

# Lathe Turning Tips

Practice, sharp tools, and a reliable machine - these are the surest avenues to beautiful lathe turning results. And here are several tips, hints, and helpful workshop methods that will ease you into more professional-looking lathe projects.

## What kind of stock is best?

For the beginner, the textbooks are right: stick with clear, straight-grained wood, free of checks, knots, and other defects. Also, stock of a consistent density throughout is preferred. To get to know the "feel" of your lathe, practice turning white pine or poplar.

## Finding centers

There's more than one way to find exact centers. One sure-fire way is to buy a product made to find centers: a plastic center finder, center-finding rule, or a Bulls-Eye TM. The old-fashioned method is to use a straightedge, pencil, or awl and draw diagonals across opposite corners on each end of the stock.

Find the center of irregular stock by marking a right triangle and dividing the hypotenuse in half. Another way of finding the center of irregular stock is by using a center finder (Part #731195). I have found this to be one of the easiest and quickest ways to accomplish this.

On really odd-shaped stock (the kind you're apt to find in a woodpile), lay a square on the end of the piece, and mark the three points where the square touches the edges. Draw lines between these points to form a right triangle. Next, divide the length of the hypotenuse (the side of the triangle opposite the right angle) in half. That halfway point is as close as you'll get to the center of the stock

## Seating spur and cup centers

If you've ever had a perfect piece of cherry or oak split as you seat the drive center, read on. Next time, try sharpening the end edges of the spur, or use a handsaw to cut kerfs corner-to-corner in the end of the stock. The spurs will seat in the kerfs.

To keep the cup center from burning as the turning wood builds friction, apply wax or soap to the cup and point. Or, avoid burning the end stock by using a live center (Part #505602); its sealed bearings rotate with the work so there's no friction between the cup and the stock. *Note: MARK V accessories include both a standard cup center and a drive center. Which the standard may scar the very end of the stock, it allows full use of the MARK V's 34" lathe bed. Using the live cup center reduces the maximum length of stock.*

After "setting" the drive center (use a soft-faced mallet), mark the stock in relation to the setscrew in the drive center. That way, if you must remove stock from the lathe and remount it later, you can easily line up the center so the spurs seat in their original position. Marking your bowls isn't necessary. The screw holes in the MARK V faceplate are positioned irregularly so that stock can be mounted and remounted in the same position. Do attach the faceplate so that no two screws run parallel with the grain of the stock.

The most common way to attach stock to the faceplate leaves undesirable holes in the bottom of your project. Here's how to avoid the holes: glue a scrap mounting block to the stock you want to turn with one sheet of newspaper in between them. After turning, split the paper joint, and you'll have a clean, even separation.

**Tip:** Use a Bandsaw to round-cut faceplate stock before mounting stock on the lathe - roughing the stock with the Roundnose will be safer and easier.

## Roughing spindles

Rough-cuts should be turned at slow speeds; too fast and the stock might vibrate off the lathe.

Use a gouge to bring stock into round. Rest the back of the tool's shank on the turning stock to test for roundness. If the gouge doesn't vibrate, the stock is cylindrical. Avoid turning too small a diameter

when roughing. Simply scribe pencil lines along the sides of the rough stock. When the dark blur of the lines disappears, the stock is round, as large a diameter as possible.

### **Turning bowls**

A common misconception is that wooden bowls are turned from the heart of trees - and that looking down into their center, the annual rings should splay outward in concentric circles, as the sawed-off trunk of the tree would look. Bowls turned in this manner will probably spit, crack and warp. Fine wooden bowls are generally turned with the grain running lengthwise, from stock taken from the outside edges of large trees, with the grain running *across* the bowl. To see the annual rings, you'd look at one side of the bowl rather than the center.

### **Turning contours**

Once roughing is complete, increase the lathe speed, but not above "L" on the MARK V. Before your next cut, stop and think ahead.

*Plan* the design you want and lay it out on paper. Use your plan (and a pencil), mark dimensions on the stock. Next, use a parting tool to make dimension cuts to within 1/16" of the final diameter. Use a set of outside calipers (Part #730221) to check the diameter of the cut.

