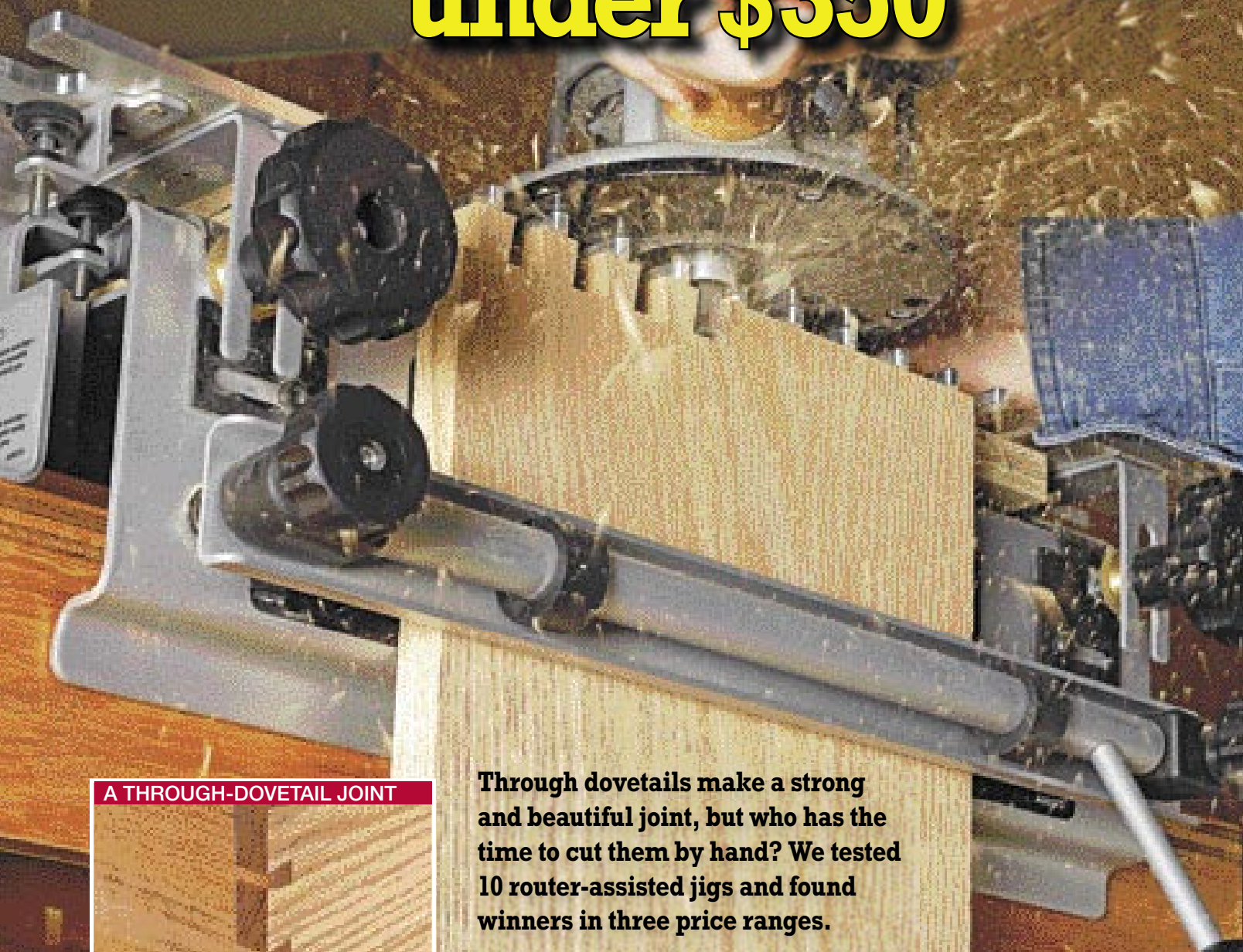
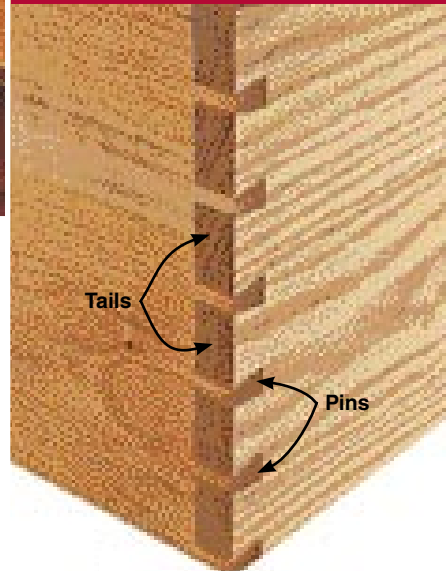


