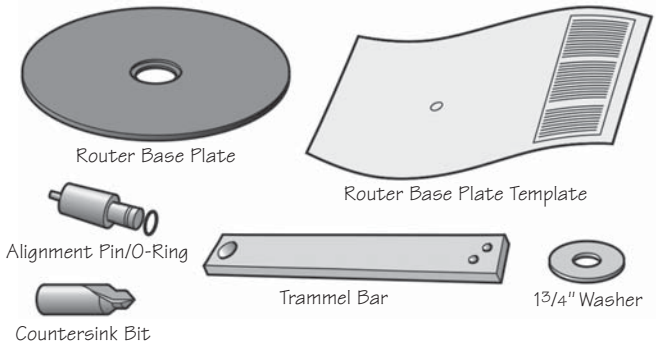
Router Base Plate

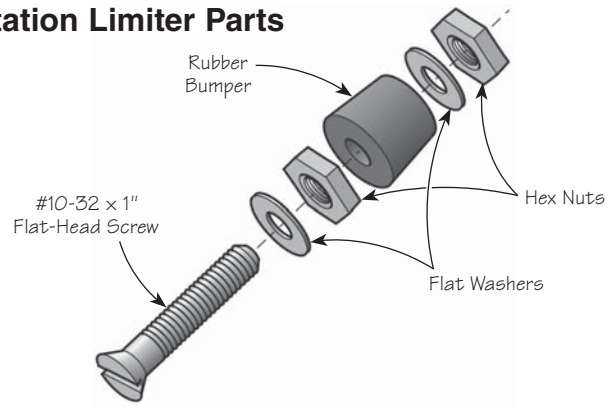
The Veritas Router Base Plate replaces the sole plate that came with your router. Because you drill the holes required to mount it to your router, it is not riddled with holes and slots that are required for it to be universally mounted to any router. Once it is attached, you are able to mount and remove your router from a shop-built router table in seconds, allowing you to go from freehand routing to table-mounted routing, and back again. Additionally, it is counterbored for compatibility with the Veritas template guide bushings.

Parts Included

The parts that are included with the Veritas Router Base Plate are shown below to help you identify each part as it is referred to in the instructions that follow.



Rotation Limiter Parts



Router Base Plate Attachment

The instructions for mounting the router base plate are outlined on the router base plate template.

Notes:

*I. In **step 4**, you are instructed to transfer the group of threaded holes that were used to secure the original sole plate. Some routers contain an additional group of threaded holes that are intended to be used for mounting to a router table. If your router contains these holes, they should be used for securing the base plate.*

ii. To properly secure the base plate to your router, use flat-head screws. If your sole plate was attached with screws of any other head style, replace them with flat-head screws.

Router Table Construction

General Notes

The router table top allows you to install and remove your router in seconds by tilting it and dropping it out from the underside. No permanent fastening of the router to the table is required.

Make your router table top from any flat sheet of stock (plywood, melamine-coated particleboard, or medium-density fiberboard), 5/8" to 3/4" (16 mm to 19 mm) thick. A melamine-surfaced sheet works well on account of the smooth, low-friction surface. However, to reduce the possibility of chipping as the base plate is removed from the table top, a better choice is plywood or medium-density fiberboard, with a laminated top surface (e.g., plastic laminate such as Arborite®).

If you have made your table top out of melamine or medium-density fiberboard, seal the stepped surfaces of the center hole and any other bare surface/edge with shellac or other sealant. This will reduce the dimensional changes that may occur as a result of humidity fluctuations.

Depending on the size of top you choose, you may want to make it more rigid by adding stiffeners to the underside. If so, add these once you have completed it, in order to be sure that they are located in a position that will not interfere with the installation or removal of your router.

During the construction, you will be instructed to drill 3/16" and 1/2" diameter holes (*steps 2*, *3*, and *6*), which will be used as pivot points to rout larger circles. Before making these holes, test the bit that will be used (in a piece of scrap made of the same material as used for the table top) to be sure it does not drill an oversize hole. As a check, the 3/16" and 1/2" diameter sections of the alignment pin should slip into each drilled hole with minimal play.

