

MAKING A SPHERE

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1. Turn a cylinder between centers making the diameter a little larger than the sphere you are going to make.



2. Mark a center line - the center line of the sphere; not necessary the center of the cylinder.



3. Mark 1/2 of the cylinder's diameter on each side of the centerline.



4. Turn the region on either side of the outer lines to about a $5/8$ diameter inch 'spoke'. There's nothing critical about the diameter of the spoke.



5. Round over the ends toward the spoke using a spindle or bowl gouge to an approximate sphere. Do not remove the center line in this step. For small spheres getting the sphere right at this point reduces the work of later steps, but isn't particularly critical. However for larger spheres it's important that the shape of the sphere be pretty close to right. Make a cardboard quarter round template to check your sphere's shape for bigger spheres (say, over 4 inches in diameter).



Fine tuning the sphere between cup centers

1. Trim the spokes close to the sphere.
2. Capture the sphere between the cup centers with the stub of the spokes perpendicular to the lathe bed (that is, outside of the cup centers).



3. Turn off the remains of the spoke with a spindle gouge. Look for the shadow above and below the sphere; carefully turn the sphere until the shadow is gone. From this point on we'll be using a scraper to fine tune the shape.
4. Using a round nose scraper sweep lightly around the portion of the sphere that is exposed. Turn off the lathe often to check your progress. Continue until your cuts have *just* become continuous around the sphere's perimeter. After making a few passes you can scribble pencil marks in the uncut portions of the sphere - when the marks are turned away, you're done.
5. Rotate the sphere 90 degrees in the centers and repeat the previous step. Then rotate it again and do it again.

Sanding

With the sphere between cup centers sand through grits without changing the position of the sphere. Start with a grit coarse enough to remove the tool marks (probably 80 or 120) then continue at grits half again finer - 80, 120, 150, 220, 300 - stopping at 220 or 300.

Rotate the sphere 90 degrees and sand through the grits again. Rotate the sphere again and sand through the grits again.