

# Shopmade Tenoning Jig

Micro-adjustment feature adds ease and accuracy

BY BRAD SCHILLING



The mortise and tenon is one of the most common woodworking joints. So a good tablesaw tenoning jig is a valuable tool for the shop. But top-quality, commercially made jigs don't come cheap. When I was faced with cutting a bunch of tenons, I decided to build a jig that included all of the features found in a top-of-the-line model.

The jig has a tall fence to support the

workpiece. And a heavy-duty hold-down keeps the stock securely in place. To minimize tearout, a narrow piece of scrap stock can be temporarily clamped in front of the workpiece. The jig slides smoothly along the table of the saw without side-to-side play. And a threaded rod with a crank allows easy and accurate adjustment of the workpiece relative to the blade.

Once I worked out the design and

bought the parts (see Sources on p. 75), I put together the jig in only a few hours. My total cash outlay for everything was about \$40, inexpensive compared with a store-bought jig with the same features.

The jig is made of  $\frac{3}{4}$ -in.-thick medium-density fiberboard (MDF), a smooth material that tends to stay flat and is reasonably inexpensive. Keep in mind that the jig is sized for my Delta Unisaw. However, it can

## TABLESAW TENONING JIG

With a heavy-duty hold-down, an extra-tall fence and a large, stable base, the tenoning jig provides a good measure of control and safety during a cut. MDF parts (all  $\frac{3}{4}$  in. thick) are smooth and stay flat. Runners made from UHMW plastic slide smoothly.

fit almost any saw simply by adjusting the length of the base as needed.

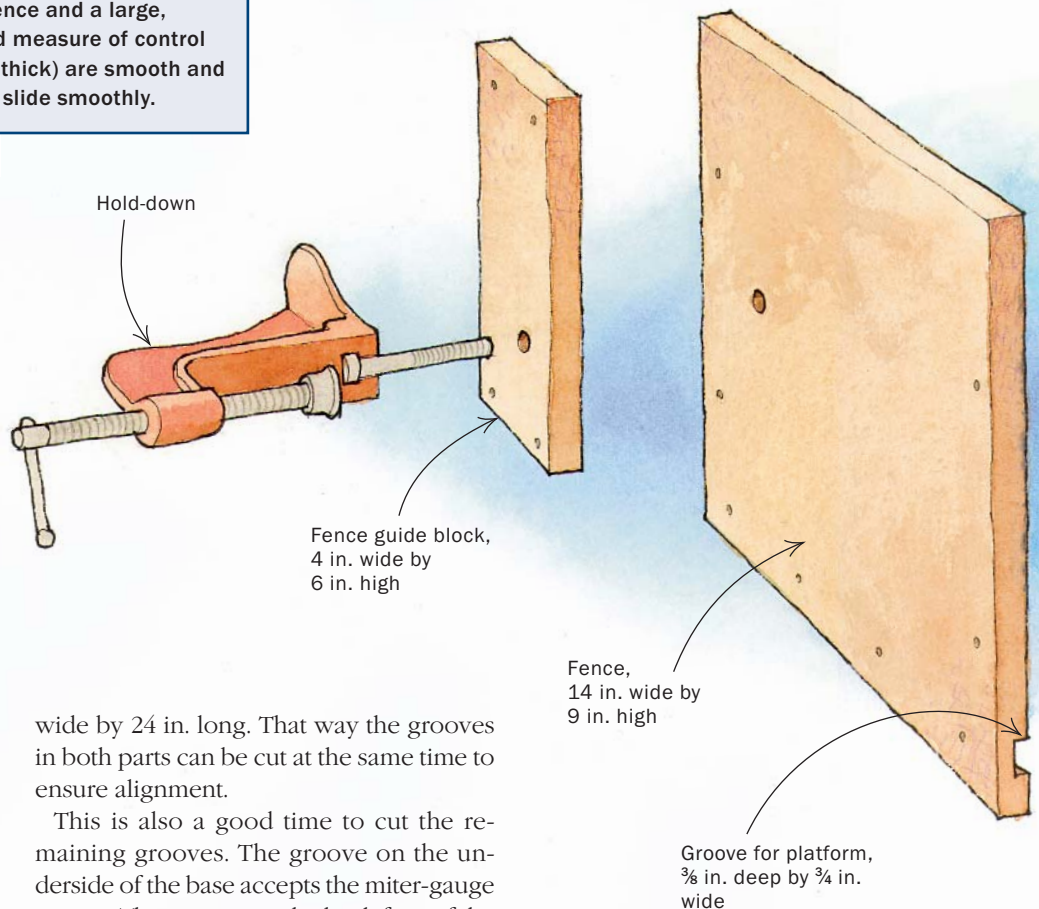
One more point before starting. Most of the parts of this jig are cut on the table saw. That means the saw must be cutting accurately. If it isn't, the jig won't have the built-in precision that's needed to make perfect cuts. So, before you get going, make sure the blade and rip fence are parallel to the miter-gauge slot and that the blade is square to the table.