Procedure

1. Cut your router table top to the size you have selected, add edge banding or solid lipping to the exposed edges, and laminate the top surface if required.
2. With the base plate attached to your router, turn your router upside down or lightly clamp it in a vise (spindle end up), install the alignment pin, and adjust your router so the 1/2" diameter portion of the alignment pin projects at least 1/4" beyond the router base plate. Place the 1/2" hole in the trammel bar over the projecting alignment pin. Swing the trammel bar so the **outermost** hole in the free end faces the rear of the router, as shown in **Figure 1**. Clamp it in this position with a small C-clamp. Using the two 3/16" holes in

the free end of the trammel bar as drill bushings, drill 3/16″ diameter holes through the base plate. To keep the holes being drilled in their intended locations, keep the drill bit perpendicular to the base plate.

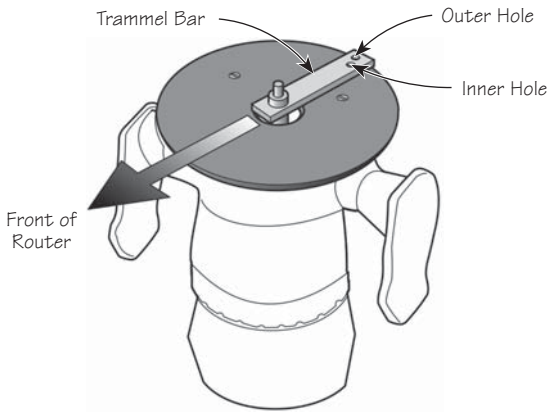


Figure 1: Drilling trammel holes in the base plate.

3. On what will become the bottom side of the table top, mark the center hole location. Using a drill press (or an alignment guide or block to ensure a perpendicular hole), drill a 1/2″ diameter hole in the center.

4. Remove the alignment pin from your router and replace it with a 1/2″ bit, adjusted for a depth of cut 3/16″ less than the thickness of your top. Clamp the table top to your bench, bottom side up and elevated on two scraps of wood whose thickness allows only the 3/16″ diameter end of the alignment pin to project past the surface of the top. With the **innermost** 3/16″ drilled hole in the router base plate placed on the projecting alignment pin, rotate the router in a full circle, thus routing a circular groove, as shown in **Figure 2**.

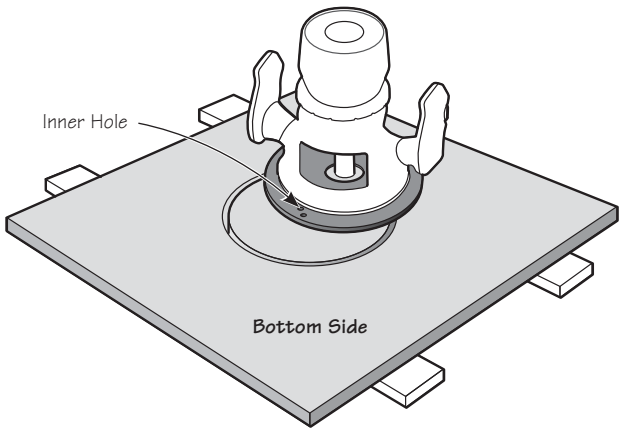


Figure 2: Routing the bottom side of the table top.

5. So the router base plate will be able to pass down through the hole in the table top, two notches must be cut through what will become the supporting ledge for the base plate. While the table top is still inverted, mark out both notch areas as shown in **Figure 3**. They should be located at two opposing points, extending 3/8″ beyond the groove just routed and be 2″ long, as shown in the diagram. With the router bit depth unchanged, rout the two notches free hand, routing to the lines (or slightly beyond). Do not worry if the routed line wavers, as it will not show when in use.

