



Many joints are possible

These samples provide an overview of the many joints and configurations possible with dovetail jigs. Other joints are possible, and the spacing options are endless. We used the shorthand listed below each sample to denote the basic joints each jig can produce.



THROUGH DOVETAILS (T)



HALF-BLIND DOVETAILS (HB)



VARIABLY SPACED THROUGH DOVETAILS (VT)

Dovetail Jigs

All can make precise joints—but the best do it easily

BY TIM ALBERS

To many woodworkers, a clean and snug-fitting row of dovetails is the hallmark of craftsmanship (hence the logo of this magazine). This is probably why you'll find more than 20 dovetail jigs on the market, each promising to turn a time-consuming process into a few foolproof passes with a router.

Like politicians, these jigs are either loved or hated and everyone seems to have an opinion about them. To see for myself, I gathered 15 of the most versatile jigs for a thorough test.

The only jigs I didn't test are the most basic models, which cut only half-blind dovetails, on stock 12 in. wide or less, with fixed spacing. These are covered by Fred Sotcher in a Web-only article, available free on FineWoodworking.com.

How they stack up

First, every one of these jigs can produce a snug and accurate dovetail joint. The factors that separate them are the diversity of joints they can create, the width of workpieces they can handle,

and the setup and adjustment time they require. The best jigs offer a good balance between versatility and learning curve.

I was impressed with a number of these jigs. Though a router bit can't create the very slender spaces between tails associated with hand-cut joints, a good dovetail jig will turn out a stack of boxes in an hour, and many offer variable spacing for more attractive results.

For the best-overall award, the Leigh D4R comes out on top. It can do it all and do it quickly. The Akeda is another great jig, but not quite as versatile. Even with the D4R, I'd be tempted to add a Keller and/or Gifkins jig: the Keller for larger work and the Gifkins for small boxes. These offer unmatched simplicity and efficiency.

For best value, I recommend the Porter-Cable 4212. While only 12 in. wide, it offers a remarkable combination of price, options, and ease of use.

Tim Albers is a woodworker in Ventura, Calif., and a frequent contributor.



**VARIABLY SPACED
HALF-BLIND DOVETAILS (VHB)**



SLIDING DOVETAILS (S)



BOX JOINTS (B)



ISOLOC (I)

Leigh jigs are fast and versatile



LEIGH D4R AND D1600

Source: www.leighjigs.com

Street prices: \$476 (D4R, shown); \$340 (D1600)

Thickness capacity: 1/8 in. to 1 1/2 in.

Width capacity: 24 in. (D4R); 16 in. (D1600)

Variable spacing: Yes

Templates included: VT, VHB, S

Accessories available: I, B, dust port

Instructions: Excellent

Learning curve: Fair

Ease of setup: Very good

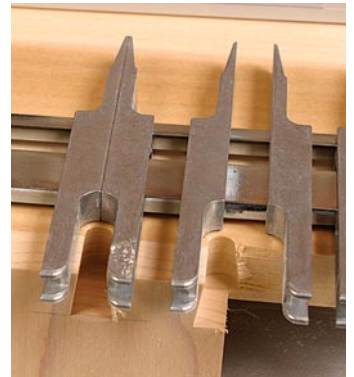
Ease of use: Very good

The Leigh jigs are built around a solid aluminum base unit, with quick and solid clamps, and a single ingenious template that produces both through- and half-blind dovetails with variable spacing, as well as sliding dovetails. The jig comes with the cutters and guide bushings for these joints.

Complexity is the tradeoff with such a versatile jig. While the manual is the most clear and comprehensive woodworking equipment manual I have seen, it still took me about a half-day to master the basic joints. However, once I understood the basic jig, terminology, and marking system, I was able to cut a variety of joints very quickly. Diagrams on the jig itself act as helpful reminders.

The key to the Leigh design is the sliding template fingers, which allow beautiful dovetail configurations to be arranged by eye, with the fingers always locking down level and straight.

