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Bill Krier  
Editor in Chief, WOOD magazine

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# build-in-a-weekend bookcase



Solid wood and simple moldings make a fitting home for books and collectibles.

**Y**ou'll love the traditional styling and no-nonsense construction of this project. To help speed the bookcase through your shop, we've sourced mail-order feet. But, should you want to turn your own feet, we've included a full-size pattern on the *WOOD Patterns*® insert. And, you can give the bookshelf a touch of your own personal style by simply choosing a different foot and routing a different profile on the face-frame styles. (See page 82 for a few options.)

## AT A GLANCE

Overall dimensions:

- 35½" wide × 12¾" deep × 50" high
- For the board feet of lumber and other items needed to build this project, see page 80.

### Start with the case

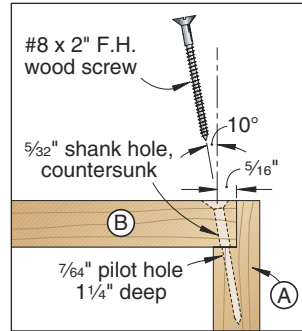
**1** From ¾"-thick stock, edge-join oversize blanks for the sides (A), top and bottom (B), cap (C), and shelves (D). Sand the blanks smooth and cut them to the sizes listed on the **Materials List**. To assist you in accurately crosscutting the parts, see the tablesaw jig on page 96.

**2** With a dado blade in your tablesaw, cut ¾" rabbets ⅜" deep in the ends of the sides (A), where shown on **Drawing 1**. Then cut a ¼" rabbet ⅜" deep along each inside back edge. Now lay out the shelf-support hole centers where dimensioned, and using a

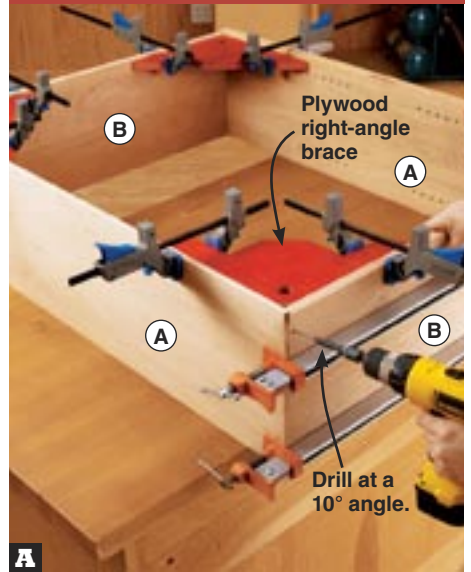
¼" brad-point bit with a depth stop, drill ⅜"-deep holes. Finish-sand the sides and the top and bottom (B).

**3** Glue and clamp together the sides (A) and top and bottom (B), in the configuration shown on **Drawing 2**. Use shop-made plywood right-angle braces to keep the assembly square. (To obtain a free downloadable plan for the plywood right-angle braces, go to [woodmagazine.com/brace](http://woodmagazine.com/brace).) Then reinforce the joints with screws, where shown on **Drawings 2** and **2a** and as shown in **Photo A**.

