

Plantation Shutters

Make them yourself for a fraction of the cost



Plantation shutters are an attractive, popular and expensive window treatment. We show you how to make them more affordable.

Plantation shutters have long been admired for their beauty and mechanical elegance. Although the name reflects their association with the South, these high-end window treatments have been used around the world for hundreds of years. Their characteristic wide louvers — at least 2 in. — provide maximum light protection and airflow control. But this level of quality comes at a steep price, often as much as \$300 to cover one double-hung window.

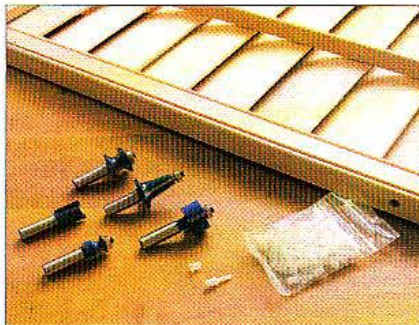
When we heard about a new router bit set (see SOURCES) designed to help DIYers build shutters for as little as a quarter of the cost of manufactured ones, we had to give it a try. Wayne Sutter of Woodline USA visited our shop to demonstrate how the system worked, and he built these bifold shutters in one day.

Although the machining techniques involved in building the shutters are not difficult, planning is critical. Because

each shutter is designed and built to fit a specific window size, you must take the time to determine exact measurements and dimensions of the parts. And each installation will pose challenges that may require design modifications.

Determine style and size

Because the wall space on one side of our window was limited, we built bifold shutters. The dimensions in the Cutting List (p. 12) are for building one set of



Woodline's shutter kit includes five router bits and a packet of 50 louver pins and four tension bushings.

bifold shutters and frames with an overall size of 50-3/8 x 63-3/8-in.

Determining the size of the shutters for your situation is the most important step in the process. Start by deciding whether you want the shutters to cover the entire window and casing, to attach to the casing or to fit inside the casing. We mounted our shutters over the existing casing. This way we could leave some of the casing exposed to tie in with the rest of the trim in the room.

If you want to leave the full casing exposed, you can remove the existing casing, install the shutters and then replace the casing around the shutters. Or, if the window is set inside the opening at least 2 in., you can mount the shutters inside the window frame.

Another consideration when determining shutter size is the location of the wall framing. Whenever possible, the side frame pieces should be mounted to existing wall framing to ensure that they'll be securely anchored.

Measure and record the dimensions of the total area the shutter panels and shutter frames will cover. Then use the equations in "Sizing Your Shutters," (p. 15) to determine the dimensions of individual parts.