The shorter Leigh D1600 (not shown) is a great value, offering all of the features of the D4R except adjustable pin size, a feature I consider insignificant.



One template does all. This clever template does both through- and half-blind dovetails, with variable spacing that is easy to set up.

The Porter-Cable is a bargain



PORTER-CABLE 4212

Source: www.portercable.com

Street price: \$150

Thickness capacity: 1/4 in. to 1 1/4 in.

Width capacity: 12 in.

Variable spacing: No

Templates included: HB, T

Accessories available: None

Instructions: Very good

Learning curve: Easy

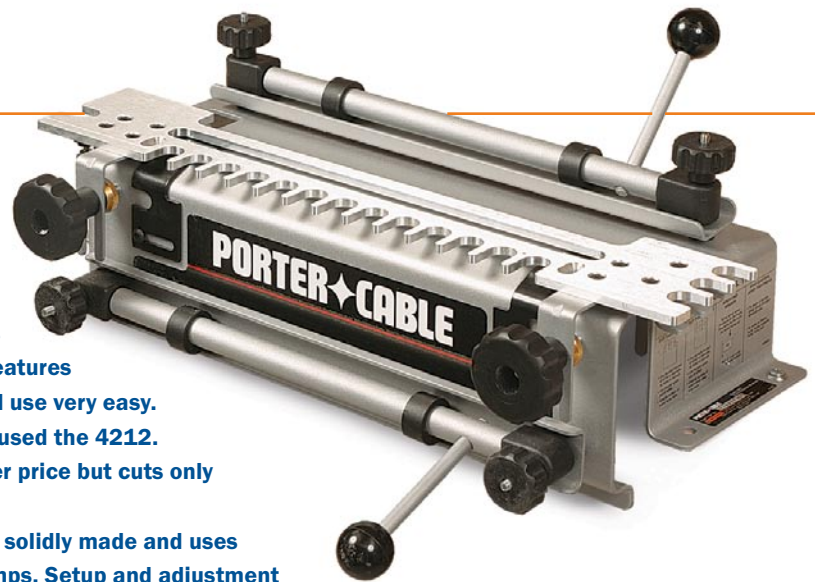
Ease of setup: Very good

Ease of use: Excellent

Porter-Cable's 4200-series jigs contain some new features that make setup and use very easy. For my evaluation, I used the 4212. The 4210 has a lower price but cuts only half-blind joints.

The 4212 base is solidly made and uses fast-acting cam clamps. Setup and adjustment went smoothly, though the instruction manual could be better. Very helpful are the additional setup lines and instructions etched onto the templates themselves. The jig is also the only one to include built-in gauges for setting the router-bit height. The jig comes with 1/2-in.-dia.-shank router bits, which reduce vibration (most others use 1/4-in. bits).

After using the jig a few times with the help of the information on the templates, it becomes pretty intuitive, and switching between templates, joints, and different-size boards goes quickly. At an average street price of \$150, this jig is a real bargain.

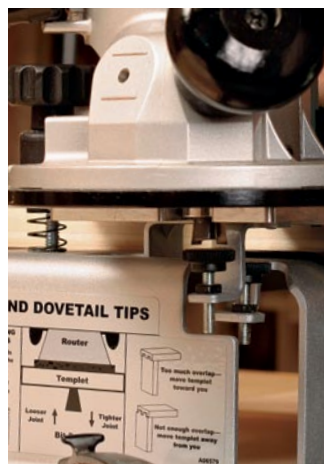




Flip and continue. For through-dovetails, once the tails are cut the template is simply flipped over to cut perfect pins.



Helpful guide lines. The templates have scribe marks that are aligned easily with the back of the tail board, making setup fast.



Another unique guide. The Porter-Cable is the only jig with built-in guides for setting bit depth. Instructions on the jig mean fewer trips to the manual.

AKEDA DC16

Source: www.woodcraft.com

Street price: \$350, plus router bits (\$450 as tested)

Thickness capacity: ¼ in. to 1 in. (pin board max is ¾ in.)

