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Bill Krier
Editor
WOOD® magazine

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Crown Molding Boxes

They're shapely, stately, and oh so easy to make. *They look like the work of an artist, with their elegant curves and classic proportions. Actually, you can make these delightful boxes with crown molding available at any home center. The trick is in the jigs, and the jigs aren't complicated at all. So, just spend a little time jigging up, and you'll soon be turning out a variety of impressive boxes. Don't worry—no mathematics or protractors required.*



A



B



C

A tale of three boxes

Believe it or not, these boxes were made from crown molding of the same size and profile, but with slight building modifications. Box A is made of red oak with an oak handle. Boxes B and C, made of cherry, have cardinal wood and Corian handles, respectively.

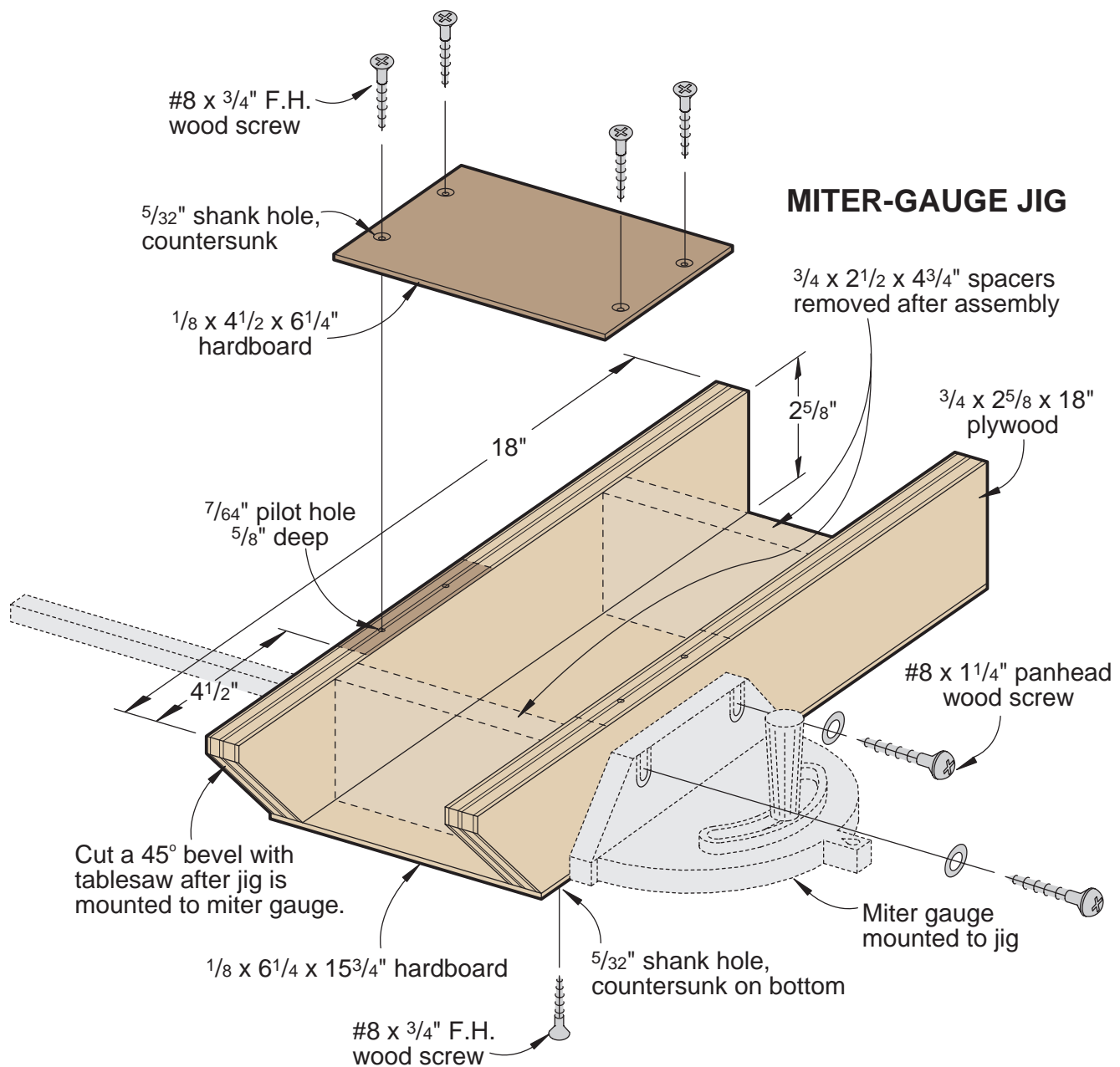
We made boxes A and B in the same way, except we positioned the crown moldings upside down in the jigs when cutting the parts for box B (relative to how we positioned them when making box A). With box C, we laid the moldings at a flatter angle in the miter-gauge jig. Doing this made the box more upright in stature.

