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February/March 2015

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If quizzes are quizzical, what are tests?

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TIPS & TECHNIQUES

Topic of the Month: Hollowing tool control

I have covered this topic many ways but it is worth updating you all again on tool control for hollowing. Let me start with the sequence of getting the wood out of the inside of vessels. The first thing is to drill an entry hole. The hole is not a depth hole but should be drilled short of what you think the bottom will be. The sole purpose of the drill hole is to eliminate the center nub issue and make every cut easy to start without fighting the wood right at the centerline. The bigger the drill the easier it is to hollow.

Next, as a shaving relief thing, I hollow out a cylinder shaped hole the size of the mouth opening. This shape allows the shavings to fall out and gets a significant amount of the wood out of the middle of the vessel. Third, I open up the inside a bit at the largest diameter. Hollowing near the large diameter is a shaving removal aide also. Don't get anywhere near the wall, leave the wall thick. This process is helpful in shaving management. When the shavings get piled up in the vessel they stall out the cutting and can bounce the tool around inside the vessel. Shavings can even possibly crack the mouth opening. The shavings get packed in there so tight they start to grab and twist the boring bar, sometimes violently.

The next step is to measure the wall thickness at the mouth opening and proceed in small stages. And finally clean up the inside wall surface, clean up tool marks and transitions from stage to stage as I work my way down the vessel without ever going back to the opening. Once I get the first stage done and clean up the wall to my satisfaction I never go back there again. Starting the measuring out at the mouth opening allows the shavings with centrifugal force to accumulate at the largest diameter and I can measure and clean up cuts without the shavings fighting me for a while.

This sequence is important. Let me further help fine tune the cutting action needed to accomplish this and hollow without vibration. The sizes of the cuts are important. In this case smaller is better, a lot better. The cutting action is usually to the left. In the early stages, the boring bar is close to parallel to the lathe bed and the cutter swivel is used to point the cutter toward the headstock. The left direction of the cut is cutting into the side grain (Read Easy). Stand in front of the lathe relaxed with your hand on the tool rest and put the cutter in the entry hole a very small distance. Using your fingertips pull the cutter directly left or perpendicular to the bed. This cut uses a very small part of the cutter tip, say 1/8 inch maximum shaving size. Then, with your fingertips push the boring bar away from you and back into the entry hole again. Advance a very small increment and pull to the left again. This is a very efficient cut. It can be done quickly after a short practice time. I can hollow quicker and easier taking small shavings than I can grind away with a larger tool, bigger cutting surface, or with bigger shavings.

There is a tendency to push the cut toward the headstock. Not a good plan. This will make the shaving size increase and wrap around the tip of the cutter. The result will be vibration and a stalled out cut that takes a lot of force to make the cut. This is harder on the body, harder on the wood, harder on the lathe, everything is taxed and working harder than need be. There is another caution when you have a bulbous shape and you swivel the cutter around to the left on an angle to undercut a shoulder. The left cutting method is not as easy as it first seems. Now in this situation what direction is left? (Cutting to the left, to the lathes left, will be harder and wrap around a large shaving again and stall out at the end of the cut.) The direction of the cut is left to the boring bar.

When the boring bar is on an angle to the hole to undercut a shoulder, the cutting motion leaves a tapered angled surface behind. Left means pulling the cutter on a cant, on a bias line scooping

toward the tailstock. This is all about keeping the shaving small and efficient and easy. Cutting in the wrong direction with a big shaving feels like the tool is dull, it just will not make a good clean cut.

If you are doing all of the above and it is still difficult to cut, it might be as simple as get a new sharp edge. When I am traveling I take the HSS cutter out of the swivel and sharpen it by hand. Note the left side of the cutter is sharpened back farther then the right leaving a nice soft rounded shape. The left of the cutter is where most of the cutting action is happening. Hand sharpening is not difficult but takes a little practice. Put your hand on the grinder tool rest, do not put the HSS cutter on the tool rest. When I am at home, I use the jig but in both cases, home and away, we are just dressing the bevel lightly and putting a new burr on the edge. The HSS cutter angles are not important. The angle is undercut slightly but it is not critical. The angles are different on the tip and side. It does not have to be symmetrical. Just keep the tool shape nice and rounded with no flat spots, facets, or points.

The carbide cutter is another story. There has been a ton of misunderstanding and bad information passed around by very reputable turners that don't understand the metallurgy or choose to misrepresent what they are promoting. The Hunter/Jamieson Nanograin carbide is a step above all the other carbides that are not as sharp due to the particulate they are made from. Plus, on my boring bar we use it in a slicing mode not scraping. So Slicing through the fibers with a sharper tool will be different than scraping with a dull tool. The Hunter/Jamieson tool cannot be sharpened. It is designed to be disposable. Honing it will not bring back the factory razor sharp edge. One problem is that it works very well after it has been used a lot. It is hard to tell when it is dull. If you have done a number of vessels, or if you are doing very large volume vessels it might need replacing. When you put a new carbide cutter on you will be surprised how easy and clean every cut will be.

Take small cuts and use sharp tools and hollowing is a lot more fun. Enjoy!

