

Inlay String Tool System

The components of the Veritas® Inlay String Tool System can be assembled in a variety of ways to produce a range of tools for embellishing woodworking projects with inlay strings. The individual components are shown in **Table 1**.

Table 1: Individual Components of the Inlay String Tool System

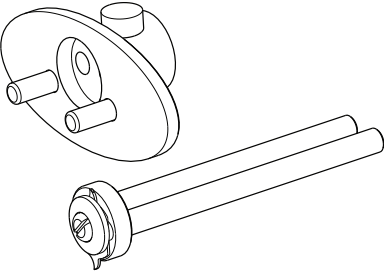
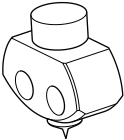
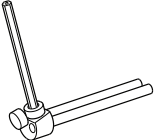
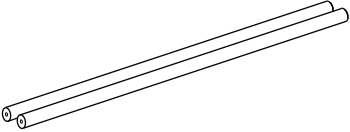


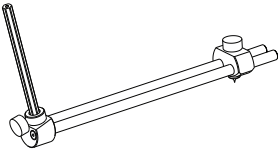
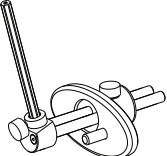
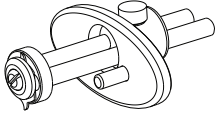
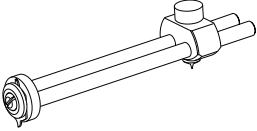
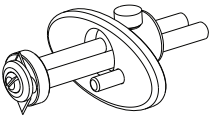
	<p>Inlay Groove Cutter & Slicing Tool 05K11.01 Straight Fence with Pair of Guide Pins Used to run a line or a narrow and shallow groove parallel to a straight edge. Accepts a user-made wooden sub-fence for use when cutting grooves offset from a curved edge.</p> <p>Cutting Head Carries the V-notched hook blade for cutting narrow and shallow grooves or the slicing blade for slicing strings off veneer.</p>
	<p>Compass Center 05K11.02 Used as a center for compass applications or cutting circular grooves.</p>
	<p>Pencil Holder 05K11.03 Carries a pencil for laying out the inlay string pattern.</p>
	<p>Pair of 10" Rods 05K11.04 Used for laying out or cutting large-radius arcs.</p>
	<p>Inlay Groove Blade 05K11.11, 05K11.12 & 05K11.13 Used for cutting narrow and shallow grooves. When pushed, the sides of the V-notch slice through the wood fibers, preventing tear-out. When pulled, the hook cuts out a thin shaving to clear the groove. Available in three thicknesses: 0.025", 0.032" and 0.040".</p>
	<p>Slicing Blade 05K11.10 Used for slicing strings off veneer.</p>

Table 2 illustrates a few of the tool combinations useful for inlay string.

Table 2: Examples of Useful Tool Combinations

 A large layout compass consisting of two long rods joined at one end by a pivot and a pencil holder at the other end.	<p>Large Layout Compass Used to draw or lay out large arcs or circles. <i>Assembled from:</i></p> <ul style="list-style-type: none">• Compass center• Pencil holder (with short rods removed)• Pair of 10" rods
 A marking gauge with a straight fence and a pencil holder attached to a rod.	<p>Marking Gauge Used as a marking gauge to lay out the straight groove pattern. <i>Assembled from:</i></p> <ul style="list-style-type: none">• Straight fence• Pencil holder with short rods
 A tool with a cutting head and a straight fence, used for cutting grooves.	<p>Inlay Groove Cutter and Slicing Tool Used for cutting straight grooves parallel to the edge of a workpiece. <i>Assembled from:</i></p> <ul style="list-style-type: none">• Straight fence• Cutting head with short rods• Inlay groove blade
 A small-radius groove cutter with a cutting head and a compass center.	<p>Small-Radius Groove Cutter Used for cutting small arcs and circles. <i>Assembled from:</i></p> <ul style="list-style-type: none">• Compass center• Cutting head with short rods• Inlay groove blade
 A veneer slicer with a cutting head and a straight fence, used for slicing veneer.	<p>Veneer Slicer Used for slicing strings off sheets of veneer. <i>Assembled from:</i></p> <ul style="list-style-type: none">• Straight fence• Cutting head with short rods• Slicing blade

Layout


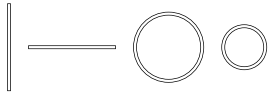
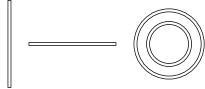
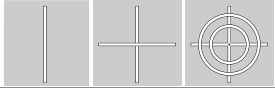
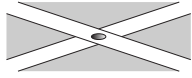
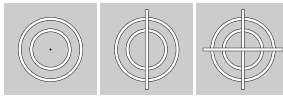
The first step when applying inlay string to a workpiece is selecting a design. You can be as creative as you wish, but consulting the many books and videos on inlay string will not only illustrate historical styles and conventions, but will also demonstrate the basic principles, as inlay string design is beyond the scope of these instructions.