### 2a CASE CORNER DETAIL

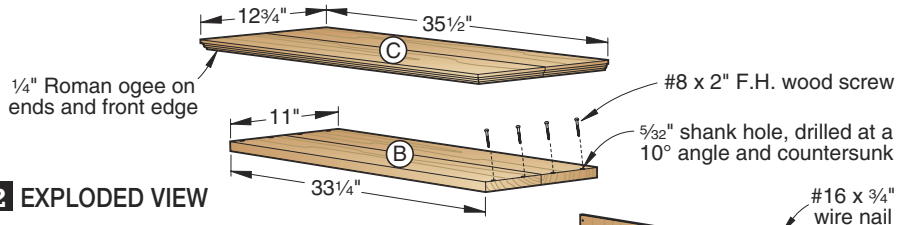


### SCREWS REINFORCE CORNERS

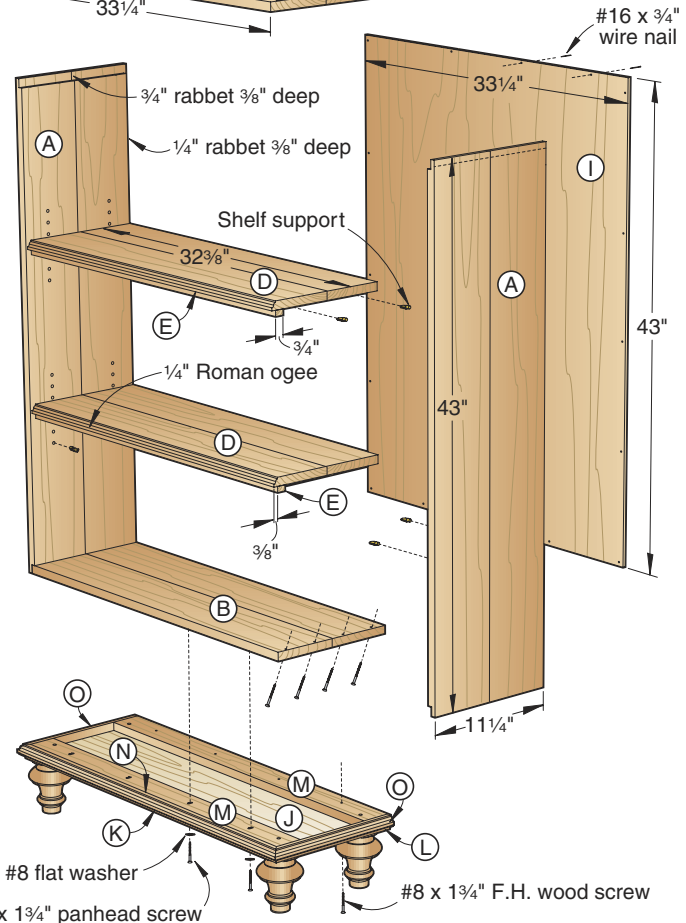
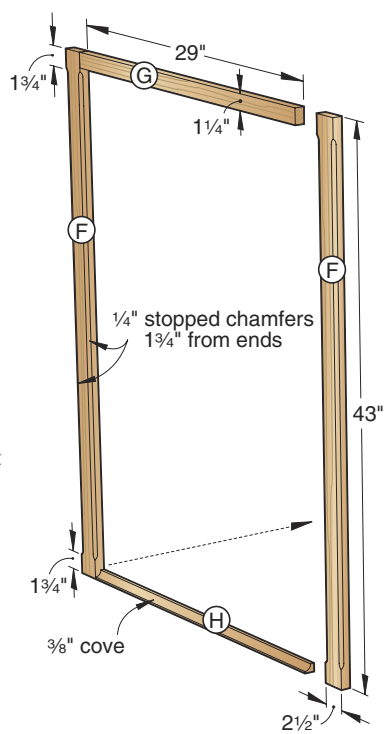
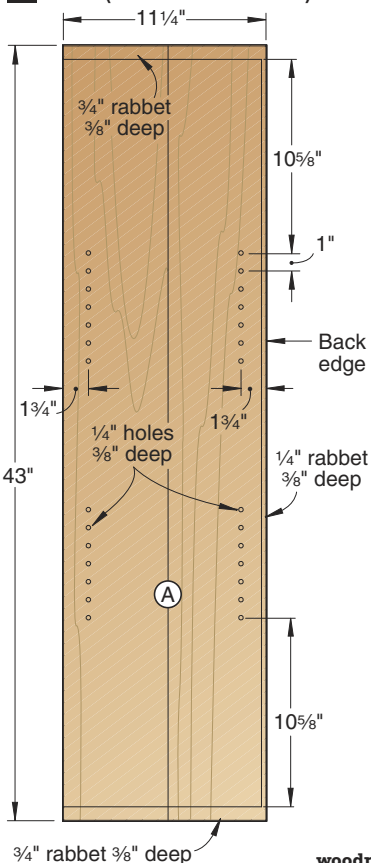


**A** Drill angled screw holes ⅝" from the ends of the top and bottom (B) into the sides (A). Then drive the screws.

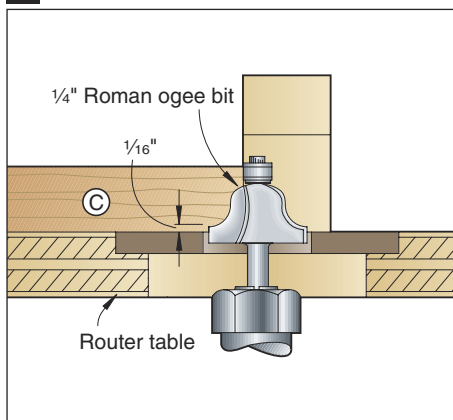
### 2 EXPLODED VIEW



### 1 SIDE (Inside face shown)



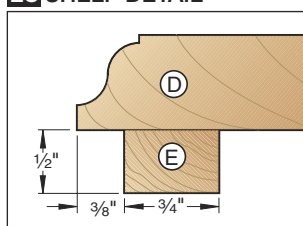
## 2b ROMAN OGEE DETAIL



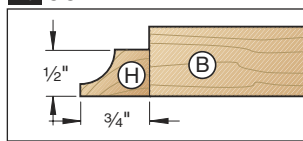
**4** Retrieve the cap (C). Chuck a 1/4" Roman ogee bit into your table-mounted router. Then rout the profile shown on **Drawing 2b** along the ends and front edge. Finish-sand the cap and glue and clamp it to the top (B), flush with the back edges of the sides (A) and centered side-to-side.

**5** Retrieve the shelves (D) and rout a 1/4" Roman ogee profile along the top front edges, where shown on **Drawing 2**. Then cut the shelf rails (E) to size. Keeping the ends flush, glue and clamp the rails to the shelves, where shown on **Drawing 2c**. Now finish-sand the shelves.

## 2c SHELF DETAIL



## 2d COVE DETAIL



**6** Cut the stiles (F) to size. To rout the stopped chamfers, where shown on **Drawing 2**, see the sidebar, *below*.

**7** Glue and clamp the stiles (F) to the sides (A), keeping the outside edges flush. Check the distance between the stiles, and cut the rail (G) to size. Then glue and clamp the rail to the top (B). Finish-sand the stiles and rail.

**8** For the cove (H), cut a 3/4x2 1/2x36" blank and plane it to 1/2" thick. Chuck a 3/8" cove bit into your table-mounted router and rout one edge of the blank. Do not change the router-table setup. Then, using your tablesaw,

rip the 1/2"-thick cove from the edge of the blank. Set aside the rest of the blank for parts K and L. Check the distance between the stiles (F), and cut the cove to length. Finish-sand the cove and glue and clamp it to the front edge of the bottom (B) with the bottom edges flush, where shown on **Drawing 2d**.

**9** Cut the back (I) to size, finish-sand it, and set it aside.

## Now make the base

**1** From 1/2" birch plywood, cut the base panel (J) to size.

**2** Retrieve the 1/2"-thick blank left from making part H and rip two 1/2"-wide strips from it. Miter-cut one strip to length for the front cove (K) and glue and clamp it to the front of the base panel (J), where shown on **Drawing 3**. Cut the other strip in half for the side covers (L) and miter one end of each piece. Dry-fit the side covers and mark the lengths flush with the back edge of the base panel. Cut the covers to length and glue and clamp them in place. Sand the covers flush with the panel. Returning to the previous router-table setup, rout coves along the bottom ends and front edge of the panel/cove assembly (J/K/L).

