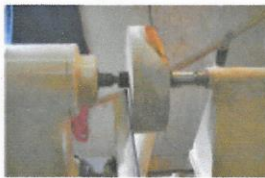


A Complete Guide to Bowl Making

by Brian Laing

Step 1 - Making a Tenon on the Bowl Blank ~ Rough Out

I use a drive center and the tailstock to mount the bowl blank. First, use the tool rest as a guide to position the blank so it turns in balance. Once the optimum balance has been reached adjust the RPM to the highest speed possible without vibration.



Roughing the Blank Using a Drive Center.

1) - Turn the face of the bowl flat with a 7/16" Bowl Gouge.

Decide which end of the blank will be the foot and mount the blank with the foot next to the tail stock. Lock the tail stock in firmly and apply a solid pressure against the drive center. This locks in the morse taper drive into the headstock.



The surface most likely will not be flat, position the tool rest and turn the blank by hand to be sure it clears the rest before turning on the lathe. Flatten the surface starting at the outside edge and finishing as close to the drive center as you can. This should take two or three cuts to get it flat.

2) - I generally don't bother to make the blank round I immediately start at the foot and begin to shape the bowl. I flatten the bottom of the blank to balance it and increase the RPM. Start at the foot and cut toward the rim. This will have some interrupted cuts so keep the tool rest as close as possible. Use the 7/16" gouge and keep the RPM up. Speed will make this operation less stressful on the interrupted cuts.



When there is a continuous surface I stop the lathe and have a look at the shape and look for edges, bark or other defects that should be removed at this time. Turning from the rim to the foot can be done at this time. Sometimes I find it easier to develop the shape of the outside cutting from the rim.

3) - Shaping the Tenon. Depending on the bowl size I decide on the big or small jaws. I like the base of the bowl to be about 1/3 of the diameter. Once decided, I

use a caliper to aid in sizing the dovetail diameter and mark it with a pencil line. I want the tenon to be about the thickness of the chuck and the flat to be bigger than the chucks OD, this saves damage on the tool later. I make the rough form with the 3/8" gouge and then cut the dovetail and flat with a 3/8" round skew.



Developing the tenon requires some thinking about the final shape of the bowl. Of course your preference must be considered. I like the finished foot to be about 1/3 of the rim diameter creating a solid base for the bowl to sit on. Remember that the finishing of the foot will reduce the diameter about a 1/2" from the dovetail size. The bowl is ready for the chuck.

Step 2 - Turning the Bowl in the Chuck

I use the Vicmark VM 140 chuck. It has several sets of jaws for big or small bowls plus the jumbo size for gripping the rim and finishing the foot.

1) - Mount the bowl in the chuck. Be sure the flat touches the chuck continuously. When tightening the chuck don't be shy, use a strong force to be sure the bowl won't move.

2) - Once the blank is mounted I flatten the face and take a light cut on the outside to true it to the chuck.

3) - If it is a green blank that has to dry before finishing and it is a respectable size I use my bowl saver to remove another bowl blank. A time saver is to cut a dovetail recess on the face to use for remounting the new blank for making a tenon on the blank.



Make a recess in the face of the blank before using the bowl saver. When the blank is out this recess is used for mounting to the chuck. Once mounted, a new tenon can be cut on the blank. The process is repeated for each blank. I will continue down to a 4" diameter blank.

4) - After removing the inside blank I turn the bowl to 10% of the diameter, in this case 1" thick. The blank will have sufficient strength to resist cracking and enough material to re-round after distortion during drying.

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The rough bowl is done ready for boiling. I normally boil the rough bowl for an hour. Material like Pecan and cedar Elm take a little more time to decrease loss during the drying cycle. Then store the blank in a paper bag for six to 12 months depending on size and type of wood.

Step 4 - Working on a dry Blank

There are many ways to complete a bowl, the following is the sequence I use and have found to be most efficient for my skill and equipment.

1) - I develop the final outside bowl shape first. I use the 7/16" and 3/8" bowl gouge to make the course and then the finish cuts. Once I am happy with the shape I refine the surface with the 7/16" gouge as a scraper. It is important to keep it sharp during this operation. Patience is required during this step. Done correctly it will save a bunch of sanding and ensure the surface is continuous. I have found that sanding with coarse grit can flatten the bowl shape and lose the fine contour we are trying to create. I try to get to the point where I can sand with 180 grit. Once you are satisfied with the shape apply sanding sealer and then sand to your normal finish. My technique is to sand to 220, apply the sanding sealer, then restart at 180 and work my way through to 600.



2) - The next decision is the type of decoration on the bowl rim.

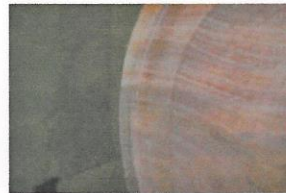
This must be done before the thickness of the blank is reduced. The blank will turn in a perfect circle while it is thick. To achieve a decorated rim that is crisp and uniform it must be shaped and sanded at this time. I like to use a variety of shapes on the rim such as con-

If there is art in bowl turning it happens at this stage. Turning the outside of the bowl to the final shape often takes a few tries to achieve the best contour. If you are in doubt take the bowl off the lathe and turn it upright and have a look. I suggest you remove the chuck and all rather than remove the bowl from the chuck. It is nearly impossible to get it back exactly the same once you remove it from the chuck.

cave, single bead, three bead, or concave with an undercut bead. Make a choice and turn it on the rim, sand it to the final grit you normally use. My technique is to sand to 220, apply sanding sealer, then restart at 180 and work my way through to 600.