Width capacity: 16 in.

Variable spacing: Yes

Templates included: VT, VHB, S

Accessories available: Router bits, dust port, various-sized fingers

Instructions: Excellent

Learning curve: Easy

Ease of setup: Very good

Ease of use: Very good

The Akeda jig truly is a new approach to cutting dovetail joints—and a successful one. If it were 24 in. wide, it would give the Leigh D4R tough competition for the best-overall award.

The Akeda comes completely assembled, and setup is a snap. The jig is calibrated at the factory and no adjustments are needed. Within 30 minutes I had read through the excellent instructions

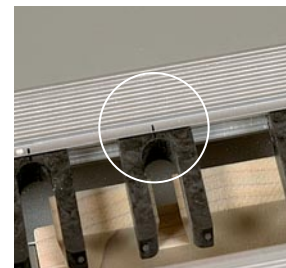
and made a precise, finished joint with variable spacing.

The Akeda's uniqueness comes from its boxlike design, which employs movable guide fingers that snap into a guide rail at ⅛-in. increments. The tails are cut first; then the tail fingers are replaced by tapered pin fingers. The clamping bars are simple and fast to adjust—one of the best designs of any jig. They require only one knob, with an internal gear system keeping pressure even.

The Akeda bits are not a standard size, so I'd keep a few extras on hand in case one breaks.



Design advantages. The Akeda jig's boxlike design offers better router support than other jigs, and with an accessory port, much better dust collection.



Good old pencil marks. After cutting the tails, you mark the jig at the center-line of each template finger and then align the pin fingers with those marks.



FESTOOL VS-600

Source: www.festoolusa.com

Street price: \$300, \$390 with basic templates

Thickness capacity: $\frac{5}{8}$ to $1\frac{1}{8}$ in.

Width capacity: $24\frac{1}{2}$ in.

Variable spacing: No

Templates included: None

Accessories available: T, HB, S, B, doweling jig, router bits, dust port

Instructions: Fair

Learning curve: Difficult

Ease of setup: Fair

Ease of use: Good

The Festool is a versatile jig capable of dovetails, box joints, and even shelf-support holes and dowel joints. It also has very solid clamping bars with a third knob in the middle for narrow stock. Adjusted front-to-back, the templates are the only ones that hold their settings when removed from the jig. The jig must be used with a Festool router, but these come with a tapered pin that makes installing the guide bushing a breeze, and the 8-mm-dia. Festool bits are

stiffer than the $\frac{1}{4}$ -in. competition.

However, the jig's design is troublesome. Because it uses a special guide bushing with a lipped collar, the stock can't be pushed flush against the template. This makes it harder to align the template with the work or to align two boards when cutting half-blinds. And the long, thin templates tended to flex under the weight of the router, or bow on top of narrow boards. Last, the jig is only the base unit; you must buy bits and at least one template to cut a joint. Add the router and the price approaches \$800.



These templates remember. The Festool templates retain their front-to-back settings when removed from the jig.



Got three hands? Because the workpieces don't touch the template, you must go by feel when aligning two boards—tough while holding the workpiece and tightening a clamp.



HART DESIGN GFK1800

Source: www.hartvilletool.com

Street price: \$150

Thickness capacity: $\frac{7}{16}$ in. to 1 in.

Width capacity: 18 in.

Variable spacing: No

Templates included: HB

Accessories available: T, small HB

Instructions: Very good

Learning curve: Fair

Ease of setup: Very good

Ease of use: Good

The Hart jig, model GFK1800, is especially large, well-designed, and well-made for a lower-priced, half-blind jig. The initial setup and adjustment took only 30 minutes. I recommend the simple but effective setup gauge (\$10), which aligns the side guides and template and sets the bit height. Cam-style clamp levers (\$20) are also a helpful upgrade.

As with all half-blind jigs, the template supports only

slightly more than half of the router base, so care must be taken to prevent the router from tipping.

