

# Five Smart Router Jigs

Get more from your router with this set of easy-to-make accessories

BY YEUNG CHAN

Few woodworkers enjoy the luxury of a spacious shop, and I'm no exception. Lacking the space for many large machines, I rely on my router when building furniture. However, used on its own, the router is limited in its abilities. More often than not, I use it in conjunction with various shopmade jigs that increase its ability to quickly and accurately cut circles, make edge profiles, cut dadoes, trim edge-banding, and even substitute for a lathe.

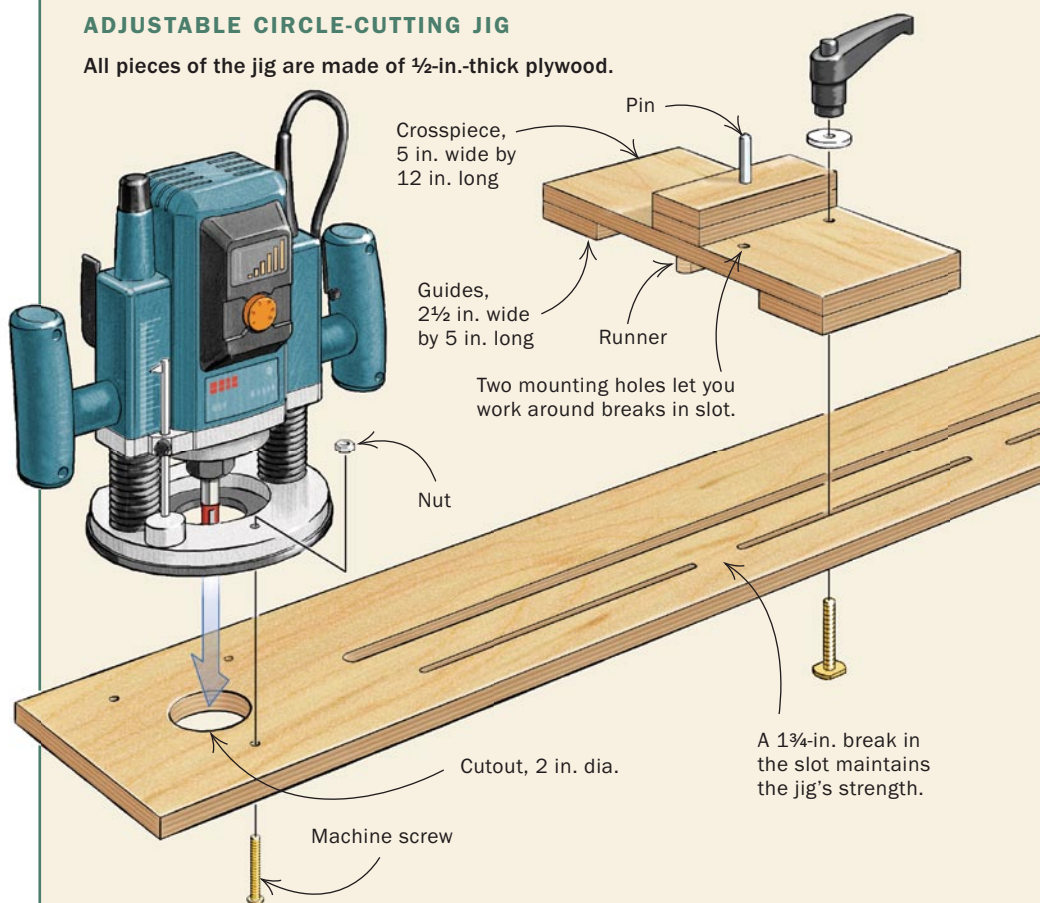
The five jigs illustrated here are all made from cheap and stable plywood or medium-density fiberboard (MDF) and require only a few pieces of hardware, available through Lee Valley ([www.leevalley.com](http://www.leevalley.com); 800-871-8158) or Rockler ([www.rockler.com](http://www.rockler.com); 800-279-4441). These router jigs are as easy to use as they are to make.

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## ADJUSTABLE CIRCLE-CUTTING JIG

All pieces of the jig are made of ½-in.-thick plywood.





