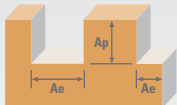














Series 55, 55CR Fractional	Hardness BRINELL				Diameter (D ₁) (inch)								
		Ae x D ₁	Ap x D ₁	Vc (SFM)									
					1/8	1/4	3/8	1/2	5/8	3/4	1		
M	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	 Profile	≤ 0.25	≤ 1.5	255	RPM	7793	3896	2598	1948	1559	1299	974
					(204-306)	Fz	0.0002	0.0006	0.0012	0.0016	0.0020	0.0021	0.0023
						Feed (IPM)	9.4	11.7	15.6	15.6	15.6	13.6	11.2
		 HSM	≤ 0.05	≤ 2	385	RPM	11766	5883	3922	2941	2353	1961	1471
					(308-462)	Fz	0.0005	0.0013	0.0024	0.0032	0.0040	0.0041	0.0045
						Feed (IPM)	28.2	38.2	47.1	47.1	47.1	40.2	33.1
M	STAINLESS STEELS (PH) 13-8 PH, 15-5PH, 17-4 PH, Custom 450	 Profile	≤ 0.25	≤ 1.5	235	RPM	7182	3591	2394	1795	1436	1197	898
					(188-282)	Fz	0.0002	0.0006	0.0010	0.0014	0.0017	0.0018	0.0019
						Feed (IPM)	7.5	10.8	12.0	12.6	12.2	10.8	8.5
		 HSM	≤ 0.05	≤ 2	355	RPM	10849	5424	3616	2712	2170	1808	1356
					(284-426)	Fz	0.0004	0.0011	0.0021	0.0028	0.0034	0.0036	0.0039
						Feed (IPM)	22.2	29.8	38.0	38.0	36.9	32.5	26.4
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoly 800, Monel 400	 Profile	≤ 0.25	≤ 1.5	70	RPM	2139	1070	713	535	428	357	267
					(56-84)	Fz	0.0002	0.0006	0.0010	0.0014	0.0017	0.0018	0.0019
						Feed (IPM)	2.2	3.2	3.6	3.7	3.6	3.2	2.5
		 HSM	≤ 0.05	≤ 2	107	RPM	3270	1635	1090	817	654	545	409
					(86-128)	Fz	0.0004	0.0011	0.0021	0.0028	0.0034	0.0036	0.0039
						Feed (IPM)	6.7	9.0	11.4	11.4	11.1	9.8	8.0
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, 750X, Incoly 925, Waspaloy, Hastelloy, Rene	 Profile	≤ 0.25	≤ 1.5	55	RPM	1681	840	560	420	336	280	210
					(44-66)	Fz	0.0002	0.0004	0.0008	0.0010	0.0013	0.0014	0.0015
						Feed (IPM)	1.3	1.7	2.2	2.1	2.2	2.0	1.6
		 HSM	≤ 0.05	≤ 2	85	RPM	2598	1299	866	649	520	433	325
					(68-102)	Fz	0.0003	0.0008	0.0015	0.0021	0.0026	0.0027	0.0029
						Feed (IPM)	4.0	5.2	6.5	6.8	6.8	5.8	4.7
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	 Profile	≤ 0.25	≤ 1.5	235	RPM	7182	3591	2394	1795	1436	1197	898
					(188-282)	Fz	0.0002	0.0006	0.0012	0.0016	0.0020	0.0021	0.0023
						Feed (IPM)	7.2	10.8	14.4	14.4	14.4	12.6	10.3
		 HSM	≤ 0.05	≤ 2	390	RPM	11918	5959	3973	2980	2384	1986	1490
					(312-468)	Fz	0.0005	0.0013	0.0024	0.0032	0.0040	0.0041	0.0045
						Feed (IPM)	29.8	38.7	47.7	47.7	47.7	40.7	33.5
S	TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al	 Profile	≤ 0.25	≤ 1.5	85	RPM	2598	1299	866	649	520	433	325
					(68-102)	Fz	0.0002	0.0006	0.0012	0.0016	0.0020	0.0021	0.0023
						Feed (IPM)	2.6	3.9	5.2	5.2	5.2	4.5	3.7
		 HSM	≤ 0.05	≤ 2	140	RPM	4278	2139	1426	1070	856	713	535
					(112-168)	Fz	0.0005	0.0013	0.0024	0.0032	0.0040	0.0042	0.0045
						Feed (IPM)	10.7	13.9	17.1	17.1	17.1	15.0	12.0

rpm = sfm x 3.82 / D₁

ipm = (inch / flute) x 5 x rpm

HSM (high speed machining)

reduce speed and feed for materials harder than listed

reduce feed and Ae when finish milling (.02 x D₁ maximum)reduce Ap to 1 x D₁ (maximum) when profile milling with long or extra long flute length tools

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