

# Perfect Hinges Every Time

Built around the hinge, this routing template is fast and flawless

BY DOUG STOWE

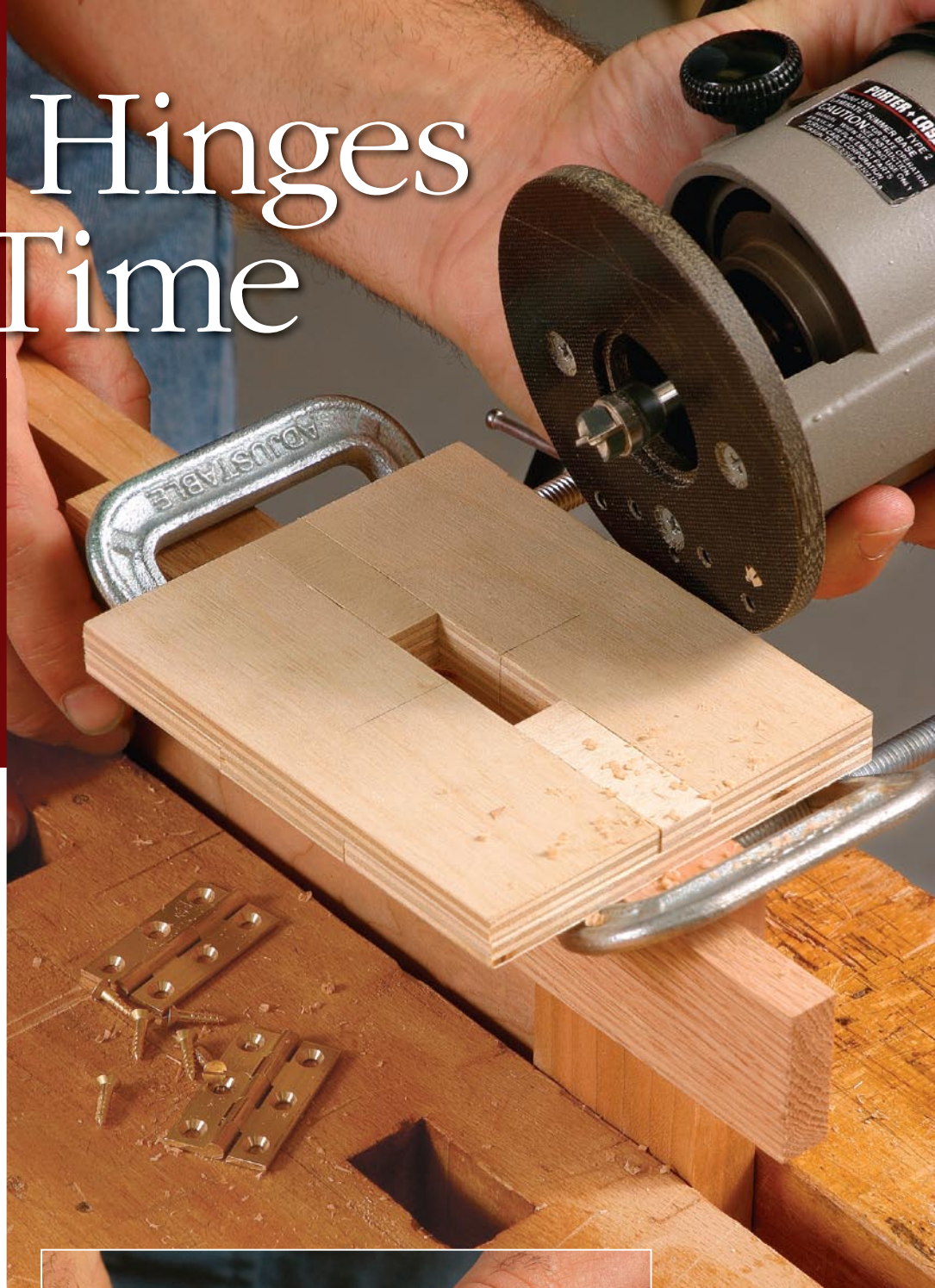
Traditional methods for installing butt hinges involve a good deal of precision layout, and that means plenty of chances to make a mistake. I've made many, like cutting the hinge mortise too deep or too long. Fortunately, I've found a better way to make precise mortises for any hinge: I rout them, using a flush-trimming bit and a quickly made jig.

