

WOODWORKER'S JOURNAL

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In this plan you will be getting:

- Step by Step construction instruction.
- A complete bill of materials.
- Exploded view and elevation drawings.
- How-to photos with instructive captions.
- Tips to help you complete the project and become a better woodworker.



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Entry Bench



Published in Woodworker's Journal "The Home Woodworker: Classic Projects for Your Shop and Home"

\$7.95

WJ126



Entry Bench

Each sloppy winter day, wouldn't it be great to have a place to sit down while you pull on your boots or galoshes?" If you've seen plenty of winters already, the need probably grows as you age. And what about extra storage — wouldn't it be wonderful to have a spot for gloves and hats, too? Maybe this is the year to do something about it. Here's a handy little entry bench that will meet all your needs and then some — and it's a gem of a project to work on. The front and sides are standard raised panels, the lid opens for storage, and the bench is a perfect fit for any busy foyer, large or small.

Building the Frames First

The most logical starting point for this project is to create the raised panel frames, as these form the skeleton of the bench. For this operation, you'll need to borrow or invest in a stile and rail set. That's a router bit (or a matched pair of router bits) that mills perfectly mated profiles on stiles and

rails. You can find them in beading, ogee, chamfer or concave profiles.

Rip stock for all the stiles and rails (pieces 1 through 8) about 1/16" larger in each dimension than the specific measurements shown in the *Material List* on page 108. Joint the stock to final dimensions, then trim the ends to length.