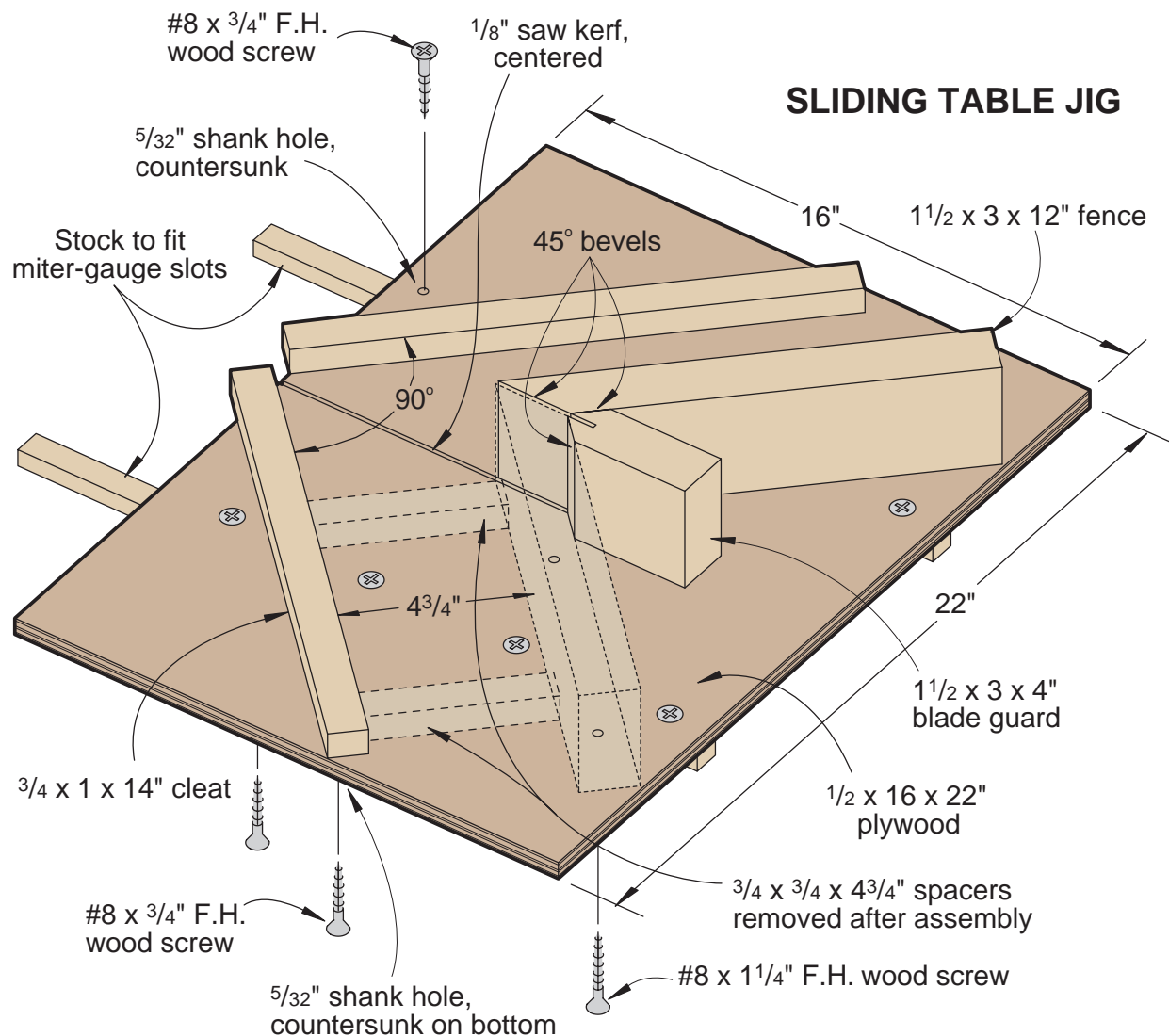
This technique began to hatch in the mind of assistant design editor Jan Svec several years ago. A fellow employee at a millwork shop would take scraps of molding, miter them, and make boxes with vertical sides.

