Dovetail

By Bruce Kieffer and Tom Caspar

If you ever face the task of making an entire set of kitchen drawers, think dovetail jig. Armed solely with a router, you can use a simple half-blind dovetail jig to bang out those drawers in an afternoon. Speed and convenience; that's what dovetail jigs have to offer.

Basic dovetail jigs are only used for making half-blind dovetails (Photo 2). We've taken a close look at all the half-blind dovetail jigs on the market and rated their features. If you simply want to make drawers, this basic jig is the way to go.

If you want to go beyond drawers and into case joinery, there are other dovetail jigs to consider. These jigs fall into two classes: those that cut through dovetails only and combination machines that cut both through and half-blind joints. The basic half-blind only jigs are all very similar, but the rest have many differences. Rather than pick an Editors' Choice and Best Buy among these, we've summarized the strong and weak points of each jig.

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PHOTOGRAPHY: MIKE HABERMANN (Lead), MIKE KRIVIT

Jigs

Three types of jigs to make you a more versatile woodworker.

Half-Blind Dovetail Jigs

Easy to set up, simple to use; half-blind jigs are workhorses in many shops. They're most commonly used for making drawers, but you can build many kinds of boxes and even do some casework with them (see Shaker Sewing Cabinet, page 82). With a router adjusted and ready to go, it takes only a few minutes to cut all the dovetails for a drawer.

All the half-blind jigs are based on the same idea. One bit cuts both pins and tails on two boards in a single operation (Photo 1). Fold the two boards together and you've got an extremely strong joint with plenty of surface area for glue (Photo 2). With this kind of jig, the pins and tails are exactly the same size. You can't vary their spacing. Accessories for most jigs include templates for smaller dovetails and templates for box joints.

All the half-blind jigs have a 12-in.-wide maximum capacity. The jigs' basic features are quite similar. Flush, overlay and lipped drawers are fairly easy to turn out no matter which jig you buy.

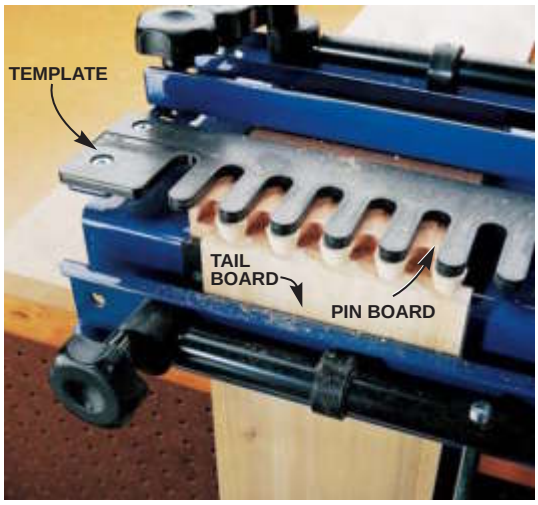
Tools Required

To cut dovetails with any jig, you'll need a fixed-base router. A 1-1/2-hp router is the perfect size for good control on top of the jig's template. It also has plenty of power for removing the waste all in one shot. The fit of the dovetails made with a half-blind jig depends on a fine adjustment of the router. The best routers for this job are those whose depth-of-cut can be smoothly adjusted in small increments.

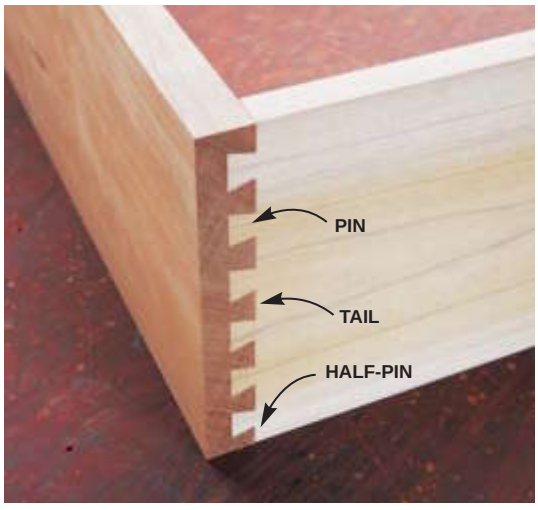
You can use a plunge router with a half-blind jig in a pinch, as long as you lock down the motor so it can't possibly pop up when you're cutting the dovetails. Not only would your joint be ruined if it did pop up, but quite possibly the template as well.

