

5 Essential Jigs for the Router Table

Great fixtures and fences offer better control and new possibilities

BY PETER SCHLEBECKER

In a recent article, I wrote about the router table I built for the Center for Furniture Craftsmanship ("Rock-Solid Router Table," *FWW* #195), the school where I teach and manage the facilities. The primary goals of the design were sturdiness and a tabletop big enough to handle a wide array of workpieces and jigs. That article was about making the table; this one is about the accessories that go with it.

Easy to make and use, these five jigs and fixtures are some of the most useful router-table jigs at the school. With them, we repeat

shapes consistently, quickly, and precisely. We make stopped cuts in angled workpieces, creating invisible and strong joinery. Profiling narrow stock is easier and safer. Edge-jointing a stack of veneers can be done effortlessly.

Online Extra

To watch Peter Schlebecker make and use these router jigs, go to FineWoodworking.com/extras.

Of course, if you don't have a router table like mine, you still can use these jigs. But if your table surface is small, you may have to scale down the jigs accordingly.

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1 Featherboard

MANAGE SMALL AND NARROW WORKPIECES

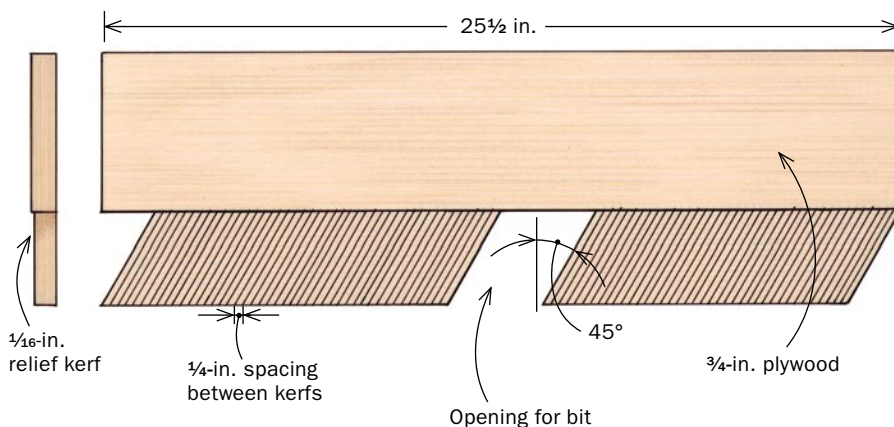
Also called a finger board, this simple fixture holds a workpiece firmly against the table surface while a cut is made. It is particularly important to use if the workpiece is very narrow and there is a risk of getting your fingers too close to the blade. I use a featherboard for a pencil bead or for any other small molding, such as the slightly curved profile on dozens of pieces for a tambour door.

The configuration that works best for the router table is a long piece of $\frac{3}{4}$ -in. plywood that is about the same length as the router-table fence, with feathers cut on both sides around a notch for the bit. Plywood is strong in every direction, so it allows you to orient the feathers along the side of this long board. Lay out pencil lines at 45° with $\frac{1}{4}$ -in. spacing, and then cut the feathers on the bandsaw. The kerf will leave feathers about $\frac{3}{16}$ in. thick, small enough to flex well but still be strong.

To use the featherboard, put the workpiece on the table, apply light, downward pressure to the featherboard, and mount it to the fence with two clamps.



Safe and accurate. Featherboards are great for holding workpieces down, but they do not allow the workpiece to back up. If there is a problem in the middle of the cut, either stop the router or just keep pushing the piece through. Use a thin push stick near the bit.



CUT THE FEATHERBOARD IN PLYWOOD



1

Reduce friction between the feathers and the fence. Before cutting the feathers, narrow the fence side of the plywood with a shallow cut, about $\frac{1}{16}$ in. thick.



2

Freehand the feathers on the bandsaw. First, remove the cutout for the bit, and then cut the feather lines.