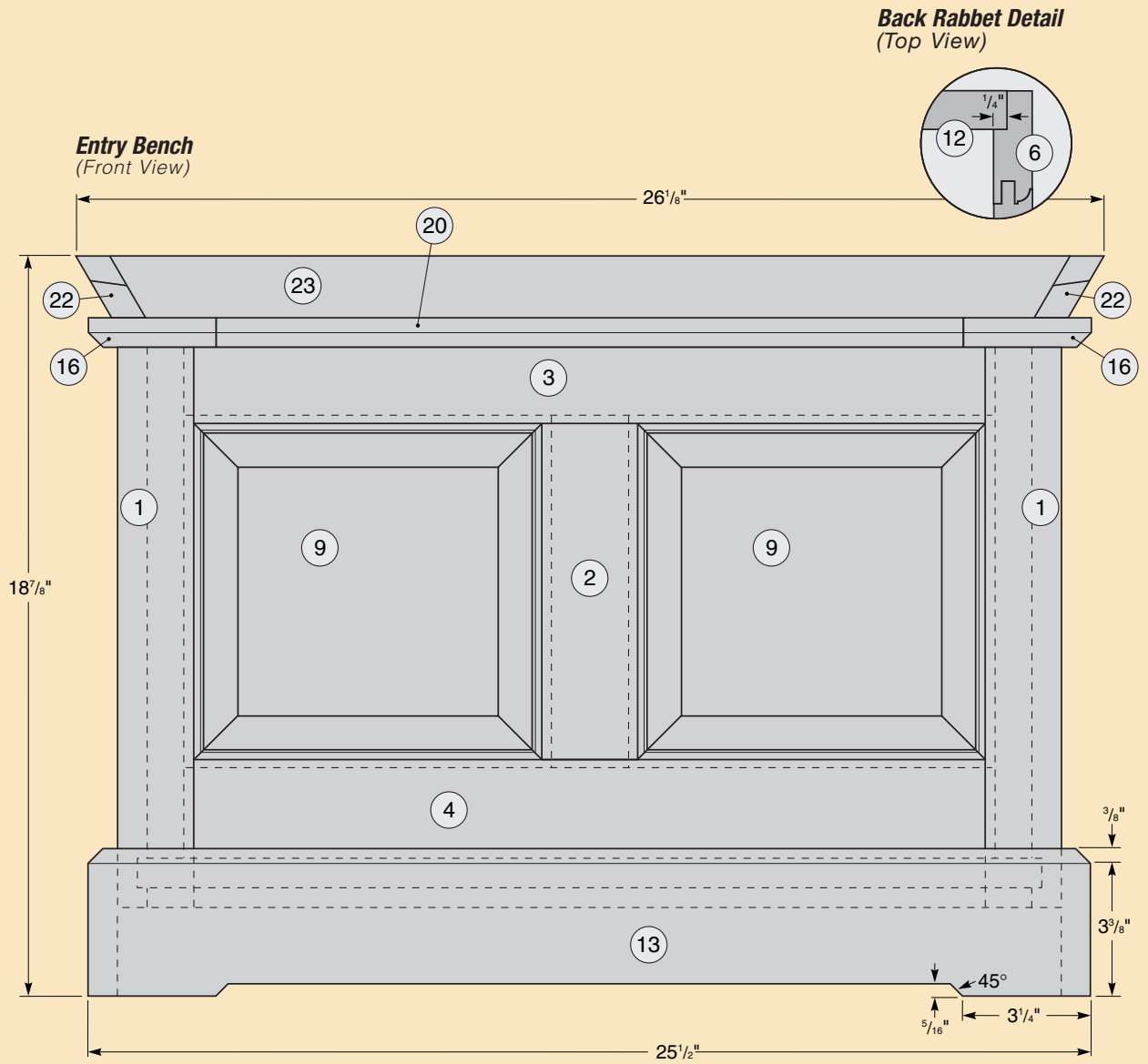
Using the Stile and Rail Set

Lay out your stiles and rails on the workbench (just butt them together for now), and mark the matching pairs where they meet. We like to use AA, BB and so on, to keep the parts oriented correctly during the milling process.

Chuck what we call the bead and

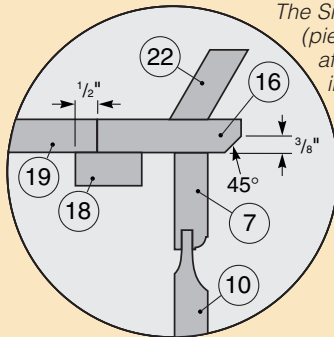
SHOULD YOU MAKE OR BUY RAISED PANELS?

We'll confess a temptation to buy raised panels for this entry bench rather than build them. Depending on where you shop, you can have your panels made by a custom cabinet shop for not much more than the cost of materials — especially when you factor in around \$200 for buying the raised panel and rail and stile bit sets to do it yourself. If you're just getting into woodworking, or if you don't own a router table and mid-size or larger router yet, buying the panels is wise. However, if you're wondering if making the panels and frames is worth the fuss, we'll definitely say yes! This may be because we're really purists at heart and just plain enjoy the process of making a project from beginning to end. There's also something to be said for trying out new bits and techniques now and again. That's what keeps woodworking fresh and interesting. And, using bits for building raised panels doesn't require nerves of steel. Just follow the bit manufacturer's instructions carefully and work safely.



