

## Hinge mortise jig for boxes

BY DOUG STOWE

I've made a lot of boxes and taught a lot of folks how to make them. One of the areas that students find most challenging is fitting hinges to a nearly finished box. To help my students across all classes and boxes, I devised a quick-and-easy jig with notches for the router to follow and a fence to position it against the workpiece. The jig all but guarantees perfectly matching mortises in the box and its lid. Luckily, it works just as well for me in my own shop.

### Symmetrical jig with stops

Tailor your jig to your router, hinges, and boxes. The jig's base should be 1 in. or more longer than the longest box you expect to make with a particular hinge and wide enough to comfortably support your router. I find a trim router to be ideal here, since it's small, lightweight, and easy to control. I use a  $\frac{3}{16}$ -in.-long dado clean out bit from MLCS (item no. 5382).

Because the notches in the jig are sized to a specific hinge, you need to make a separate jig for each size of hinge you'll use. Thankfully, making one is a piece of cake.

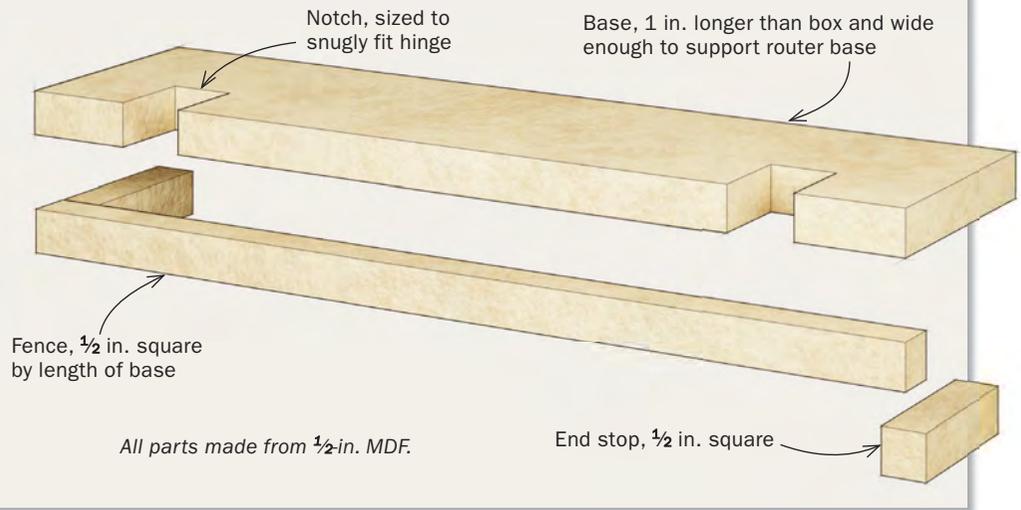
To position the notches, decide how far you want each hinge from the end of the box. Generally 1 in. or so works well for the majority of small and medium boxes I make. That distance keeps the hinge screws safely away from the corners so they don't compromise the joints.

At the tablesaw, I cut the notches to the exact width of the hinge. Set up two stops on a sled to limit the side-to-side travel



## END STOPS ARE THE KEY TO EASY REGISTRATION

With notches sized to a specific hinge and a fence and stops for positive reference, this no-frills jig takes the headache out of fitting hinges to a box and its lid—or many boxes and many lids. The end stops help ensure accurate alignment between the box and lid.



## MAKE THE JIG



**Clamp a pair of stops to a sled to notch the jig base.** The stops should be set to yield a notch the width of the hinge leaf. When setting the blade height, add the desired width of the hinge mortise to the width of the jig's fence. Slowly advance the sled while sliding the base side to side to cut the notch. Check the fit (right), and then flip the base to cut the second notch.



**Test the notch's width against the hinge.** It's best to start with the stops a little too close together, then move one farther away as you sneak up on the correct width.



**Add the fence and end stops.** Glue these flush to the base's perimeter to ensure they're square and spaced symmetrically.



