

# CUT PERFECT HALF LAPS

**H**alf laps have two great benefits — strength and speed. The joints are strong because there's a lot of face-to-face surface for a good glue joint. At the same time, half laps are quick because both halves of the joint can be cut on the table saw — often with the exact same setup. And if you're making multiple joints (which is often the case) this can save you a lot of time.

There's nothing mysterious about a half lap joint. Half the thickness of the stock is removed from each piece so both overlap and their faces are flush. The trick is to get the pieces to fit together nice and even, without any visible gaps between the shoulders. But this isn't difficult to do if you follow a few simple techniques.

**STOCK THICKNESS.** Before even thinking about making that first cut, you need to check and make sure that all your workpieces are exactly the same thickness. Why? Because if they're not, it will be impossible to cut the half laps so the mating pieces are flush on both faces. Shop Tip: If you have a thickness planer, it's a good idea to run all your stock through it before you begin, just to make sure all the boards are a uniform thickness.

**SETUP.** In most cases, I use a table saw and a dado blade to cut half laps. (If the pieces are small, I sometimes use a router table instead.) But regardless of which tool you are



using, the first step in the set-up procedure is the same. You need to adjust the height of the blade (or bit) so it cuts exactly half way through the thickness of your stock. But I don't use a rule to set the blade height.

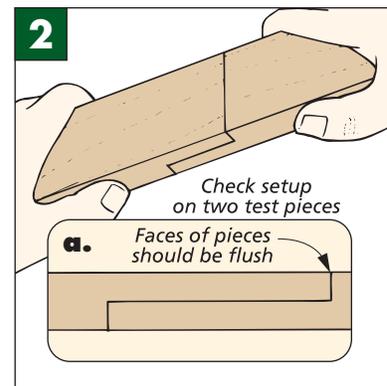
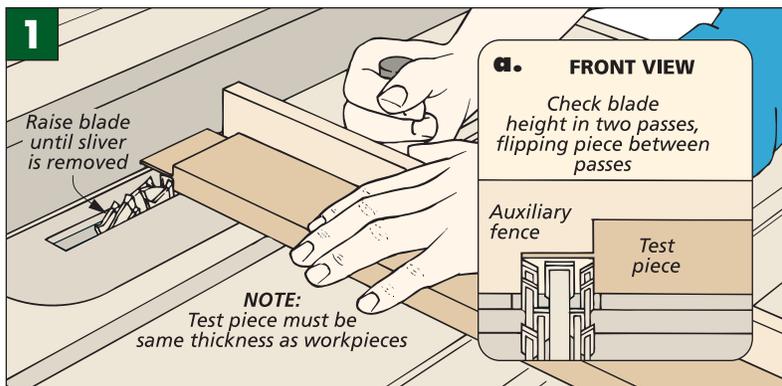
Instead, I start by setting the blade slightly below the half-way point. Then using a test piece (one that is the same thickness as my workpieces), I gradually sneak up on the height, see Fig. 1. To do this, just make a cut on the end of the test piece. Then flip the piece over and make a second cut on the same end. You should have a thin "sliver" left over.

Now just raise the blade a hair and repeat the process, removing a little

more from each side of the sliver until it's completely removed. When it is, the blade will be set at half the thickness of the workpiece.

To double check this set up, it's a good idea to cut a sample joint. Cut a half lap on the end of a couple of test pieces and fit the pieces together, see Fig. 2. By running your finger over the joint, you should be able to feel any shoulder that might be present. If the pieces aren't flush, you'll need to adjust the blade up or down depending on whether the lap is too shallow or deep.