### Rip the runners first

When the jig is in use, it's guided by an ultrahigh molecular weight (UHMW) plastic runner (see Sources) that travels along the saw's miter-gauge slot and fits in a groove in the jig's base. Cut the runner for a snug sliding fit in the slot. If the runner doesn't fit snugly, it can shift as it slides. While you're at it, cut the two plastic runners that mount to the platform. By the way, any good combination blade will produce a smooth cut in UHMW plastic.

### Cut the MDF parts

With the runners cut, you can start working on the MDF base and platform. Because these two parts have a pair of parallel grooves that need to align when the jig is assembled, cut both parts from an oversized blank—a single piece of MDF, 14 in.



wide by 24 in. long. That way the grooves in both parts can be cut at the same time to ensure alignment.

This is also a good time to cut the remaining grooves. The groove on the underside of the base accepts the miter-gauge runner. The groove on the back face of the fence accepts the platform.

Now cut the blank into two parts: one  $9\frac{1}{4}$  in. long for the platform and one 13 in. long for the base.

The connecting block and the support block work together as part of the micro-adjust system. Both of these parts have a hole bored on one face, with each hole drilled just deep enough to accept a wash-

er and nut. When the two parts have been assembled, the holes create a pocket that accepts both washers and nuts.

I used a router with an edge guide to cut the slot in the platform for the carriage bolt. Before routing, I drilled a  $\frac{5}{16}$ -in.-dia. hole to provide a starting point for a  $\frac{1}{4}$ -in.-dia. straight bit. The head of the carriage bolt is