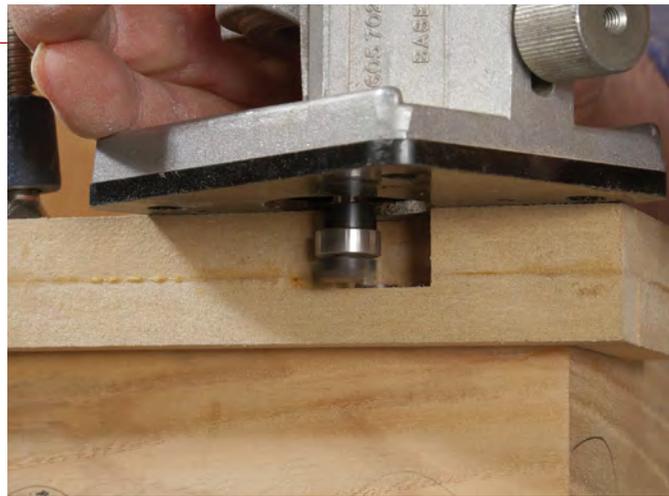
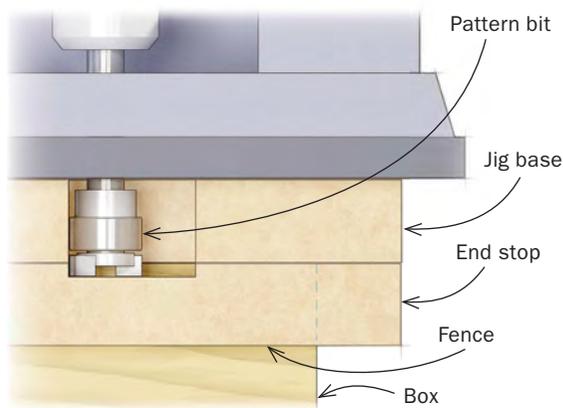
**Snug the jig to a corner of the box and clamp everything down.** Double-check that the fence and end stop are tight to the box. Clamping to the workbench ensures nothing will move while you are routing.

of the jig base. After each cut, try to fit the hinge in the notch. Ideally, the first cut will be too tight, letting you tap a stop away as you creep up on a snug fit.

Setting the blade height requires some math, not test fitting. It needs to be raised enough to account for the hinge mortise plus the width of the fence. I prefer about half of the hinge barrel to stick out at the back of the box, providing a full range of motion. So to determine the depth of the sawcut, measure from the edge of the hinge leaf to the barrel and add  $\frac{1}{2}$  in. for the width of the fence.

After homing in on the notch at one end, flip the base end for end and cut the second one. Because I flip the base to cut the second notch, both notches will be equally spaced from the end of the jig, simplifying the jig's use.

## MORTISE THE BOX



**Route with a short pattern bit.** Take test cuts in scrap to make sure you have the bit set to the right depth. The jig's fence, which you'll route through on the initial pass, provides zero-clearance support for the cut, limiting blowout.

**Jig guides the chisel when squaring the routed hinge mortise.** The router leaves rounded corners, which won't fit square hinges. You need to square these corners with a chisel. Since the jig is sized to the hinges, squaring the corners with it in place is easy and accurate.



**Slide the jig tight to the other side for the other hinge.** Because the jig's notches are the same size and the same distance from the base's ends, setting up for the box's other hinge is a simple matter of sliding the jig.

# skills spotlight continued

To finish the jig, glue on the fence and end stops, being careful that the strips are flush with the perimeter of the base.

## Jig's a template that slides and flips

To rout the mortises, I use the dado clean out pattern bit mentioned earlier. Its short cutting length means there's plenty of room left for the bearing to register on the jig's notches.

To use the jig, clamp it and the box body to the bench, making certain the box is tight to the jig's end stop and fence, and rout. If you need to square the corners of the mortise, leave the jig clamped in place, since it will help guide your chisel work. To rout the other mortise, simply slide the jig to the other end of the box and go through the same process of routing and chopping.

For the lid, flip the jig and repeat. You'll end up with matching mortises with little layout or fuss.

## A tip for setting the bit depth

Setting the bit's depth can be a challenge, so I recommend a test run.

I lower the bit so that it extends  $\frac{1}{2}$  in. (the base's thickness) plus half the thickness of the hinge barrel. I then lower it another hair to keep the hinges from binding.

Grab a piece of scrap and rout two test mortises. By then crosscutting the scrap in two, you can put the mortises together to simulate the routed box and lid.

Put the hinge barrel in this space. If the hinge falls out, the cut is too deep. Instead, you want the test blocks to pinch the barrel in place with a gap of about  $\frac{1}{64}$  in. between the blocks. Then your hinges will operate smoothly and the connection between the box and lid will look clean. □

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**Attach the hinges.** Stowe attaches the hinges to the lid first, as it's easier to balance when driving the screws into the box. He uses high-quality brass screws, drilling pilot holes and, if possible, pre-cutting threads in the holes with harder, less fragile steel screws.



## MORTISE THE LID

*The jig works just the same for the box's lid. Using the jig in the same way for the lid guarantees matching hinge mortises between the lid and the box, making installation accurate and fuss free.*

