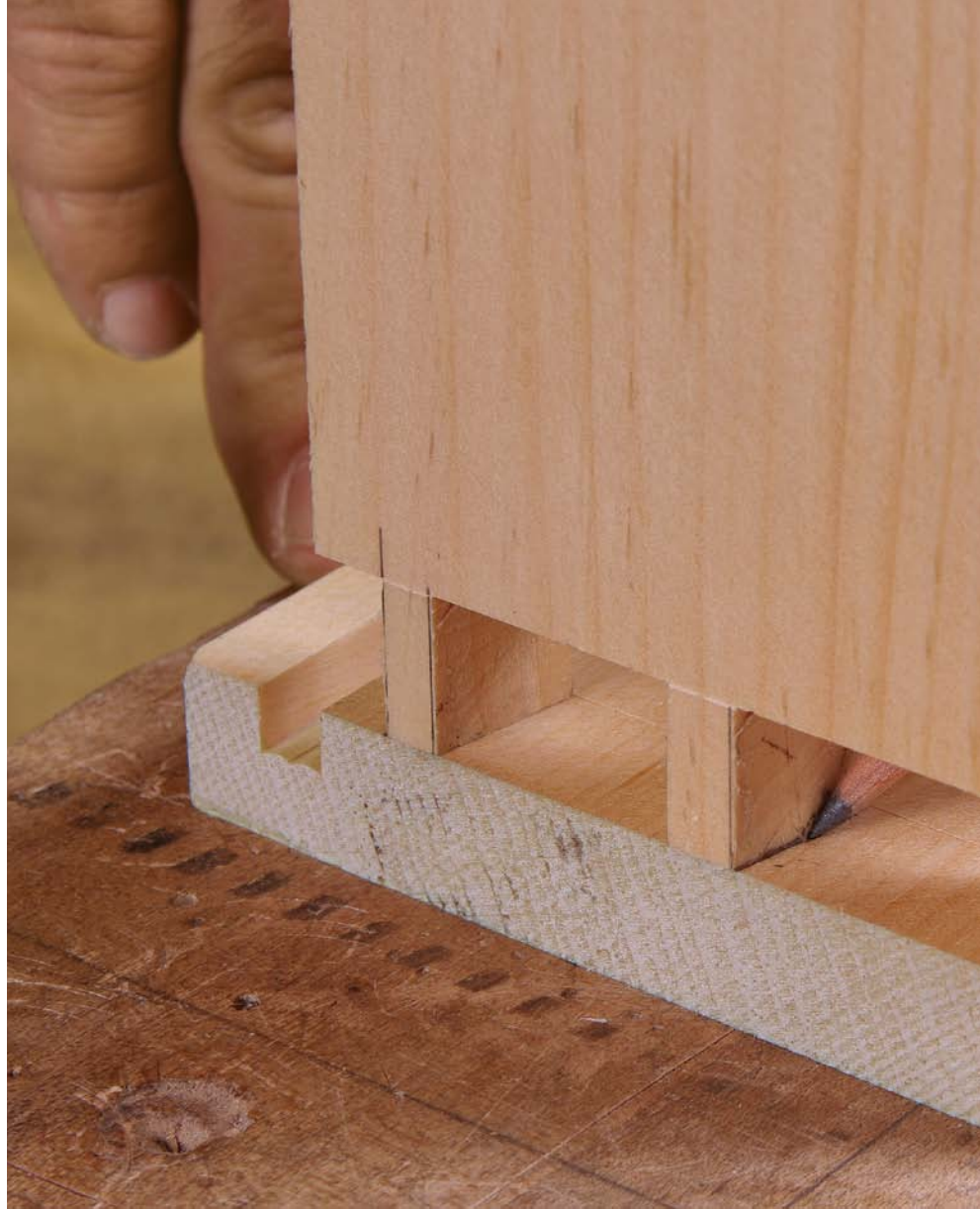


Layout: When pencil beats knife

FOR ACCURATE DOVETAILS
AND HINGE MORTISES,
YOU'RE BETTER OFF WITH
THE HUMBLE PENCIL

BY STEVE BROWN



Starting point. The point created by a pencil sharpener can be too blunt for precise layout. Refine it by twirling the pencil between your fingers as you pull the lead over a piece of P220-grit sandpaper.

Good joinery begins with accurate layout, and for many woodworkers that means using marking knives and gauges to cut layout lines. Pencils typically don't enter into the discussion, because a drawn line is supposedly less accurate. But a pencil line can be just as accurate as a scribed one and there are times when a pencil is a better choice for layout than a marking knife.

At North Bennet Street School, where I teach cabinet and furniture making, students learn to use a pencil instead of a knife when laying out dovetails and hinge mortises. In those cases, the knife cuts into the wood you want to keep, resulting in a loose or gappy fit. A sharp pencil marks a line that's just as accurate, but doesn't damage the wood. It also is easier to see. I'll show you how to do it.