The Hart jig also offers templates for through-dovetails—one each for pins and tails. Unfortunately, each time a template is changed, it must be set up and adjusted for accurate results.

The Hart 18-in. jig is a solid performer. A 12-in. model is \$100, and includes a free setup gauge.



Good capacity in a basic jig. The Hart's 18-in. capacity means it will produce deeper boxes and cases than the other low-priced jigs.



Handy alignment guide. Like the rest of the jig, the small, optional guide that aligns the side stops is simple but effective.



PORTER-CABLE OMNIJIGS

Source: www.portercable.com

Street prices: \$400 (7216);
\$300 (5116)

Thickness capacity: ½ in. to
1 in.

Width capacity: 24 in. (7216);
16 in. (5116)

Variable spacing: Yes

Templates included: HB, VT

Accessories available: Small
HB, VT, B

Instructions: Good

Learning curve: Fair

Ease of setup: Fair

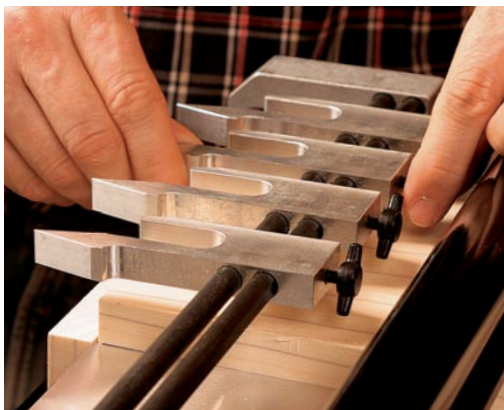
Ease of use: Fair

The Omnijig has been Porter-Cable's flagship dovetail machine for many years. In fact, the entire jig is being radically redesigned, with the new version set for a January 2007 release. We'll review it in a future issue. The existing version is the heaviest and most solid of any of the jigs we evaluated (the 7216 weighs in at 60 lb.). Both existing models come with a half-blind template, a router bit, and a template guide bushing. A special offer on the 24-in. model includes a

variably spaced through-template.

The Omnijigs arrive assembled with only minor adjustment necessary. The instructions are simple and straightforward, and a good video is included. The solid-steel, cam-action clamping bars have no flex, but to adjust them for different thicknesses you have to reach awkwardly under the jig.

The half-blind templates work well. But on the one for variably spaced through-dovetails, the T-shaped handle on each finger can get in the way of the router above and the workpiece below. Also, it's easy to tighten down the fingers in a slanted position.



Fickle fingers.

The poor design of the T-shaped clamp handles on each finger means that the template must be raised above the workpiece to align the fingers, making layout less accurate. Also the fingers don't stay level when they are adjusted.



ROCKLER DOVETAIL JIG COMBO 23882

Source: www.rockler.com

Street price: \$140

Thickness capacity: ½ in. to
1¼ in. (¾ in. on T)

Width capacity: 11 in.

Variable spacing: No

Templates included: HB, T

Bits included: Yes

Accessories available: None

Instructions: Very good

Learning curve: Fair

Ease of setup: Good

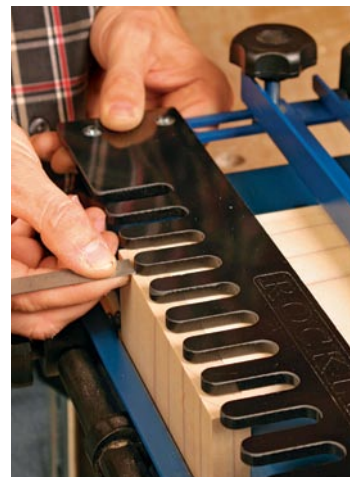
Ease of use: Fair

The Rockler Dovetail Jig Combo is a basic half-blind dovetail fixture with the addition of a through-dovetail template. The jig comes equipped with everything necessary to make either joint. The base unit is made from stamped steel and a fair amount of plastic, including the half-blind template.

