

Leigh's new router table Dovetail Jig

The first time I saw the new *Leigh RTJ400* dovetail jig, my initial thought was that it's a lot different than other dovetail jigs I'm accustomed to using. For years, I've owned a jig that's used with a hand-held router. The router moves in and out of a comb-like template to cut the joints.

This jig, on the other hand, takes that basic concept and flips it on its head. The workpieces are still secured to a template. But the

template, rather than the router, is the part that moves. Instead of a hand-held router, the guide bushing and bit are installed in a router table. Then you pass the template over them to cut the joints, as you can see in the photo above.

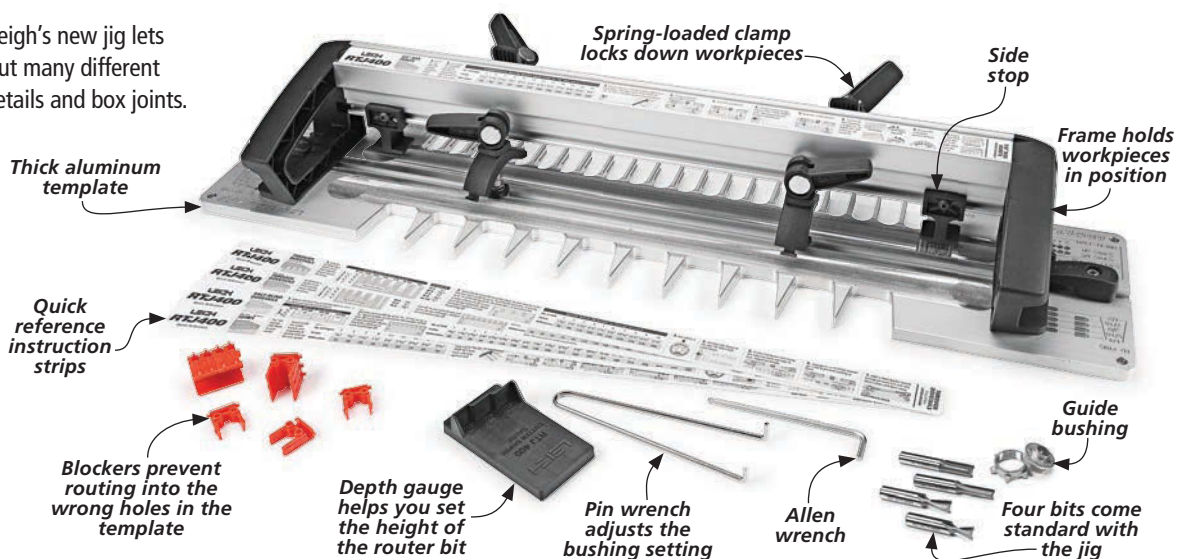
Not only does the *Leigh* jig work differently than most other dovetail jigs, but it also claims to be a lot more versatile. According to the manual, you can make nine types of through dovetails, three different sizes of half-blind dovetails, and four sizes of box joints. It can also

tackle unique joints such as half-blind box joints and angled dovetails.

As you can understand, I was intrigued by the possibility of increasing my joinery capabilities with this jig. So I decided to put it through the paces in my shop to see how well it worked.

JIG OVERVIEW. At \$329, the *RTJ400* is certainly not the cheapest dovetail jig on the market. But my hope was that its versatility, paired with the quality I've come to expect from *Leigh*, would make it a good investment.

◀ Leigh's new jig lets you rout many different dovetails and box joints.





▲ One of the secrets to the jig's versatility and ease of use is the series of "presets" at each end of the jig. To rout a particular joint, you just position the frame using the indicated preset holes, and the jig is ready to go.

As you can see in the photo at the bottom of the opposite page, the RTJ400 includes a variety of accessories. Leigh also provides a very thorough manual, quick reference instruction strips, and a DVD that walks you through every cut you might want to make.

As I started working with the jig, I was impressed by its ease of use. Even though the jig can cut many different kinds of joinery, each setup is simple to achieve. Plus, it's straightforward to switch from one setup to another when needed.

TWO-SIDED TEMPLATE. The jig has several features that contribute to both its simplicity and versatility. For one, it has a double-edged template that allows you to cut both the tails and pins for a through dovetail. You can see both edges of the template in the photo on the opposite page. The template also acts as a base for a frame that provides a clamping surface for holding the workpieces.



▲ Rotate the elliptical bushing to fine-tune the fit of a joint. Just turn it to the right or left to tighten or loosen the fit.

