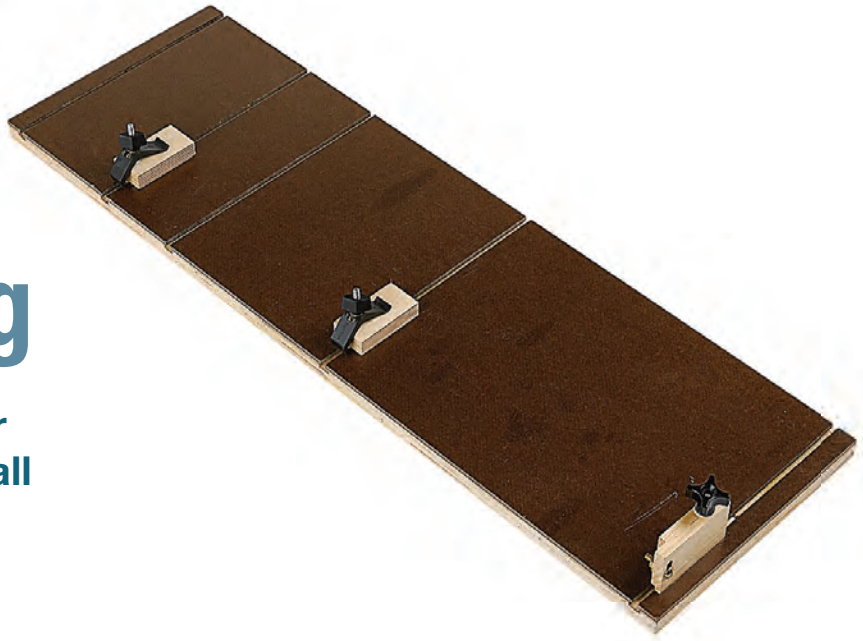
Four-Sided Tapering Jig



Here's a slick way to taper four sides of a table leg—all with one simple jig.

You can taper one side of a table leg without much head-scratching, but tapering all four sides equally presents more of a challenge. With this jig, however, you can cut all four tapers without changing your setup. You simply rotate your workpiece between cuts.

Locate the hold-downs to suit the length of your workpiece. (The pivot block can sit at either end of the jig.) If your tablesaw has a 10" blade, you can handle workpieces up to 2" thick.

Refer to **Sources** on *page 2* for hardware for this project.

Buildthejig

1 For the base, cut a piece of ¾" plywood to the size shown on **Drawing 1**, then cut a piece of ¼" hardboard to the same dimensions.

2 Cut ⅝" dadoes 3/16" deep in one face of the plywood, where dimensioned. Glue the hardboard to the dadoed face with yellow glue. Now, clamp the assembly between two scraps of plywood to ensure even pressure. After the glue dries, remove the clamps, set your dado blade for a ¼"-wide cut, put an auxiliary fence on your miter gauge, and cut a slot through the hardboard, centered over each plywood dado, as shown in **Photo A**.

3 Cut a piece of maple to ¼×⅜×12", then cut two 3" pieces and one 3½" piece from this blank for the guide bars. For the hold-down bases, cut a piece of ¾" plywood to 1½×12". Cut a ¼" groove down the center of one face of this plywood, where dimensioned on the drawing. Drill two ¼" holes near opposite ends of the groove, with each hole centered in the groove and ½" from the end. Cut a 3" piece from each end to make two hold-down bases. Next, glue one guide bar piece in the groove on each hold-down base. After the glue dries, drill a ¼" hole through each assembly, using the previously drilled holes as guides.

4 Cut a maple blank to ¾×2×12" to make the pivot block. (We begin with an oversized piece to assure safety during the cutting process.) Cut a rabbet on one end of the blank, where shown on **Drawing 1a**. Now, drill two holes to form the ends of the adjustment slot, remove the material between the holes with a coping saw or scrollsaw, and clean up the slot with a file. Cut a ¼" groove centered on the bottom edge of the blank. Next, drill a ¼" hole centered in the groove 2½" from the rabbeted end. Glue in the 3½" guide bar piece, making it flush with the rabbeted end. After the glue dries, drill a ¼" hole through the blank, using the previously drilled hole as a guide. Trim the blank to 3½" in length. Sand and finish the assembly.

5 Assemble the hold-downs as shown. For the pivot block, file or grind one edge of the washer flat, as shown on **Drawing 1a**, and then assemble the nut, screw, and washer as shown. Adjustable up or down in the slot, this screw serves as an indexing pin. Once set for a particular workpiece, it guarantees that every cut in the sequence is an equal distance from the center of the workpiece.

