



Woodsmith **PLANS**

PRECISION CROSSCUT SLED



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Accurate and clean crosscuts plus a versatile fence for accessories add up to make this a must-have jig for your table saw.



When crosscutting on the table saw, I like the fool-proof accuracy a sled provides. This solid but lightweight sled makes cutting long or wide workpieces easy.

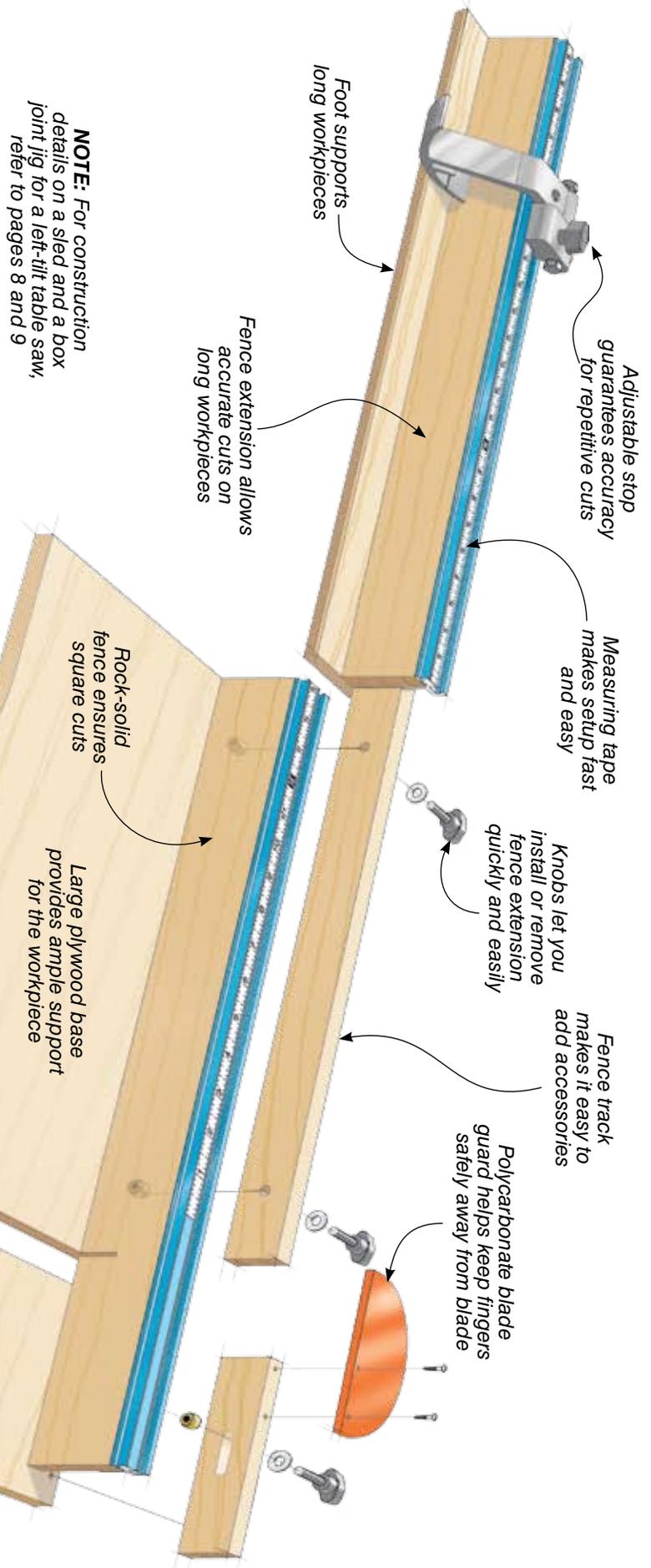
The rock-solid design of the fence means you'll always get square cuts.

And the fence is designed so you can add a variety of accessories, like a flip stop, ruler, and a box joint jig.

Another unique feature of this sled is its "zero-clearance" base. The sliding base extension allows the sled to hug both sides of the blade.

That means your cuts are cleaner with less chipout.

With all these features, this sled is sure to become your go-to table saw jig and one you're likely to leave on your saw most of the time. Turn to the next page to get started.