# Cut perfect circles

This jig can be used to rout a circle with a maximum diameter of 72 in., but the design can be modified for other diameters. First, drill a ¼-in.-dia. hole, ¼ in. deep, in the middle of the workpiece. If you don't want the hole to show, work on the underside. Next, mark a point on the desired edge of the circle, place the sled over the base, and fit the jig's pin in the center hole. Move the base in or out until the bit is on the mark, then lock the sled.

Turn on the router and plunge down to start the initial cut, which should be less than ⅛ in. deep, just enough to define the circle. Use a jigsaw to cut away the outside pieces, leaving about ⅛ in. outside the final size of the circle. This method enables you to support the corners as they are cut off so that they won't damage the finished workpiece. Once the bulk of the waste has been removed, the router has to make only a light final cut. If you're working with solid wood, pay attention to the grain's orientation and the bit's rotation. Climb-cut when necessary to avoid tearout.

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Visit our Web site to see the author demonstrate his circle-cutting jig.



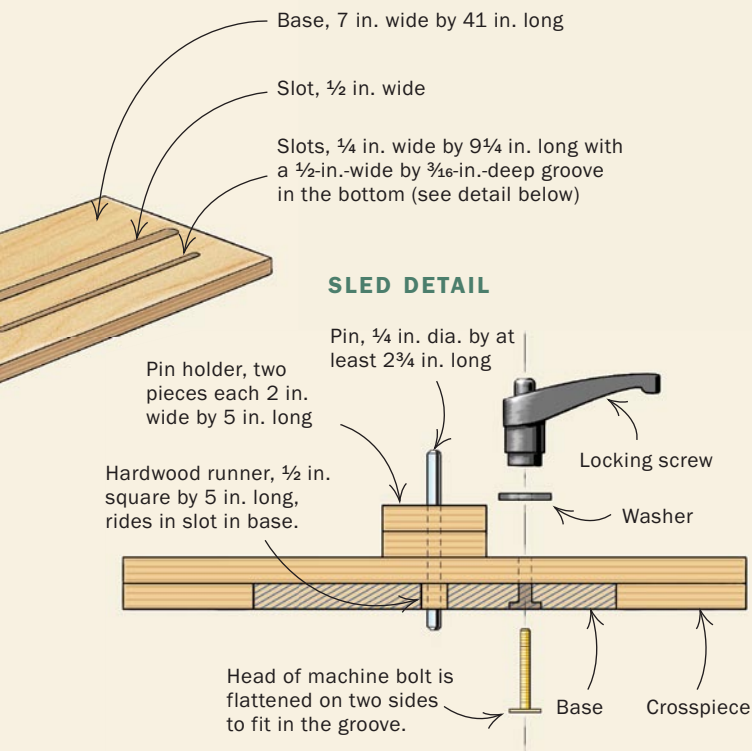
**Set the size of the circle.** With the pin registered in the center of the workpiece, move the jig's base until the inside edge of the router bit is aligned with the desired outside edge of the circle.



**Make a shallow cut to define the circle.** The initial cut made with the router should be only about ⅛ in. deep.



**Remove the waste.** Following the track left by the router, saw away the waste.



**The final cut.** The router now has to remove only a small amount of material, creating less dust and leaving a clean cut.

# Trim or cut large panels

It is a difficult job to cut a large panel on a tablesaw that's not equipped with a sliding table. So I made a simple jig that can be used to cut out a section from a full sheet of plywood or medium-density fiberboard (MDF) or to clean up a rough cut made by a jigsaw or a circular saw.

