

BUILD A PRECISION CROSSCUTTING SLED

On-the-money, splinter-free crosscuts are well within your grasp using most well-made tablesaws, but you do have to do a few things to ensure great results cut after cut. First, install a high-quality, clean-cutting blade such as the Freud Premier Fusion



general-purpose blade or one especially made for crosscutting a specific material such as plywood or melamine. Then, adjust the saw so the miter slots in its top are exactly parallel to the blade. And finally, build this sled. With it, the workpiece you're cutting is in full and steady contact with the base and fence throughout the cut, giving you total control – even with small workpieces as shown (photo 3 as an inset to photo 1) – while providing zero-clearance support to the cut. And, the sled's sliding stopblock ensures pieces of exactly the same length when making repetitive cuts.

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Start with **the base and fences**

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2. Rip four pieces of $\frac{1}{2}$ " plywood to 3" wide by 32" long. Laminate two of those pieces face-to-face for the front fence and two pieces for the rear fence.

3. Cut a $\frac{3}{4}$ " groove $\frac{1}{4}$ " deep, centered along the front face of the rear fence.

4. Glue and screw the front fence flush with the front edge of the base. Pre-drill the holes to prevent the plywood from blowing out, and be careful not to keep screws well away from the jig's line of cut.

Add the miter-slot guides

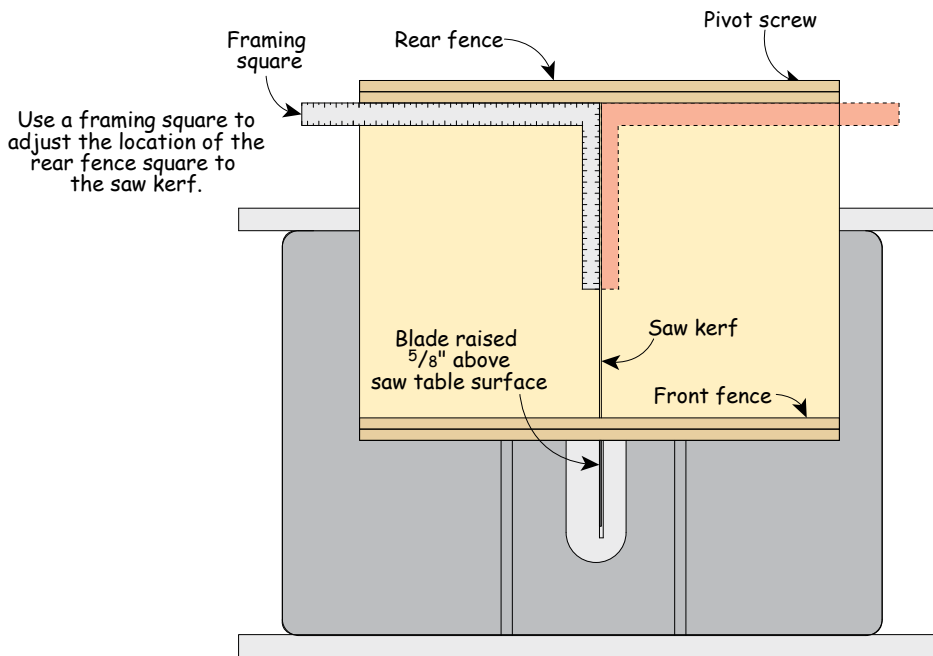
1. From a $\frac{3}{8}$ "-thick hardwood such as oak, cut the two miter-slot guides to $\frac{3}{4}$ " wide and 24" long. The guides should fit snugly in the miter-gauge slots on your tablesaw, yet slide back and forth easily. Sand or recut as necessary.

2. Place a dime in each tablesaw slot and position the miter-slot guides directly on top of the dimes. The dimes elevate the miter-slot guides about $\frac{1}{16}$ " above the saw surface for clearance when gluing the guides to the bottom of the base in the next step.

3. Adjust your saw's rip fence perfectly parallel to the miter slots. Position the rip fence about 16" either side of the blade to center the base over the blade. Fully lower the blade and apply a thin bead of woodworking glue down the center of each miter-slot guide. Reposition the base on top of the guides with one edge of the base against the fence. Place weight on top of the base to hold it firmly on the guides until the glue dries.

Attach the rear fence

SQUARING THE REAR FENCE TO THE SAW BLADE



1. Raise the blade 5/8" above the tablesaw surface. Cut through the front fence and base. Attach the left-hand end of the rear fence to the left-hand rear corner of the base with a countersunk 1-1/2"-long screw. Again, pre-drill the screw holes to prevent blow-out.

2. Using a framing square, align the rear fence square to the saw kerf. To ensure

that the framing square is indeed square, align its long edge on both sides of the rear fence as shown on the SQUARING THE REAR FENCE TO THE SAW BLADE drawing. The short edge of the framing square should be parallel to the saw kerf whether you place the square's long edge against the left- or right-hand side of the front fence: if it's not you need to either: a.) adjust the square's short edge inward toward the longer edge by striking it with a center punch at the outside of the corner where the edges meet; or b.) adjust the square's short edge outward from the longer edge by striking it with the punch at the inside of the corner where the edges meet.

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Attach the rear fence

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3. With the fence square to the saw kerf, clamp it in place, pre-drill a screw hole through the right-hand rear corner of the base and into the right-hand end of the rear fence, and drive a countersunk 1-1/2”.

4. Crosscut a piece of stock and check its cut end for square. Adjust the rear fence if necessary. Once accurately located, drive two screws on both sides of the kerf to secure the rear fence to the back edge of the base.

Make the stopblock & safety block

- 1.** Cut the stopblock and stopblock guide to size as shown on the CROSSCUT TABLESAW SLED drawing. The stopblock is 1/8" narrower than the rear fence to allow it to slide back and forth without rubbing against the base (see END SECTION VIEW drawing). Cut a sawdust-relief chamfer on the bottom inside corner of the stopblock where shown.
- 2.** Cut four pieces of 2x4 pine to 5" long. Laminate those face-to-face to create a blank for the safety block. Bandsaw the safety block to shape, tapering it from 5" at the front to 3" at the rear. Sand the safety block smooth, and glue and clamp it to the back side of the rear fence centered over the saw kerf.
- 3.** Sand the crosscut sled smooth. To help keep the sled clean, add a coat of finish. Mask off the areas next to the safety block and paint the block red. The red paint warns you to keep hands clear of this area. When cutting, stop the sled before the blade exits the back end of the safety block, and never use the safety block to push the sled across the blade.
- 4.** Enjoy your new sled and the precision cuts you'll gain by using it!

