

Thin Stem Natural Edge Goblet

Rudolph Lopez
rudolphlopez.com



- 1** Evaluate limb; Pith must be off-center to the same side of the limb for the entire length of the limb. Pith cannot be in the center or cross through center as this will cause the stem to break. Decide which end you would like as the top of the goblet. This limb was similar in shape at both ends, but I will generally choose the more unusual shaped end for the top.

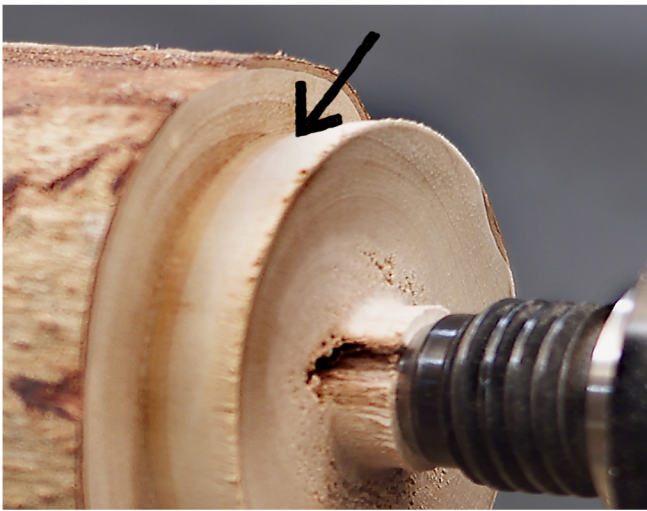


- 2** Place limb between centers with the end you decided on as the top at the headstock. Center the limb with the drive-center and live-center more or less on the center of the limb, this should position the pith out of the centerline of the goblet stem. Before turning the lathe on **sharpen your gouge**, then set the pulleys or the speed control to a slow speed before starting the lathe.



- 3** With the lathe set to a safe speed to control vibration of the irregular shaped limb begin removing a bit of bulk. I use a 5/8" or 3/8" - fingernail grind bowl gouge. Remember to leave about 3/4" of natural edge bark area at both ends of the limb, (photos at right). Begin with light bevel supported cuts downhill from right to left at the base end (tailstock) and downhill from left to right at the rim end (headstock). Continue to round out the limb to help balance it so the speed can be increased but leave the limb thick for support. Cut a tenon on the base end (tailstock). Note off center pith location in middle photo at right.

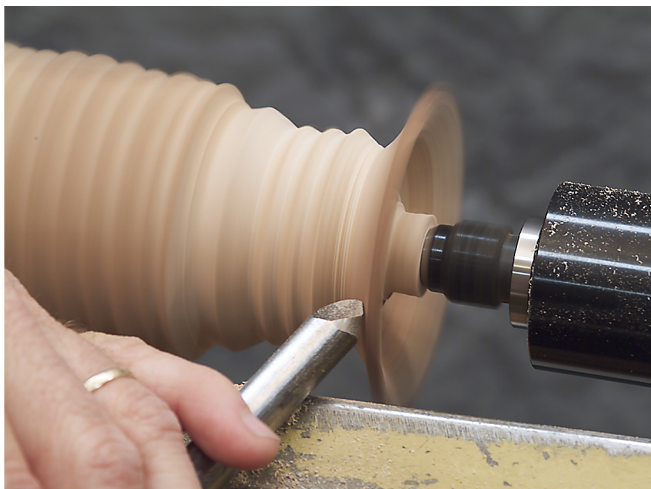




4 When making a tenon it is critical that the tenon is precisely square for straight jaw chucks or with the correct taper for Dovetail jaw chucks and that the corner is very clean and not rounded (arrow above). The length of the tenon must not be so long as to contact the bottom of the chuck jaws but should allow the face of the jaws to contact the bottom face of the limb. This is critical for the strongest hold and to help eliminate as much vibration as possible. **Sharpen your gouge.**



5 The limb has been placed in the chuck and the tailstock brought up for support. With a freshly sharpened bowl gouge I have started to establish the rim and the interior of the goblet by cutting from the bark edge toward the center. Leaving 3/4" of rim allows you change the shape of the rim and even get a catch and tear the rim off and still have enough wood to fix it. As the hollowing continues it is evident that the pith is a total void, this should not be a problem as long as the void remains out of the stem. **Sharpen your gouge.**



6 You can now begin to shape the outside of the goblet following the inside shape. With bevel supported cuts downhill from right to left following the inside shape continue to remove the bulk sneaking up on the final rim thickness. Go slowly as you near final thickness when making the curve under the rim, it easy to not curve soon enough and go too thin or cut the rim off all together. Trust me I speak from experience!