Construction Details

Overall Dimensions:
 21³/₈" D x 24" W x 5" H
 (Without fence extension)

NOTE: For construction details on a sled and a box joint jig for a left-tilt table saw, refer to pages 8 and 9

Sliding base section adjusts width and minimize chipout

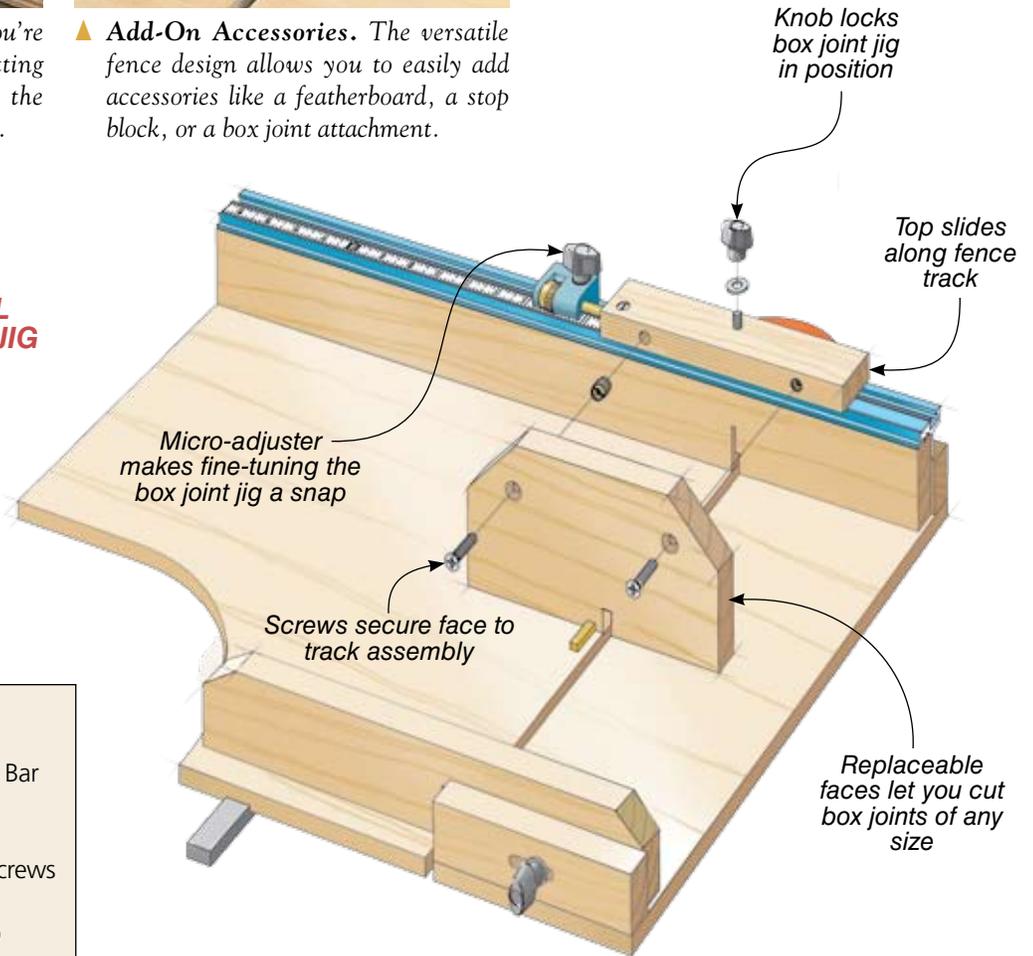


▲ **Zero-Clearance Base.** Whether you're making a simple crosscut or cutting dados, rabbets, or box joints, the adjustable base ensures less chipout.



▲ **Add-On Accessories.** The versatile fence design allows you to easily add accessories like a featherboard, a stop block, or a box joint attachment.

OPTIONAL BOX JOINT JIG



HARDWARE

- (1) $\frac{3}{8}$ " x $\frac{3}{4}$ " - 20" Aluminum Miter Bar
- (3) No. 8 x $\frac{5}{8}$ " Fh Woodscrews
- (10) No. 8 x $1\frac{1}{4}$ " Fh Woodscrews
- (2) 24" Aluminum Fence Tracks w/Screws
- (1) Flip Stop
- (1) 4' Measuring Tape (Left-to-Right)
- (4) $\frac{1}{4}$ "-20 Knobs w/Insert
- (4) $\frac{1}{4}$ "-20 x $1\frac{3}{4}$ " Threaded Rods
- (4) $\frac{1}{4}$ " Washers
- (4) $\frac{1}{4}$ "-20 Threaded Inserts
- (2) No. 6 x $\frac{5}{8}$ " Rh Woodscrews
- (1) Micro-Adjuster*
- (1) $\frac{1}{4}$ "-20 x $1\frac{1}{2}$ " Hex Bolt*
- (1) $\frac{1}{4}$ " Washer*
- (1) Knob with $\frac{1}{4}$ "-20 Insert*
- (1) $\frac{1}{4}$ "-20 Cross Dowel*
- (2) $\frac{1}{4}$ "-20 Threaded Inserts*
- (2) $\frac{1}{4}$ "-20 x 1" Fh Machine Screws*

