



Lathe Turning Basics

By George Vondriska

Parts of a lathe

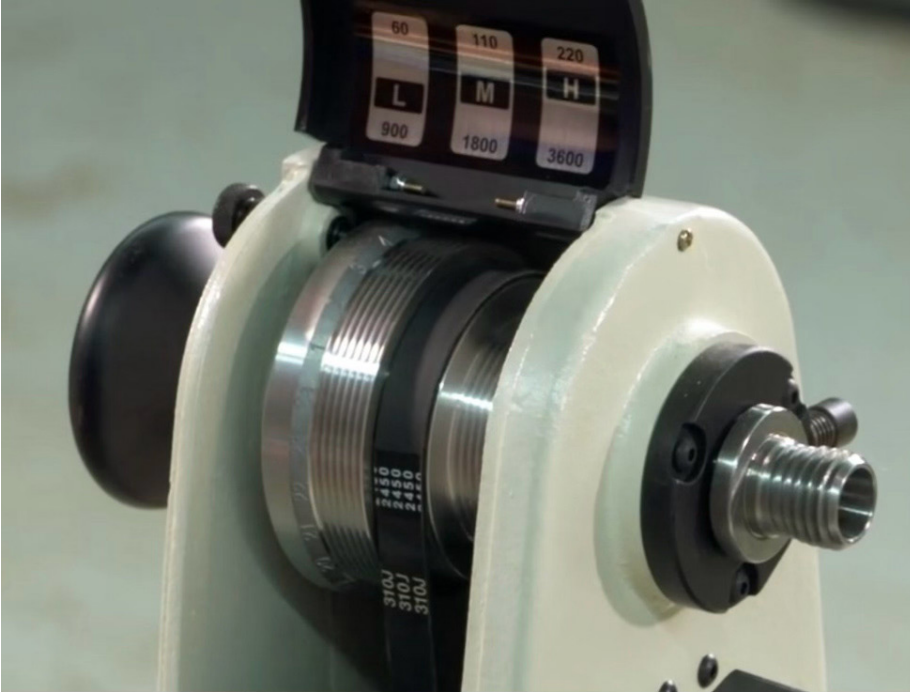
Make sure you understand the parts of your lathe before you start turning.

- Headstock
- Tailstock
- Spur center or drive center
- Face plate
- Banjo
- Tool rest

Electronic Variable Speed



EVS, electronic variable speed, is an excellent feature to have on a lathe. It allows the correct and safe speed to be easily set, and also allows the lathe to be reversed.



Use the step pulleys to set the speed range, High, Medium or Low

Speed charts—Use these to get the lathe speed correctly set. Always check the lathe's speed before mounting the spindle or bowl. There are distinct steps to turning; roughing, shaping and sanding/finishing.

Spindle Turning Speeds

	Roughing	Shaping	Sanding/finishing
Up to 2"	950	1300	2050
2"-4"	850	1150	1900
4"-6"	750	1050	1600
6" +	700	750	850

Bowl Turning Speeds

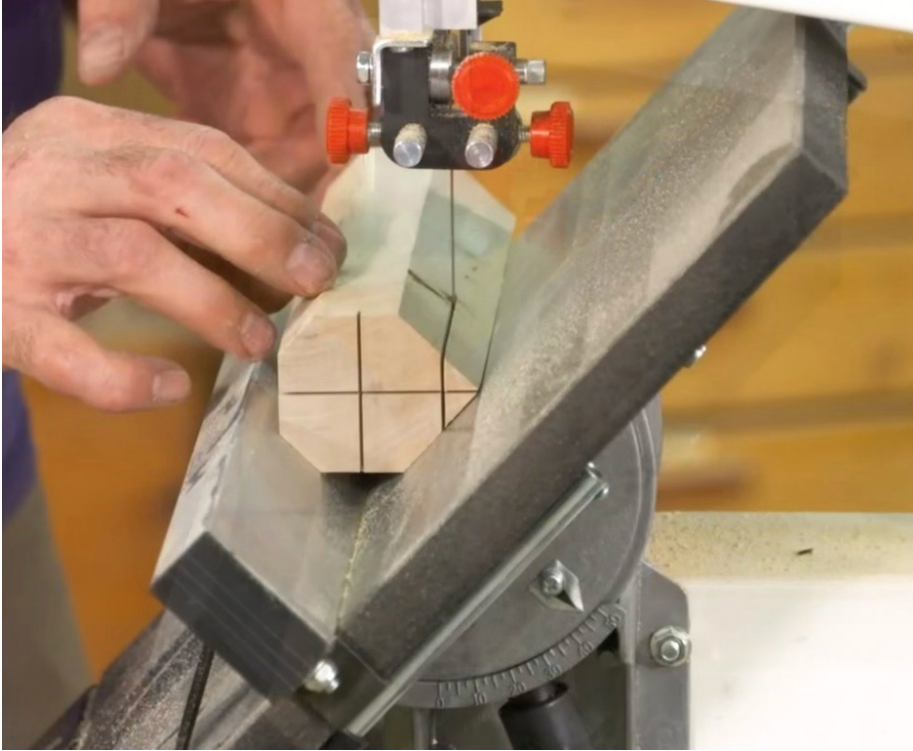
The number shown represents the maximum RPM you should turn the bowl at. Deduct 400 RPM for the roughing step, and 200 RPM for the shaping step.