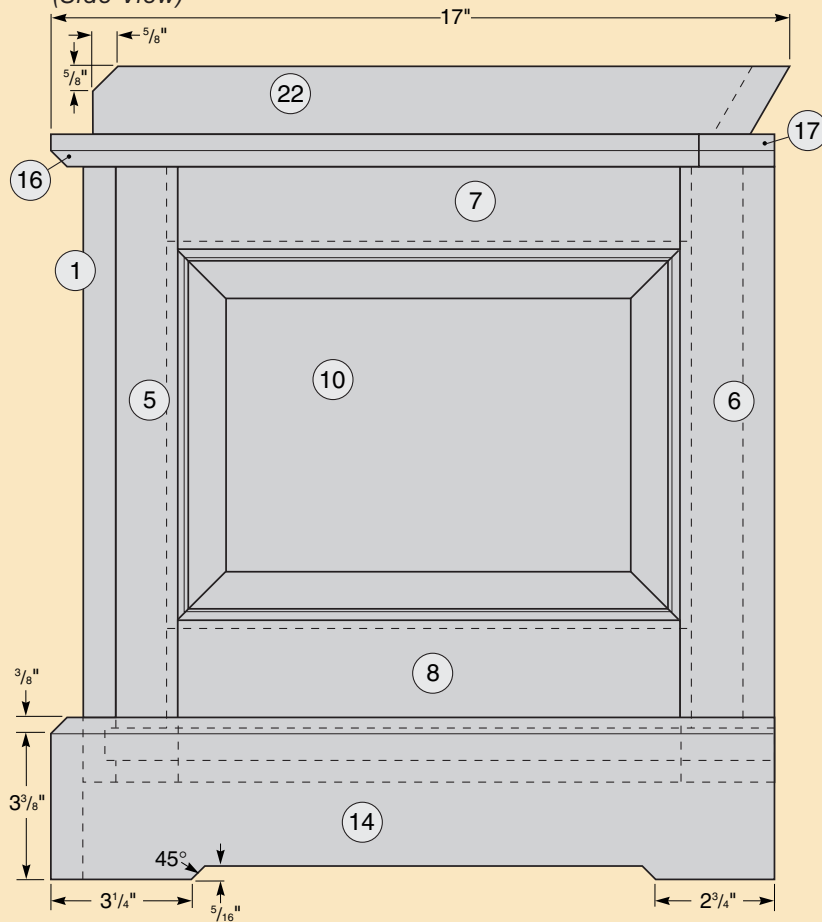
Rail, Frame and Top Side Detail

(Section View)



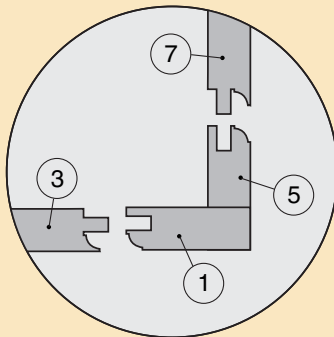
The Side Lid Braces (pieces 18) are applied after the frame is in place.

Entry Bench (Side View)



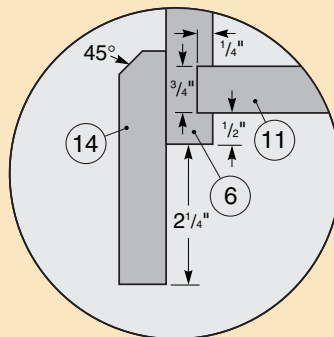
Stile and Rail Detail

(Top View)



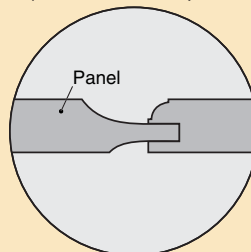
Skirt, Stile and Bottom Detail

(Section View)



Raised Panel Subassembly Detail

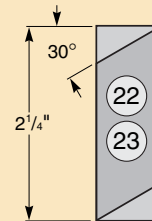
(Section View)



The same bit is used to shape the panel's front and back edge.

Top Sides and Back Machining Detail

(End View)



Rip your stock 2 1/4" wide. Don't move the fence but set the blade to 30° and take 2 more passes to form the bevels shown at left.



groove cutter (see *Figure 1*) into your router and set the bit height. Practice on a piece of scrap (the exact dimensions as your actual stock) until the profile matches the elevations shown in the *Technical Drawings* on the preceding two pages. This cutter will create the bead on the edge of the stile, plus the groove for the panel. It's a good idea to make these cuts in two or three passes, to get a clean profile safely. Mill one edge of each rail and the six outer stiles, and both edges of the front center stile. Then install the cope and tenoning cutter (see *Figure 2*): This might be a separate bit, or a rearrangement of your first set-up. Look at the manufacturer's instructions for details. Use some scrap to set the height and test your fit, then mill both ends of the front center stile and both ends of each of the rails.

Making the Panels

Glue two or three well-matched boards together for each panel (pieces 9 and 10). Make sure to select stock with color and grain that is so similar the final joint becomes almost invisible. After cutting the panels to size, you can mill both the front and back profiles with the same router bit as shown on page 110. We used a vertical panel raising bit because its cutting edges are closer to the shaft than traditional horizontal bits, which makes it more stable: the tip of the bit actually travels at a slower speed. You can also use a vertical bit safely in a mid-size router.