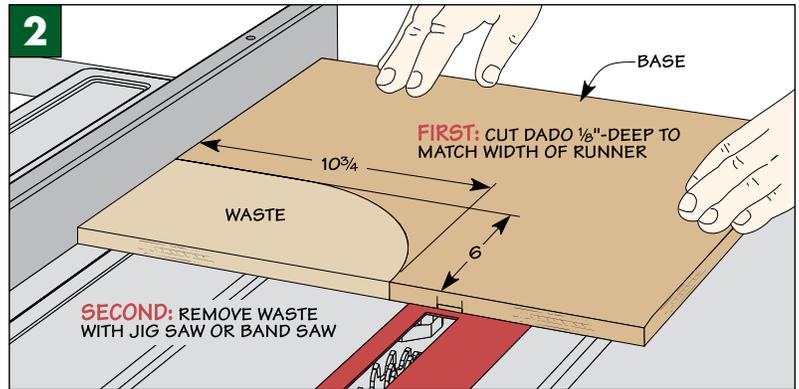
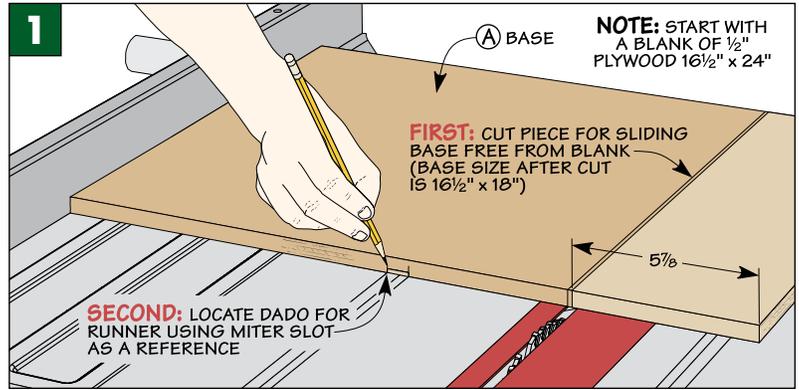
* Indicates items for optional box joint jig shown in the drawing above

MATERIALS

- | | |
|--------------------------------|---|
| A Base (1) | 16 $\frac{1}{2}$ x 18 - $\frac{1}{2}$ ply. |
| B Rear Fence (1) | $\frac{3}{4}$ x 2 $\frac{1}{4}$ - 24 |
| C Front Fence (1) | $\frac{3}{4}$ x 2 $\frac{1}{4}$ - 13 $\frac{1}{2}$ |
| D Sliding Base (1) | 16 $\frac{1}{2}$ x 5 $\frac{7}{8}$ - $\frac{1}{2}$ ply. |
| E Adjustment Blocks (2) | $\frac{3}{4}$ x 1 $\frac{1}{2}$ - 5 $\frac{7}{8}$ |
| F Guard (1) | 3 $\frac{1}{8}$ x 5 - $\frac{1}{4}$ polycarbonate |
| G Fence Rail (1) | $\frac{3}{4}$ x 1 $\frac{1}{2}$ - 42 |
| H Fence Face (1) | $\frac{3}{4}$ x 2 $\frac{1}{4}$ - 24 |
| I Fence Foot (1) | 3 x 24 - $\frac{1}{2}$ ply. |
| J Top (1) | $\frac{3}{4}$ x 1 $\frac{1}{2}$ - 8* |
| K Face (1) | $\frac{3}{4}$ x 4 $\frac{1}{4}$ - 8* |



▲ **Adjustable.** Move the extension in or out to accommodate different blade widths.



Rock-Solid Base & Fence

The foundation of the sled is the plywood base where the workpiece rests. The miter bar goes underneath, but on top of the base, you'll add the front and rear fences. Then you'll add the fence track, measuring tape, blade guard, and flip stop. It all adds up to a solid, accurate sled.

Before you get started, there are a few things to mention. This sled was

designed for a right-tilt table saw. If your blade tilts to the left, you'll need to make a mirror image of the sled. This is so the sliding base can accommodate a wide range of dado blade widths (photos above).

Also, take the time now to tune up your saw. You'll want to make sure the blade and rip fence are parallel to the miter slots. Doing this now

will help ensure accuracy is built into the crosscut sled to make it the most-used jig in your shop.