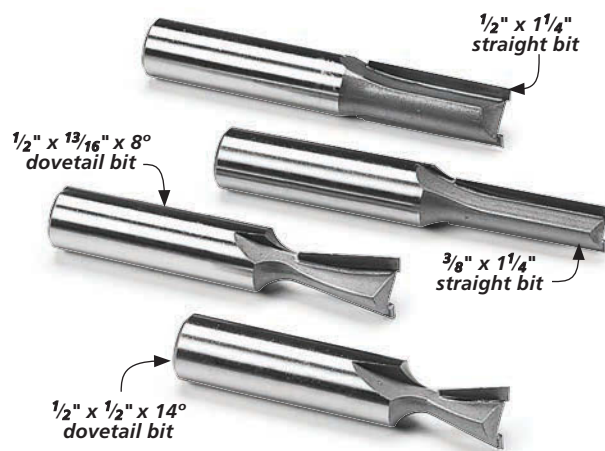
PRESET HOLES. At the ends of the template, you'll find the secret to what makes the jig so easy to set up and use. And that's a series of preset holes and slots for routing different types of dovetail and box joints. You can see the holes at one corner of the jig in the upper left photo.

These holes are used to position the frame on the template for each type of joint. If you want to cut through dovetails, for example, you position the frame using the corresponding presets on the template. Then, when it's time to rout a different joint, you simply switch to a different set of holes.

ELLIPTICAL BUSHING. The guide bushing also contributes to the jig's versatility (lower left photo). It has an opening with an elliptical shape, rather than a perfect circle. (The same type of bushing is used with other Leigh jigs, as well.) This is an important consideration, as it allows you to fine-tune



▲ The spring-loaded clamps slide in a track and hold the workpieces securely to the frame as you rout the joints.



▲ These bits come standard with the jig and can handle basic through dovetails, half-blind dovetails, and box joints. Other bits are available as options.

the fit of the joint easily. If a joint is too loose or too tight, you can fix it by rotating the bushing as shown below.

Since they're elliptical, rather than circular, the bushings might seem like they'd add a measure of confusion to using the jig. But I found that really wasn't the case. The trick, as the manual explains, is to strike a centerline on the reducer ring that holds the bushing. That way, you have an easy reference for adjusting the bushing based on the cut at hand.

OTHER FEATURES. If a jig is going to handle as many joints as the Leigh claims it can, it's going to need a lot of router bits, as well. And Leigh's jig certainly delivers in that area. It comes standard with four different bits, which can be used to cut the through dovetails, half-blind dovetails, and box joints shown in this article (upper right photo). An accessory kit is also available with more bits and bushings to expand the capabilities of the jig.

Other features enhance the accuracy of the jig. There are blockers that fill holes in the template when you want to change the spacing of the joint. Side stops allow for accurate positioning of the workpiece. And the heavy-duty, spring-loaded clamps keep the pieces from shifting while you rout (near left photo).

IMPRESSIONS. Lots of gadgets are all well and good, but I was particularly impressed with the jig in use. At 11 pounds, it has good heft that keeps it firmly in place on the table as you rout the joints. I also find that I enjoy the measure of control provided by routing at a router table. For a closer look at some of the joints the jig can make, turn the page.

THROUGH DOVETAILS

The Leigh RTJ400 isn't the only jig on the market capable of routing through dovetails. But with five different sizes of dovetails, it's one of the most versatile. What's more, the jig makes this complex joint surprisingly easy to cut.

SET THE FRAME. For standard through dovetails ($\frac{1}{2}$ " pins and 1" tails), you'll use both edges of the jig's template. The edge of the template with straight fingers is for the tails, and the edge with the angled fingers is for the pins. The first step is setting the frame in the preset holes, in this case to cut the tails (refer to Figure 1).

