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Bill Krier  
Editor  
WOOD® magazine

### **Adobe Acrobat Troubleshooting Guide**

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accurate-alignment  
**biscuit-joiner jig**

**Mount your biscuit joiner to this handy jig, and step up to a new level of convenience and precision when cutting slots in  $\frac{3}{4}$ " material.**

## 4 SITUATIONS WHERE THIS JIG UPS YOUR ACCURACY

### EDGE-TO-EDGE JOINT



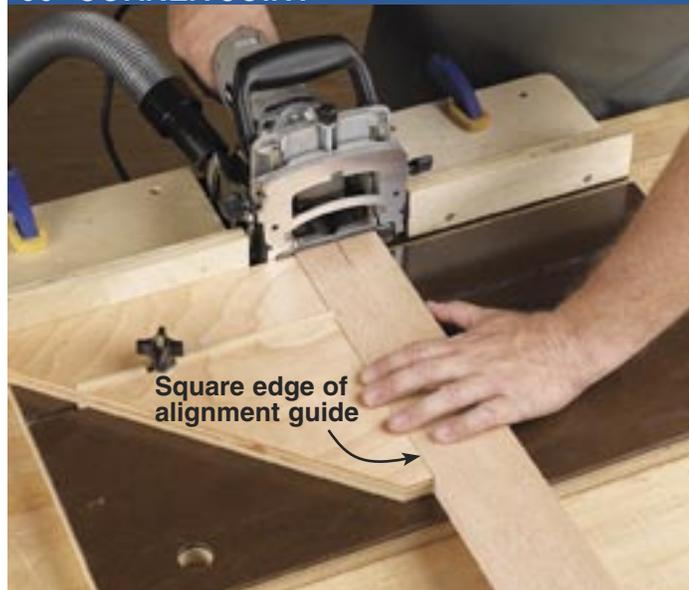
With the jig clamped to your workbench, position the workpiece against the fixed fences. Align the marks, and cut the slot.

### BEVELED-EDGE JOINT



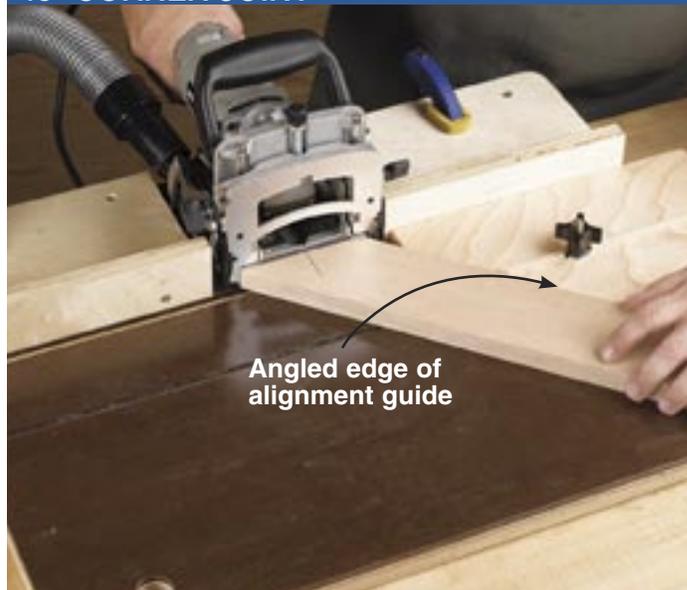
Hold the part against the fixed fences with the beveled edge in the  $\frac{3}{8} \times \frac{3}{8}$ " groove. This offsets the slot toward the inside face.

### 90° CORNER JOINT



For a 90° joint, place the workpiece against the square edge of the 90°/45° alignment guide. Position the guide to align the cut.

### 45° CORNER JOINT



To cut a slot in a 45° mitered end, position the workpiece against the angled edge of the guide. Flip the guide to cut the other end.

## NOW BUILD ONE FOR YOUR SHOP

For the board feet of lumber and other items needed to build this project, see page 7.

### Start with the base

**1** From  $\frac{3}{4}$ " plywood, cut the base (A) to the finished size of  $18 \times 23\frac{3}{4}$ ". From  $\frac{1}{4}$ " tempered hardboard, cut the top (B) to  $18\frac{1}{4} \times 24$ ".

