



Series Z5, Z5CR Fractional	Hardness (Brinell)	Profile Ae x D ₁	Slot Ap x D ₁	Vc (SFM)	Diameter (D ₁) (inch)							
					1/8	1/4	3/8	1/2	5/8	3/4	1	
S SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy, Monel 400	≤ 300	Profile ≤ 0.5	≤ 1.5	80	RPM	2445	1222	815	611	489	407	306
				(64-96)	Fz	0.0002	0.0006	0.0011	0.0015	0.0017	0.0018	0.0021
					Feed (IPM)	2.8	3.7	4.5	4.6	4.2	3.7	3.2
		Slot 1	≤ 1	65	RPM	1986	993	662	497	397	331	248
				(52-78)	Fz	0.0002	0.0006	0.0011	0.0015	0.0017	0.0018	0.0021
					Feed (IPM)	2.3	3.0	3.6	3.7	3.4	3.0	2.6
S SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene	> 300	Profile ≤ 0.5	≤ 1.5	62	RPM	1895	947	632	474	379	316	237
				(50-74)	Fz	0.0002	0.0005	0.0009	0.0012	0.0013	0.0014	0.0017
					Feed (IPM)	1.7	2.3	2.8	2.8	2.5	2.2	2.0
		Slot 1	≤ 1	50	RPM	1528	764	509	382	306	255	191
				(40-60)	Fz	0.0002	0.0005	0.0009	0.0012	0.0013	0.0014	0.0017
					Feed (IPM)	1.4	1.8	2.3	2.3	2.0	1.8	1.6
S TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350	Profile ≤ 0.5	≤ 1.5	215	RPM	6570	3285	2190	1643	1314	1095	821
				(172-258)	Fz	0.0003	0.0008	0.0015	0.0020	0.0022	0.0024	0.0028
					Feed (IPM)	9.9	13.1	16.4	16.4	14.5	13.1	11.5
		Slot 1	≤ 1	170	RPM	5195	2598	1732	1299	1039	866	649
				(136-204)	Fz	0.0003	0.0008	0.0015	0.0020	0.0022	0.0024	0.0028
					Feed (IPM)	7.8	10.4	13.0	13.0	11.4	10.4	9.1
S TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al	> 350 ≤ 440	Profile ≤ 0.5	≤ 1.5	75	RPM	2292	1146	764	573	458	382	287
				(60-90)	Fz	0.0003	0.0008	0.0015	0.0020	0.0022	0.0024	0.0028
					Feed (IPM)	3.4	4.6	5.7	5.7	5.0	4.6	4.0
		Slot 1	≤ 1	60	RPM	1834	917	611	458	367	306	229
				(48-72)	Fz	0.0003	0.0008	0.0015	0.0020	0.0022	0.0024	0.0028
					Feed (IPM)	2.8	3.7	4.6	4.6	4.0	3.7	3.2

Note:

- rpm = sfm x 3.82 / D₁
- ipm = (inch / flute) x 5 x rpm
- ramp at 5 degrees or less, using slotting speed and feed rates (do not plunge)
- 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 ()



Tool Wizard
CALCULATE APPLICATION PARAMETERS