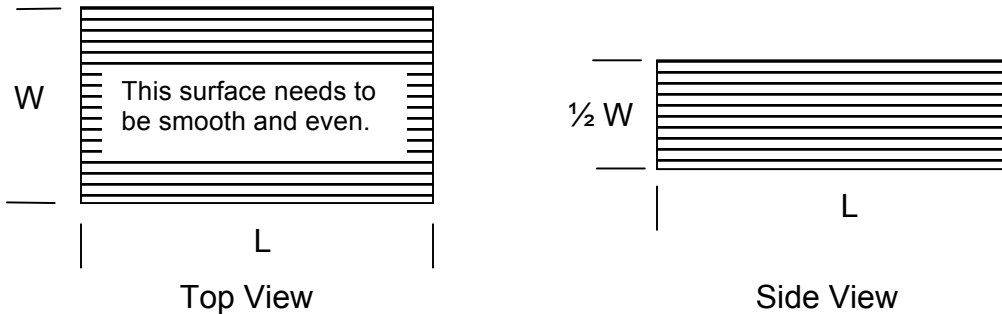


Odd Wobbler Instructions
By: Don Geiger

Stock Size Calculations and Reference Table

When preparing stock material for turning an Odd Wobbler, you will need two pieces of dry wood that is about one inch or slightly longer than the width. The thickness of each piece needs to be $\frac{1}{2}$ the width. The grain needs to be running lengthwise. The mating sides need to be planed to an even smooth surface.

Example:



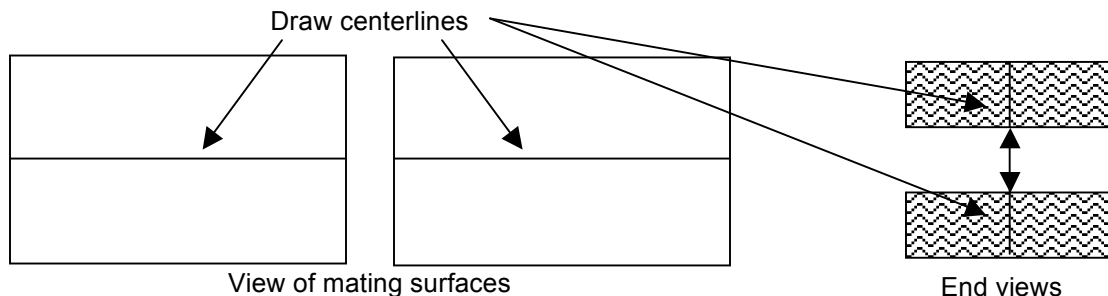
I have found that the length needs to be at least 1" longer than the width. This is reflected in the table below.

Sizing Table:

Odd Wobbler ~Diameter	Length	Width	Height
2"	3"	2"	1"
2-1/4"	3-1/4"	2-1/4"	1-1/8"
2-1/2"	3-1/2"	2-1/2"	1-1/4"
2-3/4"	3-3/4"	2-3/4"	1-3/8"
3"	4"	3"	1-1/2"
3-1/4"	4-1/4"	3-1/4"	1-5/8"
3-1/2"	4-1/2"	3-1/2"	1-3/4"
3-3/4"	4-3/4"	3-3/4"	1-7/8"
4"	5"	4"	2"

Safety Note: An Odd Wobbler smaller than 2" poses a choking hazard.

Once you have the cut the wood to the proper dimensions, mark a center-line perpendicular to the width and on each edge.

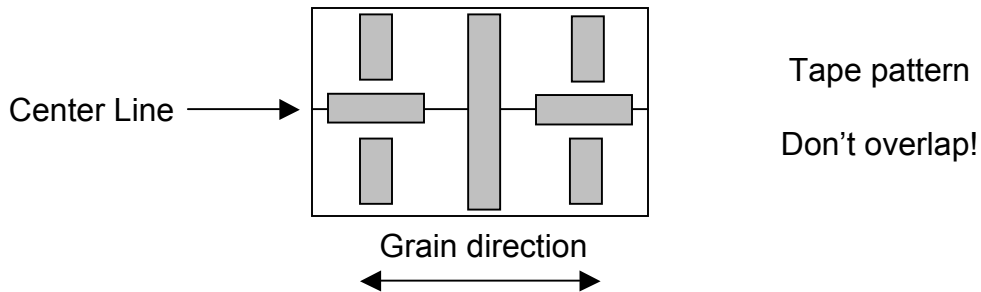




Using a triangular file, score each end of both pieces to create a void where the center points of a drive spur and live center will register.



