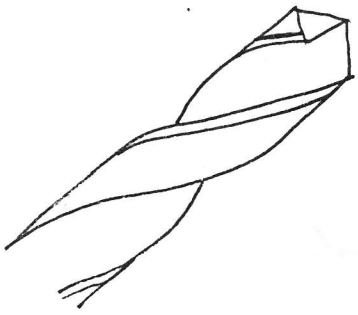
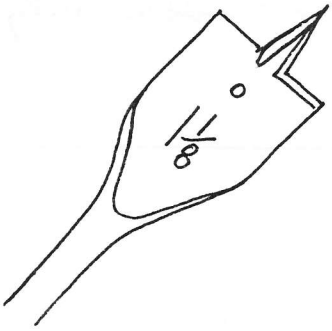
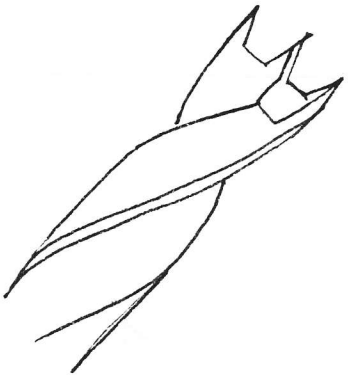
DRILLING + DRILL BITS



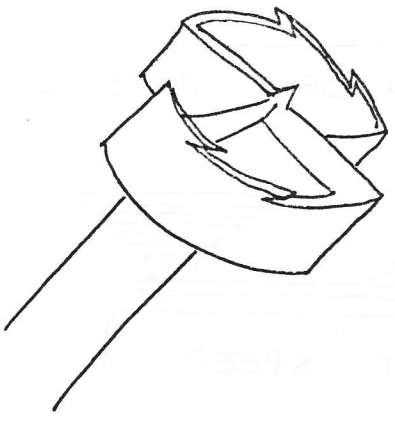
- High speed steel twist bit (H.S.S.)
- sizes 1/16" → 1/2" in 1/64" increments
- drills mild steel or wood
- use at low or medium speed
- used for accuracy and straightness.



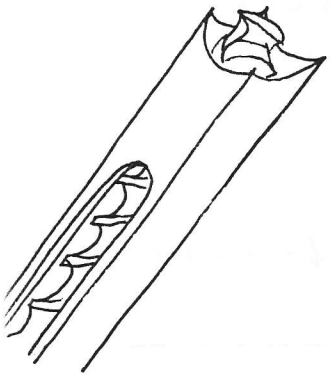
- Speed Bore bit (Spade Bit)
- sizes 1/4" → 1" in 1/16" increments &
  1" → 1 1/2" in 1/8" increments
- drills wood only
- use at medium or high speed.
- inexpensive and versatile
- not very accurate - does not always go straight



- Spur Bit
- sizes - 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 7/8",
- drills wood only
- use at low or medium speed
- expensive
- very accurate - very clean hole

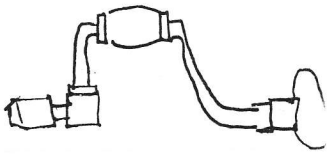


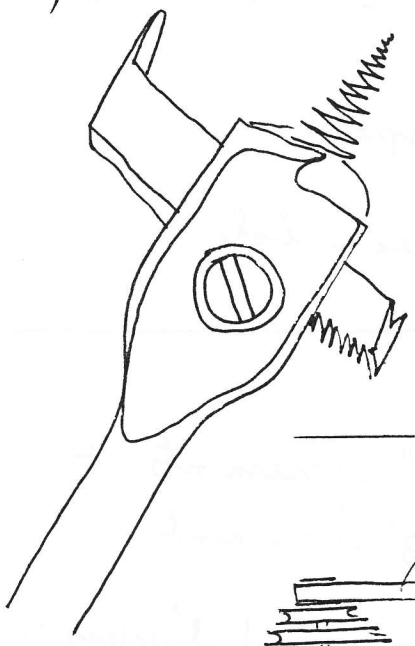
- Forstner Bit
- sizes 1/4" → 1" in 1/16" increments +
  1 1/8" → 3" in 1/8" increments
- drills wood only
- use at low speed! - use in drill press only
- expensive and fragile - easy to burn and ruin
- very accurate - very clean hole
- flat bottom - will cut at edge →



- Hollow chisel mortise Bit
- sizes 1/4", 5/16", 3/8", 1/2"
- drills wood only
- use at low or medium speed.
- expensive and fragile
- use in drill press with mortise accessory only.
- drills square holes!

