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Please include your location if you write in with comments or questions.

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Merry Christmas to everyone in my turning family! Enjoy the Holiday Season and may all your New Year's wishes come true!

"A survey shows that three out of four people make up 75% of the population." Anonymous

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TIPS & TECHNIQUES

Topic of the Month: Safe lathe speeds and chucking methods

(This month I will use one of the questions as the featured topic. This is a very important safety issue we all need to understand.)



Hi Lyle,

I have heard of a formula by Dale Nish that suggests a safe lathe speed is determined by the product of the diameter of the bowl times the RPM falling between 6000 and 9000. That is a 10 inch bowl should not be turned faster than 900 RPM (10 X 900 = 9000) for safety and 600 RPM for cutting efficiency (10 X 6000 = 6000).

I have also heard that, when using a chuck (which I never use) the diameter secured by the chuck should be at least 40% of the bowl diameter to help insure that the chuck holds the piece adequately. My question is do these two safety recommendations apply to glue blocks? During our class you always recommended turning at a "fast" speed that avoids vibration and I don't remember being concerned about the diameter of the glue block.

Thanks,

Greg from Wisconsin

Hi Greg,

Good question! There are many more variables to consider, but both Dale's formula and the 40 percent rule are good guidelines to safe turning under good conditions. Dale's formula deals with the speed the wood is going by the cutting edge. RPM alone is not a good measurement of safety; it's the speed of the wood not the speed of the lathe that can usually hurt you. Both assume you have not exceeded the limitations of your lathe or chucking methods. Both assume you have a safe piece of wood to start with. Both assume you are using my balancing method to start with, to prevent vibration.

My preference is not to use a formula since every situation is different. Is the wood solid or punky and full of checks and cracks? Does the wood have bark inclusions or other voids that might be dangerous at high speeds? Are you turning so thin that the wood becomes weak? Is your lathe strong enough to handle the weight and stresses of the turning process? We all like to push the envelope and do things bigger and bigger as our experience grows. It is really easy for our desires to exceed our lathes capabilities. How do you know when you're treading on thin ice? Vibration is one of the best indicators.

When I recommend turning fast, and I do often, it is when all the other ducks are in line. The details are taken care of to turn safely. There are a lot of pieces to the turning puzzle. It can take a lot of trial and error and sometimes even some injuries or close calls to learn to turn safely when you are to being self-taught. I highly recommend getting some help and take a class with a good turning instructor or at least get some help from an accomplished turner from your turning club who can mentor you. I have worked with many students that have years of experience and are still using some pretty scary methods.

A glue block is a much stronger method to hold wood compared to a chuck. The glue block process I use in my "Bowl Basics" DVD will transfer the power from the lathe to the wood better then chucks. You are correct...bigger bowls need bigger glue blocks. A correctly installed glue block will take some nasty abuse that would likely pull a piece out of a chuck or break the chuck tendon. Using a faceplate with many screws as I show in my "In-Depth Hollowing" DVD is even stronger than the glue block. That is the main reason I use a faceplate and screws for **ALL** hollow form turning.

I do not turn fast because it will reduce vibration. Vibration is an indicator that there is something else wrong, other than speed. I turn fast because it is easier, easier on me, easier on the wood, easier on the lathe (and chucking method). Fast speed makes it easier to make shapes develop with gentle flowing lines from the cuts. The voids or flaws in the wood go by the tool edge faster and reduces tool bounce into air spaces. Roughing out is easier with the four corners and voids going by faster. "Tunka-tunka" the sound of slow turning is beating your body up and is no fun. Turning with the lathe speed fast and using a slow pace for the tool moving across the tool rest leaves a better surface. This means fewer tool marks and less sanding needed.

QUESTIONS AND ANSWERS

POWER SANDING

Lyle,

Do you have any preference for sanding other than tearing sheets into manageable strips and working through the grits? Any thoughts on the powered or unpowered foam backed disc paper holders?

Dietrich

Hi Dietrich from Michigan,

I spend a lot of time in my Bowl DVD on tool control (and sanding) and that is the start of the sanding issue. Don't tear up the wood surface in the first place and the fast answer to sanding is use sharp sandpaper. I cover sanding disks etc. in my YouTube clip below. Only use the drill and power sanding for the course grits. I use a drill with sanding mandrels. They cut much better than the friction drive sanders. Slow down with the finer grits by hand. http://youtu.be/PLkNvVOWI04

SHARPENING JIG SET UP FOR BOWL GOUGE ANGLES

Hi Lyle,

I hope you don't mind a question I have. I was looking over the fliers you sent and the one about the bevel angle adjustment block has photos that show a Vari-grind Jig in what appears to be a vertical solution fixture by Don Geiger or one similar. Does this fixture give the correct side grind angle? Do you use it? I have one but haven't used it so far as experimenting with different grinds and angles can be expensive and time consuming as it requires much turning time and many gouges to compare the grinds back to back. I also have a grinding jig I imported from Tobias Kaye that is of super construction that would duplicate a grind but is lacking in instructions to set up a grind from scratch. I don't have unlimited funds but will invest in the best tools I can afford. I have worked as a professional gem cutter and evolved into a gemstone carver of fine art objects but tired of being confined to endless hours of sitting in one position working with very little movement. Thanks,

Mitchell

Hi Mitchell from North Carolina,

Thanks for the chance to clear up this question. In the "Bowl Basics" DVD I show how to set up and use a grinder to keep the angles of my grind accurate also in this YouTube clip:

http://youtu.be/0zUph9zEjck If you have the standard Wolverine sharpening jig you are good to go. But the Wolverine directions are not correct and will only confuse things, discard them. The Geiger system was designed for the Ellsworth or Packard jigs that do not have the adjustability of the Wolverine system. If you have the Geiger that's fine but you don't need it. My grinder set up rules will work for either system.

