

# Review of the Leigh D4-24 Dovetail Jig

## Impressions

I bought my Leigh jig at a woodworking show after considering all those on the market at that time. The primary reason I bought this jig over the others is that I thought this would do all the dovetail joints I would ever want to do and do them well. The technical knowledge of the demonstrator reinforced my decision as well. If one has the opportunity to see the jig demo'd at one of the woodworking shows it is well worth the effort.

## Assembly

There isn't all that much assembly to do on the jig and the instructions are clear, it took about an hour for me to get it together and set up. None of the parts for my jig were missing or damaged. Not included with the jig are any guide bushings required; only two bits are included which are for the most widely used through dovetail size. At the time of purchase it was suggested to buy a  $\frac{1}{2}$ " 14 degree cutter for half-blind joints as well and I did this.

Leigh does recommend building a platform for the jig to be installed on and I built one of these.

## Description

The Leigh is more than just a dovetail jig, it's a template system. The machine consists of a platform with two adjustable height arms to hold the templates, two clamp bars operated with cams, and the template. There are several templates available other than the dovetail template that comes with the package. This template will cut both through and half-blind dovetails up to 24" wide. It will also do sliding dovetails and box joints.

(*disclaimer; I have never tried to do box joints with the machine nor have I heard of anyone who uses THIS template to do so*). Other templates are available, the most useful being the mortise and tenon and the box joint templates. There are some more that allow the cutting of some special and very unique joints as well, I've never used anything other than the dovetail template.

The most notable feature of the jig is its use of adjustable width and spacing template "fingers". Most dovetail jigs have fixed spacing and pin size, this usually means the stock must be sized in some multiple of a base unit (7/8" for most HB jigs) in order to get the joint to look right. With the variable spacing of the Leigh, those restraints are largely gone. For example, if a drawer width is some non-multiple like 5 7/16" wide, you can make sure there is a half pin at both edges, other jigs would fail here.

One outstanding feature of the jig is it's manual, it is widely regarded for its clarity and quality. I would go a step further and state that this is the best manual I have ever seen for anything. The manual is spiral bound so it will lay flat on your workbench and made of good paper stock. The description of how to use the jig is mainly pictorial with accompanying descriptive text. This manual exudes excellence and clarity.

One often overlooked aspect of the jig is that if any of the template fingers become damaged, they can be replaced individually; a pair would cost about \$10. Many other jigs would require the entire "comb" to be replaced.

The Leigh is designed to run with eight degree cutters for TD joints, these cutters are available in  $\frac{1}{4}$ " and  $\frac{1}{2}$ " shank sizes depending upon the diameter. There are also 8mm shank cutters that according to many reduce "chatter" and in general are better than the  $\frac{1}{4}$ " shank bits because they are stronger. All the cutters are available through Leigh and several other outlets as well, even the 8mm shanks. These 8mm cutter will fit into a  $\frac{1}{2}$ " collet when a reduction sleeve is used. I haven't used the 8mm cutters.

## Operation

The jig must be "set-up" for every different dovetail cutter used on the machine. Using the TD cutter supplied this is done once just like every other template based jig. There are places in the manual with drawings of the template scale provided to record this set-up information, all you need to do is record the cutter type and mark the setting. Because the template is adjustable, moving the template in or out will make the joint tighter or looser fitting. There are times it is beneficial to cut a tighter or loose fitting joint and it is very easy to do with this jig.

One difference between this jig and others that cut HB dovetails is that on this jig the joint must be cut in two passes, not one as is common with the "cookie-cutter" jigs; this of coarse will take more time. One visual difference in the joint produced is that with a  $\frac{1}{2}$ ", 14 degree dovetail bit used, the tails are noticeably larger. To me this size is much more appealing than the minuscule (typically only  $\frac{1}{4}$ " deep) joints made by the more common and cheaper HB jigs. To me,  $1/4$ " deep joints appear out of scale with the stock thicknesses commonly used for drawers.

HB joints are pretty easy on the jig, the only precaution is to make sure the "fronts" are firmly clamped to prevent movement. By using spacers it is possible to cut HB overlay or HB inset drawer fronts, the manual shows how to set the jig for either type.

