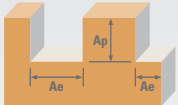
















Series Z1, Z1B, Z16CR Fractional	Hardness BRINELL			Vc (SFM)		Diameter (D ₁) (inch)						
		Ae x D ₁	Ap x D ₁			1/8	1/4	3/8	1/2	5/8	3/4	1
M	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	 Profile ≤ 0.5 ≤ 1.5		340	RPM	10390	5195	3463	2598	2078	1732	1299
				(272-408)	Fz	0.0002	0.0006	0.0011	0.0014	0.0018	0.0019	0.0020
					Feed (IPM)	8.3	12.5	15.2	14.5	15.0	13.2	10.4
		 Slot 1 ≤ 1		270	RPM	8251	4126	2750	2063	1650	1375	1031
				(216-324)	Fz	0.0002	0.0006	0.0011	0.0014	0.0018	0.0019	0.0020
					Feed (IPM)	6.6	9.9	12.1	11.6	11.9	10.5	8.3
M	STAINLESS STEELS (PH) 13-8 PH, 15-5PH, 17-4 PH, Custom 450	 Profile ≤ 0.5 ≤ 1.5		310	RPM	9474	4737	3158	2368	1895	1579	1184
				(248-372)	Fz	0.0002	0.0006	0.0011	0.0014	0.0018	0.0019	0.0020
					Feed (IPM)	7.6	11.4	13.9	13.3	13.6	12.0	9.5
		 Slot 1 ≤ 1		250	RPM	7640	3820	2547	1910	1528	1273	955
				(200-300)	Fz	0.0002	0.0006	0.0011	0.0014	0.0018	0.0019	0.0020
					Feed (IPM)	6.1	9.2	11.2	10.7	11.0	9.7	7.6
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoly 800, Monel 400	 Profile ≤ 0.5 ≤ 1.5		80	RPM	2445	1222	815	611	489	407	306
				(64-96)	Fz	0.0002	0.0004	0.0008	0.0010	0.0013	0.0014	0.0015
					Feed (IPM)	2.2	2.0	2.6	2.4	2.5	2.3	1.8
		 Slot 1 ≤ 1		65	RPM	1986	993	662	497	397	331	248
				(52-78)	Fz	0.0002	0.0004	0.0008	0.0010	0.0013	0.0014	0.0015
					Feed (IPM)	1.6	1.6	2.1	2.0	2.1	1.9	1.5
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, 750X, Incoly 925, Waspaloy, Hastelloy, Rene	 Profile ≤ 0.5 ≤ 1.5		62	RPM	1895	947	632	474	379	316	237
				(50-74)	Fz	0.0001	0.0003	0.0005	0.0007	0.0008	0.0009	0.0010
					Feed (IPM)	0.8	1.1	1.3	1.3	1.2	1.1	0.9
		 Slot 1 ≤ 1		50	RPM	1497	749	499	374	299	250	187
				(40-60)	Fz	0.0001	0.0003	0.0005	0.0007	0.0008	0.0009	0.0010
					Feed (IPM)	0.6	0.9	1.0	1.0	1.0	0.9	0.7
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	 Profile ≤ 0.5 ≤ 1.5		215	RPM	6570	3285	2190	1643	1314	1095	821
				(172-258)	Fz	0.0002	0.0005	0.0010	0.0013	0.0016	0.0017	0.0018
					Feed (IPM)	5.3	6.6	8.8	8.5	8.4	7.4	5.9
		 Slot 1 ≤ 1		170	RPM	5195	2598	1732	1299	1039	866	649
				(136-204)	Fz	0.0002	0.0005	0.0010	0.0013	0.0016	0.0017	0.0018
					Feed (IPM)	4.2	5.2	6.9	6.8	6.6	5.9	4.7
S	TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al	 Profile ≤ 0.5 ≤ 1.5		75	RPM	2292	1146	764	573	458	382	287
				(60-90)	Fz	0.0002	0.0005	0.0010	0.0013	0.0016	0.0017	0.0018
					Feed (IPM)	1.8	2.3	3.1	3.0	2.9	2.6	2.1
		 Slot 1 ≤ 1		60	RPM	1834	917	611	458	367	306	229
				(48-72)	Fz	0.0002	0.0005	0.0010	0.0013	0.0016	0.0017	0.0018
					Feed (IPM)	1.5	1.8	2.4	2.4	2.3	2.1	1.7

rpm = sfm x 3.82 / D₁

ipm = (inch / flute) x 4 x rpm

reduce speed and feed for materials harder than listed

reduce feed and Ae when finish milling (.02 x D₁ maximum)

refer to the SGS Tool Wizard for complete technical information (I)