Not bad, thought Jan. Not bad for a beginning.

The next step came when he toured historic homes in Philadelphia, searching for project design ideas for *WOOD*® magazine. "In one house, I saw a tea box with a molding profile inside and out," Jan said. That would be a very complicated project, but what about a box that's fancy on the outside and plain on the inside? He realized that crown molding would do the trick.

However, part of the beauty of this tea box came from its angled sides, so Jan experimented with ways to cut compound miters without complicated math or fancy equipment. In fairly short order, he came up with the two jigs shown on the *next 2 pages*.





Why two jigs instead of one? It has to do with the limited height of a tablesaw blade and the need for a high-profile box topped by a low-profile lid. Make them, try them, and you'll see. You'll soon cut these compound miters without ever having to figure an angle in degrees.

You can use the jigs as shown to make boxes of any width and length. They will handle molding up to 4 3/8" wide. As you can see on *page 2*, changing the position of the workpieces in the jigs dramatically changes the appearance of the box. In this article, we'll show you how to build boxes like the ones on *page 1*. Then you can experiment with other styles.

Ready to try one? First, cut the four sides

Our finished box will measure about 8" wide by 10" long. From a piece of 4 1/4"-wide crown molding, cut two pieces 8 1/2" long and two pieces 10 1/2" long. Cut them in the sequence that they'll follow around the box—side, end, side, end—and number each one near the bottom edge. (This way, the grain will seem to "run" continuously around the box.)

Set your tablesaw blade to 45°, or just a hair over, to make sure that the outside points of the miters will be tight. Slip the miter-gauge jig into the right-hand slot of the table-saw, and load one of the four pieces into it. Lean the molding

against the rear fence at the steepest angle that will still allow the blade to cut through it, then measure the distance between the lower edge and the front fence. Cut a spacer to that width, and put it between the workpiece and the fence, as shown on *Page 6*.

The edge that sits higher in the jig will become the top edge of the finished box; the lower edge will be at the bottom. Double-check that before making each cut. Now, with the workpiece wedged firmly between spacer and fence, cut a miter. Do the same at one end of each of the four pieces.

To miter the opposite ends, flip one of the shorter pieces so it's leaning against the front fence, and-



When forming the legs, use a fence with a drum or spindle sander to sand a straight edge and smooth radius.

place the spacer between the workpiece and the rear fence. Line it up with the blade, and clamp a stopblock at the other end. You don't have to measure a thing. Cut that miter, take the piece out, and cut the second short piece exactly the same way, without moving the stopblock.

Remove the stopblock, and follow the same procedure for the longer pieces. Tape the four pieces together to check the fit.

Adding feet and a bottom won't take you long

Along the bottom edge of each workpiece, measure in 1" from each end and make a mark. Draw a line parallel to the bottom edge and 1" up from that edge. With a compass set to a 1" radius, scribe a

curve up to the line.

Use a scrollsaw or bandsaw to cut close to that line. Install a 2" drum in your spindle sander or on your drill press, and sand to the line as shown in the photo *above*.

