Mitered Door Frame

Items #8781, #8782, #8783, #8784, #8785

The MLCS Mitered Door Frame Bit allows you to create dramatic rail and stile doors, picture or mirror frames, chair rails, crown moldings or other decorative trim. Combine this bit with any raised panel bit to create highly decorative raised panel doors.

(Before starting these instructions, check your stock for uniform thickness. If it is not of uniform thickness, machine it as needed to make it of uniform thickness.)

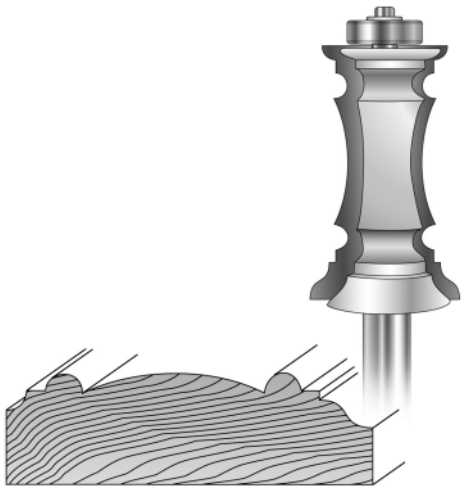


Figure 30A

Preparing your Rails and Stiles

1. Rip your stock to a final width of 2- 1/2".

2. Cut your stock to length, allowing a few extra inches to the length of each piece. (You may choose to leave the stock in longer lengths and cut them to final size after routing if you have the need for any short lengths.)

3. Rout the profile on the top face of your stock using the (# 8781) Mitered Molding router bit. (***Figure 30A***) Because you will be removing a large amount of wood, complete this step by making the cut in multiple passes by adjusting the router bit cutting depth between each pass. The final pass should leave the ball bearing guide on the bottom of the router bit flush with your router table fence.

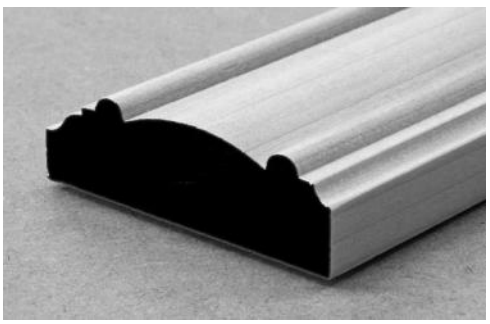
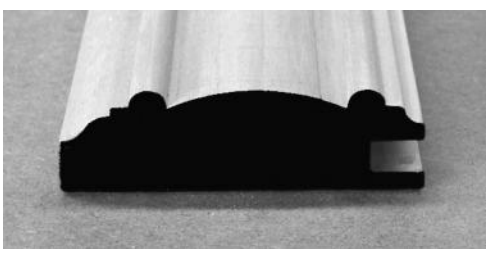


Figure 30B

4. Change to a 1/4" wide (5.2mm wide for flat undersized 1/4" plywood panel) by 3/8" deep slot cutting router bit. On the inside edge of the rails and stiles, rout the slot the full length of the rail and stile to create the slot for the panel to fit into, leaving at least 1/8" of thickness behind the panel slot. (***Figure 30B***) (The inside is the thicker edge with the cove profile cut at the top of the stock.) You may choose to make this cut in multiple passes to avoid tear out. Be sure to rout this slot on the inside of all (4) pieces of stock.



(The next step will be very crucial to the fit and appearance of your finished assembly)

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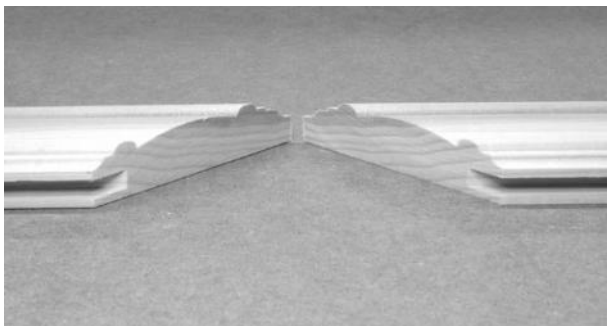
5. Use a precision miter gauge; miter sled or chop saw to cut the 45-degree miter joints. Any deviation from a perfect 45-degree angle can mean gaps in your miter joints and an assembly that is not square. Make sure you orientate your stock properly so that the short length has the panel slot cut into it. (***Figure 31A***)

Figure 31A



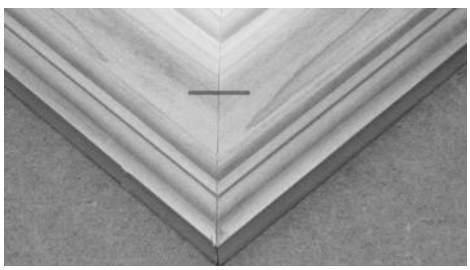
Making the Center Panel

6. Now it is time to cut the raised panel to size and rout the profile on it. Make sure to size it properly by allowing for the panel slot depth in the rail and stile when calculating the overall panel dimension. Also be sure to allow space for any seasonal panel movement due to changes in humidity. Complete the panel by routing the profile until you have an appropriate 1/4" thick tongue on the panel edge to fit into the slot on your rails and stiles.

Assembly of the Frame and Panel

7. Install (#5365/#7665) 5/32" wide slot cutting router bit to cut the proper depth slots for the biscuit joint. We are using a #11 round face frame biscuit to align the joint and provide a stronger joint than just a basic edge-to-edge glue joint. Place the two edges to be joined and place a registration mark across the center of the mitered edges. (***Figure 31B***)

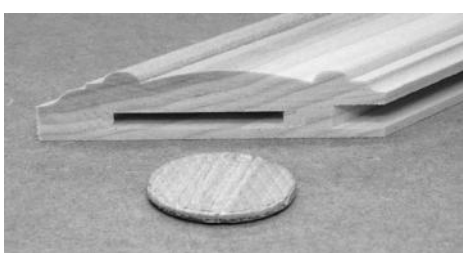
Figure 31B



8. Adjust your router table fence so that it is flush with the ball bearing guide on the biscuit slot cutting router bit. Adjust your router table fence faces to close up the gap around the router bit. If your router table fence faces do not move, you may make a zero clearance sub face and attach it to your existing fence with clamps or double-sided tape.

9. Place the long edge of the rail or stile against the router table fence and slowly pivot the mitered edge of the rail or stile into the spinning router bit so that the registration line is aligned with the ball bearing on the router bit. Repeat this operation until both ends of all four pieces are completed. (***Figure 31C***)

Figure 31C



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10. Apply glue to the miter ends of one of the rails and the corresponding edge of each stile. Apply glue into the biscuit slots in each of these same pieces. Place (1) #11 biscuit into each end of the rail and align these (3) pieces. (***Figure 32***) Tape may be used to temporarily hold these assembled joints together. Slide the panel into the slot in the stiles and rail that are now assembled. **(Do not glue the panel into these slots. It must be allowed to float to avoid cracking from seasonal wood movement.)**

Figure 32

11. Apply glue to the mitered ends of the remaining rail and exposed stile ends. Apply glue into the remaining biscuit slots. Insert (1) #11 biscuit into each stile and slide the rail into place closing up the frame assembly. Measure diagonally from corner to corner to check if the assembly is square. Use appropriate clamps such as #9012 Merle Multi Corner Band Clamp to hold the assembly until the glue is dry.

Finish by sanding then applying a stain or finish to complete your project.