Through dovetails (TD) are a little more involved but the Leigh is really good at cutting them. These joints require the use of two cutters. This jig is matched to a dovetail angle of eight degrees, all Leigh TD joints use this angle regardless of cutter size. If one needs to cut a bunch of drawers for a project then it may be very beneficial to have a second router on hand. Otherwise the cutters will need to be swapped for each new layout; all TD jigs would have this same annoyance to some degree.

There are some aspects of the jig that make it arduous to use. When elevated at a comfortable working height, it throws chips everywhere. If very many joints are cut the operator would be covered in chips; a deflector will help somewhat. I've recently purchased the Leigh dust

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collection fitting. This makes a HUGE difference on how clean the operation is. Using it should result in about a 90% reduction of chips (as long as the collection hose doesn't get clogged). The down side to the device is that it obscures the bit and it is one more attachment on the router. While it isn't actually necessary to see the bit cutting, I would prefer to see it.

Another down side to the jig is that it takes some effort to wrestle the router around to cut all the pins and the router is a little "wobbly" out on the edge. It isn't the torque of the router that one is fighting with. It's the drag of the guide bushing, the drag of the base moving across the fingers, the pick-up hose if you are using it ,and maybe the combined ancillary effects of the chips, noise, and the death grip I have on the router.

## Leigh Myths

1. The most pervasive myth is that the jig is hard to set up, this is simply not true. Every template based dovetail jig requires the same fundamental set-up process for each dovetail cutter used; the Leigh is no different. On the Leigh this is easier to do because of the scales.
2. The next most prevalent myth is that it is too complicated. The hardware is more complicated than others however that is because it will do more. Just with the dovetail template you can cut more sizes and better quality joints than the precision positioning machines or the simple "cookie cutter" jigs. Each different sized dovetail cutter will require the jig be "dialed-in" for that cutter but all template jigs would require this, if they could even do it.
3. The last popular myth is that the jig cuts dovetails that look "hand cut". They look far more "hand cut" than the typical HB jig but another woodworker can still tell they are not hand-cut; of course nobody else can tell (nor do they care). There is only one jig on the market I know of that can create the hand cut look and is isn't the Leigh.

## My Methods

I usually use two routers when operating the jig. I usually set my jig for Asymmetrical joints when the joint size is under 12" and six fingers wide. With these restraints I can set the jig up so that I can clamp up two parts at once, one on the left and one on the right. This reduces the overall time a little. There is a procedure for labeling the parts for this type of operation in the manual.

When the joint size is over 12" OR six fingers wide, I usually set the jig for a Symmetrical layout. This saves quite a bit of setup time especially if only one router is used. Using whatever objects are at hand in the shop as spacer guides I make the finger width and spacings the

same from each edge of the stock. Using this method I set the jig to cut a little on the "loose" side; unless I make a mistake I usually get within ~0.01" or less in matching the stock edges on assembly, close enough for me.

On drawer size glue-ups I use regular yellow glue. I'll usually clamp the parts together for 10 or 15 minutes then remove them from the clamps to check for square. Unless there is a "problem joint" I do not leave the clamps on because you can easily clamp perfect parts into an un-square assembly. I also set the parts aside to cure on a FLAT surface, curing on an un-flat surface can induce warp. For larger glue-ups I use white glue to allow for more time to assembly time.

## Tips

There are a few basic tips to keep in mind when operating the machine.

1. Run the router at the highest speed setting, this will help reduce tear-out.
2. Like all DT jigs, flat, consistent thickness stock makes a big difference upon the joint fit and overall success.
3. Use backer boards.
4. Use the "climb cutting" method described in the manual to keep tear out to a minimum.
5. If you are using stock that is prone to tear-out, use a "fronter" board.
6. Do a test corner to make sure the jig is set right.
7. Double check to make sure the stock is up against the template and side references before cutting.
8. Visually inspect each joint and do a dry-fit before trying to assemble with glue.
9. Sand the parts BEFORE making the joints, sanding after can affect the fit.

## Summary

I like the Leigh jig, I think it is a useful tool and if one plans on cutting dovetails in any quantity, it is a good value. Few jigs can come even close to the flexibility or joint quality that this system will produce. It does take a box or two to get the hang of using the jig but once done it is pretty easy to use. It is somewhat laborious to use (not because of the setup) but I think all template based jigs are to varying degrees.

The system is expensive but if you want or need maximum flexibility to cut all sorts and sizes of half-blind and through dovetails then this jig will do it.