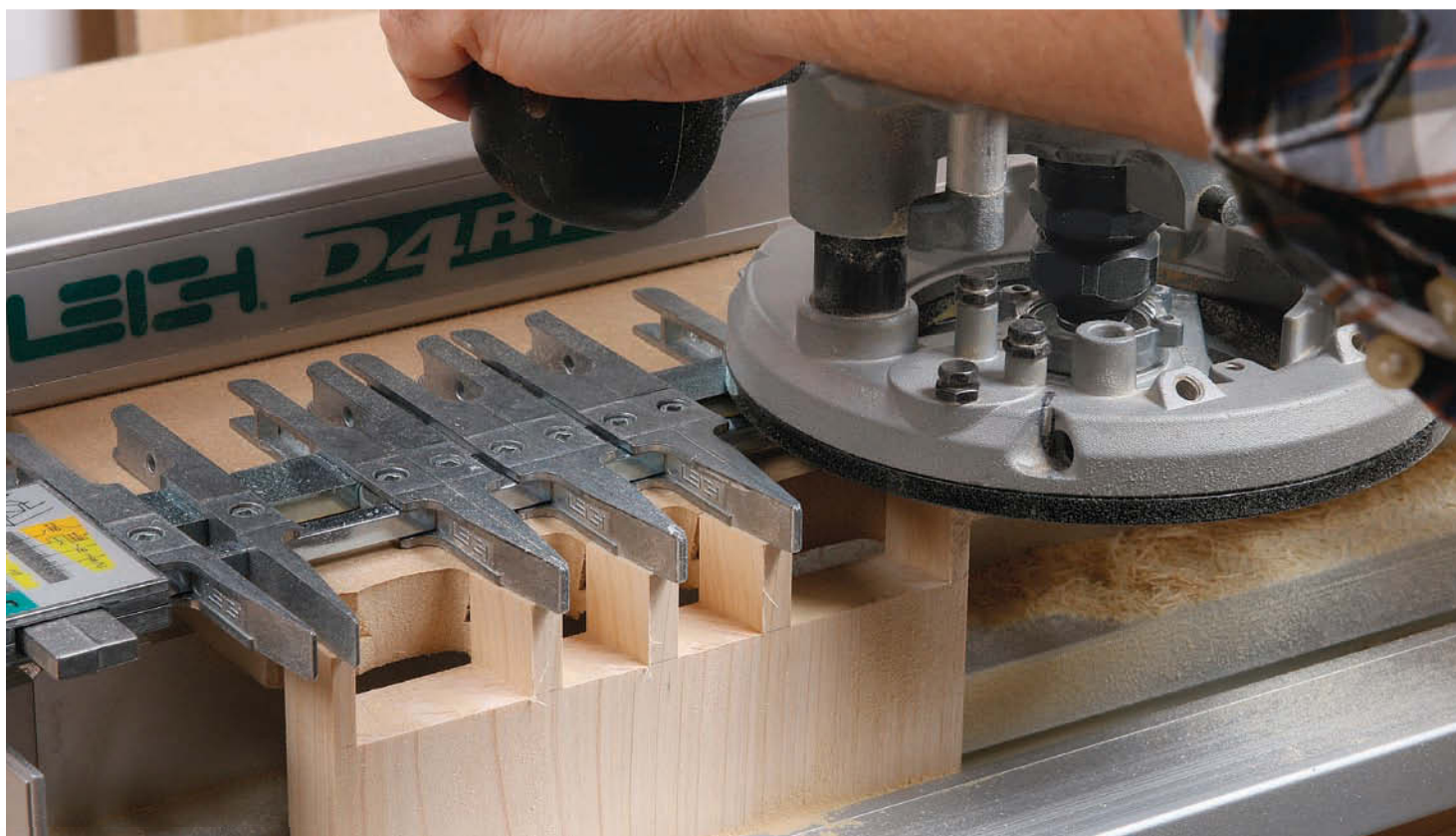


Dovetail Jigs

The best turn out beautiful, flawless joints in a jiffy

BY ASA CHRISTIANA



Everyone loves the look of hand-cut dovetails, but not everyone loves to cut them. That's why many woodworkers turn to a router dovetail jig. These jigs promise to make flawless dovetails quickly and easily. To help you pick the best one, *Fine Woodworking* asked me to test the field. There's a pile of dovetail jigs on the market, so we tested only the ones that can do both half-blinds and through-dovetails, as both are essential for furniture making.

