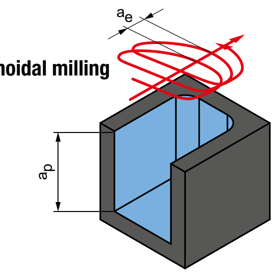
Cutting data recommendations for trochoidal milling cutters

Feed and cutting speed

Trochoidal milling



a_p = depending on the tool length
a_e = depending on the workpiece material

OptiMill-Tro-Inox | M3399

MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]	Cooling MQL/Air	Cooling Dry	Cooling KSS	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
M	M1	M1.1	Stainless steels, austenitic	< 700	✓		✓	**160 - 220**	0.8 - 1.1	5-10	0.48 - 0.60	**X5CrNi18-8** ø = 12 mm v_c = 180 m/min f_z = 0.09 mm a_e = 1.2 mm a_p = 32 mm
M	M1	M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000			✓	**120 - 160**	0.6 - 1.0	5-10	0.46 - 0.58	
M	M2	M2.1	Stainless cast steel, austenitic	< 700	✓		✓	**160 - 220**	0.8 - 1.1	5-10	0.48 - 0.60	
M	M3	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000			✓	**120 - 160**	0.6 - 1.0	5-10	0.46 - 0.58	

Correction factor tool length – k_{WL}

Factor	v_c M	a_e	h_m
2xD	1.05	1.05	1.05
3xD	1.00	1.00	1.00
4xD	0.92	0.90	0.94
5xD	0.80	0.80	0.87

Note:
For determining the cutting data, please observe the notes on pages 520 – 523.

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.

* MILLER 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.