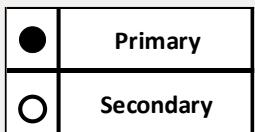


Speeds and Feeds



Feed: mm/rev
RPM: rev/min

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment			HB	HRC	SMM	Drill Ø (mm)		SMM	Drill Diameter (mm)								
			1.0	METRIC	1				2.0 ~ 13.0	METRIC		2	3	4	6	8	10	13		
P	1	Non-alloy steel	About 0.15% C	Annealed	125			●	28	RPM	8,910	40	RPM	6,370	4,240	3,180	2,120	1,590	1,270	980
	2		About 0.45% C	Annealed	190	13		●	25	RPM	7,960	35	RPM	5,570	3,710	2,790	1,860	1,390	1,110	860
	3		About 0.45% C	Quenched & tempered	250	25		●	20	RPM	6,370	30	RPM	4,770	3,180	2,390	1,590	1,190	950	730
	4		About 0.75% C	Annealed	270	28	O	O	15	RPM	4,770	20	RPM	3,180	2,120	1,590	1,060	800	640	490
M	6	Low alloy steel		Annealed	180	10	●	25	RPM	7,960	35	RPM	5,570	3,710	2,790	1,860	1,390	1,110	860	
	7			Quenched & tempered	275	29	O	O	20	RPM	6,370	30	RPM	4,770	3,180	2,390	1,590	1,190	950	730
	8			Quenched & tempered	300	32	O	O	20	RPM	6,370	30	RPM	4,770	3,180	2,390	1,590	1,190	950	730
	10	High alloyed steel, and tool steel		Annealed	200	15	O	O	15	RPM	4,770	20	RPM	3,180	2,120	1,590	1,060	800	640	490
K	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	●	18	RPM	5,730	25	RPM	3,980	2,650	1,990	1,330	990	800	610	
	13		Martensitic	Quenched & Tempered	240	23	O	O	15	RPM	4,770	20	RPM	3,180	2,120	1,590	1,060	800	640	490
	14			Austenitic	180	10	O	O	10	RPM	3,180	15	RPM	2,390	1,590	1,190	800	600	480	370
	15		Pearlitic / ferritic		180	10	O	O	28	RPM	8,910	40	RPM	6,370	4,240	3,180	2,120	1,590	1,270	980
N	16	Grey cast iron	Pearlitic (Martensitic)		260	26	O	O	25	RPM	7,960	35	RPM	5,570	3,710	2,790	1,860	1,390	1,110	860
	17		Ferritic		160	3	O	O	28	RPM	8,910	40	RPM	6,370	4,240	3,180	2,120	1,590	1,270	980
	18		Pearlitic		250	25	O	O	20	RPM	6,370	30	RPM	4,770	3,180	2,390	1,590	1,190	950	730
	19		Ferritic		130		O	O	25	RPM	7,960	35	RPM	5,570	3,710	2,790	1,860	1,390	1,110	860
S	20	Nodular cast iron	Pearlitic		230	21	O	O	20	RPM	6,370	30	RPM	4,770	3,180	2,390	1,590	1,190	950	730
	21		Not Curable		60		O	O	45	RPM	14,320	65	RPM	10,350	6,900	5,170	3,450	2,590	2,070	1,590
	22		Curable	Hardened	100		O	O	45	RPM	14,320	65	RPM	10,350	6,900	5,170	3,450	2,590	2,070	1,590
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		O	O	35	RPM	11,140	50	RPM	7,960	5,310	3,980	2,650	1,990	1,590	1,220
29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic					O	O	20	RPM	6,370	30	RPM	4,770	3,180	2,390	1,590	1,190	950	730
	36	Titanium Alloys	Pure Titanium		400 Rm		O	O	15	RPM	4,770	20	RPM	3,180	2,120	1,590	1,060	800	640	490



RPM		SMM	
$\text{RPM} = \frac{\text{SMM} \times 1,000}{\pi \times [\varnothing \text{DC}_{(\text{millimeter})}]}$		$\text{SMM} = \frac{\text{RPM} \times \pi \times [\varnothing \text{DC}_{(\text{millimeter})}]}{1,000}$	