Most of the jigs are used with a handheld router, but a couple are used with a router table. That means your table must have an insert plate that can accommodate a standard $1\frac{3}{8}$ -in.-dia. bushing. By the way, for most of these jigs you'll need a router with a $\frac{1}{2}$ -in. collet and a minimum of $1\frac{1}{2}$ hp. All of the jigs include the bushings and router bits you need for basic through- and half-blind dovetails, with some offering optional bits for different-size joints or thicknesses. All can rout both parts of a half-blind dovetail in a single pass (with even spacing), and some also can handle the workpieces separately to allow variable spacing and deeper tails, so I gave that a try, too. Whenever possible, I cut my test joints in $\frac{7}{8}$ -in.-thick stock to get an idea of the depth and spacing possible with each jig. Read on for the results.

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LEIGH D4R PRO

\$595

Spacing: Variable

Stock width (max.): 24 in.

Stock thickness: $\frac{1}{8}$ in. to 1 in. for through-dovetails (pins board can be $1\frac{1}{4}$ in.); $\frac{1}{8}$ in. to 1 in. for half-blinds

Half-blind depth: $\frac{3}{16}$ in. to $\frac{3}{4}$ in.



The D4R Pro is Leigh's flagship jig. Like the other Leigh jigs in this test, it represents a different world of quality, from its clear, comprehensive instructions to its ingenious engineering, impeccable manufacturing, and unmatched capabilities.

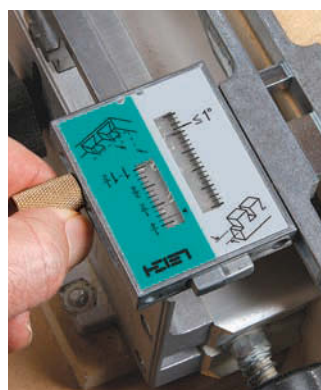
Because the sliding fingers are offset on each side of the template, you simply clamp the workpiece in place, align the sliding fingers by eye, and the pins and tails will mesh perfectly when you flip the template to machine the other half of the joint. Aligning the fingers lets you play with the array and settle on the best layout in minutes. Precise indicators ensure that you are aligning the template correctly in every position, with icons to remind you which way it flips for each task. One thing to note is that the bushing is eccentric, which lets you pivot it to adjust the joint fit 0.002 in. at a time. But you must keep the router in the same orientation to get perfect joints.

Cutting the two parts of a half-blind dovetail joint separately lets you vary the spacing and go up to $\frac{3}{4}$ in. deep, much deeper than other manufacturers' jigs. You need larger accessory bits for this—and for routing through-dovetails on the thickest stock—but the added capabilities are well worth the cost.

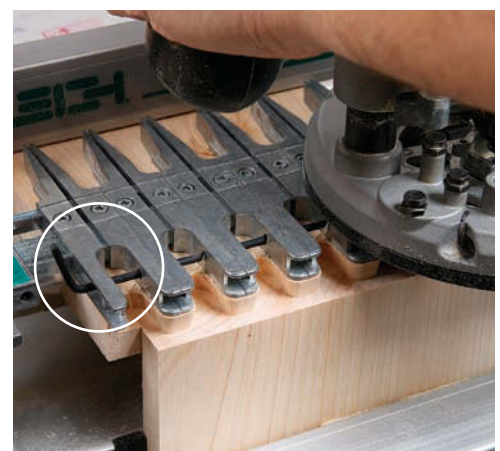
For both through-dovetails and half-blinds, the D4R produced better results and more consistent joints than any jig in the test other than the Leigh RTJ400 router-table jig, which has fixed template fingers.



Magic fingers. All you need is a center mark to design the array of pins (left). You can trust your eyes from there, and even if the symmetry is off, the design of the template ensures a perfect match between pins and tails when you flip it (below).



Short learning curve. Icons tell you which way the template goes on the jig, and precise guide lines dial in its position for any stock thickness.



Clever engineering. For half-blinds in one pass, a rod slides through the template fingers to stop the bushing's rearward travel in the right spot.



LEIGH SUPER 18 JIG

\$399

Spacing: Variable

Stock width (max.): 18 in.

Stock thickness: $\frac{1}{4}$ in. to $\frac{13}{16}$ in. for through-dovetails (pins board can be 1 in.); $\frac{1}{4}$ in. to $\frac{13}{16}$ in. for half-blinds

Half-blind depth: $\frac{7}{32}$ in. to $\frac{3}{4}$ in.



