

Safety Precautions:

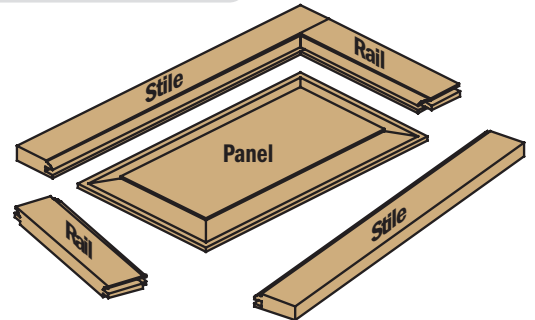
- ◆ The Raised Panel bit is capable of removing large amounts of stock. To safely and effectively produce the profile you want, we suggest making several shallow passes. It is dangerous to try to mill the entire profile in one single pass.
- ◆ Thoroughly check all tools for damage and flaws before using.
- ◆ Wear safety glasses and era protection when using power tools.
- ◆ Be sure that at least 75% of the shank is securely inserted into the collet of the router.
- ◆ Use a router table and fence.
- ◆ Keep your tools sharpened, clean and stored in a safe place.
- ◆ Reduce the router speed when working with larger diameter bits. The raised panel bit should be used at speed of 12,000 RPM or less. If your router does not have a built in speed control, a number of speed controls are commercially available.
- ◆ Take care to remove large quantities of stock (cross section 3/8" (10mm) in more than one cut.
- ◆ NEVER use dull or defective router bits.
- ◆ NEVER force the shank entirely into the collet (bottoming out). Leave about a 1/8" space between the end of the bit's shank and the bottom of the collet.
- ◆ NEVER force the cut or overload the router.

800.509.11
800.510.11
800.511.11

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

- 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.

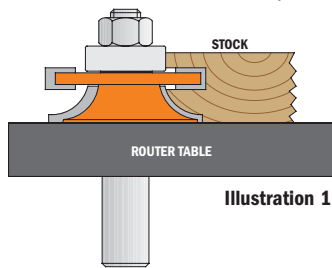


Illustration 1

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: $12" - 4 \times 7/8" + 7/8" = 8"$ rail length

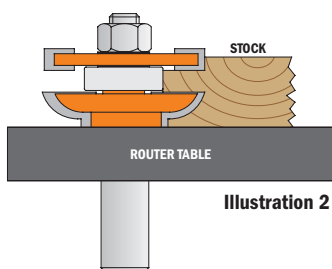


Illustration 2

Place the second panel front face up and repeat the milling 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.

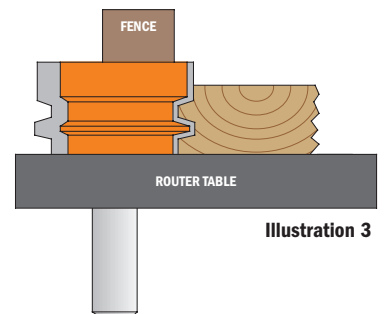


Illustration 3

MILLING THE FLOATING 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.

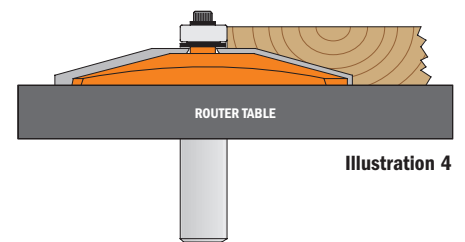


Illustration 4

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.

C.M.T. UTENSILI S.p.A.

Via della Meccanica - 61122 Pesaro, Fraz. Chiusa di Ginestreto - Italia
 Phone #39 0721 48571 - Fax #39 0721 481021
 info@cmtorangetools.com www.cmtorangetools.com

CMT USA, Inc.

7609 Bentley Road Suite D - Greensboro, NC 27409 USA
 phone 336.854.0201 - toll-free 1.888.268.2487
 fax 336.854.0903 - free-fax 1.800.268.9778
 info@cmtusa.com www.cmtorangetools.com

©: CMT, the CMT logos, CMT ORANGE TOOLS and the orange color applied to the tool surfaces are trademarks of C.M.T. Utensili S.p.A.

© C.M.T. UTENSILI S.P.A. This document has been sent for your personal use only. All usage and reproduction is forbidden without written permission from C.M.T. UTENSILI S.P.A.



BE CAREFUL!
 USE GLOVES.



WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood



WARNING: This product can expose you to chemicals including nickel and cobalt, which are known to the State of California to cause cancer, and lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.P65Warnings.ca.gov.