

Make Your Own

Why bother?
Because this one
works better than
anything on the
market

Use a marking gauge for many things—mortises, tenons, dovetails—but I've never found one exactly to my liking. Western-style marking gauges typically use a sharpened pin or cutting wheel to incise a line in the stock. These tend not to cut crisply, and the pins especially have a bad habit of following the grain. Japanese gauges have great knives, but they use a wedge rather than a thumbscrew to apply pressure on the bar. The wedge makes adjustment finicky and, in my experience, can work itself loose.

This design combines the best from East and West. It has a knife that cuts a clean line no matter which way the grain is running, and a thumbscrew that is easy to adjust. Also, my cutter has a spear point, so it can be used in both directions. There are similar cutting gauges available commercially, but they all have design quirks—the shape

A cutting gauge makes a better marking gauge

DOVETAILS

A marking gauge with a knife-style cutter cuts much more cleanly across the grain than a pin-style gauge, and won't catch a grain line and get off track when cutting with the grain.

TENONS



Marking Gauge

BY MATT KENNEY

of the fence or the location of the thumbscrew—that make them uncomfortable to use. When you make your own, you can shape the fence and locate the thumbscrew to fit your hand. Also, once you know how, you can make others for specific tasks. For example, I made a small one to scribe dovetail shoulders. Last but not least: There's a real joy that comes from using a hand tool that you made yourself.

Fit the fence around the bar

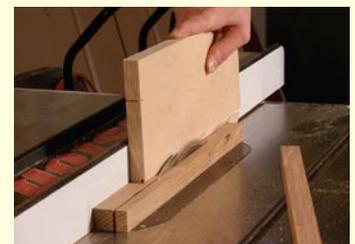
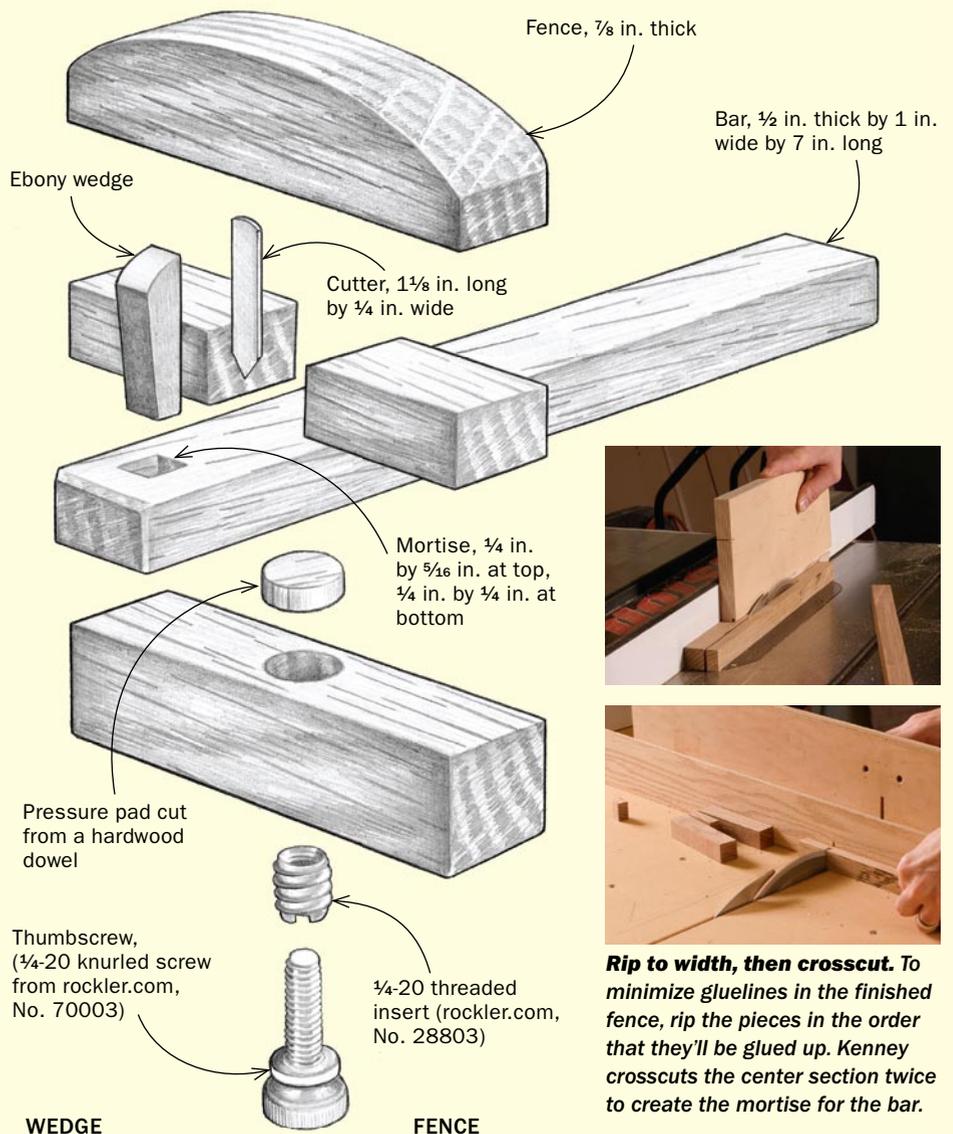
The trickiest part of making a marking gauge is getting the bar that holds the cutter to fit nicely in the mortise that goes through the fence. I find it tedious to try and fit the bar into a mortise cut into a solid piece of wood, so I glue up the fence around the bar.