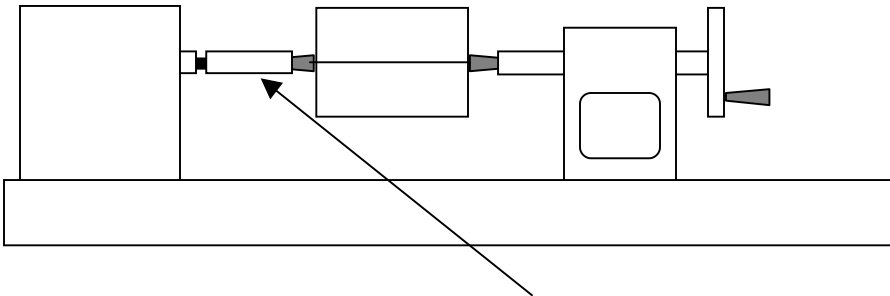
Using good quality double stick tape, adhere the two pieces to each other. Match the score marks. Glue/paper joints or CA glue should be avoided.



Press together for about 1-minute or more using a carpenter's vise or clamps.

NOTE: Alternatively, hot glue can be used on small pieces. The bond can be broken using denatured alcohol.

Mount the assembled pieces onto the lathe between centers. Although a standard drive spur and live center can be used, a Steb drive spur and a Steb live center each with a spring-loaded center pin and a ring of tiny teeth will minimize the chance that the two pieces will be separated from each other.



I have found that adding a Morse taper extender (#2 male M.T. to #2 female M.T.) in the spindle of the lathe provides additional room to maneuver the gouge when making the cuts on the left hand side of center.

There is always a chance the two pieces could come apart from each other on the lathe. It is of paramount importance that the turner wears safety glasses and a face shield. Also, occasionally stop to ensure the two pieces are still adhered securely to each other.

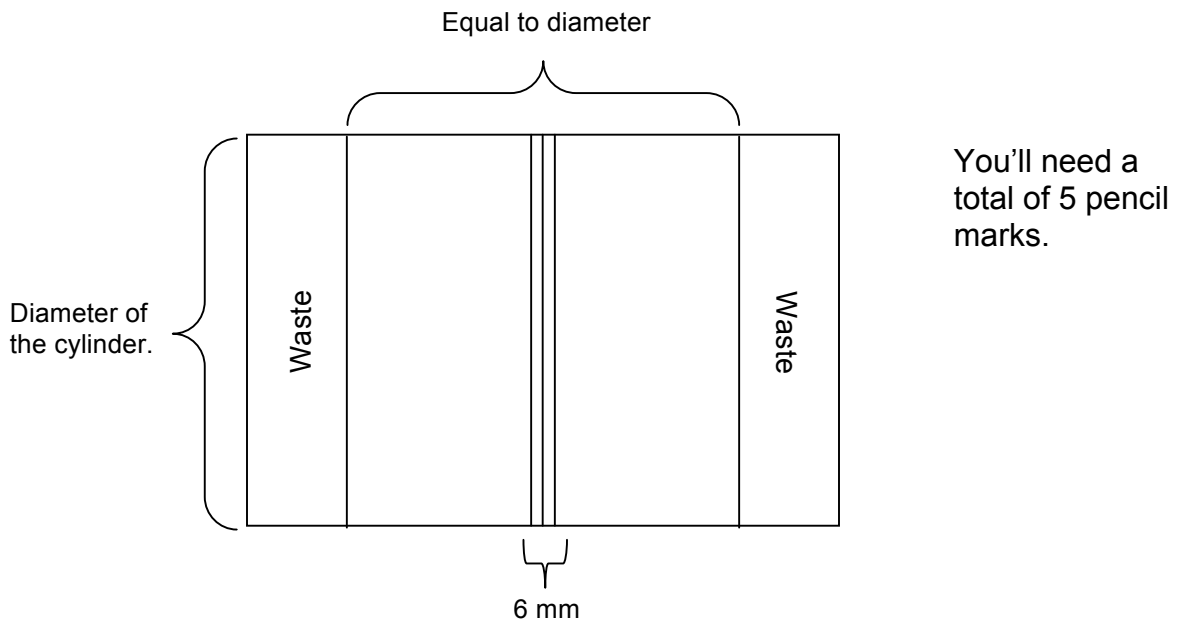
Using a skew, a roughing gouge or a side-ground bowl gouge, turn the wood into a smooth cylinder.

Using a Vernier or digital caliper, measure the diameter of the cylinder. Trim the edges down slightly so an exact measurement of the length of the cylinder can be made.