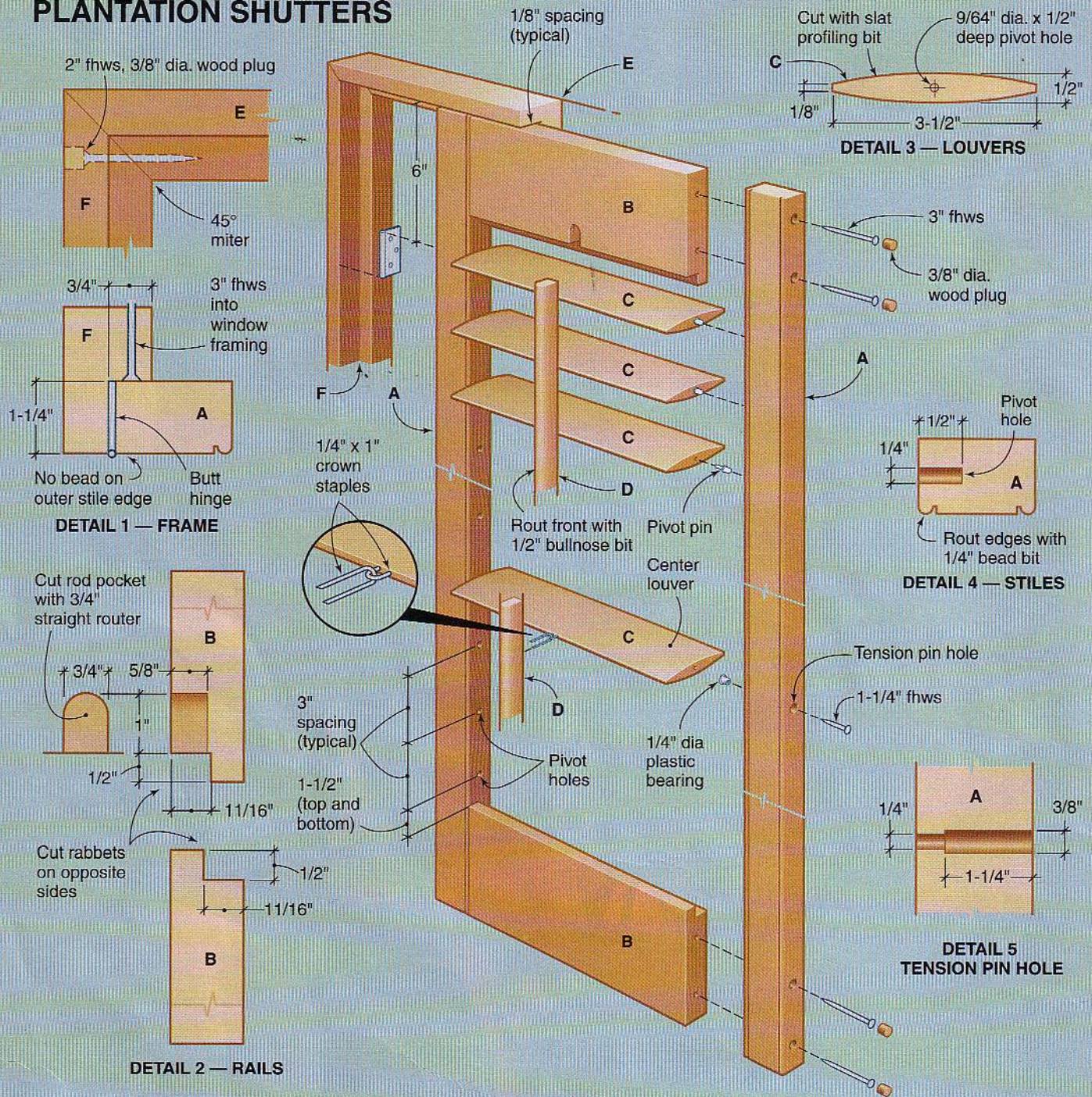
Make the panel parts

The panels are identical, so plan to machine and assemble all of the parts for each panel at the same time.

Begin by cutting the rails and stiles to size. Using the 1/4-in. bead bit, rout the vertical edges of each stile. Then bore 1/4-in.-dia. x 1/2-in.-deep holes for the louver pins centered along the inside edge of each stile (photo 1, p. 13). Locate the first hole 1-1/2 in. from the inside edge of the rail. The remaining holes must be spaced exactly 3 in. apart to ensure smooth shutter operation.

The louvers are held open by the

PLANTATION SHUTTERS



MATERIALS AND CUTTING LIST *All wood is furniture grade

The following dimensions are for one set of 50-3/8-in. x 63-3/8-in. bifold shutters.

One panel (build four)

KEY NO.	DESCRIPTION	SIZE
A ...2	Stiles	1-1/4 x 2 x 48-3/4 in.
B ...2	Rails	1-1/4 x 5 x 12-3/16 in.
C ...13	Louvers	1/2 x 3-1/2 x 12-1/8 in.
D ...1	Control rod	1/2 x 1 x 38-1/2 in.

Frame

E ...2	Frame top/bottom	1-1/2 x 2 x 64-7/8 in.
F ...2	Frame sides	1-1/2 x 2 x 52 in.

