

# Make a pair of grooving planes

A FAST, QUIET WAY TO CUT GROOVES IN SMALL PARTS

BY MATT KENNEY



## START WITH THE BLADES

This plane is built around the blade, so get that first. You can make your own from tool steel, as I used to do. But after I showed my planes to Thomas Lie-Nielsen, he offered to make and sell the blades. A pair costs \$50 (Lie-Nielsen.com). Lie-Nielsen sells similar blanks in other sizes. You'll just need to bevel and heat-treat these yourself.

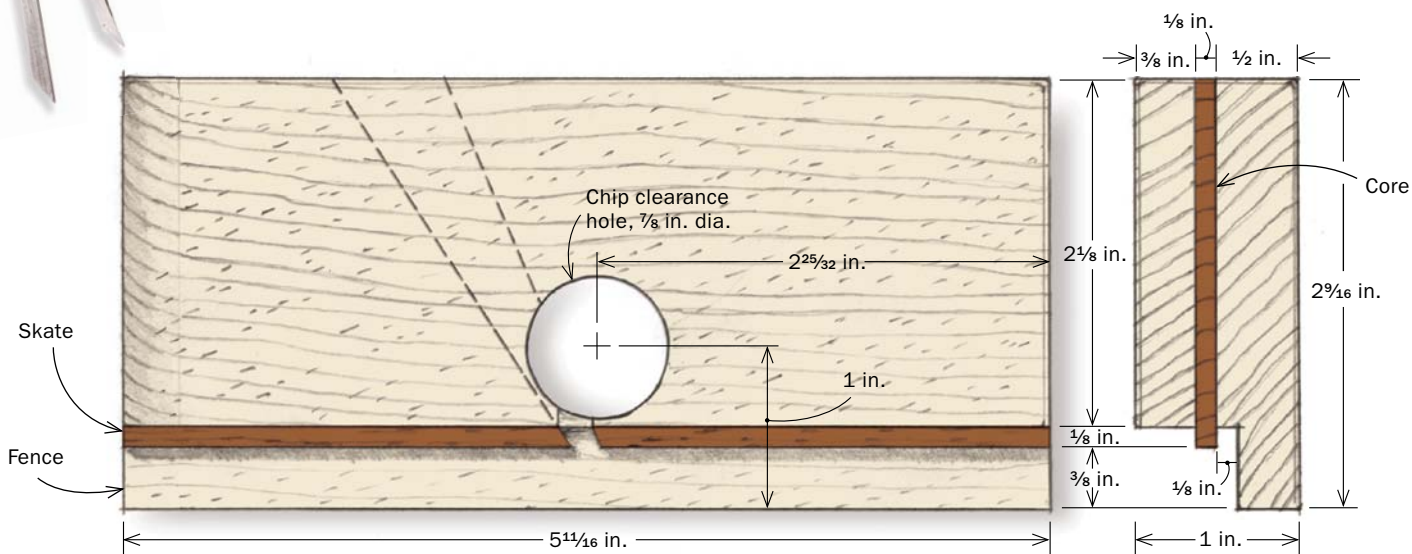
When I make a cabinet with small drawers or a box with trays, I enjoy the time at my workbench making and fitting the parts with hand tools and a few bench jigs ("Make Short Work of Small Parts," *FWW* #214). Unfortunately, the efficiency and tranquility of my work were always interrupted when it came time to make grooves for the bottom panels, a task I did at the router table or tablesaw.

One day it hit me: The grooves I use for small tray and drawer bottoms are always the same size and are inset the same distance from the edge, so I don't need a power tool that can cut grooves of various widths or has an adjustable fence. A molding plane that cuts a groove rather than a profile would be

a simple solution. So I made a pair of grooving planes with integral fences. A pair is needed so that you can always cut with the grain. They plow a perfect groove in about a minute, with no setup needed. By the way, you can make your set larger if you wish, and use it for full-size drawers.

## Body is a three-part sandwich

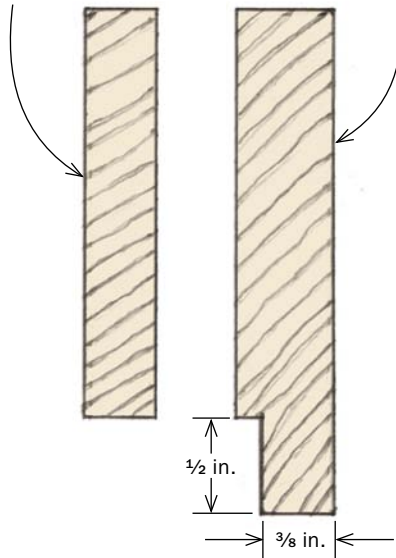
I like using planes, not making them, so I made these using a simple technique popularized by James Krenov. A middle piece, cut in two to form the bed, throat and mouth, is laminated between two sides. (On this plane, the middle piece also acts as the skate, controlling the depth of the groove.) Because you cut apart the middle piece at the tablesaw, it is easy to get



## Start with the sides

Side,  $\frac{3}{8}$  in. thick  
by  $2\frac{1}{8}$  in. tall

Fence side,  $\frac{1}{2}$  in.  
thick by  $2\frac{9}{16}$  in. tall



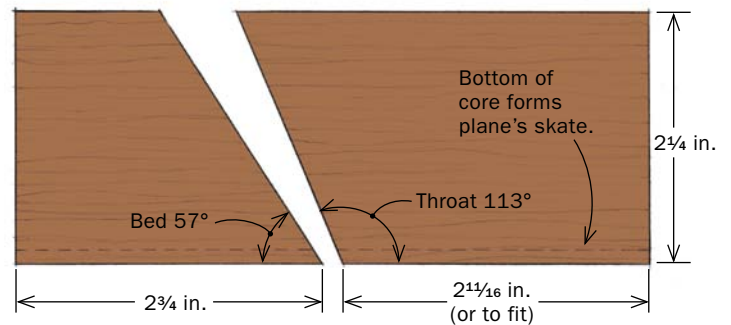
**Rabbet one side.** Once you rip the piece to width, use a router table to create the rabbet that will act as the fence.