SHOP-TESTED AND RATED

# Through-dovetail jigs under \$350



A THROUGH-DOVETAIL JOINT



**Through dovetails make a strong and beautiful joint, but who has the time to cut them by hand? We tested 10 router-assisted jigs and found winners in three price ranges.**

**F**ew things say more about the quality of a project than through-dovetail joinery. Attractive looks aside, the joint's interlocking pins and tails have proven their strength and reliability in joining boards end to end for more than 5,000 years. Some woodworkers get misty-eyed when they romanticize about cutting dovetails with hand tools, but you can use a router and a commercial jig to do the job in a fraction of the time—and typically with more precision and airtight fit.

Dovetail jigs have a reputation for being overpriced and overcomplicated, but is that a fair characterization? To find out we rounded up 10 jigs capable of producing through dovetails, with prices ranging from \$50 to \$330. Three jigs (the CMT300, Craftsman 25455, and Woodline WL-RJT) require buying accessory equipment to make this joint, thus inflating their base prices. After running each jig through rigorous testing and letting the dust settle, here's what we found.

## Despite unique features, jigs fit one of two styles

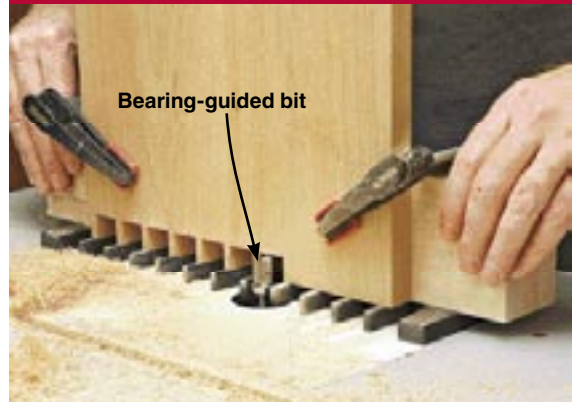
Although the 10 jigs we tested achieve the same end result—tight-fitting through-dovetail joints—these work-savers certainly don't look the same. You use routers to cut the pins and tails by following templates, but that's where the similarities end. Six of the jigs must be mounted or clamped to a benchtop or workstand. You lock in a workpiece with the jig's built-in clamping system, then run the router on top of the jig, as shown on the *previous page*. All six feature either cam-clamping bars or threaded knobs on bars, and proved adequate in our test.

The other four jigs consist of templates mounted to either a wood block or plate, with the workpiece clamped to the jig. Of

these, the Katie Jig, Keller, and MLCS jigs can be used in a vise or on a benchtop for handheld routing, or you can use them upside down on a router table, as shown with the Keller at *right*. Woodline's jig consists of a phenolic and plywood base, and works only on a router table. We prefer using these jigs on the router table for better visibility and control.

Clamping for the latter jigs proves so easy: Just a pair of one-handed clamps safely secure the workpiece to the jig. When routing on the router table, grip the jig body at its ends rather than gripping the workpiece. Katie Jig and Keller offer optional clamping kits, but you can get by without them.

### THE UPSIDE OF UPSIDE DOWN

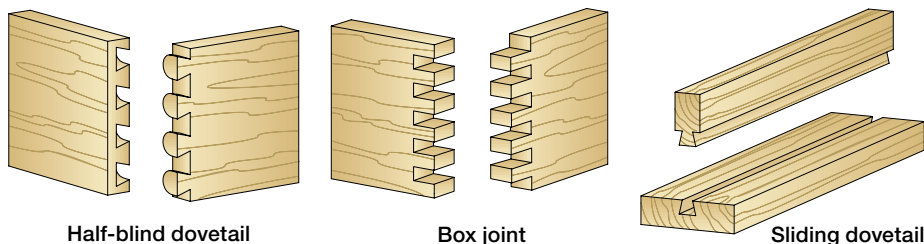


Visibility of the cutter improves and the chips blow away from you when routing tails and pins on a router table.