As shown in the drawing on *Page 6*, use a sliding bevel gauge and straightedge to determine the angle for the kerf that holds the box bottom. Again, the number of degrees isn't important. Just set the sliding bevel gauge and use it to set your tablesaw blade.

With the feet of each piece against the rip fence and the molding profile facing up, saw a 1/8"-wide kerf about 1/8" above the leg cutout and 3/16" deep at its shallow side. Do this on all four pieces. Measure the lengths of those kerfs to find the dimensions of the bottom, and cut

a piece of 1/8" plywood or solid wood to fit.

After test-fitting, glue together the sides, ends, and bottom of the box. Hold them together with masking tape and a band clamp until the glue dries. Make sure the top edges are lined up at the corners. It's easier to sand away imperfections if they're on the bottom.

Top off your beautiful box with a matching lid

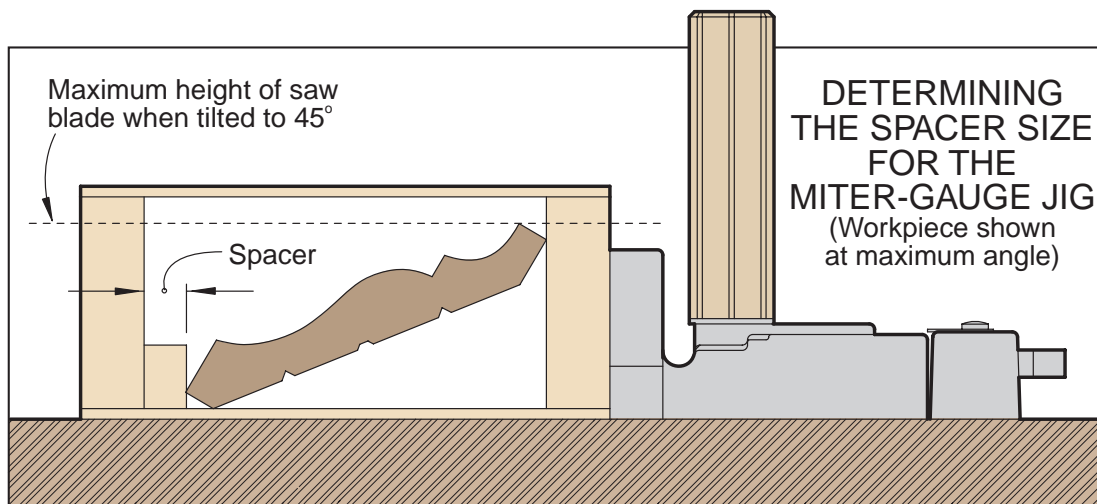
As you choose molding stock for the lid, keep in mind that the lid pieces cannot meet in the center of the box. That's because there must be a panel at least 1" wide in the center of the lid for mounting a handle. For the box in our example, 3 1/2"-wide crown molding will do the trick. If the box was wider, the 4 1/4"-wide stock used for the base might work for the lid as well.

From the 3 1/2" crown molding, cut two pieces 8 1/2" long and two pieces 10 1/2" long. As before, cut in a side-end-side-end sequence and number the pieces.

