Introduction

Your new dovetail jig will help you cut three varieties of half-blind dovetails, plus box (also known as “finger”) joints. It will accommodate drawer front stock from 1/2" to 1-1/4" thick, and boards up to 12" wide.

The following instructions begin by detailing how to set up the jig and your router to mill flush half-blind dovetails (shown at left). Once you have mastered this technique, you can add other joints to your repertoire such as offset dovetails, rabbeted dovetails and box joints.

(Note: Your jig comes with a 1/2" phenolic resin template. Additional 7/16", 1/2" and 9/16" templates are also available and sold separately.)

PARTS LIST - 12" DOVETAIL JIG

1 Clamp Handle (2)
2 Cam (4)
3 Clamp Axle (2)
4 Fence (1)
5 Clamp Bar (2)
6 Template Lock Knob (2)
7 Clamp Springs (not shown)
8 Fence Lock Knobs (2)
9 1/2" Plastic Template (1)
10 Jig Body (1)
11 "L" Shaped Adjustable Knobs (2)
12 Cam lock Knob (4)
13 Cam Lock Housing (4)
14 Template Screws (4)
15 Template Adjustment Bar (2)
16 Adjustment Bar Nuts (4) (not shown)
Secure the Jig
Two bolt holes in the bottom of the jig allow permanent attachment to a workbench or similar stable base. Where workspace is limited, the same holes allow mounting to a shop-built mobile base (see Figure 1) that can be secured in the jaws of a vise. The jig can then be stored elsewhere, when not in use. The base is just two pieces of sheet stock (plywood, MDF, Melamine™ etc.), screwed together at 90°. An optional glued dado strengthens the joint and provides extra stability.

Set Up the Router
Included with your jig are a 14° 1/2" dovetail bit (with a 1/4" shank) and a 7/16" guide bushing, both of which are shown in fig.2. The bushing is universal: it fits most popular brands of routers and after-market bases. (In the remote chance that you have difficulty attaining a perfect fit, consult your router’s manufacturer: they usually offer a guide bushing as an option.)

Install the bushing in the router base and secure it with the included threaded ring. Tighten the ring securely, then slide the base toward the motor housing and install the bit. Set the bit height at 9/16" (from the router base, not the bushing).

Locate the Stops
The jig is equipped with two stops that locate the drawer parts and allow repetitive milling: once they are set, you can build as many drawers as you need.

The first step is to to ensure that the dovetails are evenly spaced on your workpiece (that is, there is the same amount of pin or tail top and bottom). With the correct template installed – to begin with, use the 1/2" one – slide a piece of scrap the same width as your drawer stock into the jig. Center the board (left and right) on the template fingers, as shown in figure 3. The idea is to have the same amount of finger or gap showing at each side of the board. Make sure the board lies at 90° to the front of the jig, then loosen the four screws in the adjustable stop (the left one, Part 11, see figure 4), and slide it snug against the board. Tighten the four screws.

Insert the Drawer Parts
During initial set-up adjustment always use test pieces the same thickness and width as your drawer sides that you will be milling. Only install the actual drawer sides after you’ve produced a satisfactory joint in the test pieces. Figures 5, 6 and 7 illustrate the process.

Tool Safety Rules
1. Keep your work area clean and well lighted.
2. Do not use a router with this jig when tired or under the influence of drugs, alcohol or medication.
3. Avoid loose clothing or jewelry.
4. Unplug the router to make any adjustments.
5. Remove the wrench(es) before starting the router.
6. Always wear eye, dust, and hearing protection.
7. NEVER lift the router off the jig while the bit is still spinning.
8. Secure the jig to a solid base (such as a heavy workbench) before using.
10. Always replace damaged parts before using the jig.
involved in installing the two boards for each joint. Note that the two left-hand joints (that is, the joints that attach the left drawer side to the drawer front and back) are cut at the left side of the jig. Subsequently, the two right-hand joints will be milled at the right-hand side of the jig.

*Shop Tip: Always position drawer parts so inside is facing out.*

Begin by installing the drawer’s left side in the front of the jig (vertically), and securing it with the cam lock. You may have to adjust the cam lock for a good fit: don’t over-tighten it. The top edge of the workpiece should protrude above the jig body (see figure 5), but perfect alignment isn’t necessary at this time.

*Shop Tip: For even clamping, use scrap wood as support on the opposite end of the jig.*

Slide the drawer front into the top of the jig (horizontally). The inside face of this part should be facing up. (See page 4 for more on orienting the parts correctly.) Butt the drawer front tightly against the drawer side (figure 6), check that it is tight against the stop (Part 11), and secure it in place with the cam lock.

Now you can slide the drawer side up so that its top edge is flush with the top face of the drawer front, as shown in the third photo. Secure the drawer side in place, tight against the stop (Part 11), by engaging the front cam lock.