**3** Cut the fillers (M) to size. Glue and clamp them to the base panel assembly

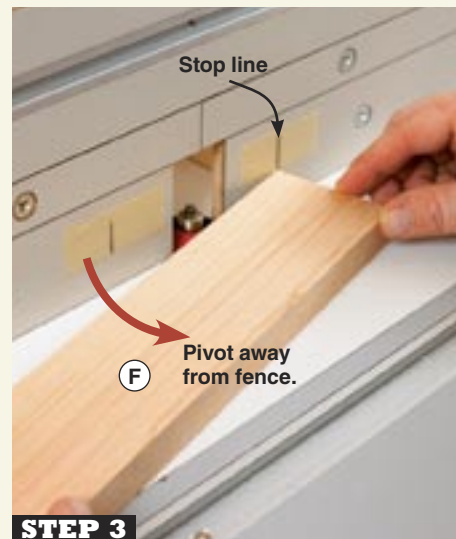
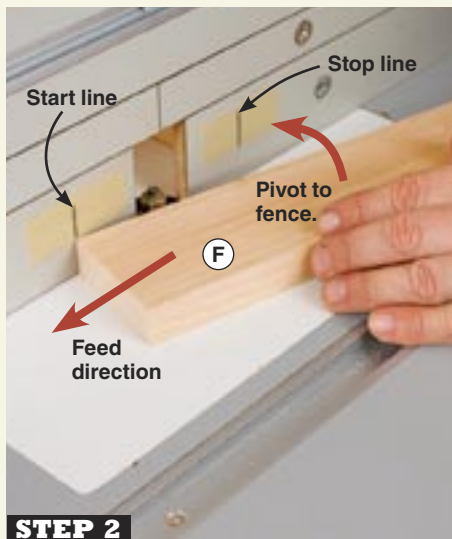
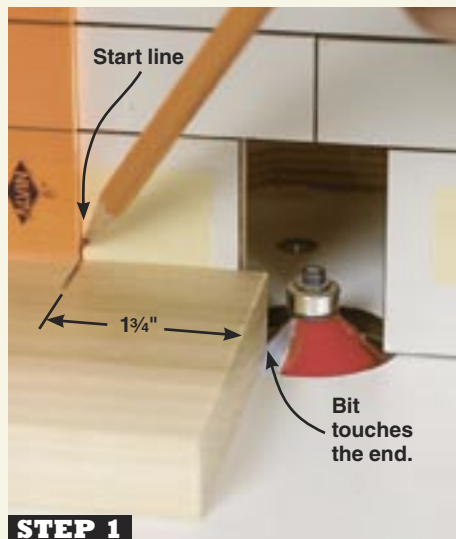
## Forming stopped chamfers on your router table

Using stopblocks clamped to a router-table fence to rout the stopped chamfers on the stiles (F) would require an auxiliary fence almost 8' long. Here's a way that uses your regular fence and no stopblocks at all.

With your table-mounted router unplugged, chuck in a chamfer bit and adjust it to rout a 1/4" chamfer. Then make a mark at the edge of a piece of scrap 1 3/4" from the end. Turning the bit by hand, position the scrap so the bit touches the end. Mark a start line on

the fence to the left of the bit, as shown in **Step 1**. Then repeat the process to mark a stop line to the right. Plug in the router.

With the router running, hold the stile (F) with one corner on the start line and angled away from the fence, as shown in **Step 2**. Pivot the stile against the fence and feed it to the left. Continue routing the stile until the trailing end aligns with the stop line. Holding the corner against the line, pivot the stile away from the fence, as shown in **Step 3**. Repeat on the other edge and other stile.