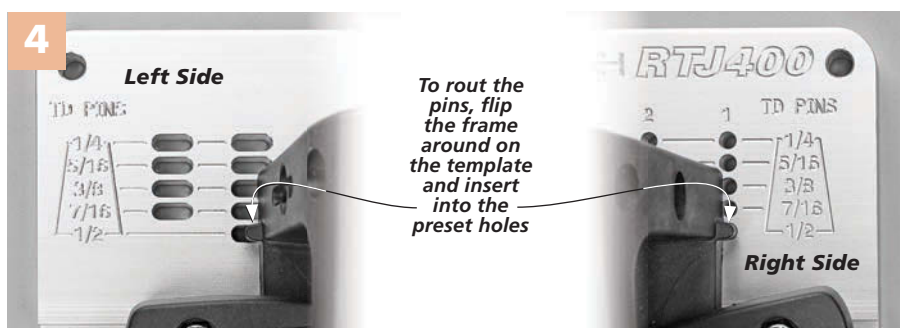
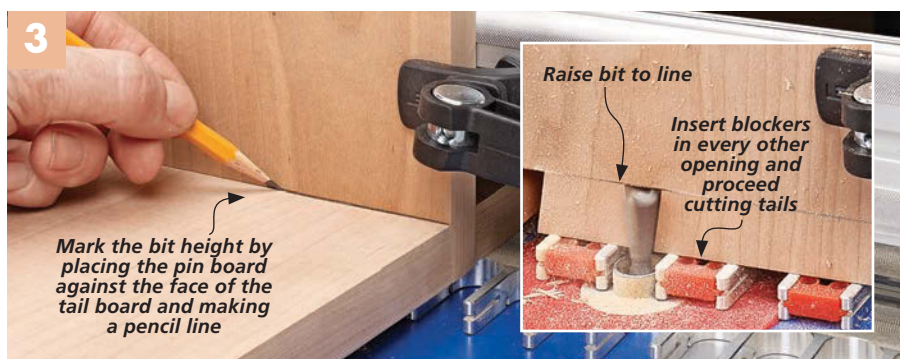
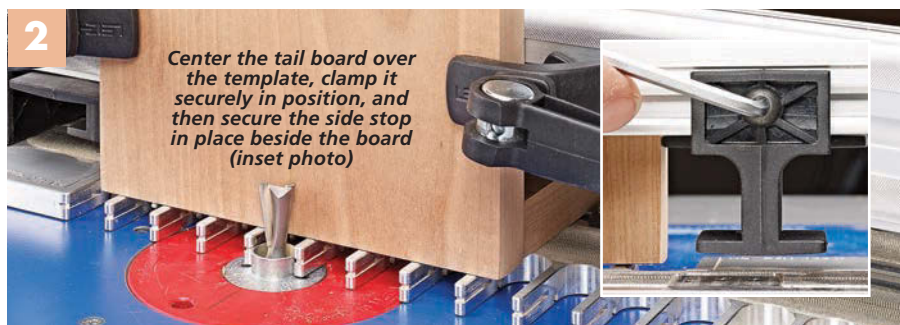
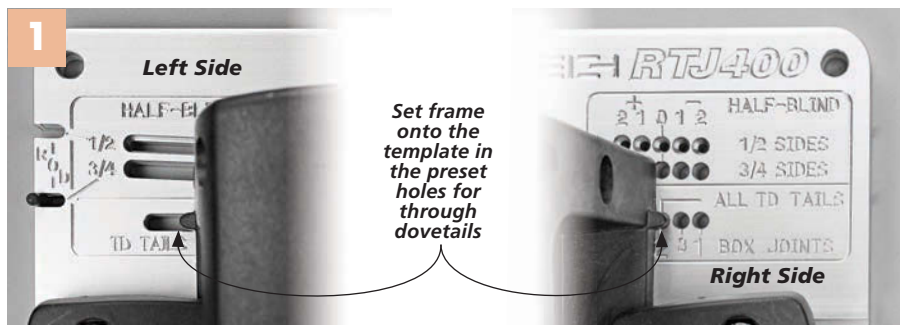
POSITION THE WORKPIECE. You'll have to position the first workpiece on the template manually, but this isn't difficult to do. Just use a rule to center the workpiece over the fingers of the template, and clamp it down (Figure 2). Then set the left side stop against the workpiece to lock in the setting for routing subsequent workpieces (inset photo). Note that there's also a backer board that's clamped horizontally behind the workpiece. This helps to prevent tearout while routing.

SET THE BIT HEIGHT. With the frame and workpiece positioned, the next step is to set the height of the bit. And since these are through dovetails, that means you can use the mating workpiece to establish the depth of the cut, as shown in Figure 3. For standard through dovetails, you'll only rout in every other opening in the template, so you can insert the blockers in the other openings (inset photo). Then just rout in and out of the template openings to complete the tails.

FLIP THE FRAME. Now you can turn your attention to the mating pin board of the through dovetail joint. To cut this side of the joint, you'll rotate the frame and align it with the "pin" side of the two-sided template. This template has wider openings and angled fingers on either side of the opening.

To set the frame on the template, you'll use the preset holes that match the diameter of the bit you'll be using to cut the dovetail pins, which is $\frac{1}{2}$ " in this case (refer to Figure 4).

