



High Performance Internal Coolant Drills				Diameter (D ₁) (inch)							
Series 140 8D Fractional	Hardness BRINELL	Vc (SFM)		1/8	3/16	1/4	3/8	1/2	5/8	3/4	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536		420	RPM	12835	8557	6418	4278	3209	2567	2139
		≤ 200	(336-504)	Fr	0.0035	0.0053	0.0070	0.0105	0.0140	0.0175	0.0210
				Feed (IPM)	44.9	45.4	44.9	44.9	44.9	44.9	44.9
		> 200 ≤ 300	(296-444)	RPM	11307	7538	5654	3769	2827	2261	1885
				Fr	0.0030	0.0045	0.0060	0.0090	0.0120	0.0150	0.0180
				Feed (IPM)	33.9	33.9	33.9	33.9	33.9	33.9	33.9
		> 300 ≤ 420	(136-204)	RPM	5195	3463	2598	1732	1299	1039	866
				Fz	0.0025	0.0038	0.0050	0.0075	0.0100	0.0125	0.0150
				Feed (IPM)	13.0	13.2	13.0	13.0	13.0	13.0	13.0
P	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100		320	RPM	9779	6519	4890	3260	2445	1956	1630
		≤ 270	(256-384)	Fz	0.0025	0.0038	0.0050	0.0075	0.0100	0.0125	0.0150
				Feed (IPM)	24.4	24.8	24.4	24.4	24.4	24.4	24.4
		> 270 ≤ 370	(184-276)	RPM	7029	4686	3514	2343	1757	1406	1171
				Fr	0.0020	0.0030	0.0040	0.0060	0.0080	0.0100	0.0125
				Feed (IPM)	70288.0	14.1	14.1	14.1	14.1	14.1	14.6
		> 370 ≤ 450	(104-156)	RPM	3973	2649	1986	1324	993	795	662
				Fr	0.0015	0.0023	0.0030	0.0045	0.0060	0.0075	0.0090
				Feed (IPM)	156.0	6.1	6.0	6.0	6.0	6.0	6.0
P	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		230	RPM	7029	4686	3514	2343	1757	1406	1171
		≤ 250	(184-276)	Fr	0.0020	0.0030	0.0040	0.0060	0.0080	0.0100	0.0125
				Feed (IPM)	240.0	14.1	14.1	14.1	14.1	14.1	14.1
		> 250 ≤ 330	(128-192)	RPM	4890	3260	2445	1630	1222	978	815
				Fr	0.0015	0.0023	0.0030	0.0045	0.0060	0.0075	0.0090
				Feed (IPM)	342.0	7.5	7.3	7.3	7.3	7.3	7.3
		> 330 ≤ 450	(64-96)	RPM	2445	1630	1222	815	611	489	407
				Fr	0.0008	0.0013	0.0015	0.0025	0.0030	0.0040	0.0045
				Feed (IPM)	2.0	2.1	1.8	2.0	1.8	2.0	1.8
K	CAST IRONS Gray, Malleable, Ductile		420	RPM	12835	8557	6418	4278	3209	2567	2139
		≤ 200	(336-504)	Fr	0.0045	0.0068	0.0090	0.0135	0.0180	0.0225	0.0270
				Feed (IPM)	57.8	58.2	57.8	57.8	57.8	57.8	57.8
		> 200 ≤ 330	(216-324)	RPM	8251	5501	4126	2750	2063	1650	1375
				Fr	0.0040	0.0060	0.0080	0.0120	0.0160	0.0200	0.0240
				Feed (IPM)	33.0	33.0	33.0	33.0	33.0	33.0	33.0
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F		210	RPM	6418	4278	3209	2139	1604	1284	1070
		< 250	(168-252)	Fr	0.0020	0.0030	0.0040	0.0060	0.0080	0.0100	0.0120
				Feed (IPM)	12.8	12.8	12.8	12.8	12.8	12.8	12.8
		> 250 ≤ 330	(128-192)	RPM	4890	3260	2445	1630	1222	978	815
				Fr	0.0018	0.0028	0.0035	0.0055	0.0070	0.0090	0.0105
				Feed (IPM)	8.8	9.1	8.6	9.0	8.6	8.8	8.6

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