# Lock Mortises Made Easy

# A router and three jigs add up to a flawless fit

BY MICHAEL PEKOVICH



#### **1** DRILL THE KEYHOLE



#### **2** ROUT FOR THE LOCK BODY



Photos: Dillon Ryan; drawings: John Tetreault

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Installing a half-mortise lock by hand is time-consuming and tricky to get just right. The process involves mortising for the lock plate, selvage, and body as well as drilling for the keyhole. Everything needs to be sized and aligned precisely to end up with a perfect fit. So when I decided to teach a class on building my tool chest ("Tool Chest with Drawers," *FWW* #234), which requires three locks, I

was a little stressed out. The thought of shepherding 10 students through two drawer locks and one lid lock in a hectic five-day class seemed impossible. To have any hope of success, I had to figure out a better way to do it.

My solution is based on a hingemortising jig made by boxmaker Doug Stowe ("Perfect Hinges Every Time," *FWW* #211). His jig is built around the

hinge itself for a perfect fit without measuring. In that vein, I designed a routing jig for the shallow mortises, a second routing jig for the deep mortise, and a keyhole drilling guide. The routing jigs are used with a pattern bit. To make registration on the drawer front easy, all of the jigs are marked for the keyhole's center. It takes less time to make these jigs and rout the mortises than it does to do the job by hand, and the results are as good as, if not better than, my hand-cut lock mortises.

#### Buy the lock, then put the jigs to use

Because the jigs are built around the lock, you need to buy the lock first. To get the most from these jigs, find a good quality lock and stick with it on future projects. I chose the LK-2 half-mortise drawer lock (\$17.50, horton-brasses.com).

The jigs can be made from a quarter-sheet of <sup>1</sup>/<sub>2</sub>-in.-thick Baltic-birch plywood. Start by cutting the sheet into strips of uniform length, then rip them to width. You'll need two pieces for each jig, but make a few extra to have as backups.

**Start with the lock-plate jig**—The lock-plate jig determines the final fit of the lock and is critical to get right. There are two pieces to the jig: a top plate and a fence. Place one plywood strip flat on the tablesaw table with its long edge against the rip fence. This will be the top plate. Next, place a second strip on top of the first, resting it vertically against the rip fence. This will become the fence. Now center the lock on the assembly with

3 ROUT FOR THE LOCK PLATE AND SELVAGE

#### Simple jigs ensure perfection

Splitting the work among the three jigs gives each the ability to shine at its specific task and results in a fit that is second to none.



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# Jigs are easy to make

# LOCK-PLATE JIG

The lock plate's shallow mortise must fit the plate exactly. Pekovich marks every cut from the lock itself and tests the fit.



**Straight from the lock.** With the jig's fence resting on the top plate, and the assembly against the tablesaw fence, mark the perimeter of the lock plate on both parts.



**Stop blocks ensure precise cuts.** Pekovich cuts the notch using his tablesaw crosscut sled, clamping a stop block on each side of the blade to size the notch accurately.



**Go deep.** Cut the sides of the notch all the way to the top mark and then clear most of the waste between the kerfs with a bandsaw.



**Sweep away the waste.** To get a clean, flat bottom on the notch, slide the piece back and forth over the blade while slowly moving the sled forward until the part reaches the apex of the blade.



**The selvage side of things.** Lower the blade and repeat the technique on the fence side with the stop blocks still in place. Check that the lock plate fits the jig opening tightly (right) to ensure success later.



### LOCK-BODY JIG

The lock body requires a deep mortise to clear the lock's mechanism housing. But because the lock body is hidden by the lock plate, its mortise does not need to be as precise. It's best to keep it slightly oversize to avoid issues when fitting.



Mark for the lock body. Place the jig's fence and top plate against the tablesaw fence, and use a straightedge and pencil to mark the lock body's location on both pieces. Remove the lock and connect the marks for a complete outline.



Aim for a loose fit. The notches in the fence and top plate are cut the same way as those in the lock-plate jig (facing page). The lock body should slide in and out of the notch without interference.

### **KEYHOLE DRILLING GUIDE**

This jig helps you drill both holes for the keyhole accurately into the face of the drawer.

> Measure the keyhole depth. Using a small combination square, measure from the center of the keyhole to the center of the locking pin.





**Transfer to the jig.** After drawing the centerline across the face of the fence, mark for the keyhole depth.



**Guide holes come next.** Drill the guide holes in the jig at the drill press. The ¼-in. hole will accommodate the key's shaft, the ¼-in. hole the key's tooth.