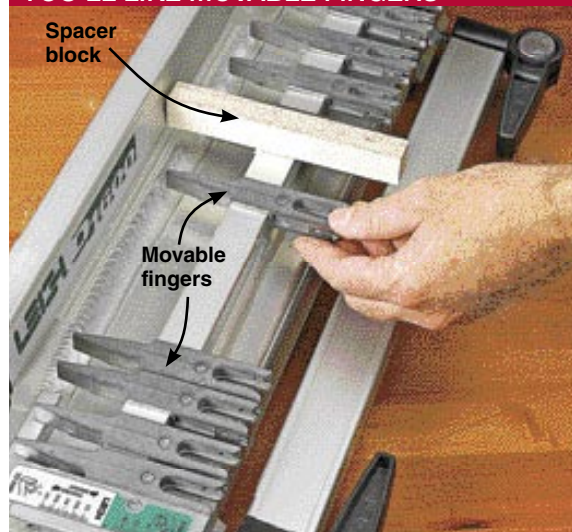
## How do you like your pins and tails spaced?

Most of the tested jigs use a one-piece template to space dovetails equally along the width of the workpiece. But two—the Katie Jig and the Leigh—allow you to arrange the template guide fingers to create custom spacing. This same feature also lets you set up perfect half-pins on each end of the joint and then space the pins between them equally. We like this versatility. One-piece templates offer no variability unless you skip some slots when routing, or reposition the jig after cutting.

Consider, too, how much function you get for your hard-earned tool dollars: We like the extra value of jigs that come equipped with templates for through dovetails as well as for half-blind dovetails and box joints, and some even for sliding dovetails, as shown *below*. The Leigh and Porter-Cable models can create all four joints with no need for accessories. Hartville and Rockler jigs cut through and half-blind dovetails. All other models require optional equipment to cut joints other than through dovetails.



### YOU'LL LIKE MOVABLE FINGERS



Use a spacer for equal positioning of the adjustable fingers on the Leigh (shown) or Katie Jig, or eyeball it for a hand-cut look.

## Bushings or bearings: Which guide bits the best?

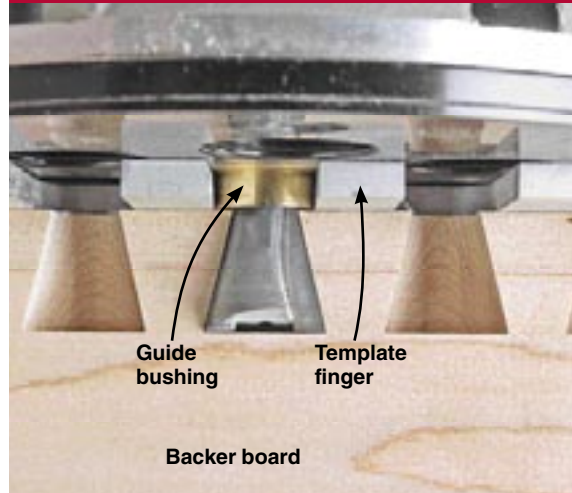
Although these jigs can look quite different, each consists of a multiple-fingered template or templates that you guide your router around to shape the pins and tails. Most of the jigs use guide bushings, as shown at *right*, that mount to your router subbase or router-table insert, but the Katie Jig and Keller 1500 rely on bearing-guided bits, as shown *top right*. With these, you simply run the bearing along the template fingers. Ease of setup proves the chief advantage with these jigs because you don't have to install a guide bushing. The downside: Replacement bits can sometimes be difficult to find.

A guide bushing offers the advantage of working with any replacement bit that matches the dimensions the jig requires. But even a slight variance in bushing diameter can affect the fit of the joint. And five of the

tested jigs require guide-bushing changes when changing bits.

