


Steps for turning a functional bowl from a log

The following is one of several dozen ways to successfully turn a functional bowl. While the process outlined here imposes some limits on the design, following it will result in repeatable successful pieces.

- Learn the safe operation of equipment.
Safety should always be your first concern. Be totally familiar with the operation of any equipment before you use it and only operate them with an alert mind. You need to know how to safely operate the lathe, bandsaw or chainsaw before you use them. Experience may be the best teacher but the final exam with a saw can be quite severe. When operating the lathe, wear a full-face shield. When sanding wear a dust mask. Get hands on instruction from an experienced turner.

- Prepare the blank
Using a chain saw, cut a log section at least 4" longer than the diameter of the bowl you plan to turn. Examine the growth rings on the end of the log and plan a bowl. Mark a cut line through the center growth ring so that the wood on one side of the line has a symmetric grain pattern from side to side. Logs don't always grow uniformly enough to get two good blanks, so be sure to get a good one. Using a chain saw rip the log section lengthwise along the line you marked. If you aren't going to turn within hours, coat the end grain of the blank to minimize moisture loss. Mark the circle (10" is best for the first few) for the bowl rim on the sawn face of the log section by centering it end to end and from side to side on the center growth ring. Remove the bark and mark the center of the bottom, centering it from end to end and side to side. Cut the blank round on a bandsaw with the rim face down (I use a hardboard circle as a guide held in place with an awl) or cut it into an octagon shape with a chain saw. For the chain saw, be sure the log section won't move as you cut it



- Mount the blank
 Drive a spur center into the center point on the rim side. Put a ball bearing center with a large cup in tailstock. While holding the blank, slide the taper of the spur center into the headstock. Hold the blank against the spur center with one hand and slide the tailstock up so that the center contacts the point you marked. Tighten the tailstock. If the blank is unbalanced one side will roll to the bottom. Loosen the tailstock and move the blank so that the tailstock center shifts toward the heavy side and repeat until the blank is balanced.

- Rough turn
Choose a lathe speed slow enough to avoid vibration while having sufficient torque. Use a bowl gouge to



round the blank into a very crude bowl shape by cutting from the tailstock toward the headstock. Every few cuts tighten the tailstock. Carry each cut out into air at the end to avoid making a groove that will trap the gouge.

➤ **Align the blank**

Once the blank is round adjust the tailstock to balance the grain pattern. Use the heartwood-sapwood transition as a reference. On the endgrain sides of the blank these will be closer to the tailstock and at 90 degrees from the endgrain they will be closer to the headstock. Put your finger on the tool rest and rotate both endgrain transitions past your finger. If they are uneven: note the “difference”, move the one closer to the headstock to the top, loosen the tailstock, support the blank and let gravity work slowly to move the reference point half the “distance” toward the tailstock. Check and repeat for refinement. Perform the same process for the two points 90 degrees off the end grain sides. The blank is now off center. Slow the lathe speed and turn the blank round on the new center. Check the grain balance and refine it if you wish by repeating the procedure again.

➤ **Turn the outside profile**

Using a bowl gouge, turn the waste block on the tail stock side (ark side of the blank). Make it ½ wider than the faceplate and ¼ longer than the length of the screws coming through the faceplate. Establish the foot by turning a small flat about ¼ wide next to the waste block. This will be the surface that rests on the table. From the headstock side use a scraping cut to establish the rim. Be sure you cut deeply enough to remove any checks. Using a bevel riding push connect the foot to the rim with a pleasing curve. This will complete the profile of the bowl. With the bowl gouge make light scraping cuts to true the face of the waste block and to make it slightly concave. You will have a supporting post in the center of the waste block to the tailstock center. Using the spindle gouge cut the supporting post to about ½ diameter and cut the face of the waste block concave. Mark rings on the face of the waste block with a pencil to help align the faceplate



➤ **Mount the faceplate**



Hold the bowl, unlock the tailstock and slide it back, remove the bowl from the spur center. With a flat chisel and mallet cut the supporting post off. Avoid splitting wood from the surface of the waste block by making small cuts all the way around first and then cutting the post off across the grain. Center the faceplate, drive one screw in halfway if the faceplate is centered drive another screw in halfway on the opposite side on the faceplate from the first screw. If the faceplate is off center remove the screw and try again after turning the faceplate a little bit to avoid using the same screw hole. Drive screws into the other holes in the faceplate and the drive the first two screws in the remainder of the way. The rim of the faceplate should have solid contact with the waste block. Remove the spur center. Screw the faceplate onto the lathe and tighten the tailstock against the bowl.