**2** Using a dado blade in your tablesaw, cut a  $\frac{5}{8}$ " groove  $\frac{1}{8}$ " deep in the top of the base, where shown on **Drawing 1** and dimensioned on **Drawing 2**.

**3** Using scrap  $\frac{3}{4}$ " plywood for a platen, cauls, and spacers, as shown in **Photo A**, adhere the oversize top (B) to the base (A) with yellow woodworking glue. Center the top with an equal overhang on all edges.

After the glue dries, trim the top flush with the base using a flush-trim bit in your router.

**4** Refit your tablesaw with a  $\frac{1}{4}$ " dado blade. Then cut a  $\frac{1}{4}$ "-deep groove in the top (B) centered over the  $\frac{5}{8}$ " groove in the base (A), where dimensioned on **Drawing 2**. (This forms a T-slot for the alignment-guide toilet bolt, where shown on **Drawing 1**.) Now change to a  $\frac{3}{8}$ " dado blade, and cut a  $\frac{3}{8}$ "-deep groove in the base/top, where dimensioned on **Drawing 2**. (This groove holds parts in position when plunging slots in beveled edges.)

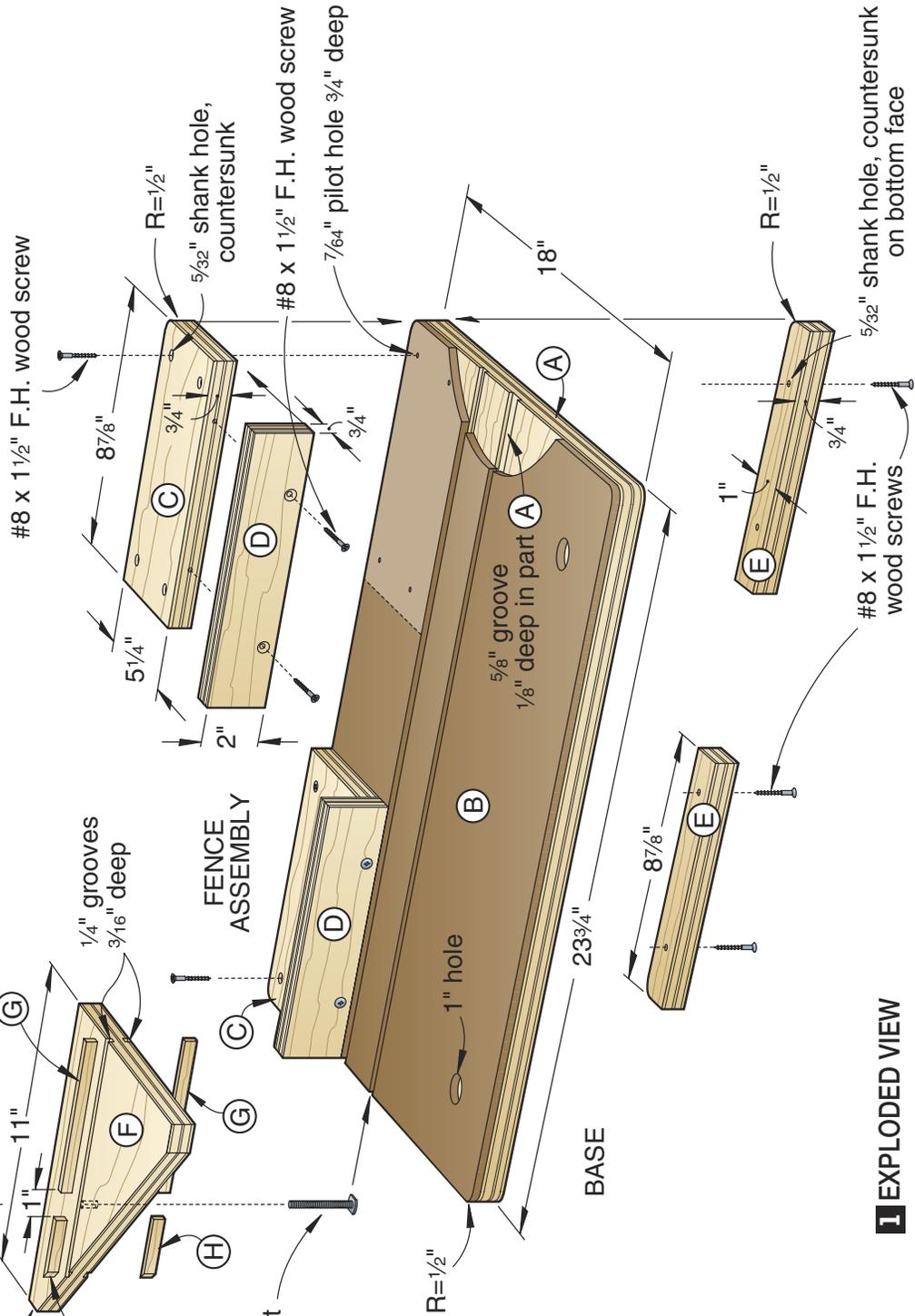
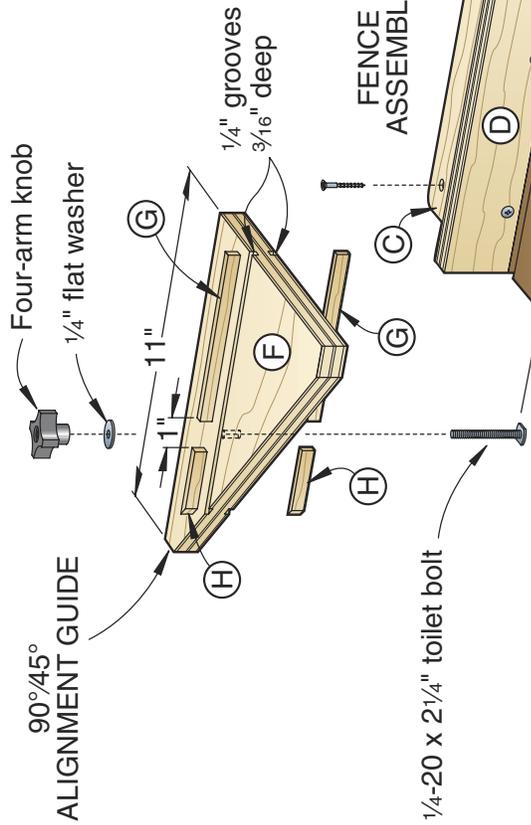
**5** From  $\frac{3}{4}$ " plywood, cut the brackets (C), fences (D), and cleats (E) to the sizes listed in the **Materials List**. Position the fences against the brackets, where

