

Suggested Drilling Speeds for High Speed Steel and Titanium Drill Bits

Material	Speed in Feet Per Minute	
	High Speed Steel	Titanium
Aluminum and its alloys	200-300	300-450
Brass and bronze (ordinary)	150-300	300-450
Bronze (high tensile)	70-150	140-300
Die castings (zinc base)	300-400	450-600
High temperature alloys:(solution treated & aged)		
Cobalt base HS25. S816. V36	10-20	20-40
Iron base INCO 800, A286, N155	10-20	20-40
Nickel base INCONEL 700, U500, Rene 41	7-15	15-30
Iron:		
Cast (soft)	75-125	150-250
Cast (medium hard)	50-100	100-200
Hard chilled	10-20	20-40
Malleable	80-90	160-180
Magnesium and its alloys	250-400	400-600
Monel metal or high-nickel steel	30-50	60-100
Plastics or similar materials (bakelite)	100-300	200-600
Steels:		
Mild .2 to .3 carbon	80-110	120-220
Steel .4 to .5 carbon	70-80	100-160
Tool 1.2 carbon	50-60	75-120
Forgings	40-50	60-100
Alloy - 300 to 400 Brinell	20-30	30-60
High tensile steels (heat treated):		
35 to 40 Rockwell C	30-40	45-80
40 to 45 Rockwell C	25-35	40-70
45 to 50 Rockwell C	15-25	25-50
50 to 55 Rockwell C	7-15	10-30
Maraging steel (heat treated):		
Annealed	7-20	15-40
	40-55	60-110
Stainless steels:		
Free machining group		
303, 303SE, 430F, 416F, 420F	30-100	60-150
Chromium-nickel group (non-hardenable)		
300 Series (austenitic), 400 Series (ferritic)	20-60	40-120
Straight chromium group (heat treated)		
400 Series (martensitic)	10-30	20-60
Titanium alloys:		
Commercially pure	50-60	100-120
5AL-2Sn, 8AL-1, Mo-IV 2Fe-2Cr-Mo (annealed)	30-40	45-80
6AL-4V, 4AL-4Mn, 7AL-4Mo (annealed)	25-35	40-70
6AL-4V, 4AL-4Mn, 7AL-4Mo		
2Fe-2Cr-2Mo (solution treated & aged)	15-20	20-40
Wood	300-400	450-600