Pencils don't damage wood

No matter how you cut dovetails (I do them pins first), you're going to trace one half of the joint onto the board for the other half. I stand the pin board on the face grain of the tail board. All of the wood between the pins will become the tails, so it

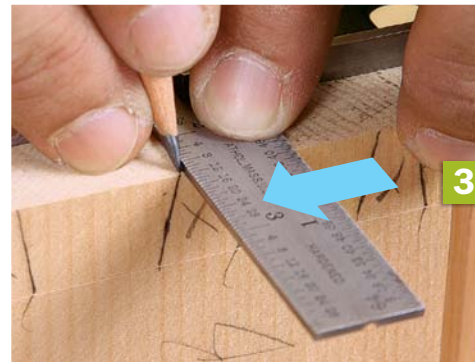


Tight joints, guaranteed

Marking knives are accurate, but they also cut into wood that's part of the finished joint, so you end up with one that's either gapped or loose. A pencil is just as accurate but doesn't damage the wood.



Crisp dovetails. A sharp pencil point reaches all the way into the corner and traces the pin where it touches the tail board (1), marking its location precisely. When transferring the line around the corner, the trick is to set the pencil in place first (2), placing the point exactly where the line on the face of the board meets the edge. Next, slide the square up to it (3), and draw a line across the end grain (4). Pare to the line (5), working across the grain. This makes it easier to control the depth of cut.



is wood that I want to keep. If you trace the pins with a knife, pressing it firmly against the pins, you cut into wood that will be part of the tails. If you later remove that scribe line when paring the tails, the joint may be too loose. If you leave it, then there will be a small gap visible, created by the beveled edge of the knife. (The same is true for a hinge mortise. As you scribe around the leaf, the knife cuts into a part of the stile that needs to be kept.)

A sharp pencil avoids those problems. It draws a line along the pin and the entire line is on wood that needs to be kept. So, when it comes time to cut and pare the tails, you work up to the line, but not into it (this also is true for a hinge mortise).

Transfer dovetails accurately

You don't need a fancy pencil. A good, old-fashioned No. 2 works great. But the point does need to be as sharp as possible. After sharpening it in a pencil sharpener, use P220-grit sandpaper to sharpen it to a finer point, twirling it in your fingers as you do so.

As I mentioned, I cut pins first. However, this



THE PROBLEM WITH MARKING KNIVES



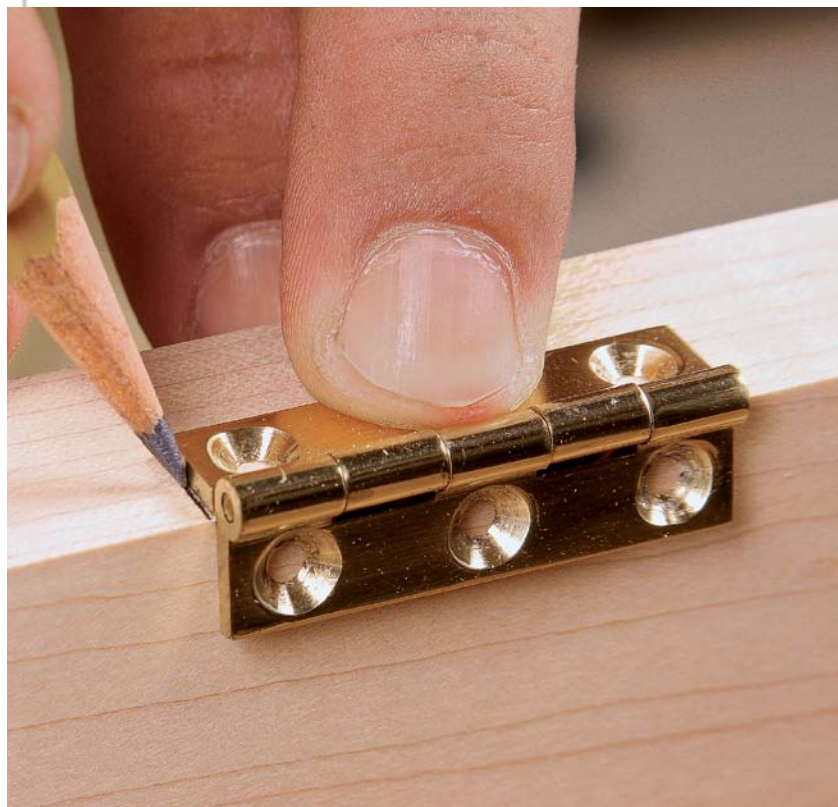
They cut the wrong wood. For accuracy, the flat back of the knife must go against the hinge. That means the bevel faces out, slicing wood fibers that aren't part of the mortise.