This jig is a value-oriented alternative to the Leigh D4R, but its template system is just as excellent. (I tested the 18-in. model, but there are 12- and 24-in. versions, too.) The template fingers don't split in half for extrawide pins, but I can't think of any situations where I would want those. Also, the jig's reference surfaces are not milled but are covered with coarse sandpaper, which holds workpieces powerfully.

The Super Jig actually has a few advantages over the D4R Pro. Its template fingers are a little closer together ($\frac{7}{8}$ in. vs. 1 in.), meaning you can cluster pins and tails closer, such as at the center of a joint. And I found its guide lines easier to see and line up precisely. The only true drawback for me is the Super Jig's more limited stock-thickness capacity (as with the other Leigh jigs, you need accessory bits to reach the full range of thicknesses and half-blind depth). Like the D4R, the bushing on the Super Jig is eccentric, so you must keep the router in the same orientation to get perfect joints.



Simpler fingers. These don't split for extrawide pins, but they are just as accurate as those on the D4R.



PORTER-CABLE 4212 DELUXE DOVETAIL JIG

\$160

Spacing: Fixed

Stock width (max.): 12 in.

Stock thickness: $\frac{1}{4}$ in. to $\frac{3}{4}$ in. for through-dovetails (tails board can be 1 in. thick); $\frac{1}{2}$ in. to $1\frac{1}{8}$ in. for half-blinds

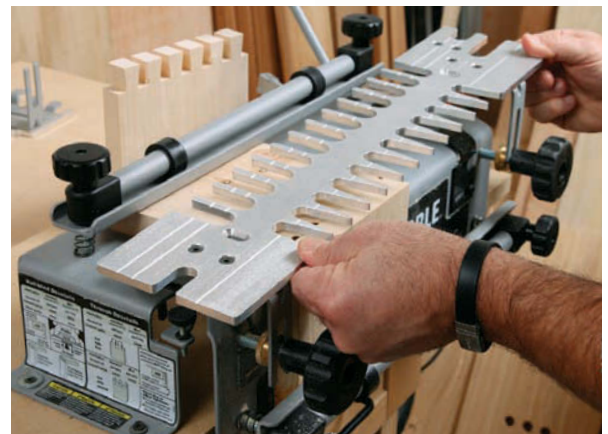
Half-blind depth: $\frac{3}{8}$ in.



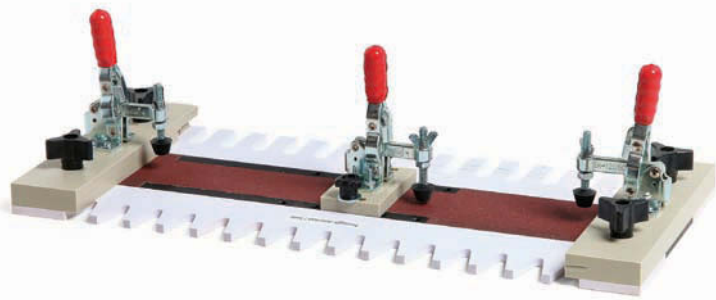
If you are OK with fixed spacing and evenly sized pins and tails, plus a $\frac{3}{4}$ -in. ceiling for workpiece thickness on through-dovetails, this jig is an exceptional value. Everything you need for precise setup is built in, making the learning curve short and success almost guaranteed.

As is the case with all fixed-spacing jigs, if you want traditional half-pins at the ends of the joint, only certain board widths will work. In this case, the optimal widths start at $1\frac{1}{4}$ in. and go up in 1-in. steps from there, with an acceptable plus-or-minus range at each increment. Also, on the Porter-Cable half-blind dovetails go only halfway through a typical drawer front, but the dovetail angle is steep enough to ensure a strong joint.

The cam-action clamp bars adjust quickly and hold fast, and the router rides steadily atop the thick, broad aluminum templates. The smooth-cutting bits have $\frac{1}{2}$ -in.-dia. shanks for vibration-free routing. The 4216 version adds a template for narrower dovetails and box joints on even thinner stock.



Set it once. Once you have the template set for one side of the joint, you can flip it into the perfect position for the other half, with no further adjustment to the router or jig.



FAST-JOINT PRECISION JOINERY SYSTEM

\$170

Spacing: Fixed

Stock width (max.): 14 in.

Stock thickness: $\frac{1}{4}$ in. to $\frac{3}{8}$ in. for through-dovetails; $\frac{1}{4}$ in. to $\frac{3}{4}$ in. for half-blinds

Half-blind depth: $\frac{3}{8}$ in.

This fixed-spacing jig is used on a router table and includes a number of decorative-joint templates, with many more available as options. It is capable of good joints, and there is some clever design to this jig, notably the little setup block that locates workpieces on various templates.

