

Carved Feet Made Simple



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Photo 1 Leave 3/4" for the feet to be carved

Would you like to add a little extra artistic flair to your woodturnings? Have you been thinking about ways to spice up your work? Want to add that WOW factor to your turnings? Do you want that “How did you do that” response from others? I have just the embellishment for you. This is an embellishment that looks complicated but is quite simple. As you will see this works for all types of turned vessels, bowls, vases, and platters. They can be solid wood, segmented, or even natural edge vessels. You will be limited only by your imagination. This article is a tremendous thought starter. Even though I call these hand carved, I use power tools, air powered grinders and sanders, and techniques that really simplify the process. You can be cranking out more artistic pieces in no time.

Note: There is a list of tools used at the end of this.

This demo will attempt to show the process for making a scalloped edge bowl or platter. The first thing to do is to determine what you want your bowl to look like. Determine your bowl design and turn the outside up to the foot area. We need to leave about 3/4" to 1" for the bottom for the feet to be carved out of, See **Photo 1**. Shape the bottom of the bowl so its curve will flow through the feet area to the center of the bottom. The center of the bottom needs to be higher off the table than the bottom of the feet for the bowl to rest on the feet. Turn the inside to the desired wall thickness. Sand the inside and out to 320 grit.



Photo 2 Reverse turn centering tool

As you can see I have the bowl mounted on a 6" faceplate. The bowl we are working on is 14" in diameter. The 6" faceplate gives me a guide to the diameter I want for the feet. I like the diameter of carved feet to be from 1/3 to 7/16 of the bowl diameter. It takes a bit more in diameter for carved feet than a round bottom for stability as there is a lot of wood missing between the feet.



Photo 3 Drill centering hole 3/8" deep

Shape the outside of the foot area to your design and sand to 320 grit. Its easier to sand a solid ring than 3 separate feet stuck out in the air. Remove the bowl from the lathe. I have a centering tool to help in centering the bowl for reverse turning the bottom, See **Photo 2**. Screw the tool into the faceplate, or chuck. There is a bushing in the tool for a size drill bit, which comes with the tool. Use the drill bit to drill a hole in the bottom of the bowl, approximately 3/8" deep,

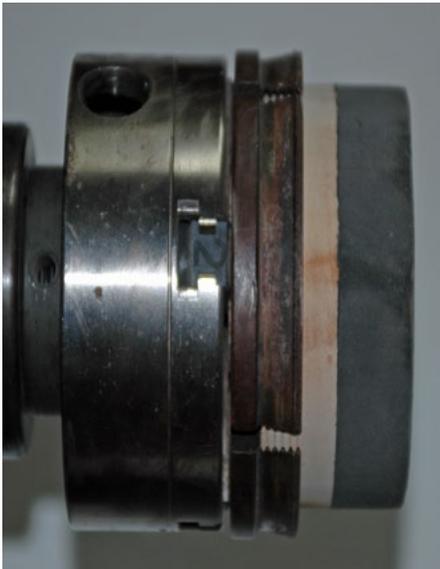


Photo 4 Use of rubber pad for reverse turning



Photo 5 Use of centering pin for reverse turning



Photo 6 Turning the inside of the foot ring

See **Photo 3**. Remove the tool from the faceplate and remove the faceplate from the bowl. The tool comes with a pin sized to the drill bit that replaces the point in the live center. I use a wood disk with closed cell sponge rubber glued on for a jam block to reverse turn the bottom, See **Photo 4**. Place the wood block in the chuck. Place the inside of the bowl against the rubber pad. Pull the tail stock up to the bottom. Align the pin in the live center to the hole in the bottom of the bowl. Sung the bowl to the rubber pad, See **Photo 5**. We are now ready to turn the bottom of the bowl and the foot ring.

We need to turn the inside of the foot ring down to match the curve profile of the bowl. We want the curve to flow smoothly to the center of the bottom. Keep in mind that the bottom of the bowl needs to be lower, in lathe position, than the bottom of the feet or the bowl will rock around on the bottom. As you noticed there are screw holes to remove, See **Photo 5**. Cutting the foot ring down to match the outside wall contour will remove these.

Turn the lathe on slowly to see if the bowl is balanced, if not turn the lathe off and adjust as necessary. After we get the bowl balanced turn the lathe off. Adjust the tool rest and proceed to turning the inside edge of the foot ring. Turn the shape of the ring to your design. I like the edges to be concave, this is personal not required, See **Photo 6**. Sand the inside of the foot ring to 320. Again it is easier to sand a solid ring than 3 individual feet while the bowl is rotating in the lathe. While cutting the inside of the foot ring turn the remaining portion of the bottom, up to the nub. Again maintain the curve profile of the bowl to the very bottom. After we carve the feet out the bowl curve profile needs to be a continuous flow between the feet.

