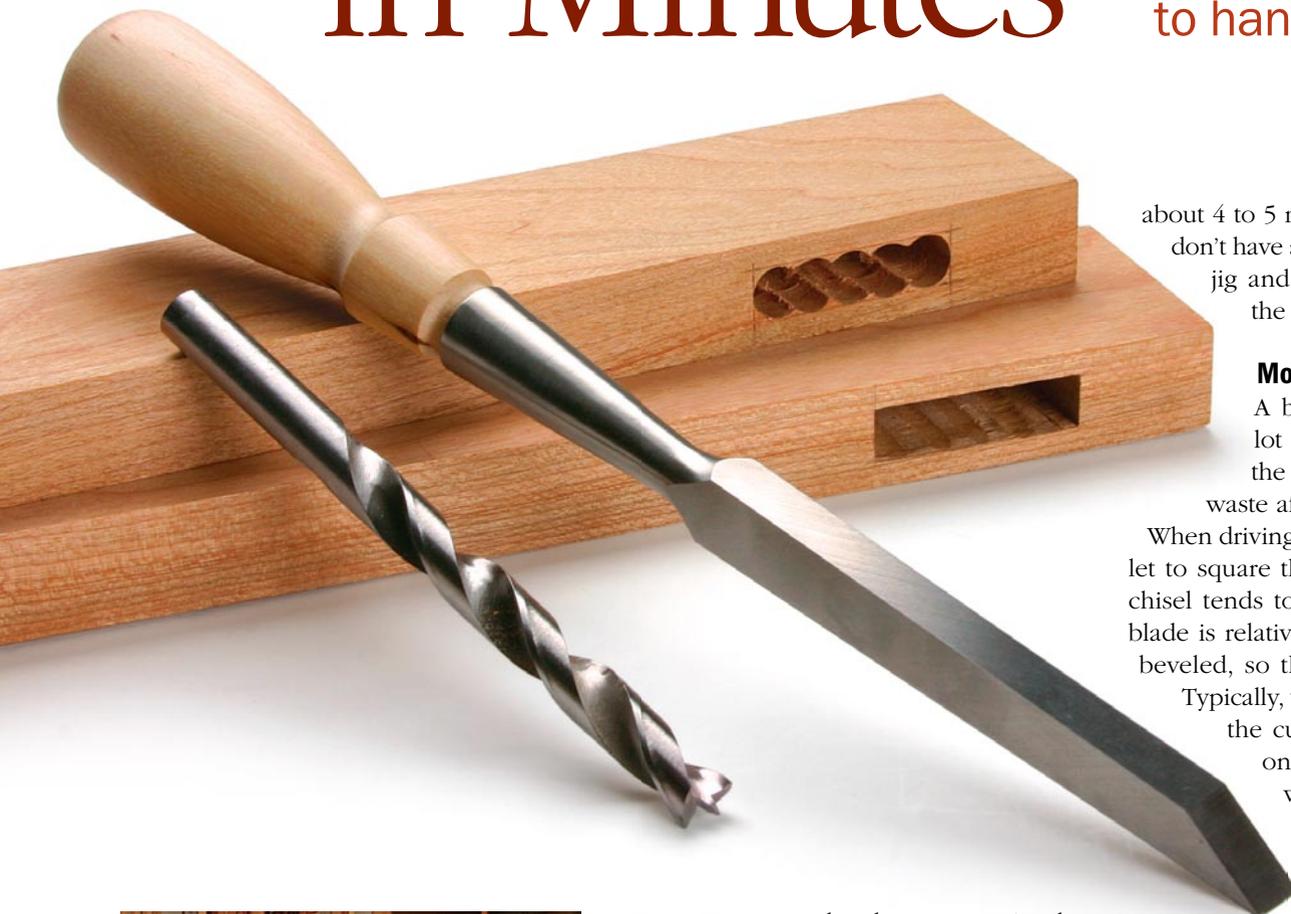


Cut a Mortise in Minutes

Drill out the waste, then use a unique chiseling technique to handle the rest



about 4 to 5 minutes. By the way, if you don't have a drill press, use a doweling jig and handheld drill to remove the waste accurately.

Mortise chisel is the star

A bench chisel is ideal for a lot of applications, but it's not the best choice to clean up the waste after drilling a mortise.