QUESTIONS AND ANSWERS

DRIVE SPUR SLIPPING

Lyle,

I have acquired some ebony to turn on my lathe. However, I am having trouble getting my spur drive center embedded in the wood. The wood is unbelievably hard. I have tried pounding it in with my hammer and I can barely dent it with the spurs. Any suggestions?

Roger

Hi Roger from South Dakota,

You are correct, you need to get a good grip with the drive and live centers. Find the balance point and mark the centers on both ends. Depending on the size of the wood you can cut an "X" saw mark in the end with a back saw or take a hammer and sharp chisel and cut an "X" across the center point so the drive will imbed deep into the wood. Another aide would be to take a Forestner bit the size of your drive center and drill a shallow hole so the drive has a shoulder to keep it centered if it strips. For the live center, drill a small pilot hole for the center point to get into the wood and the cup to imbed into the wood. An option would be to use the cone on the live center and drill a ½ inch hole in the wood so the cone will ride deep in the drilled hole. If it is small stock this might split the blank. As always, make sure you are using a face shield.

WHAT WOOD IS BEST FOR GLUE BLOCKS

Hello Lyle,

You've probably spoken about this, but if so I've forgotten. What kind of wood do you use for your backing plate and glue block? I have a mixture, mostly white pine, but I also use cherry. Any preference? Your Newsletters are great.

Thanks, Paul

Hi Paul from Illinois,

You can use about anything that is dry, but pine and soft woods will splinter and self-destruct pretty fast. The harder and the denser fibered woods will last a long time. Porous grain woods will split and splinter. A piece of hard maple might last 30 bowls. A piece of red oak might get 15 before it needs to be replaced. Cherry works fine but is not as hard as maple. This YouTube clip might help http://youtu.be/y8b35iq4LTA

2P-10 GLUE

Lyle,

I recently stumbled across 2P-10 adhesive. This is apparently different from the generic CA glue, which I am currently using. Do you have any experience with this glue for turning? I haven't used a chuck in months. Thanks for the great instructional DVD. Best regards,

Dave

Hi Dave from Pennsylvania,

Sorry I do not have any experience with that glue. The properties of CA are important. It has to be thick. It is fast cure. It is brittle. It has enormous sheer strength. I could not find any details on the sites I tried to get information from. Is it just another brand of CA? If it is not CA I would be cautious. Maybe some of my subscribers will chime in and give us some help. You might go to Wood Central or other chat rooms to see if any others have seen it or used it.

SHARPENING THE HSS CUTTER

Lyle,

I am enjoying my new "toy" (boring bar tool) immensely. One question I have, though, is do you have a jig or something to hold the 3/16 inch cutter so that I can sharpen it when it gets dull or do I have to order new ones?

Thanks,

Jim

Hi Jim from South Carolina,

I hope you are sharpening the HSS cutter. Even a small vessel will take at least one sharpening to complete. The Carbide cutter is disposable and would need to be replaced. See the carbide article for hints.

I sharpen the HSS cutter by hand when I'm traveling but there is a jig designed by John Jordan that does the job better. It uses the Wolverine sharpening system and sets up the HSS cutter to dress the bevel lightly and saves the tool life and gets your fingers away from the grinding wheel. See my web site store menu, scroll down and see the photo and description, I sell the John Jordan jig.

HONING BETWEEN GRINDING

Spalted ash bowl. I followed your DVD. Love the glue block method. What are your thoughts on honing an edge on tools between grinding?



Hi Steve location unknown,

I don't hone any of my tools except the skew. It's OK if done correctly without rolling over the edge. I like the burr from the grinder for most of my cuts. The advantage of honing is to get a sharper edge than we get off the grinder, it is so short lived I don't bother.

BOWL GOUGE GRIND SIDE ANGLE

Lyle,

I am using 60 degrees at the tip. What angle is best for the side? Thanks for the help.

Hi Keith from North Carolina

The side angle is not measurable; it's a moving target and changes over the length of the wing. My wings or side grind is tilted in considerably, compared to most other grinds. David Ellsworth and I use the same grinder settings and same side angle. We grind differently for significantly different shaped tools but the angles are the same. You need to use my grind (or David's) as a model or template to set your jig angles. There are many in your club using my grind that you can borrow to set your jig with. These angles do not have to be precise, just come close so the tool cuts are workable. Be aware the grind angle changes over a period of time. When the grinding wheel wears away and gets smaller the wheel is farther from the basket pivot point from when you started. Every now and then you need to move the basket up closer to the wheel. The angles are changing very slightly over the life of the grinding wheel.

GRINDING JIG NUMBERS TO SETUP FOR BOWL GOUGE

Out of curiosity, what setting do you use on the Tru-Grind jig for the Jamieson grind? I watched the Tru-Grind video which suggests 4. I am using 7 with reasonable result. Wings may be swept back a bit too far.

Hi Keith from North Carolina

The setting will be different for every grinder. The instructions from Wolverine or True Grind will be confusing, the terminology is not consistent. The setting needs to come from the grind angles not the other way around. Once you get the jig set up correctly with my grind angles on your grinder and your grinding system, than you can look at the number on the jig, but it will only be good for you. It will be different on other grinder setups.

