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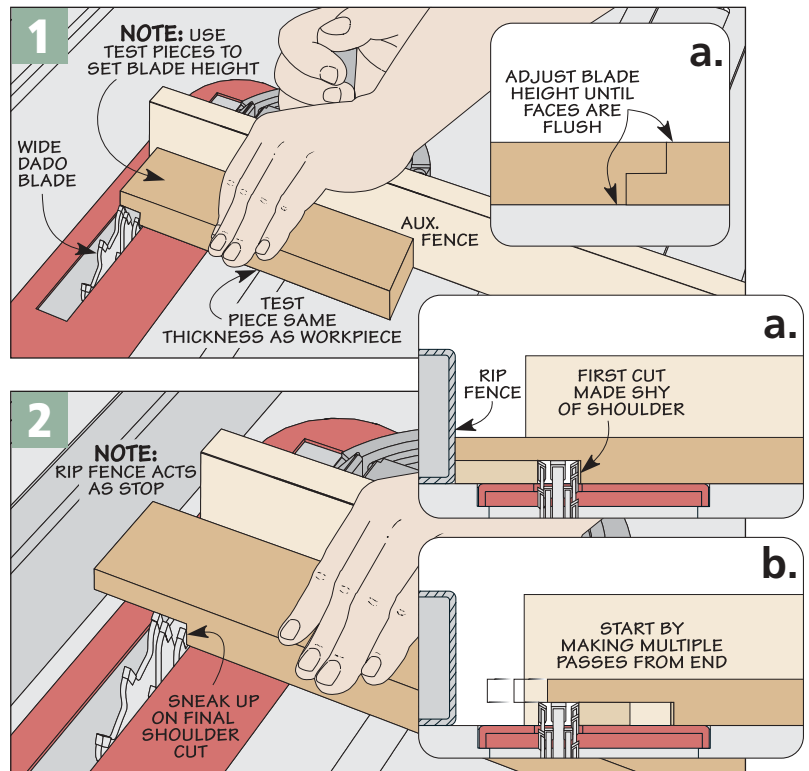
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Perfect Half Laps on the table saw

Versatile, strong, and easy. Half laps are the ultimate no-fuss table saw joint.



Half laps are high on my top ten joint list. For cabinet face frames, doors, case web frames, or any place you need a strong, rigid frame, half laps can take on the job. But the best thing about half-lap joints is that cutting them doesn't require any tricky setups or a lot of fussy work. All you need to cut perfect-fitting half laps in

a short amount of time is a table saw and a dado blade.

Just Like it Sounds. A half lap joint looks just like you'd expect. Half the thickness of each workpiece is cut away so that the two pieces overlap with flush faces. As you see in the lower left drawing, you get a large amount of gluing surface and the deep shoulders keep the joint square and rigid.

The Goals. There are two things you want to get right when cutting half laps. First, to end up with perfectly flush faces, the depth of the cuts needs to be on the money. Next, when the joint is assembled, the frame pieces should be square with the outside edges flush. This simply means the cheeks of the joint have to be cut to the right length and with square shoulders.

SETTING UP

When it comes to half laps, the key to success is to keep things in order. And the first task is to cut all the parts to size. If you get this done all at once, you can set up the saw for cutting the joinery and not waste time switching back and forth from one setup to another.

When you're sizing the parts for a half-lap frame, keep a couple things in mind. First, to end up with equal halves and

flush faces, all your stock has to be the same thickness. And next, remember that since each half of the joint has a full overlap, all the parts of a half lap frame run full length. This makes sizing the parts foolproof.

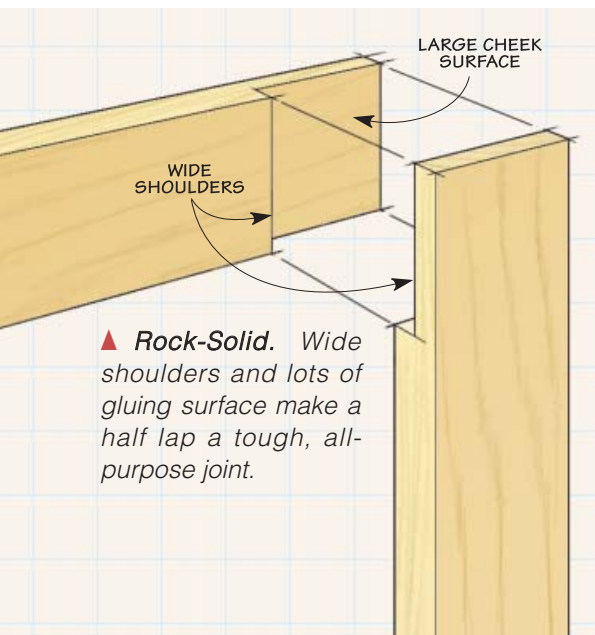
Once your parts are cut and stacked, you can set up for half laps by simply installing a wide, stack dado on the table saw and a fresh auxiliary fence on the miter gauge to back up the cuts.

