

# Built-Up Moldings

Construct impressive moldings with just a router and off-the-shelf wood

BY ALAN CHARNEY

**M**y shop is small, with only the most basic equipment. I also have limited sources of hardwood, confining me to  $\frac{3}{4}$ -in.- or 1-in.-thick stock. However, these obstacles haven't stopped me from tackling ambitious projects, such as the crown molding on a secretary I built. Lacking thick slabs of wood and a shaper, I built up the molding from smaller strips, which I profiled individually using a router. When glued together, the individual strips formed a molding that looked like it was milled from one piece of solid stock.

Following my approach, using just a basic router, a few router bits, and a shopmade router table, you can create moldings of almost infinite variety, which will enhance the appearance of your work.

## Make templates from the router-bit profiles

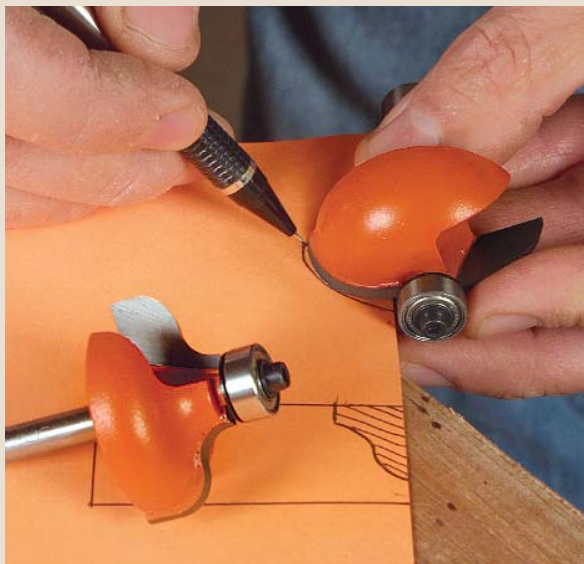
There are two ways to choose appropriate moldings for a project. One is to research the moldings traditionally used on the style of furniture you are building and to make something similar. The second way is to create your own design. A deep molding creates an elegant concave profile suitable for more formal, detailed furniture. A convex shape makes a bolder statement more suitable to heavier, country-style furniture.

After you have a general design, draw a full-scale rectangle that matches the height and depth of the molding. Then lay the router bits you intend to use against some thin cardboard and trace their





## DESIGN THE MOLDING



**Make templates.** Trace the profile of each router bit on thin cardboard to create templates for the molding.

profiles with a pencil. Cut out each profile to create templates that can be arranged on the full-scale rectangle until you arrive at a design that matches your goal.

Play with the depths of cut and the positions of each cut, and also try flipping some bits by 90°. The most useful router bits are S-shaped, meaning they follow a curve, going from thick to thin. These include edge-forming bits, such as ogee, roundover, and cove bits, plus panel-raising bits. Round-nose and V-groove style bits also work well for creating profiles.

### Choose stock with uniform grain and color

To make the molding look as if it were created from a single piece of wood, the strips need to match in color and grain pattern. The easiest way to achieve this is to take all of the strips from one wide board that is uniform in appearance. Another way is to use boards that were cut from the same tree, preferably in sequence.

Some router bits, such as panel raisers, have longer profiles and sometimes require a thicker board than I have on hand. If you need to join together two boards, matching the grain is crucial. Cut a straight-grain board in half, and then flip over one of the halves onto the other to create two adjacent layers with matching grain and color. You can use the same trick with figured boards, but because perfect grain-matching is almost impossible, you may have to rely on small steps, or reveals, between layers of molding to conceal contrasting grain patterns.

### Cut profiles on the router table

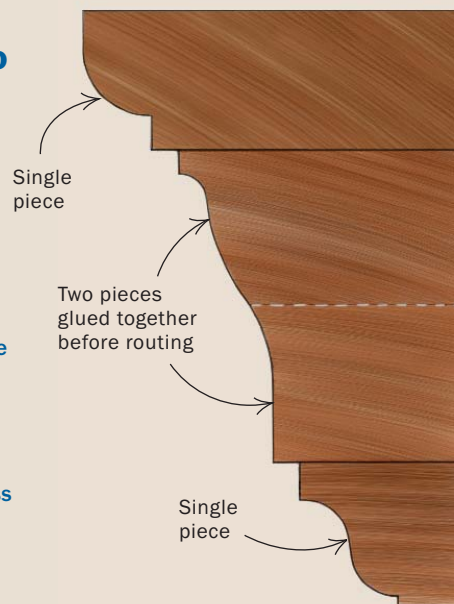
There is no need for an expensive or sophisticated router table. Mine has short legs that allow me to place it on top of my bench when in use and store it away when I'm done. Most of the bits I use have bearings, and often I use them without a fence. For safety's sake, however, you can use a fence for the first few intermediate cuts and then move it just beyond the bearing for the final cut. Make



**Use the templates to build up different molding designs.** Experiment with a combination of profiles to arrive at the perfect design for the molding.