Make each profile in several passes, with your router set to an appropriate speed. Machine the panels across the grain first, to minimize tearout, and clamp a high auxiliary fence to your router table fence to stabilize the workpiece.

Bench Exploded View

MATERIAL LIST

		T x W x L
1	Front Outer Stiles (2)	$\frac{3}{4}$ " x $2\frac{3}{16}$ " x $14\frac{1}{4}$ "
2	Front Center Stile (1)	$\frac{3}{4}$ " x $2\frac{7}{16}$ " x $8\frac{13}{16}$ "
3	Front Top Rail (1)	$\frac{3}{4}$ " x $2\frac{3}{16}$ " x $20\frac{1}{8}$ "
4	Front Bottom Rail (1)	$\frac{3}{4}$ " x $3\frac{3}{4}$ " x $20\frac{1}{8}$ "
5	Side Front Stiles (2)	$\frac{3}{4}$ " x $1\frac{7}{16}$ " x $14\frac{1}{4}$ "
6	Side Back Stiles (2)	$\frac{3}{4}$ " x $2\frac{3}{16}$ " x $14\frac{1}{4}$ "
7	Side Top Rails (2)	$\frac{3}{4}$ " x $2\frac{3}{16}$ " x $12\frac{1}{8}$ "
8	Side Bottom Rails (2)	$\frac{3}{4}$ " x $3\frac{3}{4}$ " x $12\frac{1}{8}$ "
9	Front Panels (2)	$\frac{3}{4}$ " x $8\frac{7}{8}$ " x $8\frac{11}{16}$ "
10	Side Panels (2)	$\frac{3}{4}$ " x 12 " x $8\frac{11}{16}$ "
11	Bottom (1)	$\frac{3}{4}$ " x $15\frac{5}{8}$ " x $23\frac{1}{4}$ "
12	Back (1)	$\frac{3}{4}$ " x 13 " x $23\frac{1}{4}$ "
13	Front Skirt (1)	$\frac{3}{4}$ " x $3\frac{3}{4}$ " x $25\frac{1}{2}$ "
14	Side Skirts (2)	$\frac{3}{4}$ " x $3\frac{3}{4}$ " x $16\frac{3}{4}$ "
15	Lid Brace, Front (1)	$\frac{3}{4}$ " x $\frac{1}{2}$ " x $22\frac{1}{2}$ "
16	Top Frame, Sides (2)	$\frac{3}{4}$ " x $3\frac{3}{4}$ " x 15 "
17	Top Frame, Back (1)	$\frac{3}{4}$ " x $1\frac{3}{4}$ " x $25\frac{1}{2}$ "
18	Lid Brace, Sides (2)	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x 14 "
19	Lid (1)	$\frac{3}{4}$ " x $12\frac{7}{8}$ " x $18\frac{7}{8}$ "
20	Lid Cap (1)	$\frac{3}{4}$ " x 2 " x $18\frac{7}{8}$ "
21	Lid Hinge (1)	$1\frac{1}{2}$ " Brass piano
22	Top Sides (2)	$\frac{3}{4}$ " x $2\frac{1}{4}$ " x $16\frac{1}{8}$ "
23	Top Back (1)	$\frac{3}{4}$ " x $2\frac{1}{4}$ " x $26\frac{1}{8}$ "