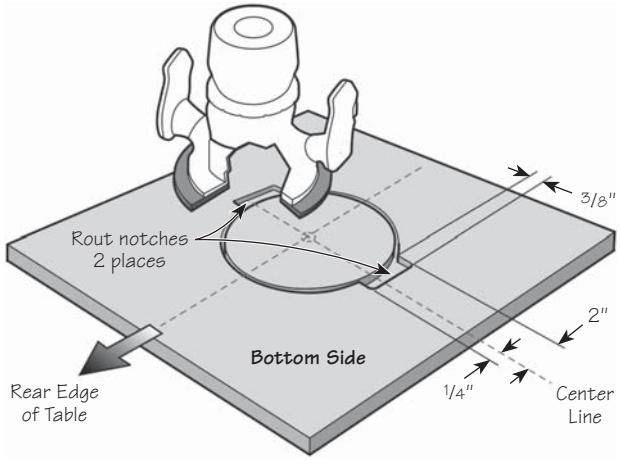


Figure 3: Notching the bottom side of the table top.

6. Make the restraining bar shown in **Figure 4** (from scrap wood) 2″ to 3″ wide, and 13″ to 15″ long. The thickness of the bar should not be greater than the scraps of wood that were previously used to elevate the table top (ref. *step 4*). Drill only the 1/2″ diameter hole in the center of the restraining bar. While the top is still inverted, attach the restraining bar with four screws as shown, using the alignment pin to ensure that the 1/2″ hole in the bar remains concentric with the 1/2″ hole in the top. Make an identifying reference mark on the restraining bar and adjacent table top surface, so the bar can be removed and replaced in the exact same position if necessary.

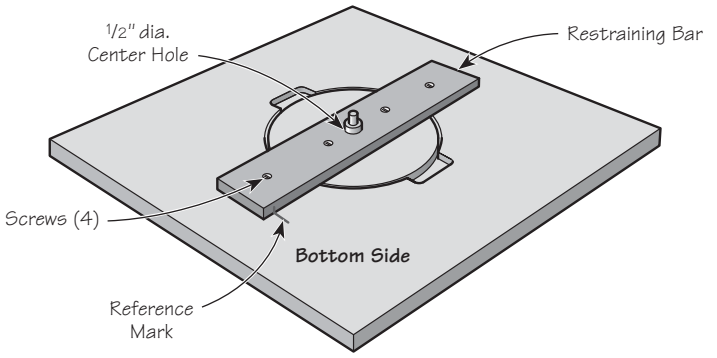


Figure 4: Fitting of the restraining bar.

7. Adjust the 1/2″ router bit so the depth of cut is equal to the thickness of the base plate. This is an important step as it sets the depth of the ledge that the base plate will rest on, so that it will be perfectly flush with the table top. As a check, cut a straight rebate in a scrap piece of material (in the same type of material as the table top), and verify that, when the base plate sits on the rebate, the top surface is **perfectly** flush with the adjacent material. A straightedge placed across the join helps to establish whether or not the two surfaces are perfectly flush.

Notes on obtaining a flush base plate:

I. The test rebate should not be wider than 1/4" (as this is the width of the ledge that the base plate will ultimately rest on), and should be long enough for the base plate to be sufficiently supported. Be sure to hold the router flat while checking.

II. A ledge with a clean square cut is necessary for the base plate to sit properly. If your router bit has not produced this, replace it with a new bit that has sharp cutters.

With the bit depth properly set, clamp the router table to your bench, top side up and elevated on the same two scraps of wood. With the **outermost** 3/16″ drilled hole in the router base plate placed on the projecting alignment pin, rotate the router in a full circle, thus routing a second slightly larger circular groove, as shown in **Figure 5**.