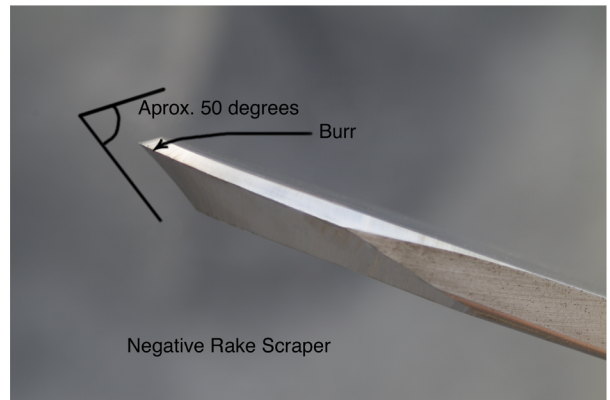
7 I will return to the inside and continue to shape the interior as much as possible with the tailstock in place. Keeping the tailstock in place reduces the vibration which helps give a better cut especially on longer goblets. For this I will use a 3/8" fingernail grind bowl gouge ground at about 40 degrees, this gives me a bit more clearance working around the livecenter.



8 I prefer to drill the goblet using a standard 1" metal cutting bit; this removes a lot of material quickly along with the hard to remove center portion. A forstner bit can be used but this leaves you with a flat bottomed hole which I don't like and find harder to round into the bottom of the goblet. The depth of the drilled hole depends on the design and shape of the goblet. Once the hole is drilled transfer that depth to the outside for a reference for the outside bottom of the goblet.



9 The interior of the goblet can be hollowed in several different ways. The generally accepted method for hollowing end-grain is back cutting from the center out toward the rim with either a spindle or bowl gouge. Here I am using a 5/8" fingernail grind bowl gouge. This cut is not a bevel supported cut but more of a scraping cut with the gouge flute rolled over toward the left side of the goblet interior. A hook tool is a very efficient type tool to use for end grain hollowing. My favorite is the Rolly Munro Hollower™, which has a cover over the cutter that can be adjusted for a very controlled cut.



10 I often use a Negative Rake Scraper to clean up tool marks and smooth out the bottom if necessary. This type of scraper is ground with a downward sloping angle on the top of the scraper. After grinding the bottom bevel the burr that is left on the top edge does the cutting of the wood. The burr does not last long (only about 30-60 seconds), but does a fine non aggressive job at smoothing out tool marks. The Negative Rake Scraper is not a good wood removal tool but more of a finishing tool, think of it as 220 grit sand paper.... only faster. Additional information about Negative Rake Scrapers by Stuart Batty can be found in the SPRING 2006 issue of the AAW Journal, AMERICAM WOODTURNER.



11 Now is a good time to.. **sharpen your gouge** and sand the interior of the goblet while there is still plenty of wood left on the outside for support.

12 It is a good idea to support the goblet in some way when you continue shaping the outside and thinning the stem. Here I am using a styrofoam ball available in different sizes at most craft stores. This goblet was very thin with several cracks around the rim so I chose a much smaller ball than shown above that would fit all the way inside the goblet. This put the pressure of the live center into the bottom of the goblet. The ball is not visible in the photos at left and below.



13 Once the goblet is supported continue removing wood and shaping the goblet exterior. This is done by making bevel supported downhill cuts from left to right to clear wood away (above) then cutting right to left with bevel supported cuts following the shape of the interior of the goblet. (right). You will need to remove the livecenter and foam ball from time to time to check the thickness and the location of the goblet bottom. As you start making the curve in at the goblet bottom take your time and check the curve often. It very easy to make the curve too sharp and cut through the goblet. Again I speak from experience. You can add some decorative detail where the goblet meets the stem or just flow the two together. Now is a good time to.... **sharpen your gouge** and sand the goblet exterior while there is good support.

