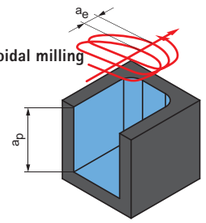
Cutting data recommendations for trochoidal milling cutters

Feed and cutting speed



Trochoidal milling

a_p = max. 3xD
a_e = depending on the workpiece material

OptiMill-Tro-Titan | SCM630

MMG*			Workpiece material	Strength/ hardness [N/mm²] [HRC]	Cooling			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	
					MQL/Air	Dry	Coolant						
S	S1	S1.1	Titanium, titanium alloys	< 400			✓	**110 - 170**	0.65 - 1.3	6 - 12	0.52 - 0.6	**TiAl6V4**	ø = 12 mm v_c = 140 m/min f_z = 0.09 mm a_e = 1.2 mm a_p = 30 mm
	S2	S2.1	Titanium, titanium alloys	< 1200			✓	**90 - 150**	0.6 - 1.2	5 - 10	0.46 - 0.56		
		S2.2	Titanium, titanium alloys	> 1200			✓	**70 - 130**	0.4 - 1.0	5 - 10	0.42 - 0.54		
	S3	S3.1	Nickel, non-alloy and alloy	< 900			✓	**60 - 120**	0.4 - 1.0	5 - 10	0.4 - 0.52		
		S3.2	Nickel, non-alloy and alloy	> 900			✓	**50 - 100**	0.3 - 0.9	5 - 10	0.4 - 0.52		
	S4	S4.1	High-temperature super alloy Ni, Co and Fe-based				✓	**35 - 90**	0.3 - 0.8	4 - 8	0.38 - 0.46		
	S5	S5.1	Tungsten and molybdenum alloys				✓	**35 - 90**	0.3 - 0.8	4 - 8	0.38 - 0.46		

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.