Another thing to be aware of: Some guide bushings might not fit your router. Porter-Cable-style bushings (included with five of the eight jigs that use guide bushings) need an adapter for routers outfitted for other bushing styles such as Bosch. Also, the CMT's bushings require using its optional subbase (\$40), or you can use your own bushings as long as the outer diameters match and you shorten their length to fit the 3/16"-thick template. Craftsman's bushing for cutting pins measures .400", an odd size. But it's made to mount only on Craftsman routers. For other routers you'll need to buy, from Sears, a universal subbase (\$13) or a set of Porter-Cable-style bushings that includes the odd size.

### BUSHINGS FOLLOW TEMPLATE'S PATH



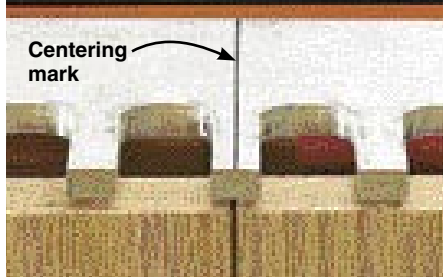
Only the correct-size guide bushings will allow you to rout perfectly matching pins and tails that each template requires.

## It's not "Dovetails for Idiots," but help is nearby

Some manufacturers create shortcuts for the user by putting tips and helpful markings on their templates. Porter-Cable has numerous tips etched into its aluminum template, as shown *far right*. Craftsman also has molded bit-depth settings on its jig body. The Leigh features color-coded settings to ensure that you're setting up for the right joint, and it also has a precision scale for accurate and easy adjustments.

Hartville's GFK1800 has a centering mark on its template, shown *near right*, that allows you to align your workpiece by simply finding its center. No need for edge stops. We tried this on other unmarked templates by making our own mark and found it worked great as well. If you don't want centered and symmetrical pins and tails, either use a jig with adjustable fingers or design your workpieces to have the desired positioning.

### LINEUP TIP SAVES YOU TIME



Eliminate the worry of getting perfectly symmetrical pins and tails by centering your workpiece to the template.

CMT's color-coded edge guides help you line up your workpiece in the jig to correctly position the pins and tails. The brown and violet guides serve as workpiece stops for through dovetails in 1/2" and 3/4" stock, respectively, on the jig's face, as indicated in the manual. (The other colored stops work for half-blind dovetails and box joints.) With

### QUICK AND EASY POSITIONING



Porter-Cable's templates feature depth settings for bits, width settings for guide bushings, and fine-tuning directions.

these you simply position your board's edge against the stop, put its end against the template, and lock the clamp. Rockler, Katie Jig, and Craftsman feature similar styles, although not color-coded.

## Tame tear-out and bit chatter for better results

Tear-out (see photo *right*) proved troublesome on both workpiece faces with all the jigs and in all materials unless we sandwiched the workpiece between sacrificial backer boards. (We cut dovetail joints in red oak, pine, Baltic birch plywood, and MDF.) Some jigs only have room for a 1/4" front board, but we found that was enough to help eliminate tear-out.

Although cut quality proved a nonissue, we found that 1/4"-shank bits chattered far more than 1/2"-shank bits. Leigh's 8mm bit (equivalent to 5/16") chattered some, but not as much as smaller shanks. Chatter stresses the bit and creates discomfort and annoyance for the user. Porter-Cable includes 1/2"-shank bits; they're optional for CMT and MLCS.

### JUST SAY "NO" TO TEAR-OUT



Note the effect on tear-out when using a backer board on both faces (left) and only one on the back face (right).

## MEET THE CONTENDERS



**CMT300, \$130 (\$250 fully equipped for through dovetails)**  
888/268-2487; cmtusa.com

We found that the color-coded edge stops—which help position your workpiece quickly and accurately—make setup a snap. The backer boards needed to prevent tear-out must be 1/4" thicker than the workpiece to keep the bits from cutting into the jig. It has lots of small parts (edge stops, template screws) that could easily get lost. The two manuals (one with illustrations and one with written instructions that refer you to the illustrations) proved awkward; we'd prefer one manual.