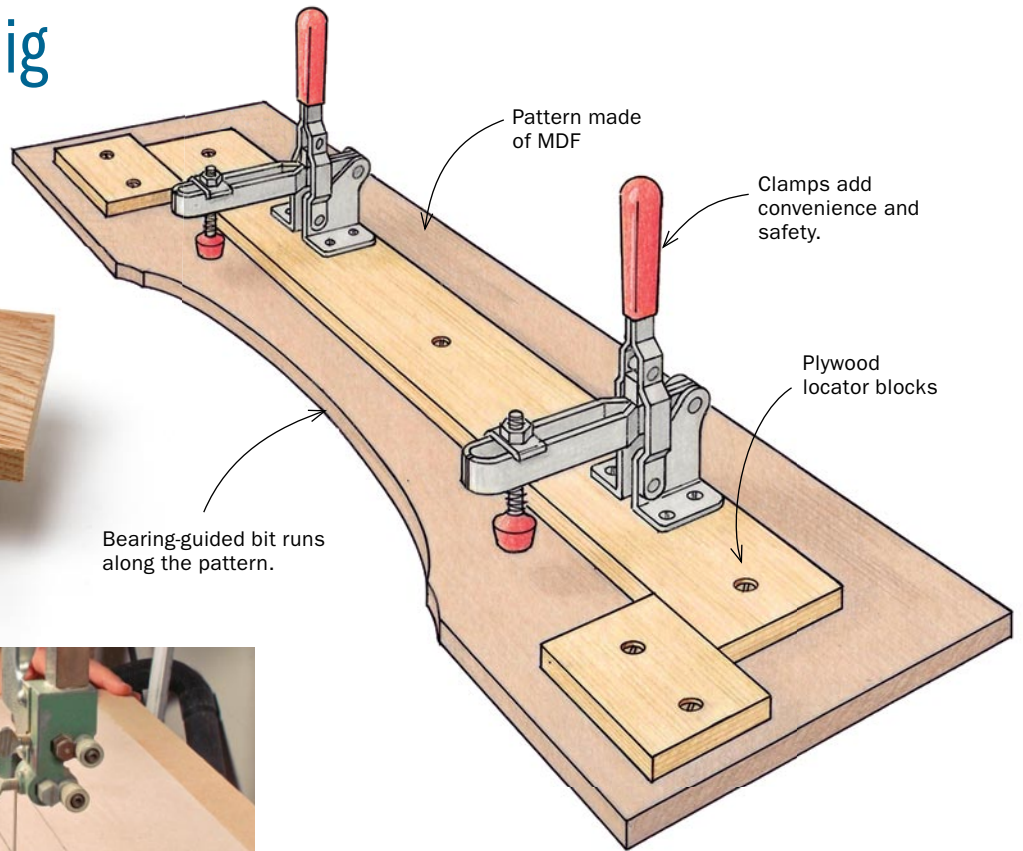


3

Put on the pressure. To have an effective hold-down that still allows the piece to move along smoothly, keep a little downward hand pressure on the featherboard while you clamp it in place.

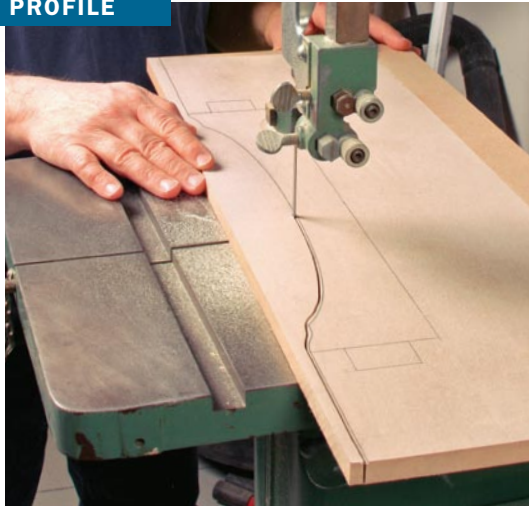
2 Pattern-routing jig

FAST, PRECISE, AND EASY MULTIPLES



1. CREATE THE PROFILE

Make the pattern jig. Draw the shape on tracing paper and glue it to MDF. Bandsaw close to the line, and then fair the curve to the line with a spindle sander or a block and sandpaper.



2. ADD THE SCREW BLOCKS



Position the blank and draw the shape. With the blank correctly located on the jig, screw locator blocks behind and on each end of the blank. Consider adding toggle clamps for extra control.

The most common use of the router table in our shop is pattern-cutting. Used for curved legs, aprons, or multiples of any kind, pattern-cutting is when a part is cut out using a bearing-guided, flush-trimming bit. The piece is roughed out slightly oversize on the bandsaw and mounted to the pattern. The bit then follows the pattern, producing the same profile every time.

This particular jig makes pattern-cutting as easy as possible. I've included an extra area before and after the pattern so the bearing has a place to ride as it moves into and out of the cut. I made it easy to locate workpieces instantly, and the toggle clamps hold the work in place and serve as built-in handles.

