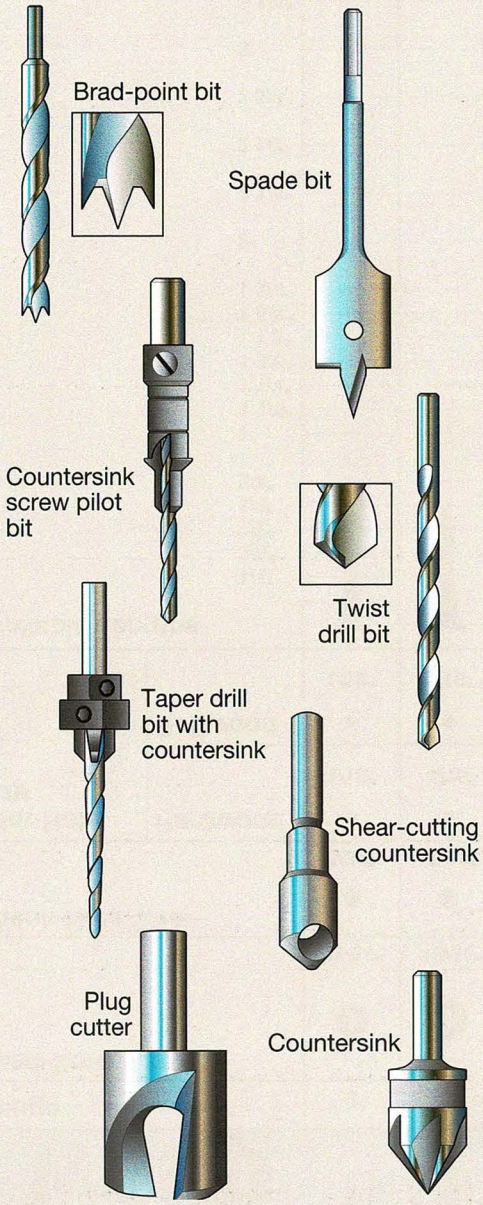
WOOD® Magazine

Shop-Tested Drill Press Speed & Screw Charts

A wall chart from WOOD Magazine to shave time and effort off your woodworking projects.