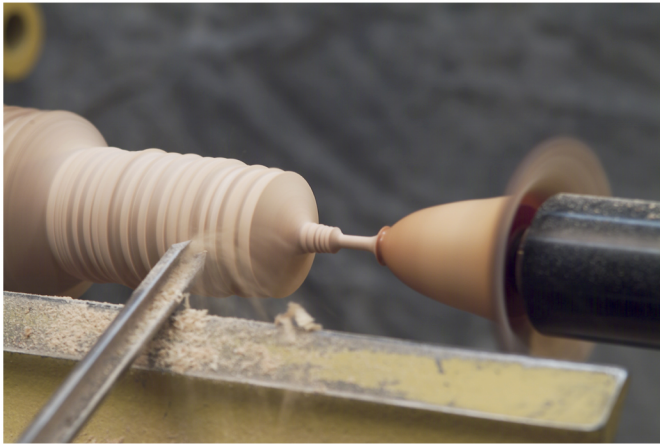




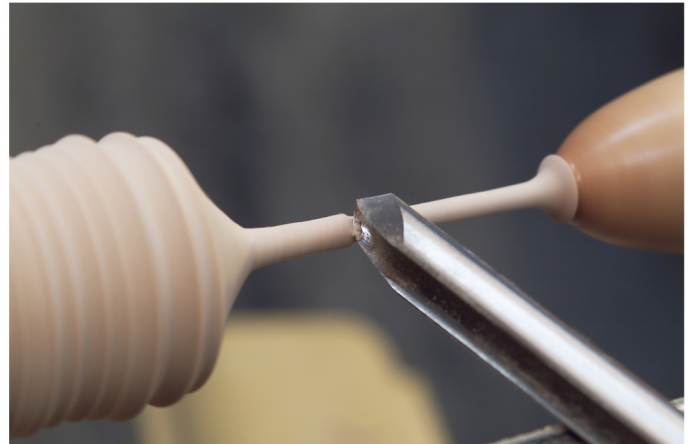
14 The soft pith area is visible in the waste wood portion and also in the bottom of the goblet. This will be turned away as we turn the stem but the area in the goblet will need to be dealt with.



15 In this photo you can also see the cracks in the side of the goblet, I have chosen to reinforce the goblet with CA glue. With the lathe turning at a very slow speed I allowed the glue to coat the entire goblet both inside and out. Leaving the lathe running I went to lunch to give the glue plenty of time to dry.



16 I continue with the same technique as before to remove wood and begin to thin the stem. Cutting downhill from left to right with bevel supported cuts (above and right) remove bulk leaving the stem a bit thick for support. Only work on about 3/4" to 1" of stem length at a time. Then with light bevel supported peeling cuts, being sure to keep the bevel of the gouge on top of the stem, cut from right to left toward headstock (below left and right). By only working on a short amount of stem close to the large portion of the limb you can go quite thin. Once you have thinned down a few inches of stem it not a good idea to go back up and try to go thinner, so go as thin as you want the first time. **Be sure to keep the bevel of the gouge on top of the stem and... sharpen your gouge.**





17 I usually sand the stem as I go especially on really thin stems. As the stem gets longer be careful not to squeeze or wrap the sandpaper to tight or you could possibly twist the stem off. There are a few things to think about as the stem gets longer and or thinner. Keep an eye on lathe speed; you may have turn the speed down to prevent the stem from whipping about and possibly breaking. Also if the lathe speed starts up to fast and the top of the goblet is a bit thicker and heavy and your support ball adds even more weight, the start-up torque could twist the stem apart. I like to start and stop the lathe with the speed control. Another thing to watch for is not to put too much pressure on the tailstock which can bend the stem and cause it to break. To prevent this you can tape the goblet top to the foam ball and the spinning part of the live center and pull on the stem instead of pushing on it.



18 As you near the bottom section where you left the bark, form the base and add any detail you like at the base of the stem. Sand the base.

19 Start making slow parting cuts at an angle into the bottom of the base being careful not to catch the top edge of the parting tool on the rim of the base as it starts to get thin.



20 Continue to part down removing enough wood to allow you good access to the underside of the base. As the waste wood gets to about 1/4" stop parting. Remove the goblet from the chuck and cut or carve the base apart from the waste wood. Or see # 21

21 Extra credit: you can remove the tail stock and support the spinning stem with your hand and then part the goblet completely off.



Have Fun, Rudolph