

Sliding dovetails..

As part of the wall units I'm building for our bedroom, I decided to use sliding dovetails to hold all the fixed shelf & divider components in the carcass. Why? Particularly when the whole unit is going to be painted on completion: It may seem a waste of time to you but as the overall construction method I've chosen incorporates both blind and through dovetails, sliding dovetails seemed appropriate

The choice for the joinery method is twofold. The first reason was that the timber was ugly; not just in the aesthetic sense, but it was also wet, with moisture content in some sections of around 20%.

My theory was that as the wood dried it would shrink & lock the dovetails firmly into place, & the joinery would help maintain the overall squareness of the panels as they dried.

Or, it could all go pear shaped & the boards would crack & warp.

The second reason for choosing this method was a purely selfish one: I just simply wanted to stretch myself and see if I could get it done.

The first step in creating the sliding dovetails was to do a test piece to set the router cutter depths & the fence settings. For the project I'm using my Festool OF1010 router & my Bosch GMR Trimmer.

The 1010 was fitted with a 6 mm spiral cutter & was used to remove the excess from the dovetail channel, whilst the GMR was fitted with the dovetail cutter & was used to cut both the trench & tail of the dovetail joint.

I also used the 1010 with a guide rail & the guide rail adapter, which comes with the set version. The GMR was used with a clamping straight edge.

The design of the wall unit calls for a vertical divider in the centre section of each of the three shelf units, which will be dovetailed into the base of the upper cupboards and the top of the lower shelf. The lower shelf will also have an additional 95mm panel dovetailed into its underside, which will be a divider for the two lower small drawer units.

As the timber is 19mm thick & the lower shelf will have dovetail trench across the centre of both sides of the board, I've decided to make all the sliding dovetails 6mm deep.

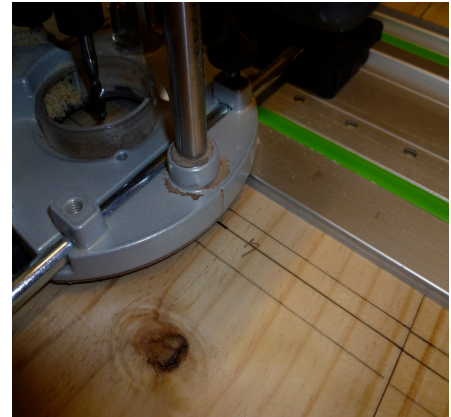
When cutting the trench for a sliding dovetail, it's a good idea to first run through the trench with a smaller straight cutter to eliminate the bulk of the excess timber. This means that there is less stress on the dovetail cutter & you'll end up with a better result.

The first step is to cut the dovetail trench, so once you've decided on the depth the next step is to mark a line across the exact centre of the trench.

Mount the OF1010 to its guide rail adapter & sit the unit on top of the guide rail. (To mount the guide rail adapter first slide the bars, which you would normally use to attach the fence into the holes in the adapter body & then slide the other end of the bars through the router base.

Please use appropriate eye & hearing protection when making this project

1. Attach the adjustment foot to the side of the router base.
2. Place the router on the guide rail and position it so that the centre mark lines on the router base are approximately 20mm from the edge of the guide rails splinter guard.
3. With your left hand, press the router base down firmly on the guide rail & with your right hand lock the adjustment foot into place so that the router base is now sitting square on the guide rail & the router base is parallel to the work piece.
4. If there is lateral movement, or if the guide rail adapter feels too 'loose' on the guide rail, tighten the screws at tip and bottom on the inside of the guide rail adapter to achieve a snug, but not too tight fit.)



Aligning the 1010

We now need to set the depth of the spiral cutter in the OF1010. Place the router & guide rail on to the work piece, again checking that the alignment foot is properly set & that the router base is parallel to the work. With the router on the guide rail, push the router down so that the tip of the cutter is just touching the work piece, & lock the plunge lock.



Cutting the straight trench

Place the depth turret on it's shallowest setting then loosen the depth stop so that it's resting on the depth turret. Set the scale to zero, & then raise the depth stop so that the scale is at 6mm. The space between the bottom of the depth stop & the top of the depth turret is now 6mm.

Place the 1010 & guide rail on the work piece, make sure that the centre alignment mark in the router base lines up exactly with the line on your work piece along it's entire length. Make sure that you note down the distance from the line to the guide rail to speed up layout on all the other pieces.

When you're happy with the position, clamp the guide rail into place and slowly cut the first trench.

Now we need to use the GMR trimmer to finish the trench. First we need to set the depth. In my case the depth was set to 6 mm. The next thing was to determine the centre point of the trimmer base so I could accurately align it to my work piece.



Dovetail cutter at 6mm

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The GMR trimmer has a base that is 90mm wide across the front so I accurately marked the aluminium base at 45mm with a pencil. The trench that I had just cut was 6mm wide, so I marked a pair of lines 3mm each side from the centre line of the trimmer base (42mm in from the edges). This pair of lines mirrored the width of the trench and help with the setup of the trenches. Once you've checked the alignment & your fence is securely clamped, slowly & carefully cut the trench. Now that we've cut the trench into our test piece, the next step is to cut the tail into our trial shelf section.

It's very important that you don't adjust the depth setting on the GMR from the dovetail trench that you've just cut, as the depth of the trench is exactly the same as the length of the tail we're going to cut.



Cutting the dovetail trench

To cut the tails we need to use the fence that came with your trimmer. Attach a piece of timber approx. 300mm long x 75mm wide to the fence. Its a good idea to cut a notch out of the timber section prior to attaching it to allow for the clearance of the wood chips and so you can see where the cutter head is.

Set the fence so that only about 2mm of the tip of the dovetail cutter is showing. Clamp your tail section firmly to your workbench then, placing the timber support flat on the work piece, cut the first side of the tail. The base of the trimmer should run smoothly along the bottom edge of the tail, automatically giving you the correct tail length.

Repeat the process on the other side then check the fit of the trench that you've already cut. The chances are that it will be too large so just back the fence off by .5mm and repeat until you've achieved a tight fitting joint that is self supporting with virtually no movement.

It's important to lock the fence on the trimmer & record your measurement to save on the setup time when you're doing the next joint. Remember that you can easily remove the fence assembly from the trimmer without adjusting the fence settings.



Fence in place on the GMR

I'd suggest you try another test piece before getting into your project, just to check you've got the knack of it

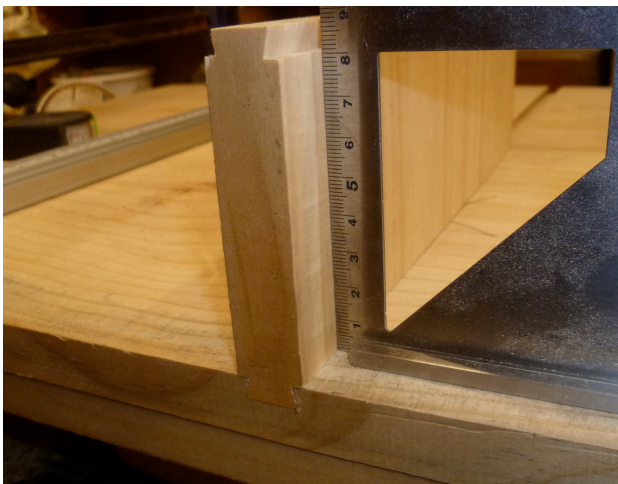
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Cutting the tail



Test fit



The completed joint

Like all woodwork joints, the sliding dovetail requires a bit of practice to perfect, so don't be afraid to chop up some scrap to do a few more tests before you start on your project, Please drop me an email if you've got any questions.

Cheers