The initial setup goes quickly, as the instructions are clear and the jig comes mostly assembled. The

clamping bars are solid, and large adjustment knobs make coarse adjustments very quick. The cam-action clamps work very well.

But the jig's overall design is problematic. Unlike the others, the Rockler template is stationary, and a separate fence limits the rearward travel of the router base. This requires too much math and test-fitting to arrive at a snug, flush joint—especially when switching from one type of joint to another.



Adjustments are a chore. This jig uses a rear fence to stop the back of the router base. This means both template and fence must be adjusted for each new workpiece or joint, and math is necessary.



WOODHAVEN 7517K

Source: www.woodhaven.com

Street price: \$362

Thickness capacity: $\frac{3}{8}$ in. to 1 in.

Width capacity: 12 in.

Variable spacing: No

Templates included: T, HB

Accessories available: B, small HB

Instructions: Good

Learning curve: Fair

Ease of setup: Fair

Ease of use: Good

The standard Woodhaven jig (model 7500; \$207) is a half-blind jig with fixed spacing. This review covers more versatile jigs, so I ordered the Woodhaven with its optional through-dovetail template and bits—actually a copy of the Keller Journeyman template.

In its basic configuration, this is a solid half-blind jig that uses bearing-guided bits, an advantage over jigs that use fussier template guide bushings. The clamping bars have

slots so that clamps can be moved next to the stock to prevent flex in the bars. The jig can be used upside down on a router table. I also liked the speedier, optional Kamtite clamps (shown).

On the downside, the Woodhaven comes in many parts and takes time to assemble. The side guides are different for various dovetails and must be changed out. The outrigger support arm for the router was more trouble than it was worth. Last, I preferred using the Keller through-dovetail system on its own (see Keller review); its versatility is limited in the Woodhaven jig.



Movable clamps. These can be snugged up to the sides of the workpiece for even pressure.



Lots of parts. The side guides are different for different dovetails, adding a step during changeovers. This jig also requires the most assembly.

Clamp-on jigs are easiest

Three jigs are a different breed: They are portable templates that clamp on to the workpiece. All use bearing-guided router bits, which tend to be more accurate than template guides. Better yet, after initial setup, these jigs handle stock of varying thickness with no



GIFKINS JIG

Sources: www.gifkins.com.au (info); www.japanwoodworker.com (purchase)

Street price: \$220

Thickness capacity: $\frac{1}{8}$ in. to $\frac{7}{8}$ in.

Width capacity: 12 in.

Variable spacing: No

Templates included: T

Accessories available: T, for other spacings

Instructions: Excellent

Learning curve: Easy

Ease of setup: Very good

Ease of use: Excellent

The Gifkins dovetail jig comes standard with a backer-board assembly and one phenolic template of the buyer's choice. The pin and tail boards are mounted at the same time on opposite sides of the fence, and aligned with a very precise and stable stop. A variety of optional templates can be purchased for different dovetail sizes and spacings.

The instruction booklet for this jig is one of the best, though all dimensions are metric. The jig was ready to use

right out of the box, aside from a one-time adjustment to the shims used on the pin side of the backer board.

The Gifkins jig is intuitive, remarkably fast to use, and especially suited for the router table.



Shim once; done forever. The Gifkins jig provides thin shims for fine-tuning the fit of the pins. As with all clamp-on jigs, you'll only have to do this once.

Router-table technique. All of the clamp-on jigs will work on the router table, but the Gifkins is especially stable there.



adjustment. They can't cut half-blind dovetails but are versatile in other ways: Variable spacing and wider workpieces are handled by sliding the template along the workpiece and/or skipping pins. Wedge-shaped shims will allow the jigs to cut dovetails at an angle.



KATIE JIG (KJ1-12000001)

Source: www.katiejig.com

Street price: \$270

Thickness capacity: $\frac{1}{8}$ in. to $\frac{3}{4}$ in. (tail board, 1 in.)

Width capacity: 12 in.