When driving a bench chisel with a mallet to square the end of the mortise, the chisel tends to twist. That's because the blade is relatively thin and the edges are beveled, so there is little side support.

Typically, you'll need to start and stop the cut several times to keep it on track. And chances are it won't be as clean a cut as you'd like.

It's also challenging to keep a bench chisel square when cleaning up the sides. So the mortise may not end up straight and smooth. Plus, compared to my method, it's slow.

The solution is a mortise chisel. They come in two basic types: One has a blade with a rectangular cross-section (parallel sides), and the other has a blade with a trapezoidal cross-section (tapered sides). You want the rectangular one. A rectangular mortising chisel won't twist easily as you bang it with a mallet to square the end of the mortise. And because the corners of the chisel meet at sharp right angles, you get a shearing cut when you lever it forward. That means much of the sidewall waste can be removed in one quick motion.

In addition, while bench chisels are normally sharpened to 25°, most mortising chisels are sharpened to 30°. That means the sharpened edge is less likely to fracture when levered.



BY CHRISTIAN
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Many woodworkers cut mortises by drilling away much of the waste with a drill press, then cleaning up what remains using a bench chisel. The technique is popular because it doesn't require a special machine or jig. It's a challenge, though, mainly because the chiseling process is slow and easily goes awry.

I've been building furniture full time for more than 30 years, and I still use drilling and chiseling to make many of my mortises. But I've managed to refine the process to just a few surefire steps.

The tools are simple. After removing most of the waste using the drill press, I use a mortising chisel to square an end and lever away—in one shot—most of the waste. A bench chisel quickly cleans up what's left.

This method delivers clean, accurate mortises, and quickly. Including the drill-press work, I can finish a 3/8-in.-thick by 1 1/2-in.-wide by 1 1/2-in.-deep mortise in

Step 1 SCRIBE LINES SHOW THE WAY



Scribe the sides. After marking the location with a pencil, use a marking gauge to scribe each side of the mortise, stopping at the pencil lines.

Last, mortising chisels are thicker and longer than bench chisels. That adds stiffness and leverage, making them better suited to the forceful levering action.

It takes just four steps to cut any mortise. But first, make sure your chisels are sharp.

Keep in mind that this technique requires that the mortise and the mortising chisel are the same width. That means if you want a $\frac{3}{8}$ -in.-wide mortise, you need a $\frac{3}{8}$ -in.-wide mortising chisel. I find that three different chisel widths— $\frac{1}{4}$ in., $\frac{3}{8}$ in., and $\frac{1}{2}$ in.—cover almost any mortise I need.

SOURCES OF SUPPLY

PARALLEL-SIDED MORTISE CHISELS

Lie-Nielsen Toolworks
www.lie-nielsen.com

Sorby
www.woodcraft.com

Layout is critical

Begin by carefully laying out and marking the length and width of the mortise. Use a sharp pencil to mark the

ends. Then use a marking gauge to cut the two scribe lines for the sides. Now, with a square and a marking knife, cut scribe lines at the mortise ends. The cut lines are important: When you slip the sharpened edge of the chisel into them, they align it perfectly for the start of the cut.

Drill out the waste

Now you're ready to start removing waste wood to create the mortise. You could remove all the waste with the mortise chisel, but it's a lot faster to remove most of it by drilling a series of holes. Plus, drilling



Scribe the ends. To complete the layout, use a knife to scribe a cut line at each end of the mortise.

makes it easier to maintain a consistent depth along the length of the mortise.

I put the drill press to work here. Either a brad-point or Forstner bit works fine. Both of these bits let you drill overlapping holes to remove the maximum waste from the mortise. Just be sure that the bit diameter is the same as the mortise width, and position the fence carefully so that all the holes are bored dead-center into the mortise.

Start by drilling the first hole at one end of the mortise, and then do the same at the other end. After that, drill as many non-overlapping holes as possible. Then cut



Tip

Keep the mortise at least $\frac{3}{4}$ in. away from the end of the workpiece. Otherwise the end-grain at the end of the mortise could blow out when you drive in the chisel.

Step 2 DRILL THE WASTE

overlapping holes as needed to remove most of the remaining waste.