To make a pattern jig, draw the outline of the shape onto tracing paper, and then use spray adhesive to glue the paper to a piece of MDF. Use a piece larger than the shape so there will be room for toggle clamps, locator blocks, and start-and-stop areas for the bearing. Bandsaw close to the line and clean it up with power- and hand-sanding.

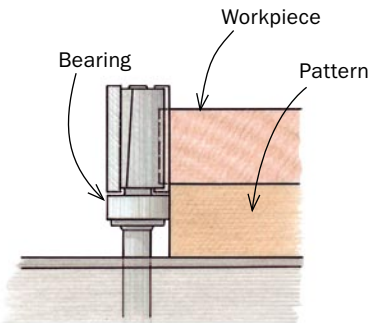
Position a blank on the pattern and surround the blank with blocks to locate it. Then use the jig to trace the shape on the blank. Remove the blank and bandsaw the shape, leaving it about 1/8 in. oversize, and return the workpiece to the jig. I usually install toggle clamps to hold the blank firmly.

When routing, begin the contact with the bearing on the pattern portion ahead of the actual blank. Follow through the cut to the other end; it's always good to take a second pass to clean up any inconsistencies left by sawdust and vibration.

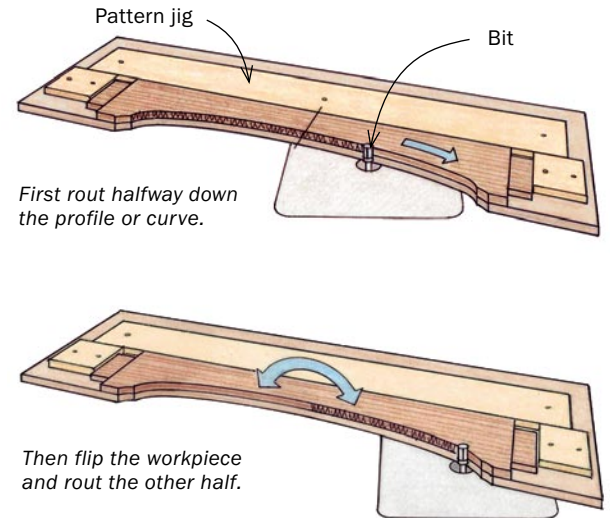
3. ROUT THE WORKPIECE WITH A PATTERN BIT



Bandsaw the waste, then rout. Transfer the pattern to the blank (above). Bandsaw away the bulk of the waste, reinstall the blank in the jig, and rout (right). The bearing-guided bit rides along the pattern.



Pay attention to grain direction. A sharp bit can cleanly cut mild reversals in grain, but when the grain is steep and tears out, a symmetrical piece can be flipped in the jig to work the grain in different directions. If the piece is asymmetrical, make a second, opposite jig and flip the workpiece.



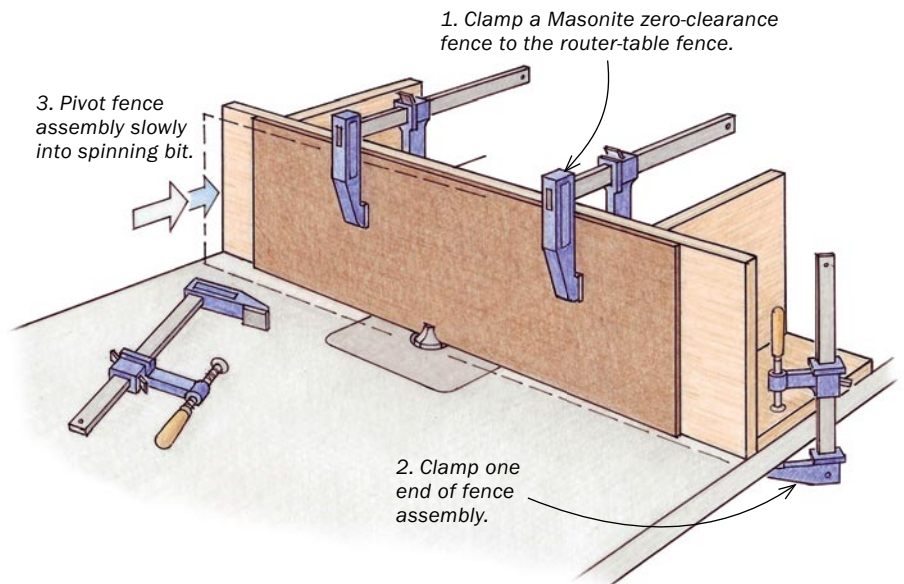
3 Zero-clearance fence FOR SMALL WORKPIECES

Sometimes workpieces are so short, there is a risk that they will dip into the opening in the fence and cut too deeply, or that the leading edge of the wood will catch the outfeed side of the opening. A zero-clearance fence will prevent these problems and make the operation safer. I use this auxiliary fence anytime I rout a profile around a small drawer front or door. A bearing on the router bit could get in the way of the fence, so if there is a bearing, you'll need to remove it.