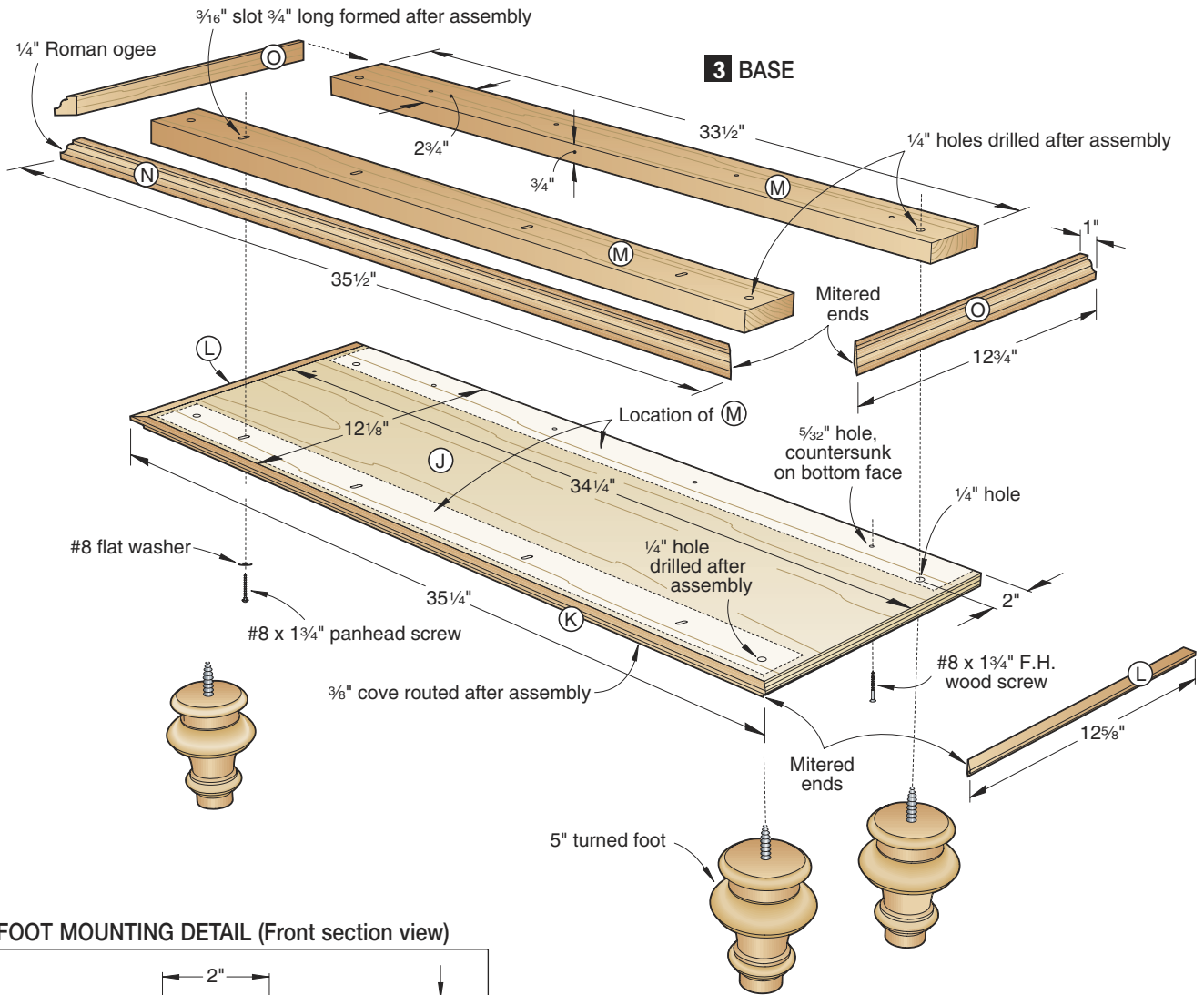


(J/K/L), centered side-to-side with the front spacer  $\frac{7}{8}$ " back from the front edge, where shown on **Drawing 3a**, and the rear spacer flush at the back.

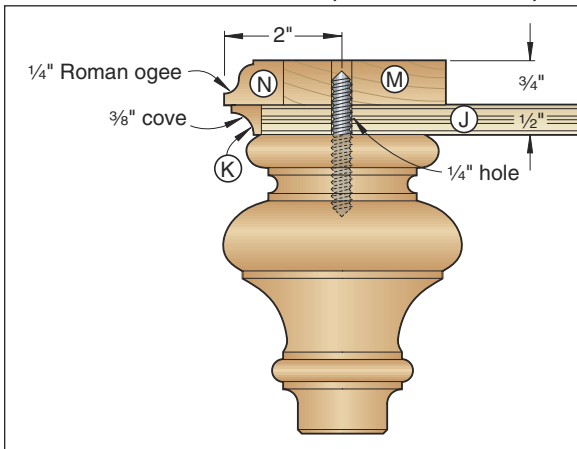
**4** Cut a  $\frac{3}{4} \times 2\frac{1}{2} \times 37$ " blank for the front ogee (N) and side ogees (O). Chuck a  $\frac{1}{4}$ " Roman ogee bit into your table-mounted router and adjust it to cut the profile shown on **Drawing 2b**. Rout both edges of the blank,

and then rip one 1"-wide ogee molding from each edge. Next miter-cut one piece to length for the front ogee and glue and clamp it in place. Now cut the other piece in half for the side ogees, and miter one end of each piece, making sure you have mirror-image parts. Dry-fit and trim them to length in the same manner as for the side covers (L). Glue and clamp the side ogees in place.

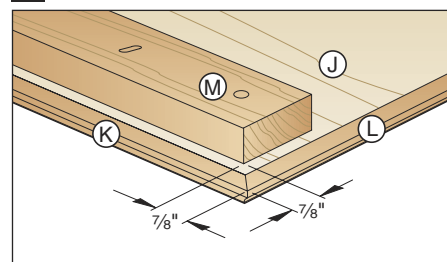
**5** Drill  $\frac{1}{4}$ " holes through the fillers (M) and base panel (J) for mounting the feet, where shown on **Drawings 3** and **3b**. (See **Source** on page 80 for the turned feet.) Then, for later mounting the base to the case, drill screw holes, countersunk on the bottom, through the rear filler and base panel, and form  $\frac{3}{16}$ " slots  $\frac{3}{4}$ " long in the front filler and base panel, where shown.



**3b** FOOT MOUNTING DETAIL (Front section view)



**3a** BASE FILLER DETAIL



## FOR EASY FINISHING, TAKE YOUR LEGS FOR A SPIN



**B** With the drill press running at 450 rpm, sand the feet with a progression of 120-, 150-, and 220-grit sandpaper.



**C** Turning the drill-press chuck by hand, apply stain with a brush. Then remove most of the excess stain with a paper towel.



**D** With the drill press running, use a paper towel to finish wiping the stain. Remove the feet from the chuck and set them aside to dry.

### On to the finish

**1** To stain the turned feet (we used Zar Modern Walnut), first wrap the protruding dowel screw with a couple of layers of masking tape. Then one at a time, chuck them into your drill press and follow the steps shown in **Photos B, C, and D**.

**2** Check all the parts and finish-sand any areas that need it. Apply stain and let the parts dry for 24 hours. Then apply a clear

finish. (We sprayed on three coats of water-based satin polyurethane, sanding between coats with 220-grit sandpaper.)

**3** Nail the back to the case with #16x $\frac{3}{4}$ " wire nails. Then lay the case, back down, on your workbench and clamp the base to it, flush at the back and centered side-to-side. Now using the screw holes and the centers of the slots in the base as guides, drill pilot holes into the bottom (B). Fasten the base to the case with #8x1 $\frac{3}{4}$ " flathead wood screws

at the back and #8x1 $\frac{3}{4}$ " panhead screws and #8 flat washers at the front, where shown on **Drawing 2**.

