

# Festool VS 600 Dovetailing Jig

By Joseph Fusco

The *Basic VS 600* sales separately for \$340.00 US and only includes the. All the templates and copy rings (*as they*



*are referred to by Festool*) have to be purchased separately as well as a Festool router such as the *OF 1010* or the *OF 1400*. This doesn't make the jig inexpensive, but doesn't put it in a class by itself when compared with other "higher-end" jigs on the market today. If you factor in the purchases of the *OF 1010* (\$360.00), the *SZ 14 or 20 half-blind dovetail template* which includes the copy ring for either the *OF 1010* or the *OF 1400* and the dovetail carbide bit (\$27.00), you will spend about \$799.00. If you wanted to add dust control to the setup all you'd need do is purchase the *Dust Extraction Hood* (\$16.00) and you'd be able to control over 90% the chips and sawdust

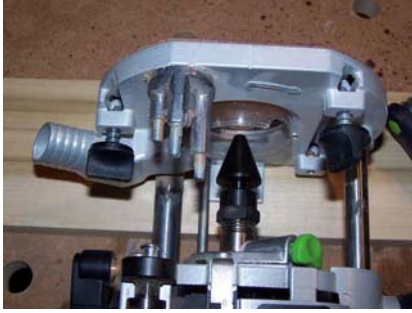
generated when using the jig. The one caveat here is that you already have a vacuum, if you didn't you'd need to factor in the cost of purchasing one as well. Vacuums can range from \$250.00 to \$600.00 for better quality ones with HEPA fillers. The combination of the VS 600 and OF1010 not only gives you a great production dovetail setup, but one of the best all-round routers on the market today that you can use for any routing task.

Your first impression of the *Festool VS 600 Dovetail Jig* will be that it's well made and thoughtfully engineered, considering the jig is made of aluminum, steel and composite plastic which helps make the jig both strong and lightweight. A second impression might be that it's difficult to use, that impression would soon bear itself out to be false. The jig can be used to cut half-blind and through dovetails, box joints and dowels simply by using the correct template, copy ring and router bit. The jig is a "fixed sized, fixed position" cutting tool which means that the size of each dovetail, box joint or dowel is fixed along with their spacing (position). This does limit the design possibilities when using the jig for such things as "one-offs" but the trade off is the superior easy of setup and operation when doing production work like cutting drawer boxes in mass for kitchen cabinets and bathroom vanities. I purchased the jig to cut production half-blind dovetails for kitchen drawers and that's what I'm going to discuss throughout this review. *There will not be a discussion on how you go about choosing the stock or how you would go about milling your stock to produce the stock you need for your drawers. Also, there won't be talk of the different types of joinery that can be used to construct your drawers.*

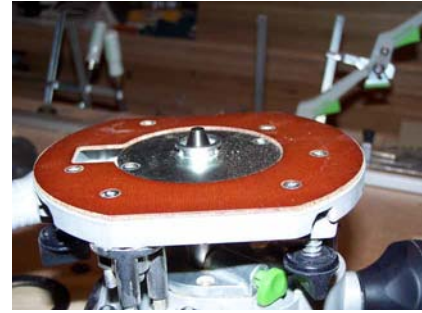
## Preparing the Router Installing the Copy Ring: (With the router unplugged)



Preparing the OF 1010 or OF 1400 for use with this the VS 600 is another operation that is quick and simple. It first involves removing the "blank" base ring from the bottom of the router, in this case an OF 1010 by removing the two screws that hold it in place. The screws are #20 Torx heads and require that type driver to remove and install them.



You can use the Festool multi-tool if you have one as I'm afraid they have been discounted by Festool and are no longer available.



Then place the centering mandrel into the router and secure it. Place the copy ring into the area where the blank

was and reinstall the screws, but don't tighten them completely. Now adjust the router up or down until the mandrel completely touches the ring around its inside circumference. This will cause the ring to be properly positioned. Once this is done, tighten the two screws firmly to hold the copy ring in place. Now insert the dovetailing bit into the router. Later you will adjust the bit to the right cutting depth.