	Bowl thickness	2"	4"	6"	8"
Bowl diameter					
4"	1700	1500	1300	1300	1100
6"	1600	1400	1200	1200	1000
8"	1500	1300	1100	1100	900
10"	1400	1200	1000	100	800
12"	1300	1100	900	900	700

Spindle prep



Use a bandsaw to create relief cuts for the drive center in the end of the spindle blank.



Turn the square blank into an octagon by cutting the corners off using the bandsaw.

Spindle setup

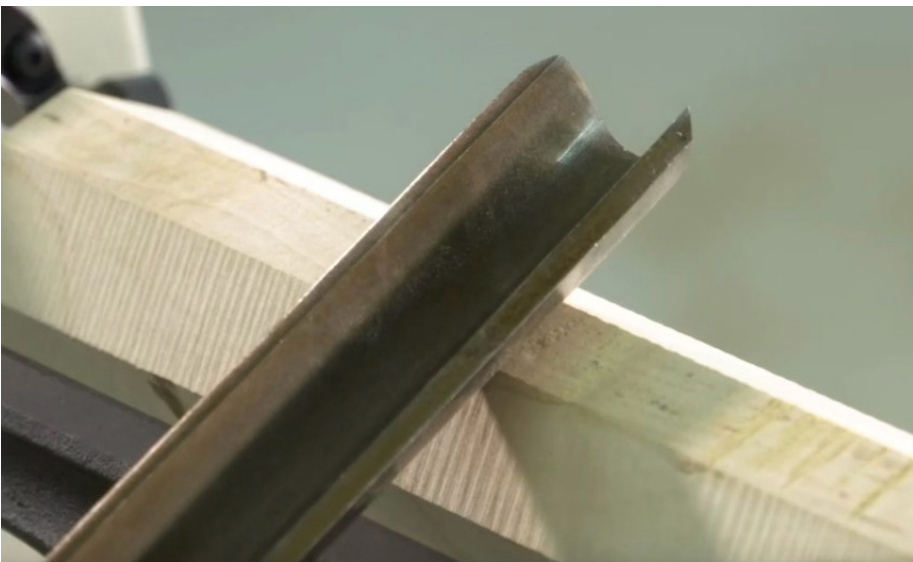


For the scraping technique set the tool rest slightly below the center line of the spindle. The tip of the chisel should be on the center line. Keep the tool rest $\frac{1}{2}$ " or less from the blank.

Lathe chisels



Carbide chisels are one option for lathe turning. They never need to be sharpened. You simply replace the cutter.



High speed steel chisels are a popular choice for lathe turning. You'll need to learn to sharpen them, but they offer more turning options, especially as you graduate from the scraping technique to shearing.

Turning and shaping spindles

Use a gouge to make the spindle blank round. Then you're ready for trueing it up and adding shapes. When using the scraping technique keep the handle of the chisel parallel to the floor. Remember to move the tool rest closer as the diameter of the turning is reduced.



Use a skew to bridge high and low spots left by the gouge in the roughing step, making the spindle into a flat cylinder. This is a shaping step so the RPM can be increased.



Create coves using the tip of a gouge or skew for rounded or V-shaped coves.



Use a parting tool in conjunction with calipers to turn the spindle to a specific diameter. When shaping of the spindle is complete move the tool rest out of the way and sand the spindle using strips of sandpaper.

Bowl turning

Start with a paper joint



Create a [paper joint](#) by sandwiching craft paper between a mounting block and the bowl blank. This allows you to fasten the face plate to the mounting block so there won't be screw holes in the bowl.

Shape the outside



Use a round nose scraper to shape the outside of the bowl. Work around the bottom of the bowl and cut into the mounting block to clean up the paper joint glue line. Watch the shavings coming off the turning project. As long as it's shavings you know you have a sharp chisel. If it's dust it's time to sharpen

Hollow the interior



After the outside is completely shaped hollow the interior. Pay attention to the tool rest and keep it close to the bowl.

Bowl calipers



Use bowl calipers to check the bottom and wall thickness. These are used with the turning stopped.

Sanding



Sanding goes very quickly when it's done with a hook and loop sanding disc on a cordless drill. Sand out any tool marks and progress through grits until the bowl looks good. Use reverse to optimize the sanding process. Be sure to tighten the set screws in the faceplate anytime reverse is used.

Finishing



Use a paper towel to apply finish to the bowl. Mylands High Build Friction Polish was used on the bowl in the video. Cover the bed of the lathe to catch any drips.

Separate the paper joint



Position the tip of a wide bench chisel in the paper joint with the flat face of the chisel facing the bowl. Gently tap the handle of the chisel with a mallet. Turn the bowl a few degrees and repeat. Let the chisel and mallet do the work, don't pry.



After the joint separates some paper will be left on the bottom of the bowl. Remove this with a random orbit sander and apply finish to the base.

My Notes

[illegible]

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