**Craftsman 25455, \$200 (\$240 fully equipped for through dovetails)**  
800/549-4505; sears.com

With quick setup and an easy-to-understand manual, we cut perfect joints on this jig in practically no time. The jig body and templates consist of high-impact polystyrene. The molded bit stops speed up the setup process, with only a little fine-tuning needed. It's one of two jigs that can work on 1"-thick stock. But the hassle of using two guide bushings (one an odd size) that fit only Craftsman routers or the optional subbase detracts from an otherwise quality product.



**Hartville GFK1800, \$250, fully equipped for through dovetails**  
800/345-2396; hartvilletool.com

This 18" jig's assembly time took the longest in our test, just over one hour. Similar to older stamped steel jigs, this one features better clamping, with square tubing and cam-action levers, and a powder-coated body to resist slippage. The manual says little about through dovetails, so we learned by intuition and trial and error. The GFK1800 is available as a half-blind jig only for \$150. Hartville also has a 12"-long model (GFK1200, \$100 base price, plus \$145 in through-dovetail accessories).



**Katie Jig KJ12000002, \$260, fully equipped for through dovetails**  
317/881-8601; katiejig.com

It took longer to read the manual than to cut the first dovetail with this unit. It came out of the box fully assembled, with backer board installed, and we completed a joint in only seven minutes, with no need to adjust for a perfect fit. The edge stops work great at positioning the workpiece, and it required a 5/32" Allen wrench (included) to remove the 1" spacers. The optional handles for router-table use seem unnecessary, since you can hold it by its body.



**Keller 1500 Journeyman, \$160, fully equipped for through dovetails**  
800/995-2456; kellerdovetail.com

Cutting through dovetails doesn't get much simpler than with this 15" jig. There's very little setup, and only slight adjustments the first time you use it. You also can cut dovetails for angled joints with this jig. Buy the optional small-bit set (\$65) to create scaled-down through dovetails, or the box-joint bit set (\$32) for traditional box joints—both with the same Journeyman template. The only downside to this jig is it won't cut half-blinds.



**Leigh D1600, \$330, fully equipped for through dovetails**  
800/663-8932; leighjigs.com

Although it looks complicated, this jig proved easy to understand and use, thanks to the best manual in the field and the included DVD. Assembly took 27 minutes, with just another 9 minutes needed to turn out a tight joint. An included reducer allows you to use the 8mm-shank bits in a 1/2" collet. Also available as options are finger-joint templates (\$200) and Leigh's Isoloc template set (\$340) for hearts, clovers, bears, keys, waves, and ellipses.

## THROUGH-DOVETAIL JIGS UNDER \$350

BRAND	MODEL	JIG STYLE (1)	OUT-OF-BOX	JOINT CAPABILITY (2)		ADDITIONAL ACCESSORIES REQUIRED FOR THROUGH DOVETAILS (3)	TEMPLATE MATERIAL (4)	ROUTER GUIDING SYSTEM (5)	GUIDE BUSHING DIAMETER (FOR TAILS, FOR PINS) (INCHES) (6)	SHANK SIZE (7)	THROUGH-DOVETAIL ROUTER BITS			CAPACITIES (INCHES)			PERFORMANCE GRADES (13)					
				WITH OPTIONAL ACCESSORIES							DOVETAIL ANGLE (DEGREES)	DOVETAIL BIT SIZE (DxH, INCHES)	STRAIGHT BIT SIZE (DxH, INCHES) (8)	MINIMUM THICKNESS (9)	MAXIMUM THICKNESS (10)	MAXIMUM WIDTH (11)	MINIMUM SPACING (ON CENTER)	MINIMUM WIDTH	EASE OF INITIAL SETUP	EASE OF CHANGING SETUP	EASE OF TUNING FIT OF JOINT (14)	MANUAL CLARITY
CMT	CMT300	B	H	B,T	D,G,S,T	S	G	5/8, 7/16	1/4***	8	1/2 X 1	5/16 X 1	5/16	25/32	11 3/4	1	1/2	B	B+	B	C	B
Craftsman	25455	B	H	B,T	D,S	PS	G	1/2, .400	1/4"	7 1/2	9/16 X 1	1/4 X 1	3/8	1	16	1	9/16	B	B	B	B	B
Hartville	GFK1800	B	H,T	B		A	G	3/4, 5/8	1/4"	7	3/4 X 7/8	1/4 X 1	3/8	3/4	18	1 1/8	3/4	B	B	B	B	B
Katie Jig	KJ12000002	W	T	B		A	B	N/A	1/4"	7	7/16 X 3/4	5/8 X 3/4	1/4	3/4	U	1 3/8	7/16	A	A-	N/A	A	A
Keller	1500	W	T	B		P	B	N/A	1/4"	7	7/16 X 3/4	5/8 X 3/4	1/4*	3/4*	U	1 1/8	7/16	A-	A	A	B	A
Leigh	D1600	B	B,H,S,T	E		Z	G	7/16	8mm*	8	1/2 X 13/16	5/16 X 1	1/8	13/16	16	7/8	1/4	B+	A	A	A	A
MLCS	8712	W	T			A	G	5/8	1/2**	14	3/4 X 7/8	3/8 X 1	1/4	7/8	U	1 1/8*	3/4*	B	C	B+	C	A-
Porter-Cable	4212	B	B,H,S,T			A	G	3/4, 5/8	1/2"	7	17/32 X 3/4	13/32 X 1	1/4	1	12	1	17/32	A	A-	A	A-	A
Rockler	23882	B	H,T			P	G	7/16	1/4"	8	1/2 X 13/16	5/16 X 1	3/8	3/4	12	1	1/2	B	B	B	B	B
Woodline	WL-RJT	W	E	H,T	T	H	G	7/16, 5/16	1/4"	14	1/2 X 1/2	3/16 X 3/4*	1/4	3/8**	14	1	1/2	B	A	A-	B	B-

