



HOW-TO BOOKLET #3099

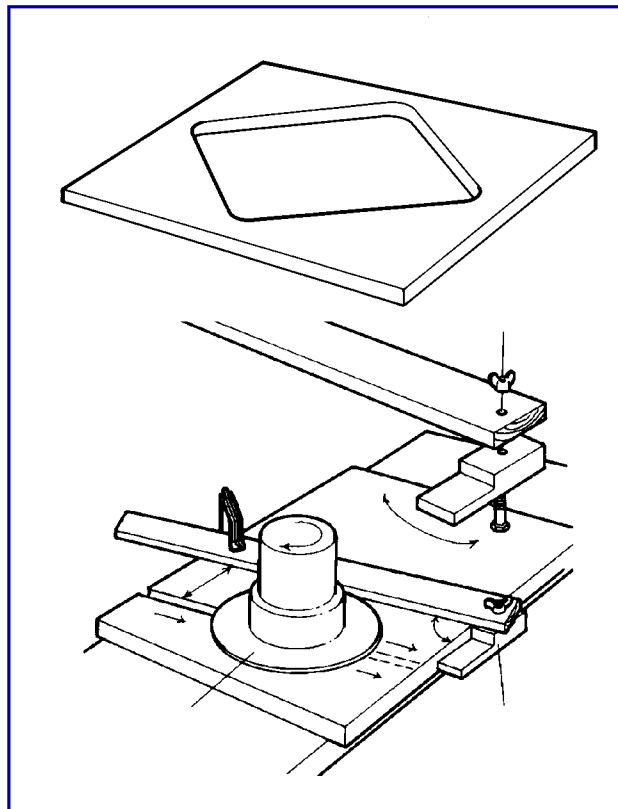
ROUTER KNOW-HOW



TOOL & MATERIAL CHECKLIST

- The Best Grade of Boards/Dimension Lumber
- Plywood for Templates
- Router Bits as Specified
- Wood for Projects
- Jigsaw
- Wing Nuts
- Tape Measure
- Carpenters Square
- Washers
- C-Clamps

Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above.



It's tough to freehand straight lines and designs in wood with a router. Router manufacturers supply a potpourri of attachments for the tool, which is an electric chisel and perhaps one of the most versatile portable power tools ever made. In this How-To Booklet you'll find several jigs for special router cuts that you can make yourself quickly and inexpensively.

CUTTING MOLDINGS

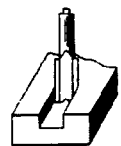
Molding cuts are easy to make in a variety of shapes and configurations. Use Clear grade boards just as straight as you can pick them from the lumber pile. The material to be shaped can be tacked or clamped to the top of a worktable or work bench to hold it tightly. If you are shaping panels or cabinet doors, clamp the panels/doors to a workbench surface. Then use a straight-edge clamped to the panels/doors to guide the router along the material with the ring riding against the straightedge. But before you make the first cut, measure and mark the material twice. If you are making a fancy cutout with the router, it's smart to make a templet of the cut first on paper. Then tape the templet to the wood as a guide, or tape the pattern in place, draw the outline from it, and then remove it. Illustrated (**Fig. 1**) are the different shapes you can make and the router bits used for them.

When cutting moldings, keep in mind that the router bit spins clockwise with a lot of torque pulling it in this direction. That's why a guide is important. The secret is to let the router ring ride the guide and let the guide do the steering. You just hang onto the router handles.

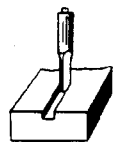
ROUTER BITS YOU CAN BUY FOR SPECIAL MOLDING CUTS

Fig. 1

Straight bits

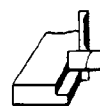


two flutes



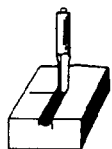
single flute

Rabbeting bit



Rabbeting

Grooving bits



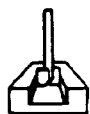
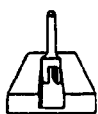
Veining



Core box



"V" grooving

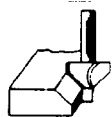


Hinge mortising

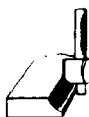


Dovetail

Decorating bits



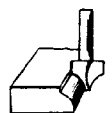
Chamfering



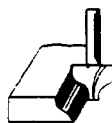
Cove



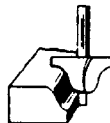
Beading



Corner round



Ogee



Roman ogee

If you are cutting freehand, push the router into the work away from your body instead of pulling the router toward you. You will have more control this way.

CAUTION: Routers have lots of power. Router bits are extremely sharp. Keep your hands away from the bottom ring of the router; just hang onto the handles and let the router do the work. When you change router bits, always disconnect the router from the power source. Be sure that the router bit is tightly seated in the chuck of the router before you start work. And be sure that router bits are super sharp.