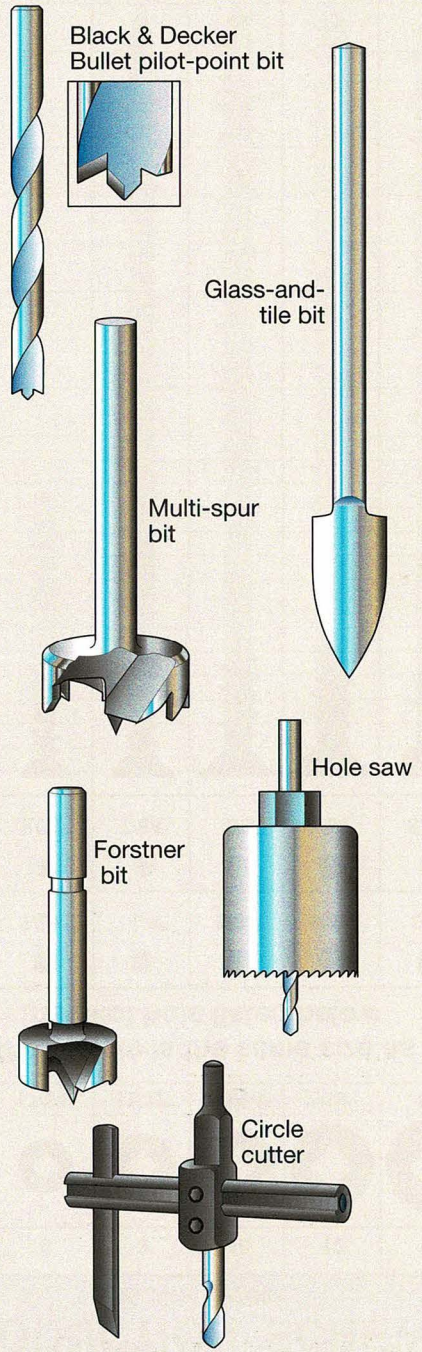


Accessory	Softwood (Pine)	Hardwood (Hard Maple)	Acrylic	Brass	Aluminum	Steel	Shop Notes
Recommended operating speeds (RPM)							
Twist drill bits*							
1/16" – 3/16"	3000	3000	2500	3000	3000	3000	Lubricate drill with oil when cutting steel 1/8" or thicker. Use center punch on all holes to prevent drill from wandering.
1/4" – 3/8"	3000	1500	2000	1200	2500	1000	
7/16" – 5/8"	1500	750	1500	750	1500	600	
11/16" – 1"	750	500	NR	400	1000	350	
Black & Decker Bullet pilot-point bits*							
1/8" – 3/16"	3000	3000	3000	2000	1500	3000	Good all-around bit. These cut more quickly than brad points and twist drills.
1/4" – 3/8"	3000	3000	2400	1500	1000	2000	
1/2"	3000	1500	1600	1500	750	1200	
Brad-point bits*							
1/8"	1800	1200	1500	NR	NR	NR	Raise 1/4" and smaller bits often to clear shavings and prevent heat build-up.
1/4"	1800	1000	1500	NR	NR	NR	
3/8"	1800	750	1500	NR	NR	NR	
1/2"	1800	750	1000	NR	NR	NR	
5/8"	1800	500	750	NR	NR	NR	
3/4"	1400	250	750	NR	NR	NR	
3/8"	1200	250	500	NR	NR	NR	
1"	1000	250	250	NR	NR	NR	
Forstner bits							
1/4" – 3/8"	2400	700	NR	NR	NR	NR	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.
1/2" – 5/8"	2400	500	250	NR	NR	NR	
3/4" – 1"	1500	500	250	NR	NR	NR	
1 1/8" – 1 1/4"	1000	250	250	NR	NR	NR	
1 3/8" – 2"	500	250	NR	NR	NR	NR	
Glass-and-tile bits (Listed speeds are for glass and tile—not softwood.)							
1/8"	750	NR	NR	NR	NR	NR	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.
3/16"	600	NR	NR	NR	NR	NR	
1/4"	500	NR	NR	NR	NR	NR	
5/16"	400	NR	NR	NR	NR	NR	
3/8"	350	NR	NR	NR	NR	NR	
1/2"	200	NR	NR	NR	NR	NR	
Hole saws*							
1" – 1 1/2"	500	350	NR	250	250	NR	Do not use with brass or aluminum thicker than 1/16". Avoid dense hardwoods such as hard maple.
1 5/8" – 2"	500	250	NR	150	250	NR	
2 1/8" – 2 1/2"	250-500	NR	NR	150	250	NR	
Multi-spur bits*							
2 1/8" – 4"	250	250	NR	NR	NR	NR	Smaller sizes also available; use Forstner speeds.
Spade bits*							
1/4" – 1/2"	2000	1500	NR	NR	NR	NR	Clamp work to table to improve quality of hole.
5/8" – 1"	1750	1500	NR	NR	NR	NR	
1 1/8" – 1 1/2"	1500	1000	NR	NR	NR	NR	
Circle cutters*							
1 1/2" – 3"	500	250	250	NR	NR	NR	Drill one side, flip material over, place center bit in its hole, and resume cut.
3 1/4" – 8"	250	250	250	NR	NR	NR	
Shear-cutting countersinks							
1/4" – 3/8"	1000 750	1000 700	700 700	700-1000 250-700	700-1000 250-700	NR NR	Cuts cleaner than traditional countersinks.
Countersinks							
2-flute	1400	1400	NR	NR	NR	NR	Raise and lower frequently for quicker cutting.
5-flute	1000	750	750	250	250	250	
Countersink screw pilot bits							
All sizes	1500	1000	500	500	NR	NR	Clear twist drill often.
Taper drill bits with countersinks							
All sizes	500	250	250	NR	NR	NR	Clear bit often to prevent heat build-up.
Plug cutters	1000	500	NR	NR	NR	NR	Cut to full depth so bit chamfers plug.

NR – Not recommended * Back material to prevent chip-out. **Always wear a face shield for optimum protection.**

Notes

- Recommendations are based on visual and tactile tests under shop conditions. Drilling faster than recommended can cause overheating. Speeds slower than those recommended may cause poor-quality holes.
- All testing done on face grain. Reduce speed when drilling into end grain.
- Speeds based on new bits from the factory.