### NOTES:

1. (B) Benchtop  
(W) Workpiece-mounted

2. (B) Box joints  
(E) Exotic joints  
(H) Half-blind dovetails  
(S) Sliding dovetails  
(T) Through dovetails

3. (D) Dovetail bit  
(G) Guide bushing  
(S) Straight bit  
(T) Template

4. (A) Aluminum  
(H) High-density polyethylene  
(P) Phenolic  
(PS) High-impact polystyrene  
(S) Steel  
(Z) Zinc alloy

5. (B) Bearing  
(G) Guide bushing

6. (N/A) Uses bearing-guided bits, not guide bushings.

7. (\*) 1/4" bits also available  
(\*\*) 1/2" bits also available

8. (\*) Spiral bit

9. (\*) 1/8" minimum thickness when using optional small bit set

10. (\*) 1" with rabbeted pins  
(\*\*) Manufacturer plans to offer templates and bits that will machine through dovetails in 3/4" stock.

11. (U) Unlimited

12. (\*) Template also available with 1"-wide tails and pins 2" on center.

13. **A** Excellent  
**B** Good  
**C** Fair

14. (N/A) Preset by manufacturer. No front or back adjustments available.

15. (AB) Alternate bits  
(B) Box-joint template  
(C) Clamp kit  
(E) Exotic joint templates  
(G) Guide bushings  
(H) Handles for router-table use  
(HB) Half-blind dovetail bit  
(HT) Half-blind dovetail template  
(R) Collet reducer  
(S) Router subbase



**MLCS 8712, \$50, fully equipped for through dovetails**  
800/533-9298; mlcswoodworking.com

Similar to the Keller in its design, this jig proved more difficult to set up and fine-tune, taking three test cuts to get it right. Nevertheless, once we zeroed it in, it turned out great-fitting joints. The instruction sheet could be better illustrated. If you prefer wider tails and pins, choose MLCS model 8713 for the same price, or get either model with 1/4"-shank bits. Pretty simple once tuned in, and an unbeatable price.



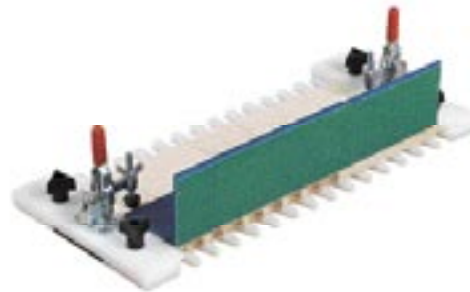
**Porter-Cable 4212, \$160, fully equipped for through dovetails**  
888/848-5175; porter-cable.com

Essentially a revamped half-blind jig, this model excels at all joints. With so many helpful hints etched onto the templates and jig body, you almost don't need the manual (which proves very good as well). It's one of only two jigs that will machine stock up to 1" thick. Replacements for the unusual-dimension bits (\$16 for the 13/32" straight bit; \$22 for the 17/32" dovetail bit) will prove difficult to find from sources other than the manufacturer.