Use a hard wood such as white oak or maple for the fence and bar; quartersawn stock will be more stable. Start with a 4/4 board about 4 in. wide and 18 in. long. Joint and plane it to 7/8 in. thick. Next, rip three strips in this order: 7/8 in. wide, 1/2 in. wide, and 7/8 in. wide. If you assemble the pieces in the order they come out of the board, you'll have a good grain match and less-obvious gluelines. Use a handplane to remove the sawmarks.

Dry-clip the strips back together, in order, and mark out for the fence parts. Do this toward one end of the stock to leave

A SHOP TOOL FROM A SINGLE BOARD

The parts are milled from a 1-in.-thick piece of hardwood that is 4 in. wide by 18 in. long.

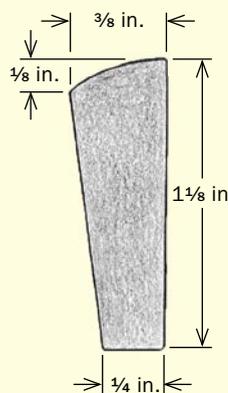


Rip to width, then crosscut. To minimize gluelines in the finished fence, rip the pieces in the order that they'll be glued up. Kenney crosscuts the center section twice to create the mortise for the bar.

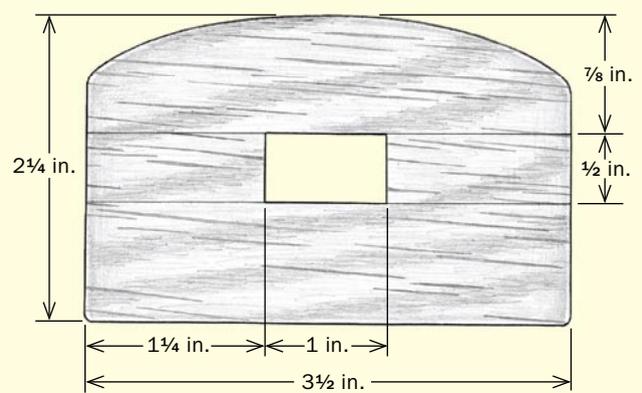
HINGE MORTISES



WEDGE

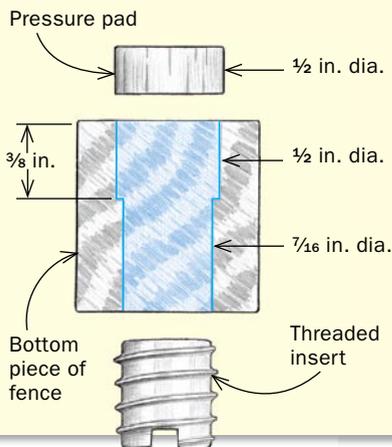


FENCE



Make the fence

FENCE MORTISE



A mortise houses the pressure pad. Drill a stepped through-mortise to hold the pad and the threaded insert.

enough length for cutting out the bar. To make the bar, cut a 12-in.-long piece from the 1/2-in.-wide strip. Make sure you don't use the section you marked for the fence. Now, drill the mortise for the cutter and square it up with a chisel, or use a mortising machine. At this point the mortise should be 1/4 in. square. But the cutter is held in place by a wedge, so you need to angle the wall farthest from the fence 5°. Use an angled guide block and a chisel. Finally, cut the bar to length.