SHOPPING LIST

Four Panels

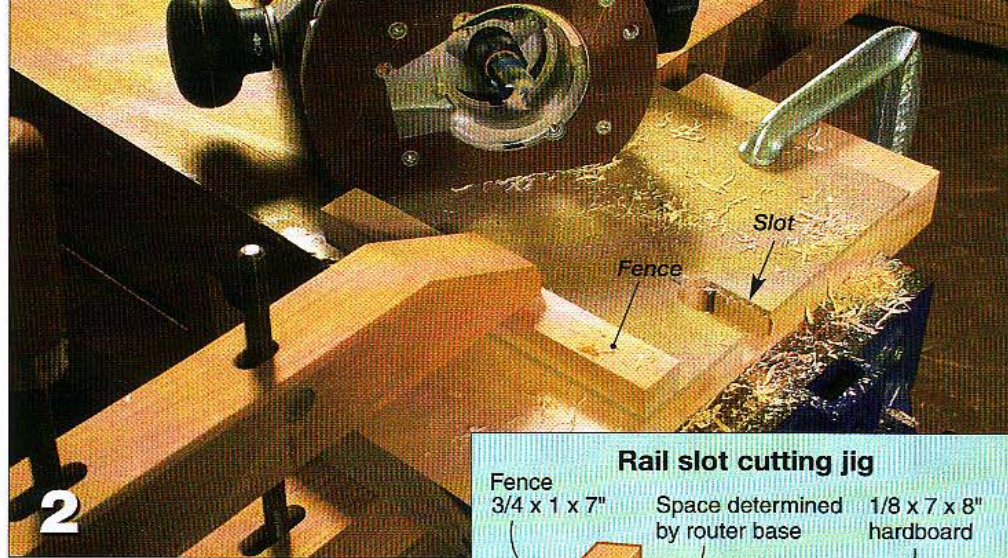
- 65 lineal ft. 1 x 4
- 45 lineal ft. 2 x 4
- 10 lineal ft. 2 x 4
- 3/8-in. hole plugs
- 1/4-in. x 1-in. crown staples
- 2-in. screws
- 3-in. screws
- (8) 1-3/4 x 2-1/2-in. butt hinges (Stanley 81-9101)
- (4) Magnetic door catches
- Woodline Plantation Shutter Router Bit Set (WL 2055; see SOURCES)
- Woodline Shutter Louver Pin Kit (WL 2055-1)

ILLUSTRATIONS BY GABRIEL GRAPHICS



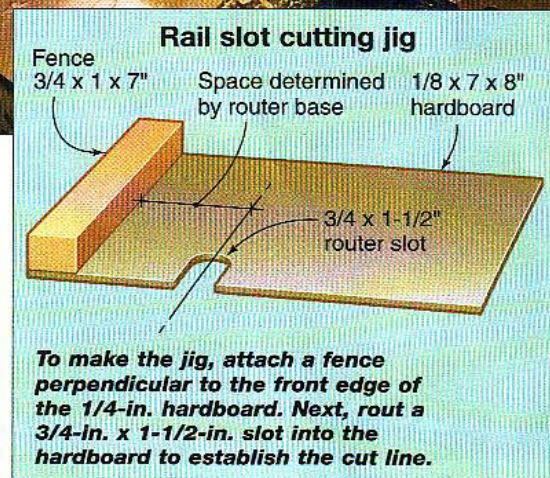
1

A laser pointer mounted to the drill press is indexed to the hole positions in the stile for the pivot pins.

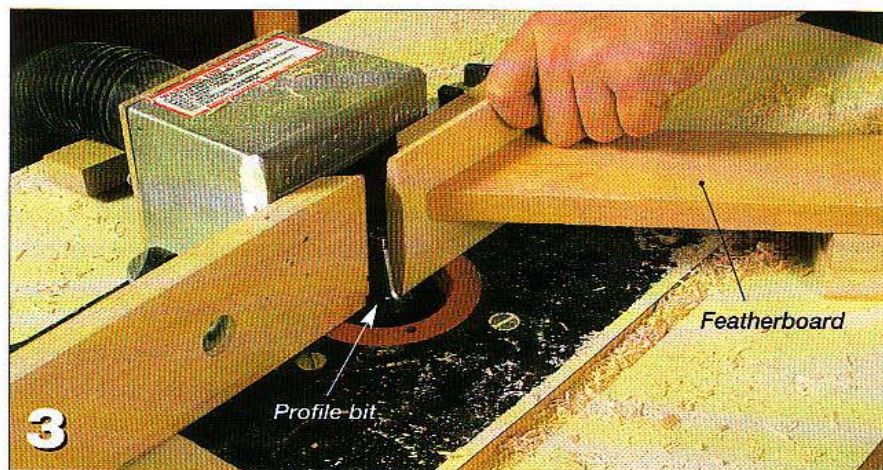


2

To cut the rod pocket, rout a 5/8-in.-deep x 1-1/2-in.-long slot centered in the bottom front face of the top rail.



