

Woodshop Calculator Template

For more information visit our web site at: www.woodshopcalc.com

Arched & Cathedral Raised Panel Door Templates (Step-By-Step Guide to Making Raised Panel Doors)

Door Example (Stiles are 2 1/4" wide, Bottom Rail 2 1/4" wide, Top Rail 4" wide) Rail and Stile widths can change.

Opening size is 11" x 22" and you want a 1/2" overhang on all sides so the door size will be 12" x 23".

-Stile will then need to be cut at 3/4" x 2 1/4" x 23"

-Bottom Rail will be cut at 3/4" x 2 1/4" x 8 1/4"

-Top Rail will be cut at 3/4" x 4" x 8 1/4"

NOTE: TOP AND BOTTOM RAIL LEAVE 1/4" WIDER. THIS ALLOWS YOU TO CUT OFF ANY CHIPOUT THAT MAY OCCUR WHEN COPE CUTTING. AFTER YOU ARE DONE COPE CUTTING, RIP BOARDS TO YOUR DESIRED WIDTH.

-Center Panel will be cut at 3/4" x 8" x 19 1/4"

(This will give us a 1/4" for the center panel to float within the Rails and Stiles)

Size the Stiles, Rails, and Raised Panel

Left and Right Stiles

-Cut to desired width

-Stile should be the same length of the door.

Top & Bottom Rail

-Cut to width you desire.

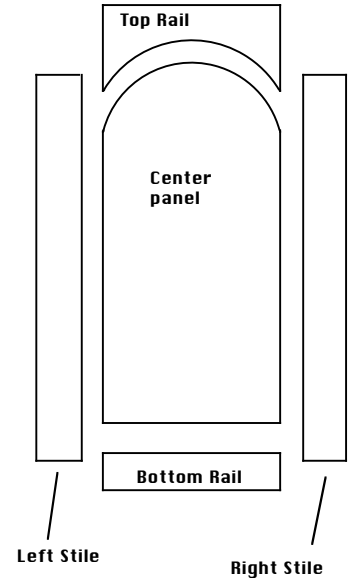
-For correct length of the rail you can use the Woodshop Calculator program (www.WoodshopCalc.com) or use the following formula: (door width minus right stile width minus left stile width plus tenon length right side plus tenon length left side) $12'' - 2\ 1/4'' - 2\ 1/4'' + 3/8'' + 3/8'' = 8\ 1/4''$

Raised Panel

-Make the width 1/4" less than the Rail length, which will leave 1/8" per side for the center panel to expand.

-Length of raised panel use formula: (door length minus distance from top of rail to top of arch minus width of bottom rail plus tenon groove depth bottom rail plus groove depth top rail minus 1/4".

$$23'' - 2'' - 2\ 1/4'' + 3/8'' + 3/8'' - 1/4'' = 19.25$$



Making the Rails

1. Make your cope cuts on the ends of each rail.

-Set your cope cutter to the correct height in your router.

(1/8" on top and 1/8" on bottom is recommended see pic. 1)

-Rip to desired width, in our case 4" for top rail and 2 1/4" for bottom rail.

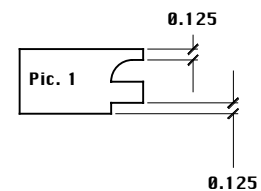
2. Use template to cut the arch in the top rail.

-Choose the correct template. Each Template is marked with a size ex. 8-9.5. Choose the template that falls within the range of the length of the rail. On our door we will use 8-9.5 because our rail length is 8.25" long.

-Find and mark center of rail and mark center of template then use double sided tape to hold template to rail lining up the center mark on the template to the center mark on the rail.

-Band saw close to template and clean up with a Flush-Trim router bit.

NOTE: TO PREVENT KICKBACK, USE A STARTING PIN IN YOUR ROUTER.



Cutting Center Panel to Shape

3. Use template to cut center panel to shape

- Choose the correct Template. Choose the template that falls within the range of the length of your rail (NOT THE WIDTH OF CENTER PANEL) In our case our rail length was 8.25" so use the template 8-9.5.

- Mark the center of the width on the center panel and center of the width on the template.

- Use double sided tape to hold template to center panel lining up the center mark on the template with the center mark on the center panel.

- Rough cut panel within 1/4" of the template and clean up with a Flush-Trim router bit.

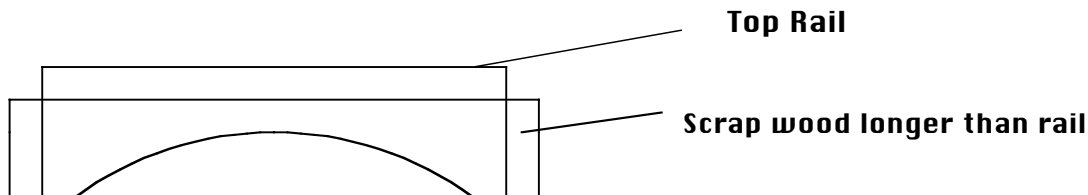
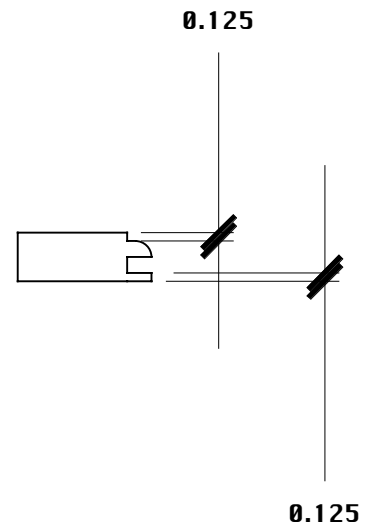
Cutting Pattern on the Stiles and Rails

4. Make freehand cut on top rail.

- Use pattern cutter which has the bearing on top.

- Place pattern cutter in router and adjust height to fit the cope cut of the rails. (recommended to test with a scrap piece of wood)

- Using scrap piece of wood with a clean straight edge, secure to top rail using fence to line up the edges (see video).



- With the router bearing in line with the fence run your top rail through router. Now you can remove the scrap wood and move fence back and router the center of the rail. Use a starting pin when routing the center out.

5. Cut the remaining stiles and rail.

- Place fence on router table and line the bearing up with the fence.

- Use a push stick or block to push the rail and stiles through.

Cutting Raised Panel

6. Make your raised panel cut.

- This step will take several passes on your router. Start with a light cut and move router bit up for each cut until center panel fits into the groove on the rails and stiles.

- Start your cut across the grain, then finish with the grain. This will help with any tear out problems.

For more information on our Cabinet Door Program please visit our web site at: www.woodshopcalc.com