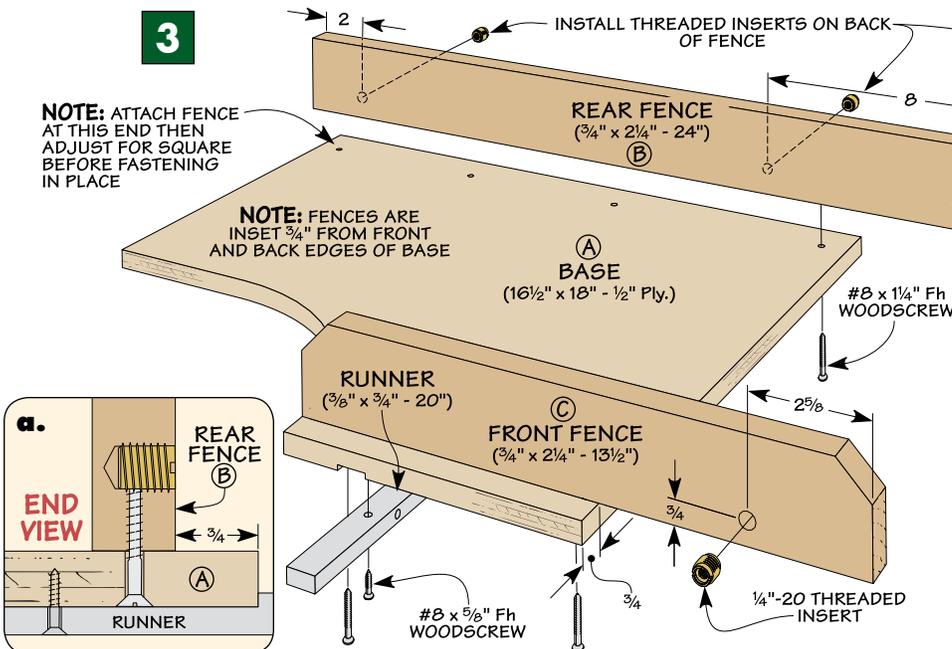
SLIDING BASE

The fixed and sliding bases are cut from a single blank. When cutting the blank to size, I made sure the edges were square. This is important because you'll use the rip fence to locate and cut the dado for the runner. And you'll use the front and back edges to determine the location for the fences later.

SLIDING BASE. The first thing to do is cut the piece for the sliding base from the blank and set it aside, as shown in Figure 1. Without moving the rip fence, mark the location for the runner using the edges of your saw's miter gauge slot as a reference.

FIXED BASE. After cutting the dado for the runner, go ahead and cut the curved cutout, as you see in Figure 2. Finally, attach the runner and adjust it for a smooth, sliding fit in your saw's miter slot.

FENCE BLANK. Now you can get to work on the front and rear fences that you see in Figure 3. To make



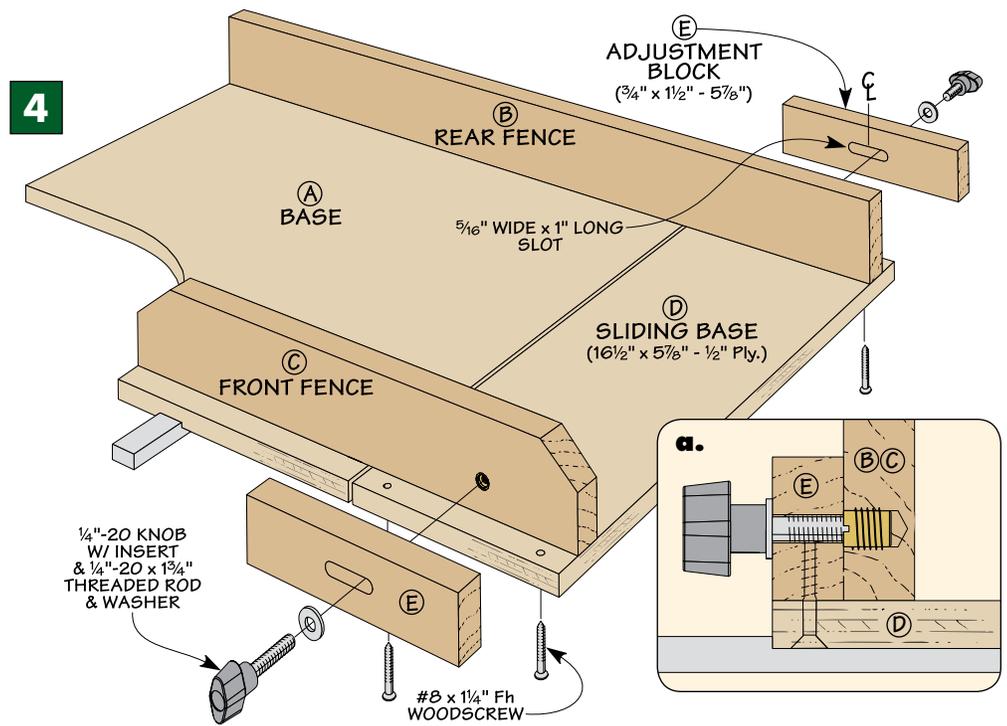
both fences, I started with a long blank. I ripped the blank to width and cut the fences to size. Then it's just a matter of cutting off the corners of the front fence (Figure 3).

