

Coloring Wood

Using the “Don Derry” Method and Other Coloring Considerations

By Joe Fleming

My approach to coloring wood is based upon my belief that deliberately adding color is an exciting way for me to express my artistic thoughts. To think about color, however, really starts with the color of the wood. As you consider the color of a piece, the inherent color of the wood is a viable color option.

Wood has beautiful colors to include in your design choices as you turn. Wood colors, of course, range from browns, tans, yellows, reds, oranges and greens. There are spalting, blue-stain, bark inclusions that add to the color experience. To get the most out of the wood, you need to consider how you cut the blank, how you orient the piece on the lathe, and what to leave or cut.

Sometimes, however, you may want to control the appearance for a particular effect. Control can be carving, texturing, piercing, burning, adding additional components, or coloring the wood. My focus in this demonstration is on the coloring options available and how to produce a glossy finish using dyes and lacquer. The techniques that I utilize are base upon what I was taught by Don Derry.

Keep in mind that you are not limited to woodturning resources about wood finishing. Michael O'Donnell has a great book for woodturners, but it is just the tip of the iceberg. There are dozens of books about wood finishing techniques and they all can be applied to woodturning. I personally own six different wood finishing books including excellent books from Bob Flexner, Jeff Jewitt, Michael Dresdner, and Sandor Nagyszalanczy. Several woodworking periodicals offer excellent articles on wood finishing. I find the best articles are in *Woodturning* magazine, usually written by Nick Arnall; and in *Fine Woodworking* magazine. But you can stretch the resources even farther if you look into art-oriented materials on color theory, how-to for different coloring materials, and artistic painting literature.



You should also consider coloring resources outside of the woodturning world. There are ceramics, glass and painting just to name the obvious.

You should also consider classes to learn more about color theory and color techniques. Community colleges, Palomar, private lessons, clubs and guilds are all available. There is no shortage of materials, literature, web resources, and classes that help you with color theory and technique. If you can't find it, you didn't try.

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You will find that wood can be colored in many different ways with many different application techniques. The material selection includes:

- Shoe dye
- Inks
- Aniline and metal acid dyes
- Stains
- Gel stains
- Opaque acrylic paint
- Transparent acrylic paint
- Milk paints
- Gilt creams
- Fabric paints
- Metal leaf
- Markers



Application techniques also vary greatly and include:

- Paper towels
- Rags
- Sponges
- Your fingers
- Brushes
- Craft sticks
- Spray can
- Air brush
- Spray gun

As you color, you need to keep in mind that by selecting to color the vessel, you are attempting to alter the appearance in a deliberate manner. There are many factors that come into play for your consideration when you color:

- What is the original color of the wood? Do I want to keep the original color or bleach it white before adding more color?
- How will the color of the wood mix with my coloring selection?
- What are the various grain patterns and orientations of my piece?
- How will the grain orientation and pattern affect the coloring activity?



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- Does my piece have unique figure or burl? Do I want to take advantage of the unique grain patterns?
- Do I have voids in the piece? How do I handle those?
- What surfaces do I want to color on the piece?

I offer these general guidelines for successful coloring regardless of the wood selection, color material and application technique you choose.

1. Experiment with the coloring materials and application techniques on scraps of the wood you select before you color the real piece. There is no reason to ruin an excellent turning with a coloring application and turns out poorly. You should have a reasonable idea of what to expect before you start coloring.
2. Make lots of sample color boards and pieces. I regularly cut up scraps of wood that I am considering for color to use as sample boards. I sand them smooth and then attempt my color options. I try different combinations of colors, different sequences of colors (e.g. red first, then yellow, and then the reverse). Remember to expect that sap wood will behave differently than heartwood.



3. I cut up failed turnings to use as sample boards so that I know how color will behave on curved surfaces with assorted grain patterns. Remember to expect that end grain will behave differently than side grain.
4. Keep in mind that all turnings have four surfaces: outside, inside, bottom/foot and rim. Each surface deserves consideration. Also remember that thin coloring materials like dyes and inks will likely penetrate deeply into the wood, and might possibly come through the other side. It is terrible, for example, to apply a generous coat of dye to the rim of a highly-figured platter only to have the color leach through to the back side and ruin the piece. Trust me, I know this one.
5. Make sure your materials are fresh. All coloring materials have a finite shelf life. Know what yours are. Properly dispose of old materials.
6. Make sure you know how to use your applicators. Rags are relatively easy. HVLP spray guns and air brushes require practice. Practice on scraps – not your

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prized turning pieces. Dispose of used applicators safely – **ESPECIALLY RAGS.**

7. Many materials are toxic. Apply them safely. Wear appropriate protection including gloves, eye protection and respirators. When applying spray finishes, do it in a safe location. Build a spray booth. *Fine Woodworking* has a great article on how to do so on the cheap.
8. Keep your work area clean. No reason to color the rest of your shop or home because you are sloppy. The reverse is also true. A clean coloring location means that you will have less risk of contaminating your freshly colored piece with dust or other foreign substances.

