














Series Z1PCR, Z1PLC, Z1PLB Fractional	Hardness BRINELL			Vc (SFM)	Diameter (D1) (inch)								
		Ae x D1	Ap x D1		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)	1.5	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)	1.2	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	0.0009	0.0010	0.0011
						Feed (IPM)	0.8	1.1	1.3	1.3	1.4	1.3	1.0
		 Slot	1	≤ 1	50	RPM	1528	764	509	382	306	255	191
					(40-60)	Fz	0.0001	0.0003	0.0005	0.0007	0.0009	0.0010	0.0011
						Feed (IPM)	0.6	0.9	1.0	1.1	1.1	1.0	0.8
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

maximum Slotting Ap for Z1PLC / Z1PLB is .25 x D₁maximum Profile Ae for Z1PLC / Z1PLB is .2 x D₁

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 ()