There's nothing tricky about the jig. It's just a two-layer plywood frame that's built around the closed hinge, leaving an opening the exact size of the hinge. The opening guides the bit and guarantees a perfectly matching mortise. A fence controls the location of the mortise on the door edge or cabinet frame. The jig can't be adjusted for other hinge sizes, but it's so easy to make that you can whip up a new one whenever the need arises.

Hand-tool purists might balk at using a router and template to make hinge mortises, but I'm for anything that results in better craftsmanship. I just wish I'd thought of this jig sooner.

## Overlaid pieces are the secret

The two layers of the router template are made from 1/4-in.-thick Baltic-birch plywood, which is reliably uniform in its



**Great fit.** This smart jig, along with a router and a bearing-guided straight bit, give a precise fit and a perfectly hung door.



# Stack pieces for a flawless template

Built around the hinge, this quick jig guarantees a perfect mortise. A router and bearing-guided straight bit follow the walls of the opening, and a chisel quickly squares the corners.

Template pieces are made from 1½-in.-wide strips of ¼-in.-thick plywood.

Equal to length of hinge plus 3 in.

Equal to width of closed hinge

Equal to width of closed hinge plus 3 in.

Equal to length of hinge

Hardwood fence, ½ in. thick by 1½ in. wide, extends 2 in. past each end of the jig base.

## YOU'LL NEED A BRAD NAILER



1



2

**Align layers carefully.** Set the hinge against a long side and press the two narrow ends firmly against it (1). After adding the second long side, use the remaining four pieces to make the top layer (2). Use your finger to align the two layers (3). Any deviation in the slot will result in an inaccurate mortise. Finally, hand pressure is enough to hold all the parts in place as you secure them with brad nails (4).



3



4

## FENCE DETERMINES MORTISE WIDTH

A butt hinge works best when at least half of its barrel sticks out beyond the cabinet and door.

Secure fence with brad nails.



Align inside of fence with centerline of hinge barrel.



**Fence location determines how much of the hinge barrel is exposed.** Align the fence with the layout marks on the template and secure it with long brads.



# Precise mortises in minutes

## MARK CENTERLINES ON THE DOOR AND CABINET

*These marks will align with the centerline on the router template. Routing the mortises on the door removes the centerlines, so transfer the lines from the door to the cabinet before mortising.*



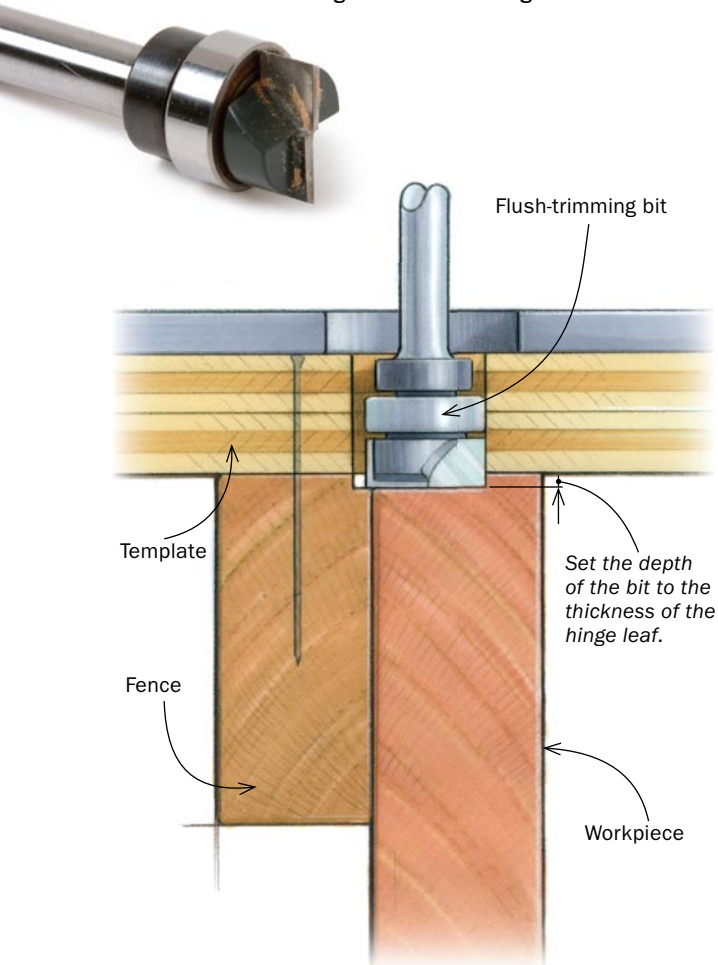
thickness. That's important for a hinge mortise, which must have a consistent depth.