Variable spacing: Yes

Templates included: VT

Accessories available: None

Instructions: Good

Learning curve: Fair

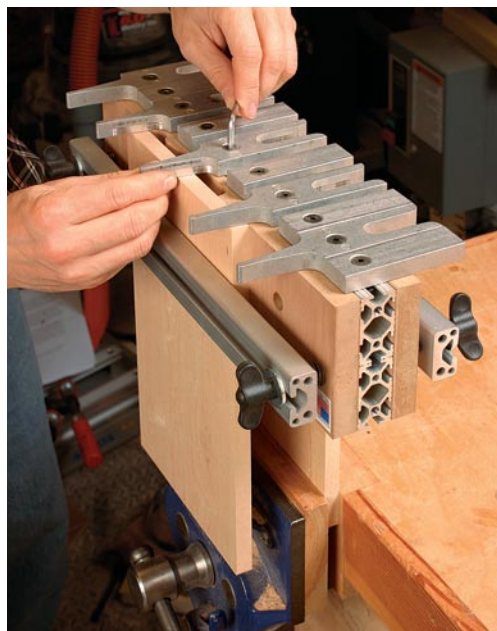
Ease of setup: Good

Ease of use: Very good

The Katie is the only clamp-on jig with true variable spacing. However, the movable finger assemblies require a bit more setup than the fixed models, partly because there is play in the finger assemblies when loosened.

I found this jig easier to use upright, with a handheld router. There are optional handles available for controlling the jig on a router table, but they are too close to the

clamp handles, and the one interferes with the other. Also, due to the variable spacing, the backer board gets eaten away more quickly than similar models, and tearout becomes a problem.



Variable spacing, at a price. While this is the only clamp-on jig with movable template fingers, they have slop in their fit. To align them correctly, push each one against the mounting bar when securing it.

KELLER PRO SERIES

Source: www.kellerdovetail.com

Street prices: \$250 (1601); \$340 (2401); \$440 (3600)

Thickness capacity: $\frac{1}{8}$ in. to $\frac{3}{4}$ in. (tail board, up to 1 in.)

Width capacity: 16 in., 24 in., or 36 in.

Variable spacing: No

Templates included: T

Accessories available: None

Instructions: Very good

Learning curve: Easy

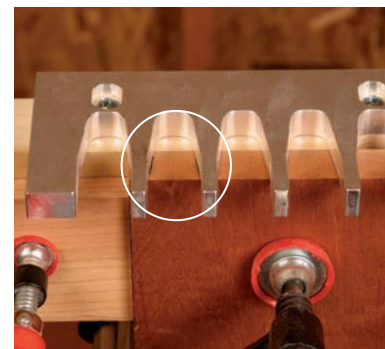
Ease of setup: Very good

Ease of use: Excellent

The Keller Pro Series jigs are simply aluminum templates (with bits included) that come in pairs (for pins and tails) and are supplied in three sizes, all longer and thus more versatile than the other clamp-on jigs. The templates are mounted on shopmade backer boards. There's a less-expensive Journeyman system made from phenolic resin that comes in two sizes, 15 in. (\$150) and 22 in. (\$220). These combine the tails and pins on one template, requiring the user to make just one backer board.

As with all clamp-on jigs, test cuts are needed at the very beginning to adjust the pins' template on its backer board, but on the Keller a helpful scribe line gets you close. (Quick tip: Before flipping over or replacing a chewed-up backer board, clamp another board to the template to record the correct position.) The system is very easy to use: The tails are cut first, and then the tail board is used to register the pin board. Just clamp on stop blocks for repetitive work.

The 16-in. length might be all you need. It is more affordable, yet because it can be slid along the workpiece, with careful layout it will handle the deepest blanket chest.



Low-tech but effective. After cutting the tails, use that workpiece to lay out the first pin on the mating piece (left). Then you can align the pins' template quickly and accurately (right). Clamp a stop block on each jig to lock in the side-to-side workpiece alignment.