shown, with the ends and bottoms flush. Drill mounting holes, and drive the screws.

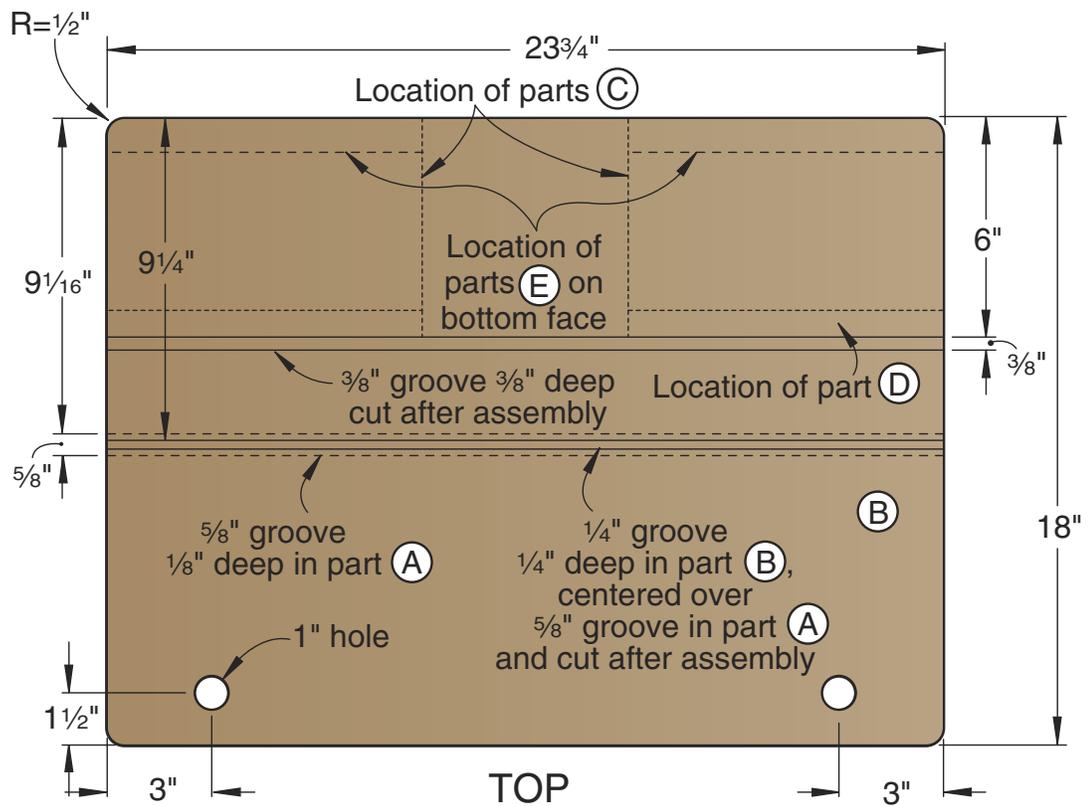
**6** Clamp the fence assemblies (C/D) in position on the base/top (A/B), where shown on **Drawings 1** and **2**, with the front face of the fences flush with the back edge of the  $\frac{3}{8}$ " groove. To keep the fences aligned, clamp a scrap piece of  $\frac{3}{4}$ " plywood as a straightedge to the front of the fences. Check that your biscuit joiner fits in the opening between the fences with the biscuit-joiner fence flush against the straightedge. If your joiner has a dust-collection port, make sure you have sufficient clearance for the hose attachment. If needed, trim the fence assemblies to fit the joiner, and then remove the joiner.



