Speeds and Feeds

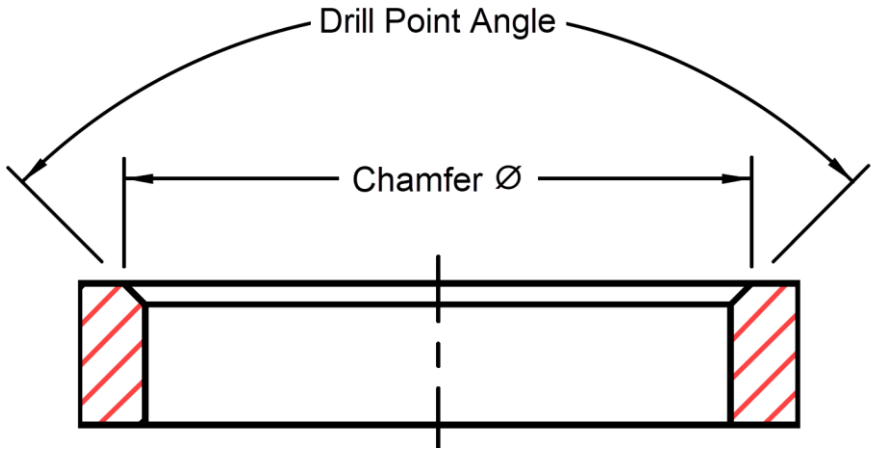
RPM: rev/min
FEED: in/rev

ISO	Material Description	Composition / Structure / Heat Treatment		HB	HRC		SFM	Drill Diamerter											
							6.0 ~ 20.0	METRIC	6.0	-	-	8.0	-	10.0	12.0	-	-	16.0	-	20.0
							1/4 ~ 3/4	FRACTIONAL	-	1/4	5/16	-	3/8	-	-	1/2	5/8	-	3/4	-
							0.2362 ~ 0.7874	DECIMAL	.2362	.2500	.3125	.3150	.3750	.3937	.4724	.5000	.6250	.6299	.7500	.7874
P	Non-alloy steel	About 0.15% C	Annealed	125		●	247	RPM	3980		2980		2390		1990	1890	1490		1260	1190
								FEED	.0028 - .0039		.0031 - .0047		.0035 - .0055		.0043 - .0067	.0043 - .0067	.0051 - .0075		.0051 - .0075	.0059 - .0083
		About 0.45% C	Annealed	190	13	●	230	RPM	3710		2790		2230		1860	1760	1390		1170	1110
								FEED	.0028 - .0039		.0031 - .0047		.0035 - .0055		.0043 - .0067	.0043 - .0067	.0051 - .0075		.0051 - .0075	.0059 - .0083
		About 0.45% C	Quenched & tempered	250	25	●	214	RPM	3450		2590		2070		1720	1630	1290		1090	1030
								FEED	.002 - .0031		.0028 - .0039		.0031 - .0047		.0035 - .0055	.0035 - .0055	.0043 - .0067		.0043 - .0067	.0051 - .0075
	Low alloy steel		Annealed	180	10	●	230	RPM	3710		2790		2230		1860	1760	1390		1170	1110
								FEED	.0028 - .0039		.0031 - .0047		.0035 - .0055		.0043 - .0067	.0043 - .0067	.0051 - .0075		.0051 - .0075	.0059 - .0083
			Quenched & tempered	275	29	○	181	RPM	2920		2190		1750		1460	1380	1090		920	880
								FEED	.002 - .0031		.0028 - .0039		.0031 - .0047		.0035 - .0055	.0035 - .0055	.0043 - .0067		.0043 - .0067	.0051 - .0075
M	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	115	RPM	1860		1390		1110		930	880	700		590	560
								FEED	.0028 - .0039		.0031 - .0047		.0035 - .0055		.0043 - .0067	.0043 - .0067	.0051 - .0075		.0051 - .0075	.0059 - .0083
K	Grey cast iron	Pearlitic / ferritic		180	10	●	296	RPM	4770		3580		2860		2390	2260	1790		1510	1430
								FEED	.0031 - .0043		.0039 - .0051		.0047 - .0063		.0059 - .0079	.0059 -- .0079	.0071 - .0094		.0071 - .0094	.0087 - .011
		Pearlitic (Martensitic)		260	26	○	230	RPM	3710		2790		2230		1860	1760	1390		1170	1110
								FEED	.002 - .0031		.0028 - .0039		.0031 - .0047		.0035 - .0055	.0035 - .0055	.0043 - .0067		.0043 - .0067	.0051 - .0075
	Nodular cast iron	Ferritic		160	3	○	296	RPM	4770		3580		2860		2390	2260	1790		1510	1430
								FEED	.0031 - .0043		.0039 - .0051		.0047 - .0063		.0059 - .0079	.0059 - .0079	.0071 - .0094		.0071 - .0094	.0087 - .011
	Malleable cast iron	Ferritic		130		○	197	RPM	3180		2390		1910		1590	1510	1190		1000	950
								FEED	.0031 - .0043		.0039 - .0051		.0047 - .0063		.0059 - .0079	.0059 - .0079	.0071 - .0094		.0071 - .0094	.0087 - .011
N	Aluminum-wrought alloy	Not Curable		60		○	543	RPM	8750		6570		5250		4380	4150	3280		2770	2630
								FEED	.0039 - .0051		.0047 - .0059		.0059 - .0075		.0071 - .0091	.0071 - .0091	.0083 - .0106		.0083 - .0106	.0098 - .0122
		Curable	Hardened	100		○	428	RPM	6900		5170		4140		3450	3270	2590		2180	2070
								FEED	.0039 - .0051		.0047 - .0059		.0059 - .0075		.0071 - .0091	.0071 - .0091	.0083 - .0106		.0083 - .0106	.0098 - .0122
	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		○	362	RPM	5840		4380		3500		2920	2770	2190		1840	1750
								FEED	.0039 - .0051		.0047 - .0059		.0059 - .0075		.0071 - .0091	.0071 - .0091	.0083 - .0106		.0083 - .0106	.0098 - .0122
S	Titanium Alloys	Pure Titanium		400 Rm		○	115	RPM	1860		1390		1110		930	880	700		590	560
								FEED	.002 - .0031		.0028 - .0039		.0031 - .0047		.0035 - .0055	.0035 - .0055	.0043 - .0067		.0043 - .0067	.0051 - .0075

TESTED. PROVEN.

●	Primary
○	Secondary

Speeds and Feeds



Point Angle	Drill Point Z Depth
60°	0.866 × Chamfer Ø = Z Depth
82°	0.575 × Chamfer Ø = Z Depth
90°	0.500 × Chamfer Ø = Z Depth
118°	0.300 × Chamfer Ø = Z Depth
120°	0.288 × Chamfer Ø = Z Depth
135°	0.207 × Chamfer Ø = Z Depth

RPM	SFM
$RPM = \frac{SFM \times 3.82}{[\varnothing DC_{(inch)}]}$	$SFM = \frac{RPM \times [\varnothing DC_{(inch)}]}{3.82}$