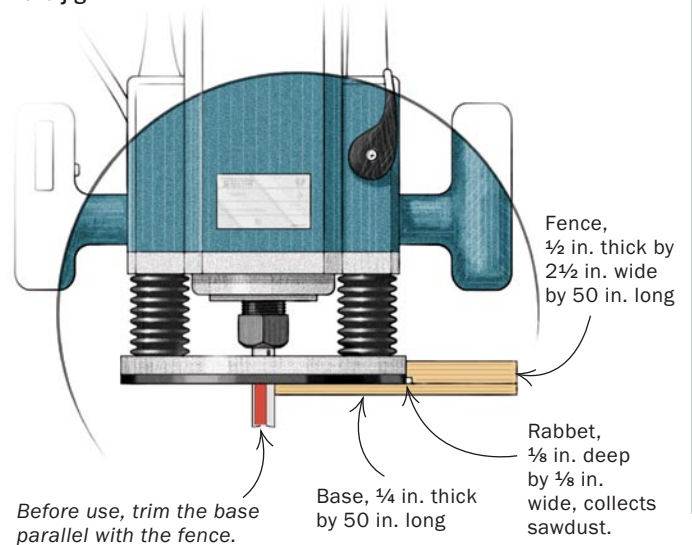
Once you've assembled the jig, run the router along the straight edge of the fence to create a matching straight edge on the base. To use the jig, clamp it at both ends of the workpiece with the edge of the jig aligned with the desired cut. As the router rides along the jig, it leaves a perfectly straight, clean cut.



**Straighten edges.** Rough-cut the panel, then clean up the cut with this straight-edge jig.

## STRAIGHT-EDGE JIG

Always use the same-diameter router bit with this jig. A smaller bit will cut wide of the jig's edge, while a larger bit will eat into the jig.

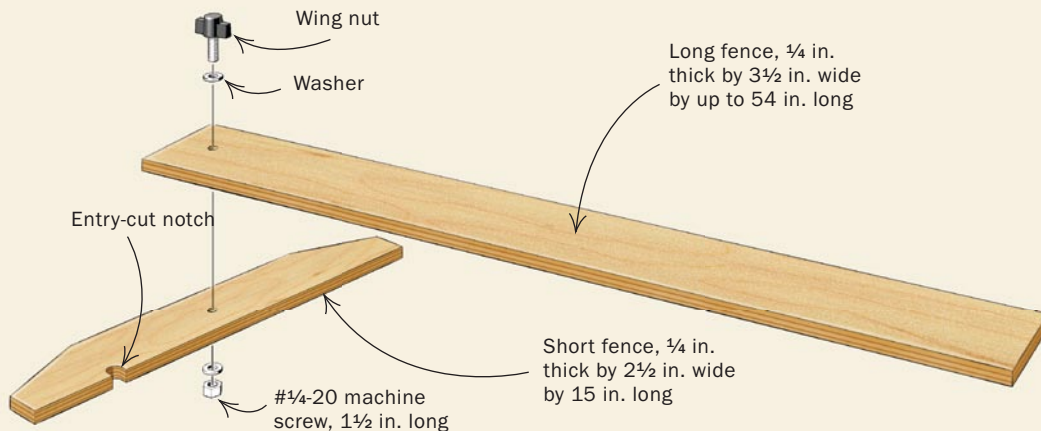


# Cut dados at any angle

Reach for this jig when I have to cut multiple parallel dados on a panel. Most of the time these grooves are perpendicular to the short fence of the jig, but they can be cut at different angles. Like the straight-edge jig (above), this one needs to be clamped at both ends during use. As long as you use the same size bit each time, and the same angle, the entry cut on the jig's short fence will show the location of the dado. Use an up-cut spiral bit, which will prevent chips from jamming in the dado. For deep dados, make several passes.

## DADO-CUTTING JIG

Align the notch cut by the router in the short fence with the desired dado location.



**Variable-angle jig.** Although dados usually are perpendicular to the long edges of a panel, this jig can make cuts at other angles.



**Cut clean and accurate dados.** Clamp the dado jig at both ends and make the cut in two or three passes.



# Trim edge-banding quickly and cleanly

One of the hardest parts of using solid wood to edge plywood or laminate panels is trimming the edge-banding flush with the plywood. If you use a plane, you risk cutting through the thin plywood veneer, and sanding can leave cross-grain scratches on the plywood. This router jig enables you to trim the banding flush, quickly and flawlessly.

Mount the router on the jig, and set the depth of the bit so that it just clears the plywood surface. A router with micro-adjustment comes in handy. Adjust the guide block to align the bit so that the carbide tips extend just a hair over the plywood. Clamp the guide block tight, and you're ready to go.