### The Jig:

The jig consists of vertical and horizontal platforms (faces or surfaces) which can accommodate work pieces up to 24-1/2" in width. The work pieces are held in position with square hollow steel bar type clamps (pressure beams as referred to by Festool) while cutting. Each one of the beams has two screw knobs located at each end with the option for a central screw knob to be installed when working with narrow work pieces if the need arises. These additional screw knobs came with my jig. On the vertical face of the jig are two alignment stops, one located at each end. Each stop has a vertical and horizontal component that move in tandem. These stops have several functions one of course is to properly align the work pieces for the given template being used. To affix the stop in any desired position you loosen the rotary knob and slide it either left or right then, tighten the knob. Mounted on the stop are three tabs with different offsets lengths that correspond to the different templates being used. These tabs are simply rotated to correspond to a template and are held in place with friction.



There is the template mounting bar which is positioned horizontal and where the various templates mount. The template mounting bar has two small rotary knobs, one at each end to clamp down the template when installed. The template mounting bar can be clamped into three orientations; central, rear and front. This clamp is located on the right side of the bar below the height adjustment clamp. The position used will depend on the type joint you are cutting. In my case it was clamped into the central position. Lastly the template mounting bar has two height adjustment clamps located on top of the bar at either side to lock

the bar in position once it has been adjusted for the work pieces thickness. The template mounting bar also has a nice feature of being able to pivot or rotate out of the way once the template is setup and clamed into position.

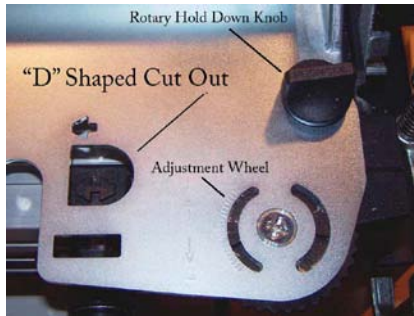
This helps when placing the work pieces into the jig.



### Securing the Jig and Installing a Template:

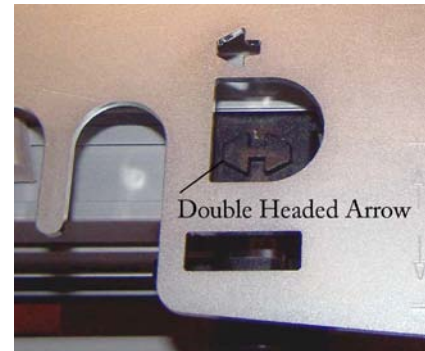
In order to use the jig you will need to mount it to a table, work bench or stand. When doing so the vertical face of the jig needs to project about 5mm beyond the edge of any table or bench to allow clearance for the work piece to pass. There are two ways you can secure the jig,

the first being with screws and the second with clamps. On the sides of the jig, molded into the frame are plastic “feet” and in them are slots that will accommodate screws for securing the jig. I opted to clamp the jig down to my MFT 1080 with a slight twist. I have two “tees” that I first clamped to my table and then clamped the jig to the tees. This brought the whole jig up about 10 inches higher and made routing a lot easier for me.



Installing the *SZ 14 half-blind dovetail template* was a very simple affair. This template has two adjustment wheels located at either end; they are used to adjust the depth of the router bits plunge into the front/back piece of the drawer (*the work piece on the horizontal face of the jig*). Before you install the template, check to make sure that these wheels are set to their central positions. You can easily do this by loosening the screws and rotating the wheels until they are at the large hash mark between the “+” and “-” signs on the

template. After checking I locked the template mounting bar in its central position and while resting on the horizontal surface of the jig, clamp it down, loosen the rotary knobs and slide the template under the knobs making sure that the wheels on the template are facing “down”, then continue to slide it straight back until the wheels touch the jigs frame, then tighten the rotary hold down knobs.



On the face of the template there are two “D” shaped cutouts located at each end and at this point there should be a double ended black arrow head located in them. Loosen the rotary knob on the alignment stop on the left and gently slide the stop to the right until the right arrow head touches the right side of the “D” shaped cutout. Then do the same for the right side alignment stop only moving it to the left and making sure the left arrow head touches the left side of the “D” cutout.

### Adjusting the Template for Stock Thickness:

Depending on the template you are using, there will be a range of stock thickness that the template will accommodate. If you are using the SZ 14 you will be able to cut half-blind dovetails in stock ranging from 5/8” (16mm) to 25/32” (20mm). , this template has a slot dimension of 14mm. If you are using the SZ 20 you will be able to cut dovetails in stock ranging from 26/32” (21mm) to 1-3/32” (28mm), this template has a slot dimension of 20mm. The slot dimension refers to the fixed spacing between the fingers of the jig. Knowing this it is possible to use another router and guide bushing combination with the VS 600 if you can get these setting to all match up. I’m using the SZ 14 and my stock thickness is 5/8” (16mm).