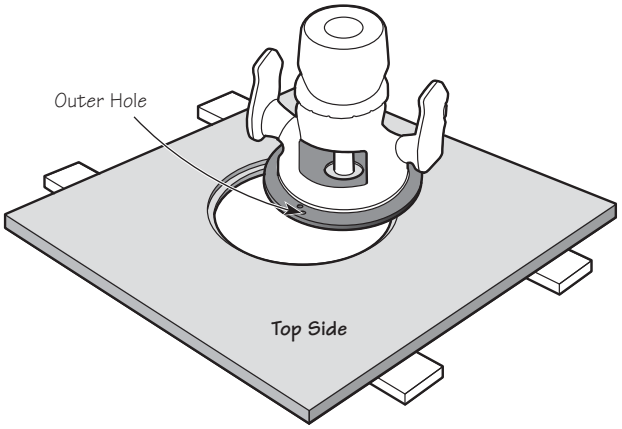


Figure 5: Routing the top side of the table top.

8. Before removing the router, rotate it until the bit is pointing at what will become the back edge of the top, and plunge the bit down, going through the table top (see **Figure 6**). Because the router may have a tendency to rotate counterclockwise when making this cut, we suggest either clamping the router in place or clamping a wooden bar against the side of the base plate to the table top to prevent this.

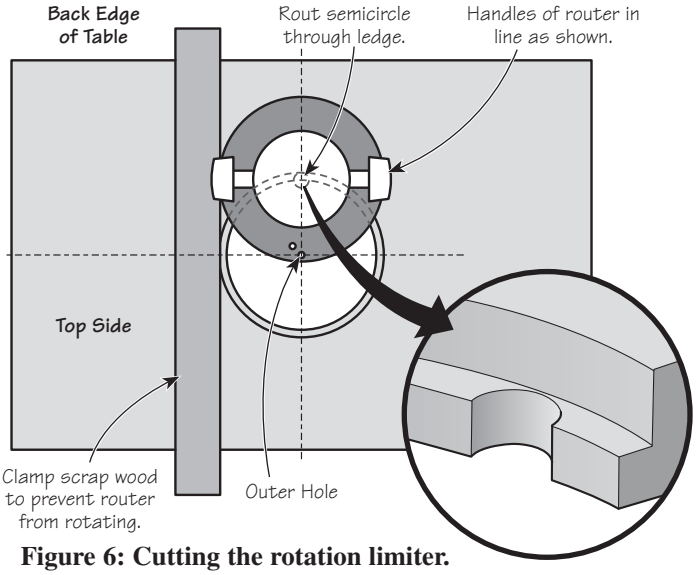


Figure 6: Cutting the rotation limiter.

If you do not have a plunge router, simply rout the 1/2″ diameter semicircle free hand, using a wooden bar as a guide. Stop the cut when the leading edge of the bit intersects with the edge of the larger routed circle.

9. Remove the router and the restraining bar from the table top (the center cut-out portion of the table top should remain attached to the bar). Clamp the top to your bench so the hole is overhanging your bench. Drop the inverted router into the stepped hole. If the base plate is too big to fit it into the larger routed hole, continue with this step; otherwise, proceed to *step 10*.

   To increase the size of the larger routed hole, first reinstall the restraining bar (with the center cut-out portion still attached) to the bottom side of the table top and in the same orientation that it was originally installed. Repeat *step 7*, except this time, pull the router **away** from the alignment pin as you rout the circle; this applied load will result in a slightly larger routed circle. Check if the base plate now fits. If not, use a twist drill to open up the outermost hole by 1/64″. Repeat *step 7,* again pulling the router away from the alignment pin as you rout.

Note: *This step may be repeated if necessary, enlarging the outermost hole in the base plate by increments of 1/64″.*

10. Using the countersink bit provided, countersink the **outermost** 3/16″ hole from the top side of the base plate (side opposite to router), deep enough so the 10-32 flat-head screw sits just below the base plate surface. Secure the flat-head screw by tightening the inner nut against the base plate. Install the rubber bumper and remaining hardware as shown in **Figure 7**.

