













Series 51 | Speed & Feed Recommendations

Hardness BRINELL	Coolant	Series 51 / 51CR Fractonal			Vc (SFM)	Diameter (inch)							
			Ap x D1	Ae x D1		1/4	3/8	1/2	5/8	3/4	1		
P < 275	A / E / M	CARBON STEEL 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536		≤ 1	≤ 0.1	720	RPM	11002	7334	5501	4401	3667	2750
						(576-864)	Fz	0.00200	0.00350	0.00500	0.00550	0.00610	0.00710
							Feed (IPM)	132	154	165	145	134	117
				≤ 2	≤ 0.05	915	RPM	13981	9321	6991	5592	4660	3495
						(732-1098)	Fz	0.00280	0.00530	0.00700	0.00770	0.00850	0.00100
							Feed (IPM)	235	296	294	258	238	21
P < 325	A / E / M	ALLOY STEEL 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100		≤ 1	≤ 0.1	490	RPM	7487	4991	3744	2995	2496	1872
						(392-588)	Fz	0.00150	0.00290	0.00380	0.00420	0.00460	0.00540
							Feed (IPM)	67	87	85	75	69	61
				≤ 2	≤ 0.05	620	RPM	9474	6316	4737	3789	3158	2368
						(496-744)	Fz	0.00210	0.00390	0.00520	0.00570	0.00620	0.00730
							Feed (IPM)	119	148	148	130	117	104
P < 375	A / E / M	TOOL STEEL A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 1	≤ 0.1	240	RPM	3667	2445	1834	1467	1222	917
						(192-288)	Fz	0.00120	0.00230	0.00300	0.00340	0.00370	0.00430
							Feed (IPM)	26	34	33	30	27	24
				≤ 2	≤ 0.05	305	RPM	4660	3107	2330	1864	1553	1165
						(244-366)	Fz	0.00170	0.00320	0.00420	0.00460	0.00500	0.00590
							Feed (IPM)	48	60	59	51	47	41
M < 275	E	STAINLESS STEEL (FREE MACHINING) 303, 416, 420F, 430F 440F		≤ 1	≤ 0.1	510	RPM	7793	5195	3896	3117	2598	1948
						(459-561)	Fz	0.00150	0.00280	0.00380	0.00410	0.00450	0.00530
							Feed (IPM)	70	87	89	77	70	62
				≤ 2	≤ 0.05	650	RPM	9932	6621	4966	3973	3311	2483
						(585-715)	Fz	0.00210	0.00380	0.00510	0.00560	0.00610	0.00720
							Feed (IPM)	125	151	152	133	121	107
M < 185	E	STAINLESS STEEL (DIFFICULT) 304, 304L, 316, 316L		≤ 1	≤ 0.1	350	RPM	5348	3565	2674	2139	1783	1337
						(315-385)	Fz	0.00120	0.00230	0.00300	0.00330	0.00360	0.00420
							Feed (IPM)	39	49	48	42	39	34
				≤ 2	≤ 0.05	450	RPM	6876	4584	3438	2750	2292	1719
						(405-495)	Fz	0.00170	0.00320	0.00420	0.00460	0.00500	0.00590
							Feed (IPM)	70	88	87	76	69	61
M < 325	E	STAINLESS STEEL (PH) 13-8 PH, 15-5PH, 17-4 PH, Custom 450		≤ 1	≤ 0.1	325	RPM	4966	3311	2483	1986	1655	1242
						(293-358)	Fz	0.00120	0.00230	0.00300	0.00330	0.00360	0.00420
							Feed (IPM)	36	46	45	39	36	31
				≤ 2	≤ 0.05	410	RPM	6265	4177	3132	2506	2088	1566
						(369-451)	Fz	0.00170	0.00320	0.00420	0.00460	0.00500	0.00590
							Feed (IPM)	64	80	79	69	63	55