### Test cuts:

The first step in setting up the template is to loosen the template mounting clamps if they are not already. Slide two test pieces milled to the correct thickness under the horizontal bar clamp and under the template mounting bar while lifting the template bar up, place those one piece at each end against the alignment stops. Allow the pieces edge to align with the edge of the jigs body, tighten the horizontal bar clamp’s knobs then press the template mounting bar firmly against test pieces insuring that the black plastic strip located on



the bottom lays flat on the work pieces, tighten the mounting templates clamps. This has now located the template at the correct height. Now simply flip the template up (it will rotate out of the way) and install the vertical test pieces.



On the left side vertical alignment spot rotate the tab stops until the one labeled SZ 14 is pointing to the right side of the jig, do the same for the right side stop only have its tab point to the left side of the jig. Loosen the knobs on the vertical bar clamp and slide one test piece under it on the left side against the vertical alignment stop until this piece is flush to the top of the horizontal on the same side. This piece should be offset to the right of the horizontal piece. To help get the two pieces flush you can place a straight edge or block on top of the horizontal work piece. Once the alignment is good slightly tighten the left vertical clamp knob.

Do the same for the test piece on the right side of the jig. Once this is complete flip the template back down and prepare the route bits depth of cut.

### **Router Bit Depth: (With the router unplugged)**

Loosen the router adjustment and adjust the bit so it just protrudes passed the copy ring (about an 1/8"). Place the router on the template and over a work piece (either one it doesn't matter). Slide the router so the copy ring enters between the fingers of the template and seats at the back of the finger. Adjust the bit down until it just touches the top of the work piece. This is the routers "0" position. When using the SZ 14 the recommended bit depth is 12mm, so now using the routers fine adjustment lower the bit by 12mm. With this done you are now ready to make your first test cuts. It took me about 8 test cuts to get everything right so be a bit patient.

### **The Test Cut:**

Plug your router in and cut your first test piece by first making a scoring cut (a climb cut) along the vertical work pieces. You can do this two ways; either by milling a straight edge 33mm thicker than your stock is wide and placing it against the back of the mount bar and using it as a fence to guide your router across the face of the work piece as you make the climb cut, or you can guide it by holding it firmly and performing a climb cut. Do what feels comfortable to you. Once you make the score cuts proceed from left to right pushing the router into the slots removing the material. If you are using dust collection being mindful of keeping the router upright as the dust hood and hose have a tendency to cause the router to tilt. I found that placing my hand atop the OF 1010 and grasping the dust hood hose connection help greatly to balance the router when cutting. Once you've cut the test pieces on both sides check your cuts to make sure all the material has been properly removed before removing the test pieces. You may need to "pass" over the pieces one last time to clean up the cuts. As you do this more and more, you will develop a feel for how to cut the joints cleanly in one pass. If after inspection the cuts are proper, remove the test pieces and check the fit.



### If the Joists Fit is to:

- **Tight**, then decrease the bits depth. This means to raise the bit as it's too deep. Try raising it in .5mm increments until you get it just right.
- **Loose**, then increase the bits depth. This means to lower the bit as it's not deep enough. Try lowering it in .5mm increments until you get it just right.
- **Deep**, (*this procedure is not explained well in the Festool manual*) then loosen the mounting bar



clamps and place the bar on the jig in the resting position and then clamp it there. *Loosen the template rotary hold down knobs, loosen the screw that secures the wheel adjustments and rotate it in the "minus (-)" direction the amount required to bring the joist flash. Each tick mark is 0.1mm. Once both sides are done, slightly press the template back against the jig and make sure the wheels are touching the jig frame and tighten both rotary knobs.* Loosen the bar clamps and

reposition the mounting bar to the correct height for the stock you are cutting.

- **Shallow**, (*this procedure is not explained well in the Festool manual*) then loosen the mounting



bar clamps and place the bar on the jig in the resting position and then clamp it there. *Loosen the template rotary hold down knobs, loosen the screw that secures the wheel adjustments and rotate it in the "plus (+)" direction the amount required to bring the joist flash. Each tick mark is 0.1mm. Once both sides are done, slightly press the template back against the jig and make sure the wheels are touching the jig frame and tighten both rotary knobs.* Loosen the bar clamps and reposition the

mounting bar to the correct height for the stock you are cutting.