The zero-clearance fence clamps onto the regular fence. Make it out of 1/4-in. Masonite, about the same size as the regular fence. I use Masonite because it is stiff enough to stay straight near the center when clamped on the ends. After bringing the main fence forward of the bit and clamping on the Masonite, clamp one end of the main fence to the table. With the bit set at the correct height, start the router and then pivot the entire fence so that the bit slowly cuts through the hardboard from the rear. I bring the cutter just a bit farther out than needed and then back it off to leave a little clearance for the blades. This reduces heat buildup and noise. Stop the router, lock down the free end of the fence, and try a test cut.

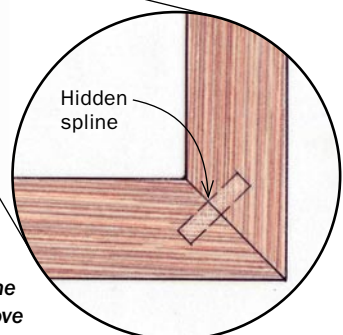


No room for error. A zero-clearance fence closes the gap around the bit and prevents short work, like this drawer front, from dipping into the open space.

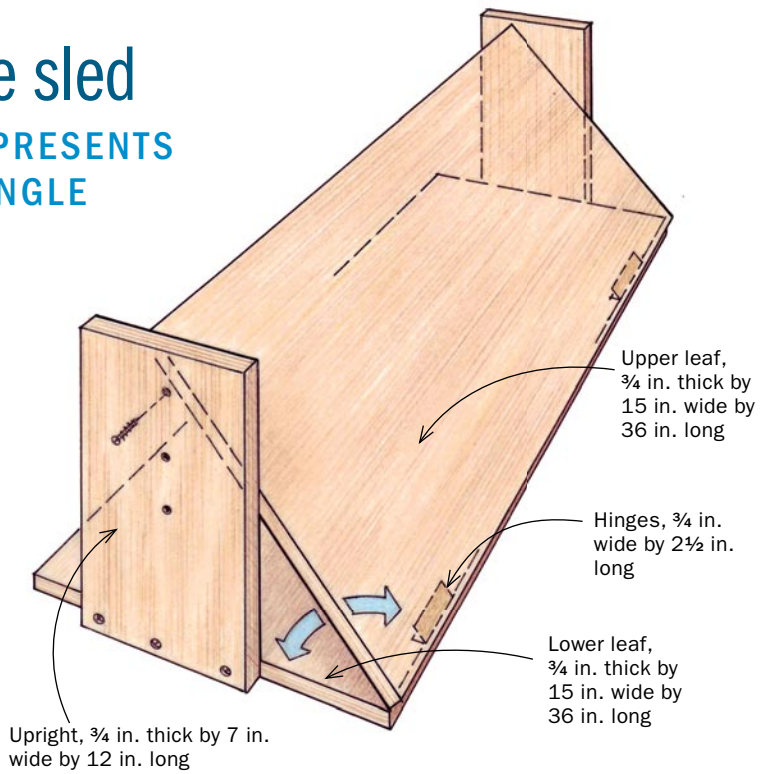


4 Miter angle sled

SIMPLE SLED PRESENTS WORK AT AN ANGLE



Hidden joinery. An angle sled makes it simple to run a stopped groove into the edges of a mitered carcass, like this one by Seth Deysach, where the groove would show at the front and back if it went all the way through.



When it is necessary to present a piece of wood at an angle to the router bit, as with a mitered joint with spline grooves in box or carcass construction, this sled makes it easy. Cutting the grooves on the tablesaw is not an option if you want to make stopped grooves, hiding the splines. But this sled, used on the router table with a slot-cutting bit, will do the job perfectly.

Constructing the sled is simple. I make my sled big enough to hold a range of sizes with extra space to screw in hold-down blocks should I need them. Two squared boards of sheet material are held together with inexpensive utility hinges, and end pieces establish the angle. The workpiece is clamped onto the upper leaf so that the leading edge just touches the table surface. Or you can align the side or top edge with marks or stop blocks screwed to the upper leaf. When routing the end of a narrower piece, the upright end can serve as a right-angle guide as long as the components of the jig have been made accurately square.

