

Speed & Feed Recommendations



Series 33CR 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	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275	Profile ≤ 0.5 ≤ 1.5	550	RPM	16808	8404	5603	4202	3362	2801	2101
				(440-660)	Fz	0.0005	0.0012	0.0023	0.0031	0.0039	0.0040	0.0043
					Feed (IPM)	25.2	30.3	38.7	39.1	39.3	33.6	27.1
			Slot 1 ≤ 1	440	RPM	13446	6723	4482	3362	2689	2241	1681
				(352-528)	Fz	0.0005	0.0012	0.0023	0.0031	0.0039	0.0040	0.0043
					Feed (IPM)	20.2	24.2	30.9	31.3	31.5	26.9	21.7
P	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	> 275 ≤ 375	Profile ≤ 0.5 ≤ 1.5	315	RPM	9626	4813	3209	2407	1925	1604	1203
				(252-378)	Fz	0.0004	0.0009	0.0017	0.0023	0.0029	0.0030	0.0032
					Feed (IPM)	11.6	13.0	16.4	16.6	16.7	14.4	11.6
			Slot 1 ≤ 1	250	RPM	7640	3820	2547	1910	1528	1273	955
				(200-300)	Fz	0.0004	0.0009	0.0017	0.0023	0.0029	0.0030	0.0032
					Feed (IPM)	9.2	10.3	13.0	13.2	13.3	11.5	9.2
P	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	> 250 ≤ 375	Profile ≤ 0.5 ≤ 1.5	185	RPM	5654	2827	1885	1413	1131	942	707
				(148-222)	Fz	0.0003	0.0007	0.0014	0.0018	0.0023	0.0024	0.0025
					Feed (IPM)	5.1	5.9	7.9	7.6	7.8	6.8	5.3
			Slot 1 ≤ 1	145	RPM	4431	2216	1477	1108	886	739	554
				(116-174)	Fz	0.0003	0.0007	0.0014	0.0018	0.0023	0.0024	0.0025
					Feed (IPM)	4.0	4.7	6.2	6.0	6.1	5.3	4.2
K	CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	≤ 220	Profile ≤ 0.5 ≤ 1.5	445	RPM	13599	6800	4533	3400	2720	2267	1700
				(356-534)	Fz	0.0004	0.0011	0.0021	0.0028	0.0035	0.0036	0.0039
					Feed (IPM)	14.3	22.4	28.6	28.6	28.6	24.5	19.9
			Slot 1 ≤ 1	355	RPM	10849	5424	3616	2712	2170	1808	1356
				(284-426)	Fz	0.0004	0.0011	0.0021	0.0028	0.0035	0.0036	0.0039
					Feed (IPM)	11.4	17.9	22.8	22.8	22.8	19.5	15.9
K	CAST IRONS (HIGH ALLOY) Gray, Malleable, Ductile	> 220 ≤ 260	Profile ≤ 0.5 ≤ 1.5	340	RPM	10390	5195	3463	2598	2078	1732	1299
				(272-408)	Fz	0.0003	0.0008	0.0016	0.0021	0.0026	0.0027	0.0029
					Feed (IPM)	9.4	12.5	16.6	16.4	16.2	14.0	11.3
			Slot 1 ≤ 1	270	RPM	8251	4126	2750	2063	1650	1375	1031
				(216-324)	Fz	0.0003	0.0008	0.0016	0.0021	0.0026	0.0027	0.0029
					Feed (IPM)	7.4	9.9	13.2	13.0	12.9	11.1	9.0
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 275	Profile ≤ 0.5 ≤ 1.5	490	RPM	14974	7487	4991	3744	2995	2496	1872
				(392-588)	Fz	0.0004	0.0010	0.0019	0.0025	0.0031	0.0032	0.0035
					Feed (IPM)	17.1	22.5	28.5	28.1	27.9	24.0	19.7
			Slot 1 ≤ 1	390	RPM	11918	5959	3973	2980	2384	1986	1490
				(312-468)	Fz	0.0004	0.0010	0.0019	0.0025	0.0031	0.0032	0.0035
					Feed (IPM)	13.6	17.9	22.6	22.3	22.2	19.1	15.6

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