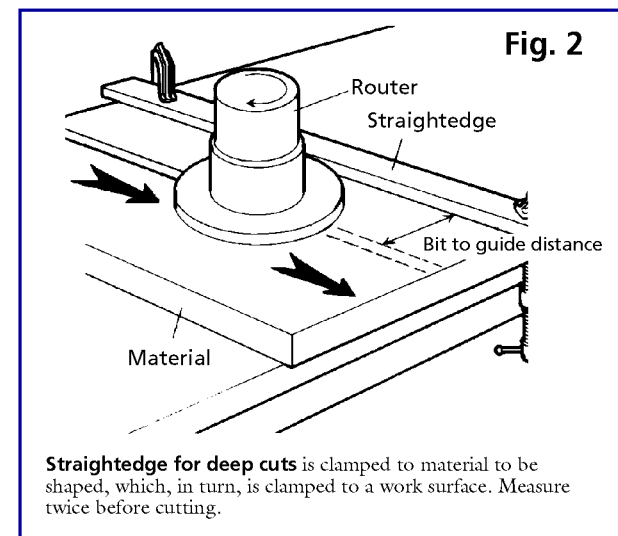


Fig. 2

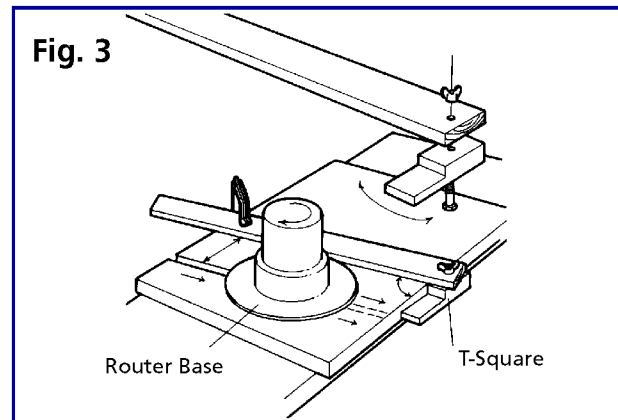
Straightedge for deep cuts is clamped to material to be shaped, which, in turn, is clamped to a work surface. Measure twice before cutting.

MAKING DEEP CUTS

When the project calls for a deep cut in material that is too deep for a guide attachment, you can make one easily from a length of straight wood stock. The key word here is straight so you may have to hunt through the piles of Select boards to find a straight piece. Or, if you have a power table saw, you can cut a straightedge for this reason: if the router jumps the edge of the metal, trouble could result. Wood will "absorb" the mis-cut.

Clamp the material to be shaped to a workbench or table top. Then clamp the straightedge to the material, as shown in the drawing (**Fig. 2**). Measure the distance from the straightedge to the inside edge of the cut. Measure twice, cut once.

If the material you are shaping is the good stuff, pad the clamps with thin pieces of scrap wood to protect the material. The scrap wood, slightly larger than the clamping surfaces, also helps distribute pressure from the clamps, holding the material tighter to the table.



SHAPING ANGLED CUTS

If you have lots of straightedge and angled cuts to make, this homemade jig can save you plenty of time. It's easy to fabricate from Select stock; a wing nut and washer combination lets you angle it (**Fig. 3**).

The tongue of the T-square should be approximately 3 feet long; the hinged block should be approximately 12 inch long which provides a solid bearing surface. Both pieces should be cut from Select grade wood; 3/4-inch thickness is adequate, although you may want to consider 5/4-inch material. Or, you can cut both pieces from scrap wood, if you have a square-cutting table saw.

It is recommended that you seal the wood with a coat or two of shellac, sanding the surface between coats.

To use the adjustable straightedge, clamp the material to be shaped to a work surface. Then clamp the hinged block to the material and set the angle you want. Clamp the end of the tongue. Pad the clamps.

MAKING A GUIDE BOX

To cut stopped grooves or parallel blind grooves, here's a guide box you can make. Use Select stock, with half-lap joints at the corners. Glue and nail the joints. The inside edges of the box must be square and smooth. The side rails of the box must be absolutely parallel to each other and spaced to fit the outer edge of the router ring base.

If you are making a blind and stopped cut, the measurement between the two end pieces must be equal to the length of the cut plus the diameter of the router ring less the diameter of the router bit.

If you make the box extra long, you can mark the "start" and "stop" lines for the router on the rails of the box. But before you make any cuts in good material, test the box and the cuts you want on scrap wood. Then seal the box with two coats of shellac (**Fig. 4**).

