

Recommended Operating speed for the given material

Drill Type	Soft Wood	Hard Wood	Acrylic	Brass	Aluminum	Steel	Glass & Tile
Twist Drill Bits							
1/16" to 3/16"	3000 RPM	3000 RPM	2500 RPM	3000 RPM	3000 RPM	3000 RPM	NR
1/4" to 3/8"	3000 RPM	1500 RPM	2000 RPM	1200 RPM	2500 RPM	1000 RPM	NR
7/16" to 5/8"	1500 RPM	750 RPM	1500 RPM	750 RPM	1500 RPM	600 RPM	NR
11/16" to 1"	750 RPM	500 RPM	NR	400 RPM	1000 RPM	350 RPM	NR

*Note: Lubricate drill with oil when cuttin steel 1/8" or thicker. Use Center punch on all holes to prevent drill from wavering.

Brad Point Bits							
1/8"	1800 RPM	1200 RPM	1500 RPM	NR	NR	NR	NR
1/4"	1800 RPM	1000 RPM	1500 RPM	NR	NR	NR	NR
3/8"	1800 RPM	750 RPM	1500 RPM	NR	NR	NR	NR
1/2"	1800 RPM	750 RPM	1000 RPM	NR	NR	NR	NR
5/8"	1800 RPM	500 RPM	750 RPM	NR	NR	NR	NR
3/4"	1400 RPM	250 RPM	750 RPM	NR	NR	NR	NR
3/8"	1200 RPM	250 RPM	500 RPM	NR	NR	NR	NR
1"	1000 RPM	250 RPM	250 RPM	NR	NR	NR	NR

*Note: Raise 1/4" and smaller bits often to clear shavings and prevent heat build-up.

Forstner Bits							
1/4" to 3/8"	2400 RPM	700 RPM	NR	NR	NR	NR	NR
1/2" to 5/8"	2400 RPM	500 RPM	250 RPM	NR	NR	NR	NR
3/4" to 1"	1500 RPM	500 RPM	250 RPM	NR	NR	NR	NR
1- 1/8" to 1- 1/4"	1000 RPM	250 RPM	250 RPM	NR	NR	NR	NR
1- 3/8" to 2"	500 RPM	250 RPM	NR	NR	NR	NR	NR

*Note: Raise 1/4" - 3/8" bits often to clear shavings and prevent heat build-up. Make several shallow passes with larger bits; allow bit to cool between passes.

Glass & Tile Bits							
1/8"	NR	NR	NR	NR	NR	NR	750 RPM
3/16"	NR	NR	NR	NR	NR	NR	600 RPM
1/4"	NR	NR	NR	NR	NR	NR	500 RPM
5/16"	NR	NR	NR	NR	NR	NR	400 RPM
3/8"	NR	NR	NR	NR	NR	NR	350 RPM
1/2"	NR	NR	NR	NR	NR	NR	200 RPM

*Note: Wear safety goggles. Use drill press only. Do not apply excessive pressure. Lubricate with water while drilling. Reduce quill pressure when bit tip emerges from back side.

Hole Saws							
1" to 1- 1/2"	500 RPM	350 RPM	NR	250 RPM	250 RPM	NR	NR
1- 5/8" to 2"	500 RPM	250 RPM	NR	150 RPM	250 RPM	NR	NR
2- 1/8" to 2- 1/2"	250-500 RPM	NR	NR	150 RPM	250 RPM	NR	NR

*Note: Do not use with brass or aluminum thicker than 1/16". Avoid dense hardwoods such as maple.

Multi-spur bits							
2- 1/8" to 4"	250 RPM	250 RPM	NR	NR	NR	NR	NR
*Note: Smaller sizes also available; use Forstner speeds.							
Spade bits							
1/4" to 1/2"	2000 RPM	1500 RPM	NR	NR	NR	NR	NR
5/8" to 1"	1750 RPM	1500 RPM	NR	NR	NR	NR	NR
1- 1/8" to 1- 1/2"	1500 RPM	1000 RPM	NR	NR	NR	NR	NR
*Note: Clamp work to table to improve quality of hole							
Circle cutters							
1-1/2" to 3"	500 RPM	250 RPM	250 RPM	NR	NR	NR	NR
3-1/4" to 8"	250 RPM	250 RPM	250 RPM	NR	NR	NR	NR
*Note: Drill one side, flip material over, place center bit in it's hole and resume cut							
Countersinks							
2- flute	1400 RPM	1400 RPM	NR	NR	NR	NR	NR
5- flute	1000 RPM	750 RPM	750 RPM	250 RPM	250 RPM	250 RPM	NR
*Note: Raise and lower frequently for quicker cutting							
Countersink screw pilot bit							
All Sizes	1500 RPM	1000 RPM	500 RPM	500 RPM	NR	NR	NR
*Note: Clear Twist often							
Plug cutters							
Any	1000 RPM	500 RPM	NR	NR	NR	NR	NR
*Note: Cut to full depth so bit chamfers plug.							