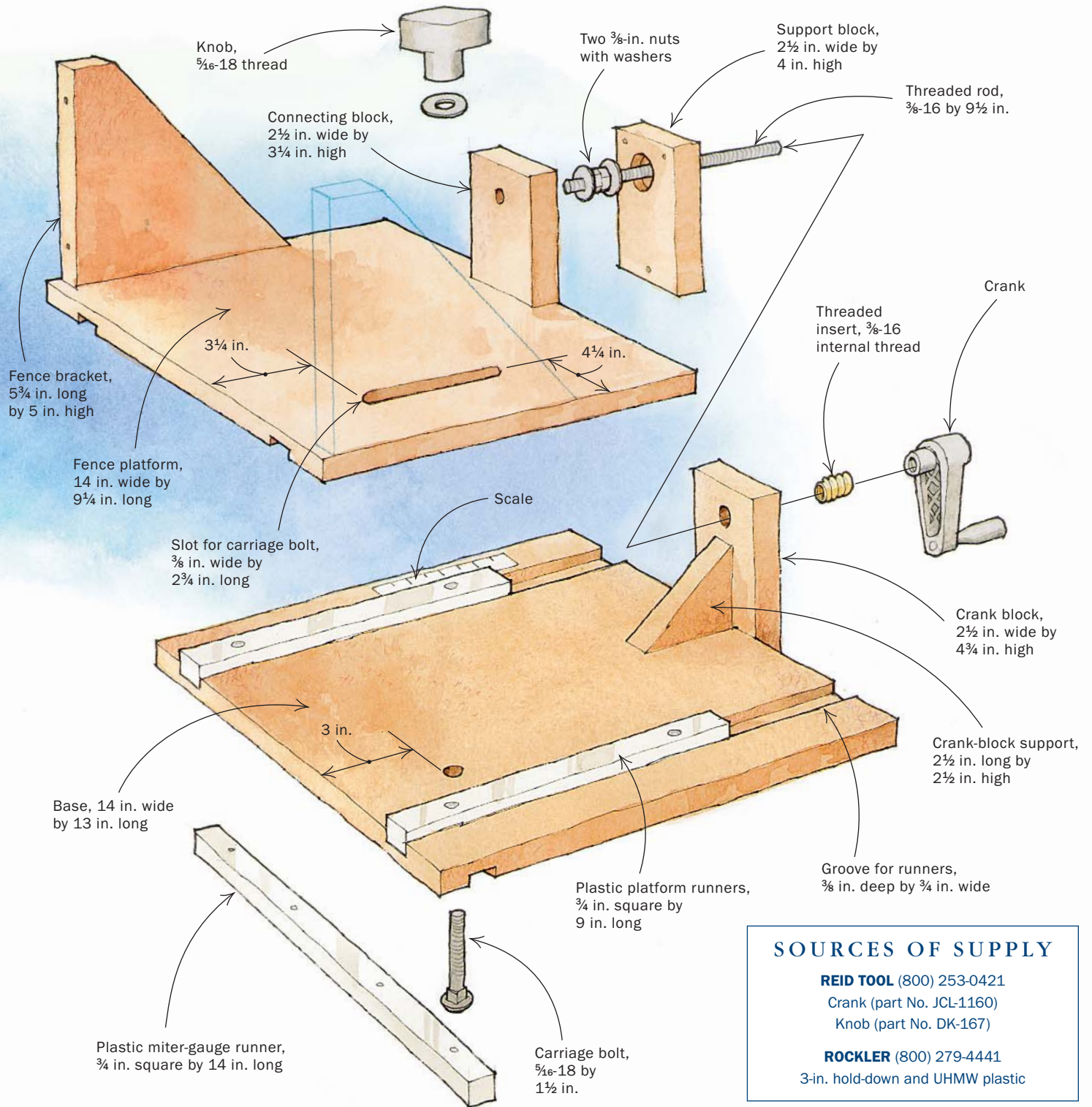
**Rip the plastic runners.** A combination blade makes a smooth cut in UHMW plastic.



**Cut some grooves.** A dado head plows a pair of parallel grooves in an oversized blank.



**Cut the blank in two.** Crosscutting the blank provides stock for the base and platform.



## SOURCES OF SUPPLY

**REID TOOL** (800) 253-0421

Crank (part No. JCL-1160)

Knob (part No. DK-167)

**ROCKLER** (800) 279-4441

3-in. hold-down and UHMW plastic

recessed in a counterbore in the underside of the base. Now add the threaded insert to the crank block. Drill a 1/2-in.-dia. hole, lubricate the outside threads of the insert with wax and screw it in place.

### Assemble and finish

At this point, all of the MDF parts can be screwed together. Keep in mind, though,

that MDF tends to split, especially when screwing into an edge. So it's important to drill pilot holes before adding screws.

After that, cut the three runners to final length. Then drill, countersink and screw each runner in place.

The micro-adjust system comes next. Cut the threaded rod to length. Then add the crank, nuts and washers. To complete the

system, it's just a matter of screwing the connecting block to the support block.

To add moisture protection to the jig, it's a good idea to apply a couple of coats of polyurethane to the MDF parts. Mounting the hold-down completes the jig. □

*Brad Schilling enjoys working wood in Fairview Heights, Ill.*