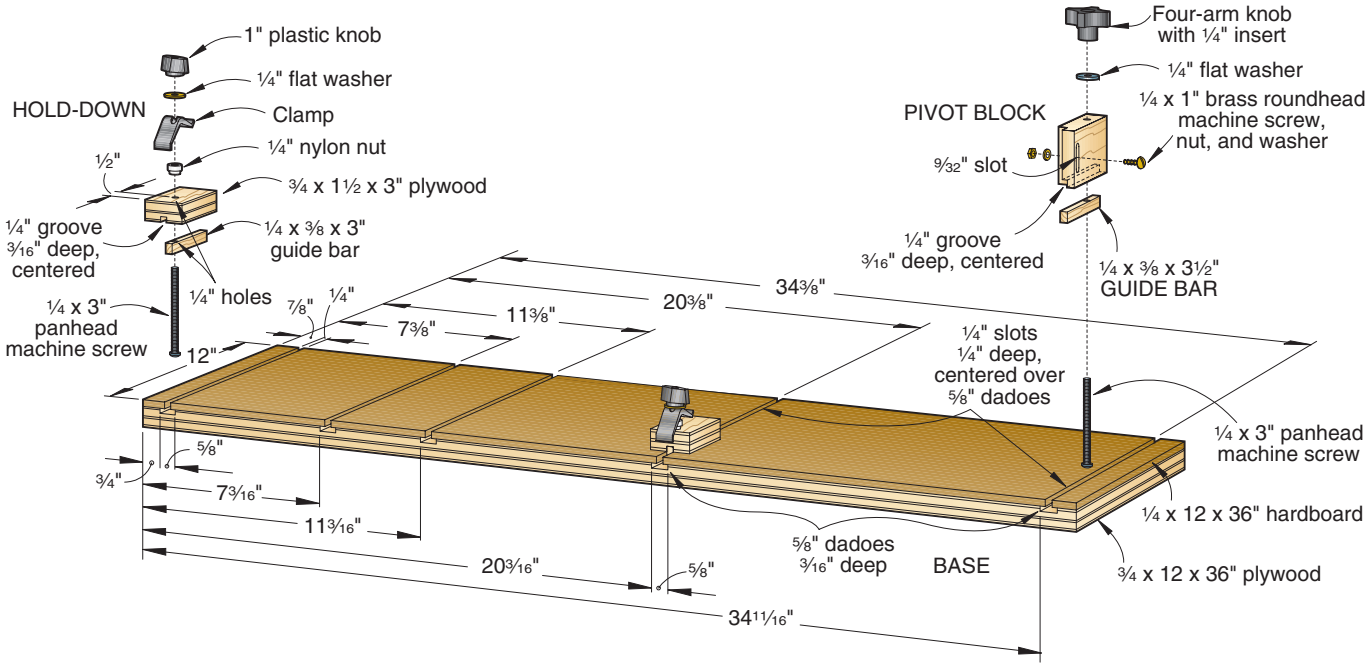
A

After cutting dadoes in the plywood base, glue the hardboard to the dadoed face. Mount the two outside blades of a dado set in your tablesaw, and cut slots through the hardboard centered over each dado.

B

Diagonal lines on the end of the workpiece locate the hole that fits onto the indexing pin. Draw the cutline for the final shape, and extend the lines to the edges to help you position the workpiece on the jig.

1 EXPLODED VIEW



Tap into tapering

To taper a leg, cut your workpiece to its finished length, then rip it to the square dimensions that you want for the untapered section at the upper end. Draw a line on all four faces to mark where the taper will begin. Drill a ¼" centering hole ⅜" deep at the center of the bottom end, and add cut lines to show the final dimensions of that end, as shown in **Photo B**. Draw cut lines on the face connecting the leg-bottom marks with the taper-start marks. This helps you visualize the final shape, and serves as a safety reminder as you push the jig across the saw.

Mount the leg-centering hole on the indexing pin. Slide the pivot block until the planned outside face of the leg aligns with the edge of the jig. Turn the knob to lock the pivot block in place. Now, near the upper end of the leg, align the taper-start cutline with the edge of the jig. Slide the hold-down blocks against the leg, and tighten the nylon nut on each one to set the block's position. Tighten the top knob on each hold-down to clamp the leg in place.

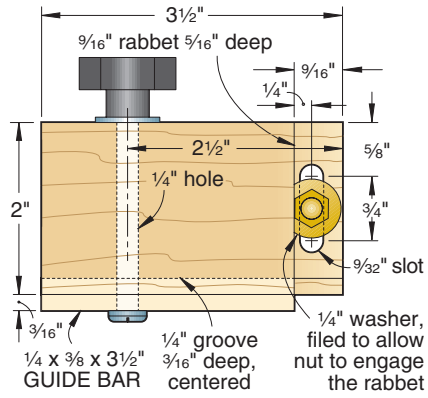
Raise the saw blade ¼" above the leg. Butt the jig to the fence, move the fence until the saw blade just clears the left side of the jig, and then make the cut, as shown in **Photo C**. To make each of the three remaining cuts, loosen the hold-down knobs, rotate the leg one-quarter turn clockwise (as viewed from the pivoting end), reclamp, and cut.

This jig also serves another purpose, as shown in **Photo D**. When you need to cut a single taper, mark its start and stop points on the end and edge of your workpiece. Remove the indexing pin from the end block, and nest the end of the workpiece in the notch. Align the marks with the edge of the jig, and clamp. Place your hold-downs against the workpiece. Tighten the pivot block in place, and make the cut.

Sources

Hold-down no. 142398, $4.99 (bolt and knob)
Woodcraft 800/-225-1153, woodcraft.com.

1a PIVOT BLOCK



Hold the taper jig tightly against the tablesaw rip fence as you cut. Before starting each pass, make certain that your left hand is well away from the line.

The width and adjustability of the taper jig allow you to handle a wide range of angle cuts. Here, with the jig flipped end-for-end, we're shaping a simple leg.