⚠ *For better safety, use this bit only on a router table — **not free hand**.*

This bit is adjustable for use on material between 0.79″ and 1″ (20 mm and 25 mm) thick.

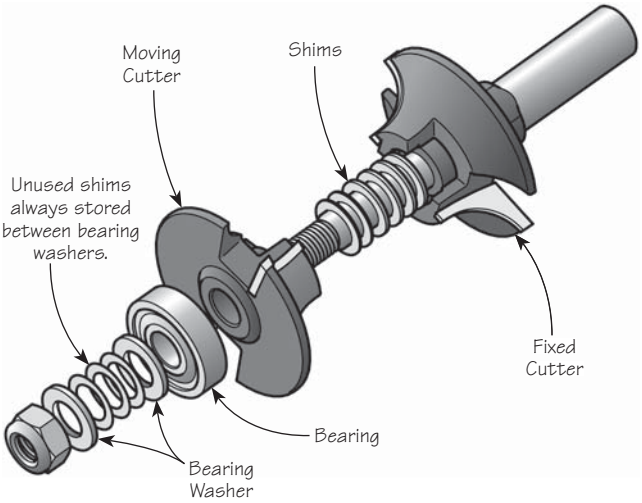

Figure 1: Bit components.

This bit allows you to rout a fully radiused edge to custom-made handles for woodworking tools (e.g., saw handles and plane totes). The bit is equipped with a bearing that rides along a template to shape the handle.

Setting the Cutters

The two independent cutters, a fixed cutter and an adjustable cutter, interlock with each other so that they cannot rotate relative to each other. The distance between them is set using a shim stack. Five shims are 0.039″ (1 mm) thick, two are 0.020″ (0.5 mm), four are 0.004″ (0.1 mm), and two are 0.002″ (0.05 mm) thick. These shims allow adjustments in 0.002″ (0.05 mm) increments between maximum and minimum settings. Unused shims should **always** be placed between the bearing washers (see **Figure 2**). For minimum setting, remove all the shims and place them between the bearing washers. This setting will fit a blank 0.79″ (20 mm) thick. For the maximum setting, place all the shims between the two cutters. At this setting, the bit will contour a 1.02″ (26 mm) thick blank. Intermediate settings can be set using different combinations of shims. Make sure that the cutters overlap and that the nut is securely tightened before using the bit.

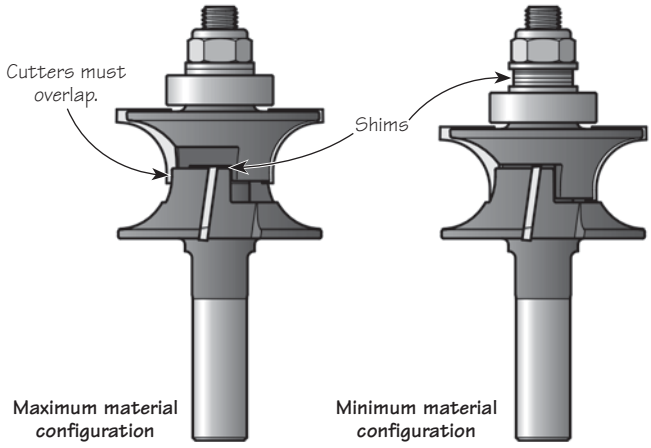

Figure 2: Bit configurations and shim placement.

⚠ ***Never** use this bit without all components installed and secured.*

Preparing the Template

Since the bearing is the minor diameter of the bit (0.94″ or 24 mm), the template needs to be the outside shape of the handle. The template should be relatively thick (1/4″ minimum). You will want the template to extend beyond the top and bottom of the handle profiles being cut in order to give sufficient lead-in for the bit, as well as to give something to hold on to while shaping the part. The template must not have any inside radius less than 17/32″ (13 mm) to ensure the bearing can pass smoothly around the template.

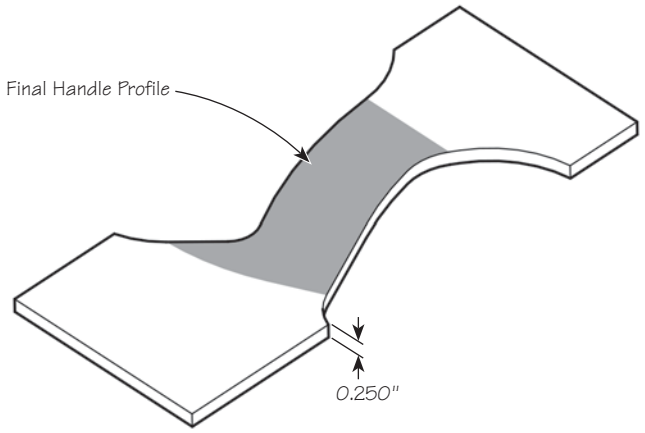

Figure 3: Template.

Preparing the Blank

Because of the size of cut to be taken, it is highly recommended to use an oversized blank with lots of material at the unshaped sections (top and bottom) of the handle to afford a secure grip while shaping the handle. Trace your template shape onto the blank. Add 1/16″ offset to the areas to be contoured, and then carefully cut along that line.

