

# Sliding Dovetails

Normally, it doesn't really matter what the shoulder distance is from the edge of the sides to the top, like on the coat rack below, but you can dial this in for making drawers with mechanical slides.

Sliding Dovetails make a versatile joint that can be made quickly and accurately, especially if you are doing multiples. I use them in coat rack/shelf units, for example:



hundreds of drawers that are hung with mechanical drawer slides with this joint:



Sliding Dovetails need to be very precisely cut or else they

bind and even differences in how the pieces are sanded will make fitting the joint not the worth the trouble. So here is what I do to quickly and easily produce this joint so they'll be consistent and uniform. I start with stock that is flat (especially the inside of the drawer face or where the female part of the joint is going to be cut) and sanded (these were not and only one edge of the pieces were jointed). It helps to have stock that is about 1/4 inch wider than the finished dimension so you don't have to worry about "blowing out" the edges. You can also back up the cuts with a scrap piece of wood, but it faster and easier to just make everything over-width. It doesn't hurt to make the drawer sides an inch or so longer than you'll need so you can use one end (at least on a couple of them) to help as test pieces when closing in on the final fit. For typical drawers, the faces are 3/4 inch thick and the sides are 5/8th inch thick. For mechanical drawer slides I want a shoulder from the outside of the drawer side to the ends of the drawer front of about 1/64th shy of 1/2" since the drawer face is 1/32" less wide than the opening. I mark out on the inside or back of the drawer face where I want the side pieces to join. I'll make the 1/2" dovetail about 5/16th" deep into the back of the drawer front. The router table has to be very flat and the fence has to be perpendicular to the top. It's nice to have a fence that is about 3 inches tall to help when making the male parts of the dovetail. I start by centering a 1/4 inch straight bit where I want to cut the female portion of the dovetail. It's easier to cut the dovetail sockets if you remove much of the wood before with a straight bit.



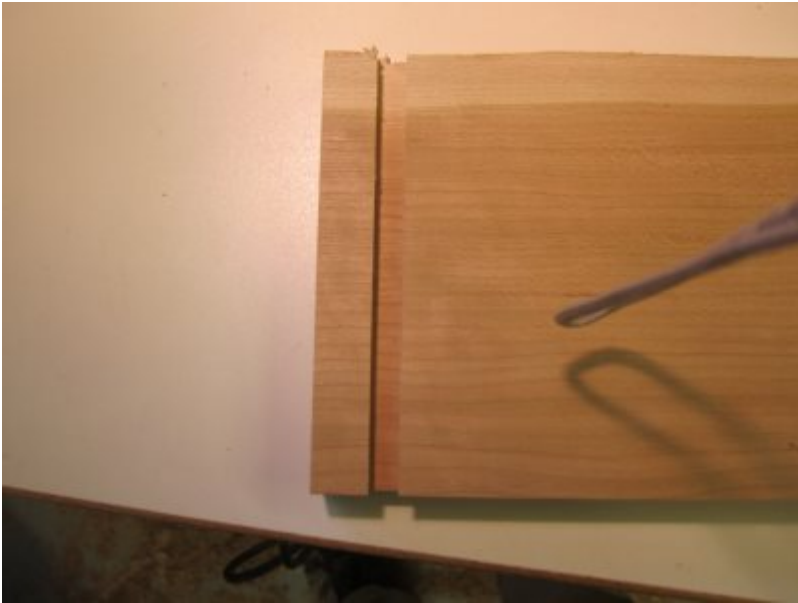
Set the height of the bit to about one half of the height of 5/16th" and run all the faces or fronts through and then make another pass with the bit raised, cutting a dado that is just lower than 5/16th". (The opening on the fence on the router table should be just larger than the width of the router bit.

This one is not but I'm used to making this joint and haven't bothered making a fence with a smaller opening. I'd do that for an article). Now I replace the straight cutting bit with a 1/2 inch dovetail bit and set it at a height of about 5/16th" (it should be higher or deeper than the dado). I run all the fronts through with the fence set the same and keep the end of the face registered against the fence (that's why a small opening is nice) and the piece flat on the router table.

