

### Shaping the Sticking

The next step is to shape the decorative stick profile and panel groove along the frame edges.

But first bandsaw the arch in the top rail. Before shaping the top rail you'll need to make a template to guide the cut. Making the template is easy. You can cut it from a piece of 1/4" plywood that is slightly larger than the top rail. Bandsaw the 4-5/16" radius contour onto the plywood and smooth the edges.

Next, tack the template to the rail with a couple of brads. Before shaping the rail, smooth the curved edge with a flush trim bit. To avoid kickback, allow the bearing to contact the extended end of the template before the bit contacts the wood. Also, it's important to safely distance your hands from the router bit. You can grip the work within the jaws of a handscrew clamp or secure it to a push block with double-stick woodturners tape. (See tip below)

Now you're ready to shape the frame edges. To set the proper height, align the bit with the cope cut on the rail end. Once set use the template to guide the arched cut on the top rail and the fence to guide the stiles and bottom rail.

### Making the Panel

The first step is to size the panel to fit within the frame. First, dry assemble the frame and measure the distance between the fillets on the sticking.

Now cut the panel to this size and layout the 4-1/2" radius at the top with a compass. After bandsawing the arch, smooth the edges of the curve with a file. Now you're ready to shape the panel.

To safely hold the panel, I attach it to a push block with double-stick woodturners tape. Adjust the bit height so that the edge of the panel forms a friction fit within the frame groove. Remember to use a starting pin to safely enter this cut.

To make the cut, position the panel against the starting pin. Next, pivot the panel into the bit until the edge makes contact with the bearing. After shaping the arch, use a fence to shape the straight edges of the panel.

After shaping all frame and panel pieces, dry clamp the final assembly to check for fit. Then proceed to final glue-up and assembly.

### Safety Tip

**Double stick tape does not adhere very well to the rubber pad on a push block. Fasten a block of wood to the push block with screws first, then apply the double-stick woodturners tape.**

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*Congratulations on your new purchase!*

*This manual will assist you during the use of your new set. This manual is not intended to teach you about woodworking. This is basic information for use of our product. It is assumed that you are an experienced woodworker and you are familiar with the basic woodworking skills and techniques necessary to use this product safely. If you are unsure after reading all material presented in the manual, please consult widely available books on woodworking techniques.*

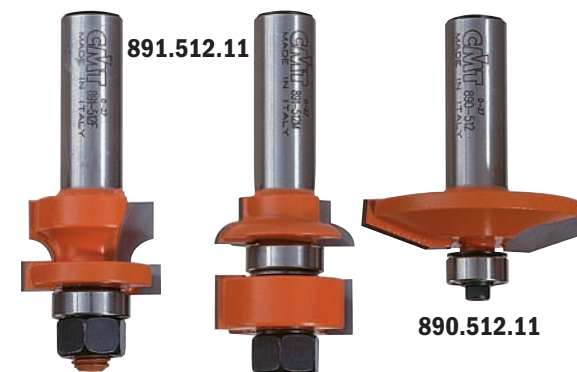


### Contents of Set

**One each of the following items:**

**890.512.11 Raised Panel Bit**

**891.512.11 Rail and Stile Matched Pair**



**Read and understand the entire contents of this manual before attempting assembly or operation of these tools! Inspect contents for shipping damage and shortages. Report problems to your distributor immediately.**

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IMPORTANT! Safety Precautions

SAFETY WARNINGS

- Failure to heed all safety instructions and warnings regarding use of this product can result in serious bodily injury or death.
- Carefully read all important safety instructions in the owner's manual that came with your machine before operating.
- If you do not have a manual, contact the manufacturer and obtain one before using any CMT bits or blades.
- Always wear eye protection in compliance with the current ANSI standard Z87.1 when operating any power tool.
- Always use proper guards and other safety devices when operating any machine.
- Carefully check router bits or blades prior to each use. Do not use if damage or defect is suspected.
- Do not exceed recommended RPM for any saw blade or router bit.
- Avoid wearing loose clothing or jewelry that may catch in a rotating saw blade or router bit.
- Unplug the machine when mounting or adjusting any saw blade or router bit.
- For best results always have router bits and saw blades professionally sharpened.

Specific Router Bit Safety Precautions

- Never force the bit or overload the router.
- Be sure that at least 3/4 of the shank length is inserted into the router collet.
- Never "bottom-out" the bit in the collet, the end of the shank should be about 1/8" from the bottom of the collet.
- Always make sure that the guide fences on your router table are firmly clamped in position before each use.
- Route in two or more passes when large amounts of stock must be removed.
- Use reduced speeds for large diameter bits.