INSERTS. Now, you'll find it's easier to install the threaded inserts before attaching the fences to the base. The inserts are used for adjusting the sliding base and attaching the fence extension you'll make later.

ADDING THE REAR FENCE. If you take a look at Figures 3 and 3a, you'll see that the fences are inset from the edges of the base. This provides room for the adjustment blocks used to position the sliding base.

The accuracy of the sled depends on the rear fence being square to the blade, so it pays to take extra care when installing it. To do this, I fastened the fence to the sled with one screw at the far end of the sled. Then after squaring it up, you can fasten the fence at the opposite end with one screw and make some test cuts. Once everything checks out, add the remaining screws to lock the fence down to the base.

FRONT FENCE. The front fence comes next. The important thing to keep in mind here is that it needs to be parallel to the rear fence so the extension can slide in and out freely.



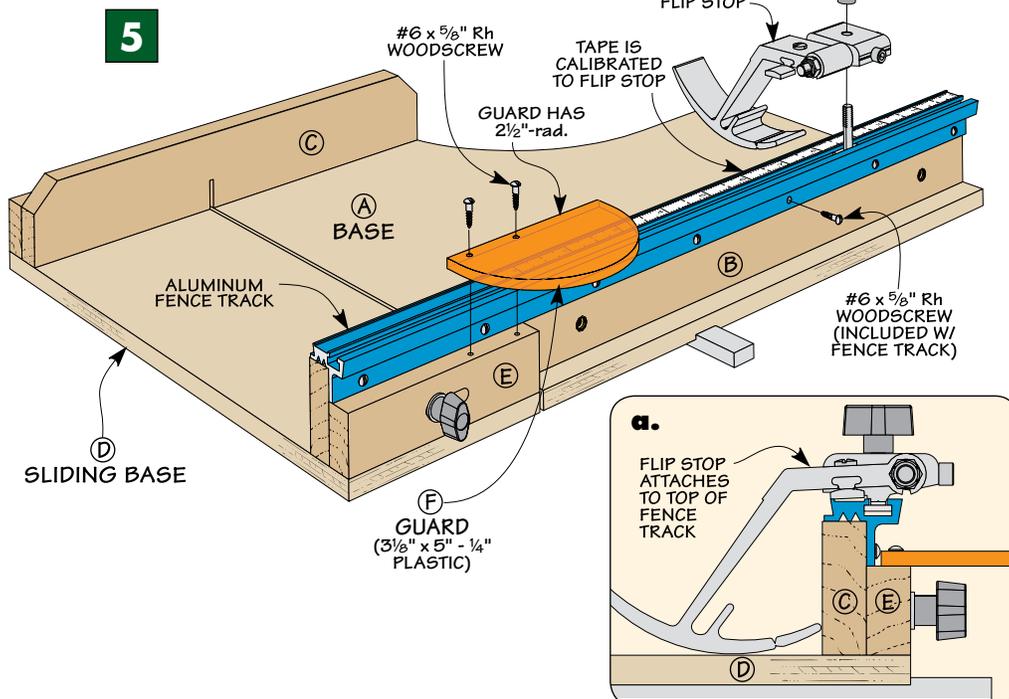
SLIDING BASE & DETAILS

Now you can turn your attention to the sliding base (Figure 4). All you need to add here are the two adjustment blocks. The slots allow the sliding base to hug the blade as you're crosscutting. When you fasten the blocks to the sliding base, they'll sit flush with the front and back edges of the base (Figure 4a).

Adding a little hardware comes next. Make the studded knobs to ensure they are just the right length

to engage the threaded insert. To do this, use a dab of epoxy to lock the threaded rod into the knob.

FINAL DETAILS. To finish up the rear fence, you'll add a commercial fence track, measuring tape, flip stop, and finally, the blade guard, as you see in Figure 5. At this point, you have a fully functional sled that's sure to become a mainstay in your shop. But on the next page, you can make the fence extension that extends the capacity of the sled.



▲ **Blade Guard.** The guard helps keep your fingers away from the spinning blade as it exits the sled.



▶ **Long-Reach Support.** The fence extension gives you the capability to accurately cut long workpieces with ease.