When you have selected your design, it is strongly recommended that you test your design using the layout tools described above for two main reasons.

1. Since the layout tools are built on the same platform as the cutting tools, the practice ensures that the cutting tools can, in fact, do what you want. Let's say, for example, that your design includes a $3/4$ " circle. While this can be drawn with a regular compass, neither the layout compass nor the groove cutter can make circles smaller than $1 1/8$ " in diameter.
2. Practicing the layout provides the opportunity to work out the sequence. This is the key to stringing. Unlike typical woodworking practice where each step is done to completion before the next is started (e.g., all the mortises are cut first, then all the tenons are cut to match), the process of applying inlay string is a cycle of cutting grooves, inlaying string, scraping smooth, and repeating. This process prevents the tear-out that occurs when one groove intersects another. Also, practicing the sequence allows you make certain that the pin hole that results from using the compass is cut away by subsequent steps.

Table 3 illustrates how to work out an inlay string sequence using a crosshair design.

Table 3: Working Out an Inlay String Sequence

<p>Let us say, for example, that the crosshair design shown is to receive inlay string. (The width of each string is exaggerated for clarity.)</p>	
<p>An inspection of this design shows that there are four separate strings required: two straight lines and two circles.</p>	
<p>Notice, also, that the two circles do not touch or cross each other, and that the two straight lines cross both circles and each other. This design can, therefore, be cut in three steps; each line by itself and the circles as a pair.</p>	
<p>One approach is to draw the vertical line followed by the horizontal line, then finish with the two circles.</p>	
<p>However, by finishing with the two circles, the compass point poked the horizontal string and left a pin hole.</p>	
<p>Since this is a test run, you have the opportunity to change the sequence. While starting with the circles initially leaves a pin hole in the center of the design, it is subsequently removed when the straight lines are cut.</p>	

Since the second sequence produced the desired results, you would first configure the tool as a small-radius groove cutter, inlay the string into the circles, and then reconfigure the tool as a straight-groove cutter and inlay the string into the straight lines.

Cutting Narrow and Shallow Grooves

Configure the groove-cutting tools as required for your design. **Figure 1** illustrates how to hold the straight-groove cutter and radius cutter, but it is biased for a right-handed user. If you are left-handed, the cutter should be flipped such that the hook faces the opposite direction.

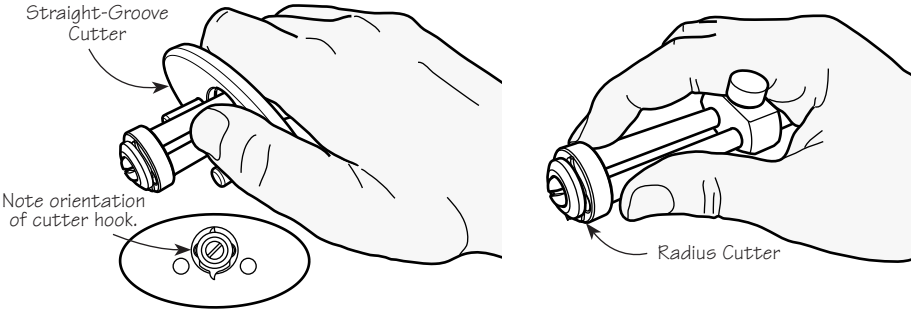


Figure 1: Holding the cutting tools.

Regardless of which cutter is being used, cutting a groove is a two-step process; you will need to first score the wood, then cut it to prevent tear-out. To achieve this, push or rotate the tool **away** from you so that the blade scores the fibers, then pull or rotate the tool **toward** you to make the cut, as shown in **Figure 2**.

