

Hardness BRINELL	Series 33 Metric			Vc (m/min)	Diameter (mm)								
		Ap x D1	Ae x D1		3	6	8	10	12	16	20		
> 175 < 250	CARBON STEEL 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536		1.5	0.5	181	RPM	19227	9613	7210	5768	4807	3605	2884
					(145-218)	Fz	0.01090	0.02870	0.04900	0.06120	0.07340	0.08590	0.09550
						Feed (mm/min)	629	828	1060	1059	1058	929	826
			1	1	145	RPM	15349	7675	5756	4605	3837	2878	2302
					(116-174)	Fz	0.01090	0.02870	0.04900	0.06120	0.07340	0.08590	0.09550
						Feed (mm/min)	502	661	846	845	845	742	660
> 250 < 350	ALLOY STEEL 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100		1.5	0.5	114	RPM	12118	6059	4544	3635	3029	2272	1818
					(91-137)	Fz	0.00810	0.02160	0.03680	0.04600	0.05510	0.06430	0.07160
						Feed (mm/min)	294	393	502	502	501	438	390
			1	1	91	RPM	9694	4847	3635	2908	2424	1818	1454
					(73-110)	Fz	0.00810	0.02160	0.03680	0.04600	0.05510	0.06430	0.07160
						Feed (mm/min)	236	314	401	401	401	351	312
> 250 < 350	TOOL STEEL A2, D2, H13, L2, M2, P20, S7, T15, W2		1.5	0.5	91	RPM	9694	4847	3635	2908	2424	1818	1454
					(73-110)	Fz	0.00810	0.02160	0.03680	0.04600	0.05510	0.06430	0.07160
						Feed (mm/min)	236	314	401	401	401	351	312
			1	1	73	RPM	7755	3878	2908	2327	1939	1454	1163
					(59-88)	Fz	0.00810	0.02160	0.03680	0.04600	0.05510	0.06430	0.07160
						Feed (mm/min)	188	251	321	321	320	281	250
> 200 < 260	MEDIUM & LOW ALLOY CAST IRON Gray, Malleable, Ductile		1.5	0.5	91	RPM	9694	4847	3635	2908	2424	1818	1454
					(73-110)	Fz	0.00740	0.01980	0.03350	0.04190	0.05030	0.05890	0.06550
						Feed (mm/min)	215	288	365	366	366	321	286
			1	1	73	RPM	7755	3878	2908	2327	1939	1454	1163
					(59-88)	Fz	0.00740	0.01980	0.03350	0.04190	0.05030	0.05890	0.06550
						Feed (mm/min)	172	230	292	292	293	257	229
> 250 < 350	DIFFICULT HIGH ALLOY CAST IRON Gray, Malleable, Ductile		1.5	0.5	58	RPM	6140	3070	2302	1842	1535	1151	921
					(46-69)	Fz	0.00610	0.01570	0.02690	0.03350	0.04040	0.04700	0.05260
						Feed (mm/min)	112	145	186	185	186	162	145
			1	1	46	RPM	4847	2424	1818	1454	1212	909	727
					(37-55)	Fz	0.00610	0.01570	0.02690	0.03350	0.04040	0.04700	0.05260
						Feed (mm/min)	89	114	147	146	147	128	115
< 250	STAINLESS STEEL (FREE MACHING) 303, 416, 420F, 430F 440F,		1.5	0.5	183	RPM	19388	9694	7271	5816	4847	3635	2908
					(146-219)	Fz	0.00890	0.02310	0.03960	0.04950	0.05940	0.06930	0.07720
						Feed (mm/min)	690	896	1152	1152	1152	1008	898
			1	1	146	RPM	15511	7755	5816	4653	3878	2908	2327
					(117-176)	Fz	0.00890	0.02310	0.03960	0.04950	0.05940	0.06930	0.07720
						Feed (mm/min)	552	717	921	921	921	806	718
< 275	STAINLESS STEEL (DIFFICULT) 304, 304L, 316, 316L		1.5	0.5	120	RPM	12764	6382	4786	3829	3191	2393	1915
					(96-144)	Fz	0.00710	0.01850	0.03180	0.03960	0.04750	0.05560	0.06200
						Feed (mm/min)	362	472	609	607	606	532	475
			1	1	96	RPM	10179	5089	3817	3054	2545	1909	1527
					(77-115)	Fz	0.00710	0.01850	0.03180	0.03960	0.04750	0.05560	0.06200
						Feed (mm/min)	289	377	486	484	483	424	379
< 325	STAINLESS STEEL (PH) 13-8 PH, 15-5PH, 17-4 PH, Custom 450		1.5	0.5	110	RPM	11633	5816	4362	3490	2908	2181	1745
					(88-132)	Fz	0.00710	0.01850	0.03180	0.03960	0.04750	0.05560	0.06200
						Feed (mm/min)	330	430	555	553	553	485	433
			1	1	88	RPM	9371	4686	3514	2811	2343	1757	1406
					(71-106)	Fz	0.00710	0.01850	0.03180	0.03960	0.04750	0.05560	0.06200
						Feed (mm/min)	266	347	447	445	445	391	349