

Hinge Mortising Jig



A Mortise for a Hinge. Quick, clean, and accurate — that's the only way to describe the mortise you get with a trim router and this hinge mortising jig.

One of the “make it or break it” parts of building a project comes when you install hardware, especially hinges. A poorly fit hinge not only looks bad, but it can affect how well a door or lid opens and closes.

The hinge mortising jig you see above takes the hassle out of cutting a mortise for a hinge and just about makes it automatic. Worried about sizing the mortise to match the hinge? Don't. Simply use the hinge to set the jig for a perfect fit. And with the adjustability designed into the jig, you'll be able to handle hinges as small as $\frac{3}{4}$ " , or as large as $\frac{31}{8}$ " .

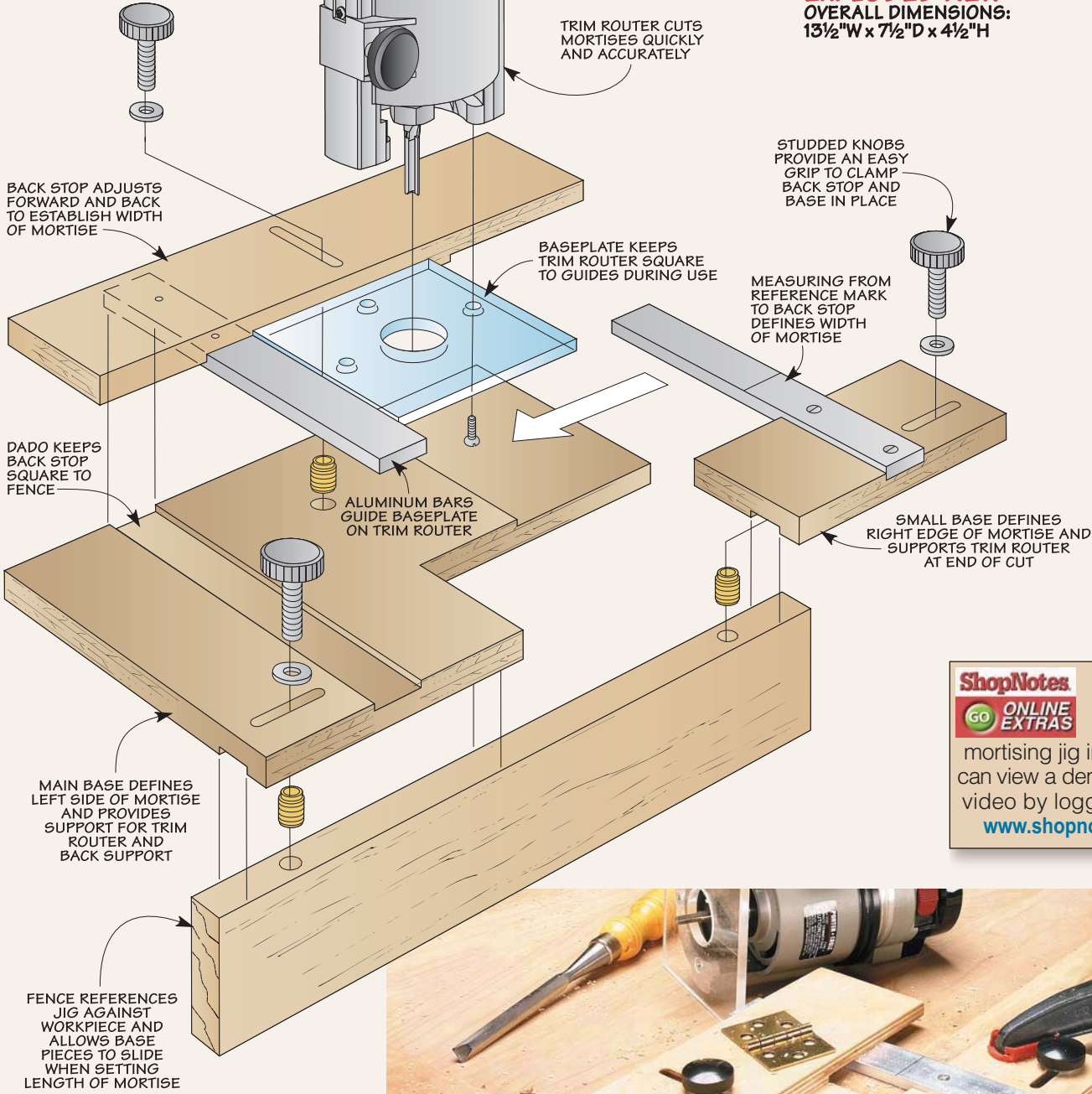
Trim Router – One thing you'll notice in the photo is the trim router used to rout the mortise. A trim router is most often used for working with laminate, but there are a few benefits to using one with this hinge mortising jig.

