

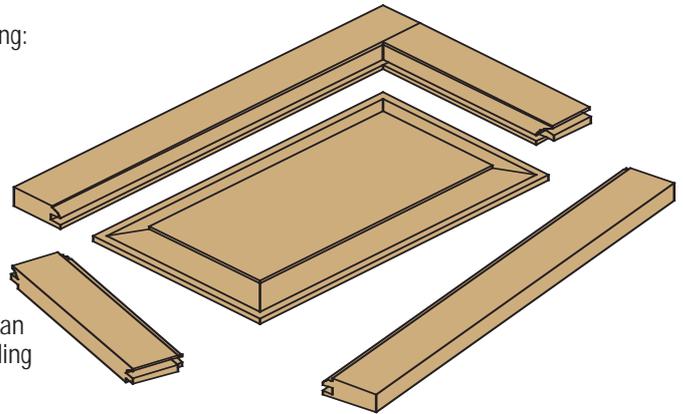
Use these instructions with any of CMT's Kitchen Sets, or with the Raised Panel or Rail and Stile Sets sold individually.

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In our step by step example of panel door construction, we used the following:

- CMT Rail & Stile set (item # 891.502.11)
- Raised panel bit (item # 890.502.11)
- CMT Reverse Glue Joint (item #855.501.11 not included)
- pre-cut stiles - 3/4" thick x 2-7/16" wide
- pre-cut rails - 3/4" thick x 2-7/16" wide
- panel - 3/4" thick
- scrap stock

The CMT Rail & Stile set was designed ideally for the construction of panel doors from 3/4" thick stock, however any variation of size up to 7/8" thick can be used. Remember to adjust your measurements and cutting depths according to the wood thickness you use.



MILLING THE RAILS AND STILES

First make trial cuts of the cope profile (rail) and the stick profile (stile) in scrap stock and check the accuracy of the joint. This is extremely important when working at maximum thickness (7/8"). Make sure your stock is flat and cut straight with square edges. Using the CMT Stile Bit shown in Illustration 1, place the stock front face side down on the router table and mill the stick profile in the stile and rail pieces.

To mill the cope cuts, use the CMT Cope Bit shown in Illustration 2, position the rails face side down on the router table and mill the cope profile in the ends. If you are milling cope and stick profiles before cutting the rails and stiles to length, make sure to make the proper calculations before cutting the rails.

The stiles are the same length as the door. The length of the rails must be calculated by the following equation:

Width of the door, minus the width of the two stiles, plus the length of the two tenons, equals rail length.

In our example, the door is 12" wide, and the stiles are both 2-7/16" wide.

The tenons produced by CMT rail and stile bits are 7/16" long. Therefore, the equation for our examples is: $12" - 4 \cdot 7/8" + 7/8" = 8"$ rail length

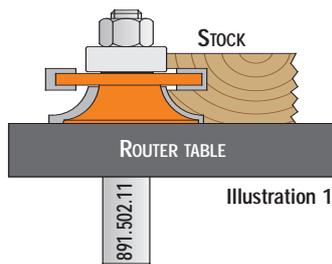


Illustration 1

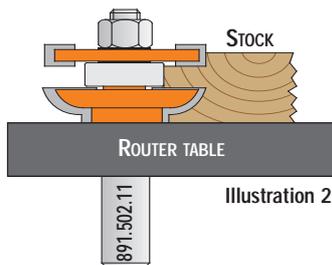


Illustration 2

process. This assures you will have the best side of your stock as a front face. If a third panel is required, mill one cut edge of the piece as instructed above, turn the piece over and run the other edge. Assemble the reverse cut pairs together for beautiful, strong joints that match up perfectly.

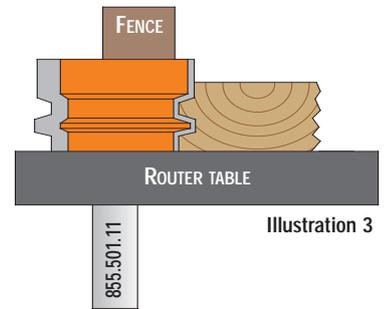


Illustration 3

MILLING THE FLOATIN PANEL

Make trial cuts in scrap stock so the top of the panel is flush with the top of the rail and stile pieces. The panel size can be calculated using this method: the width of the panel is 1/4" less than the length of the rail. If the rail length is 8", the panel width is 7-3/4".

This allows the panel to expand and contract between high and low humidity seasons. It is also advisable to insert Panalign strips which keep the panels centered. The length of the panel is 4" less than the overall door length. A 24" long cabinet door - 4" = 20" long raised panel.

This 4" method only works when you make your rails and stiles 2-7/16" wide since our tenons are cut 7/16" long. If you plan on using the Panalign strips on the top and the bottom of the panels, you should subtract another 1/4" on the length of the panel. It is not required to use Panalign strips on the top and bottom, but some cabinetmakers use them to expose more of the raised panel cut.

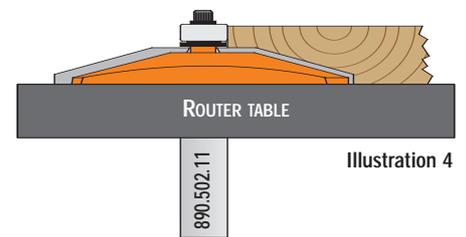


Illustration 4

Safety Precautions:

- ◆ This bit is capable of removing large amounts of stock. To safely and effectively produce the profile you want, we suggest making several shallow passes by moving the fence. It is dangerous to try to mill the entire profile in one single pass.

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