Regardless of the type of router you use, most jigs require a template guide that fits into the openings of the template (Photo 3). Each jig requires a different-sized guide (see Chart, page 70). The dovetails won't fit if you use the wrong guide! However, the Woodhaven jig doesn't require a guide at all, but comes with a special bit with a bearing (Photo 4). This could be a godsend if you have an older router and can't find template guides for it.

No half-blind jig is ready to cut dovetails right out of the box. You'll have to spend some time putting the jig together and calibrating it, which requires a number of test cuts with your router.



1 **Cut both pins and tails** in one pass on a half-blind dovetail jig, such as the Woodstock, shown here. Guided by the template, your router makes equally spaced dovetails.



2 **Half-blind dovetails** make an incredibly strong joint. They're particularly suited for drawers: you can't pull dovetails apart by yanking on a drawer front.

Half-blind dovetails are only visible from one side of a corner: you can't see them from the front (that's why they're called "half-blind").

Half-Blind Dovetail Jigs

3 **You'll need a specific-diameter guide** to follow the template of a half-blind dovetail jig (see Chart, page 70). Woodworking catalogs offer template guides for most fixed-base routers, but you may have to special-order yours from a dealer.

4 **A special bit with a bearing** comes with the Woodhaven dovetail jig. The bearing replaces a template guide. This bit won't work with other jigs, however, because it requires an extra-thick template.

5 **A rigid template** makes it easier to align the pin and tail boards. You're more likely to get consistently accurate results with a rigid template (such as the Hart, shown here) than with one that bends slightly.

FEATURES

You'll get good results with every jig once it's properly set up, but some jigs are more user-friendly than others. Here are the features that matter most:

RIGID TEMPLATE

It's easier to align the pin and tail boards under a rigid template than a slightly flexible one (Photo 5). When you insert the boards in the jig, you've got to make sure their tops are flush before you clamp them in their final position. With a template that flexes, you must use your finger to feel when the boards are flush. It can take a couple of tries. A rigid template sits tight on the horizontal pin board. To flush up the vertical tail board, simply butt it up to the bottom of the template. Double-check with your finger for a flush fit. It's usually right on the money.

ADJUSTABLE BOARD CLAMPS

Once the boards are properly aligned in the jig, you have to be able to count on them staying in place. That's the role of the board clamps. Although the clamps on all the jigs are acceptable, we especially liked those that could be snugged up right to the side of a board (Photo 6).

COMFORTABLE HANDLES

You'll appreciate large-diameter handles on the board clamps after tightening and loosening them a dozen times!

ADJUSTABLE STOPS

A jig's stops position your boards under the template. Three characteristics distinguish them. First, most jigs have stops with built-in offsets for switching between flush or rabbeted joints (C in the Chart, page 70). Second, most stops

can also be adjusted sideways, allowing you to fine-tune the width of the lowest dovetail in a drawer, called the half-pin (Photo 7 and D in the Chart). Lastly, for those stops that require adjusting, easy accessibility is a plus (E in the Chart, page 70).

DOUBLE-SIDED TEMPLATE

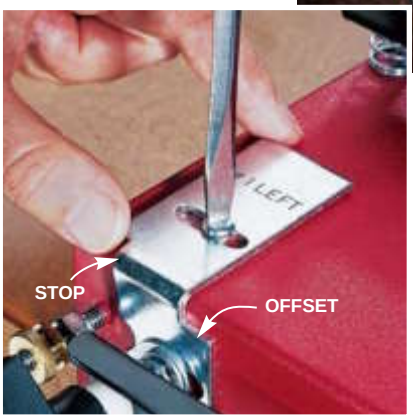
All jigs have optional templates for cutting different-sized dovetails or box joints, but two jigs are equipped with double-sided templates with two rows of fingers (Photo 8). With the Craftsman you can make standard 1/2-in. and 1/4-in. dovetails (although you'll need another bit and template guide for the smaller ones). With the Woodhaven you can make 1/2-in. dovetails and wider 3/4-in. dovetails using the same bit.