For starters, the jig can be smaller since it doesn't have to support a large router base. Plus, the small, compact size makes it easy to use with one hand. And finally, it's quite a bit less noisy than a full-size router.

Online Video – One last thing. If you'd like to see how easy it is to use the mortising jig to rout a mortise, check out our new video by visiting www.ShopNotes.com.



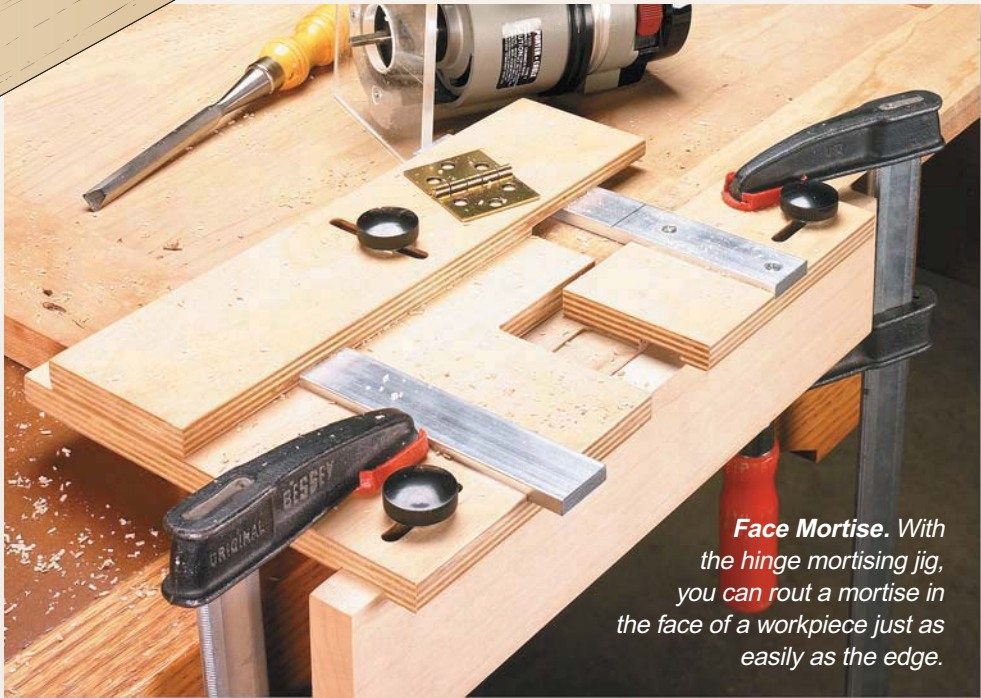
EXPLODED VIEW
OVERALL DIMENSIONS:
13½"W x 7½"D x 4½"H



ShopNotes  If you'd like to see the hinge mortising jig in use, you can view a demonstration video by logging on to: www.shopnotes.com

Hardware & Materials

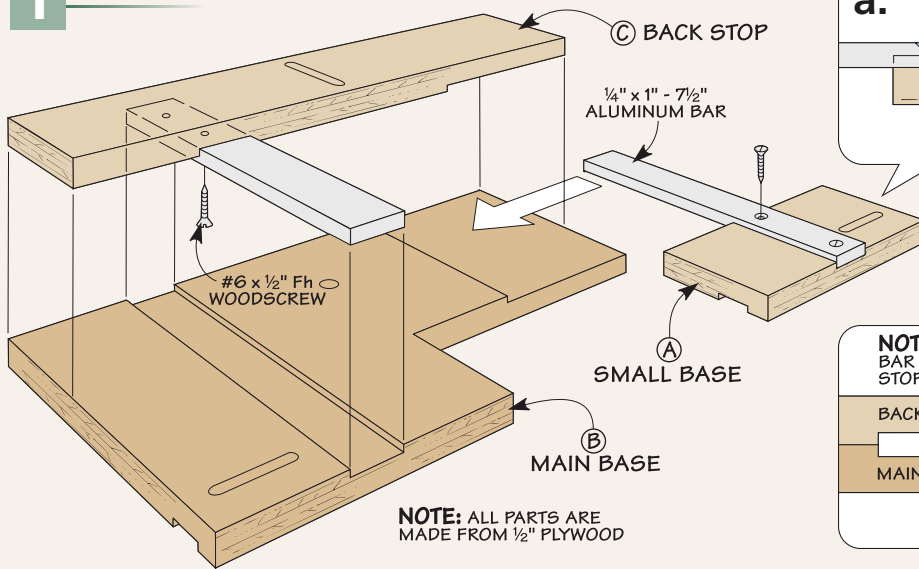
- A Small Base (1) 2¹¹/₁₆ x 5⁷/₁₆ - 1/2 Ply.
 - B Main Base (1) 7¹/₂ x 11 - 1/2 Ply.
 - C Back Stop (1) 2³/₄ x 11 - 1/2 Ply.
 - D Fence (1) 3/4 x 2³/₄ - 13¹/₂
 - E Baseplate (1) 4 x 4 - 1/4 Plexiglas
- (4) #6 x 1/2" Fh Woodscrews
 - (2) 1/4" x 1" - 7/2" Aluminum Bars
 - (3) 1/4" Threaded Brass Inserts
 - (3) 1/4" x 1" Round Studded Knobs
 - (3) 1/4" Flat Washers



