

Katherine Kowalski

“Fine, *Refined* Turnery”

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Goblet with a Twist

Please see my web site www.KatherineKowalski.com for additional handouts, a supplier list, and more information.

Wood Selection

Wood selection is fairly critical to make a successful and beautiful piece. Choose a straight-grained, hard, dense wood that will hold detail and be strong enough to take a twist. Use bone-dry material; kiln dried is best, unless you are certain of the moisture content of a piece. Recommended woods: exotic hardwoods like Cocobolo, African Blackwood, (and other true rosewoods/*Dalbergia* genus), Bocote, Pink Ivory, Olivewood, etc. Hard Maple and Cherry work as well, though their detail-holding ability is slightly inferior. Osage Orange is a prime choice. Avoid softwoods like Pine or Spruce, and woods with open grain, like Oak and Ash. **DO NOT USE BURL** – the stem will not be strong enough to support the piece.

If making a goblet from a branch, insure that the piece is dry. When mounting to the lathe, *do not put the pith directly on center*. The pith almost always contains small cracks, and they may affect the structural integrity of the piece, i.e. cause it to “blow up.” Slightly off-center, the cracks may show up in the outside, but the piece will usually hold together.

The Parts

Bowl – The top part of the goblet is essentially an end-grain bowl. Two easiest ways to cut it: *carefully* use a push cut to dive right into the end grain, (see demo for a **safe** way to do this). The second way is to make a sheer cutting action *with* the grain, moving the tool from the bottom toward the top.

Stem – Basically what we would come to think of as a thin spindle. Because some of this material will be carved away, it needs to be thin enough to complement the shape of the piece, yet sturdy enough to hold a twist. This stem is where wood selection is most important, as it directly controls the final diameter.

Base – Simply a pedestal on which the stem rests. In my aesthetic vision, I prefer that the shape relates to the bowl of the goblet. Example: if I turn an ogee-shaped bowl, I want the base to have a similar ogee curve.

Turning

We are using the natural strengths of the wood to make a successful piece – wood is strongest *with* the grain. By turning this piece in a spindle orientation, (wood grain is parallel to the lathe bed), the stem will be strong enough to support the bowl, even if very thin.

Begin by turning a tenon on the Base end of the wood block and mounting in a chuck. With a standard set of jaws, a piece of about 12” maximum length may be turned. Using taller jaws, the length of the goblet can be increased. If this is your first piece, try a length of about 6” to start.

First thing to do is decide and cut the shape of the bowl. **Do not take the base of the bowl down to final stem diameter** – leave a little “meat” to support the hollowing process. Start to hollow it out. If using the push cut method, a bowl gouge is recommended. Using the sheer-cut method, one must use a spindle or detail gouge, *never* a bowl (winged) gouge. I recommend Stuart Mortimer’s set of end-grain

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hollowing gouges – they have shorter flutes which allows the tool to go over the rest further than standard, producing much less vibration. Use a negative-rake scraper, burr down, to refine the shape.

Next, turn the stem to the desired diameter. Make sure to look at the workpiece at a “normal” angle – i.e. tilt your head to the side to see what the actual piece will look like. (Because of the way our eyes are constructed, humans see things differently in a horizontal vs. vertical orientation.) You can only accurately check the design/proportions if you are looking at the piece “right side up.” Adding decorative fillets and/or beads to the stem will make the design look more complete.

Now turn the base. Proportionally, the base looks better if it is either slightly larger or slightly smaller than the diameter of the bowl. If both pieces are exactly the same size, the piece will lose “excitement” value. Make a small parting-tool cut to define the bottom of the base. **Do not part off at this time.**

Cutting the Twist

Mark out the twist as per your desire – a single, double, or three-start twist would be most appropriate for this diameter of stem. The stem is cut by hand, **NEVER while the lathe is spinning.**

Various tools can be used to cut the twist, depending on the twist depth and width. To cut the initial twist, use a rotary tool with an appropriate-sized bit – try to find a relatively cylindrically-shaped one, either carbide, or diamond, etc. Chain saw files, diamond files, micro files and Micro-planes are excellent hand tools to use to refine the shape. To keep things even, use the same number of strokes at each rotation of the piece.

Sanding

Sand with “special tools,” made from fabric-backed sandpaper that tears well and can be twisted into shape. Recommended brands: Vitex, (made in Europe, cost-prohibitive to buy, but holds the twist the best). “Color Grit Abrasives” are sold by various turning supply companies, and have the added benefit of having easy identification of the grit! After twisting, secure the end with duct tape or similar and begin sanding. Go through each grit, refining the twist.

Finishing

My favorite finish for a goblet is a lacquer/wax finish. Get a paste wax, such as Myland’s Wax, and apply to a paper towel. Using a good-quality lacquer, (Krylon, or similar), spray each finished section individually with lacquer, spreading/burnishing with the wax as the lathe is spinning. This will partially dry the lacquer. The stem should be sprayed with lacquer, then rubbed with the paper towel. To spread evenly, spin the lathe at **very slow speed** as you move the towel down the twist. Let dry.

Other Options

To save on wood, the parts may be made separately. This will allow the base/bowl to be made out of burl, for example, and to resaw the stem wood to make four (or more) stems from the same block. Always use proper joinery techniques; a mortise and tenon join is indicated here. Use water-proof glue, (Titebond III), if the goblet is to be used.

If using a patterned wood, like Zebrawood, it is usually best to make the entire goblet from the same block of wood so that the grain lines match. (The same can also be said about heart/sap-wood contrasts on other timber, like African Blackwood or Olivewood.)