➤ **Turn to round**

The bowl will be slightly off center. Cut the waste block to round leaving the diameter ¼” larger than the faceplate. Using a bowl gouge make a bevel riding push cut from the foot to the rim. Follow the curve you made between centers. You may need to use a scraping cut close to the waste block. Remove the least wood to make bowl round and keep the shape. Look at the shape and refine the curve.



➤ **Turn out the inside**

Flatten blank where the bowl opening will be from the rim to the tailstock center. Use a bowl gouge and a scraping cut. Remove as much wood as you can with the tailstock in place. Remove the tailstock and turn out the inside. Make a wall thickness of 1 to 1¼ inches thick. Set the wall thickness and use calipers to ensure that it remains even or decreases slightly for about 2/3 the height. Use a stair-step cutting to establish the wall thickness form the rim toward the bottom. Go about an inch at a time getting each section even before going deeper into the bowl. Work an inch at a time. Once you’ve established the wall 2/3 of the way from the rim to bottom, turn to the bottom forming a pleasing curve. Be sure to continually check the depth. The wall thickness at the bottom should be a little thinner to compensate for waste block thickness.

- **Dry**
Place the bowl inside a paper grocery bag to dry. A bowl with an even wall thickness dried in a slow controlled environment usually will not crack. Check it daily for the first week and put it into a dry bag. If any mold forms wiping the bowl with Clorox will kill it. After 2 months remove from the bag and let it dry to 8-10% moisture content. This usually takes 4-6 months.
- **Mount on a jam chuck**
Turn a jam chuck into a small bowl shape that is slightly hollowed out. Round over the rim. Place your dry bowl over the jam chuck and bring up the tail stock to hold it very lightly. Adjust the position of the tailstock until the bowl is centered. This is a trial and error process. I like to have the rim balanced so that the two high spots and two low spots are both equidistant from the headstock respectively.
- **Turn the base and outside**
Use the bowl gouge to true the rim, the waste block and the foot of the bowl. Turn the outside of the bowl to round. Cut from the foot toward the rim. Follow the curve to keep the same shape. Do not remove much wood.
- **Mount the faceplate**
Remove the bowl from the lathe. Mark the center of the waste block. The pin mark from the tailstock center will be a true center. Screw the faceplate onto the waste block, aligning it on the center. Mount the bowl on the lathe.
- **True the bowl.**
If you centered the faceplate and the bowl is running true go to the next step. Turn the waste block close to the faceplate diameter. Turn the outside of the bowl to round, following the curve to keep the same shape.. Cut from the foot of the bowl to the rim using a bevel riding push cut. Often you cannot ride the bevel close to the foot because the tool handle would need to be inside the headstock so you use a scraping cut near the foot. Finish turn the outside and shear scrape it to a sandable surface.
- **Turn the rim**
Finish turn the rim from the outside in. Shear scrape it
- **Turnout the inside**
Set the wall thickness and use calipers to ensure that it remains even or decreases slightly for about 2/3 the height. Use a stair-step cutting to establish the wall thickness from the rim toward the bottom. Go about an inch at a time getting each section even before going deeper into the bowl. As you work down the inside don't cut near the rim again since this portion will be likely to vibrate. Work an inch at a time. Once you've established the wall 2/3 of the way from the rim to bottom, turn to the bottom forming a pleasing curve. Be sure to continually check the depth.
- **Scrape any ridges**
Use a round nose scraper to remove any ridges left by the gouge. Don't use the scraper on the side wall of the bowl where the endgrain is.
- **Sand**
When sanding keep the lathe speed relatively slow. A fast lathe speed causes the sandpaper to clog and the wood to heat up creating small checks in the surface (heat checks).
- **Mount with a jam chuck**
Be sure to use a pad between the bowl and chuck (thin foam, synthetic leather, or paper towel work well). Center the bowl on a jam chuck and bring up the tailstock. Centering is a trial and error process. Using the bowl gouge, turn off the waste block remove the screw holes. . Leave a post of wood about ½ inch thick supporting the bowl from the tailstock. Turn a slight concave surface from the rim to the center post. The post is not very strong because of the wood grain direction so avoid putting pressure on it since it may break. You can turn the post to a cone shape with a ¼ diameter against the bowl. Hold the bowl and remove it from the lathe by sliding the tailstock away. Use a carving gouge to cut the supporting post free.