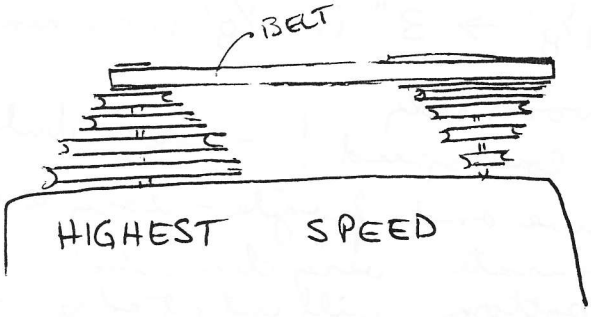
- Brace Bit
- sizes 1/4" → 1" in 1/16" increments
- drills wood only
- use in Hand Brace Only →

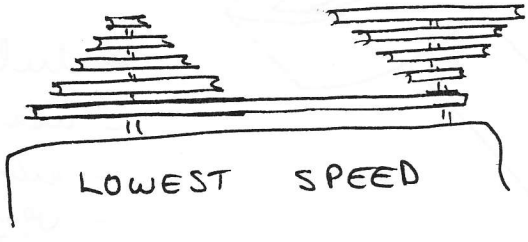




- Expansion Bit
- adjustable size 7/8" → 3"
- drills wood only
- use in Hand Brace Only

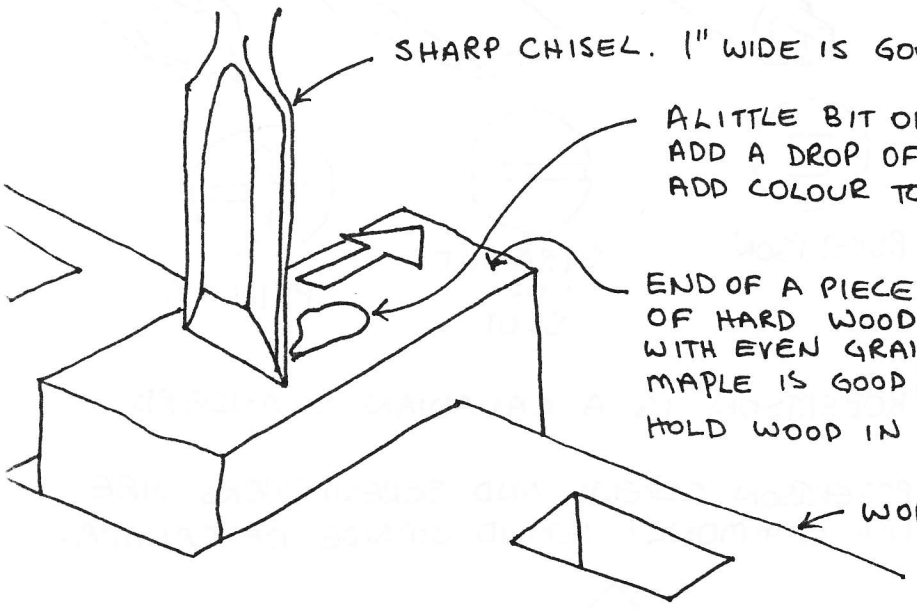
STEPPED PULLEYS ON DRILL PRESSES





STAN KRZYZANOWSKI

QUICK WOOD FILLER OR PUTTY



SCRAPE CHISEL ACROSS END OF WOOD WITH GLUE

DUST FROM WOOD MIXES WITH GLUE TO MAKE PUTTY.

MAKE SURE YOU SCRAPE ENOUGH TO INSURE THAT THE PUTTY IS MOSTLY WOOD.