To make the jig, attach a fence perpendicular to the front edge of the 1/4-in. hardboard. Next, rout a 3/4-in. x 1-1/2-in. slot into the hardboard to establish the cut line.



Rout the curved ranch profile on all four edges of each louver. Use a featherboard to hold the stock against the router table's fence.

tension created by a screw driven through the outside edge of the stile and into one of the middle louvers. The screw runs through a 1/4-in.-dia. plastic bearing called a tension bearing, which is seated in the stile.

Create the tension screw hole by drilling through one of the middle pin holes already in the stile with a 1/4-in. bit. Then, drilling from the outside edge of the stile, enlarge the 1/4-in. hole to 3/8 in. dia. x 1-1/2 in. deep. This creates a countersink for the head of the tension screw (see drawing, opposite, detail 5).

Next, cut the rails to size. When the louvers are closed, the control rod fits into a clearance slot in the top rail. Rout the slot using the 3/4-in. straight bit and a simple straightedge jig (photo 2 and drawing). Complete the rails, using the 3/8-in. router bit to cut a 3/8-

in.-wide x 11/16-in.-deep rabbet along the bottom front edge of the top rail and along the top back edge of the bottom rail.

The louvers are sized to fit between the stiles, leaving 1/32-in. clearance on each side. Plane the louver stock to 1/2 in. thick and cut it to size. The louvers are tapered so they're thicker in the center and thinner along the edges. Create the taper using the slat-profiling bit with the router table (photo 3). If you're using hardwood, make these cuts in two or three passes to limit chipping and chatter.

Next, drill 9/64-in.-dia. x 1/2-in.-deep louver pin holes in the ends of each louver (photo 4 and drawing).

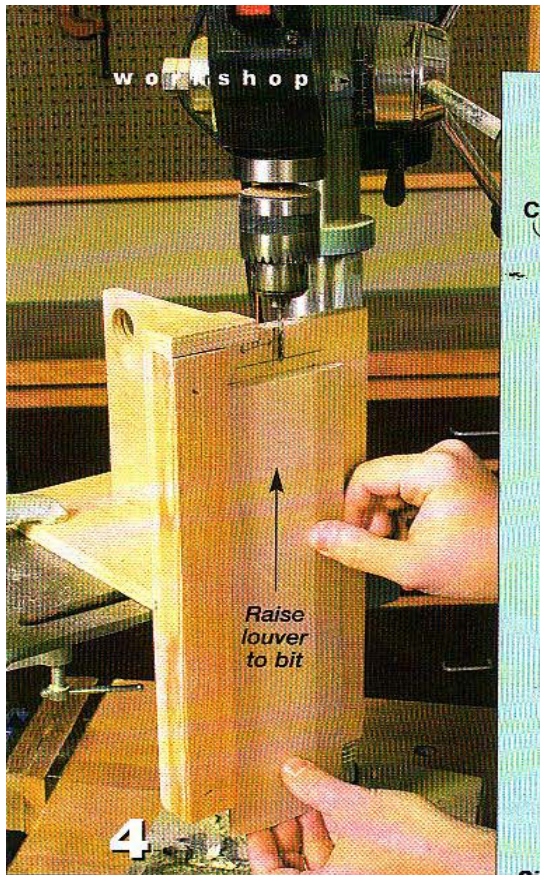
The final part to make for each panel is the control rod. Cut the control rod to size, and use the 1/2-in. bullnose bit to round over the front face edges.

Assemble the louvers

Each louver is connected to the control rod with a pair of 1-in.-long crown staples. The staples interlock, with one staple in the edge of the louver and the other staple in the control rod. To accomplish this tricky connection, build two stapling jigs to accommodate your crown stapler. The jigs we built work with a Senco FinishPro 2N1.