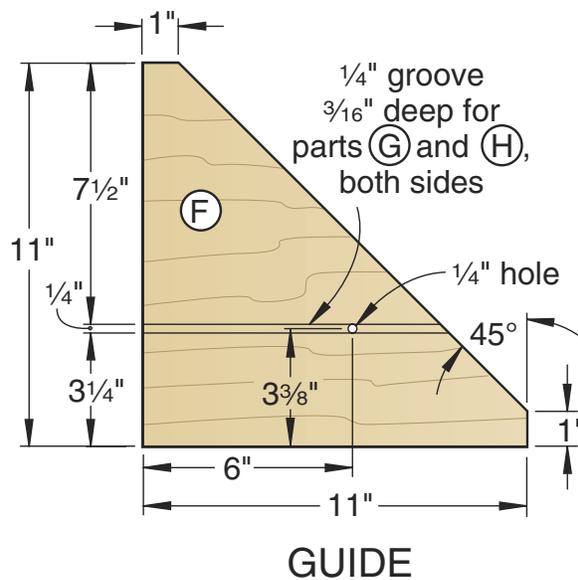
Glue and clamp the top (B), centered, to the base (A), using a plywood platen and cauls to evenly distribute the clamping pressure.



**1** EXPLODED VIEW



**2 PARTS VIEW**



**7** With the straightedge clamped to the fences, glue and clamp them to the top (B). Drill mounting holes through the brackets (C) into the base/top, and drive the screws. Remove the straightedge.

**8** Position the cleats (E) on the bottom of the base (A), where shown on **Drawings 1 and 2**. (The cleats position the jig against the front edge of your workbench.) Drill mounting holes, and drive the screws.

**9** Draw  $\frac{1}{2}$ " radii on the corners of the base/top and brackets (C). Cut and sand the radii smooth.

**10** Using a Forstner bit, drill 1" holes (for hanging the jig) through the base/top, where dimensioned on **Drawing 2**. Use a backer to prevent tear-out.

### Add the alignment guide

**1** From  $\frac{3}{4}$ " plywood, cut the guide (F) to size. Then cut a  $\frac{1}{4}$ " groove  $\frac{3}{16}$ " deep on both faces of the guide, where dimensioned on **Drawing 2**. Now drill a  $\frac{1}{4}$ " hole through the guide, centered in the groove, where dimensioned.