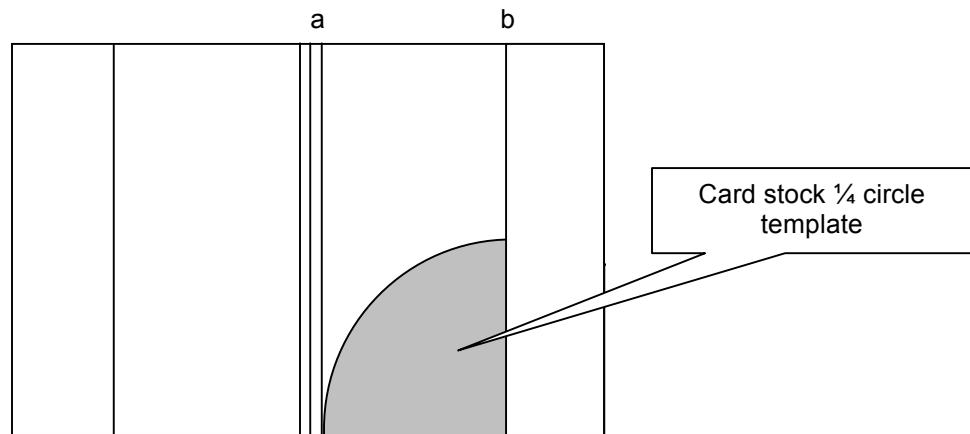
Determine the exact center of the cylinder and make a pencil mark all the way around the perimeter.

Using the centerline as a reference, draw two lines around the perimeter of the cylinder equal to the diameter and equidistant from the centerline.

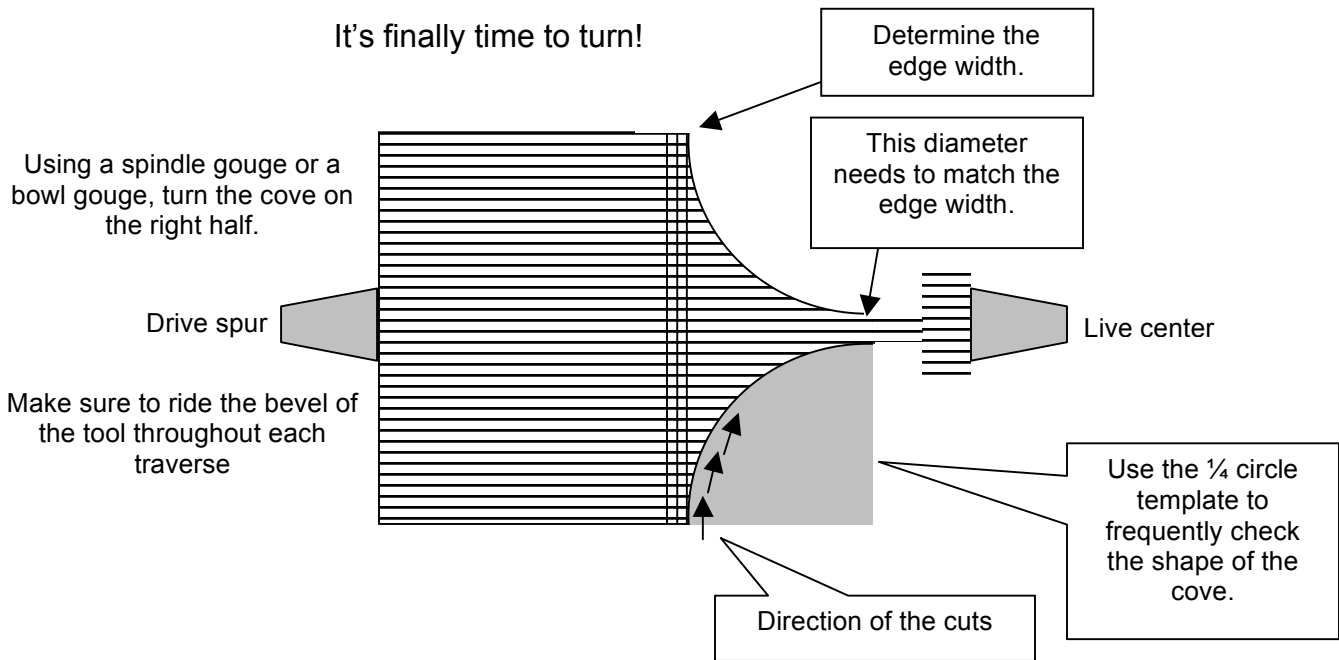
Mark two lines around the perimeter of the cylinder on either side of the centerline equal to the width you want the edge of the Odd Wobbler to be. For an Odd Wobbler in the 2 to 4" range, I suggest using a 6 mm edge, so the lines will be 3 mm on either side of the centerline.



Make a $\frac{1}{4}$ circle template by: measuring the distance between lines "a" and "b". Draw a circle onto card stock using this distance as the radius. Cut a $\frac{1}{4}$ circle.