Adding the Fence Extension

The crosscut sled by itself is a must-have addition to any table saw. But for cutting longer workpieces, this add-on fence extension lends a helping hand. The extra length plus the “foot” on the extension work to support a long workpiece for making

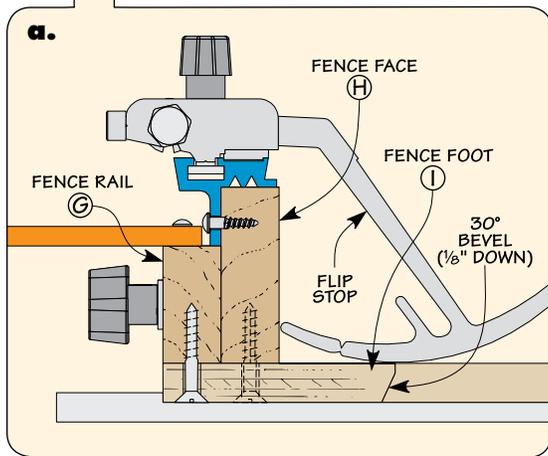
precise cuts. You can see in Figure 6 how the extension mounts to the sled’s fence with studded knobs.

START AT THE RAIL. Figure 6 also shows how the fence extension is put together. I started with the fence rail — the “backbone” of the extension. After cutting it to size, drill the oversized holes for the studded knobs.

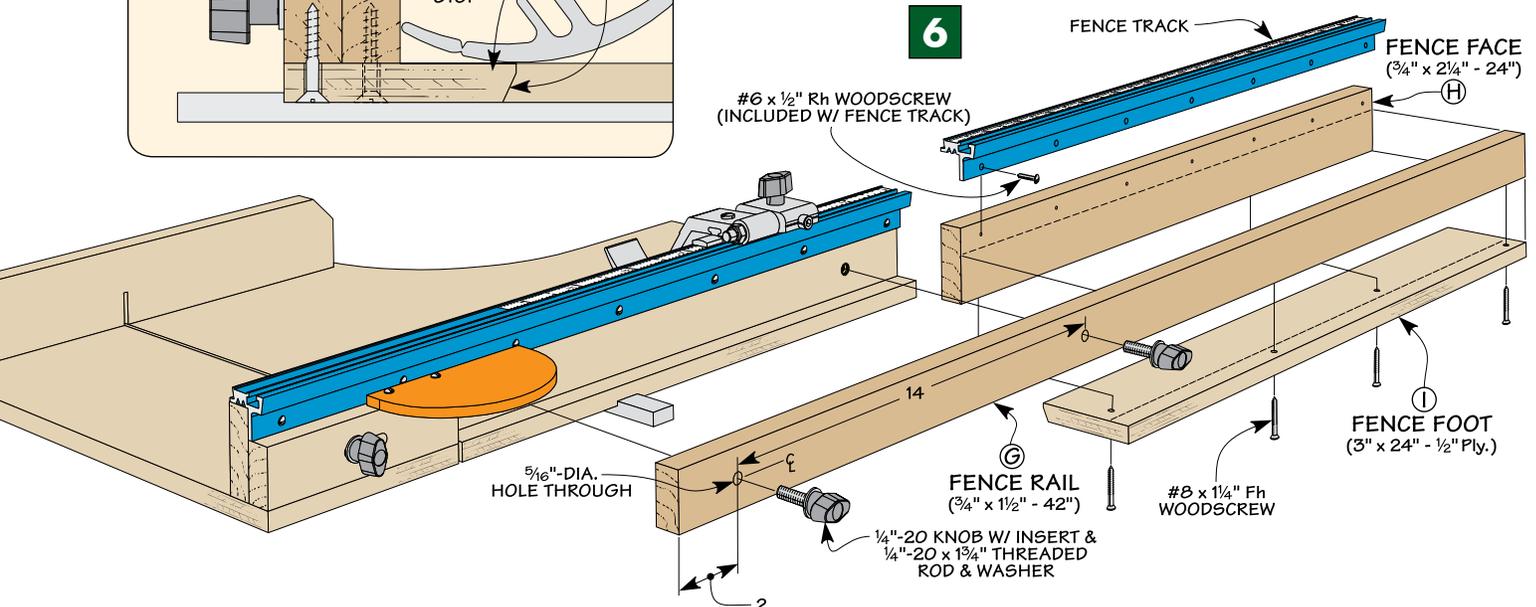
FENCE FACE. The fence extension’s face is just like the one on the sled’s rear fence. The only difference here is the addition of the foot. After cutting the face to final size, you can cut the foot with its beveled front edge. (This helps the fence slide over your saw’s table).

To make assembly of the fence extension easier and eliminate gaps between the sled’s fence and the extension, I fastened the fence rail to the sled first. Then I simply butted the end of the foot against the sled and fastened it to the rail. You can do the same thing with the fence face. Finally, you can install the fence track along the top edge and add the measuring tape.

HANDY HELPER. After making a few cuts with this sled, you’ll wonder how you got along without it. But to make it even more useful, page 7 shows how to make an attachment for cutting accurate box joints.



6



Box-Joint Attachment

The crosscut sled makes an ideal platform for cutting box joints, as you can see in the photo. It's easy to make and takes most of the "trial and error" out of cutting box joints.