Carving the feet will be done with a 1/4" air grinder and a 2" spherical burr. The 2" diameter gives a nice radius on the foot. You can use a different diameter burr if that suits your design.

Carving the feet also requires a table and a sled for the air grinder and pencil point. These can be made. The center line of the grinder and pencil point in conjunction with the table, which fits in the banjo, needs to



Photo 7 Use of a table and air grinder sled for carving



Photo 8 Mark the location of the feet on the ring



Photo 9 All 3 feet marked on the ring

align with the center line of the lathe. See **Photo 7**. Information on how to make these is at the end of the article.

We will also be using the indexing locking system on the lathe. If your lathe does not have an indexing system they are available for sale commercially. My lathe has a 24 pin indexing system. We will be carving 3 feet. 3 feet will always set without wobble when the wood moves later. 4 feet has a great chance of rocking on the feet when the wood moves. Just because I like using 3 feet does not mean your design can't have more. That means a foot will be every 8 index positions.

Lock the indexing wheel in place. Using the pencil sled draw a line on the outside of the bowl, also mark the bottom of the foot ring, See **Photo 8**. Pull the indexing pin and rotate the bowl to the next locking position. In this example the number 2 position of 24. Mark the foot ring again. Advance the indexing wheel 6 positions and mark the foot ring again. Advance 1 position and mark. Advance 1 position and again mark the foot ring. Advance the indexing wheel another 6 positions and mark the foot ring again. We should have 9 marks on the foot ring, See **Photo 9**. There should be 3 marks defining the location of each of the 3 feet.

Use a 1/4" air grinder, in the sled, and 2" sphere burrs to carve the feet. See **Photo 9**. You will need a compressor with enough air supply to power the grinder. You need at least 10 CFM @ 90 PSI. You can use less but it will take longer. Be careful to hold down the sled as it slides back and forth on the table. The burr is rotating and will have a tendency to want to ride up out of the flute. Carve until you reach the guide line on the foot ring. My grinder has a lever valve to turn the air on and off. I have the normal air supply lever on the grinder strapped down so I don't have to hold it down while also holding the sled down on the table.

Index the bowl until the burr will be cutting in between the marks for the feet. We want to leave the 3 marks defining the location of the feet. Assure the indexer is locked in place so the bowl does not move when carving.



Photo 10 Start carving the first foot



Photo 11 Carve all the area between the first 2 feet



Photo 12 Carve the ridges down between the feet



Photo 14 Start sanding with 120 grit on firm pad

Note: If the air hose on the grinder rubs the table it needs to be held up. This will cause the grinder sled to grab and may cause wood removal where you don't want. You can wrap the hose around your shoulders to eliminate this, or hang from the ceiling.

Turn the grinder on and move it into the foot ring slowly. You will get a feel for how the grinder cuts the wood very quickly. Carve the foot ring down until the bottom of the cut nearly matches the curve of the bowl. Remember to leave enough wood for sanding. After the first cut turn the grinder off and let's take a look at it, See **Photo 10**. Visually and with your fingers assure the curve profile of the bowl is being maintained. If all feels and looks good rotate the bowl 2 index positions. Repeat the above step. Rotate the bowl again until you carve to the next foot guide line. At this point you should have all of the wood roughed out between the first two feet. As you will notice there will be several raised ridges in this area, See **Photo 11**. They need to be carved down free handed to make sanding a lot easier. We can use the grinder in the sled for this. It may be easier to hold a grinder not mounted in a sled also, See **Photo 12**. Again assure there is enough wood left for sanding. You can always take more off, you can't add any back.



Photo 13

Rotate the bowl to line up the next foot mark. Repeat all of the steps above until the second area between the feet is roughed out. Again assuring to leave enough wood for sanding while maintaining the bowl curve profile. When all is OK with this area rotate the bowl to the third and final area. Again repeat the above steps to rough out the final portion of the foot ring, See **Photo 13**. Assure all looks and feels OK



Photo 15 Finish sanding to 320 with soft pad



Photo 16 Trim nub down



Photo 17 Carve nub away



Photo 18 Sand with 120 grit on firm pad

before we start sanding.

I sand the feet while the bowl is still in the lathe. This way I can lock the indexer to keep the bowl from rotating as I sand. I use a 3" sanding disk, firm pad, with 120 grit disk to rough sand the feet, See **Photo 14**. While sanding I maintain the profile curve of the bowl between the feet. The outside and inside edge of the feet should already be sanded to 320. Rotate the bowl and sand the other feet. After rough sanding I change the sanding pad to a soft pad, See **Photo 15**. This allows a better flow of the pad to conform to the shape of the foot. Sand all feet to 320 grit.

