

Build a simple crosscut sled for the tablesaw

ESSENTIAL JIG ENSURES SQUARE CUTS

BY GARY ROGOWSKI



Every saw needs one. A shopmade sled makes it easier and safer to make accurate crosscuts on the tablesaw.

It's a euclidean world, darn the luck. Woodworking goes better when angles are precise, true, and above all, consistent. "Consistently off" may be how your work has been going until now, but making a tablesaw crosscut sled can fix many crosscutting woes.

My sled is a focal point of my shop. With it, I can produce square ends on stock. I can clamp on a stop block or make a pencil mark for repeat cuts. I can use the sled as a platform for other jigs to cut precise angles and to cut a variety of joints. And I can do all of this work safely and with greater accuracy.

A crosscut sled provides support from two directions (behind and underneath)

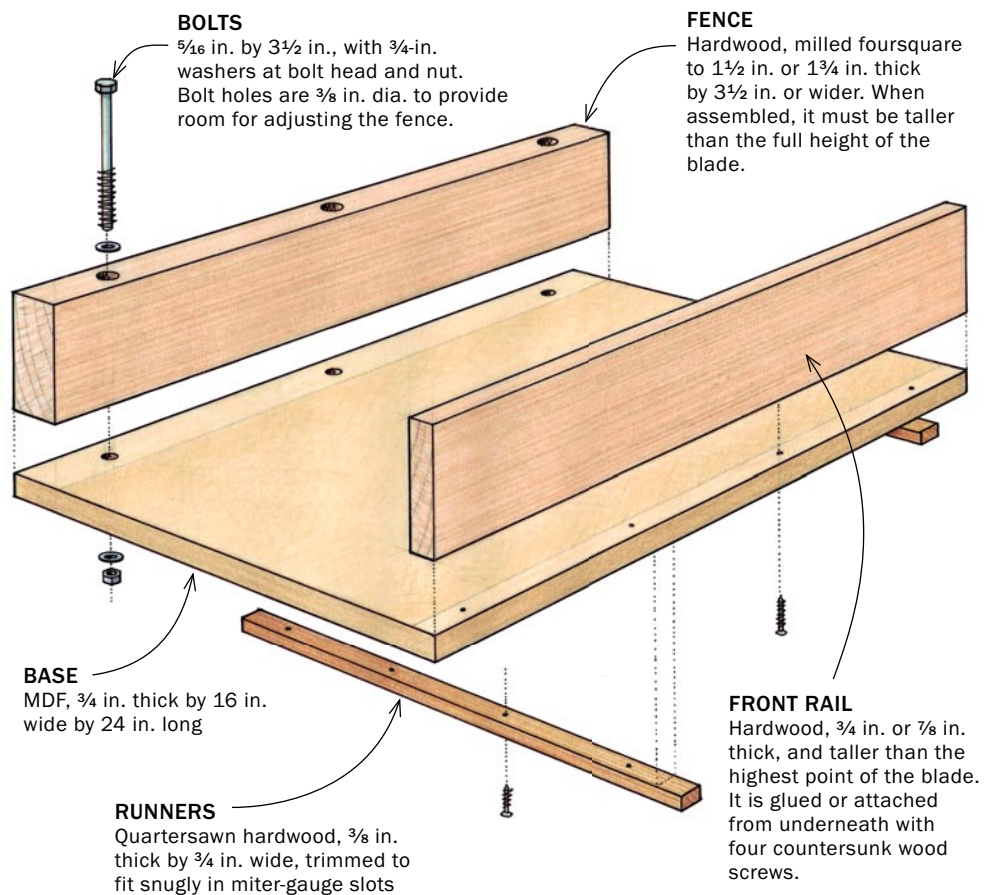
1. Attach the fence

Attach the fence with bolts. This makes it easier to adjust the fence so that it is square to the blade.



ANATOMY OF A SLED

A crosscut sled is a versatile tool with just a few carefully assembled parts. Its accuracy relies on close-fitting runners and a square fence.



and so holds a workpiece more securely than most stock miter gauges. This is especially helpful when crosscutting wider pieces, where a sled is a much safer option than running a workpiece against the rip fence, which is a recipe for kickback.

The sled is accurate in part because its twin runners ensure that the stock moves in a straight line past the blade. The stock is registered against a back fence that is carefully set at 90° to the blade. The fence is adjustable, so it can be reset if it gets knocked out of whack.

Start with a square piece of MDF

You can build any size sled, but I strongly recommend starting small. I've learned that it pays to make your first sled for 99% of cuts, that is, boards less than 13 in. wide. The sled will be easier to make, easier to move, and easier to adjust. For any cut wider than 13 in., I have another sled at 37 in. wide.