**Rip the other side to fit.** Kenney lines up the tablesaw fence with the top of the rabbet to get the exact width of the narrower side, and then rips that side to size.

## Add the core

**Cut the core into two parts.** Square up one end of the core and then set the miter gauge to the bed angle. Cut the bed to length. Cut the throat angle, and then crosscut the throat piece to size.



**Glue the bed to the fence side.** Before tightening down the clamp, let the glue tack up slightly and feel around the edges for the precise alignment.

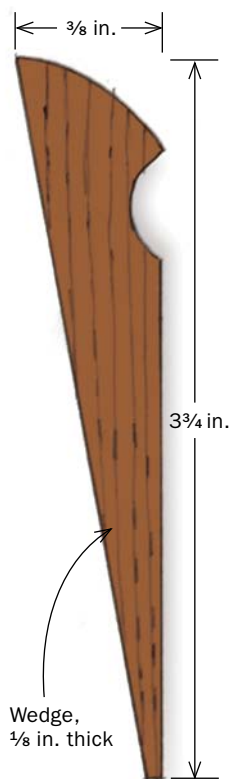


**Set the blade in place to mark the throat opening.** Leave enough clearance for the blade to fit through, plus about  $\frac{1}{64}$  in. for chip clearance.



**Pencil line and outside edges guide placement.** Glue the throat piece in place, eyeballing it and feeling for alignment.





## Make and fit the wedge



**Fit the wedge in the partially assembled plane.** Test-fit the wedge. If the angle isn't quite right, mark the wedge and tweak the angle to fit using sandpaper on a flat surface. Test the fit and repeat as needed to get a tight fit along both the front of the throat and the blade.



**Shape the top of the wedge.** Mark the shape and cut it out on the bandsaw, and sand it to a finished smoothness. It should be about 1/2 in. below the top of the blade. Kenney adds a finger notch.



**Add the second side.** After the wedge is finished, glue on the second side, again waiting for the glue to tack slightly and aligning the pieces by feel before clamping.



a perfectly formed bed, throat, and mouth. Mortising and filing are not needed.

I use beech for the sides, but you could use any hard, stable wood. I start with a 5/4 board about 18 in. long because I make two planes at once and it is safer milling a longer board. Resaw the board into two pieces, just over 1/2 in. and 3/8 in. thick. After jointing the resawn faces, plane the boards to final thickness. I rip the thicker, wider board to width, rout a rabbet on the side that will have the fence, and then rip the other side to width. At this point, I crosscut both pieces twice. This breaks apart the two long pieces, leaving me with the four sides of two planes.

Now joint and plane a core piece from any hard, durable wood, so its thickness is equal to the blade's width. At the tablesaw, crosscut the stock to form the bed and throat pieces.

### Fit the wedge and add finishing touches

Start by gluing the bed and throat pieces to the side with the fence. Line up the top, back, and front edges with your fingers to ensure that the bed and throat are at the right angles. Clamp them in place, taking care that no glue ends up in the throat. Begin to

### Online Extra

Go to [FineWoodworking.com/extras](http://FineWoodworking.com/extras) for a chance to win a pair of Matt Kenney's grooving planes.





**Big hole helps clear shavings.** Use a Forstner bit at the drill press to cut a hole that meets the bed but does not cut into it. To help the chips reach the hole, saw a slot that lines up with the mouth.

make the wedge from the same piece of stock used to make the bed and throat pieces. Cut it oversize at the bandsaw and tweak the fit with sandpaper. After fitting the wedge, cut the top. You'll cut it to length (at the bottom) after you finish gluing the body together. Glue on the second side of the plane body.

After removing the clamps, drill the chip-clearance hole. It also makes a great finger hold, so chamfer its edges for comfort. I used a trim router and chamfer bit, but a file or sandpaper works. Next, round over the edges of the plane. Now, take a few light shavings off the skate on the side that doesn't face the fence so that it won't bind in the groove. Then cut back the bottom tip of the wedge so that shavings don't get jammed in the mouth. Cut it, plane a groove, and repeat until the plane is clearing shavings without trouble.

I finish the plane with two thin coats of Tried & True Danish oil, wiping off the excess after each.

### Using the plane

There is no learning curve here. Use a sharp blade, set for a slightly heavier cut than for a smoothing plane. I work against a planing stop, holding the workpiece with my hand. Take the first passes slow and use your lower fingers to press the fence against the edge of the board being grooved. After the groove has been started, you can speed up. However, you should still apply pressure to the fence. □

*Matt Kenney is an associate editor.*



**Round over sharp edges.** On the back end of the plane, where your hand wraps around it, Kenney uses a ½-in.-dia. roundover bit in a router table. A backer board prevents tearout on the end grain and improves the plane's stability as you guide it past the bit. He breaks the rest of the sharp edges with sandpaper.



**Keep the skate running smoothly.** Use a shoulder plane to take a few light shavings off the skate, and don't forget to wax the skate before use.