**4** Turning the feet by hand, screw them into the base. For help installing the feet, see the **Shop Tip below left**. Place your bookshelf against the wall, and move your library into an elegant new home. 🌳

Written by **Jan Svec**

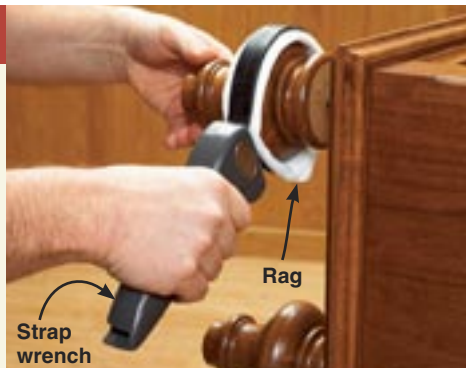
Project design: **Jeff Mertz**

Illustrations: **Roxanne LeMoine; Lorna Johnson**

## SHOP TIP

### No-mar installation solution

When screwing the feet into the base, getting a good grip and adequate leverage on them can be difficult. To solve both problems without marring the finish, wrap the feet with a rag and turn them with a strap wrench, as shown at *right*. We purchased a plastic-handled two-wrench set at a home center for \$10.



## Cutting Diagram



$\frac{3}{4}$  x 7 $\frac{1}{4}$  x 96" Cherry (5.3 bd. ft.) (2 needed)



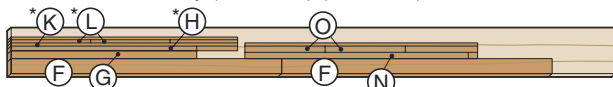
$\frac{3}{4}$  x 7 $\frac{1}{4}$  x 96" Cherry (5.3 bd. ft.) (2 needed)



$\frac{3}{4}$  x 7 $\frac{1}{4}$  x 96" Cherry (5.3 bd. ft.)



$\frac{3}{4}$  x 7 $\frac{1}{4}$  x 96" Cherry (5.3 bd. ft.) (2 needed)



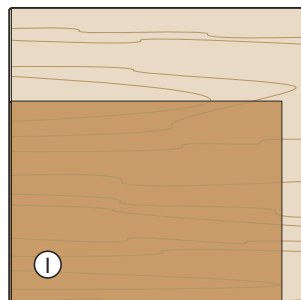
$\frac{3}{4}$  x 7 $\frac{1}{4}$  x 96" Cherry (5.3 bd. ft.)

\*Plane or resaw to the thickness listed in the Materials List.

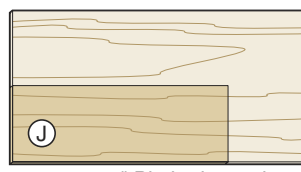


$\frac{3}{4}$  x 3 $\frac{1}{2}$  x 96" Cherry (2.7 bd. ft.)

80



$\frac{1}{4}$  x 48 x 48" Cherry plywood



$\frac{1}{2}$  x 24 x 48" Birch plywood

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## Materials List

Case	FINISHED SIZE			Matl.	Qty.
	T	W	L		
A* sides	$\frac{3}{4}$ "	11 $\frac{1}{4}$ "	43"	EC	2
B* top and bottom	$\frac{3}{4}$ "	11"	33 $\frac{1}{4}$ "	EC	2
C* cap	$\frac{3}{4}$ "	12 $\frac{3}{4}$ "	35 $\frac{1}{2}$ "	EC	1
D* shelves	$\frac{3}{4}$ "	10 $\frac{7}{8}$ "	32 $\frac{3}{8}$ "	EC	2
E shelf rails	$\frac{3}{4}$ "	$\frac{1}{2}$ "	32 $\frac{3}{8}$ "	C	2
F stiles	$\frac{3}{4}$ "	2 $\frac{1}{2}$ "	43"	C	2
G rail	$\frac{3}{4}$ "	1 $\frac{1}{4}$ "	29"	C	1
H* cove	$\frac{1}{2}$ "	$\frac{3}{4}$ "	29"	C	1
I back	$\frac{1}{4}$ "	33 $\frac{1}{4}$ "	43"	CP	1

### Base

J base panel	$\frac{1}{2}$ "	12 $\frac{1}{8}$ "	34 $\frac{1}{4}$ "	BP	1
K* front cove	$\frac{1}{2}$ "	$\frac{1}{2}$ "	35 $\frac{1}{4}$ "	C	1
L* side covets	$\frac{1}{2}$ "	$\frac{1}{2}$ "	12 $\frac{5}{8}$ "	C	2
M fillers	$\frac{3}{4}$ "	2 $\frac{3}{4}$ "	33 $\frac{1}{2}$ "	C	2
N* front ogee	$\frac{3}{4}$ "	1"	35 $\frac{1}{2}$ "	C	1
O* side ogees	$\frac{3}{4}$ "	1"	12 $\frac{3}{4}$ "	C	2

\*Parts initially cut oversize. See the instructions.

**Materials key:** EC—edge-jointed cherry, C—cherry, CP—cherry plywood, BP—birch plywood.

**Supplies:** #8x1 $\frac{3}{4}$ ", #8x2" flathead wood screws; #8x1 $\frac{3}{4}$ " panhead screws; #8 flat washers; #16x $\frac{3}{4}$ " wire nails;  $\frac{1}{4}$ " shelf supports.

**Blade and bits:** Stack dado set;  $\frac{1}{4}$ " brad-point drill bit; chamfer,  $\frac{3}{8}$ " cove,  $\frac{1}{4}$ " Roman ogee router bits.

### Sources

**Feet.** 5" cherry feet with dowel screws, no. AO556-DS-5 (4). Adams Wood Products. For a current price and to order, call 423/587-2942.

# 4 easy bookcase options

A few simple changes will give your project a whole new look.