ROUT THE PINS. While you use a dovetail bit to cut the tails, you'll actually rely on a straight bit to cut the pins. The reason this works is due to the angled sides of

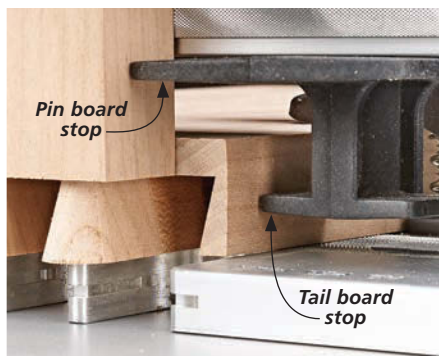


the template openings, which you can see in Figure 5 on the opposite page.

The good news is that the setup for routing the pins is easy. The side stop you set in Figure 2 will automatically position the pin board to match. And you set the bit height the same as is shown in Figure 3.

When it comes time to rout the pins, you'll just want to be aware that this is a hefty cut that removes a lot of material. So it's best to make a light skim pass first to establish the shoulder, as shown in the inset photo of Figure 5. Then you can finish routing the pins.

FINE-TUNING THE JOINT. Almost every dovetail joint requires some fine-tuning to get the fit just right. And as promised, the *Leigh* jig has a number of features that make this process easy. If the joint is too loose or too tight, you simply turn the elliptical bushing in the router table, and make another test cut. For joints



▲ With the Leigh jig, you can rout both the pins and tails of a half-blind dovetail joint in one operation.

that are proud or recessed, you reposition the frame in the template using the "+" or "-" holes. (You can see these clearly in Figure 1 on the opposite page.) I found I was able to dial in a perfect fit with just a few test cuts.

HALF-BLIND DOVETAILES

Really, the bread-and-butter joint for any dovetail jig isn't through dovetails,

but half-blind dovetails. I use this type of joint all the time, particularly for drawer construction (refer to the cherry buffet on page 42). And, as I expected, the *Leigh* jig is well-equipped to handle half-blind dovetails, too.

The typical manner of routing half-blind dovetails is to offset the position of the pin board from the tail board, and rout both parts of the joint at once. And the *Leigh* jig allows you to cut them this way, as well. In fact, the side stop has two settings, so it positions both the tail board and pin board for the cut simply by placing them against the corresponding parts of the stop (upper left photo).

SETUP GAUGE. Setting the height of the bit is a little trickier for a half-blind dovetail, since you won't be cutting all the way through the workpiece. Fortunately, *Leigh* offers a simple depth gauge that simplifies the process (near left photo). You just raise the bit to match the setting of the bit you're using until it just barely grazes the underside of the gauge.

STOP ROD. As it is, the jig's template works great for routing half-blind dovetails in $\frac{3}{4}$ "-thick stock. Of course, sometimes you want dovetails in $\frac{5}{8}$ " or thinner stock. This requires limiting the distance that the router bit cuts into the opening in the template, and *Leigh* solved this problem with a long nylon stop rod. When needed, it passes through holes in the template openings to limit the depth of cut (inset photo, above left). Then it simply stores below the template frame when not needed.

FINAL IMPRESSIONS. The *Leigh* RTJ400 is pricey compared to other dovetail jigs. But after extensive use in my shop, I have to say that this versatile, easy-to-use jig is worth the cost. In fact, it has changed the way I look at dovetail joinery. I now consider the router table my go-to tool for these cuts. **W**



▲ For routing half-blind dovetails in thinner stock, you pass a stop rod through the template to limit the depth of the bit's cut.



▲ A bit depth gauge makes it easy to set the height of the dovetail bit for cutting accurate half-blind dovetail joints.

How-To: CREATE PERFECT BOX JOINTS

The *Leigh* jig handles four sizes of box joints with ease, as well ($\frac{3}{32}$ ", $\frac{3}{16}$ ", $\frac{3}{8}$ ", and $\frac{3}{4}$ "). And setting up for box joints is even easier than for dovetail joints. Instead of centering the workpiece on the template, you use the long

stop rod to set the position of the side stop for routing the box joints (photo below). Then it's just a matter of shifting the frame between two positions to create the interlocking pins and slots on the mating workpieces.



◀ Preset holes in the jig template allow you to accurately position the side stop for routing perfect-fitting box joints.

Sources for LEIGH DOVETAIL JIG

- **Highland Woodworking**
RTJ400 Dovetail Jig ... [105881](#)
Accessory Kit ... [105882](#)

These specific sources were also cited

- Highland Woodworking
highlandwoodworking.com
800-241-6748