The fence is a simple glue-up

From each of the two 7/8-in.-wide strips, crosscut a 5-in.-long piece. One will be the top of the fence, the other the bottom. Now cut a pair of 2-in.-long pieces from the 1/2-in. stock. These fit around the sides of the bar. Make sure the end grain cuts are square so the bar is perpendicular to the fence.

Before gluing up, drill the stepped mortise that will house the thumbscrew used to clamp the bar to the fence. Mark a center point on the top edge of the bottom piece. Drill a stopped mortise for the pressure pad. Then drill a through-hole, centered in the stopped mortise, for the threaded insert. Use a drill press to help drive in the threaded insert (see photos, left).

Glue up the fence around the bar to keep everything aligned. Spread glue on

TIP INSTALL THE INSERT

Saw the head off a bolt and thread two nuts and the insert onto it (right). Chuck the bolt into the drill press. Use the press (turned off!) to apply pressure as you turn the top nut with a wrench to drive the insert into the hole (far right).



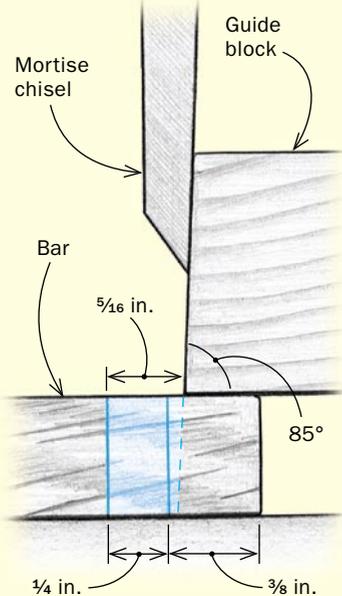
Glue up around the bar, then put the assembly in clamps. Take care to avoid glue on the walls of the mortise (above). Once the assembly is secure (right), remove the bar and any squeeze-out in the mortise.



Mortise the bar and install the cutter



ANGLED MORTISE



5° angle. Make a 1/4-in.-square mortise. Then use a guide block and chisel to angle one wall. Use a block of wood as thick as the bar to support the guide block.



Grind a spear point. After filing or grinding away the teeth from a jigsaw blade, shape the tip into a blunt spear point. Then reset the tool rest to bevel the edges of the tip.



Hone the bevel. Work the cutter on a stone to polish the back and the beveled edges.



Fit the wedge. While test-fitting, mark the wedge for cutting to length. The top can then be shaped.

the center pieces, but not on the top or bottom: You don't want glue on any of the walls of the bar's mortise. Once everything is clamped up, pull out the bar and make sure there is no glue in the opening. The bar should slide if pushed, but otherwise stay put. There should be no side-to-side play. After the glue has dried, crosscut the fence to length and shape it.

Give the cutter an edge

You can fashion a cutter quickly at the grinder from an old high-speed-steel jigsaw blade (see photos, above).

To hold the cutter in place, cut a wedge from a contrasting hardwood. I like cocobolo or ebony, but I wouldn't go out and buy some just for this—hard maple works fine as well. Use the guide block you made earlier to set a bevel gauge and mark a line on the stock for the wedge.

Cut out the wedge with a bandsaw. Make it plenty long so that after it's sanded smooth on all sides, it will still wedge the cutter in place. Clean up the saw marks, test the fit with the cutter in the mortise,

and mark where you want to cut it off. It should stick out about 1/16 in. below the bar, and 1/8 in. to 1/4 in. above the top of the cutter.

Getting the most from the gauge

For 99% of tasks, the beveled edge of the cutter should face the fence. This draws the fence against the workpiece as a cut is made, ensuring an accurate line.

For most tasks, a bevel-in cutter means the bevel is also facing the waste side of a cut. When marking out shoulders for tenons and even dovetails, this means I can make several passes and get a clean, deep cut, and then use a chisel to pare out a wedge in front of the cut line, leaving a clean shoulder as a reference for a chisel or saw. □

Matt Kenney is an associate editor.