To cut the inside of a bowl to within it's final depth, drill a depth control hole in the center of the stock. If possible, use a brad-point bit - it leaves a flat bottom hole and won't drift. Then scrape the remainder of the bowl bottom to this depth. Refer to your owners manual or call Shoptsmith Technical Support for instruction on how to the Tailstock Chuck Arbor (Part #505603).

Always work "downhill" - turn larger diameters first, work from top to bottom of the bead, and the outside of the bowl to the center. This helps eliminate chatter that develops in long slender turnings. Don't let your chisel move off the tool rest; keeping the tool rest centered at the area being cut solves this problem. Since the tool rest is the fulcrum for your chisel, keep it within 1/8" of the stock, even if it means extending one end inside a bowl. When scraping, place the rest near the centerline of the diameter of the turning stock. For shearing, raise the rest to where you feel most comfortable. A good rule of thumb in shearing is to raise the toolrest slightly above the centerline of the stock.

### **Using the right tool**

In general, you should select the lathe tool that works best for you. Time-honored guidelines say that a gouge and Roundnose are commonly used to cut flat and convex surfaces, such as taper and beads on spindles. When turning bowls, use a bowl turning gouge. Ask us about some recommendations.

Don't hold the tip of a skew in the wood more than an instant - push it in and get it out. Otherwise, the chisel can heat up, burn, and draw out the temper.

Feed your tools slowly and steadily; never jab or force a tool into the wood. If your chisel begins to chatter or you get a rough cut, check the sharpness of the edge. If the sharpness is good, then the stock may be turning too fast or maybe you're trying to remove too much stock at one time, or perhaps the stock is whipping because it's become too slender to turn without some sort of center rest.

### **Sanding and finishing on the lathe**

- When sanding on the lathe, **Always remove the tool rest from the lathe.** Protect the way tubes on your MARK V by using a scrap board, cloth, or aluminum sheet stock formed to fit the tubes.
- Don't use new sandpaper to *finish* sand your work; its sharp grit can leave rings on the wood. Before using new sandpaper, rub it together. Rather than holding sandpaper still, move it back and forth on the turning piece perpendicular to the rotation of the piece.
- To sand coves and tapers, cut a narrow strip of sandpaper and strengthen its back with a piece of transparent or plastic electrical tape. Held taut, this strip will reach down into tight coves and beads.

- For long tapers or flat surfaces, use a sanding block. Or fold sandpaper in thirds and place steel wool or felt between the sandpaper and your fingers (to protect your fingers from friction heat).
- Reduce sanding time by first filling major tears in the wood. If you're sanding faceplate work, mount the piece on the upper auxiliary spindle of the MARK V. This reverses the faceplate direction and you'll be sanding against the direction the piece was turned.
- Before applying finish to straight, tapered, or gradual contours, stop the lathe, and use fine grit sandpaper to lightly finish sand with the grain.
- Finishing on the lathe allows you to apply a quick and even finish. For best results with oil finishes, apply it both to the wood and the sandpaper. While the piece turns, the sawdust will mix with the finish, sealing the pores of the wood. Follow the same way tube protection as with lathe sanding.
- If you plan to stain your work, remember that over polishing the wood with tools or extra-fine sandpaper will close the wood's pores. Pine is most susceptible to over polishing, to the point that resin is drawn out and *prevents* stain from soaking into pores.

### **Scraping vs. Shearing**

Another of woodworking's hotly contested questions: Which is best, scraping or shearing? Once again, it's something you'll have to decide for yourself, but here are a few facts:

Scraping is newer. It started in the pattern-making trade and is now popular among hobbyists and other amateurs. Still, most pros use the technique at certain stages in their projects. This method removes stock slower than shearing. You can count on more accuracy because it's easier to control the amount of stock you remove. Scraping is quicker and easier to learn, but leaves a rougher surface and requires more sanding.

Shearing has been the accepted method for generations. Fathers passed the technique on to sons, and in this way, the method was perfected in the old trade. Shearing removes wood rapidly and leaves a surface needing very little sanding. But shearing is time consuming and takes patience and practice to learn.