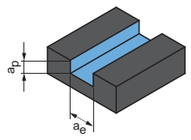
Cutting data recommendations for trochoidal milling cutters

Feed and cutting speed

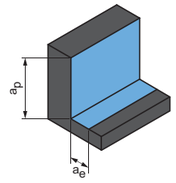
OptiMill-Titan-HPC | SCM394

Groove milling



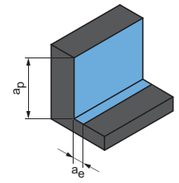
a_p = 1xD
a_e = 1xD

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] Diameter of milling cutter [mm]							v_c [m/min]	f_z [mm] Diameter of milling cutter [mm]							v_c [m/min]	f_z [mm] 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.