

# Speeds and Feeds



RPM : rev/min

FEED: inch/rev

ISO	Material Description	Composition / Structure / Heat Treatment		HB	HRC		SFM	Drill Diameter					
							6.0 ~ 12.0	METRIC	6.0	-	-	10.0	12.0
							1/4 ~ 3/8	FRACTIONAL	-	1/4	3/8	-	-
							0.236 ~ 0.500	DECIMAL	.2362	.2500	.3750	.3937	.4724
P	Non-alloy steel	About 0.15% C	Annealed	125		●	82	RPM	1330	800	660		
		About 0.45% C	Annealed	190	13	●	82	FEED	.0028 - .0039	.0035 - .0055	.0043 - .0067		
								RPM	1330	800	660		
		About 0.45% C	Quenched & tempered	250	25	○	49	FEED	.0028 - .0039	.0035 - .0055	.0043 - .0067		
								RPM	800	480	400		
		Low alloy steel	Annealed	180	10	●	66	FEED	.002 - .0031	.0031 - .0047	.0035 - .0055		
	RPM							1060	640	530			
	Low alloy steel	Quenched & tempered	275	29	○	49	FEED	.0028 - .0039	.0035 - .0055	.0043 - .0067			
RPM							800	480	400				
M	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	49	FEED	.002 - .0031	.0031 - .0047	.0035 - .0055		
								RPM	800	480	400		
K	Grey cast iron	Pearlitic / ferritic		180	10	●	99	RPM	1590	950	800		
								FEED	.0031 - .0043	.0047 - .0063	.0059 - .0079		
		Pearlitic (Martensitic)		260	26	○	82	RPM	1330	800	660		
								FEED	.002 - .0031	.0031 - .0047	.0035 - .0055		
	Nodular cast iron	Ferritic		160	3	○	99	RPM	1590	950	800		
								FEED	.0031 - .0043	.0047 - .0063	.0059 - .0079		
	Malleable cast iron	Ferritic		130		○	66	RPM	1060	640	530		
								FEED	.0031 - .0043	.0047 - .0063	.0059 - .0079		
N	Aluminum-wrought alloy	Not Curable		60		○	214	RPM	3450	2070	1720		
								FEED	.0039 - .0051	.0059 - .0075	.0071 - .0091		
		Curable	Hardened	100		○	197	RPM	3180	1910	1590		
								FEED	.0039 - .0051	.0059 - .0075	.0071 - .0091		
	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	75		○	165	RPM	2650	1590	1330			
							FEED	.0039 - .0051	.0059 - .0075	.0071 - .0091			



●	Primary
○	Secondary

# Speeds and Feeds



RPM : rev/min

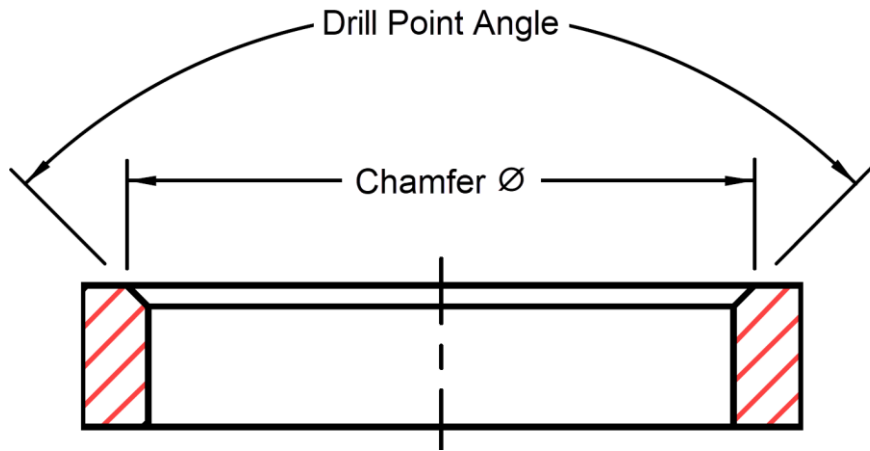
FEED: inch/rev

ISO	Material Description	Composition / Structure / Heat Treatment		HB	HRC		SFM		Drill Diameter					
							6.0 ~ 12.0	METRIC	-	-	16.0	-	20.0	
							1/4 ~ 3/8	FRACTIONAL	1/2	5/8	-	3/4	-	
							0.236 ~ 0.500	DECIMAL	.5000	.6250	.6299	.7500	.7874	
P	Non-alloy steel	About 0.15% C	Annealed	125		●	82	RPM	630	500	420	400		
						FEED		.0043 - .0067	.0051 - .0075	.0051 - .0075	.0059 - .0083			
		About 0.45% C	Annealed	190	13	●	82	RPM	630	500	420	400		
						FEED		.0043 - .0067	.0051 - .0075	.0051 - .0075	.0059 - .0083			
	Low alloy steel	Quenched & tempered	250	25	○	49	RPM	370	300	250	240			
							FEED	.0035 - .0055	.0043 - .0067	.0043 - .0067	.0051 - .0075			
		Annealed	180	10	●	66	RPM	500	400	340	320			
							FEED	.0043 - .0067	.0051 - .0075	.0051 - .0075	.0059 - .0083			
	Quenched & tempered	275	29	○	49	RPM	370	300	250	240				
						FEED	.0035 - .0055	.0043 - .0067	.0043 - .0067	.0051 - .0075				
M	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	49	RPM	370	300	250	240		
								FEED	.0043 - .0067	.0051 - .0075	.0051 - .0075	.0059 - .0083		
K	Grey cast iron	Pearlitic / ferritic		180	10	●	99	RPM	760	600	500	480		
								FEED	.0059 - .0079	.0071 - .0094	.0071 - .0094	.0087 - .0110		
		Pearlitic (Martensitic)		260	26	○	82	RPM	630	500	420	400		
								FEED	.0035 - .0055	.0043 - .0067	.0043 - .0067	.0051 - .0075		
	Nodular cast iron	Ferritic		160	3	○	99	RPM	760	600	500	480		
								FEED	.0059 - .0079	.0071 - .0094	.0071 - .0094	.0087 - .0110		
	Malleable cast iron	Ferritic		130		○	66	RPM	500	400	340	320		
								FEED	.0059 - .0079	.0071 - .0094	.0071 - .0094	.0087 - .0110		
N	Aluminum-wrought alloy	Not Curable		60		○	214	RPM	1630	1290	1090	1030		
								FEED	.0071 - .0091	.0083 - .0106	.0083 - .0106	.0098 - .0122		
		Curable	Hardened	100		○	197	RPM	1510	1190	1000	950		
								FEED	.0071 - .0091	.0083 - .0106	.0083 - .0106	.0098 - .0122		
	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	75		○	165	RPM	1260	990	840	800			
							FEED	.0071 - .0091	.0083 - .0106	.0083 - .0106	.0098 - .0122			



●	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
$\text{RPM} = \frac{\text{SFM} \times 3.82}{[\text{ØDC}_{(\text{inch})}]}$	$\text{SFM} = \frac{\text{RPM} \times [\text{ØDC}_{(\text{inch})}]}{3.82}$