in stock

Dimensions							Specification	Order no.
d_1 f8	d_2 h6	l_1	l_2	d_3	l_3	R		
6,00	6	57	13	5,8	20	0,50	SCM394-0600Z04R-R0050HB-HP826	31304509
6,00	6	57	13	5,8	20	1	SCM394-0600Z04R-R0100HB-HP826	31304544
8,00	8	63	21	7,8	25	0,50	SCM394-0800Z04R-R0050HB-HP826	31304547
8,00	8	63	21	7,8	25	1	SCM394-0800Z04R-R0100HB-HP826	31304549
10,00	10	72	22	9,8	30	0,50	SCM394-1000Z04R-R0050HB-HP826	31304552
10,00	10	72	22	9,8	30	1	SCM394-1000Z04R-R0100HB-HP826	31304554
12,00	12	83	26	11,8	36	0,50	SCM394-1200Z04R-R0050HB-HP826	31304557
12,00	12	83	26	11,8	36	1	SCM394-1200Z04R-R0100HB-HP826	31304558
16,00	16	92	36	15,8	42	1	SCM394-1600Z04R-R0100HB-HP826	31304573
16,00	16	92	36	15,8	42	2	SCM394-1600Z04R-R0200HB-HP826	31304575
20,00	20	104	41	19,7	55	1	SCM394-2000Z04R-R0100HB-HP826	31304580
20,00	20	104	41	19,7	55	2	SCM394-2000Z04R-R0200HB-HP826	31304582
25,00	25	136	50	24,7	65	2	SCM394-2500Z04R-R0200HB-HP826	31304586

Available on request

8,00	8	63	21	7,8	25	2	SCM394-0800Z04R-R0200HB-HP826	31304551
10,00	10	72	22	9,8	30	2	SCM394-1000Z04R-R0200HB-HP826	31304555
12,00	12	83	26	11,8	36	2	SCM394-1200Z04R-R0200HB-HP826	31304570
12,00	12	83	26	11,8	36	3	SCM394-1200Z04R-R0300HB-HP826	31304571
16,00	16	92	36	15,8	42	3	SCM394-1600Z04R-R0300HB-HP826	31304576
16,00	16	92	36	15,8	42	4	SCM394-1600Z04R-R0400HB-HP826	31304578
20,00	20	104	41	19,7	55	3	SCM394-2000Z04R-R0300HB-HP826	31304583
20,00	20	104	41	19,7	55	4	SCM394-2000Z04R-R0400HB-HP826	31304585
25,00	25	136	50	24,7	65	3	SCM394-2500Z04R-R0300HB-HP826	31304588
25,00	25	136	50	24,7	65	4	SCM394-2500Z04R-R0400HB-HP826	31304589

Configurable features

Shank form:
Shank form: HA

Specification:
SCM394-1200Z04R-R0300**[shank form]**-HP826

Example:
SCM394-1200Z04R-R0300**HA**-HP826

Shank form HA

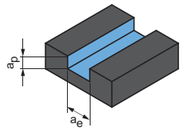
Dimensions in mm.
For cutting data recommendations, see next page.
Special designs and other coatings available upon request.

Cutting data recommendations for shoulder milling cutters

Feed and cutting speed

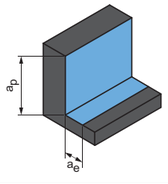
OptiMill-Titan-HPC | SCM394

Groove milling



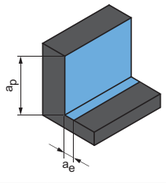
a_p = 1xD
a_e = 1xD

Roughing



a_p = 1,5xD
a_e = 0,25xD

Finishing



a_p = 1,5xD
a_e = 0,1xD

MMG *		Workpiece material	Strength/ hardness [N/mm²] [HRC]	Cooling			v_c [m/min]	f_z [mm/teeth] Diameter of milling cutter [mm]							v_c [m/min]	f_z [mm/teeth] Diameter of milling cutter [mm]							v_c [m/min]	f_z [mm/teeth] Diameter of milling cutter [mm]						
				MQL/Air	Dry	KSS		6,00	8,00	10,00	12,00	16,00	20,00	25,00		6,00	8,00	10,00	12,00	16,00	20,00	25,00		6,00	8,00	10,00	12,00	16,00	20,00	25,00
S	S1	S1.1 Titanium, titanium alloys	< 400			✓	**85**	0,035	0,045	0,054	0,062	0,075	0,086	0,096	**135**	0,059	0,076	0,091	0,104	0,127	0,146	0,163	**160**	0,094	0,120	0,144	0,165	0,202	0,230	0,257
	S2	S2.1 Titanium, titanium alloys	< 1.200			✓	**80**	0,029	0,037	0,044	0,050	0,061	0,070	0,078	**120**	0,049	0,062	0,074	0,085	0,104	0,119	0,133	**145**	0,077	0,098	0,117	0,135	0,165	0,189	0,210
		S2.2 Titanium, titanium alloys	> 1.200			✓	**50**	0,025	0,033	0,039	0,045	0,055	0,062	0,070	**80**	0,043	0,055	0,066	0,076	0,093	0,106	0,118	**95**	0,068	0,087	0,104	0,120	0,147	0,168	0,187

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

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