

Turning a sphere – DAW Club July demo notes by Tod Raines

1. Prepare the blank with the length at least 2" longer than the diameter; turn round to a cylinder.
2. Find and mark the center of the cylinder and then mark the diameter along the length centered on the center line.
3. Transfer these three marks to tape on tool rest; to be used for reference
4. Part out the cylinder at the left and right marks to make tenons down to 2/3 of the diameter
5. Make two temporary marks to the left and right of the center line that equal half the diameter of the freshly cut tenons
6. Now practice progressively larger cuts on the right side until the right most mark meets the tenon on a pleasing round curve. Repeat this for the left side. Continuously ask yourself where is the 'high spot' and work to a round shape.
7. Repeat steps 4 (using marks on tape for reference), 5 & 6 only with a smaller diameter tenon such as 1/3 the diameter.
8. Continue this process until you have very small tenons (say ~ 1/4" or smaller and you are approaching the center line and the sphere is mostly formed.
9. Again continue with a critical eye to find the 'high spots'. The use of calipers at different diameters can help.
10. Once you are satisfied with the spherical shape, use a small handsaw to cut the sphere free from the tenons.
11. Mount a soft wood cup center in the chuck (or Morse taper to fit headstock) and another cup center on the tail stock live center.
12. Mount the sphere in between the cup centers orthogonal to the original axis
13. Use either a spindle gouge or sandpaper to smooth out the tenon ends of the sphere.
14. Once this axis is smooth, rotate the sphere in the cup centers and repeat eventually just using sandpaper
15. Finish as desired

What tools do I use?

- Lathe with drive centers and revolving tail center (point w/cup)– can use safety center but I don't
- Wood blank the length at least a few inches longer than the width
- Pencil
- Ruler or tape measure
- Masking tape
- Calipers
- Spindle roughing gouge
- 1/2" or 3/8" spindle gouge
- Thin parting tool (larger parting tool can be used as well)
- Small hand saw
- Soft wood cup center to fit chuck (or with Morse taper) and Soft wood cup center for tail stock (several methods available)
- Finish – sandpaper, cream fillers and Deft spray lacquer