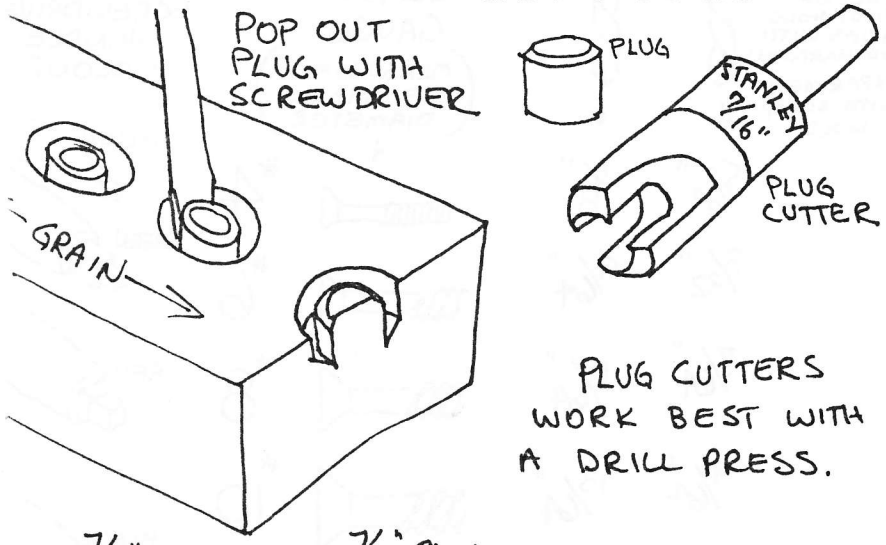
MAKE A LITTLE AT A TIME

APPLY THE FRESH PUTTY WITH THE CHISEL. DON'T PUT ON TOO MUCH OR YOU'LL HAVE A LOT OF SANDING TO DO. A LARGER HOLE MAY NEED REPEATED APPLICATIONS.

CLEAN THE CHISEL AFTER EACH BATCH

ALWAYS AVOID USING FILLER OR PUTTY. WORK CAREFULLY TO AVOID NEEDING IT. SOME DEFECTS LOOK BETTER OR MORE HONEST THAN FILLER.

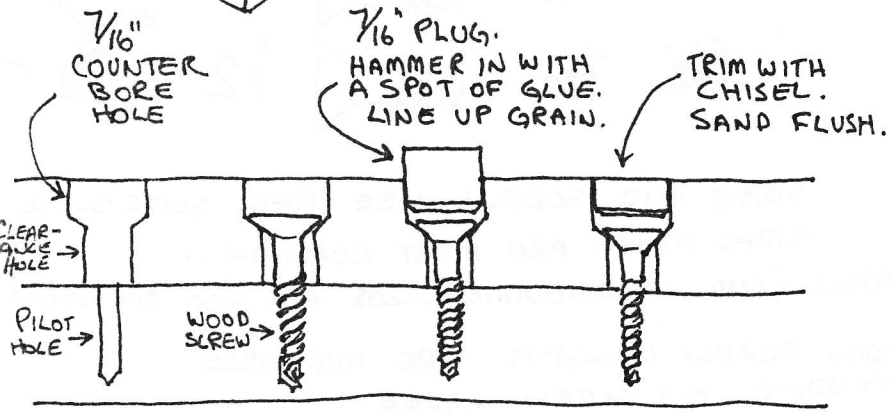
BUT.... IF YOU NEED A LITTLE FILLER, THIS BEATS BUYING IT. (UNLESS YOU NEED A LOT) THEN IT PAYS TO BUY IT.



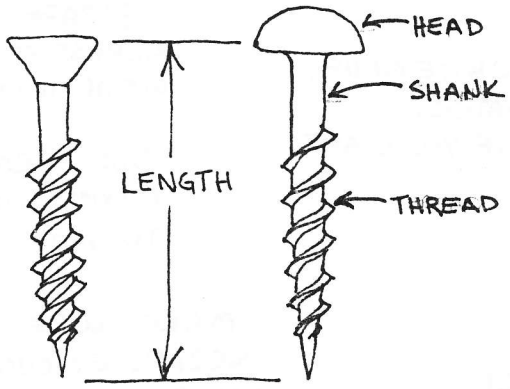
PLUG CUTTERS WORK BEST WITH A DRILL PRESS.