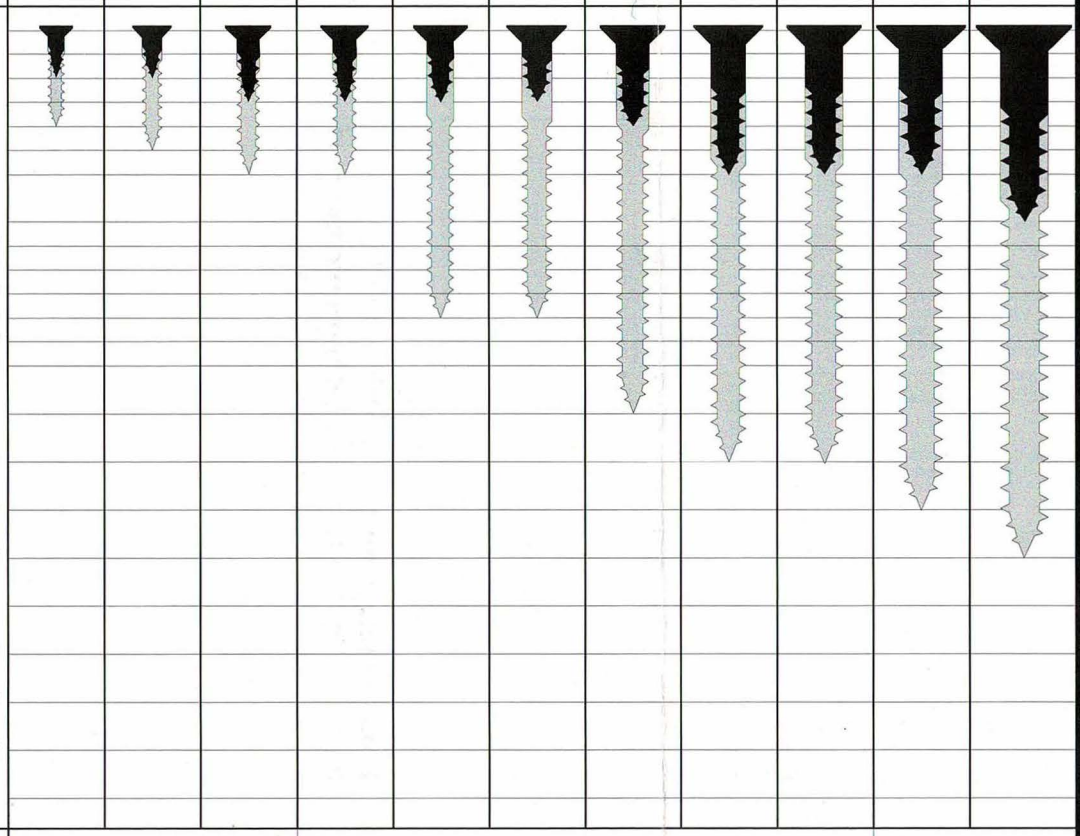
#220165

WOOD® Magazine

TRADITIONAL WOOD SCREWS
(Actual Sizes)

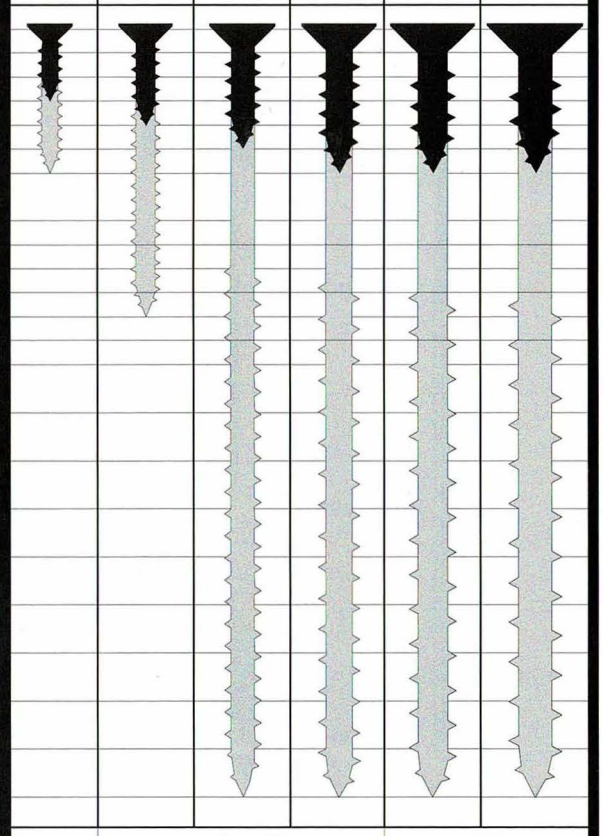
Gauge	2	3	4	5	6	7	8	9	10	12	14
Head-Bore Size	11/64"	13/64"	15/64"	1/4"	9/32"	5/16"	11/32"	23/64"	25/64"	7/16"	1/2"
Shank-Hole Size	3/32"	7/64"	7/64"	1/8"	9/64"	5/32"	5/32"	11/64"	3/16"	7/32"	1/4"
Pilot-Hole Size — Hardwood	1/16"	1/16"	5/64"	5/64"	3/32"	7/64"	7/64"	1/8"	1/8"	9/64"	5/32"
Pilot-Hole Size — Softwood	1/16"	1/16"	1/16"	1/16"	5/64"	3/32"	3/32"	7/64"	7/64"	1/8"	9/64"
Phillips-Head Point Size	#1			#2						#3	
Square-Drive Bit Size	#0			#1			#2			#3	

Available Lengths: 1/4", 3/8", 1/2", 5/8", 3/4", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 2", 2 1/4", 2 1/2", 2 3/4", 3", 3 1/4", 3 1/2", 3 3/4", 4"



PRODUCTION SCREWS
(Actual Sizes)

	4	6	8	10	12	14
Head-Bore Size	7/32"	17/64"	11/32"	23/64"	7/16"	1/2"
Shank-Hole Size	Shank hole is the same size as the pilot hole listed below					
Pilot-Hole Size — Hardwood	5/64"	7/64"	1/8"	9/64"	5/32"	3/16"
Pilot-Hole Size — Softwood	1/16"	3/32"	7/64"	1/8"	9/64"	5/32"
Phillips-Head Point Size	#1	#2			#3	
Square-Drive Bit Size	#0	#1	#2		#3	



WDMBRC9A