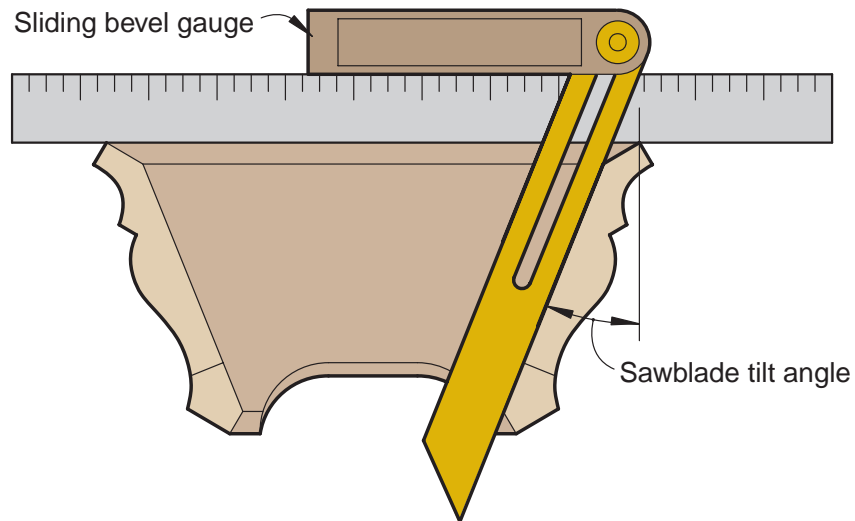
Also, cut a scrap of that molding 1" long and tape it to the box so that its bottom edge fits snugly against the bevel of the box. Lay a straight piece of scrapwood across the box and mark the angle of your scrap molding on it. (See the drawing on *Page 6*.) Set the sliding bevel gauge to that angle, and use it to set the tablesaw blade, with the handle of the gauge held against the rip fence as shown on the *next page*.

Saw kerfs in each lid piece to receive the top panel. To do so, hold the flat side of the molding against the fence, and cut a slot 1/8" wide and 3/16" deep, at least 1/8" from the edge that will be the highest part of the lid. See the photo on *Page 7*.

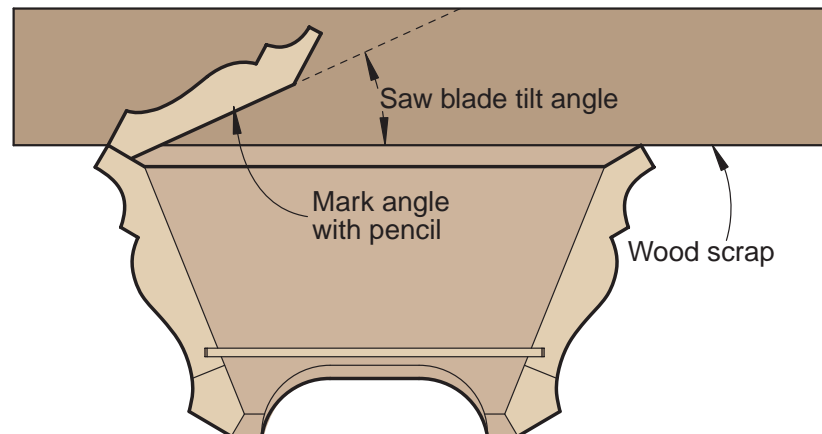
Place the sliding table jig in the slots of your tablesaw, and set the blade at exactly 90°. To find the correct angle for the miter cut, again use a piece of scrap molding 1" long taped to the box. With a straightedge across the box, mea-