COVERING SCREWS WITH WOOD PLUGS

A COUNTER BORE HOLE MUST BE DRILLED TO RECEIVE THE WOOD PLUG. THE PLUG NEEDS A 1/8" HOLE DEPTH AT LEAST. PLUG CUTTERS COME IN DIFFERENT SIZES. USE A BIT FOR THE COUNTER BORE WHICH MATCHES THE SIZE OF THE PLUG CUTTER.

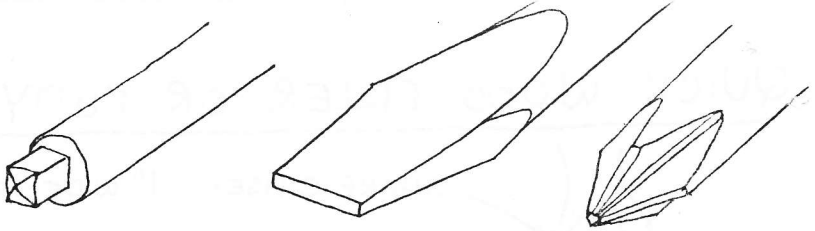


WOOD SCREWS



FLAT HEAD

ROUND HEAD



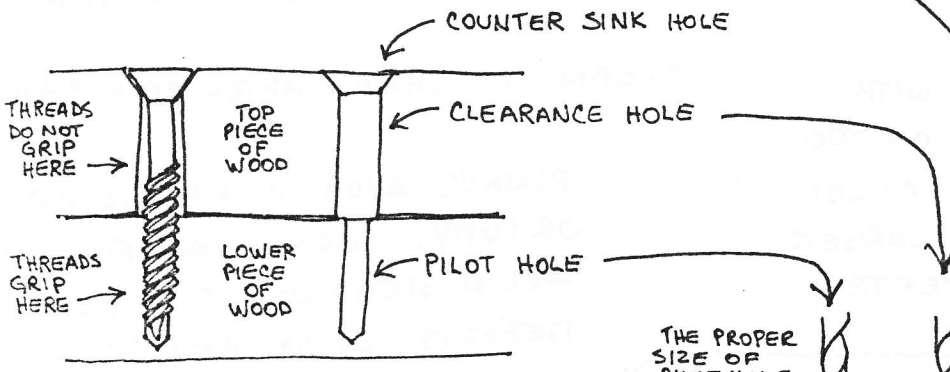
ROBERTSON

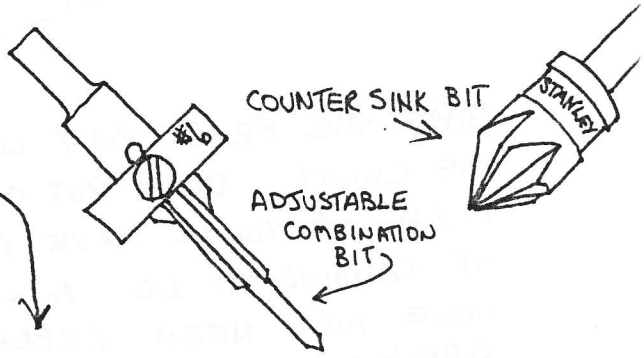
STRAIGHT OR SLOT

PHILLIPS

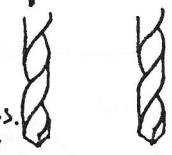
ROBERTSON IS A CANADIAN STANDARD.

ROBERTSON SCREWS AND SCREWDRIVERS ARE NOT COMMONLY FOUND OUTSIDE OF CANADA.