Using the Lonnie Bird - Small Arch Door Set

If you've ever wanted to make small raised panel doors for fine furniture, then this set is the key. It's scaled-down proportions are perfect for doors and lids on secretaries, small cabinets and chests. You can also use the panel without the frame as a lid for small boxes. Because the bits are equipped with guide bearings, they will shape curved work such as the small arched doors shown in (Fig. 1)

The three-piece set comes with matching cope-and-stick bits for producing frames from 5/8" to 3/4" thick. The stick bit shapes a decorative 3/16" thumbnail molding and panel groove along the edges of the frame. The ends of the rails are shaped with the coping bit. The panel bit shapes 1/2" thick panels with a classic diminutive beveled profile.

Suggested Router Speeds	
Bit Diameter	Maximum Speed
1" (25mm)	24,000 RPM
1-1/4" - 2" (30-50mm)	18,000 RPM
2-1/4" - 2-1/2" (55-65 mm)	16,000 RPM
3" - 3-1/2" (75-90 mm)	12,000 RPM

**WARNING:** The router bits included in this set are only to be used in a table mounted router. Do not attempt to use these bits in any hand held operation.



Constructing an Arched Panel Door by Lonnie Bird

Begin by making a drawing of the door you would like to build. The drawing does not need to be elaborate, but it should show the overall size as well as the size of the frame members. As I outline the steps of construction, I'll refer to the door in (Fig. 1).

Next, cut the stiles and rails to size. To find the length of the rails, subtract the stile width and add 1/4" for the tenon. For example:

$$6-3/4" - (1-1/4" \times 2) + (1/4" \times 2) = 4-3/4"$$

After milling the frame members, the next step is to cut the cope on the ends of the rails. First, align the router table fence tangent with the bearing on the bit. This is easy to do with a straight edge. Then set the fence opening as small as possible, this prevents small stock from dropping into the fence opening and being spoiled.

Now you're ready for the cut. Clamp the workpiece to a wide backup board behind the workpiece to control the cut and prevent tearout on the leading edge.

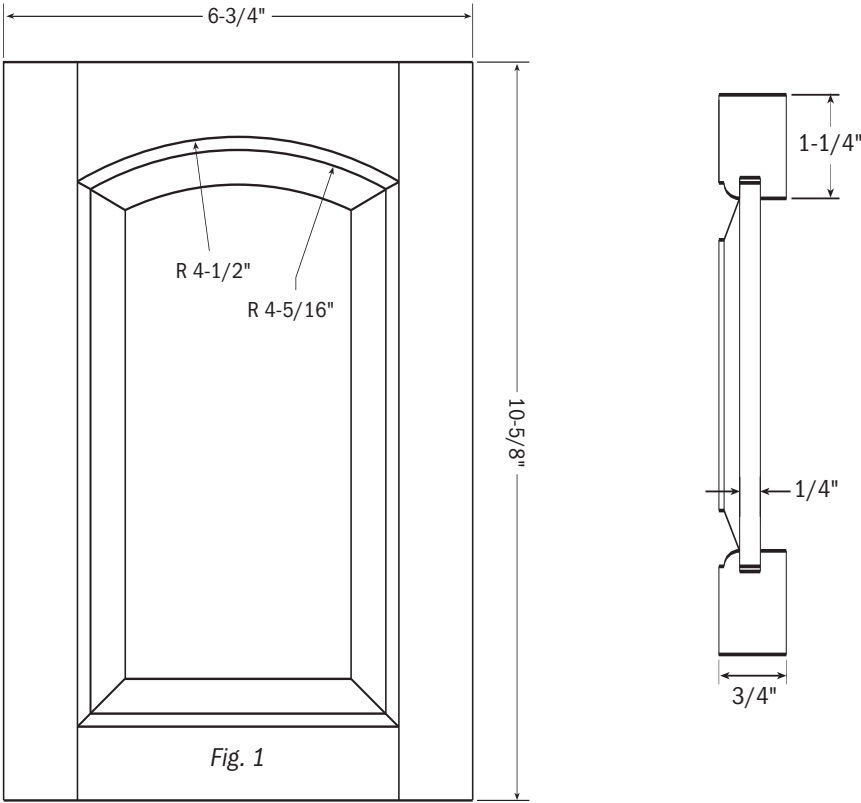


Fig. 1