Face Mortise. With the hinge mortising jig, you can rout a mortise in the face of a workpiece just as easily as the edge.

Two-Part Base, Stop, & Fence

1 OVERVIEW



▲ Countersink.
Drill a deep countersink to ensure the screw head is below the surface of the bar.

To get a tight-fitting mortise, you need to control two things — the width and length of the mortise. To do this, the mortising jig consists of a two-part base, an adjustable stop, and a pair of aluminum guide bars. An overview of how these parts fit together is illustrated in Figure 1.

Start With One Piece — As you can see in the drawing, the aluminum guide bars fit into dados and rabbets cut in the base parts and the adjustable stop. Instead of working with each part individually as I cut the dados and rabbets, I found it easiest to start with a single

blank — and then cut it into separate pieces once the joinery was complete, as in Figure 2. Working with a larger piece is easier and safer — and it pretty much guarantees that the dados and rabbets will align perfectly with each other.

The first thing I did was cut a single groove in the *bottom* of the blank. This groove is sized to match the thickness of the fence ($\frac{3}{4}$ " that's added later, like you see in Figure 5.

Once the groove was complete, I cut the dados you see in Step 1 of Figure 2. These two dados are cut in the *top* of the blank and sized to fit the aluminum bars that act as guides for the base of the trim router.

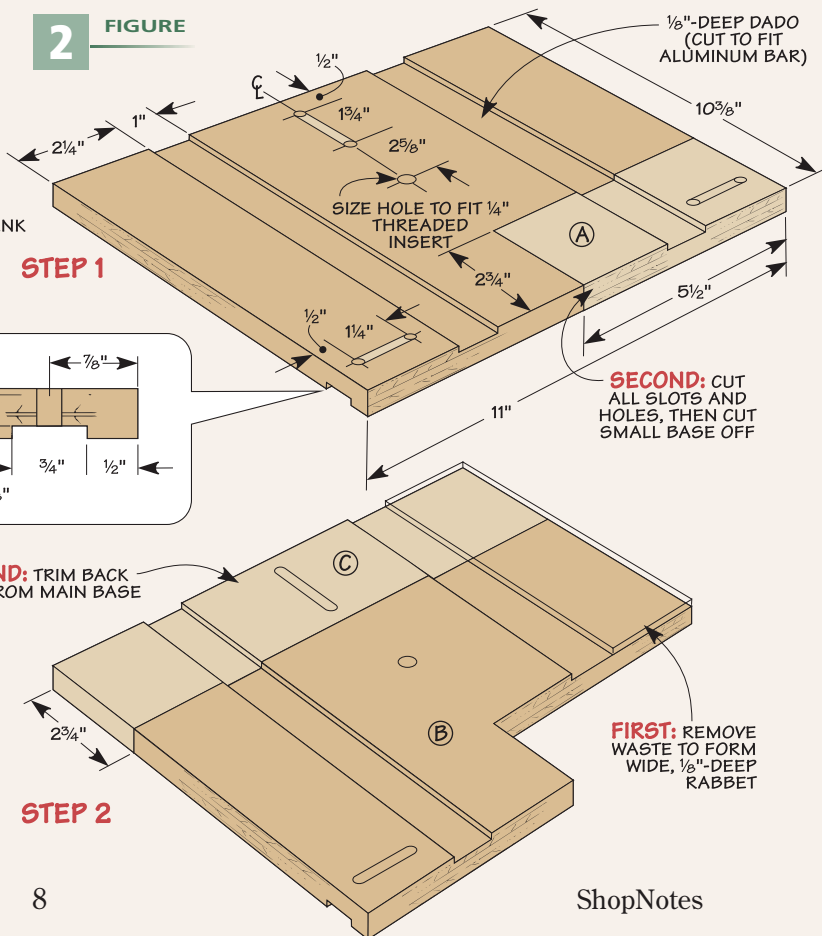
The only thing to keep in mind here is to be sure to cut the dados at least *half* the thickness of the bar, as shown in Figure 1b. A hair deeper is fine, but if they're too shallow the back stop on the jig won't rest against the base during use.

