

## Miter Sled

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I often attach ½" - 1" wide edge banding to plywood drawer fronts. I prefer to miter the corners of the edge banding because it looks much more finished. It is demanding, however. The miters have to be perfect – at least, each corner has to be square because otherwise there will be visible gaps. The same would be true for a picture frame.

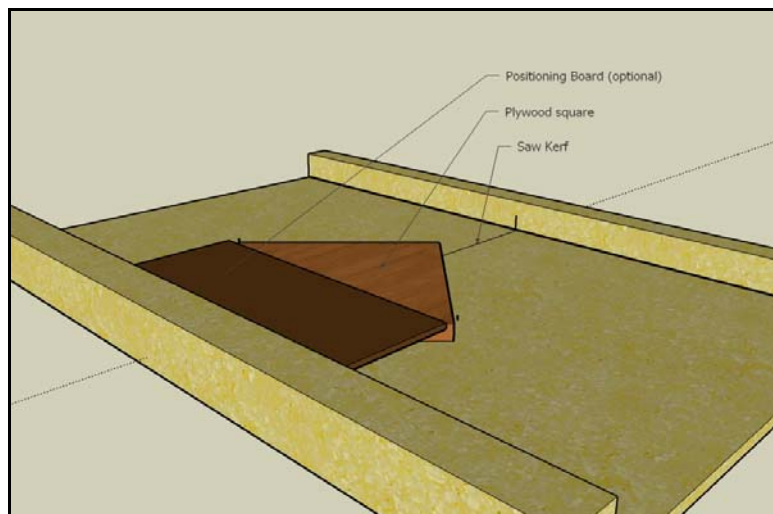
I prefer to keep the miter gauge on my table saw locked at 90°. Even if I were willing to adjust it to 45°, it would take many test cuts to get it exact. Then, when I was done, I'd have to go through the same process to return it to 90°. (Unless you have tried this, you may not recognize that the precision needed is much greater than the resolution of the angle graduations on a miter gauge.)

I cut very accurate 45° miters with a simple shop-made jig that screws to my [shop-made crosscut sled](#). The strategy is to make a fence that is 90° exactly and then bisect it to cut 45° miters. Measuring 90° is easier and more accurate than measuring 45°. Then it's fairly easy to bisect it exactly, to get precise 45° miters. Even if you miss 45° by a few seconds of arc, the joint will still add up to 90°.

The jig takes just a few minutes to make. Take a good, flat piece of ¾" plywood. Assuming that your crosscut sled is built to cut perfectly square, use it to trim two adjacent edges of the plywood so that they are 90° to each other. Then cut the plywood into a perfectly square shape by running those adjacent edges against the rip fence. A 10" square is a good size.

Turn the square piece of plywood so that one corner lines up with the saw kerf in the bottom of the crosscut sled and the opposite corner fits into the saw kerf in the front fence of the crosscut sled (the one nearest you.) The two leading edges of the square are now 45° to the direction of cut. They will be the "fences" for the work to rest against. Screw the plywood to the crosscut sled in that exact position. That is basically the whole jig.

If you like, you can add secondary fences to the edges of the plywood square. I did not bother. A ¾" high "fence" is high enough for cutting edge banding. You can also attach another piece of plywood or ¼" masonite to the plywood to help make sure that you can position it correctly when you reattach it later.



**Figure 1.** Miter Jig Resting on Crosscut Sled. One point of the plywood square is sticking into the saw kerf in the fence of the crosscut sled. It is concealed by the accessory "positioning board".

If you do not have a crosscut sled, you can use the same idea with an accurately adjusted miter gauge. In that case, I would carefully cut the plywood square into two pieces along the diagonal and then attach the resulting triangular piece to an extension on the miter gauge.

To use the jig, you will cut one leg of the mitered joint from the left side of the jig and the mating side from the right. Probably, the two leading edges of the plywood will be exactly  $45^\circ$  to the saw blade. Even if they are very slightly off, however, the miter joint will be square if you cut one leg on one side of the jig and the other leg on the other side. As you work along, it is not really necessary to keep track of mating pieces. Just mark one side of each piece as the "top" as the joint is laid out. Always keep that side up. That way each side of each miter will be cut on the correct side of the jig.

Make test cuts, press the mitered edges together, and check the joint for square. After the first miter is cut, there will be a saw kerf in the plywood. This is perfect for lining up the cut to a pencil mark.

When I am making edge banding, I start at a corner, say the lower left corner. I cut miters on the adjacent legs without measuring, near the end of each piece. Press the mitered pieces against the corner, hold the joint firmly together, and mark the length of each leg. If you have a good eye, you can cut each leg to length using the pencil marks. Since I sometimes do not have a good eye, I often cut the miters about  $1/32$ -  $1/16$ " long. I then use a shooting board with a  $45^\circ$  fence and a low angle block plane to trim the legs to perfect length. Repeat for the opposite corner with two other pieces.

One practical limitation of this jig is the length of the legs that can be cut. The front fence of a wide crosscut sled will limit the length you can cut. For example, if the apex of the jig is 12" from the front fence, the geometry of the sled might limit the length of a leg to about 17". For longer pieces, it would be worthwhile to make a dedicated miter sled with a narrower front fence.