

Chucking and Holding Techniques For Rough Wood

Glendale Woodturners Guild Presentation by Bill Haskell – July 14, 2002

- The size and shape of the rough piece of wood may have a lot to do with how the wood is held.
- For this presentation, I will assume the piece of wood is fairly large – a limb or chunk of wood that is 6”-12” long and 5”-10” in diameter.
- A somewhat larger size would work with this approach also.
- For our purpose here, “ROUGH” is assumed to mean that the ends are non-parallel and non-perpendicular to the turning axis, and that the sides are not even or straight. In other words: “ROUGH”
- Two holding techniques are addressed here:
 - Faceplate mounted
 - 4-Jaw Chuck mounted
- Before mounting, however, the rough chunks must be shaped for mounting
 - Turn between centers first
 1. Mount the chunk between a spur center on the headstock side
 2. Bring up the tailstock to support the other end with a live (revolving) cup center
 3. Rough turn the chunk of wood until the horizontal sides are straight and true like a cylinder
 4. Turn and face off both ends of the cylinder flat and true – turn as close to the center as possible
 5. At this point, decide which end of the cylinder will make the best top and which the best bottom.
 6. Decide whether a faceplate or 4-jaw chuck holding technique will be used
 - Faceplate Method
 1. Take the rough turned cylinder off the lathe
 2. Pare the center nub off the end that will be the bottom
 3. A carpenter’s chisel works well – one or two bangs with a hammer on the chisel and the nub will usually pop off
 4. Make sure the bottom is flat with no protuberances so the faceplate sits firmly and does not rock. Any indentation where the nub was removed is ok.
 5. Screw a faceplate on the center of the bottom end

- Screw tips:
 - Square drive or Phillips head screws work best
 - The screw should penetrate $\frac{1}{2}$ " to $\frac{3}{4}$ " into the wood block
 - #12 or #14 size screws depending on the size and weight of the block
- 6. You are now ready to install your faceplate mounted block onto the lathe and fashion a lovely turned form
- 4-Jaw Chuck Method
 1. At the end of rough turning the cylinder, make sure the tailstock cup holds the cylinder end that you have chosen for the bottom. If not, flip the cylinder end to end.
 2. On the bottom end, turn a spigot the size required for your 4-jaw chuck.
 3. I like to turn a groove in the spigot about $\frac{1}{4}$ " from the end. When mounting the spigot into the 4-jaw chuck, seat the front edge of the chuck into the groove. This provides a better grip.
 4. Remove the cylinder with spigot end and mount into your 4-jaw chuck. The nub on the end of the spigot does not need to be removed, and will be useful later on to reverse the piece when turning the bottom surface
 5. You are now ready to turn a delightful piece

TIPS:

1. A clear plastic circle (approximately 5" in diameter) with a small hole in the center and concentric scribed rings every $\frac{3}{4}$ " or so is a real aid in quickly finding the best center, providing maximum diameter, on a rough piece of wood.
2. When rough turning between centers, use a 2-prong drive spur where a non-perpendicular and unflat surface is encountered.
3. If the faceplate approach is used, before removing the rough turned cylinder from between centers, use a pencil or sharp pointed chisel to mark a circle on the revolving cylinder. The circle should be slightly larger than the diameter of your faceplate, so that it is a good reference for centering the faceplate.
4. Leave your 4-jaw chuck on the spindle when you need to turn between centers. Insert a 2 or 4-prong drive into the 4-jaw chuck and tighten the jaws. This saves having to remove and remount the 4-jaw chuck.
5. When turning a hollow or enclosed form, do the initial rough turning between centers so that the form bottom is at the tail stock side. When all turning is complete and you go to reverse the piece to turn the bottom, the existing tailstock cup indentation will allow you to reinsert the tailstock in exactly the same place and have perfect concentricity.