At this point, I will explain how I apply the “Don Derry” finish on a piece. Don is known for his dyed, high-gloss finishes. He taught me how to create this finish and I offer it to you.

Here are the quick-list steps for the Derry process. Details are listed below:

1. Sand to 180 or 220 on the lathe. Finer sanding just fills the pores and begins to obscure the grain.
2. Wet the surface of the piece while on the lathe to raise the grain. Final sand to your desired grit (180 or 220). Remember that water-based finishes will raise the grain, so do it before applying the finish.
3. OPTIONAL: Bleach the wood with a two-part wood bleach.
4. Off the lathe, seal the surface of the piece with an even, but light coat of spray lacquer. Don't overdo it.
5. OPTIONAL: Fill open-grain woods with a wood filler or a contrasting, heavy-bodied coloring agent. Paint pigment and heavy-body acrylics work for this.
6. Sand the coloring agent away to reveal the natural color of the wood without pulling the pigment out of the pores of the wood.
7. Color the piece with dye however you like.
8. Spray-seal the color layer with vinyl sanding sealer. Lacquer can be used too, but the vinyl sanding sealer is more flexible, especially for larger pieces. Remember, wood moves and a hard lacquer finish could spider-crack over time.
9. Spray several coats of lacquer to build up a thick layer. Using a heavy-bodied lacquer will reduce the number of coats needed.
10. Wet sand the lacquer surface with 400 or 600 grit paper. **DO NOT SAND THROUGH THE LACQUER.** Eliminate all dimples and divots in the surface of the finish. If wood pores telescope through the lacquer, you either need to sand below the dimple, or add more lacquer, before continuing with sanding.

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11. Once the surface is completely dimple-free, polish the piece with automotive polishing compounds. I use MacGuire's Macguire's Medium Cut Cleaner #1, Macguire's Fine Cut Cleaner #2, Macguire's Swirl Remover #9, and Macguire's Show Car Glaze #7 in this order.
12. If you can CLEARLY read text in the reflection of the finish, you are done. Carefully inspect the entire surface to insure that every bit of the surface has the same reflective quality.

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Don Derry Coloring Technique in Detail

1) Sanding (on the lathe):

- a) Don't sand to too high a grit. 180 is actually just fine for this. Sanding to a finer grit will burnish the surface and it pushes sanding dust into the pores, hiding defects that need to be found.
- b) Don't sand too fast. You need an even scratch pattern, consistent over the entire surface. Maintain the speed so grit scratch pattern is even.
- c) Use very soft sanding pads to achieve this surface.
- d) Eliminate perceptible radial lines. Lines around the piece are especially noticeable.
- e) Once sanding is complete, wet the surface of the piece with water using a damp rag or paper towel to raise the grain. When completely dry, sand again, while on the lathe. Final sand to your desired grit (180 or 220). Remember that water-based finishes will raise the grain, so do it before applying the finish.
- f) Completely finish the turning and sanding process.

2) Coloring (off the lathe):

- a) **OPTIONAL:** Bleach the wood with a two-part wood bleach. Bleaching takes time. Each wash of bleach must **COMPLETELY DRY** before applying the next wash. Plan on bleaching three to five times to get the color out. Ash, maple, cherry, madrone, and walnut all bleach really well. Some eucalyptus bleaches well too. Other woods are bleach resistant. You need to test it out on scraps so you know.



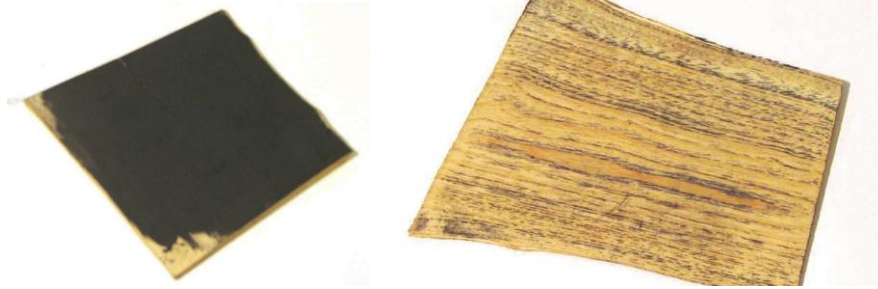
- b) Sealer coat the piece with a spray of lacquer, but don't soak the piece. The goal is to seal the surface but leave the strong grain line pores open for application of pigment. Magnashield Gloss is a good product http://hoodfinishing.com/finishing_prod.htm

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- c) OPTIONAL for open-grain woods: Rub pigment into open grain woods. Force it into the open grain. A little goes a long way.