The Bottom Line

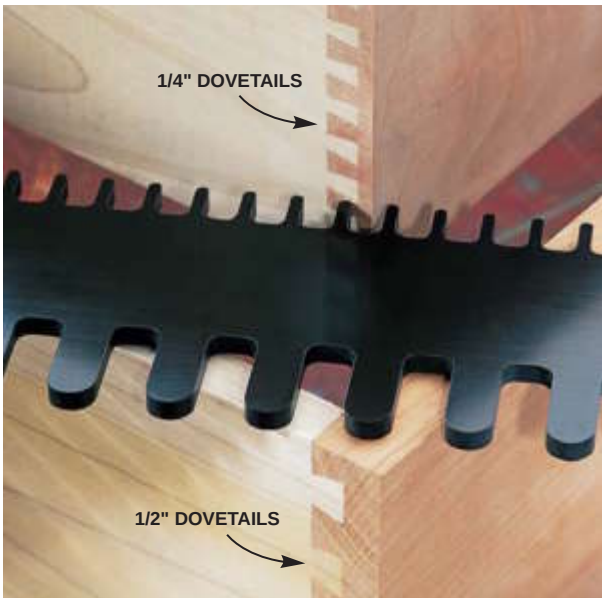
Once we got the hang of using it, every jig we tested turned out fairly good joints, so you really can't go wrong with any of these jigs. However, jigs with the best features listed above generally produce more consistent results and make life in the shop more pleasant.

6 **Adjustable board clamps** on the Woodhaven jig ensure that your work won't slip while you're cutting. The clamps slide back and forth to deliver even pressure on both wide and narrow boards.

Large knobs on the clamps are easy to grip and tighten. They're an important feature if you've got lots of boards to cut.



7 **Adjustable stops** allow you to fine-tune the width of the half-pin at the bottom of a dovetail joint. The stops on the Porter-Cable jig shown here are easy accessible.



8 **Make two sizes of dovetails** with a double-sided template. All the jigs offer a smaller template as an accessory, but it's standard equipment on the Craftsman shown here.

You Also Should Know About...

ROUTER-TABLE BASED JIGS. You can make a bazillion dovetail variations with the **Incra Jig Ultra** (972-418-4811 or www.incra.com; 16-in., $200; 24-in. $240) or the **Jointech** (800-619-1288, www.jointech.com; 12-in. $320; 18-in. $350). These jigs are sophisticated fences for your router table. Versatility comes at the price of being quite complicated. These jigs aren't for the faint of heart.

A TEMPLATE-MAKING JIG. In theory you can make your own templates and complete dovetail jig with the **DoveTail TemplateMaster** (fax 502-244-6047, www.stots.com; $40), but in practice we found it difficult to pull off.

A NEW MINI-JIG. Too new to test, the **Katie Jig, Jr.** (Hampton House, 317-881-8601, www.katiejig.com: $230) is a baby sister to the Katie Jig (page 71). It cuts variable-spaced through-dovetails in 3/16-in. to 1/2-in.-thick wood; perfect for small boxes and pigeonhole-sized drawers.

Half-blind Dovetail Jigs

BEST BUY

The red jig. Porter-Cable and Hart Design make very similar solidly built jigs. You can pick one up for about $100, including a bit and template guide. Without these accessories, the jig sells for as little as $80.

EDITORS' CHOICE

The Woodhaven has all the best features in a well-designed package. It's got adjustable clamps, large knobs, a universal bit and a rigid, double-sided template.

Half-Blind Dovetail Jigs

Model	Street Price	Rigid Template	Knobs and Clamps	Stops	Double Template	Accessories	Specs		Source
							THICKNESS CAPACITY	TEMPLATE GUIDE O.D.	
Porter-Cable 4112 and Hart Design	$80 to $100	Yes	A	C,D,E	No	F,G	7/16" to 1"	5/8"	Delta (800) 438-2486 Hart Design (800) 345-2396
Sears Craftsman 315.25790	$60	No		C,E	Yes*		1/2" to 3/4"	5/16" and 7/16†	Sears (800) 377-7414
Woodhaven 775	$170	Yes	A,B	C,D,E	Yes#	G, J	3/8" to 1"	N.A.	Woodhaven, Inc. (800) 344-6657
Woodstock International W1099 and Reliant NN825	$50	No	A	D	No	F,G,H	5/16" to 1-1/4"	7/16"	Grizzly Industrial (800) 523-4777/ Trend-Lines (800) 767-9999

KEY

A=Comfortable Knobs
B=Adjustable Clamps
C=Preset Offsets
D=Adjustable
E=Accessible
F=1/4" Template
G=Box-Joint Template
H=7/16" and 9/16" Template
J=1/4" and 3/8" template
***=1/2" and 1/4"**
#=1/2" and 3/4"
†=Both included with jig, for Craftsman router only

Identifying Jigs in a Catalog

Jigs by Porter-Cable and Hart Design appear to differ in only one detail: a minor difference in the size of the dovetails they make. Some woodworking catalogs show an unidentified red jig with an aluminum template. Chances are, it's a Hart Design.