However, the jig has the same deal-breaker as the MLCS (p. 42): It can't make half-pins on the ends of through-dovetails, at least not without some sort of DIY spacer block. Because the fixed clamping blocks also serve as end stops, you'll need a spacer to center any type of joint, unless the boards are precisely sized. Worse, the jig can only machine through-dovetails on stock up to $\frac{3}{8}$ in. thick.

The Fast-Joint also requires significantly more assembly and setup time than others in the test.



Disposable stops. You rout into the plastic end blocks for many joints, making them increasingly difficult to use for later tasks.



LEIGH RTJ400 ROUTER TABLE JIG

\$330

Spacing: Fixed

Stock width (max.): 16 in.

Stock thickness: $\frac{1}{8}$ in. to $\frac{13}{16}$ in. for through-dovetails (pins board can be $1\frac{1}{4}$ in.); $\frac{1}{8}$ in. to $\frac{13}{16}$ in. for half-blinds

Half-blind depth: $\frac{3}{8}$ in. to $\frac{19}{32}$ in.



Easy setup. The workpiece holder drops down onto the template in precise positions for different joint operations. You can't vary the spacing, but for through-dovetails, you pop in little spacers to create wide tails.



This is another Leigh jig of impeccable quality, with a CNC-cut template and machined reference surfaces for accuracy. It produced even more consistently accurate through-dovetails than the other Leigh jigs, especially on the first try, probably due to its fixed template fingers and the fact that it is used on the router table, where it rides steadier than a handheld router can. However, in price and capabilities it falls between the Porter-Cable and Leigh Super Jig, more expensive than the former and lacking the variable spacing of both.

The template is clever, from the pins and holes that locate it to the tension levers that hold it tightly to the workholder above. The workpiece clamps slide easily and hold strong, even pulling cupped boards flat, and large handles on the back of the jig make it easy to control. Like other Leigh models, the RTJ400 requires accessory bits to reach the maximum range of thicknesses and half-blind depth.

Although this jig lacks variable spacing, it creates double-wide tails for a more handmade look than most fixed templates produce. If you don't mind being limited in the range of possible board widths and thicknesses, the RTJ400 jig is a great option.



MLCS MASTER JOINERY SET

\$200

Spacing: Fixed

Stock width (max.): 12 in.

Stock thickness: ½ in. to ¾ in. for through-dovetails;
¼ in. to 1 in. for half-blinds

Half-blind depth: ¾ in.



This jig comes with a wide range of templates for more than one size of through-dovetails, half-blinds, and box joints, and it can machine good joints. But there are too many problems. Using the supplied edge guides, you can't position the stock for half-pins at the ends of the through-dovetails, only half-tails. Switching between joints is time-consuming and tedious: Side stops have to be changed out, as do spacers on the upper clamp bar, and you have to make a significant front-to-back adjustment to the template position, with small lock nuts that must be turned many times with a wrench.

The jig also lacks some of the user-friendly stops and guide lines of other jigs, requiring that you do a fair amount of measuring and marking for every joint you cut. Add a range of manufacturing and other design issues, including bits that don't cut very well, and I can't recommend this jig.

Tricky setups. To position the template for single-pass half-blinds, you align the bottoms of the template fingers with a pencil line on a reference board, which disappears as you get close. Also, the lock nuts that position the template must be turned a dozen or so times with a wrench to transition between joint types.



ROCKLER COMPLETE DOVETAIL JIG

\$165, optional templates \$40 each

Spacing: Fixed

Stock width (max.): 11 in.

Stock thickness: ½ in. to ¾ in. for through-dovetails (pins board can be up to 1½ in. thick); ½ in. to ¾ in. for half-blinds

Half-blind depth: ⅝ in.



Extra steps for half-blinds. You have to do some math and measuring to set the stop bar that limits the router's rearward travel (left). Also, the side stops don't stay square when moved, so you have to recheck them.

With its standard setup, this jig competes with the Porter-Cable Deluxe on price and machines good joints. It's also more versatile: For \$40 each, you can add templates for a few non-uniform, nice-looking arrays of through-dovetails. But those templates are still fixed, with an even more limited range of acceptable board widths. And the additional template cost bumps the Rockler up to \$275, pitting it against the 12-in. Leigh Super Jig, which offers infinitely adjustable spacing.

Where it loses to the Best Value Porter-Cable is in ease of use. Setting up for both half-blind and through-dovetails is a fussy process. There is an optional dust-collection attachment (\$48) that does its main job well, but it has to be detached for every new setup.