

Returning Dried Bowl Blanks Sam Turner - 6/20/09

When a bowl blank is turned wet, you have two choices. You can turn it, let it dry and re-turn it, or you can finish turn the bowl while still wet. Either way, when the wood dries, it moves. If you want a bowl to be distorted, turn it wet to its final shape and see what happens. If you want the bowl to be perfectly round (circularly symmetric), you will need to turn it oversize so that when dry and out of round, you'll have something to turn away as you make it round. I will now offer some considerations that will help to make this a more successful process.

Maintaining a ratio of 10:1 (bowl diameter to wall thickness) is a good rule of thumb when rough turning bowls. Try to keep the wall thickness consistent throughout. Wood should dry to equilibrium moisture content at a rate of about one inch per year. This indicates that patience is a requirement in this process. It's very important to slow the moisture loss while preventing fungal decay during the initial drying period. For the first month, keep the blank in a closed cardboard box or paper bag. Plastic bags will encourage mildew and should be avoided or watched closely. Coating the outside of the blank with end grain sealer or adding wet chips from the turning process will also help slow moisture loss. Gradually allow more exposure to air currents. Eventually the blank can be placed in a cool place until dry. The goal is to prevent cracking.

There are a couple of ways to determine the moisture content of a bowl blank. You can use a moisture meter to check the percentage of moisture. Another method is to weigh the blank and thus measure the moisture loss. Either way the blank is dry when its moisture content (and weight) stabilizes. When the blank has stabilized, it's ready to remount on your lathe and re-turn.

Some woods will retain their shape very well during drying. However, some will warp significantly. One of our most available and nicest local woods, Avocado, is very prone to warping so may require a thicker wall (e.g., 8:1 ratio) to successfully re-turn. Experience is a great teacher and every species and every piece is different. Don't expect to get it right every time. No one does!

Try to leave a center mark on the inside and outside of the blank after the rough turning process. Usually the tool marks remaining on the inside of the bowl blank will reveal the center point. On the outside (bottom of the bowl) retain the mark left by the live center. These marks will help in finding a starting point to remount the blank between centers if it becomes necessary to adjust the tenon used to mount the blank in a scroll chuck for re-turning.

When rough turning the blank, plan to leave the diameter of the tenon a little larger than normal because it shrinks. In this way you'll have enough material to true the tenon and still have enough to hold it in the scroll chuck. Know the

minimum diameter your scroll chuck will hold in compression, and then cut the rough tenon about 1/2" or so larger in diameter.

If the shoulder of the tenon won't fit flat on the face of the chuck, or the rim is low on one side, you will have to re-balance the blank. To do this, you can re-mount the blank between centers. I like to use a Steb Center to drive the blank. Mount the bowl with the rim toward the head stock. If the bowl is too deep to mount this way, the problem can be overcome by using a Morse Taper Extension between the spindle and the Steb Center. The Steb Center has a center point on a spring so that it doesn't leave a deep mark in the center of the blank. A two or four prong drive center can also be used, but that will require that a little more material be removed from the inside bottom of the bowl in final cleanup to get rid of the mark. So, make sure you have enough material thickness left so you don't go through the bottom of the bowl. Another option is to use a jam chuck to drive the blank. I like to use one of my vacuum chucks (without vacuum) as a jam chuck. It is made from a 4" section of ABS pipe with a piece of leather glued on the end. The drive end is mounted to a piece of turned Maple with a tenon to fit in a chuck. There are other ways to mount the blank. The tooling available and your ingenuity are your only limits.

To get the largest bowl from a piece of wood, it is often necessary to re-orient the blank. To help do this, use your tool rest as a guide. Hold the blank lightly between centers. Adjust the tool rest so that its end lines up with one of the two high points on the rim of the blank. Rotate the blank to the other high point (180 degrees opposite). If they don't line up, release the tail center and move the blank over a little and re-check the high points until they're equal. Then rotate the blank to one of the low points on the rim and repeat the procedure used for the high points. This may take some time, but it's worth it to save as much of the blank as possible. Once you're satisfied with the position of the bowl, tighten and lock the quill on the tailstock. Make sure the lathe is set at its slowest speed and turn it on. Standing to one side, out of the way for safety sake, observe the tenon on the bowl blank. If it's not running true, you'll have to true it up in order for the blank to run the same when reverse mounted on the tenon.

To true up the tenon and shoulder, run the lathe at a slow speed and use a small bowl gouge. Always cut into the side grain, not the end grain. In other words, make all your cuts toward the head stock. Cut lightly and take your time. To true up the shoulder use a skew chisel lying on its side to scrape the surface flat. Use a set of calipers to measure the final diameter of the tenon to ensure you don't make it too small for the chuck. If you take your time with the setup and re-turning the tenon and shoulder, you'll get the most out of the blank.

A problem that can arise when re-turning a dried bowl blank, especially when the blank is badly warped, is that when you have finished re-turning the outside of the bowl, the inside will be quite thin in some areas. This leads to vibration that makes it very difficult to cleanly cut the inside wall of the bowl. A bowl steady will

cure this problem. Oneway makes a steady rest for this purpose that is available from most woodturning catalogs. On the internet you can find the instructions for Oneway's Bowl Steady at www.oneway.ca/pdf/bowlsteady.pdf .

Turning wet wood is a neat experience and asymmetrical bowls are fun to make, but if you want to go to the trouble of drying and returning a blank you can get that perfectly symmetrical bowl as a finished product and have the fun of turning wet wood too.

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