There's one other thing to keep in mind when adjusting the height of the blade and when it comes to



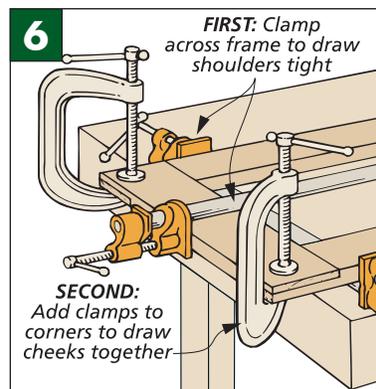
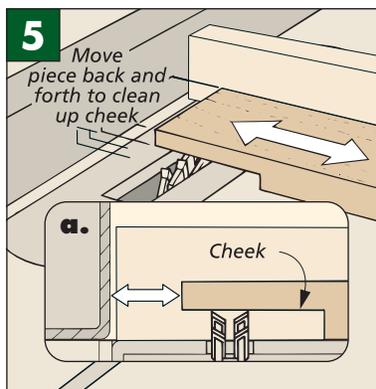
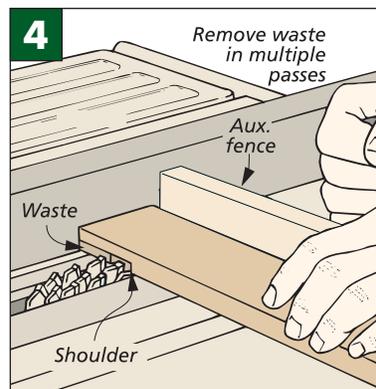
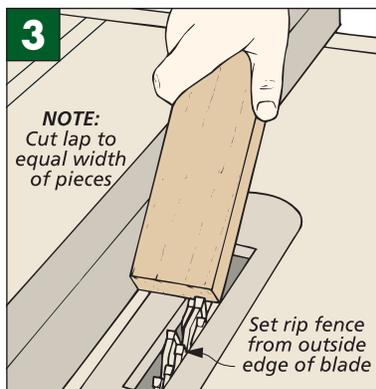
cutting the half laps in your actual workpieces. The depth of cut can be affected by any bowing in the board or even the amount of pressure you apply to the face of the boards as they pass over the blade. So try to keep the downward pressure on each board consistent as you're cutting the half laps.

Once you have the blade height set, you're ready to start cutting the laps. Whether you're cutting the laps on the ends of the workpieces (end laps) or in the middle of the workpiece (a cross lap), you can use the rip fence as a stop to establish the shoulder(s) of the joint, see Fig. 3. (Provided the workpiece doesn't exceed the capacity of your rip fence.)

**END LAPS.** To cut an end lap, I like to start by establishing the shoulder with the first pass, see Fig. 4. Then the rest of the waste can be removed by making multiple passes over the blade, sliding the workpiece over between each pass.

**CLEANING UP THE CHEEKS.** After you've cut the half lap, pick up the workpiece and turn it over to examine the surface of the half lap. You may find that the dado blade has left behind tiny ridges and grooves. These ridges and grooves can prevent the two pieces from making full contact when assembled. So it's a good idea to remove them as best as you can. One way to do this is to slowly push the piece side-to-side over the blade, see Figs. 5 and 5a.

**ASSEMBLY.** When you're ready to glue up the half lap joints, the thing to remember is that each joint needs to be clamped in three directions, see Fig. 6. First I clamp along the length and width of the joint, checking to



make sure that the assembly is square. Then I like to apply clamping pressure to the face of the joint to hold the two pieces together.

**CROSS LAPS.** When it comes to cutting a cross lap on short workpieces, you can use the rip fence as a stop to establish both shoulders (You'll have to reposition the fence for each shoulder.) But with longer workpieces (like the stiles in the shelving unit) the capacity of your rip fence might not be great enough to use the fence as a stop. In this case, I use a different approach.

First, I carefully lay out the ends of the cross lap on the top face of my workpiece, see Fig. 7. Then I attach a long auxiliary fence to my

miter gauge to support the workpiece. By marking the path of the dado blade right on the auxiliary fence, I have a visual reference for lining up the blade to the layout lines on my workpiece, see Fig. 7. **W**

## RIP FENCE AS STOP



Occasionally, we'll get a letter warning us about the danger of using the rip fence as a stop when pushing a piece with the miter gauge. The danger is that the cut-off piece can kick back at you. And we agree. You should never cut *completely* through a workpiece using both the rip fence and miter gauge at the same time.

But the key word here is "completely." When cutting half laps, you're not cutting completely through the workpiece, so there's no cutoff piece to kick back at you.