**Rockler 23882, \$140, fully equipped for through dovetails**  
800/279-4441; rockler.com

This jig includes everything you need to cut half-blinds and through dovetails. It features sturdy cam-clamping power and adjusts easily when fine-tuning the fit of a joint. Rockler's bits had the longest shanks in the test, resulting in the most chatter. (Rockler's Steve Krohmer told us they will be replacing in the first quarter of 2007 their 1/4"-shank bits with 8mm shanks, which should reduce chatter. A reducer for 1/2" collets will be included.)



**Woodline WL-RJT, \$180 (\$207 fully equipped for through dovetails)**  
800/472-6950; woodline.com

Originally designed to cut decorative (hearts, keys) and box joints in small boxes, this jig has grown into a fully functional multi-joint unit. The through dovetails we cut with it needed very little fine-tuning. You get a lot of versatility with this jig by being able to add new templates from the many

available. You also get a DVD to help guide you. Two downsides: You have to buy the optional half-blind (for the pins) and through templates, and those limit you to 3/8"-thick stock. (Woodline's Wayne Sutter told us they will have templates and bits for 3/4" stock available by January 2007.)

## If it were for our shop, we'd go with a versatile jig

Before buying one of these jigs, consider what you want to do with it. Given that all the jigs create good joints and all but one of the jigs cost \$130 or more, we recommend that you get the most bang for your buck: Buy a jig that makes more joints than just through dovetails. (A separate half-blind dovetail jig will cost you another \$100 or more.) Also, get a jig that will be just as easy to remember and use even if you let it sit idle for a year.

That kind of versatility, coupled with exceptional performance, is what grabs Top Tool honors for the Leigh D1600. Although the priciest, nonetheless it executed clean, snug-fitting dovetails on accommodating 16" templates. And though we'd prefer bearing-guided bits instead of its guide bushings, the D1600's set of standard and optional

templates made it impressively useful for a variety of joints.

The Porter-Cable 4212 follows closely behind the Leigh in performance—selling for \$170 less but lacking variable spacing, and earning a Top Value award. Keller's 1500 cuts through dovetails simply, quickly, and accurately, but for the same money lacks the Porter-Cable's versatility.

The MLCS 8712 shares Top Value honors with the Porter-Cable. Despite a couple of minor inconveniences and the fact that it only turns out through dovetails, the 8712 does a respectable job for only \$50. 🐿

Written by **Bob Hunter** with **Pat Lowry**  
Illustrations by **Roxanne LeMoine**

See more Tool Reviews at:  
[woodmagazine.com/reviews](http://woodmagazine.com/reviews)



ACCESSORIES (15)					
STANDARD	OPTIONAL	COUNTRY OF ASSEMBLY (16)	WARRANTY, YEARS (17)	BASE UNIT SELLING PRICE (18)	
G,HB,HT	AB,B,S,SB,T,TB	I	L	\$130	
B,G,HB,HT,T	G,S,SB,TB	U	L	\$200	
G,HB,HT,SB,T,TB	B	U	1	\$250*	
SB,TB	B,C,H	U	1	\$260	
SB,T,TB	AB,C	U	1	\$160	
G,HB,R,SB,TB	AB,E,V	CA	5	\$330	
G,SB,T,TB		CH	1	\$50	
B,G,HB,HT,SB,T,TB		CH	1	\$160	
G,HB,HT,SB,T,TB		T	1	\$140	
E,G,HB,SB,TB	AB,E,HT,T	U	L	\$180	

(SB) Straight bit
(T) Through-dovetail template
(TB) Through-dovetail bit
(V) Vacuum attachment
16. (CA) Canada
(CH) China
(I) Italy
(T) Taiwan
(U) United States
17. (L) Lifetime
18. (*) Hartville kit #30073TD
Prices current at time of article production and do not include shipping, where applicable.