

157 Recommended Cutting Data - Profile Milling Inch

Workpiece Material Group	ISO	Hardness	Coolant			Profile Milling (ae)					End Mill Diameter*								
			● Preferred ○ Possible x Not Possible								1/8	1/4	3/8	1/2	5/8				
						5%	10%	20%	30%	50%	*Axial depth during profile milling: OD < 1/4" .25D ap OD > 1/4" 1D ap								
			Max.	Air	MMS	2.3	1.8	1.2	1.1	1	← Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only add chip thinning when roughing or semi-finishing.								
										vc - SFM					fz - in/tooth				
Free Machining & Low Carbon Steels 1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117, 1140, 1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330	P	up to 28 Rc	●	●	●	600	550	500	450	400	.0011	.0022	.0035	.0042	.0059				
Medium Carbon & High Carbon Steels, Alloy Steels & Easy to Machine Tool Steels 1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, O1, O2, O6, S2, W1 to W310	P	28 to 38 Rc	●	●	●	600	550	500	450	400	.0011	.0022	.0035	.0042	.0059				
Tool Steels & Die Steels O7, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13, H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A128, D2, D3, D4, D5, D7	P	28 to 44 Rc	●	●	●	550	500	450	400	375	.0011	.0020	.0033	.0040	.0055				
Hardened Steels	H	40-50 Rc	●	○	○	360	340	300	280	260	.0007	.0014	.0024	.0030	.0040				
Hardened Steels		50-55 Rc	●	○	○	360	340	300	280	260	.0004	.0008	.0016	.0018	.0024				
Hardened Steels		>55 Rc	●	○	○	320	300	280	260	240	.0003	.0006	.0010	.0015	.0018				
Stainless Steel - Ferritic	M	up to 28 Rc	●	x	○	550	525	500	450	425	.0010	.0020	.0033	.0040	.0055				
Stainless Steel - Martensitic	M	up to 28 Rc	●	x	○	550	525	500	450	425	.0010	.0020	.0033	.0040	.0055				
Stainless Steel - PH 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L, 321, PH13-8Mo, Nitronics	M	over 28 Rc	●	x	○	550	525	500	450	425	.0010	.0020	.0033	.0040	.0055				
High Temp Alloys Nimonic, Inconel, Monel, Hastelloy	S	up to 42 Rc	●	x	x	165	165	130	115	100	.0004	.0008	.0016	.0018	.0024				
Titanium Alloys 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr, 10V-2Fe-3Al, 13V-11Cr-3Al	S	up to 42 Rc	●	x	x	400	375	350	300	250	.0004	.0008	.0016	.0018	.0024				

**Spindle Maximum - Should the calculated spindle speed be more than your actual spindle maximum, use this formula:
(Calculated Feed x Spindle Maximum)/Calculated Speed**