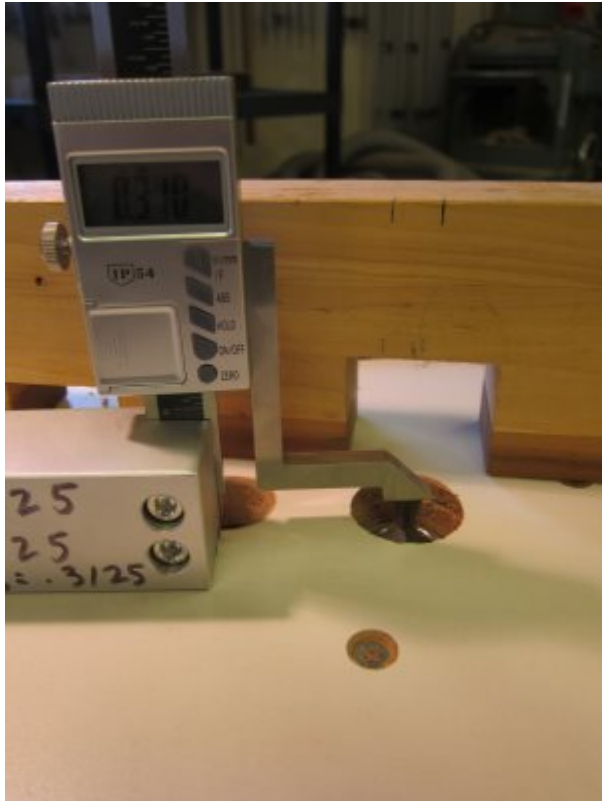


*This cut can leave little “hairs” that can make the fit appear tighter than it actually is, so I lift these up with a rule and sand them off with a sanding block (without removing any other wood from the inside of the face or front).*

*The finished dovetailed socket should look like this:*



Now, lower the dovetail bit slightly (about 10 thousandths is probably about right) so you insure that the shoulders of the joint will come up tight. You can use one of the cut dovetail sockets as a reference for lowering, just make sure that it's flat on the router table. It's hard for me to see this small of an increment, so I tried this tool that I bought recently, but I set it down about 25 thousandths as just a guess and that was too much. I think it will be helpful once I know how many thousandths of an inch corresponds to how much I want to lower the bit.



Now, choose a face (I usually choose the inside face) on the drawer sides and mark it with a pencil. The trick to this is that we'll always be referencing this same face against the fence for making the male part of the joint, which eliminates problems caused by varying thickness, sanding, etc. Start by running the side on-end between the fence and the bit. When you make this cut, you must go from left to right. I cut about one half of that side of the joint in the first pass and then set the fence forward a bit till I'm cutting the full amount off (running through all the sides at each setting). Creep up to the shoulder I want at this time. This shows going from left to right and doing the second cut on that side.



*And here I am, creeping up on the first piece until I've reached my desired shoulder on the drawer front (make sure you are leaving enough wood on the other side of the drawer side so you'll have enough wood to complete the dovetail). Run all the sides through at this final pass (on this side) at this setting. Now, I move the fence, "burying" the bit and start cutting the other side of the male dovetail. I go about half way in again and cut all the ends at this setting. I move the drawer side from right to left with this bit/fence configuration.*



When I get close to fitting the joint, I purposely slow down. A few more minutes spent here insures a perfectly fitting joint for this piece and for all the rest to follow. It's easy to mark the position of the fence on the router table with a 5mm pencil as a reference on one end and move the fence in very small increments until I'm happy with the fit of dovetail. You'll be moving the fence away from you to remove wood (when you were getting close for the shoulder distance on the drawer front for the other side of the male dovetail, you were moving the fence toward you to remove more wood).

Here's what the joint looks like now (I dropped the bit more than I usually do using the digital height tool). One of the edges of the drawer sides and fronts can be jointed cleaned, and then the other side gets ripped to the desired width (I joint this edge, too).





If this is a drawer, I fit the back into the insides of the drawer sides with sliding dovetails, put a stopped groove in the bottom of the drawer face on the router table, a through groove on the inside and bottom of the drawer sides and rip the back down so the drawer bottom panel can slide in underneath the back. I size this panel to fit the groove on the table saw, using this same principle of trapping the piece between the blade and the fence. I use polyurethane glue for gluing up these joints since it can be hard to keep things from binding up with regular wood glues. I slightly dampen the male dovetails (being careful to not get any moisture on the sanded pieces) and put a thin skim of polyurethane glue in the female sockets with a thin, flexible rule and tap the pieces together (the two sides go into the back of the drawer face first, tapping them down on a bench so the bottom edges are flush for the three pieces, then I turn the drawer over, wipe off any excess poly glue that got pushed out of the bottom of the socket with denatured alcohol, and tap in the back so it comes up flush with the tops of the drawer sides. I wipe off any excess poly glue in the same way here, check for square (they usually come out square with this joint) and leave the drawer on a flat surface until the glue sets.