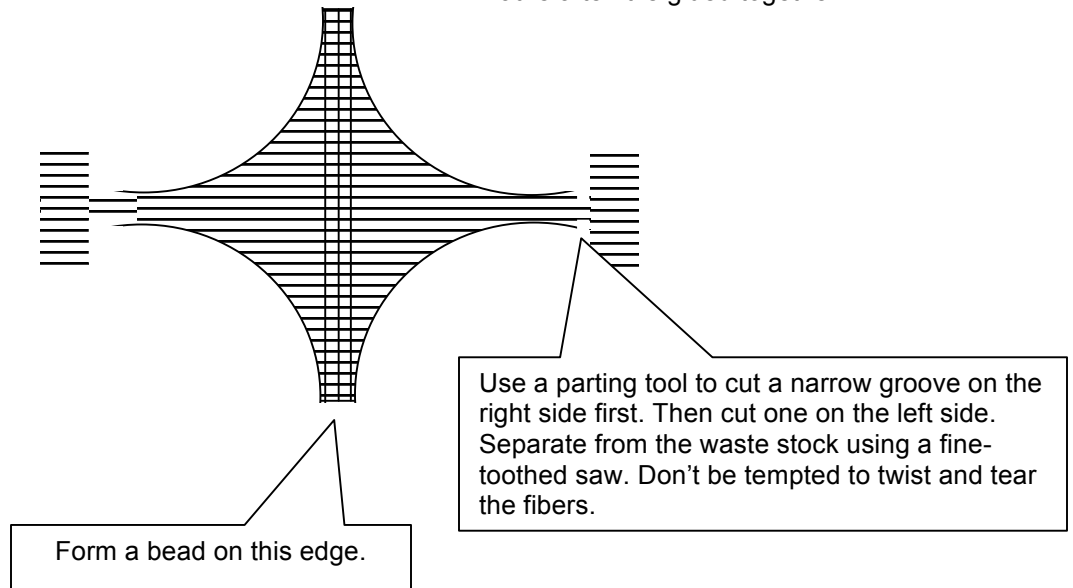
It's finally time to turn!



Turn a cove on the left side.

You can perform some sanding while the piece is on the lathe. Final sanding will be done off the lathe after it is glued together.

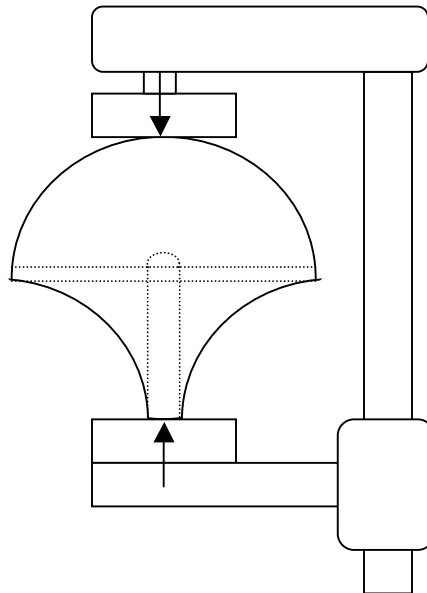
Note: As the diameter of the wood remaining on the left cove becomes smaller, the structure becomes weaker. Care must be taken to not exert much pressure on the wood or it may twist, thus breaking the piece. Twisting of the fibers can be caused by torque created by the lathe suddenly going from stand still to full RPM quickly. To avoid this, each time the lathe is re-started ramp the speed up from zero rpm to the speed you wish to turn at.



Once the turning has been removed from the lathe, the two halves need to be separated. A knife inserted in the area where the bead was turned can be used to carefully separate the two halves. Don't insert the knife at the thin ends or else you will damage the wood.

Once the two halves have been separated, remove the double stick tape.

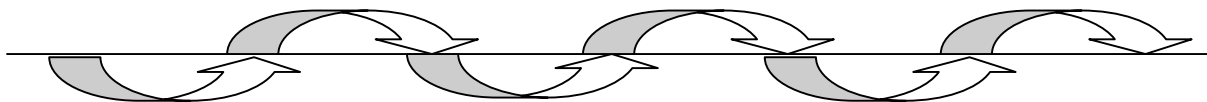
Rotate one of the halves 90° to the other and use glue to adhere the two together. I usually use TiteBond II wood glue for this. Use a small bar clamp to hold them together until the glue sets up.



Clamp securely until the glue sets-up.

Once the glue is set up, use a fine-toothed saw to trim the ends that hang over. Then use a cylindrical sanding drum to sand the edges of each half until they match. I like to use foam-backed sanding pads to do the final sanding. Use a finish of your choice.

Place the Odd Wobbler on a hard flat surface and give it a nudge. It will roll easily and will wobble back and forth while staying on track. If you've done a good job and made each half symmetrical to the other then it will roll quite a ways before coming to a stop.



Rolling path of an Odd Wobbler

These make great gifts for adults and children. Remember: don't make the Odd Wobbler smaller than 2" diameter or it will be a choking hazard!

Enjoy!

Sincerely,
Don Geiger