

BILL'S THREE SIDED BOX ©

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Objective is to turn a round cylinder into three sides and then make a box.

Wood

Hardwood oriented for spindle turning. I will be using a 3 inch diameter by 4 to 5 inches long piece of maple.

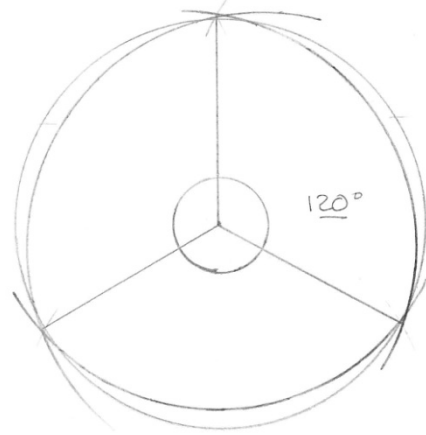
Tools –I will be using these; use what you are comfortable with.

Spindle gouge
Spindle roughing gouge
Bedan
Beading tool
Box Scraper (s)
Parting tool
Calipers
Center punch
Rule
Safety drive centers
Live center with pin
Center finder
Sandpaper/Finishes

You will also need a chuck and lathe, indexing will simplify this project.

Math- A circle is made up of 360 degrees, one third of a circle is 120 degrees. Any circle can be made into three sides if the radius of the side

cuts the circumference and the centers are spaced 120 degrees apart on a circle smaller than and parallel to the original circle.



The most difficult part of this project is the layout.

Indexing – Many lathes have some form of indexing (or spindle locks). With 24 index points, 120 degrees can be set at the 1, 9 and 17 index points.

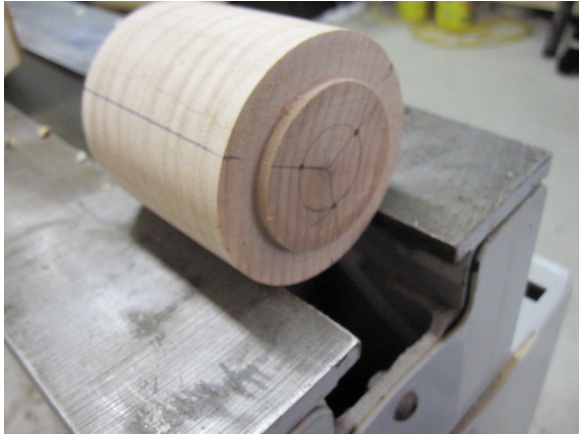
Procedure – Mount the wood between centers and make round. The ends should be kept fairly flat. Put tennons on each end for later mounting in a chuck.

Mark a spot 1/2 inch off center on each end and with the lathe running scribe a circle 1 inch diameter around the center point of the blank.

With the round blank on the lathe and using the tool rest as a straight edge, mark the blank at 120 degrees.

Remove from the lathe and using the center finder, draw lines from the 120 degree lines to the center of the blank marking the point that crosses the 1 inch diameter circle.

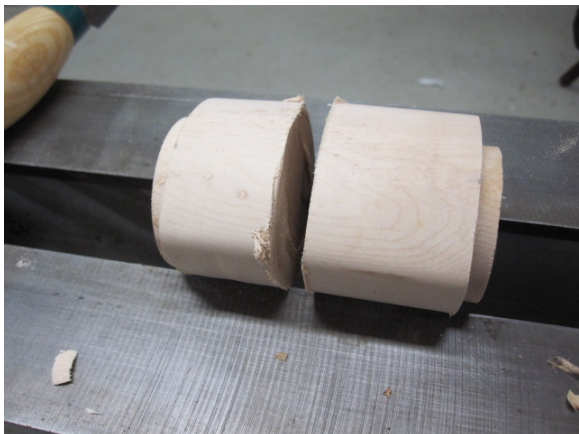
Next, using the center punch, mark the points where the lines cross the scribed circle on both ends of the blank. There should be corresponding points on each end.



Mount the blank back on the lathe off center using the same off set points on each end. Watch the speed as the blank will be off balance. Use a spindle roughing gouge to trim off wood between the lines. Then do the same for the other two sides. I generally sand each side.



One side trimmed



Split the blank into two pieces to make into the box.

Hollow the pieces making a tenon on the bottom piece and recess in the top.

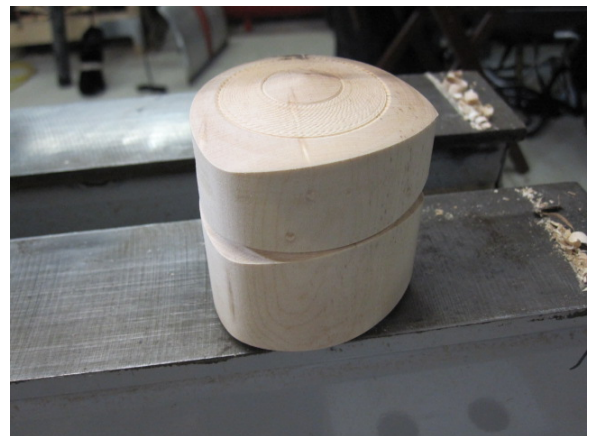


Top Hollowed



Top reversed to finish the box top. (note the points for the off center. Use the expansion jaws to hold the top and use the live center until the final finishing cuts.

Do the same for the box bottom, again from the inside. Use either compression jaws or jam chuck.



Finished piece.