**2** Mark the  $45^\circ$  angle on the guide. Bandsaw or jigsaw to the line, and sand the edge smooth.

**3** To form the long and short guide bars (G, H), plane or resaw a piece of  $\frac{3}{4} \times 2 \times 16$ " hardwood (we used maple) to  $\frac{1}{4}$ " thick to glide smoothly in the  $\frac{1}{4}$ " groove in the top (B). Rip a  $\frac{3}{8}$ "-wide strip from the piece. Then crosscut two  $5\frac{1}{2}$ "-long long bars and two  $2\frac{1}{4}$ "-long short bars from the piece. Glue the bars in place in the guide (F), leaving a 1" space between them, where shown on **Drawing 1**. After the glue dries, trim the ends of the short guide bars flush with the angled edge of the guide using a fine-tooth saw.

### Finish up, and rig the jig

**1** Finish-sand the base assembly and alignment guide, and remove the dust. Apply three coats of satin polyurethane, sanding to 220 grit between coats.

**2** To mount your biscuit joiner, reclamp the straightedge to the fences. Then position the joiner on the jig, and mark centerpoints for the joiner-base mounting holes on the top (B), as shown in **Photo B**. (Due to the tight space with some joiners, you may need to use a nail instead of an awl to mark the centerpoints.) Drill shank holes through

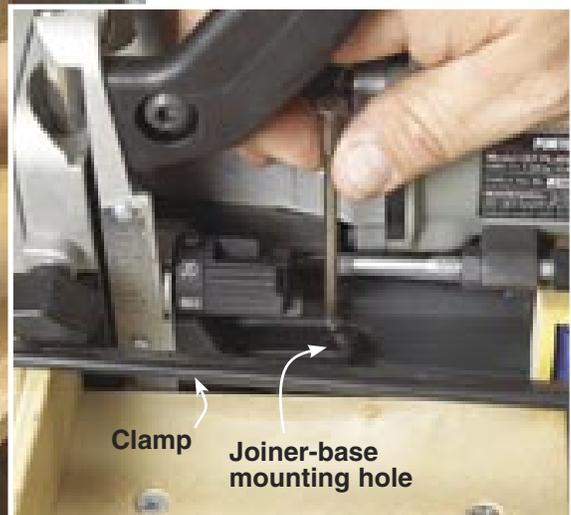
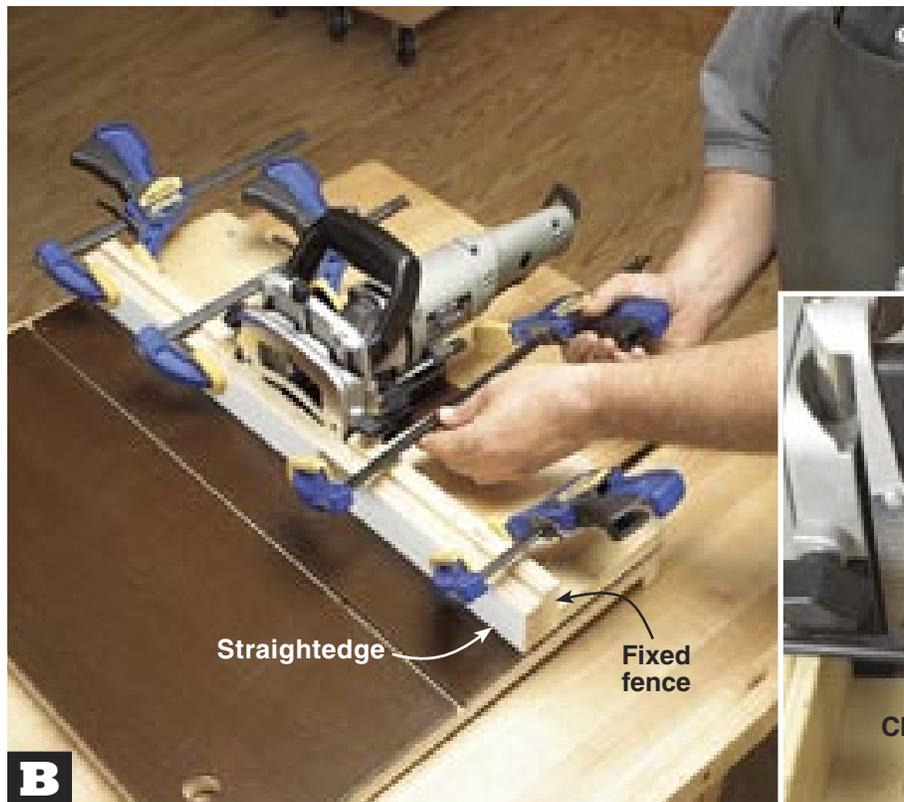
the base/top assembly, and countersink them on the bottom face. (The screws must not protrude from the base.) Fasten the joiner to the assembly with suitable hardware. (To mount our Porter-Cable Model 557 joiner, we drilled  $\frac{3}{16}$ " shank holes through the base assembly and secured the unit with  $\frac{3}{16} \times 2\frac{1}{2}$ " flathead machine screws and  $\frac{3}{16}$ " flat washers and nuts.)

