

Achieving a “Gallery Quality” Finish

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Introduction

What I mean by a “Gallery Quality” finish is a finish that protects the wood, enhances the color and figure and also does not display any tool marks or sanding scratches. The following is the general process I use in attempting to achieve that end.

Preparation

The finishing process starts long before you pick up a piece of sandpaper. Even before you arrive at the final shape, in many cases. If you’ve achieved the perfect curve for the form you’ve selected and then find you have deep tear-out in a spot or two that must be taken out somehow, there’s a good chance you will end up with a shape that is not so pleasing. (You may also have other problems that are beyond the scope of this article.) As you approach what you hope is the final shape, stop the lathe and see if tear-out is occurring. If there is tear-out, adopt techniques that are less tear-out prone. In general, this means, be less aggressive in your removal of the wood. If lighter cuts don’t seem to help, probably your tool needs resharpening. If you’re not sure whether it needs it, inspect the edge under a bright light. I find a 10-power loupe helps for those of us who are visually challenged. If you see a shiny edge; it needs resharpening. A shiny edge may be OK for roughing out, but for finish cuts, it’s a no-no.

Tools and techniques make a difference

Assuming you’re turning a bowl using a gouge; and you’ve made sure your edges are sharp: turn the gouge over on it’s side so the flute is facing the surface for a shear cut. If you’ve got enough room, it may also help to position the gouge so that the edge is approximately 45 degrees off of the direction of rotation. The bottom edge should do the cutting while the upper edge just barely clears the wood.

Changing tools may also help. For example, if you’ve been using a bowl gouge deep inside a bowl, a finely honed scraper, held at 45 degrees to the direction of rotation with light pressure will sometimes work better. I’ve found (Bob DeVoe will shudder at this thought) that a scraper with an ordinary grind, held “upside down” and using a light cut will often do a fine job. And, because of the greater downward angle required to cut, it is less likely to catch. It also saves you from having to go back to the grinding wheel again so soon.

Another trick is to use a single edge scraper. (I used to call it a round nose skew but this confused people a lot.) I’ve taken a skew and reground it so that it resembles an asymmetrical round nose scraper but with the double bevel of a skew. I use it flat on the tool rest like a scraper. The advantage of this is that it does a better job of cleaning up torn grain and is less prone to catch than an ordinary scraper. The disadvantage is the edge wears rapidly and must be resharpened often to keep it effective.

Another possibility is using cabinet scrapers free hand. They can be either curved or straight, depending on the curve being worked on. Stop the lathe and work the trouble spot by hand. This works best on wood of uniform density.

Sanding

The next step is sanding. What grit should I start with? The answer is; starting grit size depends on the quality of surface you’ve been able to achieve with your tools. Do the best you can with the tools. Depending on the design, too much sanding may lose the crisp edges that are one hallmark of good turning. If you’ve chosen a particularly knarly burl that you just love the grain though, you may need to

start with 60 or 80 grit. If you have dense, uniform grained wood, like Cocobolo, ebony and others, you may be able to start with 180 or even 220. It's a mistake to start too high on the grit scale though. You'll waste a lot of time getting rid of the tool marks and if you get impatient, you'll heat harden the wood and it will take even more time to eliminate previous sanding marks.

Proceed up through the scale, grit after grit, until you've achieved the scratch free surface you want. Stick with each grit until you've eliminated the scratches from the previous grit. If you're not sure, you can stop the lathe and hand sand at an angle to the direction of rotation. Any previous scratches will show up at an angle to the direction you are presently sanding. Be sure you have good lighting that is striking the area you are inspecting at a low angle. Direct overhead lighting makes scratches disappear; low side lighting makes them stand out. Wipe the turning before each grit change to remove the swarf (sanding dust) and bits of the coarser grit that always breaks off. This prevents the coarser grit from continuing to make coarse scratches while you're using the finer paper. It's a good idea to perform the last sanding parallel to the grain, with the lathe stopped, especially with open grained woods like oak or ash. Taking the turning off the lathe after you think you're done sanding and holding it under a bright light is a good idea; especially if it is a complex shape. Turn it around to various angles so you can really see into the crannies.

When should you quit going to a finer grit? Again the answer is; it depends. You'll need to use a finer paper if you've turned a dense uniform wood like cocobolo or ebony than if you've used a more open wood like mahogany or oak; or even a light colored wood like maple. 220 or 320 grit may be good enough for mahogany or oak. I think 600 is usually good enough for cocobolo, and 600 or 800 for ebony, (With-grain sanding helps here too), although I know guys who go all the way up to 2400 grit. Look closely and judge for yourself.

Choosing a finish

Now that the sanding has been done to perfection, what finish should you apply? There are hundreds, maybe even thousands, of finishes on the market. The best reference I know on this subject is Bob Flexner's "Understanding Wood Finishing", although there are others. For a glossy finish, I prefer sprayed on clear lacquer. For a semi-glossy finish, you can spray on clear gloss, to avoid obscuring the figure, and giving it a final rub down with fine "Scotchbrite" sanding pads, until you're happy with the shine.

Polyurethane is more durable but more difficult to work with than lacquer. Tung oil and various "oil" finishes give a matte look and more tactile feel to the turning but are not as durable as lacquer or polyurethane. Most wax finishes are quick and easy but may need reapplication occasionally and will pick up fingerprints. Carnuba and microcrystalline waxes are harder and more resistant to wear and fingerprints. I like spray-on lacquer, but there are wipe-on versions of nearly every finish on the market.

Applying a finish is a complex subject, with too many variables to be adequately covered here. Flexner's book, for example, is 310 pages long.

So! After the finish has been applied, I always find I don't have the perfect finish yet. There is always an area that has not been adequately covered, in which case, I apply another coat or two. Or there are brush marks or runs and overspray from the spray gun; or dust nubs or knats. So I have to level the finish and buff it up to get the amount of shine I want.

Finishing the finish

For lacquer, I usually start with 400 or 600 grit, give it a final rub with 600, if I'm after a high gloss, and buff it up with white diamond compound. I use a five-inch buffing wheel at 1725 RPM. Much slower takes too much time and much faster you're in danger of melting the finish and smearing it. Every finish

type requires a final rubbing and buffing, I believe, but my experience is too limited to go much beyond what I've said above.

Finishing can be rough and dirty or it can be slow and exacting. But if you want to rise above the country craft show level and say, "I could be in del Mano if that Ray Leier wasn't so blind to real genius!" you have to invest a little more time into each piece. If you do, I'm sure your friends will say, "Wow! Look at the turning! And it even feels good too!"