Building a Crosscut Sled for a Table Saw

Making square cuts on wide stock is quick, safe and easy with this simple jig that you can build in a day

BY REX ALEXANDER

When I streamlined the small shop I use for building kitchen cabinets, one of the first jigs I made was a crosscut sled for my table saw (photo right). Inexpensive and quick to put together (I built this one in a day), it is also one of the fastest, safest, most accurate ways to make 90° cuts on a table saw.

Although I designed this crosscut sled for my shop saw with building cabinets in mind, the design can be easily adapted for other table saws and other purposes. My sled is wide enough (24⅛ in.) to handle 2-ft. wide sheet goods with ease. The 32-in. length from the saw kerf to the side of the jig makes it easy to cut 30-in. cabinet sides. And I installed a handy little device called a Flip Stop (Woodworking FasTTraK; woodworkingfasttrak.com; 888-327-7725) that makes fast, accurate work out of repetitive cuts.

Shop sled. This shop-built jig makes crosscutting items such as cabinet components fast, safe and easy with its large capacity and pinpoint accuracy.

Smooth melamine and aluminum runners provide the slide

The bed of the sled is a rectangle of ½ in. double-sided melamine 25½ in. by 48 in. I chose melamine because its smooth surface lets it glide easily. The sled is guided by runners in the miter-gauge slots on the table saw.

The runners are made from ¾-in. by ⅜-in. aluminum bar stock (available at hardware stores or welding-supply shops) that I precut to 25½ in., the overall width of the sled bed. I first make sure the runners slide smoothly in the slots on the saw. To keep the box dead accurate, the runners should fit snugly in the slots with no side-to-side play.

Before I begin assembly, I draw a line on the table saw in line with the sawblade to the edge of the table. With the runners in their slots, I lower the blade, place the melamine sled bed on the table saw and mark 32 in. from the right side on the edge of the melamine (for the proper sled width). I then line up that mark with the sawblade mark and clamp the melamine flush with the edge of the table.

Next, I mark the centerline of each runner on top of the melamine panel and drill a ⅛-in. hole on this line ⅜ in. from each edge of the panel. The drill bit should pierce through the melamine just enough to make a dimple in the aluminum runner.

After I unclamp and remove the panel, I drill and tap the runners for 8/32 machine screws (photo left, facing page). I then attach the melamine to the runners with countersunk flat-head machine screws. When the runners are attached, I slide the melamine to make sure it moves smoothly without binding and that it still lines up with the table.

Front and rear supports keep the jig together when it's sawed in two

When the jig is in use, the melamine base is sawed into two pieces. To keep the jig together, ¾-in. plywood supports 3 in. high run along the front and rear edge of the jig. On the rear or trailing edge of the jig, the plywood support is glued to a ⅝-in. by 3-in. hardwood fence to give the fence added rigidity and the proper thickness for the Flip Stop.