The rim is the first thing that the eye sees when looking at the bowl. Taking care to make it consistent is very rewarding. I also think a decorated rim makes a statement about the skill of the turner. However, like most things once you understand the steps it is easy to do. If you have a catch or don't like the shape cut it off and start over most decoration only takes a 1/4" to 1/2" off the bowl height.



3) - Next is matching the inside to the outside.

I use the 7/16" gouge to form the inside. If the final thickness target is more than 3/8" I will form the entire inner shape and then sand, seal and sand. However, if the target thickness is less than 1/4" and the bowl is 8" or larger I will shape and rough sand it 1.5" at a time. This ensures a continuous inner shape. In either case I use the gouge to achieve the target thickness and then use a 3/4" x 1/4" scraper to refine the surface. The objective is to remove tool marks and tears and start sanding at 180.



This rim is concave from the OD to the ID with an undercut bead. I leave the bowl wall slightly thicker than the bead so I can sand the entire bowl wall with the power sander. Note I have reduced the wall for about an inch down from the rim to keep the bowl stiff. This is one of the tricks to make delicate and consistent shapes on the rims of big bowls.

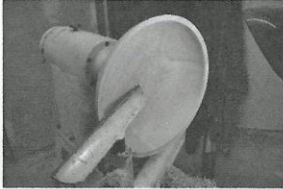
Reduce the thickness of the bowl in steps on large diameter bowls with wall thickness less than 1/4". Sand, seal and sand at each step. The challenge is blending each step seamlessly. In this process skilled use of a scraper makes easy work of the task.

I use a caliper to judge the thickness of the bowl and try to make it uniform. When it feels smooth and continuous I am satisfied. I take care to make the inner surface of the bowl a continuous curve. I have found the

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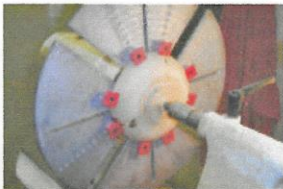
scraper the best tool for this task. Using course grit sand paper is hard work and does not achieve the shape I desire.



Step 4 - Completing the Foot of the Bowl

Like most bowl makers I waste time turning the foot of the bowl. I use the jumbo jaws on the Vicmark chuck. This makes the task easy and can be done without the use of the tail stock. However, if you do not have a set of jumbo jaws a disk of plywood can be used. The disk should be about an inch bigger in diameter than the bowl. Cut a recess in the disk about 1/8" deep. The trick is to make the recess exactly the same size as the bowl rim (you will also find out if your bowl is round). If you fuss with it and develop a 2 to 5 degree angle the bowl will "lock" on the recess. Once the recess is done use the tail stock to hold the bowl in place. Now you can work on the foot.

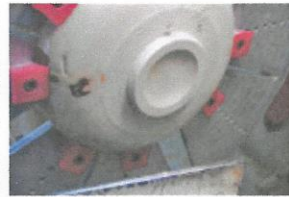
1) - Blending the outside to the foot can be a challenge and takes care. Generally, the bowl is not exactly round at the foot so take small cuts to blend the foot to the bowl. I use several shapes for the foot, i.e., a round bead, an ogee or an ogee with an overlap. Complete this step; sand, seal and sand.



It takes a little effort and time to make the wall thickness equal from rim to foot. I use comparison calipers to help see the thickness. I use a scraper to achieve the smooth internal surface. It can be time consuming but I have found it to be the best method to get a continuous curving surface

This is meant to show the completion of the foot on the bowl side. In this case there is a small skirt between the foot and the wall of the bowl. This is turned with the tail stock in place.

2 - Now for the nervous part! All good bowls should have a shaped base. I like to have the foot rim to be 1/4 to 1/2" wide with a taper to the OD. If the bowl does distort this technique prevents it from wobbling. I like to have a concave bottom from the foot rim to the center. If you are using the plywood plate technique the tail stock is in the way preventing completion of the task. At this point you can take it off the lathe and finish the rest by hand (but this is labor intensive) or use the following.



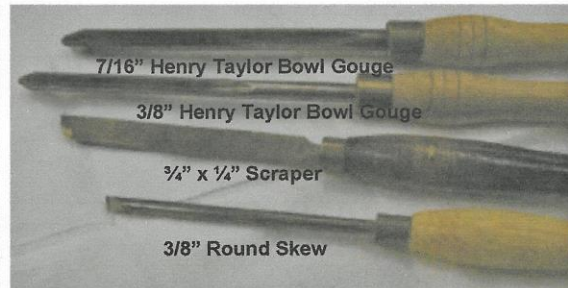
The foot has been turned to a concave surface. Why is it only wood turners pick up a bowl and turn it over to see if the bowl has been reversed chucked and the foot turned? I have to admit I take pleasure in the fine details and feel a great bowl is not done until all the surfaces are turned, sanded and finished.

3 - With the tailstock in place use 2" masking tape and secure the bowl in place.

The masking tale is very strong in tension and will hold the bowl firmly. I suggest you adjust the RPM to a conservative speed at this time. In order to prevent break-through you can use the starting thickness where the tailstock was a guide. Develop the concave shape leaving the center in place until the last operation. I use the 3/8" gouge and then scraper to finish the shape and then sand, seal and sand.

The Tools

This picture shows the tools I use most frequently for turning bowls. If I had to start again I would buy:



With these basic tools you can make any bowl. However, you never have enough tools! The Henry Taylor small tool set is very useful for the small details for the rim and foot.

Step 5 - Finish

I apply the finish off the lathe. I like the Liberon finishing oil. You can achieve a variety of finishes from matt to high gloss depending on the number of coats and treatment between applications.



Here is a sample of a completed bowl, finished with Liberon oil and buffed between four coats.