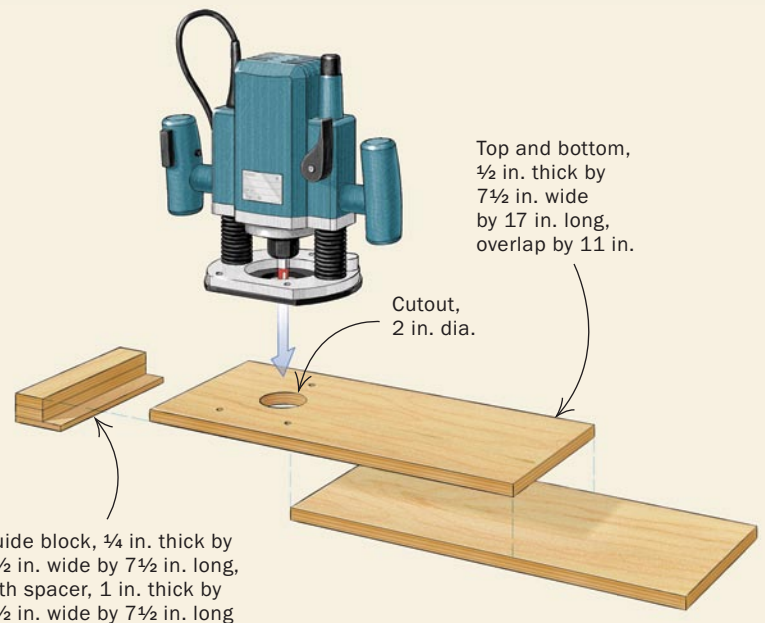
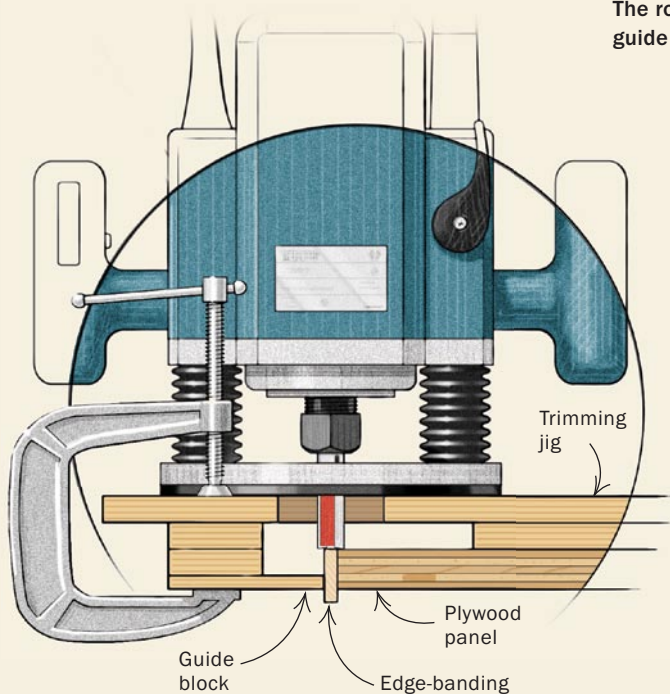
Pay attention to the router bit's rotation and the direction you move the router. To avoid tearout, you want the leading edge of the bit to enter the wood first. Known as climb cutting, this method can be dangerous if the bit pulls the router forward uncontrollably. Because the amount of wood being removed is so small, you should be able to control the router easily.



**Flush-cut edge-banding.** This jig allows you to cleanly cut solid-wood edge-banding flush with the plywood panel.

## EDGE-BAND TRIMMING JIG

The router bit should be positioned a hair above the plywood surface. The spacer/guide block is clamped to the jig to steer the router along the edging.