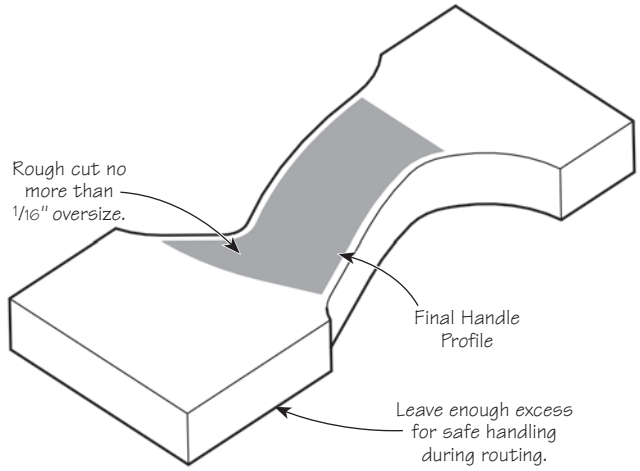

Figure 4: Preparing the blank.

Mounting the Blank to the Template

To ensure the cutter wings don't come in contact with the template, it is advisable to raise the template from the blank by about 1/8″. This will also preserve your template for future use and reduce the amount of material the bit has to remove. Place spacers between the blank and the template in areas where the cutter will not remove material. The spacers can be attached with heavy-duty double-sided tape, or with screws placed within the scrap areas.

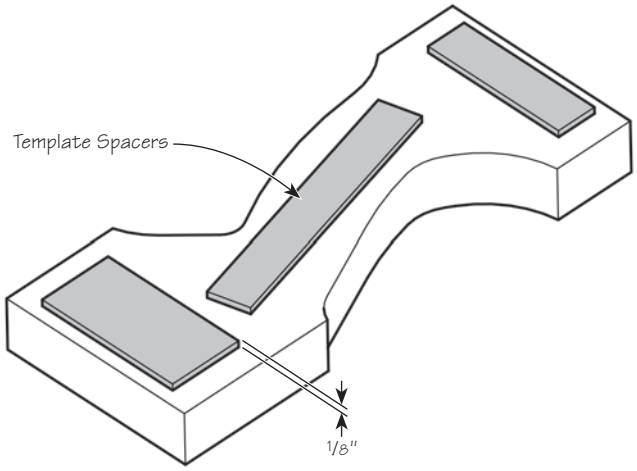

Figure 5: Adding Spacers.

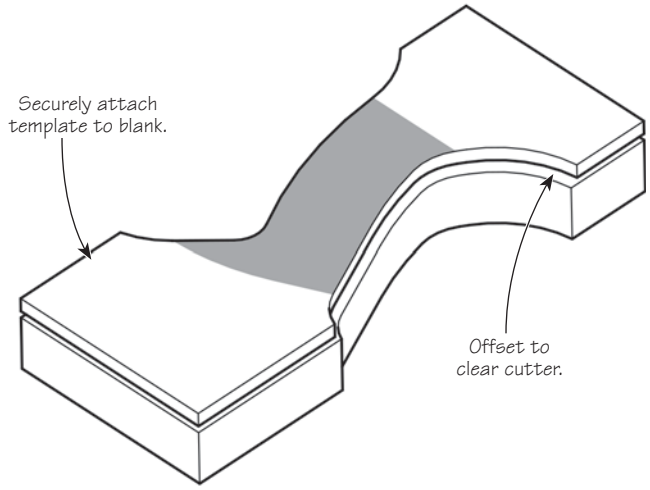

Figure 6: Template mounted to blank.

Using the Bit

Always run around the template in a direction such that the cutting action of the bit holds the bearing in contact with the template. On a router table, this means running the workpiece in a clockwise direction.

⚠ *Proceed carefully; a typical handle can have complex curves with radically changing grain directions. Be particularly careful at tight radii, where the forces on the bit can change quickly.*

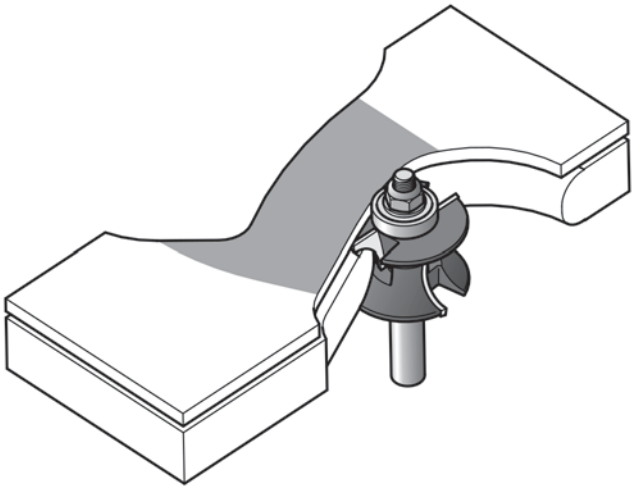

Figure 7: Routing the contour.

Remove the template and complete the final shaping of the handle with appropriate saws, rasps and sandpaper.

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