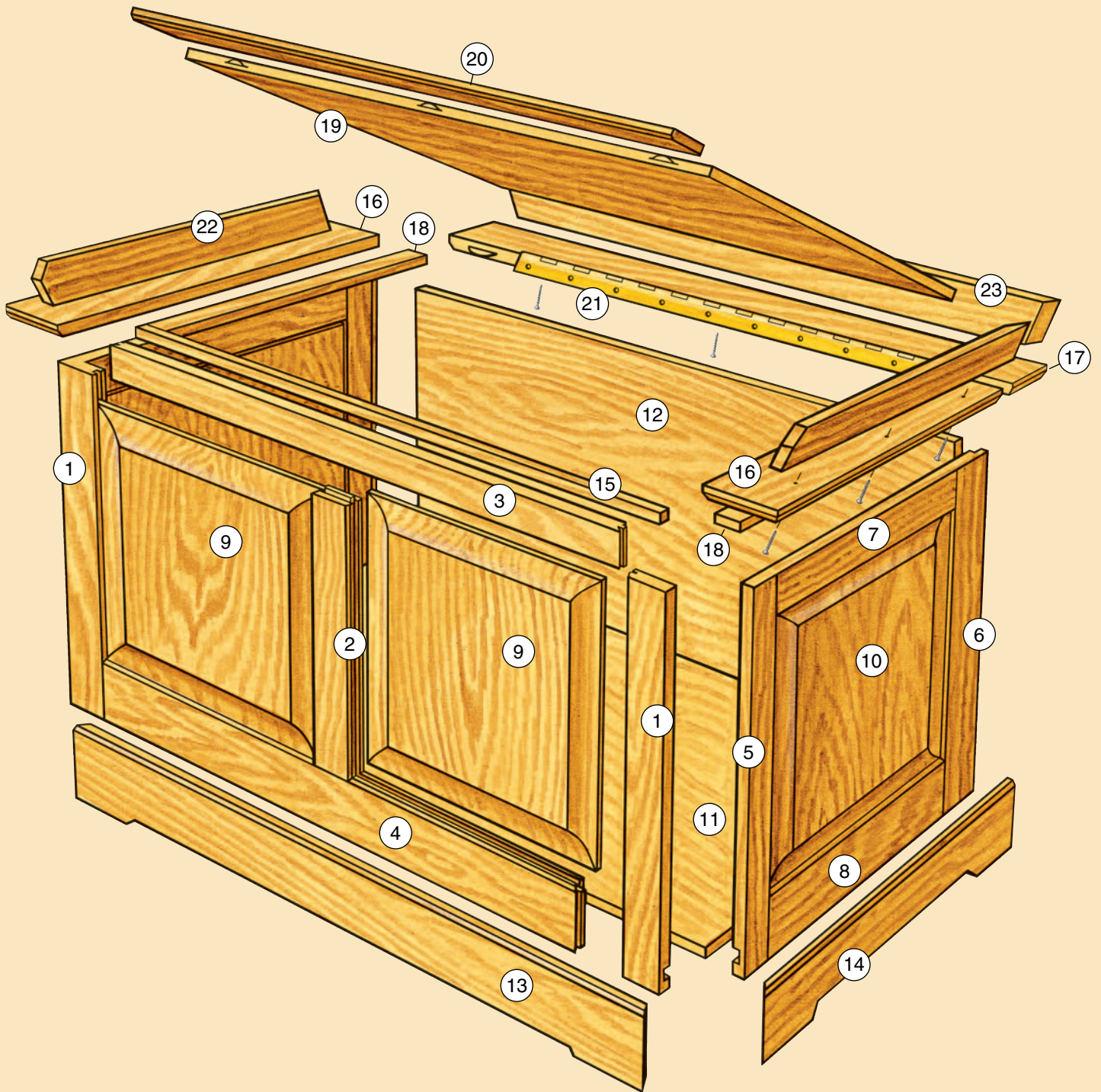




Figure 1: Stile and rail bits are the best way to create the mating joints characteristic of frame and panel construction. With your first pass you'll form a bead and groove.

Assembling the Frames and Panels

Sand the frame elements and apply stain (if you plan on staining your bench) to the panels; this will prevent color gaps later if the panels move after finishing. Glue and clamp the frames together, with the panels floating freely in their grooves. If you glue the panels in place, they may split as the wood reacts to changes in humidity.

Make sure the assemblies are flat and square as you apply the clamps. You can add a sandbag, if needed. When the glue has set, plow dados for the bottom (piece 11) and rabbets for the back panel (piece 12). Their dimensions and locations are shown on the *Technical Drawings*.



Glue and clamp the side frames to the front frame as shown in the *Exploded View* on page 109. While a simple butt joint is quite adequate here, you might want to use biscuits to help align the parts. Slide the bottom into its dado to help keep things square, then predrill for a couple of 4d finish nails in each side, to hold the back in place while it's being glued and clamped. (For stability, we used oak veneered MDF for the bottom and back.) Set and fill the nail heads and sand the filler smooth when it's dry.