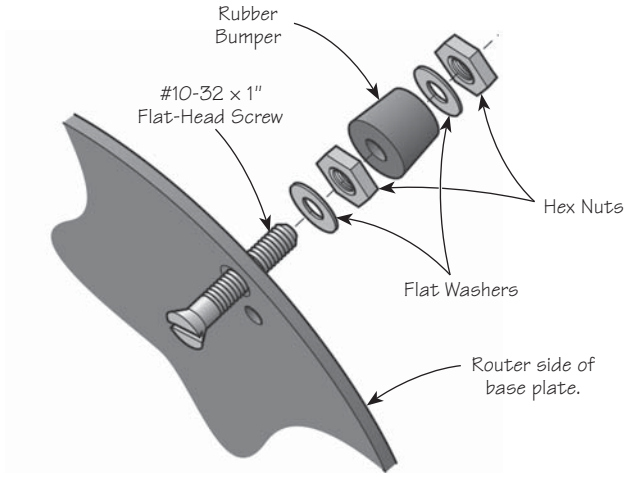


Figure 7: Installing the rotation limiter to base plate.

Tighten the lower nut until the base plate fits into the table top with no play, as a result of the rubber bumper pressing against the side of the semicircular hole routed in the back of the table top.

You can now install/remove your router into/from the table top in seconds, as shown in **Figure 8**. If the base plate sits slightly proud in the area of the rotation limiter when the router is placed into the table top, pressing or tapping the base plate down in this area will make it settle onto the ledge.

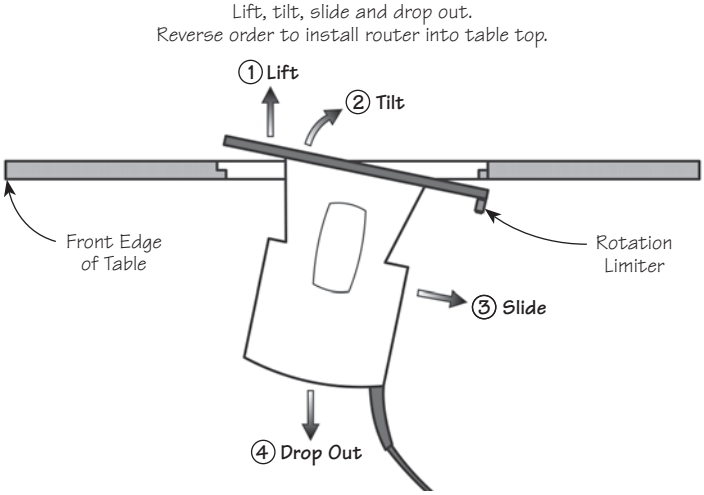


Figure 8: Removing the router from the table top.

Note: *There is a possibility that routers with handles that are very close to the base plate will foul the table top when the router is tilted to be installed or removed. If you encounter this, extend the length of the two notches on the bottom side of the table top toward the front edge of the table top as required.*

Using the Alignment Pin as a Pivot Pin

The alignment pin may be used as a pivot pin when doing freehand routing with bits that have solid or ball-bearing guides. By installing the included O-ring (found in the parts package) on the groove of the pin shank, the alignment pin will become a pivot pin. When this pin is mounted in your base plate, and located close to the bit, it is used as an infeed pivot point to support your workpiece as you begin your cut, preventing your workpiece from being grabbed by the bit.

If you intend on doing such work, you will have to drill a 1/4" hole in the base plate. To provide the best workpiece support, the hole should be located as close as possible to the bit but, to ensure that the pivot pin has adequate support, do not drill it closer than 1/4" from the edge of the counterbore in the center of the base plate. Add a small countersink (e.g., 1/32") to the exposed side (non-router side) of the base plate.

Before using the alignment pin as a pivot pin, roll the O-ring onto the 1/4" diameter end until it sits in the circular groove. The inclusion of the O-ring prevents the pin from inadvertently rising out of the hole, either as a result of contact with a workpiece that has a sloping face, or just as a result of normal vibration; most pins on the market are subject to this weakness. Ours, with the O-ring, will not be.