Jigs by Woodstock and Reliant are also very similar. If you see an unlabeled blue jig that has cam-action clamps in a catalog, it's probably one of these.

Through Dovetail Jigs

Reviewing the through and combination jigs (see next page) is like comparing apples to oranges. We can't recommend one jig over another. Here's a summary of their strengths and weaknesses.

KELLER DOVETAIL JIGS $150 and up

Keller makes four jigs for quickly making through-dovetail joints only. The size and spacing of the dovetails is determined by each jig's template. It's possible to make variable-spaced dovetails by manually shifting the jig on your work.

It's easy to make dovetails that fit fairly tight, because the *template* does it for you. Unlike a half-blind jig, the fit is not determined by micro-adjusting the router's depth of cut.

Pictured above is the 1500 Journeyman, $150. Its template is made of phenolic plastic. The three other Keller jigs are aluminum and come in pairs, one template for pins and one for tails. The smallest aluminum jig cuts the same size dovetails as the Journeyman. The other jigs cut progressively wider dovetails. Each model comes with two special router bits with bearings. Optional bits for thin wood are available.

Pro: Keller jigs are user friendly.
Con: It's awkward to alter the dovetail spacing.
(See Chart, page 73 for specs.)

THE KATIE JIGS $270 and up

Here are two through-dovetail-only jigs with a twist: you can shift their guide forks and change the space between dovetails.

Katie jigs make looser-fitting dovetails than the Keller's, on purpose. They're easier to glue up. Katie recommends using polyurethane glue, which they claim tolerates a thicker glue line than yellow glue. You can make thinner backer boards for tighter-fitting dovetails.

You'll need to replace the backer boards as they wear out. The boards' thickness is critical, so you have to plane them yourself or buy them from the manufacturer ($9 each).

You get two bits with 3/8-in. shanks (less vibration than with 1/4-in. shank bits). They come with an adapter for a 1/2-in. collet. The length of the bits makes them best suited for 3/4 in. and thicker wood. With thinner wood you end up with dovetails that are too long and must be planed or sanded flush after glue up.

Pro: Katie jigs make variable-spaced through dovetails.
Con: For wide stock you must shift the jig, buy more forks and spacers or double up two jigs.
(See Chart, page 73 for specs.)

ONE OUTSTANDING FEATURE

It's dirt simple. There's no fussy setup or complicated instructions to remember. Simply clamp your work to the jig and go for it.

ONE OUTSTANDING FEATURE

It's adjustable. Move the jig's guide forks to customize the spacing between dovetails.

Combination Dovetail Jigs

LEIGH D4-24 $370

This is the most versatile jig available. It'll make half-blind or through dovetails in boards up to 24-in. wide. This jig allows you to determine each individual dovetail's size and spacing. Fortunately, a comprehensive manual takes you through every setup because it takes a while to get the hang of using such a complicated jig. Half-blind dovetails require cutting the pin boards and tail boards separately, for example. You flip and reset the template between cuts. There are many optional templates and bits that allow you to work in a wide range of wood thicknesses and make unusual-shaped dovetails. The basic package includes the bits you need for most through-dovetail work, but Leigh recommends upgrading to thicker-shanked 8 mm bits for less chatter. They'll fit in a 1/2-in. collet with a reducer.

Pro: The Leigh jig cuts every dovetail you're likely to need.
Con: Its complexity can be intimidating.
(See Chart, page 73 for specs.)

ONE OUTSTANDING FEATURE

Customize the spacing of half-blind dovetails. That option is unique to the Leigh jig.

PORTER-CABLE OMNIJIG 5116 $320

Rugged, heavy and made primarily with metal parts, this jig is built to withstand the rigors of a busy professional woodworking shop. The basic unit cuts fixed-space half-blind dovetails the same way its less-expensive Porter-Cable brother does (see page 70). However, you can buy an Omnijig accessory template ($130) for cutting variable-spaced through dovetails as well. You have to reposition the edge stops when shifting from pins to tails when cutting through dovetails—a minor inconvenience. The jig comes with a template guide and carbide bit for making 1/2-in. half-blind dovetails. There's a wide range of other accessory templates (see page 73).

Pro: The Omnijig is built like a tank.
Con: The combination package is pricey ($450, plus bits).
(See Chart, page 73 for specs.)

ONE OUTSTANDING FEATURE

Quick-action board clamps let you move lumber through this jig at a rapid rate. The clamps are as stout as the rest of the jig, which looks like it can take years of hard use.

