

20 ways to master Spindle Turning

By Nick Cook

In the hands of an expert, turning a spindle looks effortless. But there are plenty of pitfalls to avoid on the journey to expertise. Here are 20 tips to help you become a spindle master.

Spindle turning may seem easy for production turners and others who have stood in front of a lathe for a few decades. Many of us simply turn on the machine, mount the blank between centers, and start cutting. Those who watch—either in demos or as students and even clients—are amazed at the speed and accuracy with which we perform what we consider the mundane task of turning spindles.

But for the beginner, there are so many things to think about!

Editor's note: Earlier this year, we published Nick Cook's article "Twenty Ways Not to Turn a Bowl." Nick received so many compliments about this article that he volunteered to write a follow-up article with spindle-turning tips.

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Let's start with mounting the blank. Should we use a safety center or a spur-drive center? A two- or four-prong spur center? Should I use a mini-spur? Should it be spring-loaded or not?

See what I mean? This may be too much for the average student.

Most beginners don't really have to think about all that much. The lathe they just purchased came with a drive center and a four-prong spur center without a spring loaded center, and is large enough to drive most anything that will fit on it.

Here are some do's and don'ts to improve your spindle work.

Mount your stock

1 Choose your turning stock carefully. Avoid knots, checks, and other defects. Straight-grain blanks produce the best results. Poplar is inexpensive, easy to turn, and readily

available. For projects requiring detail, maple is my favorite light-colored hardwood; walnut and cherry are ideal when dark woods are preferred.



2 Always use a centerfinder or a straightedge across the corners of the blank to find the center. This is especially true if you are going to leave squares on the final turning. It is also necessary to make sure the blank is truly square when preparing the material. On fully rounded work, this is not as critical.

3 Never mount the blank with the lathe running.

It is dangerous and can cause you harm. Don't do that!



4 Never drive the blank onto the spur center while it is mounted in the spindle.

This can damage the Morse taper and stress the lathe bearings.



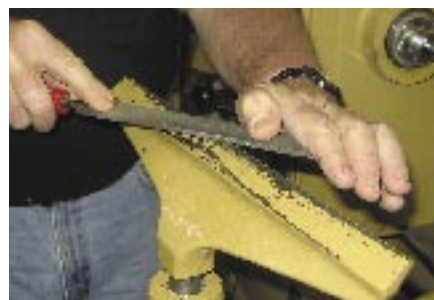
5 Never drive the spur center into the blank with a steel-faced hammer.

This will damage the Morse taper, preventing it from fitting properly. Always drive the spur with a wooden mallet, dead blow, or other soft-faced hammer.

6 Never apply excessive pressure on the blank with the tailstock.

Slide the tailstock forward, lock it in place, and run the live center into the end of the blank. Be sure to lock the quill in place once you've snugged up the tail center. At the tailstock, use a good-quality live or ball bearing center; one with interchangeable tips to accommodate different applications is worth the extra expense. A cup-shaped tip on the live center will be less likely to split smaller blanks.

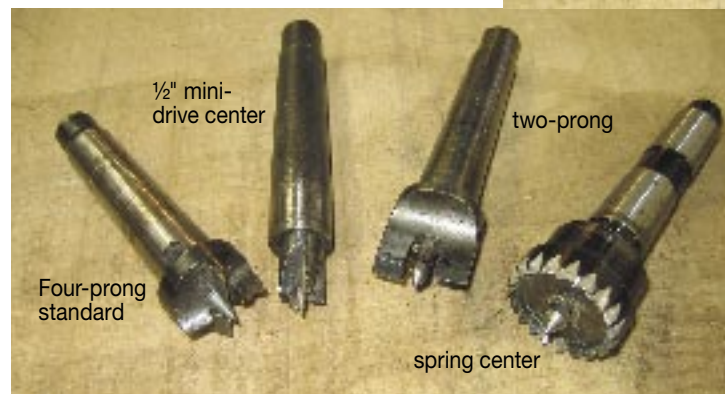
Tool-rest tips



7 Maintain your tool rest.

All turning tools are harder steel than the tool rest. Nicks and dings in the tool rest will be reflected in the workpiece. Use a mill file to keep the tool rest smooth. Some turners even wax the tool rest with paraffin (sometimes called canning wax).