While the bowl is mounted in the lathe you will not be able to sand all the way to the bottom as the live center is still in contact with the bowl. Remove the table from the banjo and insert the tool rest. Unlock the indexer and turn the lathe on. Trim the nub at the live center pin down as small as possible without breaking it. Clean up the remaining portion of the bottom maintaining the curve profile, See **Photo 16**. Again assure there is enough wood left for sanding.

Stop the lathe and remove the bowl. Place the bowl on a flat surface so we can remove the nub on the bottom. I use a piece of exercise mat to cover the work surface. This protects the edge of the bowl and helps to keep it from sliding when carving the nub off. Use the grinder as we did earlier to carve the nub away, See **Photo 17**. Again assuring to leave enough wood for sanding.

Now sand the remaining portion of the bottom. Start with 120 grit disk on a firm 3" sanding pad, See **Photo 18**. Sand until the bowl curve profile is maintained. When the profile is achieved change the sanding pad to the soft one, See **Photo 19**. Finish sanding to 320 grit. Assure the bottom of the bowl matches the curve profile.

Lets take a look at the bowl setting upright with the carved feet, See **Photo 20**. This just adds that extra flair to any piece, especially just a plain bowl. It appears to give the bowl a little lift off the table.

If all meets the quality check we can finish the bowl. Use the finish of your choice. I prefer Mohawk's



Photo 19 Finish sanding to 320 with soft pad

Pre-Catalized Lacquer satin finish. This gives a very durable and professional looking finish that is very easy to achieve. This finish is also harder than normal lacquer. It also dries very fast thus eliminating much of the dust fallout. Just buff with steel wool between coats. There is also a Pre-Catalized Sanding Sealer that I use as the first coat.

Now lets take a look at the finished product. Notice how the curve profile flows through the feet to the bottom of the bowl, See **Photo 21**. What a great addition to any bowl or platter. This just adds that bit of elegance to an other wise plain utilitarian bowl.

Making the table and sled

The table has a 1" post welded to a 4" diameter 1/4" piece of plate steel. The post needs to fit your banjo. A piece of 3/4" plywood is screwed to the plate steel. The plywood can be cut to the shape of the bowl. The post needs to match your banjo size.

The sled can be UHMW or wood. Take a 3" square piece of wood 6" long. Drill a 2" hole through the center, length wise. Cut this in half on the band saw and you have two sleds. Secure a 1/4" air grinder in the sled with straps. Strap the air supply lever down so it is always open. Add a lever valve to the air grinder. This will also allow you to control the speed of the grinder. This is how you will turn the air grinder on and off. This way you don't have to hold the air supply lever down on the tool while holding the sled down.

Be careful as the carving burr is always rotating until the air supply valve is shut off.



Photo 20 Look at bowl setting on the carved feet

Photo 21 Bowl after finishing



Tools and Suppliers

Tools	Suppliers
Air Grinders - Drills	Harbour Freight - www.harbourfreight.com
	Home Depot
	Packard - www.packardswoodworks.com
	Klingspore - www.woodworkingshop.com
Carbide Burrs - 2" wood blaster and 1" sphere	Wood Carvers Supply - www.woodcarverssupply.com
By Saburr Tooth.	TreeLine - www.treelineusa.com
Mohawk Pre-Catalized Lacquer	Klingspore - www.woodworkingshop.com
Sleds - pencil & grinder	Home made
Sled Table	Home Made
Sanding supplies	Klingspore
	The Sanding Glove - www.thesandingglove.com
Re-centering Tool	Don Geiger - www.geigersolutions.com
Indexing Plate	Home made or www.ironfirellc.com

Quick List of Steps

1. Finish turn bowl except for the foot. Including sanding to 320 grit. Leave 3/4" to an 1" on the bottom to carve the feet from.
2. Use a centering tool to help with setting up the bowl for reverse turning. Drill a hole 3/8" deep in the bottom before removing the faceplate or chuck.
3. Use a rubber pad in a chuck for holding the bowl for reverse turning. Mount the bowl back on the lathe jam chucking against the rubber pad and the centering pin in the live center.
4. Turn the inside of the foot ring to desired shape.
5. Sand the inside of the foot to 320 grit.
6. Need a sled for the air grinder and pencil. Need a table for the sled to slide on. You can make these.
7. Need indexing capability, from the lathe or an indexing wheel.
8. Mark the locations of the 3 feet on the foot ring. Use the pencil and sled for this.
9. Carve the feet with the air grinder in the sled.
10. Hand carve the ridges between the feet down. Remember to leave enough wood for sanding.
11. Sand the feet to 320 grit.
12. Cut the nub on the bottom, next to the pin in the live center, down as small as possible without breaking it.
13. Remove the bowl from the lathe. Place the bowl on a piece of exercise mat to prevent slipping and to protect the rim of the bowl.
14. Carve the nub down with an air grinder. Remember to leave enough wood for sanding.
15. Sand the bottom of the bowl to 320 grit.
16. Finish as desired.