That leads to a sloppy fit. It's natural to pare the mortise wall back until the cut line is gone, but that creates a mortise that's too long and has an unsightly gap.

No-slop hinge mortise

Here's how to do it with a pencil, and get a great fit every time.



Use a pencil on both ends. No matter how thick the line, it's only marking the wood outside the mortise, so you know exactly where to stop paring—before you cut into the mark.

technique works if you cut tails first, too, as long the space between them is large enough for a pencil to fit.

Clamp the pin board on top of the tail board and transfer the pins by putting the point of the lead into the corner and taking a single stroke. It's that sharp point that provides the accuracy, because it gets right into the corner between the pin and tail boards (the thickness of the line doesn't matter). To preserve that accuracy, sharpen the pencil frequently.

After tracing all of the pins, use a square and a sharp pencil to transfer the lines across the end grain of the tail board. Then cut out the waste between the tails, cutting as close to the line as you can. Ideally, you cut right on the line, but if there's a bit of paring left to do, work up to the layout line, but not into it. From here, it's just a matter of testing the fit and paring until the joint comes together.

Cut a hinge mortise that always fits

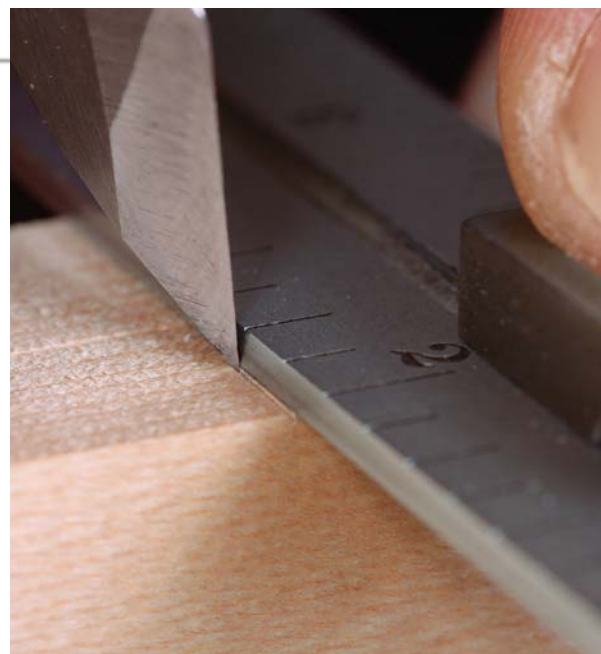
To trace around a hinge, sharpen your pencil the same way as for dovetails. Then hold the hinge in place on the stile and trace around it, holding the point of the lead in the corner where the hinge and stile meet. Take away the hinge and scribe along the inside of the line with a marking knife. To do that accurately,



But it's OK to scribe for the side. The bevel on a marking gauge's cutter faces the waste wood, so paring away the entire cut line creates a mortise of the perfect width.



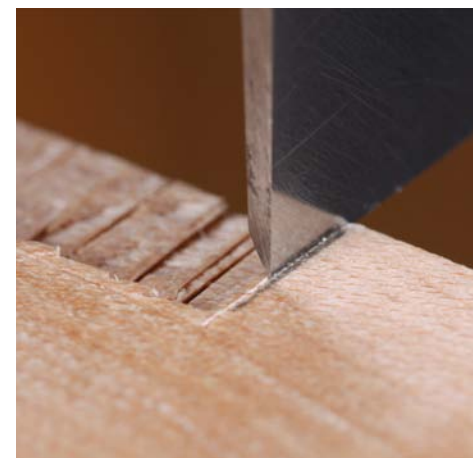
Add a knife line for easier paring. Put the knife on the inside of the line (above), push the square against it, and then scribe the line (right).



Chop across the grain. It's easier to control the cut depth this way.



Work inward to remove the waste. Start above the scribe line marking the depth and get rid of the waste quickly. Then pare to the line.



Put the chisel in the scribe line. This aligns it with the inside of the pencil line, so you pare only wood that should be removed.

put the bevel of the knife on the line first, with the bevel facing into the mortise. Then move a square up to the flat of the knife. Scribe the line. With this technique, the knife does not damage the wood outside of the mortise, and you get the benefit of having a scribed line to put your chisel into when paring.

After marking the hinge's length, use a marking gauge (the kind with a cutting knife, not a pin) to mark its width and depth. It can be used for those lines because the bevel cuts into the waste. Next, chop out the waste, staying about $\frac{1}{16}$ in. inside the layout lines, including the one that marks the mortise's depth. Then, carefully pare back to the lines, by placing the chisel edge into the scribed line and pushing. □

Steve Brown is an instructor at North Bennet Street School in Boston, and is technical adviser to the WGBH television show *Rough Cut: Woodworking with Tommy Mac*.



No gaps. This is how a hinge should fit its mortise, and it's proof that pencils can be accurate layout tools.