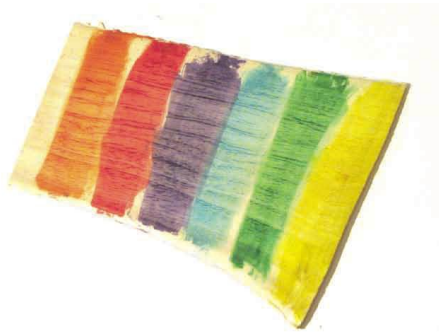


- d) After dry, sand off the pigment down to lacquer layer. The goal is to remove the surface pigment and the surface lacquer without pulling the pigment out of the pores. 180 grit is appropriate.
- e) Dye recommendations: Use water-based dyes for best color fastness. Alcohol dyes will work in this protocol, but will likely fade too easily. Only use Water base Dye. Metal Acid dye is even better but the color selection is limited at this time. Many good Aniline and Acid based dyes can be found at:
- i) <http://www.homesteadfinishingproducts.com/index.html>
 - ii) <http://www.aciddyes.net/metal-complex-dyes.html>
- f) Rags or air brush application will work. Rags tend to saturate the wood. Airbrush provides better control.
- g) Mixing color:
- i) When mixing aniline dyes, use hot distilled water for best results.
 - ii) Mix the dyes very strongly concentrated for best coloring.
 - iii) Consider storing unused colors in small squeeze bottles. They make inserting dye into the gun and removing dye from it easier.
- h) Typically, use one color as a base for the entire piece. Lighter colors first will generally give a better result. They can be darkened if desired. Dark colors can never be lightened.

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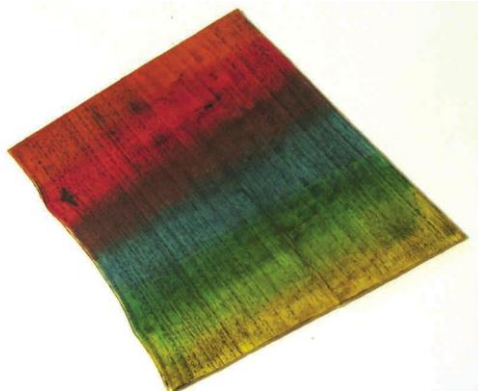
3) Finishing:

- a) Use two coats of vinyl sanding sealer from the paint store on top of the dye; especially larger items. On the bigger pieces the vinyl sealer is more flexible and will help the top coat not to crack over time.
- b) Spray lacquers for about five or more coats. If you use a thin lacquer like spray Deft, you will need upwards of twenty coats. Sand to level surface after three coats or so. Do not sand through lacquer. Use 400 - 600 grit. You want a dead-flat surface – no divots or dimples when tipped into a bright light.
 - i) NOTE: Assuming you use a heavy-body lacquer, if you look closely at the sanded surface, you can actually see the lacquer layers as you sand through them. If you keep count of how many coats of lacquer you apply, you can protect yourself from sanding through the lacquer. When in doubt, apply more lacquer before continuing your sanding.
 - ii) NOTE: If you sand through the lacquer and disturb the color, it is VERY DIFFICULT to repair. It is better and easier to use Note #1.
- c) Defects and cracks can be filled with super glue. Once the glue hardens, file off to level down to the lacquer. Then sand to blend.
- d) Use Lacquer as the top coat if you use super glue to fill large divots.
- e) Sand to level the surface removing all shiny dimples.

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4) Polishing:

- a) Polish in order:
 - i) Macquire’s Medium Cut Cleaner #1
 - ii) Macquire’s Fine Cut Cleaner #2
 - iii) Macquire’s Swirl Remover #9
 - iv) Macquire’s Show Car Glaze #7
- b) If you can CLEARLY read text in the reflection of the finish, you are done polishing. Carefully inspect the entire surface to insure that every bit of the surface has the same reflective quality. Back up a few steps to repair poorly polished areas. Yes, polishing is hard work. Compromise the finish by quitting too early.



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5) Additional Tips:

- a) If you decide that you need to add color after the lacquer starts, use pigments thinned into lacquer to add color on top of the clear lacquer. This is called glazing by fine arts painters. Use the same industrial pigments from the paint store to tint the lacquer. You can air brush tinted or opaque lacquers between any of the top coats to add highlights or shadowing. Glazing will add a lot of flexibility to the process and will increase your color choices also.
- b) Alcohol can be used to wipe the surface between lacquer coats for cleaning, if needed.
- c) Airbrush cleaning:
 - i) Airbrush full of dye,
 1. Clean dye out with water
 2. Clean water out with alcohol
 3. Clean alcohol out with lacquer thinner
 4. Airbrush is now ready to spray lacquer
 - ii) Airbrush full of lacquer
 1. Clean lacquer out with lacquer thinner
 2. Clean lacquer thinner out with alcohol
 3. Clean alcohol out with water
 4. Airbrush is now ready to spray dye

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- d) You can use any available lacquer. The difference is that Magnashield has 40% solid content and most lacquer is only 14% solids. This means that one coat of MS is like putting on 3 coats of lacquer. Lacquer also cracks much easier if too many coats are applied. Lacquer also takes longer to cure because it has so much higher thinner to solids ratio. Go ahead and experiment with what you find locally it will work fine but it will take three times longer to build the coats and over time it may deteriorate faster. Each top coat of Magnashield needs to cure for at least 24 hours. Consider 48 hours. Lacquer will feel hard and cured with less than 48 hours but it may continue to slowly cure until after six months to a year. It might shrink back into the open grain and will not look glass-like any more.