A router bit can be used with a bearing that will run along the workpiece, as in the case of the slot-cutting bit.



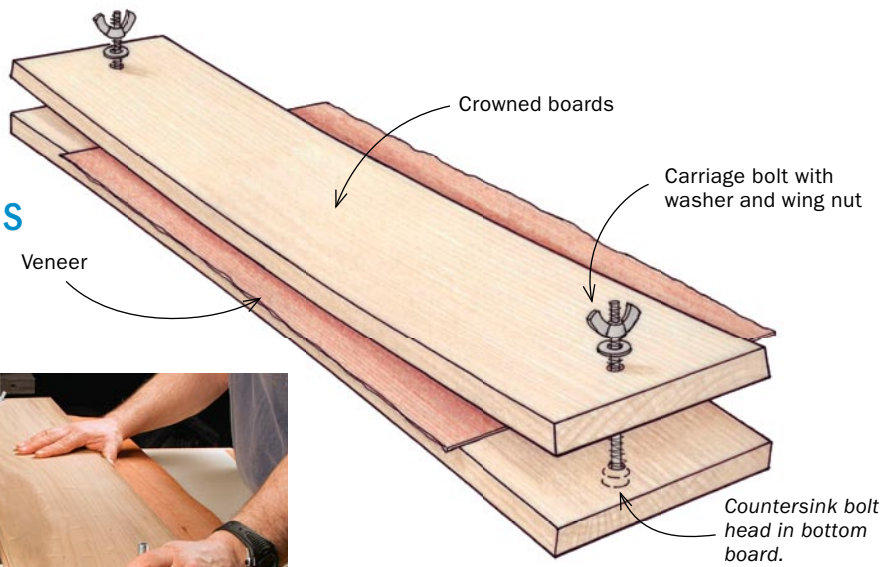
Set up the angle. Once the leaves are hinged and the uprights are screwed to the lower leaf, use a bevel gauge to set the angle (left), and screw through each upright to lock the upper leaves (right).



Use the fence as a pivot point for a stopped cut. With the workpiece clamped on the angle sled and the stopping points taped on the fence, use the fence to pivot into the bit on one end and out on the other.

5 Veneer jig

JOINT PERFECT EDGES ON A STACK OF VENEERS



Tighten veneers in the jig. The excess should protrude about $\frac{1}{8}$ in. from the edge. Use a flush-trimming bit to do the trim cut. Go slow so as not to chip out highly figured veneers, and take a second pass to perfect the edge.

Edge-jointing veneers with a handplane can be time-consuming and frustrating. Instead, you can use a veneer-trimming jig to joint multiple leaves of veneer at the same time. I like this jig because it is simple, can handle any width of veneer, and is easy to re-true on a jointer. It consists of two poplar boards bolted together at the ends. For short lengths, two flat boards will suffice. However, for veneers up to about 5 ft. in length, I make a longer jig with a camber in the boards so that clamping pressure is even along the entire length.

To create the camber, square up two $\frac{5}{4}$ boards to about $1\frac{1}{8}$ in. thick. Set the

jointer to take a $\frac{1}{16}$ -in. cut and run the first board over the cutterhead about one-third of the way along the board. Stop the motor, turn the board around, and repeat on the other end, same face down. Repeat this three times on both ends, stopping each time about 4 in. from the end of the previous cut. The board should be tapered on both ends in a series of steps.

Next, flip the board and use a planer to remove the material in the center until the whole board has been planed end to end. A planer won't remove the camber from the

board and the steps will not show up on the planed side. Flip the board and take a pass or two to clean up the stepped side. Repeat the process on the other board.

Drill holes for carriage bolts, making sure to countersink the heads and install washers and wing nuts. When the crowns of the boards are pressed against each other, they will force the whole jig to lie flat on the table surface. Lock the assembly down and run both edges over the jointer to true them up, and you're ready to insert veneer leaves and edge-joint them.

CROWNED BOARDS ARE THE KEY

Start with steps. Schlebecker takes multiple jointer passes on both ends of the boards, shorter each time. He tapes a mark on the jointer and matches it to lines on the top of the board to know when to pick up the board.



Plane it smooth. Next, with the steps facing down on the bed, he runs the board through the planer until the board has been planed across its length. Then he flips the board over and gradually removes the steps.