Once the jig and sharpening system is set up to produce my grind angles don't move it. This is where the bevel angle adjustment blocks come in. I use the blocks to change the tip angles of my other tools without moving the Wolverine jig or the sliding arm position. It all starts from the bowl gouge angle, which is a constant.

The quick answer to setting up the angles is the tip angle is set by moving the jig arm and the side angle is set by moving the sliding basket-pivot position. Keep this separate in your mind with the knowledge that they each influence each other. Once the angles are set, just grind in the right place to keep the grind looking the same.

Many folks do carving on turned objects. There is a lot of carving with my figurative sculptures. You will have a huge head start for carving on wood at a larger scale that will be a lot more fun for you.

FACEPLATE WITH SCREWS & GLUE BLOCK RECOMMENDATIONS

Lyle,

I purchased your boring system at the NC Symposium. We discussed that a faceplate should be used instead of a 4 jaw chuck. Do you recommend using a glue block to attach the piece of wood to the faceplate or a straight faceplate to wood connection? Richard

Hi Richard from North Carolina,

Nice to hear from you! Good question, I recommend the faceplate with screws whenever possible, for both bowls and hollow forms. BUT...we need to waste some wood for the screws. So, we use a glue block that has almost as much stability as the screwed faceplate for bowls or small turning. Always use the faceplate with screws for all hollow forms. Glue is not as strong for end grain. With small things it would be OK to use a glue block but under normal circumstances a faceplate and screws will provide better support.

GLUE BLOCK SIZES AND FAILURES

Lyle,

In your video you mention the 40% rule for chucks for the tenon size. Do you have a rule of thumb for glue blocks? What size glue block would you use for a 16 inch bowl? Ed from Wood Central, location unknown

Ed,

The size of the glue block and faceplate would follow the same 40 percent rule. I would use a 5 or 6 inch faceplate with a 6 inch glue block for a 16 inch bowl.

One of the criticisms of using glue blocks was the glue line fails after a period of time. This is correct. As the turned piece shrinks or warps from drying it will weaken or break the glue line. This will happen no matter what holding method you use. As wood dries it shrinks and there will be problems if you leave the roughed piece on the lathe too long. I always try to have time to go from start to finish in one setting. If I have to walk away from a piece half-done I put a plastic bag on it to help stop the moisture loss and save the glue line, then get back to finish turning it real soon. If you are double turning always remove it from the lathe to dry off the glue block or faceplate. Always start the roughed out piece after it dries and shrinks, between centers to orient the piece on the axis that will get you back in balance. It will be oval and distorted so putting it back on the same axis as it started might not work, depending on the shrink rate of the wood variety.

FEEDBACK

Hi Lyle,

I received my Bowl Gouge order yesterday afternoon and I am very pleased! I will be studying your grind very carefully and plan to set up a dedicated jig for your grind. I discovered woodturning about 12 yrs. ago and will study your videos so that I can improve my turning methods. It was from your YouTube videos that I realized that you are not only a great master of woodturning but you are the finest teacher. I have videos of other woodturners and none gives the in depth explanations that you do and would like to express my thanks to you for making the information available. I hope you are having a good day. Again thank you. Mitchell from North Carolina

I see you are offering a lot of classes at your home shop. I would like to repeat my previous recommendation for your prospective students. They really should watch the Bowl Basics DVD or the Hollowing DVD a couple of times prior to the traveling to Traverse City. They will get much more out of the class if they do that.

Hey Lyle!

We are a small woodturning-community in Copenhagen, Denmark, and you should know; we find inspiration and guidance in your work and videos.

So, thanks for your work on the internet,

And we are looking forward for anything you put on the net.

I have discovered your newsletter, and the knowledge and experience, you put forward, is

appreciated in our turning community. I will place an order for your DVDs one of the days to come. The turning community in Denmark is small. We are a small country; 4 million people. In the Danish "woodturning.dk"- our internet- community, there are about 1500 readers but only 150 subscribers on a regular basis. In Copenhagen we are 15-20 who meet in a shop in the City the first Tuesday every month.

Many of my comrades were familiar with your site and video clips, and appreciate you as a master turner.

Regards,

William from Denmark

CALENDAR

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

February, 2014 - Tennessee

March, 2014 – New York

April, 2014 – Georgia

June, 2014 - Arizona

August, 2014 - Illinois, Texas

September, 2014 - Virginia