**Set the Template**

The template has no side-to-side movement: the only adjustment required is to position the template back from the edge of the board exactly the same distance as the wall thickness of the guide bushing. If you are using the guide bushing provided with the jig, set the template 1/16" back from the edge of the board. The template can be adjusted by means of two knobs (Parts 6) located at the back of the jig. These secure the template to the top cam mechanism. Be aware that, as you lock down the top cam, the template may move a little and may no longer be aligned perfectly.

**Set the Fence**

The last adjustment to make before milling begins is to set the fence (Part 4). Two knobs (Parts 8) lock the fence in place.

The reason you set the fence is that the router base butts up against it at the end of every cut. This limits the length of the grooves between the pins, into which the tails fit. Figure 8 shows the fence setting for 3/4" stock, figure 9 shows 1/2" stock. Note the different lengths of the grooves.

Setting the fence location sounds complicated, but it’s really quite simple. You’ll need a piece of paper and a pencil to work out the location, since you’ll need to add a couple of numbers together.

Start by writing down a measurement that is twice the thickness of the drawer side stock (for example, with 3/4" thick sides, this would be 1-1/2"). Now find the radius of your router base: that is, the distance from the center of the bit to the edge of the base. Add this to the first number. For example, if your router has a 6" base, you would now have 3" plus 1-1/2" for a total of 4-1/2". The last calculation is to deduct half the thickness of the bit. The supplied bit is 1/2", so just subtract 1/4". Locate the fence this distance from the front of the template. In our example, the fence would be 4-1/4" back from the front edge of the template. Be sure that the fence is set parallel to the front of the template. Secure the fence by locking down the two knobs, and you’re ready to mill the test boards.

**Making Minor Adjustments**

Install your test boards in the jig, set the fence and template to their correct locations, and then lock the boards in place with the two cam locks. With the router bit set at the
correct height, visually check that the bit won’t engage the template or any part of the jig. Begin cutting from left to right, making sure that the bushing rides the template all the way to the back of each groove. **DO NOT LIFT THE ROUTER OFF THE TEMPLATE WHILE THE MOTOR IS RUNNING.** If you do, the bit will destroy your template.

If the resulting joint is too sloppy, raise the bit slightly and try again. Conversely, if the fit is too tight, lower the bit. Make adjustments in approximately 1/64” increments, as a small adjustment can make a lot of difference.

If the two parts fit together well, but the tails are proud, move the fence back the amount the tails are proud. If the tails slide too far into the grooves (also called “sockets”) between the pins, move the fence forward the amount they are shy.

If you don’t have an even amount of pin or tail at the top and bottom of the drawer, revisit the section entitled **Locate the Stops**, above. Sometimes you may want to have a full pin at the top and a half pin at the bottom. This is easily accomplished by visually adjusting the stops in the manner described in that section.

Continue milling test pieces (both left and right) until you achieve results that are satisfactory. Only then should you mill actual workpieces.

**Drawer Layout**

It is recommended that you keep track of the parts of each drawer by numbering and labeling them, then milling them in the same order every time you build a drawer or box. This repetition will virtually eliminate mistakes, with practice.

Refer to the drawing above to see how this is done. The parts of the drawer are laid out in their proper orientation, then each piece is labeled on the inside face (FRONT, BACK, LEFT SIDE, RIGHT SIDE). You can write directly on the part with a soft pencil, or use masking tape. Mark the faces next: each face should have a notation that says which way is up.

Finally, mark the corners with designated number, 1 through 4. For example, the left side of the drawer in the illustration meets the front at corner #1, so each part is so labeled.

If you can develop a habit of marking the drawers in exactly the same fashion every time, errors will be few and far between.

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**Some other joints you can make with your Rockler 12” dovetail jig**

**Your jig can help you mill three variations of the half-blind dovetail.**

**Offset Dovetails** (top drawing) can be used when there is no separate drawer face to attach to the drawer front. They give you an integrated overlay: that is, part of the drawer front overlays the face frame of the chest or cabinet. To mill the joint, just add 3/4" to the length of the front. The part thickness should be a minimum 7/8" thick, and the rab-bet on each end should be milled before inserting the piece in the dovetail jig. Move the backstop 3/8" back, and test your setup on scrap.

**Rabbeted Dovetails** (middle drawing) add a lip to the top, bottom and sides of the drawer front. They are milled in the same fashion as the offset dovetail (above), except that you must reset the right and left stops for the drawer front. Note: You’ll need to shim the horizontal/top arm of the “L-shaped” stop 3/8” so that the offset is 1/8” instead of the standard 1/2”, then proceed.

**Box or Finger Joints** (lower drawing) can be milled by securing both parts in the jig vertically. One piece of stock must be lined up with the top stops, while the other is lined up with the front stops: this means that the front board is 1/2” to the left of the back one. Set the router bit depth (a 1/2” straight bit) to the exact thickness of the stock. You can use a stock bit or a 1/2” bearing-guided bit. If using a bearing-guided bit, shim the template so it is high enough that the bit won’t cut it.