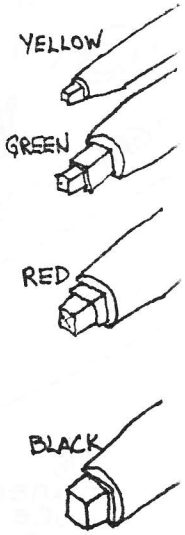


THE PROPER SIZE OF PILOT HOLE VARIES WITH WOOD HARDNESS. EXPERIMENT WITH SCRAP WOOD

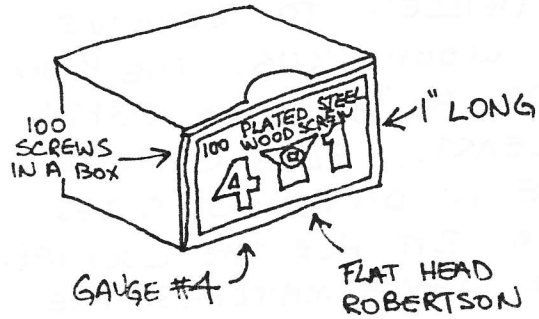


SCREW GAUGE (MEASUREMENT OF SHANK DIAMETER)		
5/64"	1/8"	#4
3/32"	9/64"	#6
7/64"	11/64"	#8
9/64"	13/64"	#10
5/32"	7/32"	#12

ROBERTSON SCREWDRIVE HANDLE COLOUR



THE THREAD OF THE SCREW GRIPS THE LOWER PIECE OF WOOD ONLY. WHEN THE SCREW IS TIGHTENED, THE HEAD PULLS THE TOP PIECE OF WOOD DOWN AGAINST THE LOWER PIECE. THE SCREW CLAMPS THE TWO PIECES OF WOOD TOGETHER.



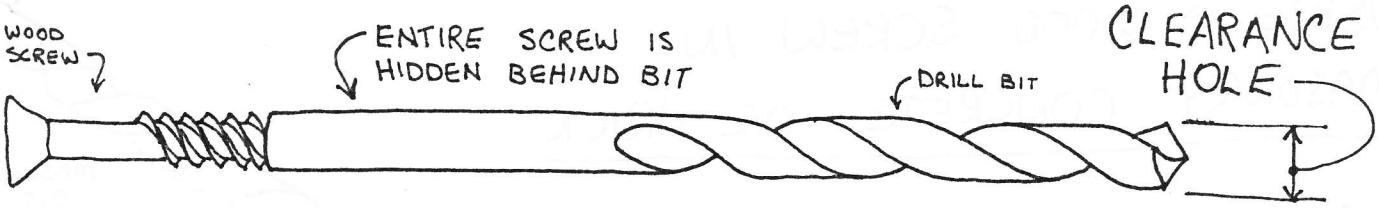
SOME #10 SCREWS USE RED, SOME BLACK.

SIZES ABOVE ARE MOST COMMON.

OTHER (AND INTERMEDIATE) SIZES ARE ALSO AVAILABLE

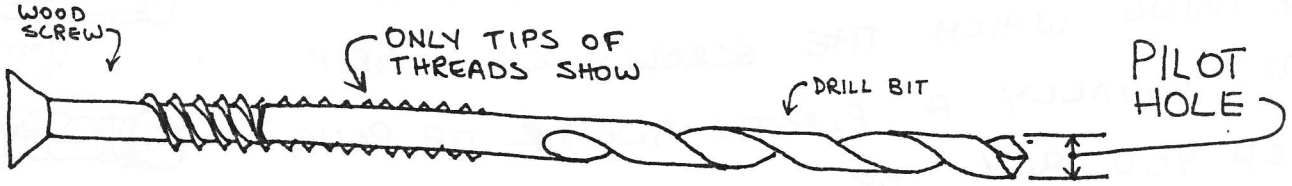
VARIOUS SCREW LENGTHS ARE AVAILABLE DEPENDING ON SCREW GAUGE.

STAN KRZYZANOWSKI



IN CHOOSING A BIT TO DRILL THE CLEARANCE HOLE FOR A WOOD SCREW, TRY TO SELECT A BIT WHICH WILL COMPLETELY HIDE THE SCREW WHEN HELD BEHIND IT. THE WOOD SCREW SHOULD SLIP EASILY IN AND OUT OF THE CLEARANCE HOLE. THREADS OF THE WOOD SCREW SHOULD NOT GRIP THE SIDE WALLS OF THE CLEARANCE HOLE.

STAN KRZYZANOWSKI



IN CHOOSING A BIT TO DRILL THE PILOT HOLE FOR A WOOD SCREW, TRY TO SELECT A BIT WHICH WILL COMPLETELY HIDE THE CENTRAL SOLID SHAFT OF THE SCREW WHEN HELD BEHIND IT. THREAD TIPS SHOULD BE VISIBLE BEHIND BIT.