## ASSEMBLE AND MARK THE JIGS



**Nail the trio.** With an 18-gauge brad nailer, Pekovich assembles the halves of each jig. He takes extra care to make sure that the notches on both pieces line up and that the two halves are perpendicular.



**Mark the jigs for center.** While the keyhole jig is already marked for center, the other two aren't. Put the lock in the lock-plate and lock-body jigs and use a straightedge to mark for the keyhole center. This reference line will ensure each jig is in place, relative to the keyhole.

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# Get a perfect mortise in minutes

#### **1** CREATE THE KEYHOLE



**Find your center.** The notch cut into the keyhole guide's fence serves as a window so that you can line up the guide with the centerline on the drawer.



**Drill out the keyhole.** These holes only have to go about halfway through the drawer, so mark the bit for depth using a blue tape flag, which also helps sweep away swarf.

## 2 CUT THE LOCK-BODY MORTISE



**Line up the jig.** Before clamping the lock-body jig to the back of the drawer front, align the centerline on the drawer with the mark on the jig.





**Rout the deep mortise.** With a bearing-guided pattern bit, rout the deep mortise in two passes.

**Square up the corners.** Before removing the jig, use it as a guide to chisel the corners of the mortise square and clean.

**Two holes become one.** Remove the jig, score between the holes, and use a chisel to connect the two openings, forming a ½-in. channel that intersects the ¼-in. hole and creating the iconic keyhole.



the selvage against the fence and trace its outline. Grab a crosscut sled and with the top plate held vertically, align one mark on the top plate with the kerf in the sled. Clamp a stop block to the fence at one end of the template. Repeat the steps for the other mark and clamp a stop block on the other end. Make two full-height cuts to define the notch opening, then use the bandsaw to remove the waste between the kerfs. The lock should fit snugly with no wiggle room. If it's too tight, adjust one of the blocks and take another cut. If it's too loose, grab another strip of plywood and try again. Once the fit is right, clear the waste fully at the tablesaw.

**Lock body is next**—The lock-body jig is made the same way, but it doesn't require a piston fit. Place the top plate and fence on the tablesaw as before and mark the location of the lock body on both pieces. Cut the notches on the crosscut sled and bandsaw. When you check the fit, make sure there's some wiggle room for the lock body to prevent any potential binding during fitting later.

#### **3** FINISH WITH THE LOCK-PLATE MORTISE



Set the bit depth. Pekovich raises the router bit through the jig and then sets the bit to the thickness of the plate.



Rout the mortise. After aligning the jig with the centerline on the drawer, rout the back of the drawer to accept the lock plate.



Don't forget the selvage mortise. While still clamped up, rout along the fence, mortising for the selvage, before squaring the corners with a chisel.

Drilling guide rounds out the trio—To make the drilling guide, strike a centerline on a jig piece. Set a combination square against the selvage and measure to the center of the lock pin. Transfer that to the centerline on the jig and repeat for the bottom of the keyhole. At the drill press, drill the two holes that will form the keyhole. The fence of the drilling guide is made of 1/4-in. MDF and has a notch cut in it for alignment. Use a brad nailer or glue to assemble the jigs and mark each jig for the keyhole center. The center marks are used to align each jig on the work.

#### **Installing a lock**

Now that the hard part's over, all it takes to install a lock is a prepped drawer front and 15 minutes. Mark the center of the drawer front, aligning the drilling guide's center mark with the drawer front's centerline. Clamp the guide in place and then drill the holes. After removing the guide, align a square with each edge of the smaller hole and knife a line connecting it to the larger hole. Chisel out the waste. You only need go about halfway through the drawer front as the rest of the material will be removed when rout-

### Jnline **Extra**

To see the lock-mortise jigs in action, go to FineWoodworking.com/extras.

ing the mortises. Next, clamp the lock-body jig in place, aligning it with the center marks on the drawer front. Set the bit depth to the notch in the

jig's fence and rout out the mortise. With the jig still in place, chisel the corners square.

Finally, set the bit depth to the thickness of the lock plate and clamp on the lock-plate jig. Rout out the mortise on the inside face of the drawer, then along the selvage to complete the mortise. Square up the corners and remove the jig.

There's one more task to take care of before the lock will fully seat. The lock plate has a rounded 90° bend in it to make the selvage, so chisel a chamfer at the corner of the mortise bottom. Then the lock should settle snugly in place. 

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The final cut. The last adjustment is to chisel a chamfer along the edge of the shallow mortise where the selvage folds over (left). This will make room for the rounded inside corner. The lock should slide snugly into place. As a final test, grab the key and check that the lock functions without binding (below).