The jig consists of a top piece that slides along the fence track. The micro-adjust mechanism takes the guesswork out of cutting box joints by allowing you to fine-tune its position. Finally, interchangeable faces allow you to easily cut a wide range of box joint sizes.

MICRO-ADJUSTMENT. It's best to start with the top piece so you can accurately fit the micro-adjuster (drawing below). You can cut the top to length, but leave it a little wide to make it easier to locate the holes for the cross dowel that accepts the stud on the adjuster.

To do this, install the micro-adjuster on the fence track. Now place the oversized top piece on top of the track, overlapping both the front and back edges. Use the threaded stud of the micro-adjuster to locate the holes for the stud and cross dowel (detail 'a'). With these

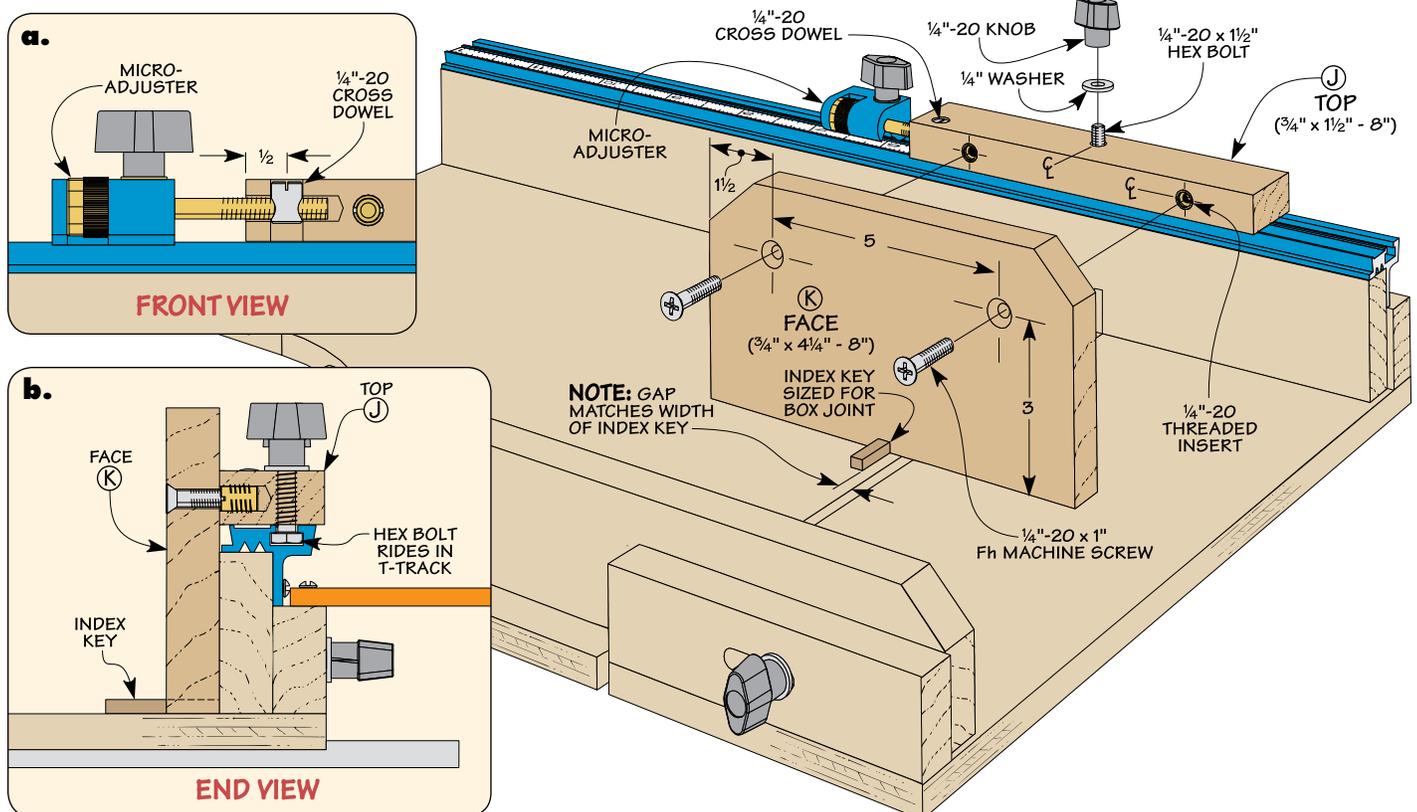
holes drilled and the cross dowel in place, go ahead and thread the micro-adjuster into the dowel. Now you can mark the width of the top using the fence edges as a guide, and then rip the top to width. Finally, after drilling the holes for the adjustment knob and inserts, thread the inserts into place.

