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WOODWORKING AND HARDWARE

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Reversible Rail-and-Stile Router Bit Instructions

Set up and make the cope cuts in the ends of the rails

You can make the profile/groove cuts in the rails and stiles first, but we recommend that you start with the cope cuts. That way, the rails' long edges are still flat and square, and you can use a flat-edged backer board to prevent tear-out at the end of the cut.

1. The cutters and guide bearing need to be arranged as shown in **Fig. 1**. If they're not already in that order, fit a 9/16" wrench onto the collar at the top of the bit shank (to hold the bit) and use a 1/2" wrench to loosen and remove the nut at the top of the bit.
   Note: Use only in a table-mounted router at reduced RPMs.

2. Starting from the shank end, stack the bit in this order: straight cutter, bearing, profile cutter. Install the washer and use the wrenches to tighten the nut at the top of the bit, taking care to maintain alignment of the cutting edges. **Fig. 1.**
   Note: Do not invert any of the cutters, and make sure the cutting edges are facing as shown.

3. Install the bit securely in a table-mounted router.

4. Using a piece of your stock as a reference, adjust the bit cutting height until you achieve the desired profile (taking into account the thickness of your center panel).

5. Position the fence so that it aligns with the bearing guide on the bit and lock it down.

6. Using a scrap piece that's the same thickness as your workpiece, make a test cut. It's important to orient the stock 90° to the fence and to hold it securely as you make the end-grain cope cut. At minimum, use a miter gauge or a wide push block. Also use a backer piece to prevent tear-out at the back of the cut. A better solution is a jig like Rockler's Rail Coping Sled (52149), which securely holds the rail stock square to the fence for easy, accurate cope joints and incorporates a backer block to prevent tear-out.

7. Adjust the bit height as necessary and make additional test cuts until you're happy with the profile. Then, with the front face oriented up, make the cope cuts on the ends of your rails.

Reconfigure the bit to make the groove cuts in the rails and stiles

1. Remove the bit from the router and use a 9/16" wrench and a 1/2" wrench to loosen and remove the nut at the top of the bit.

2. Starting from the shank end, stack the bit in this order: profile cutter, straight cutter, bearing. **Fig. 2.** Use the wrenches to tighten the nut at the top of the bit, taking care to maintain alignment of the cutting edges.
   Note: Do not invert any of the cutters, and make sure the cutting edges are facing as shown.

3. Install the bit securely in your table-mounted router.

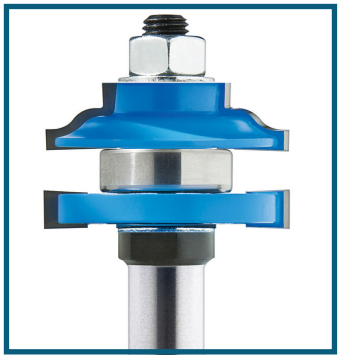

Fig. 1*

Fig. 2

*23422 shown here as an example

Rail and stile profiles

4. Using one of your rail ends as a reference, adjust the bit cutting height so the bit profile lines up with the coped profile on the rail.

5. Make sure the fence aligns with the bearing guide on the bit and lock it down.

6. Using a scrap piece that's the same thickness as your workpiece, make a test cut. Bring the stile and the coped end of the rail together to test the fit. Adjust the bit height as necessary and make additional test cuts until the rail and stile pieces form a flush joint.
   Note: Use a push block and featherboard for safe, accurate cutting.

7. With the front face down, against the table, rout the profiles/grooves on the inside edges of your rails and stiles.

Warnings

- **Use only in a table-mounted router at reduced RPMs.**
- **Do not bottom out bit in your router collet. Allow at least 1/8" gap between bottom of bit shank and bottom of router collet.**
- **Keep hands clear of bit.**
- **Wear eye protection at all times.**

Check Rockler.com for updates. If you have further questions, please contact our Technical Support Department at 1-800-260-9663 or support@rockler.com