Temporarily clamp a plywood straight-edge to the carcass to keep the skirts aligned as you clamp them in place. Glue and clamp the front lid brace (pieces 15) in place next. Move on to the top frame (pieces 16 and 17). The bottom edge of this frame is chamfered to match the top edges of the skirts. Chamfer the ends of the frame back, then glue it to the carcass. With the frame back already in place, it's a little easier to locate the chamfers on the edges of the top frame sides for a perfect fit. Use biscuits on the ends of the frame sides to help glue and clamp them into place. Now, position and glue the lid side braces (pieces 18) under the frame sides.

Adding the Skirt and Top

When the carcass glue is dry, rip and joint a board that's long enough to yield the front and side skirts (pieces 13 and 14). Mill a chamfer on its top edge (see *Technical Drawings*) using a router bit. Machine the three skirts to length, then band-saw reliefs on their bottom edges as shown on the *drawings*. Using your table saw's miter gauge, miter the skirt to wrap around the box. Install the skirts with glue and clamps.



Follow the directions in the *sidebar* on the next page to make the top sides and back (pieces 22 and 23), then glue and screw these pieces in place. Predrill for the screws and countersink their heads.



Figure 2: The rail ends are machined to fit into the grooves formed by the first cutter. Then use a raised panel bit (below) to shape both sides of the panels.



Installing the Lid

The lid is a panel of veneered MDF (piece 19) with a strip of solid oak (piece 20) edge-glued to it. Pick up the skirt's chamfer on the front edge of this edging, then dry-fit the seat (allow for the depth of the hinge as you do). Trim the hinge (piece 21) to length, then predrill for its screws and install it.

Remove the lid hinge and sand all parts down through the grits to 220. Apply the stain of your choice (we used a red oak tint, to even out the wood's natural colors), followed by three coats of clear finish. Reinstall the hinge, and you're finally ready to put on your boots in comfort.

Finishing Up

Reinstall the hinge, and you're finally ready to put on your boots in comfort.



MAKING SHADOWBOX MITER CUTS



The top sides and back are milled just like a shadowbox picture frame. Cutting their compound miters on a table saw is a two-step operation. Begin by adjusting the miter gauge and blade angles using the chart at right. The Desired Angle is the angle the seat side makes with the top (in this case, 60°). Cut one end of each frame piece with the miter gauge set for a left-to-right downward slope. Then reverse the miter gauge exactly 90° and reposition the frame segment for the cut at the other end. Make sure the piece is oriented with the toe of the miter ahead of the heel, then make your cuts.

Desired Incline	Blade Angle	Miter Gauge Angle
5°	43 $\frac{3}{4}$ °	85°
10°	44 $\frac{1}{4}$ °	80 $\frac{1}{4}$ °
15°	43 $\frac{1}{4}$ °	75 $\frac{1}{2}$ °
20°	41 $\frac{3}{4}$ °	71 $\frac{1}{4}$ °
25°	40°	67°
30°	37 $\frac{3}{4}$ °	63 $\frac{1}{2}$ °
35°	35 $\frac{1}{4}$ °	60 $\frac{1}{4}$ °
40°	32 $\frac{1}{2}$ °	57 $\frac{1}{4}$ °
45°	30°	54 $\frac{3}{4}$ °
50°	27°	52 $\frac{1}{2}$ °
55°	24°	50 $\frac{3}{4}$ °
60°	21°	49°

Quick Tip

Three-spoke Clamp Pads

Positioning a pad between the jaw of a bar clamp and the assembly you're building can be tricky. Trying to keep the clamps in position — especially when you're at the other end of a large cabinet or panel — can be downright frustrating. These three-spoke pads solve both problems at once. Two of the three spokes become the stand's legs (they even allow for uneven surfaces), while the third spoke automatically centers itself as a hands-free pad between the metal of the clamp jaw and the workpiece being glued up. No more pads slipping out of place, and these will never get lost.