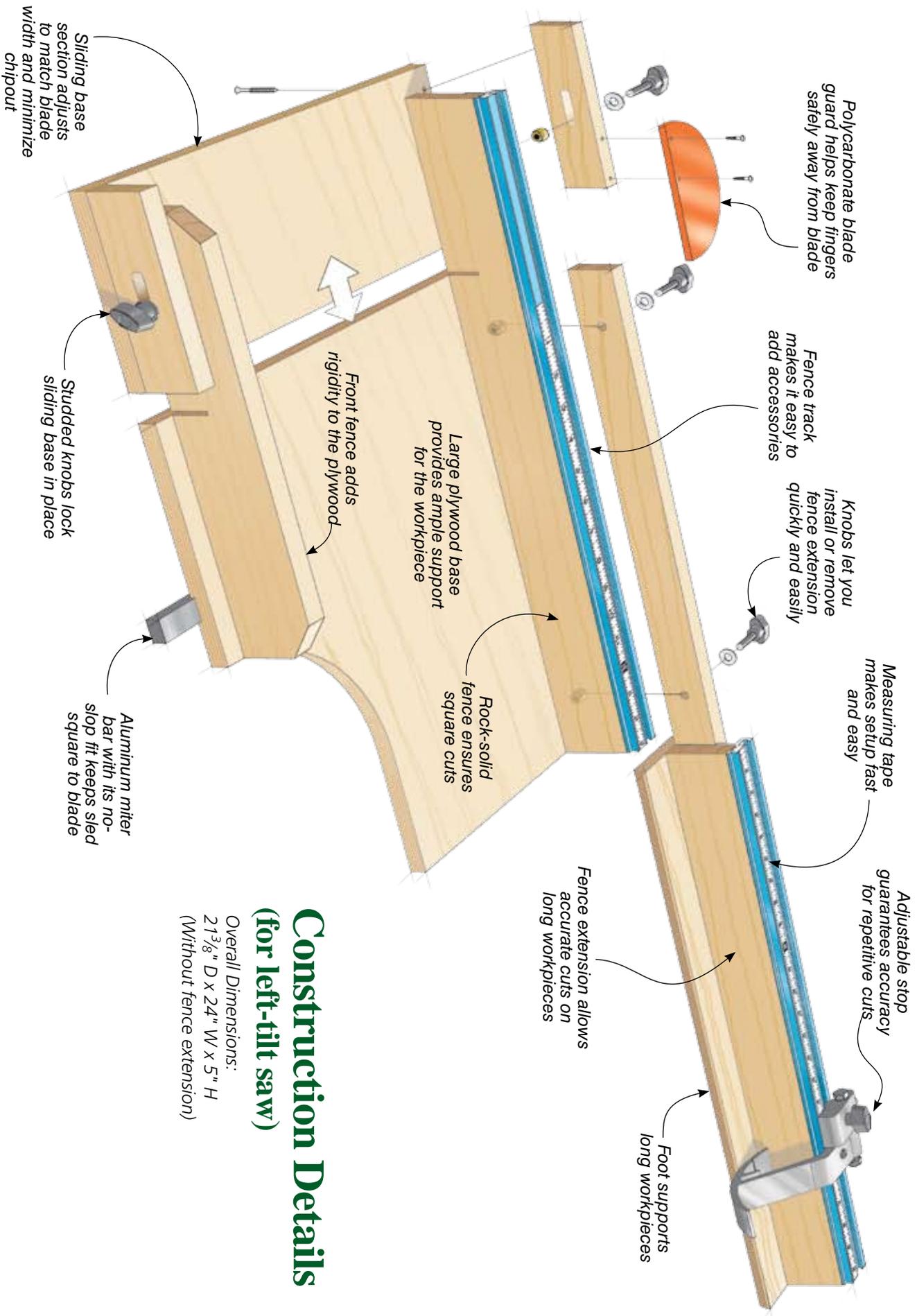
JIG FACE. Now you're ready to work on the face of the jig. There are only a couple of things you need to do here. First, drill countersunk holes for machine screws that fasten the face to the top. Then you'll need to cut a notch so you can glue the index key in place. (The width of the notch and key determine the size of the box joints.) The great thing is, you can make a separate face for each size of box joint you need to cut.

USING THE JIG. Using the jig is simple and similar to other box joint jigs you may have used. But the advantage here is the micro-adjuster. It's easy to zero in on the perfect fit of your box joint just by turning the knurled knob. And in no time, you'll be making perfect box joints.



▲ **Box Joints.** You can easily turn the crosscut sled into a precise box joint jig with this commercial micro-adjuster.





Construction Details (for left-tilt saw)

Overall Dimensions:
21 3/8" D x 24" W x 5" H
(Without fence extension)

**OPTIONAL BOX JOINT JIG
(for use with a left-tilt saw)**