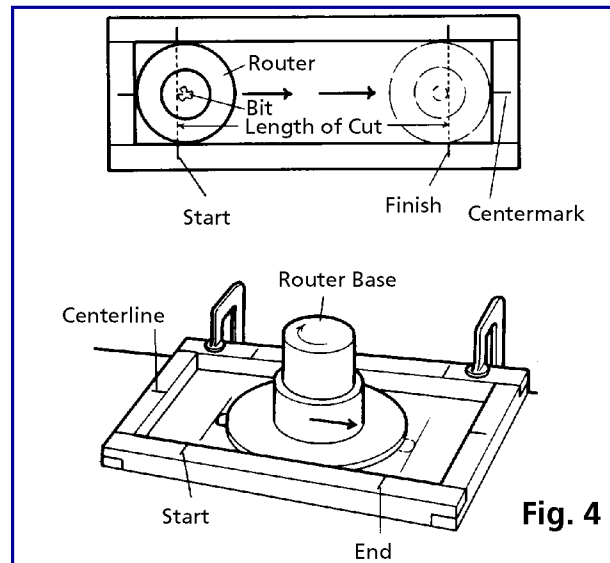
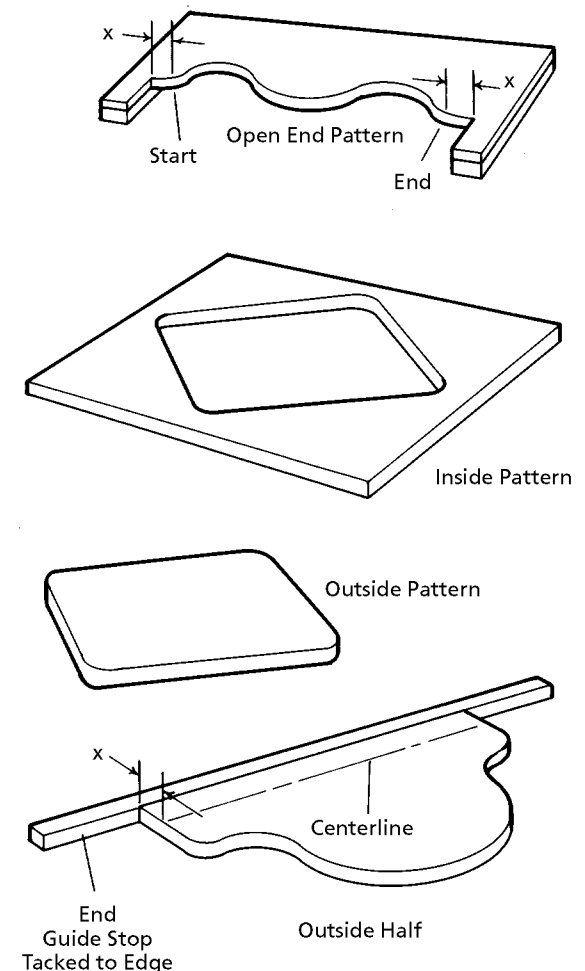
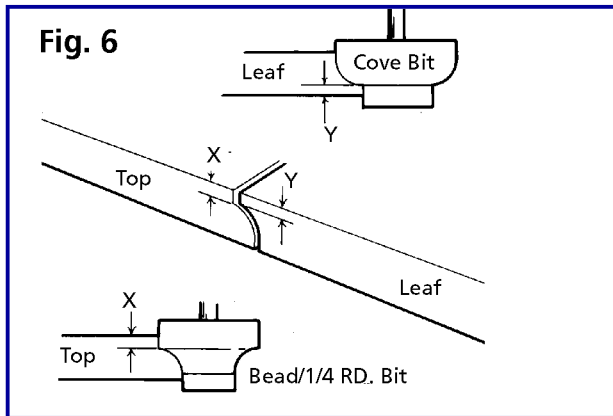


Fig. 5



Pattern or templets can be most any shape and size. Make them with a power jig or saber saw; simple patterns with a coping saw. Always measure distance between router and bit for cut.



MAKING PATTERNS (TEMPLETS)

You really need a power bandsaw or jigsaw to make special templet designs. If the design is simple enough, you can use a coping saw, but the power equipment will produce better patterns.

Almost any shape can be cut, although right angles will be slightly rounded. You can cut out the surplus wood, however, with a good sharp wood chisel.

Templets are a 2-step operation. First, you will have to draw on graph paper (1-inch grid squares) the design you want. Then you have to transfer this design to the material that you will use for the templet—1/4-inch-thick hardwood or hardboard. We suggest tempered hardboard because the material is more dense and won't "fray" at the edges as much. Once the pattern is on the hardboard (or hardwood or plywood) you can cut the shape(s) with a jigsaw or coping saw. This is tedious work; have patience and go at it slowly.