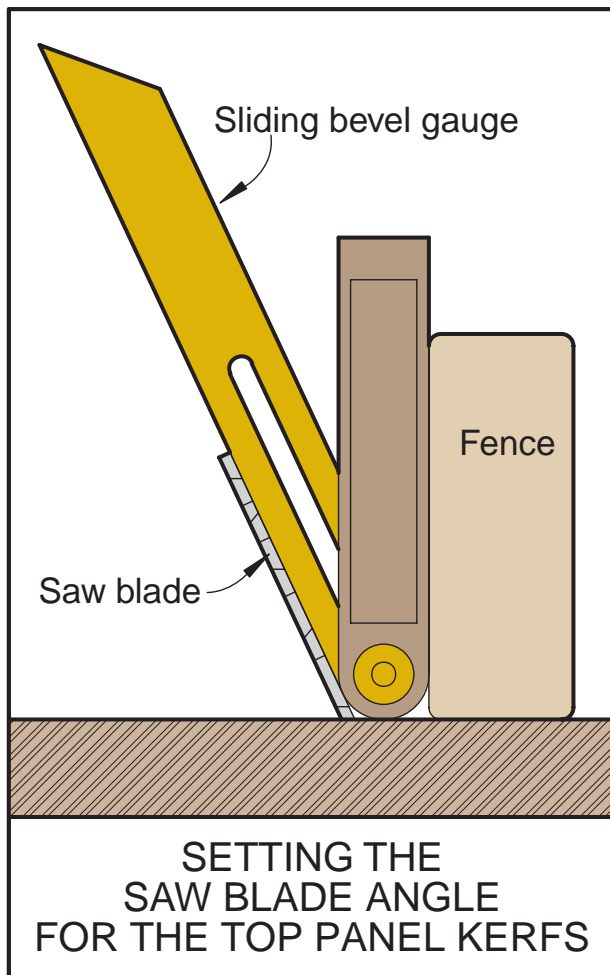


MEASURING THE ANGLE FOR THE BOTTOM PANEL KERFS

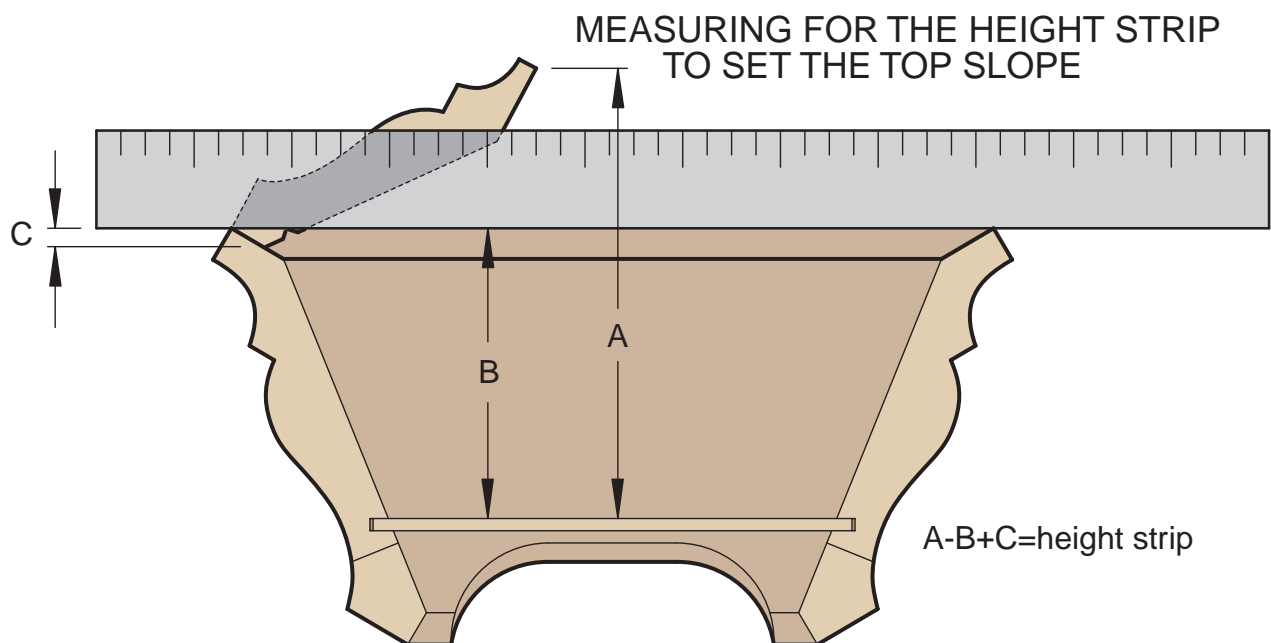


MEASURING THE ANGLE FOR THE TOP PANEL KERFS

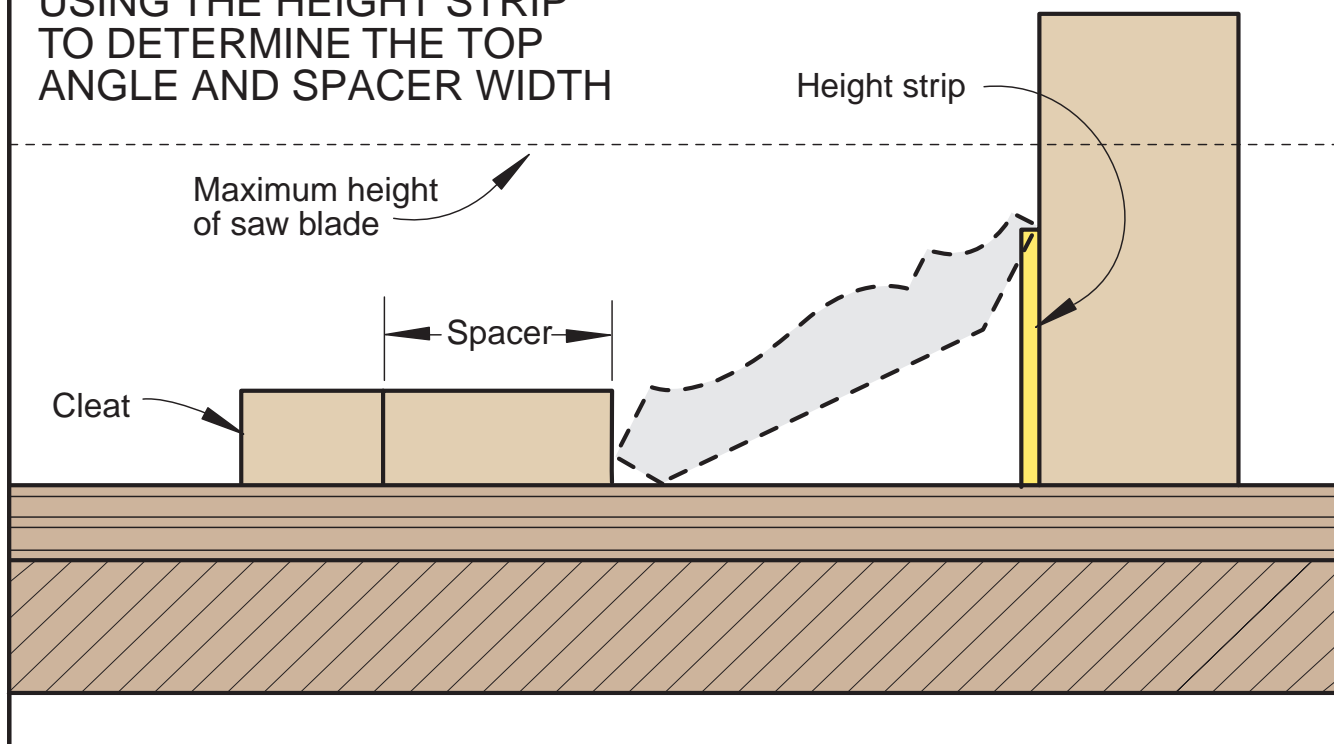




Hold the back side of the molding against your table-saw's fence to cut the kerf that holds the panel in the center of the lid.



USING THE HEIGHT STRIP TO DETERMINE THE TOP ANGLE AND SPACER WIDTH



sure as shown in the illustration on *Page 7*. Cut a piece of scrap to a length that equals $A+B+C$. Hold this height strip flat against the left fence of the jig, and draw a line along the top edge.