Finally, to allow you to lock the base pieces and back stop in place, you'll need to cut a series of slots and holes for the adjusting knobs and an insert. You can see where these are located in Step 1 of Figure 2.

Cut the Base Apart — Now you're ready to do what I talked about earlier — start cutting the main parts of the jig from the blank.

2 FIGURE

NOTE: ALL SLOTS ARE $\frac{1}{4}$ " WIDE



FIRST: CUT GROOVE ON BOTTOM FACE OF BLANK (DETAIL 'a') AND DADOES ON TOP OF BLANK

STEP 1

SECOND: CUT ALL SLOTS AND HOLES, THEN CUT SMALL BASE OFF

SECOND: TRIM BACK STOP FROM MAIN BASE

FIRST: REMOVE WASTE TO FORM WIDE, $\frac{1}{8}$ "-DEEP RABBET

STEP 2

The first step is to form the *small base* (A). I did this by making a pair of intersecting cuts on the band saw. Doing this on the band saw allows you to leave your table saw and dado blade set up. This way, you can easily go back and cut the wide rabbet on the “leg” of the blank. You can see all this clearly in Step 2 of Figure 2 and in Figure 4.

Form the Main Base & Stop –

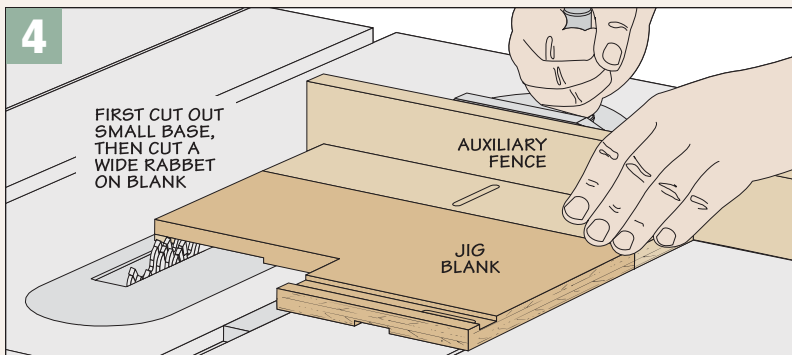
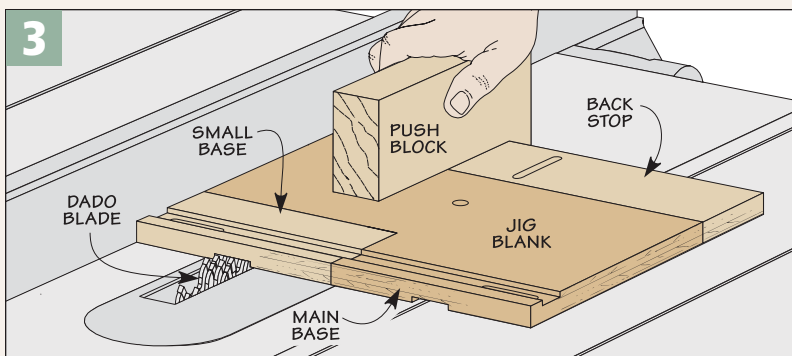
All that’s left to do at this point is trim a narrow strip off the back of the blank to form the *main base* (B) and *back stop* (C). Once that’s complete, cut the aluminum guide bars to length and screw one to the back stop and the other to the small base, like you see illustrated in Figure 1.

To see how the construction process resulted in perfectly matched dadoes and rabbets, just flip the back stop over and set it in place.

Make the Fence – With the main part of the jig assembled, you’re ready to start on the fence. The fence references the jig against the workpiece and provides a way to clamp the jig in place.

The *fence* (D) is just a piece of $\frac{3}{4}$ ”-thick hardwood that fits the groove cut in the bottom of the base.