Find the Depth. When I'm ready to start on the joinery, I set the workpieces aside for a bit. First, I use a couple of cut-offs that are the exact thickness of my workpieces to adjust the blade height. Figure 1 above shows how this works.

Make a quick "halfway point" mark on each piece and then set the dado blade a little bit below the mark. After you make a cut across the end of each piece, simply overlap them to check the result.

Raise the blade slightly and repeat the process until the faces fit flush, as in Figure 1a. Remember that since you're cutting both pieces, the blade adjustment is doubled, so take it in tiny steps.

And be sure to keep firm downward pressure on the pieces as you make the cuts. You don't want the workpiece to ride up on the blade and give you a false test result.



▲ **Rock-Solid.** Wide shoulders and lots of gluing surface make a half lap a tough, all-purpose joint.

Cut the Cheeks. At this point, you can set aside the test pieces and turn to the actual workpieces. With the depth set, the only trick now is to cut the cheeks of the joint square and to the right length.

An easy way to get this done is shown in Figure 2 at left. The miter gauge and auxiliary fence will ensure a clean, square shoulder while the rip fence acts as a stop to help you cut the joints to the right length.

First, set the rip fence so that the distance from the outside edge of the blade to the fence is about $\frac{1}{16}$ " shy of the final cheek length. Then pick up one of the workpieces and make your first pass, as shown in Figure 2a. Slide the workpiece back and maintaining steady downward, start nibbling away the waste from the end, as shown in Figure 2b.


Test Fit. When all the waste has been turned to saw dust, do a quick test by lapping the workpiece over its mating piece. Since the fence isn't set to cut the cheek to final length,

the end won't be flush. But now it's easy to see how far to cut back the shoulder for a perfect fit. Just sneak up on the final cheek length by adjusting the fence away from the blade until the fit is flush.

Now that you've used the first piece to fine tune the setup, you can go ahead and cut the remaining joints. When all the pieces are equal width, this one setup will do the job.

The Glueup. The only catch to half laps is that gluing up the frame

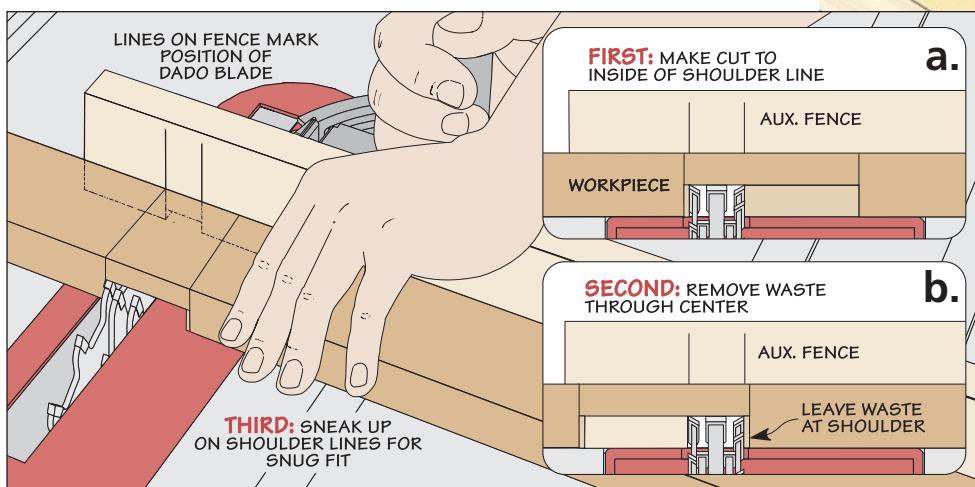
requires a few extra clamps. On a half-lap joint, neither piece is "captured," so this means you need to clamp the pieces in all directions. The photo above shows this clearly.


First, loosely clamp across the frame both ways. Next, apply a short clamp over the joint to pull the cheeks together. Tighten all the clamps, check for square, and that's it. A perfect half-lap frame. 



More Clamps.
Assembling a half-lap frame is easy with the help of a few extra clamps.

In the Middle: Half Lap



T-Joint.  Half laps are a great way to create a strong joint in the middle of a rail or stile.

Half laps are also a great way to join two pieces together in a T-joint, as shown in the drawing at right.

To do this, the half lap on the end of the first piece goes just the same. Then lay this half lap over the

mating piece to mark a layout of the other half of the joint.

To cut this part of the joint, I don't use the rip fence. It would be too far from the blade to make a reliable stop. Instead, you can mark the lines

of the dado blade cut on the auxiliary fence to act as your guides. With this extra help, you can simply follow the steps in the drawings above to complete a snug-fitting joint.