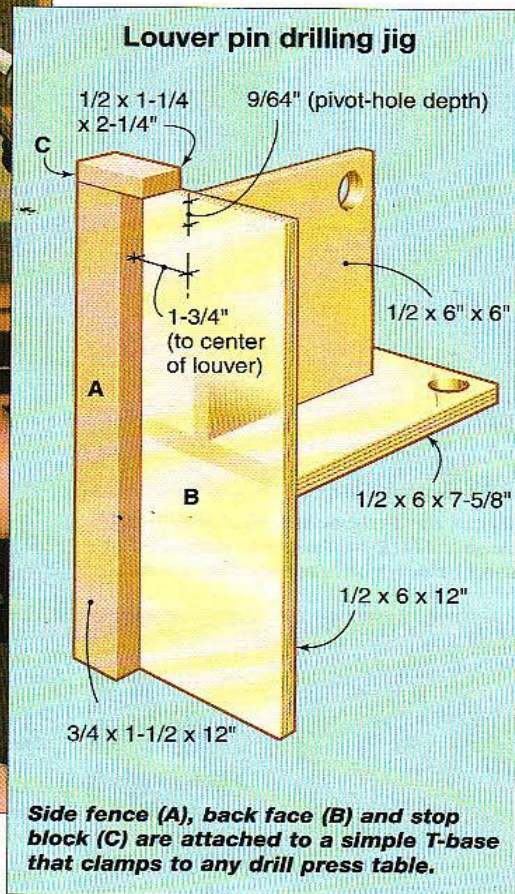
The louver stapling jig (photo 5 and drawing) is designed to position the staple along the edge of the louver and leave approximately 1/4 in. of the staple exposed. Test the jig on some scrap louver stock to adjust staple placement and depth. After driving a staple into each louver, line up the louvers and make sure all of the staples are at the same height (photo 6).

The control rod stapling jig (photo 7 and drawing) is designed to position the control rod and louvers so that the second staple is centered on the control rod edge and overlaps the existing louver staple. Again, it's best to test the positioning on scrap pieces first. Drive staples into the control rod at 3-in. intervals beginning 1 in. from one end of the control rod.



4

Center the bit on the end of the louver. Raise each louver up to the drill bit.



Side fence (A), back face (B) and stop block (C) are attached to a simple T-base that clamps to any drill press table.

