

In this plan you will be getting:

- Step by Step construction instruction.
- A complete bill of materials.
- Exploded view and elevation drawings.
- How-to photos with instructive captions.
- Tips to help you complete the project and become a better woodworker.

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Ultimate Fluting Jig



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Ultimate Fluting Jig

Make multiple, parallel flute cuts spaced any way you like using this jig. Our author cleverly designed it with a pair of fences and a moveable base so you can set it for different stock widths and bit positions while keeping the router tracking straight.



Transfer your router's mounting hole pattern to the jig, using its own plastic base. The jig's router base is made from 1/4" plywood.

Over the years, I have made many a decorative flute cut by simply using a router and an edge guide. But a recent job, which required me to make a number of fluted newel posts (with varied spacings between the flutes), inspired me to create a dedicated jig. Because edge guides can allow the router to waver during the cut, spoiling the flute, I needed a jig that would keep the router on track.

But how do you hold the jig snug to both sides of the stock and still allow it to slide easily while routing? My solution was an adjustable and flexible second fence. It keeps the fixed fence firmly against the edge of the stock as you rout, while allowing for small variations in the stock's width. The jig also has a moveable base for the router so you can adjust the bit position easily on the workpiece.

The body of the jig is made from



The author used an adjustable circle-cutting attachment on his drill press to form the 3"-diameter openings on the jig and router bases. He removed the rest of the waste on the table saw.

good-quality 1/2" plywood, while 1/4" plywood is used for the router base. For strength and durability, choose straightgrained hardwood for the guides and fences. Go ahead and cut all the parts to size using the *Material List* on page 37 as a reference. Lay out the grooves and holes on the jig and router base (pieces 1 and 2), using the *Elevation Drawings* on the next page. Everything

Fluting Jig Exploded View



36 SHOP PROJECTS





MATERIAL LIST – Fluting Jig		
		T x W x L
1	Jig Base (1)	1/2" x 10" x 12"
2	Router Base (1)	3/16" x 6 ³ /4" x 12"
3	Fixed Fence (1)	1/2" x 3/4" x 10"
4	Guides (2)	1/2" x 3/4" x 11 ¹ /2"
5	Spring Fence (1)	1/2" x 3/4" x 10"
6	Tension Strips (2)	3/16" x 1/2" x 10"
7	Tension Spacers (5)	3/16" x 1/2" x 1/2"
8	Knobs (4)	1/4" - 20
9	T-nuts (2)	1/4" - 20



Making the slots in the jig base is a three-step process. After you've marked where the slots belong on the base, set up your router table with a 1/4" straight bit. Pivot the jig base slowly down onto the bit with the base pressed against the router fence. After the bit protrudes through the plywood, push the piece forward to complete the slot cut.

is symmetrical, so start with an accurate centerline and work outward toward each side. Remove the subbase from your router and center it on the router plate center hole so you can mark and drill the mounting holes, as shown in the top *photo* on page 35.

Use a drill press circle cutter (see bottom *photo*, page 35) to bore the 3" openings in both bases. Use a table saw or band saw to remove the rest of the waste in the jig base and follow up by milling the slots in both bases (see *photo sequence*, upper right). If you don't have a router table, cut the slots with a jigsaw.

Milling Solid Stock

The fixed fence (piece 3) is a straight piece of stock, rounded at the ends, glued and screwed to the edge of the jig base. The guides (pieces 4) receive a small rabbet and are affixed to the face of the base. Mount them by attaching one of the guides to the jig base, slide in the router base, then add the second guide. The fit must be snug enough to guide the router base without binding.

Now that you have the guides properly in place, check the accuracy of the T-nut hole locations, drill the holes and counterbore for the T-nuts.

Next, the spring fence (piece 5) needs to be built. It's the flexible fence that makes the whole jig work well. Thin strips of hardwood held together with small blocks (pieces 6 and 7) provide a spring effect that presses the workpiece firmly against the fixed fence.

Mill up the fence parts a little wide so you can sand the assembly to a uniform thickness after glue-up. Check the spring fence against the outer slots in the base, then drill and tap 1/4" -20 holes in the body of the guide for the knobs. Install the knobs and T-nuts (pieces 8 and 9) and you have the lion's share of this jig project behind you.

The final step is to create additional

accuracy and adjustability by installing adjustable stops. These are just a couple of stove bolts that thread into the front and back edges of the jig. The addition of a nut (see the *Exploded View* on page 36) turns them into "micro adjustable" stops. Simply drill and tap a 1/4" - 20 hole in each edge of the base, or use a threaded insert. Mount your stove bolt and nut combination and you are ready to rout. Once the stop is set, tighten the nut against the base to lock it in place.

Using the Jig

Putting this jig to work is easy as pie (and I mean apple...not the tran-

scendental number). Mount the router, then slide the router plate onto the base, and set the center of the bit at the desired distance from the fixed fence. Then, set the depth of cut. Don't be afraid to make more than one pass if needed, to keep from overloading the bit and router. The jig allows this level of accurate repeatability. For stopped flutes, you'll have to clamp stop blocks at each end of the workpiece to limit the path of the jig. The stops on the base sides can be set to stop the jig correctly on the ends of the cut.

After you rout the first flute, flip the jig around and set it back in place. This creates two evenly spaced flutes along the edges of the workpiece face. With the two outer flutes made, you can loosen the jig knobs and reposition the router and bit on the workpiece to cut another pair of flutes or a centered flute, if applicable.

After you get used to using this jig, you'll probably find all sorts of other tasks to use it for, some of which are described at right. The two-fence system makes slotting and grooving long narrow parts easy and accurate. So, next time you need to make a mantle or reed, flute a table leg or make wooden slides, grab this jig. It will definitely keep your router on the straight and narrow!

The jig's moveable fence, with its "spring" construction, is one of the main reasons it is so effective. It has just the right amount of give to accommodate minor variations in the width of the stock you are fluting.

GETTING CREATIVE WITH YOUR FLUTING JIG

As often happens in the world of woodworking, this jig, which was designed for one task, easily lent itself to other related operations. Although necessity is the mother of invention, creativity might be the stepfather of flexibility.

Because this jig accurately guides a router in lineal cuts, any of a variety of routing operations can be preformed with it, including rabbets, grooves or mortises. Its one limitation is the distance from the edge to the router bit. This offset must be accounted for in any setup as you expand the uses of this versatile fluting jig.



Rabbets are easily formed with this jig. To accommodate the offset of the jig base, you can first make the rabbet and then cut the stock to width.



A plunge router is often used to form a mortise. This jig, with its adjustable stops, will help you put the mortise exactly where you want it.



A groove is just a rabbet moved to the middle of the board (or vice versa!). Be creative and get the most from your fluting jig.