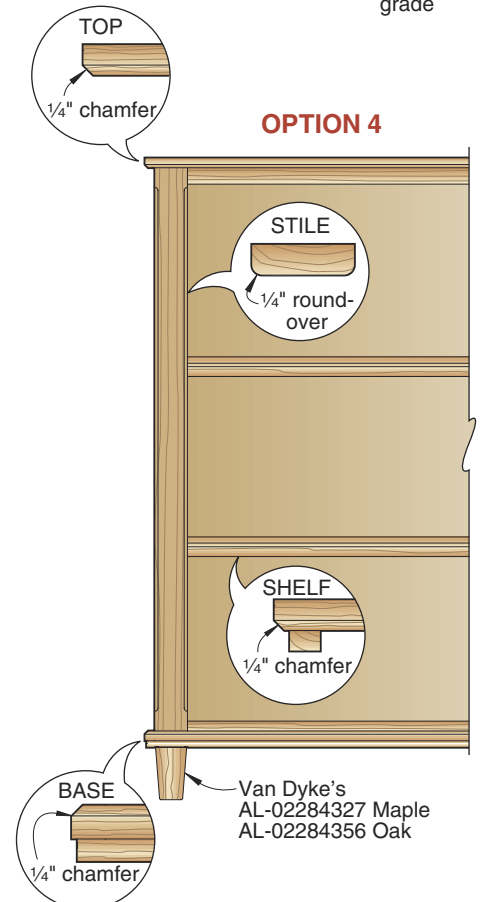
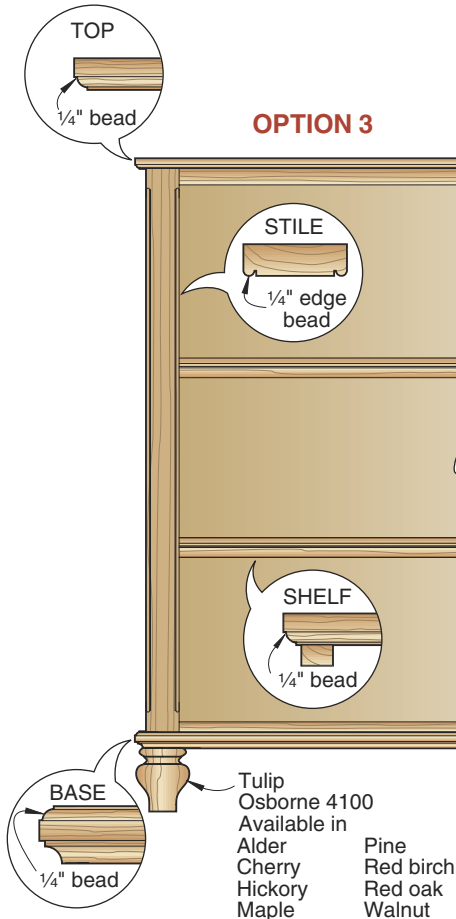
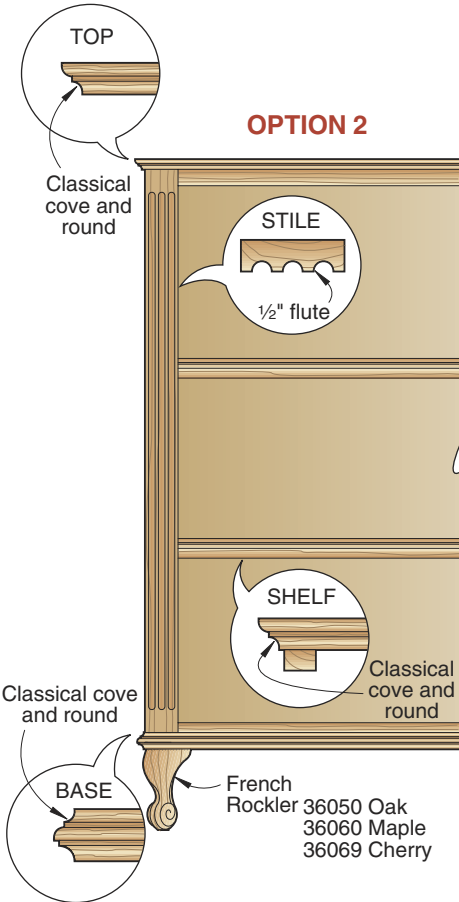
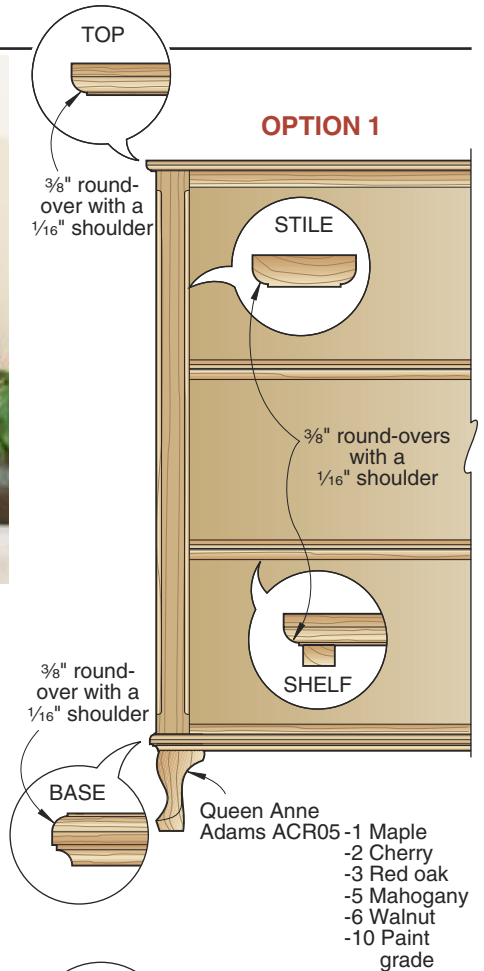


It's amazing how you can completely alter the appearance of a project without changing dimensions or construction methods. We drew up different combinations of stile treatments, routed edges, and foot profiles for the bookcase on page 76, and came up with the new looks shown here. Changing some of these features amounts to little more than choosing a different router bit. And with ready-made legs, like the ones shown, you have lots of options. The ideas

pictured here show only a few possibilities. For more foot profiles, as well as a wide range of other manufactured wood parts, see below. 🌲

**Sources for more foot styles**

- Adams Wood Products: Call 423/587-2942, or go to [adamswoodproducts.com](http://adamswoodproducts.com).
- Osborne Wood Products: Call 800/849-8876, or go to [osbornewood.com](http://osbornewood.com).
- Rockler: Call 800/279-4441, or go to [rockler.com](http://rockler.com).
- Van Dyke's Restorers: Call 800/558-1234, or go to [vandykes.com](http://vandykes.com).