Make your test cuts again (on new or the other sides of your test pieces) and check the fit. Repeat the above steps until you have a good fit. It shouldn't take more than about 3 test cuts to "zero-in" on a perfect joint. Once you have the template "dialed-in" you'll never need to adjust it again, that is as long as the wheels are never moved. You might also think about saving the final test piece to quickly and accurately adjust the router bit depth again in the future.

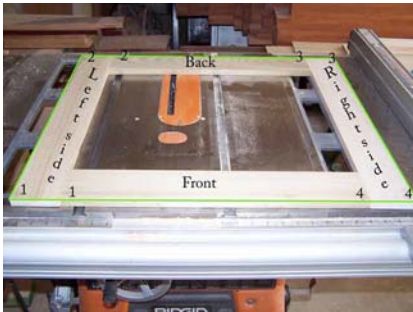
### Marking You Drawer Stock for Placement:

This is straight forward concept and the thing to remember is that the inside faces of the drawer components are always facing you when they are in the jig. Furthermore the tops of the drawers (*their top edges*) are also always placed against the alignment stops and tabs.

Place the drawer components on a work bench and arrange them in this order:

- **Front** (closest to you with its inside face up and its top edge to you)
- **Left side** (to the left of the front with its inside face up and its top edge to the left)

- **Back** (opposite the front with its inside face up and its top edge away from you)
- **Right side** (to the right of the front with its inside face up and its top edge to the right)



Starting from the lower left-hand corner, mark corresponding # 1's on the upper top edges of the front component and the left side component on the side that will join them. Then mark corresponding # 2's on the upper top edges of the left side component and the back component on the side that will join them. Repeat this until you have label all four upper top corners of the components with the numbers 1 thru 4. Now the actual order you start the layout isn't important as long as you mark the upper top edges of the inside faces. Once this is completed you

can then easily and reliably place the drawer components into their proper positions in the jig for routing.

### Placing the Components in the Jig:

Three simple concepts will forever keep you out of trouble when setting in you drawer components to



cut half-blind dovetails; first the inside face of the drawer is always facing you whether they are in the vertical or horizontal clamped position in the jig and second, the upper top edge of the drawer is always against the alignment stop or offset tab. The third is that for half-blind dovetails the components in the vertical position will have pins (tails) cut into them and the components in the horizontal position will always have slots (pockets) cut into them. Another way to state this is to say the front and back of your drawers will be clamped horizontally and the sides will be clamped vertically.

Since I used the *SZ 14 template*, I rotated the offset tabs so that the tabs labeled "SZ 14" were level and pointing to the inside of the jig on both the left and right

sides of the jig. Now take the back of your drawer and place in the horizontal clamp on the left side of the jig. Place it so the # 2 is against stop and facing up. Align it with the edge of the vertical face of the jig and slightly tighten the clamping knob to hold it in place. Now take the side drawer component and place it in the vertical position under the clamping bar so that the # 2 is against the offset tab and facing you. Align its top edge with the top of the drawer front in the horizontal position, you can use a straight edge, your fingers or a block placed on top of the horizontal piece to do this. Once aligned make sure it's against the tab as well and tighten the clamp



knobs.

Now place the front piece under the horizontal clamping bar on the right side with the # 1 against the alignment stop and aligning its edge with the edge of the jig like before. Then take the right side drawer component and place it under the vertical clamp on the right with the # 3 against the offset tab, once again making sure to align its top edge with the top edge of the work piece clamped in the horizontal position. Once all pieces are aligned, tighten all the clamps firmly. You're now ready to make your first cuts.



Cutting your stock is the same as when you cut your test pieces. You make a scoring cut (a climb cut) and then proceed to route out the joint. Start by routing out the joint on the left hand side of the jig. Once complete, take the piece in the vertical position on the left hand side and remove it. Now remove the piece on the left side and flip it to the right side vertical position aligning the #1's and proceed to route it out that joint. Once you have completed it you will have routed out the complete left side of the drawer and the left sides of the both the front and back components of the drawer as well. To complete the drawer you now need to swap and flip the two components in the horizontal position of the jig so that the # 3 is positioned against the right side alignment stop and the # 4 is positioned against the left side of the alignment stop in the horizontal position. Now place the right side drawer component in the vertical position on the left side of the jig aligning the # 4's. Route that joint and then flip that vertical piece to the right side of the jig aligning the #3's. Route that joint and the drawer is finished.