Combination Dovetail Jigs

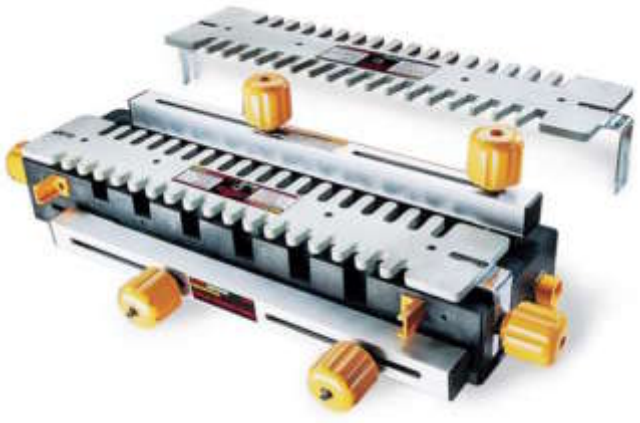
SEARS CRAFTSMAN INDUSTRIAL DOVETAIL FIXTURE $140

This is a relatively inexpensive jig for cutting both half-blind and through dovetails. The spacing and size of both kinds of dovetails is fixed. Two important features of this jig are the template adjustment knob (see below) and the adjustable board clamps. Most of the parts of the jig are plastic. The templates are somewhat flexible (we prefer more rigid ones) and must be set up with care. Craftsman template guides are included, but not the bits ($30 for the set).

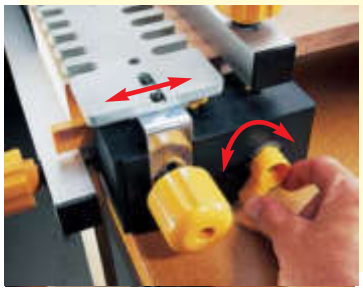
Pro: The Craftsman is less than half the cost of other combination jigs.

Con: Both kinds of dovetails are fixed-space.

(See Chart, below for specs.) *AW*



ONE OUTSTANDING FEATURE



Fine-tune the template setting with a simple turn of a knob. You can easily adjust the template for different thicknesses of lips on rabbeted drawers.

ACCESSORIES KEY

A=Katie Jig: 3 sizes of box-joint guide forks, router table handles, and more.
B=Keller: Router bits for 1/8" to 3/8" thick stock, and a bit for making box joints.
C=Leigh: Templates for rounded and square finger joints, six variations of dovetails, a multiple mortise and tenon attachment, and more.
D=Porter-Cable Omnijig: Templates for 1/2" "hand dovetails," 1/4" half-blind dovetails, 1/2" sliding tapered dovetails, 1/2" and 3/4" adjustable through dovetails, and 1/2" box joints.
E=Sears Craftsman: Templates for two sizes of box joints.

Through and Combination Dovetail Jigs

Model	Price	Width	Pin Width	Pin Spacing	Thickness of Wood	Pin Width	Pin Spacing	Thickness of Wood	Accessories	Source
			THROUGH			HALF-BLIND				
Katie Jig 5/8"	$270	12"	5/8"	1-3/4" min.	1/2" to 1"				A	Hampton House Inc. (317) 881-8601
Katie Jig 7/16"	$250	12"	7/16"	1-3/8"	1/4" to 3/4"					
Keller 1500	$150	15"	7/16"	1-1/8"	3/8" to 3/4"				B	Keller and Co. (707) 763-9336
Keller 1601	$250	16"	7/16"	1-1/8"	3/8" to 3/4"					
Keller 2401	$340	24"	5/8"	1-3/4"	5/8" to 1"					
Keller 3600	$440	36"	1"	3"	5/8" to 1-1/4"					
Leigh D4-24	$370	24"	1/2" min.	1" min.	3/16" to 1-1/4"	11/16"	1"	1/2" to 1-1/2"	C	Leigh Industries (800) 663-8932
Porter-Cable 5116	$320	16"	1/2"	1-3/4"	1/2" to 1"	1/2"	7/8"	5/16" to 1"	D	Delta Int'l Machinery (800) 438-2486
Porter-Cable 7116	$360	24"	1/2"	1-3/4"	1/2" to 1"	1/2"	7/8"	5/16" to 1"		
Sears Craftsman Industrial Dovetail Fixture Part #171.25450	$140	16"	9/16"	1"	3/8" to 1"	9/16"	1"	3/8" to 1"	E	Sears (800) 377-7414