USE THIS METHOD AS A GUIDE. THE PROPER SIZE OF DRILL TO USE IS A MATTER OF JUDGEMENT AND PRACTICE. IT IS BEST TO EXPERIMENT WITH A SCRAP PIECE OF WOOD.

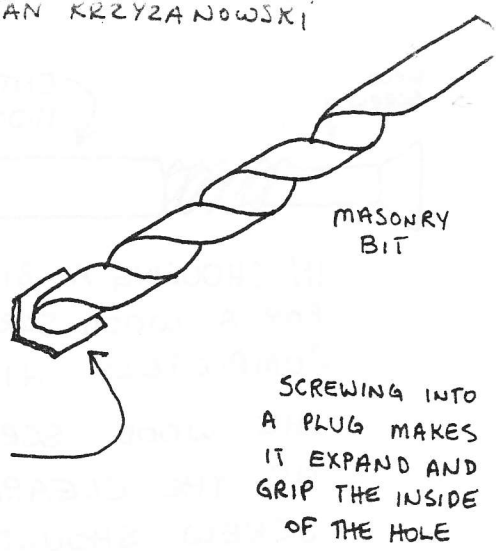
CONSIDER INCREASING THE DIAMETER OF THE PILOT HOLE IN THE FOLLOWING CASES:

1. SCREWING INTO A NARROW PIECE OF WOOD. THIS MAY PREVENT SPLITTING THE WOOD.
2. SCREWING INTO A HARD PIECE OF WOOD. THIS MAY PREVENT STRIPPING OR RUINING THE SOCKET OR SLOT IN THE HEAD OF THE SCREW.
3. WHEN USING SCREWS MADE OF SOFTER METAL LIKE BRASS. THIS MAY PREVENT BREAKING THE SCREW.

A LITTLE BIT OF SOAP (ON THE SCREW THREAD / ON THE SCREW) WILL HELP WITH A TIGHT PILOT HOLE.

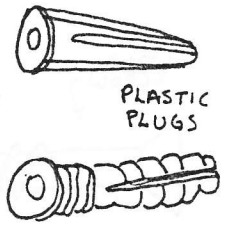
STAN KRZYZANOWSKI

USING A WOOD SCREW IN MASONRY, CONCRETE OR BRICK

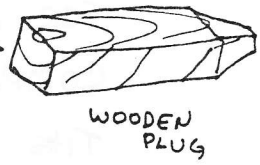


FIRST DRILL A HOLE USING A MASONRY BIT WHICH ARE SPECIAL DRILL BITS WITH A SUPER-HARD 'CARBIDE' TIP. THESE BITS COME IN DIFFERENT SIZES.

NEXT YOU HAVE TO FILL THE HOLE WITH SOME THING WHICH THE SCREWS CAN GRIP INTO; USUALLY A PLASTIC ANCHOR OR PLUG WHICH YOU BUY, OR,



A PIECE OF WOOD WHICH YOU MAKE →



- THE STORE BOUGHT PLUGS ARE JUST HAMMERED INTO THE HOLE, AND YOU CAN SCREW INTO IT. YOU MUST USE A MASONRY BIT WHICH MATCHES THE SIZE OF THE PLASTIC PLUG. IT SHOULD BE QUITE TIGHT. THE HOLE MUST ALSO BE OF THE RIGHT DEPTH; AT LEAST AS LONG AS THE SCREW OR THE PLUG, WHICHEVER IS LONGER. YOU MUST ALSO USE A SCREW WITH A GAUGE WHICH FITS THE PLASTIC PLUG. A PACKAGE OF STORE BOUGHT PLUGS SHOULD HAVE A LISTING OF THE REQUIRED DRILL BIT SIZE AND THE APPROPRIATE SCREW GAUGE.

- THE WOODEN PLUG IS A SQUARE STICK SPLIT OUT OF SOFT WOOD WHICH IS HAMMERED INTO THE HOLE. IT SHOULD BE A TIGHT FIT. WHITTLE THE END INTO A BLUNT POINT TO HELP IT START INTO THE HOLE. TRIM FLUSH WITH THE SURFACE USING A KNIFE OR A CHISEL.