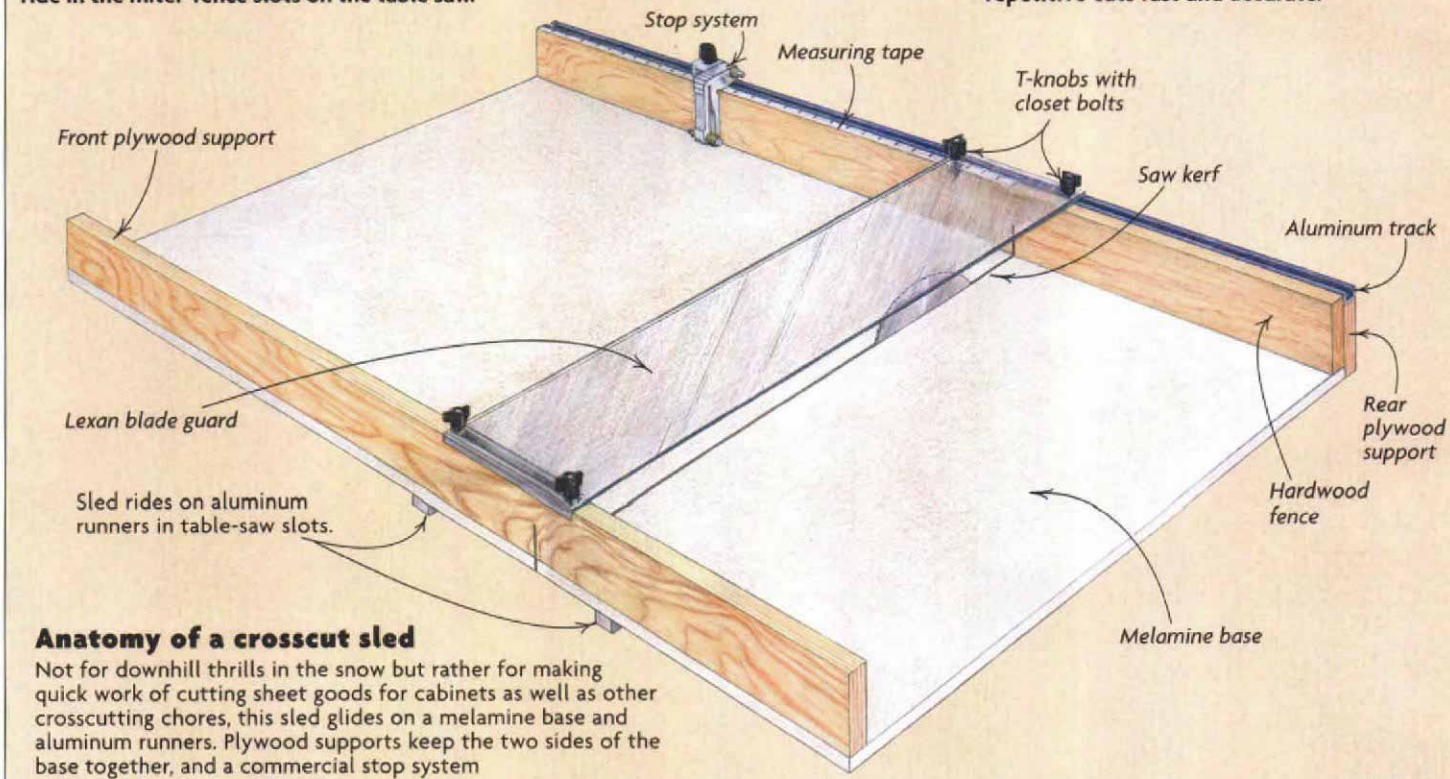
I cut a 7-in. notch ½ in. deep in the top edge of the front support centered on the blade. The notch is for a length of aluminum track that holds a couple of toilet bolts for attaching the Lexan blade guard after the sled is assembled.

Next, I turn the base upside down on top of the front support and the hardwood fence. Keeping the support and fence flush with the edges of the melamine, I countersink 2-in. deck screws in predrilled holes every 8 in. (photo center, facing page). I turn the jig back over and set it into the slots on the table saw.

Aluminum runners for a smooth ride. Runners made from aluminum bar stock are drilled and tapped for flat-head bolts that hold them to the melamine base. The runners ride in the miter-fence slots on the table saw.

Upside-down assembly. After the runners are bolted to the base, the base is turned over and screwed to the rear plywood support and to the hardwood fence plate.

A built-in stop. A commercial jig called a Flip Stop rides in an aluminum track on top of the fence. Calibrated to an adhesive-backed measuring tape, the jig makes setting lengths for repetitive cuts fast and accurate.



Anatomy of a crosscut sled

Not for downhill thrills in the snow but rather for making quick work of cutting sheet goods for cabinets as well as other crosscutting chores, this sled glides on a melamine base and aluminum runners. Plywood supports keep the two sides of the base together, and a commercial stop system enhances the sled's capabilities.

The rear fence support is then glued and clamped to the hardwood fence; I take care not to glue it to the melamine base in case the jig needs to be tweaked later. After the glue has set, I attach a length of aluminum track flush on top of the rear support to hold the Flip Stop jig.

The sled is worthless if it doesn't cut square

Now I'm ready for a trial run. I put a melamine-cutting blade in the saw set at 0° and leave the blade cranked all the way down. I position the sled with the front support directly over the center of the blade, turn on the saw and slowly crank the blade up until it's about 1½ in. above the melamine base. Then I push the sled through, letting the blade slice the fence and its support.

I retract the blade and set a framing square against the fence next to the saw kerf. If it's out of square, I note which direction and by how much. Then I back out the screws, remove the fence and shave that amount off one side or the other of the melamine. A belt sander is my usual adjusting tool. When I reinstall the fence, I drive the screw through a new hole near the end of the side that was adjusted, and I recheck the sled for square. If necessary, I repeat the process until the fence is perfectly square to the kerf.

The guard for the jig is a 7-in. wide piece of ¼-in. Lexan that has been predrilled and then slipped over the toilet bolts in the aluminum track. The aluminum track adds a measure of reinforcement over the kerf in the track, and the guard can be removed easily by removing commercially available T-knobs. Screws would also probably work well to hold the guard in place. Frankly, though, the track and knobs look better, and I'm inclined to do better work with nicer-looking tools.

The final step is installing the Flip Stop and the adhesive-backed measuring tape on top of the fence (photo right). The Flip Stop is secured in the aluminum track, where it can be flipped down for repeat cuts or flipped up out of the way when not needed. With its microadjuster, I can calibrate the cut to the exact measurement on the tape, adding even more speed and accuracy to this handy crosscut sled. □

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