**Note:** If your biscuit joiner does not have mounting holes, check if it has a removable baseplate attached with machine screws. If so, drill holes in the jig base assembly matching the baseplate hole pattern, and mount the unit using the same size machine screws except 1" longer to account for the thickness of the base assembly. If your joiner does not have a removable baseplate, you'll need to drill holes through the baseplate.

**3** Finally, install a  $\frac{1}{4} \times 20 \times \frac{1}{4}$ " toilet bolt,  $\frac{1}{4}$ " flat washer, and four-arm knob on the alignment guide, where shown on **Drawing 1**. Then slide the guide onto the base assembly, engaging the toilet-bolt head in the T-groove, and tighten the knob. Now clamp the jig to your workbench, and plunge away! 🌲

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Position your biscuit joiner on the jig, and clamp it to the straightedge. Then mark the centerpoints of the joiner-base mounting holes (shown at *right*).

# Materials List

Base assembly	FINISHED SIZE			Matl.	Qty
	T	W	L		
A base	3/4"	18"	23 3/4"	BP	1
B* top	1/4"	18"	23 3/4"	TH	1
C brackets	3/4"	5 1/4"	8 7/8"	BP	2
D fences	3/4"	2"	8 7/8"	BP	2
E cleats	3/4"	1"	8 7/8"	BP	2
<b>90°/45° alignment guide</b>					
F guide	3/4"	11"	11"	BP	1
G* long guide bars	1/4"	3/8"	5 1/2"	H	2
H* short guide bars	1/4"	3/8"	2 1/4"	H	2

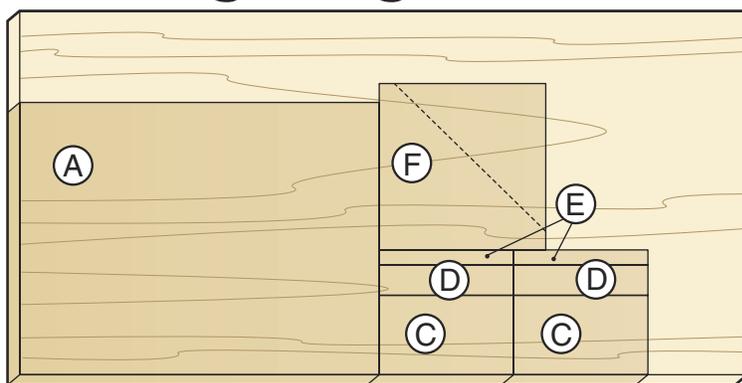
\*Parts initially cut oversize. See the instructions.

**Materials key:** BP–birch plywood, TH–tempered hardboard, H–hardwood.

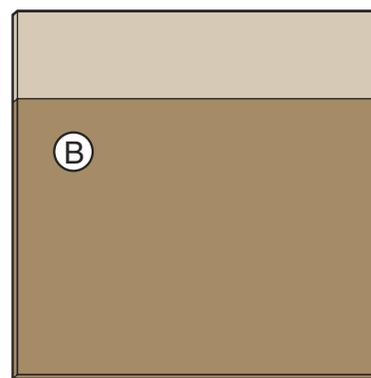
**Supplies:** #8×1 1/2" flathead wood screws (16), 1/4–20×2 1/4" toilet bolt, 1/4" flat washer, four-arm knob.

**Blades and bits:** Dado-blade set, flush-trim router bit, 1" Forstner bit.

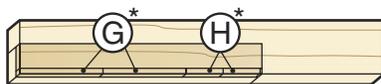
## Cutting Diagram



3/4 x 24 x 48" Birch plywood



1/4 x 24 x 24" Tempered hardboard



3/4 x 3 1/2 x 24" Hardwood (.7 bd. ft.)

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

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