

# SPEED - LUBRICANT & DRILL TYPE RECOMMENDATIONS

MATERIAL	CARBON STEEL	HIGH STRENGTH STEEL	STAINLESS STEEL	CAST IRON	ALUMINUM/BRASS
HARDNESS	TO 200 BHN	BHN 250-300	BHN 200-300	TO BHN 150	TO BHN 250
LUBRICANT	SULFURIZED OIL OR WATER SOLUBLE OIL	ACTIVATED OIL OR SULFURIZED OIL	ACTIVATED OIL OR SULFURIZED OIL	NONE - DRY AIR	WATER SOLUBLE OIL
DRILL TYPE	G.P. OR H.D.	H.D. OR COBALT	H.D. OR COBALT	COBALT OR NITRIDE	GENERAL PURPOSE
POINT ANGLE	118°/135°	135°	135°	135°	118°
BIT DIAMETER	RPM	RPM	RPM	RPM	RPM
1/16	3000-4500	950-2000	2000-3200	5000-10,000	6500-16,000
3/32	2000-3000	650-1300	1200-2200	3500-6500	4200-11,000
1/8	1600-2500	450-1000	1000-1600	2500-5000	3200-8000
5/32	1200-1800	400-800	750-1300	2000-4000	2500-6500
3/16	1000-1500	300-650	650-1100	1700-3200	2100-5400
7/32	1000-1300	275-550	550-950	1500-2750	1800-4500
1/4	800-1200	250-500	500-800	1200-2400	1600-4000
9/32	700-1000	200-450	425-725	1200-2200	1400-3600
5/16	600-900	200-400	400-650	1000-2000	1300-3200
11/32	500-800	175-350	350-600	950-1800	1200-3000
3/8	500-750	160-325	325-550	850-1600	1100-2700
13/32	500-700	150-300	300-500	800-1500	1000-2500
7/16	450-650	135-275	275-575	700-1400	950-2300
15/32	425-600	125-260	250-450	700-1300	900-2200
1/2	400-600	120-240	250-400	640-1200	800-2000
17/32	350-550	115-230	225-400	600-1200	750-1900
9/16	350-500	105-215	200-375	600-1100	700-1800
19/32	300-500	100-205	200-340	550-1000	675-1700
5/8	300-450	95-195	200-320	500-1000	650-1600
21/32	300-425	90-185	180-305	500-900	600-1550
11/16	300-400	85-175	175-300	450-900	575-1500
23/32	275-400	80-170	165-280	450-850	550-1400
3/4	250-375	80-160	160-270	400-800	525-1350
25/32	250-350	75-155	150-260	400-775	525-1300
13/16	250-350	75-150	150-250	400-750	500-1300
27/32	250-350	75-150	150-250	400-750	500-1250
15/16	200-300	65-130	130-215	350-650	425-1100
1	200-280	60-120	120-200	300-600	400-1000
1-1/16	180-265	55-115	115-190	300-575	375-950
1-1/8	180-250	50-110	105-180	285-550	350-900
1-3/16	165-240	50-105	100-170	265-510	335-850
1-1/4	160-225	50-100	95-160	260-500	325-800
1-5/16	150-215	45-95	90-155	250-475	300-775
1-3/8	145-205	45-90	85-145	230-450	300-750
1-1/2	130-190	40-80	80-135	210-400	265-675

BHN - Brinell hardness number