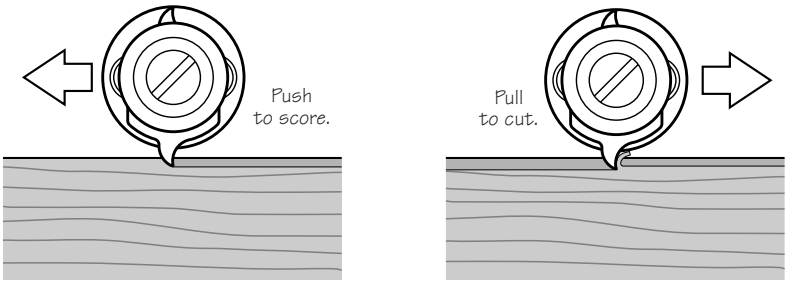
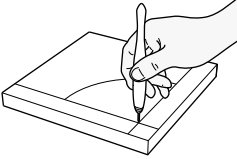
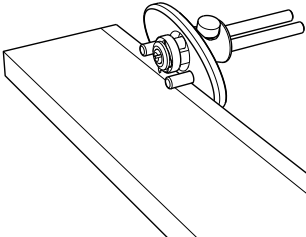
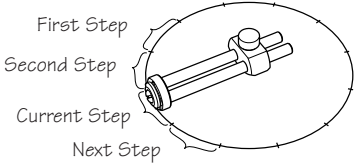
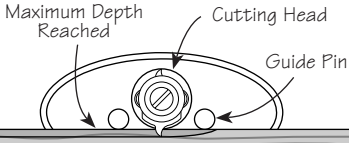
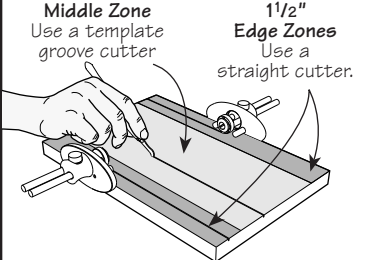
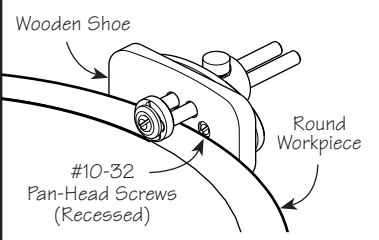


Figure 2: Using the cutting tools.

Table 4 illustrates some tips to keep in mind when using the inlay string tools.

Table 4: Tips for Using the Inlay String Tools

<p>Mark the Centers of Arcs</p> <p>To maintain accuracy when stringing arcs, the center of those arcs needs to be precisely located. Before using the radius cutter, be sure to mark the center with the inlay pin awl.</p>	
<p>Use the Guide Pins</p> <p>Once a groove has been started, the cutters tend to follow it. To get to this point, the first few cuts are key, but it can be tricky to start a cut while keeping the fence against the workpiece. The guide pins have been provided to make this easier. Position the tool against the workpiece such that the fence contacts the side and a guide pin rests atop the surface. Then rotate the tool until the blade touches.</p>	
<p>Work in Short Increments</p> <p>When cutting circles and arcs, it is not practical to try to take complete strokes. Instead, start at one end and work a 20° to 30° portion of the arc to full depth, and then rotate the workpiece before moving on to the next portion.</p>	
<p>Limit the Depth of Cut</p> <p>These tools have been designed to limit the depth of cut. Once the cutting head is riding on the workpiece, the inlay groove blade will no longer remove any shaving.</p>	
<p>Limit the Projection of the Groove Cutter</p> <p>When creating your stringing design, bear in mind that the groove cutter is limited to about a 1 1/2" offset from the edge of a workpiece. As the offset increases, chatter becomes a problem.</p> <p>For cutting grooves in the middle of a workpiece, use a Veritas® Template Groove Cutter.</p>	
<p>Use a Wooden Shoe</p> <p>If your design calls for a string offset from the edge of a curved workpiece (such as a round table), you can configure the groove cutter to follow the required curve by attaching a wooden shoe with a slightly smaller radius to the brass face. Remove the guide pins and secure the shoe with two #10-32 screws (not included).</p>	

Slicing Veneer

Configure the veneer slicer as shown in **Table 2**. You can make a simple cutting jig by gluing a self-healing cutting mat onto a wooden substrate, as shown in **Figures 3** and **4**. Trim together to form a square edge.

To use the low-volume jig shown in **Figure 3**, visually align the veneer to the edge of the mat and draw the veneer slicer along the edge. Strings do not need to be of uniform width across their length. One edge will be buried in the workpiece and the other scraped off.

If you will be slicing a lot of inlay string, you can add an adjustable fence to the jig to make quick work of positioning the veneer for consistent slices. The fence height is adjustable to allow for different thicknesses of veneer.