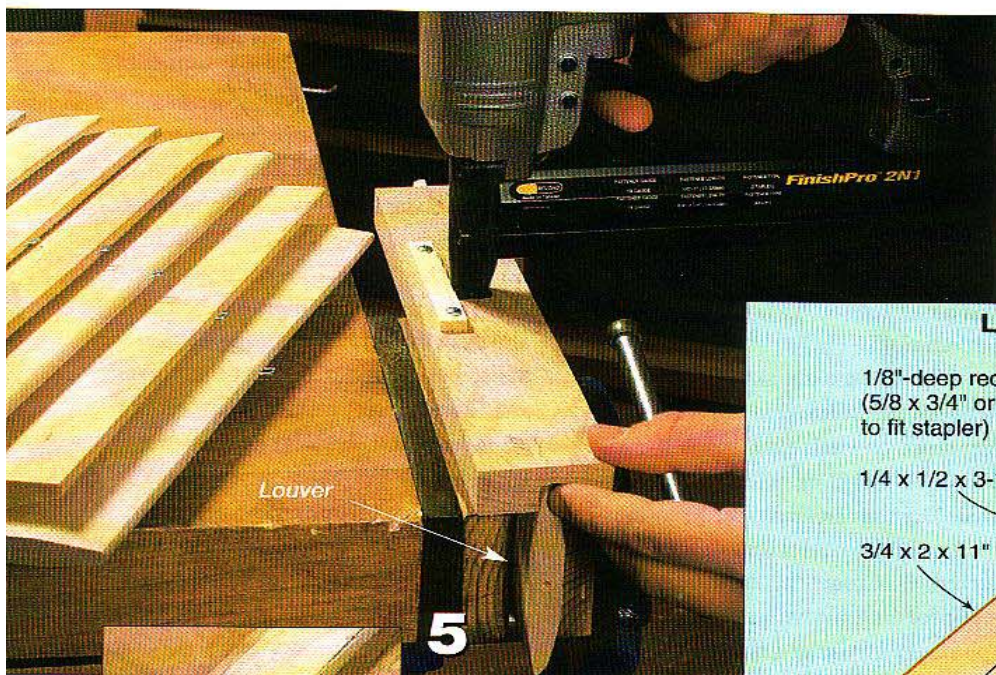
Assemble the panels

Secure the rails to one of the stiles with two countersunk 2-1/2-in. screws. Insert a louver pin in each louver hole except for the one that lines up with the tension pin hole in the stile. Fit the louver pins into the stile that is attached to the rails (photo 8, p. 16). After installing one side of the louvers, position the second stile and repeat the process. When you have inserted all of the louver pins, clamp the stiles and rails together and secure them with countersunk 2-1/2-in. screws (photo 9). Plug the countersink holes with 3/8-in. plugs. Then install the tension screw and tighten it to the desired resistance (photo 10).

If you are building single-panel shutters, at this point you are ready to build the frame and install the shutters. But for bifold shutters, you must first connect each pair of shutters with two butt hinges. Position the hinges 6 in. from the top and bottom edges of the shutters.

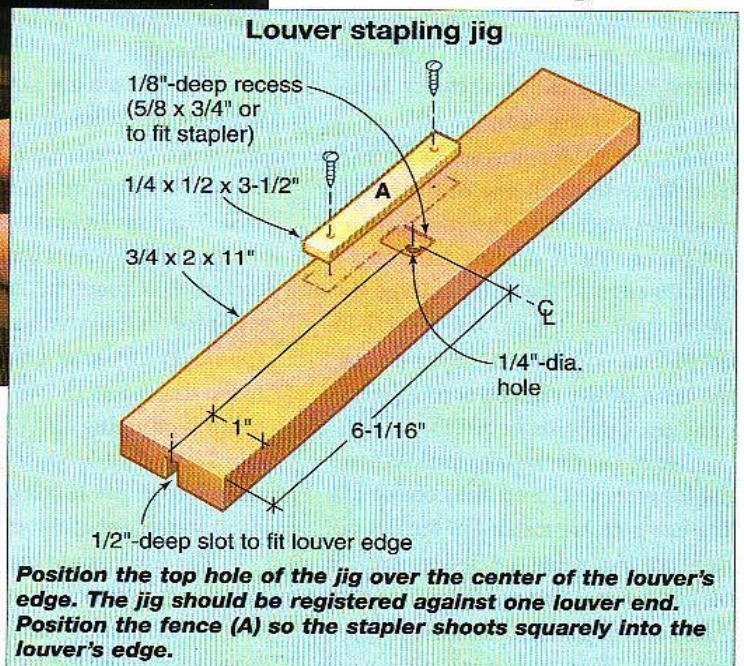
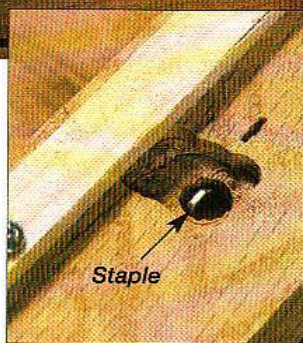
Build the frame

The shutters hang on a frame that is mounted directly to the wall (or through the window casing and into the wall). The frame is similar to the back side of a picture frame. It features mitered corners and a 3/4-in.-wide x 1-1/4-in.-deep rabbet cut around the inside edge. The shut-



5

Hold the jig flush with the side of the louver and drive a 1-in.-long crown staple into one edge of each louver.



Position the top hole of the jig over the center of the louver's edge. The jig should be registered against one louver end. Position the fence (A) so the stapler shoots squarely into the louver's edge.



6 All staples should protrude out of the louver about 1/4 in. Tap down high staples with a tack hammer.

ters hang on hinges and fit into the rabbet opening.