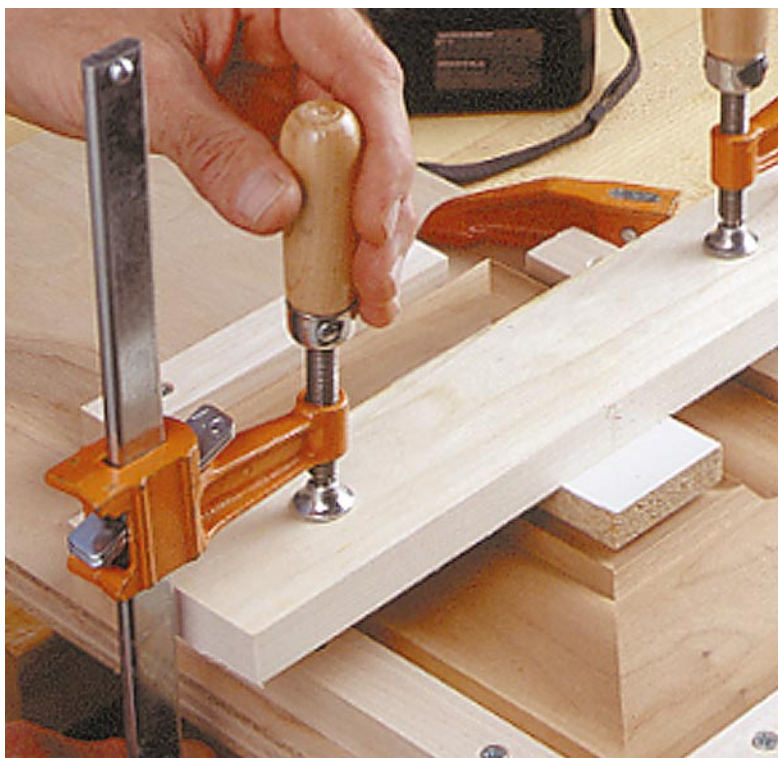
Tilt one of the molding pieces against the fence so that it just covers the line, and measure the gap between the workpiece and the cleat. Cut a spacer to fit that gap. See the drawing *above*. Cut a miter at one end of each of the four pieces, each time pressing the piece firmly between the fence and spacer.

Hold one of the longer lid pieces against the side of the box, and mark its finished length, which should be about 10" in our example. Moving to the right-hand side of the sliding table jig, put the spacer against the cleat and set the workpiece so the blade meets the mark. Clamp a stopblock to the fence and against the point of the mitered end. Cut the miter.

Repeat the procedure for the other long piece, and follow the same steps for the two shorter



Attach four cleats at right angles to each other to hold the lid pieces in position on a plywood clamping platform.



Apply glue to the mitered edges, and squeeze them together with the help of some scrap stock and clamps.

pieces. Again, the bottom edge of the lid goes at the bottom when cutting. Cut a piece of $\frac{1}{8}$ " plywood or solid wood to fit the lid kerfs.

To make a clamping jig for the lid, screw two pieces of scrap to a piece of plywood at right angles, hold the lid together, and set it into that corner. Screw two more scrap pieces into the plywood so that they're tight against the lid as shown in the photo on *Page 8*.

Take the lid out, glue the miters, and replace the lid assembly into the clamping jig. A board or two on top, held down by clamps, will force the miters snugly together as shown at *left*.

For a handle, we suggest a "fin" made of $\frac{1}{4}$ - $\frac{1}{2}$ " stock, cut to the length of the lid panel and about $\frac{1}{2}$ -1" wide. This would be a fine time to use a piece of exotic scrapwood or Corian. Attach the handle with brass screws from the bottom side of the panel.

Apply the finish of your choice. Paint works well for woods lacking showy grain patterns, or if you want to show off the grain, apply several coats of oil and top it off with paste wax. ♣

A few facts about crown molding

You can buy crown molding in many sizes and species. Shown here are some of the moldings we worked with during the making of this article. Each one will produce a box with a slightly different look.

Commonly available species include oak, cherry, and poplar, and range in width from $3\frac{1}{2}$ " to $7\frac{1}{4}$ ". (If you use moldings wider than $4\frac{5}{8}$ ", you will need to upsize our jigs to accommodate their greater width. Your larger jigs will work just like the ones shown in this article.) We used economically priced poplar for the painted boxes.

When you go shopping, check a couple of sources for selection and price, and inspect the molding's surface carefully. Some mills turn out glass-smooth cuts, and some leave noticeable chatter marks that can be tough to sand out of an elaborate profile.

Also, some mills cut grooves in the back side of the molding and some mills don't. If you prefer a smooth interior, be sure to flip the molding over and check the back before buying.

A wide range of available crown moldings means you can make an infinite variety of boxes.



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