There are several keys to an accurate sled: a flat baseplate, straight runners that fit snugly in the miter slots, and a flat and square fence. Make the base out of ¾-in. medium-density fiberboard (MDF) about 16 in. wide by 24 in. long. Attach a front rail that is taller than the fullest height of the sawblade. Its job is to hold the front of the jig together.

Make fence and runners of hardwood

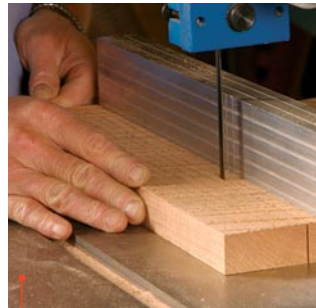
I make the fence out of hardwood, milled foursquare about 1½ in. thick and taller than my tallest cut. I make it this thick so I can fasten it onto the baseplate with bolts and washers. I built my first sled with screws, and they just don't hold up to the banging around this jig gets. If your MDF is relatively square, bolt on the fence so that its rear face is aligned with the back of the base. You'll adjust it later to square it with the blade.

For this sled, I used ⅝-in. bolts and drilled ⅜-in.-dia. holes. This gives me room to adjust the position of the fence.

The runners are critical to the success of the jig. If they don't run without play in the miter-gauge slots, then your jig will ride sloppily, your cuts will be inconsistent, and your salty vocabulary

2. Install the runners

Make the runners of quartersawn hardwood. With the grain oriented in this way, seasonal wood movement will cause the runners to shrink or swell in thickness, as opposed to width. This means the runners won't bind.



1 Bandsaw to rough dimensions. Set the fence using measurements taken from the tablesaw's miter-gauge slot.



2 Joint two faces. These will serve as reference surfaces for final trimming of the runners to fit in the miter-gauge slots.



3 Trim to final width. Take light cuts and check the fit in the slot as you go. You also can use a planer or a handplane.



4 Attach the runners. Assembling the sled with the runners in their slots helps ensure they'll be parallel and properly spaced when you're done. Attach the runners with wood screws driven into countersunk holes.

5 Trim the high spots. Push the completed sled back and forth in the slots a few times. Any places where the runners rub against the side of the slots will darken. Trim these areas with a scraper, then wax the runners and the bottom of the sled to reduce friction.



3. Square the fence to the blade

The sled won't make accurate crosscuts unless the fence is precisely perpendicular to the blade. The oversize bolt holes in this fence make it possible to adjust the angle until test cuts yield square results.



1 Make the kerf. Set the blade to its full height and cut through the sled.



2 Make a test cut. Crosscut a piece of wide stock to gauge the fence's accuracy.



3 Check the cut with a square. Any gaps will help you determine the direction and amount of adjustment the fence requires.

will grow at an alarming rate. Make the runners of hard-wearing quartersawn stock such as oak or maple, about $\frac{3}{8}$ in. thick, or slightly thinner than the depth of the gauge slots. You don't want the runners bottoming out in the slots and lifting the baseplate off the saw table.

Make the runners to fit snugly in width, trimming them with a handplane to fit into the gauge slots. Next, drill four countersunk holes in each runner for flat-head screws to hold it in place.

Mount the runners and adjust the fence

Place the runners in the slots, lay the assembled base and fences on them, and push the package all the way to the

are visible. Mount these screws and then flip the sled over and drill and mount the four remaining screws.

Place the sled in the slots and try to push it. The runners will probably be too tight. Wax them and the bottom and see if will slide. If not, check for black spots on the runners that show where they're rubbing. Use a scraper or shoulder plane to trim those areas, re wax, and try again. The sled should move effortlessly in the slots with no side-to-side play.

Now you're ready to start working. Make the first cut in the sled by raising the blade just enough to slice through the baseplate. Then raise it for a higher cut. Place a piece of scrap on the sled and crosscut it, checking the results with a square. Adjust the fence accordingly. You can make a through crosscut and flip the pieces to see if they line up perfectly, but I prefer to use a square. Lock down the fence with the bolts when you're cutting square.

Remember to always set the jig down so that it's not resting on its fence. You don't want it knocked about. Also, be very careful of the exit point on the sled. Mark this zone to remind yourself never to place your fingers close to it. □



4 Mark your starting place. Before adjusting the fence, mark its original location as a reference point.



5 Tighten the fence. When you're done adjusting, crank the bolts home and you're ready to make crosscuts.

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In a video, Gary Rogowski offers tips and tricks to upgrade a tablesaw crosscut sled. His suggestions will keep this useful jig working smoothly.

rear of the saw table so that one set of countersunk holes is visible. Make sure the jig's fence is relatively parallel to the back edge of the saw. Mount two screws into the sled, one in each runner. Then slide the assembly back to the front edge of the saw table so that two more holes