Unless you are making large shutters, it is easiest to build the frames on a flat surface and then attach them to the wall. This helps ensure proper shutter operation.

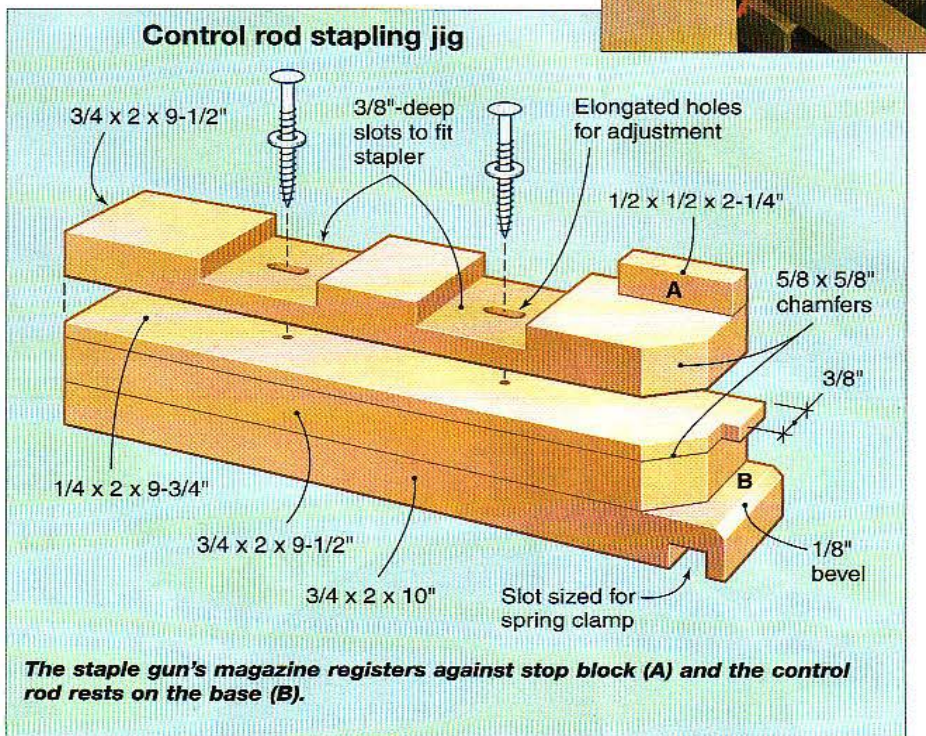
Position the frame pieces on a flat surface. Attach hinges to the outside edges of the shutters and position them inside the frame. Insert strips of 1/8-in. hardboard to maintain the gaps between and around the shutters. Check that the frame is square, and countersink 2-in. screws through the miters.

Before removing the shutters or moving the frame, mark the hinge positions. Carefully remove the shutters, and tack scraps diagonally across the frame to keep it square. Position the frame over the window, and drive 3-in. screws through the frame rabbets (photo 11). Hang the shutters by attaching the hinges to the frame.

If the shutters rub or are too tight,



7 Secure the control rod to the jig with a spring clamp. Place each louver at an angle against the jig and over the control rod. Drive a staple into the control rod so that it couples with the existing louver staple (see inset).



SIZING YOUR SHUTTERS

The following equations will provide the dimensions necessary for building bifold shutters with 3-1/2-in. louvers.

1. Determine the overall height and width to be covered by the shutters:

When installing shutters with a mounting frame, measure the height and width of the entire area to be covered and subtract 1-1/2 in. from each. (This accounts for the extra width added by the frame.) For shutters without the mounting frame (inside mount), measure the inside window frame height and width.

2. Determine the panel dimensions:

Panel height = Total shutter opening height - 1/4 in.

Panel width = (Total shutter width ÷ number of shutters) - 3/16 in.

3. Determine the number of louvers:

(Panel height in inches - 10) ÷ 3
Round up to the nearest whole number.

4. Determine the panel part dimensions:

Stiles:

Thickness = 1-1/4 in.

Width = 2 in.

Length = Panel height

Rails:

Thickness = 1-1/4 in.

Width = Panel height - (Number of louvers x 3) ÷ 2

Length = Panel width - 4 in.