Install the Inserts – After cutting the fence to final size, all that’s

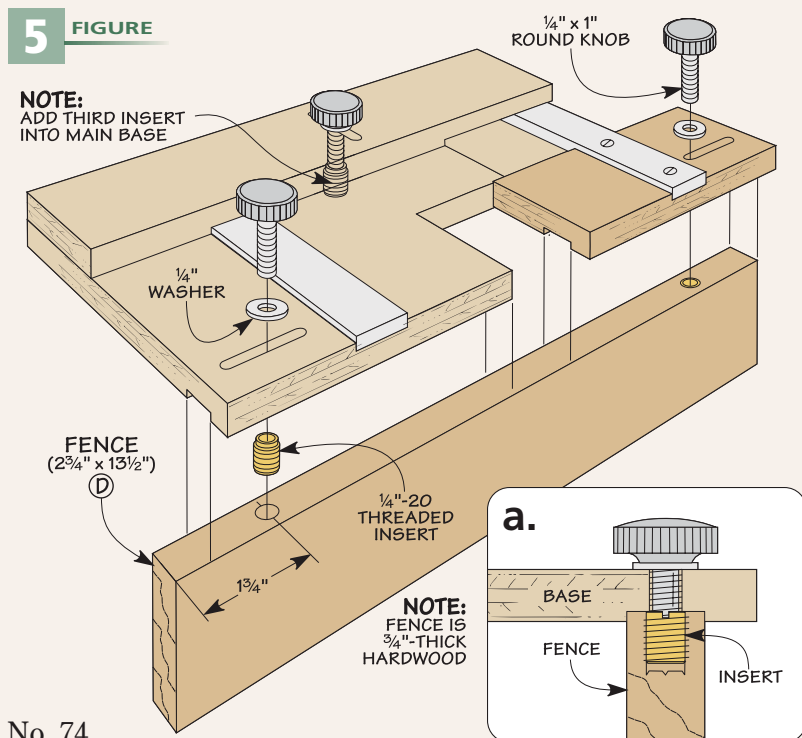


left to do is add the rest of the hardware. A threaded insert at each end of the fence accepts the studded knobs that allow you to clamp the base pieces in place once you set the jig for the length of the mortise, like you see in Figure 5a.

The Shop Tip below shows a handy way to install the inserts perfectly straight. This method requires

nothing more than a cut-off bolt and a couple hex nuts. Just be sure to turn the chuck *by hand* as you press it down with the drill press lever.

Finally, don’t forget to install a threaded insert in the main base. Note: Depending on how thick your plywood actually is, you may have to file or sand the insert flush with the bottom face of the base.



▲ **Installing Inserts.** A quick and easy way to install an insert perfectly straight is to use a cut-off bolt, a pair of hex nuts, and a drill press.

Final Details

Although the basic construction of the jig is complete, there are still a few things left to do before you can use it to rout a mortise for a hinge.

Add an Auxiliary Plate – The first thing you’ll want to do is add an auxiliary baseplate to your trim router, like the one you see in the photo. The auxiliary baseplate serves two purposes.

First, using a square piece of clear plastic for the baseplate provides better visibility and more support during use. And second, it limits where the router bit cuts to match the hinge you’re installing. You can see how I added the baseplate by looking at Figure 6.

Create a Custom Fit — As I mentioned earlier, the jig will automatically take care of sizing the mortise to match the width and length of the hinge. But to do this, you first have to custom fit the opening for

New Baseplate.

To improve accuracy and visibility, replace the round baseplate with a square piece of clear plastic.

your baseplate and the router bit you’ll be using to rout the mortises.

Note: The jig is designed to be used with a 1/4"-dia. straight bit. This will allow you to rout a mortise for a hinge as small as 3/4" long.

Start by sliding the two base pieces all the way open. And then slide the stop to the back. Next, you’ll need to cut past the bottom face of each base. After adjusting the depth of cut to 5/8", rout clockwise around the inside of the guides and stop (Figure 7).

“Zeroing Out” the Stop – The last step is to “zero out” the stop so

you can easily set the width of the mortise. To do this, clamp a scrap against the inside face of the fence and adjust the stop so the cutting edge of the router bit is just touching the scrap when the back edge of the baseplate is against the stop, as illustrated in Figure 8a.

After you lock the back stop in place, use a scratch awl to scribe a mark on the top of the aluminum bar. You can see this in Figure 8.

Using the Jig – With the scribe mark in place, using the jig is just a matter of following the four-step process on the opposite page. 