# quick and easy jig straight-tracking crosscut sled

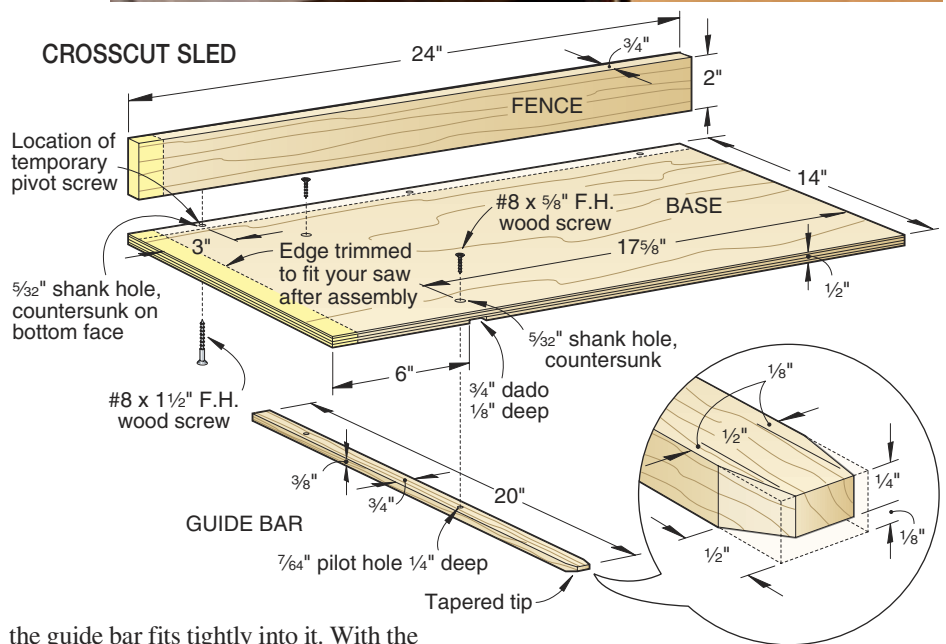
For cutting long or wide stock on your tablesaw, this simple jig is like having another pair of hands.



**W**ith a long, wide base securely anchored to a 20"-long miter-gauge slot guide bar, this crosscut sled provides a lot more workpiece support than a standard miter gauge. And it's so inexpensive and easy to build that every table saw should have one. Here's how to make yours.

Start with the guide bar. To make it, joint one edge of a  $\frac{3}{4}$ "-thick board 24" long, and then rip a  $\frac{13}{16}$ "-wide strip from it. (We used maple.) Adjusting your planer to just shave the surface, reduce the  $\frac{13}{16}$ " width in multiple passes until the piece slides in your table saw miter-gauge slot without play. Now rotate the piece 90° and plane the original  $\frac{3}{4}$ " thickness to  $\frac{3}{8}$ ". Trim the guide bar to 20" long, and sand tapers on the front end, where shown on the drawing at right.

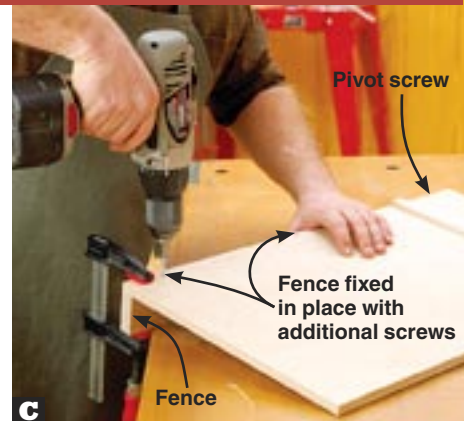
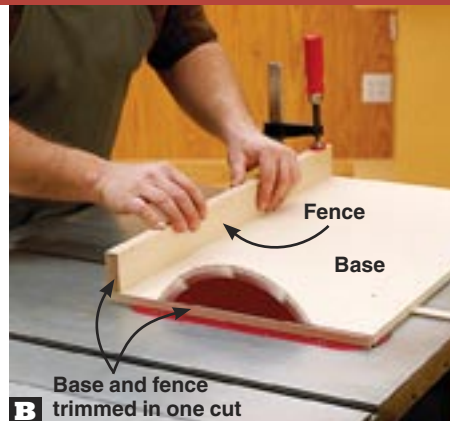
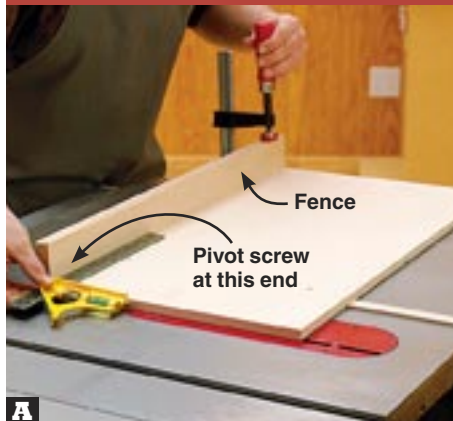
From  $\frac{1}{2}$ " plywood or medium-density fiberboard, cut the 14x24" base. With a  $\frac{1}{8}$ " dado blade, cut a  $\frac{1}{8}$ "-deep dado in the base, 6" from one end. Then moving the rip fence in small increments, widen the dado until



the guide bar fits tightly into it. With the back end of the guide bar and base flush, drill countersunk screw holes and fasten the guide bar into place.