To slice a string, position the veneer in the required location on the jig. Lay a guide rod atop the veneer and press the fence against the side of the jig. Rotate the tool down until the blade contacts the cutting mat. Draw the tool across the veneer, making certain that the guide rods keep the veneer in place.

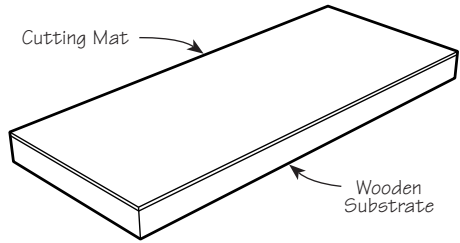


Figure 3: Low-volume string slicing jig.

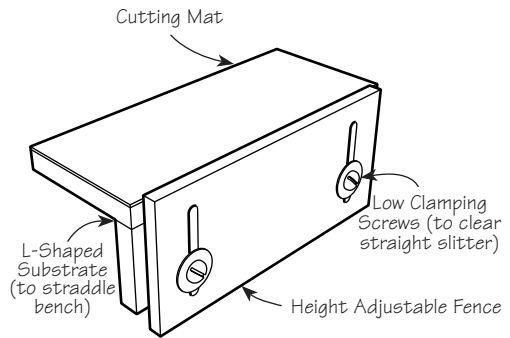


Figure 4: High-volume string slicing jig.

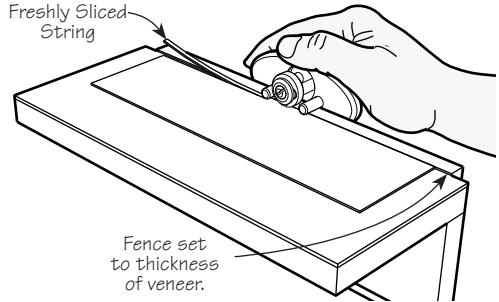


Figure 5: Using the veneer slicer.

Sharpening

The inlay groove hook blade can be sharpened in one of two ways. If you have a 60° needle file and a magnifying loupe, you can sharpen the V-notch by taking a single stroke. Alternatively, a small-diameter dowel with some fine-grit sandpaper can be used to remove a small amount of material from the front face of the blade. If you wish, both techniques can be used.

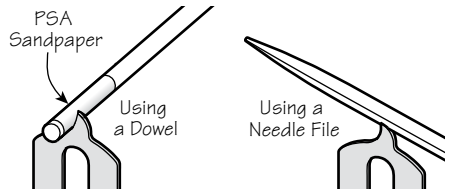


Figure 6: Techniques for sharpening a hook on inlay groove blade.

To extend the usable life of the slicing blade, it has four bevelled edges. Eventually, it will need to be sharpened.

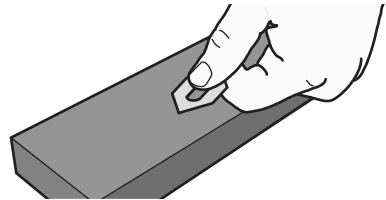


Figure 7: Sharpening the slicing blade.

Remove the blade, and by hand, draw each bevel across an 800x or 1000x stone. To preserve the symmetry of the blade and ensure uniform wear, use the same number of strokes for each bevel. Five is usually enough.

After all four bevels have been sharpened, slide the back of the blade across the stone just once to remove any burrs.

The slicing blade has been ground to a uniform thickness; it should not be lapped flat. Not only will lapping change the blade thickness, making it more prone to bending, but it will also wear away the bevels at different rates.

Accessories

- 05K11.01** Inlay Groove Cutter and Slicing Tool
- 05K11.02** Compass Center
- 05K11.03** Pencil Holder
- 05K11.04** Pair of 10" Rods
- 05K11.05** Cutter Head
- 05K11.11** 0.025" Inlay Groove Blade
- 05K11.12** 0.032" Inlay Groove Blade
- 05K11.13** 0.040" Inlay Groove Blade
- 05K11.10** Slicing Blade
- 05K12.01** Inlay Pin Awl
- 05K12.21** 0.025" Inlay Chisel
- 05K12.22** 0.032" Inlay Chisel
- 05K12.23** 0.040" Inlay Chisel
- 05K12.11** 0.025" Template Groove Cutter
- 05K12.12** 0.032" Template Groove Cutter
- 05K12.13** 0.040" Template Groove Cutter
- 05K12.31** 0.025" Groove Cutter/Chisel Set
- 05K12.32** 0.032" Groove Cutter/Chisel Set
- 05K12.33** 0.040" Groove Cutter/Chisel Set