The critical measurement is the distance between the edge of the templet and the inside edge of the cut. This measurement is always one-half the diameter of the router bit that you will use and one-half the arbor, pilot, or bushing diameter of the router.

As noted above, a router cannot make an inside angle cut, which has to be chiseled out by hand. And, the bushing diameter will be exactly one-half of the bushing diameter from the templet at all points.

A basic guide for making templets is illustrated (Fig. 5). The letter X represents one-half of the guide bushing on the router.

DROP LEAF TABLE CUT

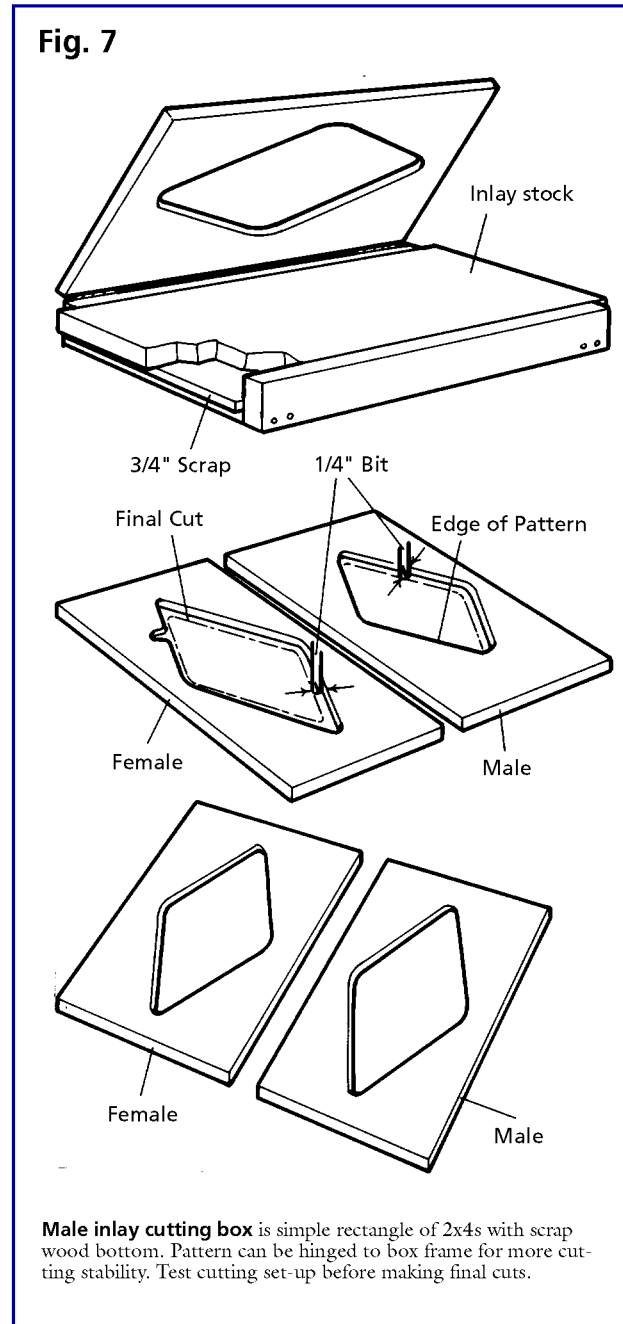
The edges for a drop leaf table are tricky cuts. Take your time, and we suggest that you try the cuts you want on scrap wood before you make the real cuts (Fig. 6).

You may use a 3/8-inch bead and 1/4-rd. bit and a 3/8-inch cove bit for the cuts. Or, you can use two 1/2-inch sizes in combination with each other. The leaf edge of the cut is made with a cove bit with the leaf upside down. The top edge is done with the bead and 1/4-rd. bit. You should use a 7/16-inch pilot with both bits. In dimension, make the X measurement a tad larger than the Y measurement for the leaf. If your table leaf will be less thick than the top, raise the bit by the difference between the thickness of both pieces. Or lower it if the table leaf is thicker.

INLAYS/TEMPLET BOX

You need two matched templets for inlays. The male templet to cut the shape via through-cutting, and the female which is used for routing to the thickness of the material (male) that you will inlay. The illustrations will show you the basics of this cut. Practice this first, before you cut the real inlays. We suggest a 1/4-inch straight bit for the cuts. The male inlay should be about 1/64-inch smaller than the female cut you make in the material. This is about right for the adhesive.

The male inlay box is created out of scrap wood; the male templet serves as the "lid." You will need a piece of scrap under the inlay material for a clean cut, since you will be cutting through the inlay wood to the scrap (Fig. 7).



Male inlay cutting box is simple rectangle of 2x4s with scrap wood bottom. Pattern can be hinged to box frame for more cutting stability. Test cutting set-up before making final cuts.