



Recommended Speeds & Feeds for Drill Mills

		Milling									Chamfering								
		Feed rate, IPT (Inch per Tooth)									Feed rate, IPT (Inch per Tooth)								
Material	Hardness R/C	Starting SFM	Drill Mill Diameter							Starting SFM	Drill Mill Diameter								
			1/8	1/4	5/16	3/8	1/2	5/8	3/4		1	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
Low Carbon Steel 1006, 1008, 1018, 1020, 1022, 1025, 1117, 1140, 1215, 1330	Up to 30	450	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	500	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0006	.0015	.0018	.0023	.0026	.003	.004	.005		.0006	.0013	.0015	.0018	.0025	.0031	.004	.0052
Medium Carbon and High Carbon, Steels 1030, 1040, 1050, 1060, 1085, 1095, 1541, 1551, 9255, 3135, 3415, 4130, 4140, 4150, 4320, 4520, 5015, 5120, 5140, 8620	30-40 RC	300	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	350	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0006	.0015	.0018	.0023	.0026	.003	.004	.005		.0005	.0011	.0014	.0017	.0023	.0028	.0034	.0045
Tool Steels T1, T2, T15, A2, A7, H13, P20, S7, D2	30-44 RC	250	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	250	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0005	.0012	.0015	.0018	.0023	.0027	.0035	.004		.0006	.0013	.0015	.002	.0025	.003	.004	.005
Stainless Steel 430F, 301, 303, 410, 416, 420F, 430, 430F	Up to 30 RC	350	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	350	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0006	.0015	.0018	.0023	.0026	.003	.004	.005		.0006	.0011	.0016	.0021	.0028	.0033	.0041	.0055
Stainless Steel 301, 302, 303, 304, 305, 420, 15-5PH, 17-4PH, 17-7PH	Up to 30 RC	225	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	200	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0005	.0012	.0015	.0018	.0023	.0027	.0035	.004		.0002	.0007	.001	.0012	.0016	.002	.0024	.003
Stainless Steel 302B, 304B, 309, 310, 316, 316B, 316L, 317, 317L, 321, Nitronic	Over 30 RC	200	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	200	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0005	.001	.0012	.0016	.0018	.0025	.0028	.0038		.0006	.0012	.0016	.0019	.0025	.003	.0037	.0048
Gray Cast Iron ASTM A48, Class 20,25,30,35, SAE J431C, Grades G1800,G3000,G3500, GG10,15,20,25,30,35,40	---	400	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	900	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0006	.0015	.0018	.0023	.0026	.003	.004	.005		.0012	.0025	.003	.0035	.005	.006	.007	.009
Ductile Cast Iron 60-40-18, 65-45-12, D40148, D4512, 32510, 35108, M3210, M4504, M5503, 2502, 300, 350, 400, 450	---	300	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	600	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0006	.0015	.0018	.0023	.0026	.003	.004	.005		.001	.002	.0025	.003	.004	.005	.0065	.0075
Aluminum 2024, 6061, 7075, 1050, 6351, 5005, 2017, 7075	Up to 3% Si	1000	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	1000	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.001	.0023	.003	.0035	.0045	.006	.007	.009		.0012	.0025	.003	.0035	.005	.006	.007	.009
Cast Aluminum High Silicon A380, Castings	Over 3% Si	750	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	700	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0008	.0018	.0023	.0028	.0036	.0046	.0055	.0075		.0014	.0028	.0035	.0042	.0055	.007	.0085	.011
Magnesium	---	700	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	1500	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0006	.0015	.002	.0023	.003	.004	.0045	.006		.0012	.0025	.003	.0035	.0045	.006	.007	.0095
Non Ferrous Copper, Brass, Bronze	Up to 30 RC	500	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1	500	1/8	1/4	5/16	3/8	1/2	5/8	3/4	1
			.0005	.001	.0015	.002	.0025	.003	.0035	.005		.001	.002	.0025	.003	.004	.005	.006	.007

** Use OD of tool for all speed and feed calculations.

** If milling axial DOC exceeds .5 x dia, reduce IPT or radial DOC by 50%.

** Drilling - use milling IPT. Please note feed is listed as inches per tooth, not inches per rev.

** Calculate all drilling with 2 flutes. Even the 4 flute style since only 2 flutes are effective when drilling.

** Please note speeds and feeds are approximate values and can vary greatly depending on cutting situations.