Sweeping the wings back is a result of the grinding. The jig setting will change the angles **ONLY**. These are two separate issues. Get the jig set up correctly for the angles of both the tip and side. That is a constant, don't move that. Grind the wings back about ¾ inch from the tip. Less will hamper sheer scraping and more will get funky because the side angle and flute configuration I use will not allow the wing to be swept back more than ¾ inch without troubles.

CA GLUE BOND ON WET WOOD

Hi Lyle,

Happy New Year!

I have been watching and learning a great deal from your videos and I thank you a lot for that. It has made my turning experience much more successful and enjoyable!

I was watching your video on preparing a glue block. I know you turn green wood so what is your test for how wet can the wood of your work piece be and yet have a workable bond with the CA glue to your dry glue block?

Jon

Hi Jon from Hawaii,

Nice to hear from you, thanks for the feedback. I can have a fresh cut tree with water spraying in my face when I turn the lathe on...no problem. It will work with any wood. In fact wet wood will cure faster than dry wood. The moisture aides CA glue in curing. This process works, I have done some big stuff with voids and natural edges without ever having a glue block fail.

USES FOR THE REVERSE ANGLE CARBIDE CUTTER

Hi Lyle,

I just placed an order for the Hunter cutter (and a couple extra cutters) but held off on the "reverse cutter". I must not be advanced enough or just tired, but I didn't quite grasp your explanation with regards to the tool. Do you cover the use of the reverse cutter on any of your DVDs?

I was talking to one of our club members recently, he claims that your hollowing system has been improved since I purchased mine. I bought mine approx. ten years ago. I can't imagine what you could do to improve it, it's damn near perfect.

Thanks for the great tool, best regards, James

Hi Jim, From Ohio

Thanks for the feedback; I'll quote you in my newsletter.

My system is the same as I started with in 1996. I have added some accessories that make the process better but the basic system works the same as before. What has changed over the years is the set-up. The set-up is critical to its success and I have changed some things over the years to make it work better and have more versatile. Look at the installation instructions on my web site tools menu and make sure everything is set up correctly. Pay attention to details there.

The reverse angle cutter is used to make the cleanest cut possible and reduce sanding. It is all about grain orientation. The standard cutter is dedicated to cutting to the left. It is wise to cut to the right sometimes to go downhill to the grain with supported fibers. Think about a calabash shaped bowl too deep to reach with a bevel supported bowl gouge. It is side grain. I will need to sand the bottom. The direction of the cut must be from the largest diameter down to the bottom. This requires the direction of the cut going to the right. Pull a cut to the left and it will get torn out grain. I don't want to have to sand torn out grain. Sorry I have not used the reverse cutter in my DVDs or YouTube clips. If this is still foggy give me a call and we can clarify better that email.

My new "In-Depth Hollowing" DVD has a lot more plus advanced techniques that might fine tune your process and make hollowing easier and more fun for you.

FEEDBACK

I have now ordered the reverse cutter and the ½" bar, but only just now found this email, my bad. I appreciate you getting back to me and will now order your new DVD. By the way, I've had the chance to try my new carbide cutter and wow, very nice. That's not to say that there isn't a bit of a learning curve (there is definitely a sweet spot) but once I figured it out, I don't know that my HSS cutters will see much action. Jim

Hi Lyle,

My class with the two men in my shop went really well yesterday. They were both enthusiastic and willing to give my ideas a try, but most of 'my' ideas' were of course from my good learning experiences with you, Rudy Lopez, and Nick Cook. Tracey made lunch and we had a good social time.

We concentrated on using the bowl gouge because both students wanted to do that--one had turned some before and the other was very new to turning. I taught and demonstrated your four cuts, and they did very well--the especially were impressed with that sheer scrape once I got them to keep the handle down:-)

Thanks for your help over the years--I do enjoy helping others learn about turning but I don't expect to reach the Lyle Jamieson level of technical knowledge and skill! I will stick to teaching beginners or just learning students for quite a while--keeping within my comfort zone.

Hope you are finding some time to thaw out up there in the cold place. . . it is beautiful even if very wintery in TC.

Henry from Kentucky

I really appreciate the videos that you do. As a new turner I have learned more in 5 of your videos than I have watching a months' worth on others. You are a really good teacher. Josh location unknown from YouTube messages.

Thanks for a great class today. Your hands on instruction will allow me to correct my bad techniques. Best of all though, was learning new and easier ways to turn wood using your hollowing system and signature grind bowl gouge. The bad news is finding something to do with most of my remaining wood turning tools. The good news is I have your bowl and hollow turning DVDs to refresh everything that you taught me today.

I also want to thank you for your military service. Sometimes I do dwell on my disabilities and forget that others also sacrificed much for our country.

Thanks again, Tim from Michigan

CALENDAR

Check out my website calendar for more specifics. (http://www.lylejamieson.com/information/calendar.asp)

March, 2015 - Oregon, Washington, New York

May, 2015 - New Hampshire

June, 2015 – Pennsylvania

August, 2015 - Texas

September, 2015 - Georgia

October, 2015 - Ohio, Georgia, Virginia