continued on page 98

## THREE STEPS TO PERFECT 90° CROSSCUTS



# quick and easy jig

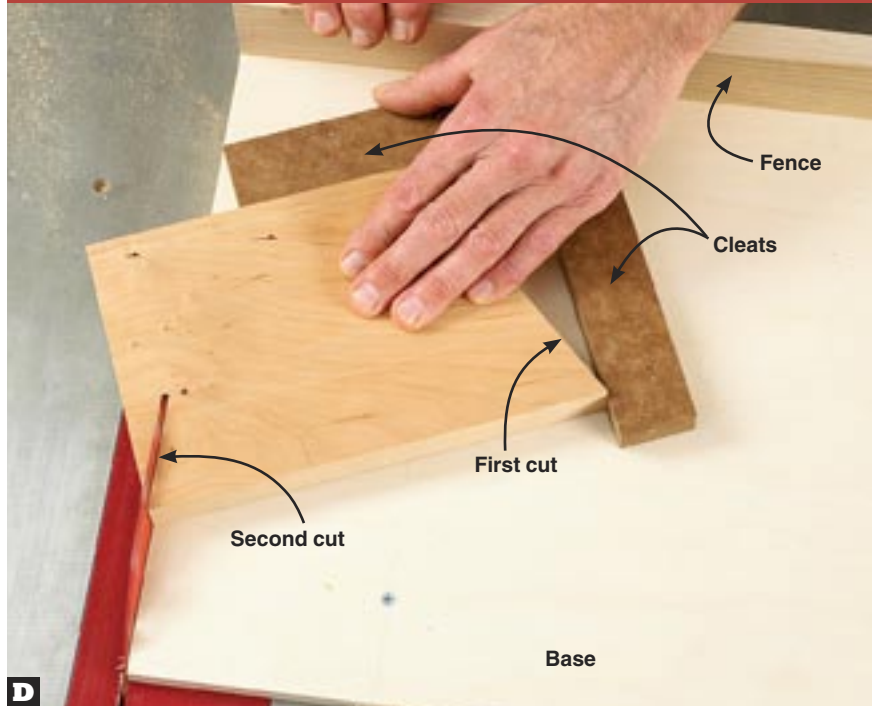
Cut the 3/4x2x24" fence (any piece of straight and flat stock will do). Clamp it to the base, flush with the ends and back edge. From the bottom, drill a countersunk screw hole for the temporary pivot screw, where shown on the drawing on page 96, and drive the screw. Then follow the three steps shown in Photos A, B, and C to square the fence to the blade. Now finish-sand the jig and protect it with two coats of finish.

## Using the crosscut sled

The jig easily handles unwieldy parts, such as the 11 1/4"-wide by 43"-long sides of the bookshelf on page 76. To use the sled, simply hold the workpiece down on the base and tight against the fence, as shown in the top photo on page 96. Because you trimmed the jig flush with the blade, you can align your cutline with the end of the base. The wide base and extra-long guide bar allow you to start a cut with the fence well off the front edge of the table without sacrificing workpiece support or a square cut. For cutting several pieces shorter than the sled to the same length, clamp a stopblock to the fence where needed. You also can fasten cleats to the base to position hard-to-hold parts for angled cuts, as shown in Photo D.

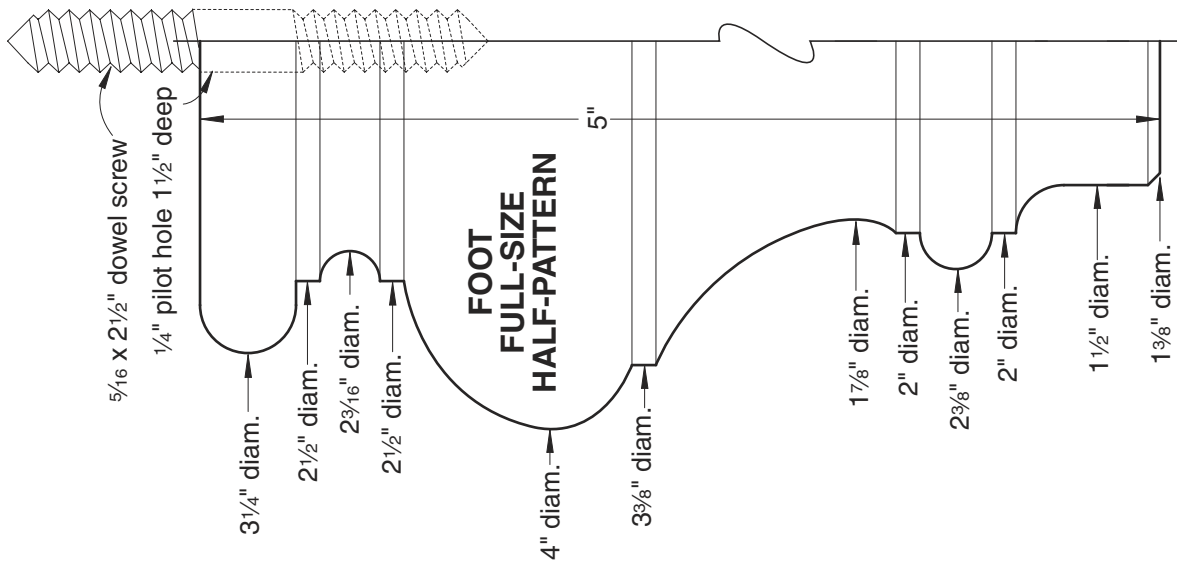
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### DIFFICULT CUTS MADE EASY

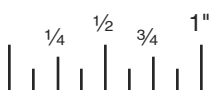


To position parts for angled cuts, fasten cleats to the base with cloth-backed double-faced tape or drive flathead woodscrews from the bottom.

## FULL-SIZE PATTERN



To ensure full-size patterns are correct size, your printer should be set to print at 100% (not fit to page). Measure full-size patterns to verify size.



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