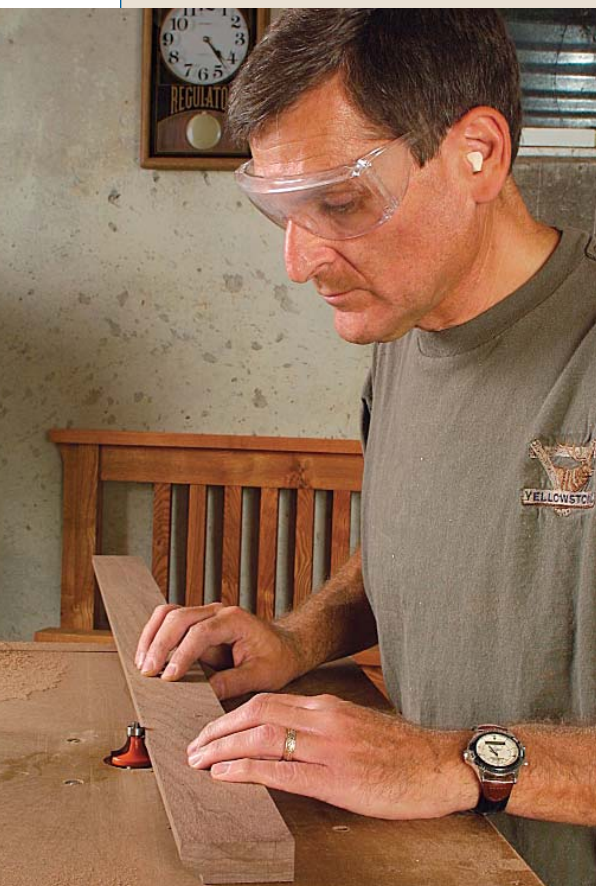
### DIVIDE THE DESIGN INTO SECTIONS

Divide the molding into slices that each router bit can cut. Solid lines divide the pieces routed separately, and the dashed line shows where two boards must be glued together to create the necessary thickness for a large router-bit profile.





## ROUT THE PROFILES



**Route the first section.** The top section of the molding is a piece of wood large enough to be cut safely without the addition of a scrapwood backing block. For safety's sake, though, you can use a fence for the first few intermediate cuts; then move the fence beyond the bearing for the final cut.

Feed the stock from right to left when facing the router. Guide the workpiece free-hand, making several passes to remove only small amounts of wood each time. On only the last cut or two is the wood guided by the router bearing.

### WIDE PROFILES



**Align the workpiece and router bit.** Instead of lowering the bit and creating a large hole in the router table, raise the workpiece by running it across a thin sheet of medium-density fiberboard (MDF) or hardboard clamped to the table.

### NARROW PROFILES



**Small boards need backing blocks.** Because the lowest section of the molding is so narrow, a piece of scrapwood should be attached to it to keep fingers away from the router bit.

### THE IMPORTANCE OF BACKING BOARDS

Because of the amount of wood to be removed by the panel-raising bit, this section requires that several pieces of scrapwood be glued to it for stability during routing.



Any wide piece of scrapwood can be used as a backing board for a narrow molding. But make sure the molding is held in the correct orientation to the router bit.



sure you have enough depth adjustment on your router, once it's mounted under the table, to get the profile you want.

**Tips for router safety**—To prevent the small strip from being thrown from the router with your fingers only inches from its 25,000-rpm spindle, glue scrapwood to the back of the workpiece, which makes the piece safer and more stable, as well as less prone to vibration and chatter.

Also, don't cut the full depth of the profile at once; instead, take several passes. As well, use earplugs and all required safety equipment. Make sure the router bit is tightened. Never push your fingers toward the spindle; make sure they push parallel to the wood's movement. This allows them to go past the spindle and not into the bit if the wood should shoot out suddenly.

### Assemble the strips into one molding

After cutting the profiles, rip away the scrapwood backing pieces. Don't worry about getting an even surface on the back of the molding; that will come later.

Refer to the full-size drawing to determine the depth of the reveal between layers of molding. It is important that this small overlap be uniform along the length of the molding. The best way to ensure this at glue-up is to place a length of scrap on the bars of the clamps to shim one section of the profile (see the photos on the facing page). Also, put the glue bead toward the back of the overlapped surfaces to avoid squeeze-out in the reveal in front, where it is hard to remove.

Never glue up more than two pieces at once: This way you can concentrate on one overlap at a time to prevent mistakes. As you tighten the clamps, make sure the pieces don't slide out of alignment. Use as many clamps as necessary to prevent an unsightly gap from appearing in the middle of the molding.

Last, rip the finished molding to the correct width shown on the original drawing, establishing a flat back that can be glued or otherwise attached to your project. □

*Alan Charney is an engineering manager and amateur woodworker who lives near South Bend, Ind.*



## GLUE UP THE STRIPS

Before the strips of molding are glued together, you need to rip away the scrap-wood backing blocks.



**One step at a time.** Glue together only two sections at a time (above) and check the joint carefully as pressure is applied. To establish the reveal between two sections of molding, use a spacer of the correct thickness (right).



**Continue adding sections.** Because any gaps between sections of molding will be conspicuous, use numerous clamps to apply even pressure over the whole length.