Rip the plywood to size. The outer sections are 1½-in.-wide, which is wide enough to support the router, while allowing you to locate the jig close to the cabinet top and bottom. The interior strips are ripped to match the hinge width and length. Then crosscut the eight pieces to length (see drawing, p. 45).

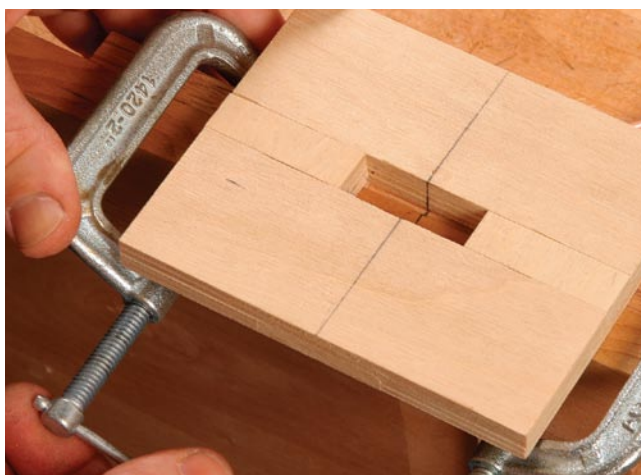
Assemble the first layer of the template, using the two pieces that are as wide as the closed hinge and the two that are 3 in. longer than the hinge. Place them around the closed hinge. Arrange the remaining four pieces on top of the first layer. Use your fingers to align the inside edges of the layers. Then drive brad nails through the layers to hold them together. Make sure that the pieces fit tightly around the hinge. Any gaps will transfer to the mortise. This

## ROUT THE MORTISE WITH A FLUSH-TRIM BIT

Hinge mortises aren't deep, so you need a bit with a shallow cutting depth. A dado cleanout bit is the perfect size and has a bearing for flush-trimming.



**Set the bit depth.** Set the template upside down on the router's baseplate, and place the opened hinge on the jig. The bit should be just shy of thickest part of the hinge leaf.



**Center the template.** Align the centerline of the template on the centerline of the mortise, then clamp the fence to the door.



might seem like a tall order, but I manage it with one hand holding the template pieces and the other holding my nail gun.

### Simple fence locates mortise with precision

With the template made, it's time to attach the hardwood fence to it. The fence's location determines how much of the hinge barrel will stick out beyond the cabinet and door. In order to work properly, a butt hinge needs at least half of its barrel to stick out.

To position the fence accurately, you must know the diameter of the hinge barrel. Halve the diameter, and use the resulting number to measure in at each end from one side of the template's opening. Align the inside edge of the fence with these marks, and then check to make sure that it is parallel to the edges of the opening. If

it's not, the hinge mortise won't be parallel to the edges of the door or cabinet frame. Attach the fence with a few brad nails.

Next, mark the opening's centerline on the template. The centerline will make it easy to locate the template on the workpiece (see photos, facing page).

### Now put the jig to use

I use a 1/2-in.-dia. flush-trimming bit with a shallow cutting depth, typically called a dado cleanout bit, to rout the mortise ([www.mlcswoodworking.com](http://www.mlcswoodworking.com); part No. 5382). After the bit is chucked into the router, set its cutting depth by turning the router over, placing the template on its base, and putting an open hinge on the underside of the template (not in the opening). Adjust the bit's depth until it's just shy of the depth of the thickest part of the hinge leaf. Then rout a mortise on

some scrap and test the fit. Once the depth is dialed in perfectly, you're safe to rout the actual hinge mortises.

Hinges usually line up with the inside edges of the door rails, so lay out the door first, marking the centerlines of the mortises. Then shim the door in place in its opening and transfer the centerlines from the door to the cabinet. Don't wait to lay these out, because the layout lines on the door will be routed away. Remove the door and secure it in a bench vise. Align the centerline on the template with the centerline on the door and clamp the template in place. Rout the mortise, then square its corners, using the template to guide your chisel. Use the same steps to rout the remaining mortises. □

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**Rout the door mortise.** Don't pull the router off the jig until the bit has stopped spinning. If you do, the bit could cut into the template opening and ruin it.



**The jig squares corners, too.** The square opening makes a perfect chisel guide. Remove the template to pare away the waste (below).



### AND IT FITS INTO THE CASE

Clamp the fence to the front edge of the cabinet side. The template is short enough that it won't butt against the cross-pieces.