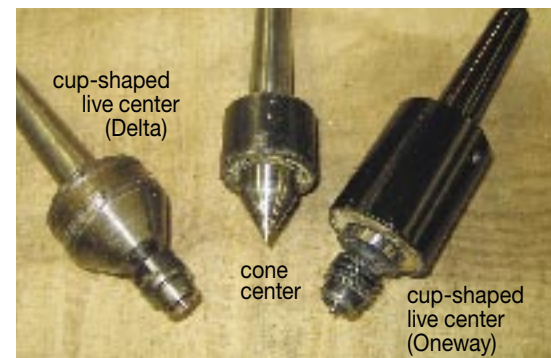
Popular drive centers



8 Position the tool rest parallel to the blank and as close as possible—1/4" is

adequate clearance. Be sure to lock the tool rest to the support and the support to the lathe bed. Always rotate the workpiece by hand before turning on the machine. No matter how many times you have seen it done in demos, never move the tool rest with the machine running. Always move the tool rest closer after removing the corners from the blank—excessive overhang of the tool will cause chatter.

Popular tailstock centers





9 Adjust the height of the tool rest to match the tool you are using. You should cut above center for most lathe tools. If you switch from a thick tool (like a spindle roughing gouge) to a thinner tool (like a skew) you will need to raise the tool rest.

Turning tips



10 Always cut downhill, from large diameter to small diameter on spindles. Attempting to cut uphill on some woods will produce disastrous results—expect a lot of catches.



11 Never work with dull turning tools. If in doubt, sharpen the tool. The skew in particular needs to be razor sharp. Honing is required to maintain the edge of the skew; other tools may be used straight off the grinding wheel. Sharpening jigs or fixtures will ensure that you get a consistent bevel angle on your tools. (See page 32 for details.)



12 Never turn on the lathe without first checking the speed. Step pulleys are easy to check visually. Variable-speed lathes that utilize an adjustable pulley system do not allow you to change the speed without the machine running. Turn on the lathe before mounting the blank, adjust the speed, then turn it off and mount the workpiece. Some of the electronic

lathes are equipped with digital readouts so you can see the RPM as you make adjustments.

Here are speed guidelines (wood species and experience are key variables): For 1"- to 3"-diameter stock, I recommend roughing out at 1,200 rpm and moving up to 2,000 rpm for finishing cuts. For stock 5" in diameter or larger, rough out at 800; finish at 1,500.

13 Use your body—not just your hands—as you move the tool along the tool rest. This will provide more support and better control.



14 When turning furniture parts or architectural elements with square ends or pommels, make sure your blanks start out perfectly square. It is also critical that you accurately locate the centers on this type of work.

Master skills

15 **Take your time;** rushing through a project will probably create less than satisfactory results.



16 **If duplicating two or more spindles, make a pencil gauge or story stick.**

Use your template to mark each blank once it is roughed out. The marks will identify where details are located along the spindles. Use a parting tool or bedan and a vernier scale to cut down to the appropriate diameters. Always measure from the same end to provide consistent results.



17 **Vernier scales and spring calipers can get caught in the workpiece and snatched from your hands.**

Always round over the tips of your measuring tool before using them on spinning stock. Or even safer: Stop the machine to take measurements.



18 **For additional support and better control** of your spindle turning, wrap your index finger around the tool rest.



19 **Remove the tool rest prior to sanding.** It's too easy for fingers to get caught between the tool rest and the turning stock.



20 **Never use cloth rags for applying finish,** only paper towels. In an instant, the spinning lathe can grab a thread and your finger. It's false economy to use cast-off T-shirts if doing so leads to a trip to the emergency room.



Always think SAFETY!

Whatever you turn, keep two safety tips in mind:

- Always wear a proper dust mask while sanding.
- Never turn without proper eye protection.

Enough said.

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Photos: Marisa Pruss