# Make turnings with a router

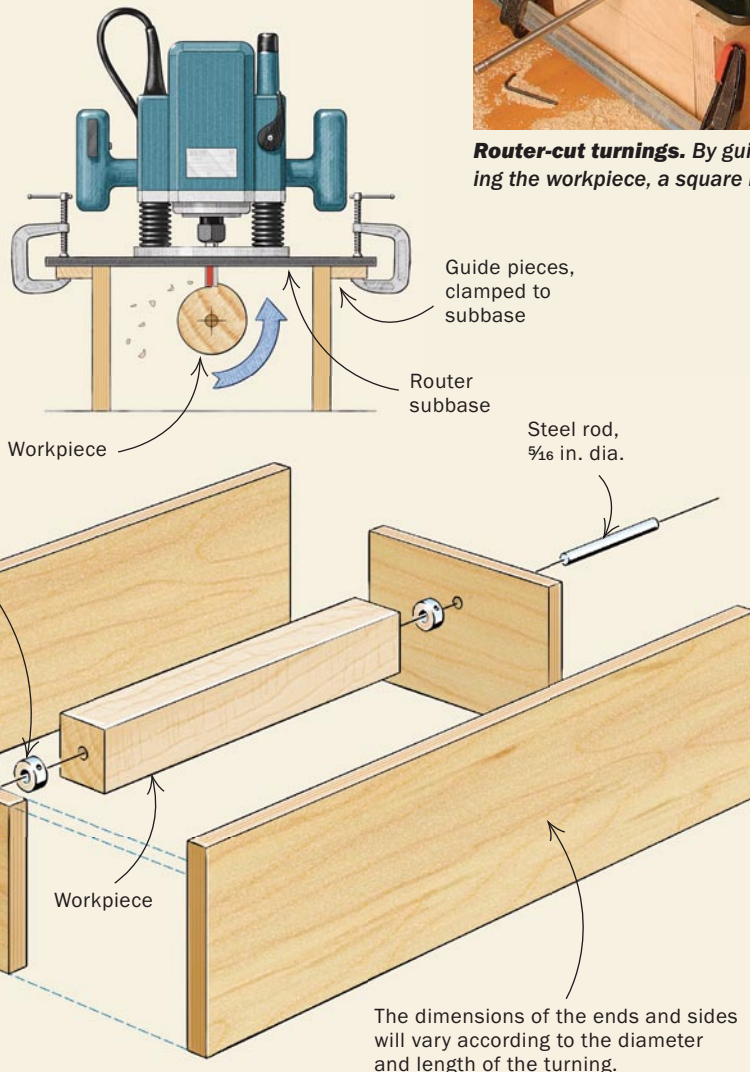
This jig allows you to “turn” round columns and posts using a router. To use the jig, first drill a  $\frac{5}{16}$ -in.-dia. hole,  $1\frac{1}{2}$  in. deep, in each end of the workpiece, then insert a steel rod to hold the workpiece inside the jig. Lock a drill stop on each end of the rod where it enters the jig to prevent the workpiece from shifting during the turning. Clamp two wood guide pieces to the edges of the router subbase to restrict the router’s side-to-side movement.

Turn on the router, slowly plunge down, and move the router halfway up and down the jig as you slowly rotate the workpiece. As you increase the depth of cut, you’ll create a cylinder. Then repeat the process on the other half of the workpiece. Throughout the process, make small cuts for a better finish and a safer operation.

You can adapt this jig to create different turnings. Offset the hole at one end of the jig to make tapered turnings, or clamp blocks to the long sides of the jig to produce stopped turnings. If you design the jig with gently curving sides, the workpiece will become football shaped as it is turned.

## TURNING JIG

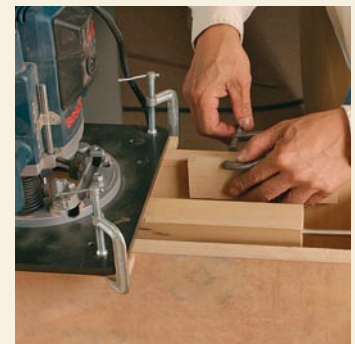
The dimensions of this jig will vary based on the size of the blank to be turned. The four sides of the jig can be screwed together or clamped for greater flexibility. Steel rods passing through each end of the jig hold the blank.



**Router-cut turnings.** By guiding the router back and forth while turning the workpiece, a square blank gradually becomes a cylinder.



**Tapered turnings.** Lower the hole at one end of the jig to taper the turned workpiece.



**Stopped turnings.** Clamp blocks to the side of the jig to leave a square section on the turning.