Plunge and lever

With most of the waste drilled out, mark the depth of the mortise on the chisel blade. Place the tip of the cutting edge into the scribe line on one end with the bevel facing away from the end. Make sure the chisel is plumb. Also, with thin stock, it's a good idea to clamp the sides of the stock at the mortise so it won't split.

Now, use the mallet to pound the chisel to the full depth. Keep the chisel plumb as you go (see tip, facing page).

Once you reach the full depth, lever the chisel forward, toward the opposite end of the mortise. This is where the rectangular chisel pays big dividends. Because the chisel sides are parallel, their leading edges slice away—in one quick motion—a good portion of the waste at one end. Repeat the cut-and-lever technique on the opposite end. If the wood is hard, use both hands and lean into the chisel a bit.

Just a bit of cleanup left

You now have only a small triangular section of waste in the middle of the mortise. Since this is mainly a paring operation, use a normal, bevel-edged bench chisel. Simply start at the top of the waste triangle and carefully pare down to the bottom. Use the mortise chisel to clean up what remains. □

Christian Becksvoort is a contributing editor.



Tip

No drill press? Use a doweling jig. It's nearly as fast and just as accurate as a drill press.

SETUP



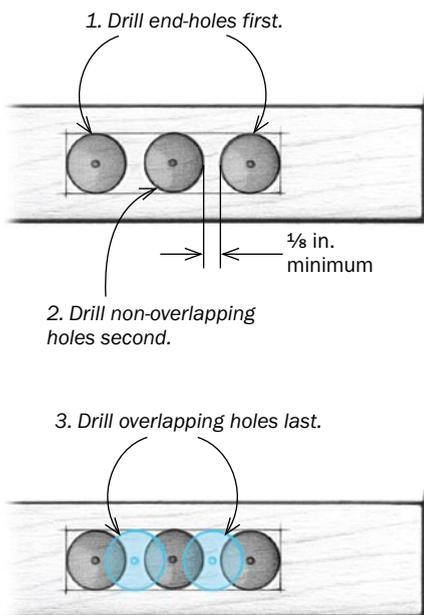
Drill press does the grunt work. Use a bit that matches the mortise width. Clamp a fence to the table to ensure that the bit drills into the center of the piece.



Dial it in. After drilling a single hole in the test piece, use a dial caliper to make sure the hole is centered.

DRILLING SEQUENCE

Drill the end holes and 'tweeners. With the stock against the fence, drill a hole at each end of the mortise. In between, drill as many non-overlapping holes as possible (left), leaving $\frac{1}{8}$ in. between holes. Then drill overlapping holes, anchoring the center spur in the material between each hole to help keep the bit from drifting.



Step 3 THE MORTISE CHISEL TRICK

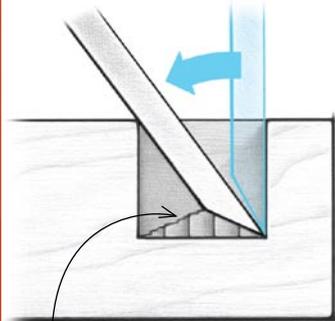
Mark the depth. With an ink marker and a square, mark the mortise depth on the blade of the chisel.



Drive the chisel. Place the tip of the chisel into the cut line on one end of the mortise (bevel facing away from the end), then use a mallet to drive it to the full mortise depth.

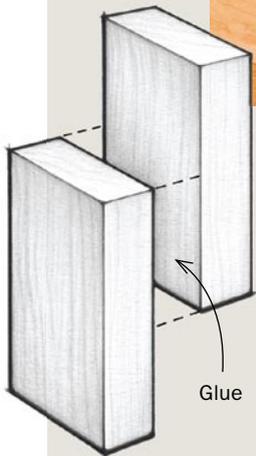


THE LEVERING TRICK



Small triangle of waste remains after levering from both ends.

Lever the chisel. Lever the chisel toward the opposite end of the mortise. As you do, the square corners of the mortise chisel shave a good part of the waste stock. Repeat from the other end. The levering trick removes all but a small triangle of waste (see drawing, left).



Tip

If keeping the chisel plumb is a problem, clamp a block of wood to the workpiece.

Hold the blade against the block and you can drive the chisel knowing it's aligned perfectly.



Step 4

FINISH WITH A BENCH CHISEL

Clean out the last of the waste. A bench chisel removes the remaining triangle. Elapsed chiseling time for both the mortise and bench chisels: one to two minutes.