Louvers:

Thickness = 1/2 in.

Width = 3-1/2 in.

Length = Rail length - 1/16 in.

Control rod:

Thickness = 1/2 in.

Width = 1 in.

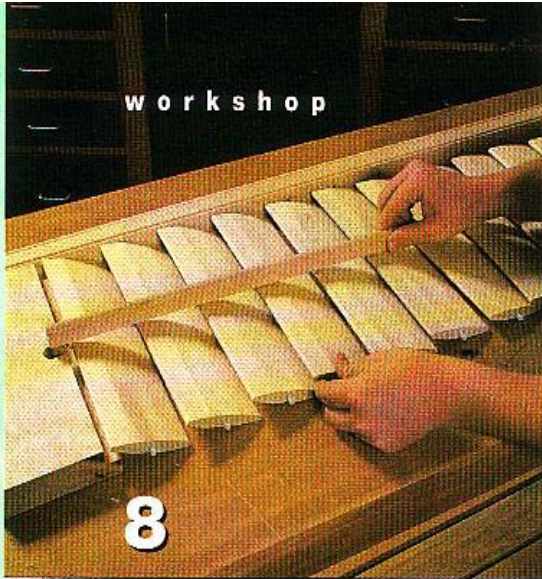
Approximate length = Stile length - (Rail width x 2) - 1/4 in.

Mounting frame:

Thickness = 2-1/2 in.

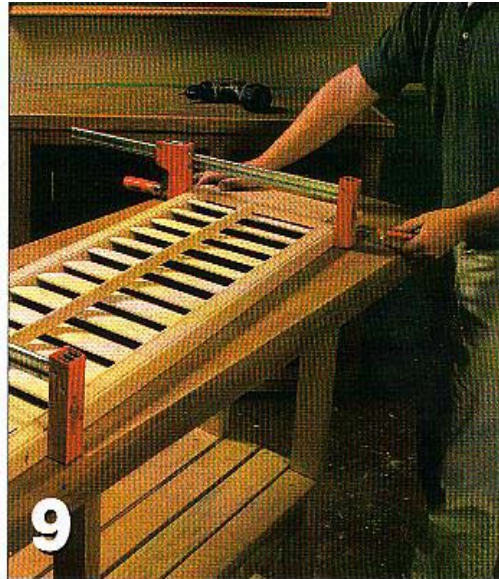
Width = 1-1/4 in.

Length = Total opening dimensions



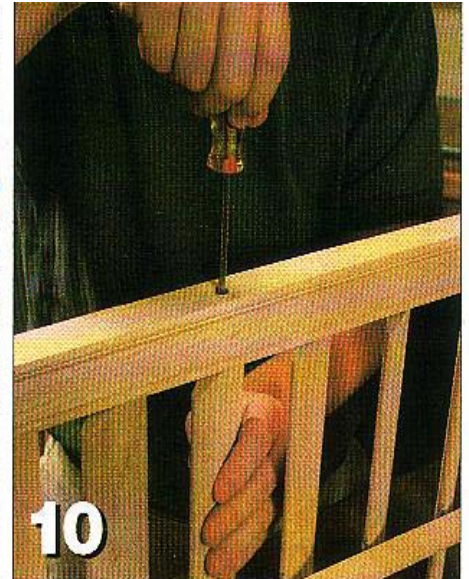
8

Slip the louver pins into the first stile, working from one end to the other. Lift up the louvers slightly with the control rod to help align them.



9

After aligning all louver pins, drive two screws through each stile and into the rails. Be sure the panel is square before securing.



10

Drive a 1-1/4-in. screw through the tension screw hole (see drawing) and into the tension bushing and louver.



11 Mount the frame with 3-in. screws driven through the frame and into the wall framing.

remove them and trim an equal amount from both shutters. Finally, install magnetic catches to keep the shutters closed.

SOURCES ONLINE

For more information, go to www.handymanclub.com and click on SOURCES ONLINE.

Woodline USA; 800-472-6950

Members who order the Plantation Shutter Router Bit Set (WL 2055, \$99) will receive a free louver pin kit (WL 2055-1) and free shipping.