

## Winged Box Demonstration Handout

Mike Peace, MikePeace356@gmail.com  
MikePeaceWoodturning.com



### Introduction

You can do this fun project on a mini lathe using typical turning tools and wood scraps a turner might have laying around his shop.

### Design

I like to make the box lid with contrasting wood for added interest. Feel free to try different size wood and vary the shape and form. You can make the lid relatively flat or more domed like mine above. I have a somewhat looser fit on this type of box than ones I typically turn end grain so you can easily lift the top off with one hand. Use a piece of wood thicker or wider for the base and you get a different look. Dye, paint, pierce or burn!

### Wood

This project will require a piece of kiln dried wood approximately 1" X 2" X 7" for the body. The lid will require a block about 2" square and 3" long. You may need a scrap of 2X4 or other soft wood for a jamb chuck. I have made these boxes of walnut, maple, cherry and aromatic cedar for the box and walnut and various exotics for the lids. You can experiment with green wood but when it dries the lid may not fit and the box could rock!

### Tools

- Four jaw chuck with 50mm and 35mm jaws and Woodworm screw and 1/4" plywood spacer
- 3/8" spindle gouge
- 5/8" and 3/8" bowl gouge
- 1/2" round nose scraper
- 1/2" Square scraper
- 1/4" parting tool
- Drill with 5/16" bit
- Vernier calipers

### Steps

1. Prepare the blank and cut a tenon
  - a. Use a drill press to drill an appropriate size hole for your chuck's woodworm screw 1/2" deep centered on the blank.
  - b. Mount the blank using the woodworm screw chuck with plywood spacer.
  - c. Because of the interrupted cut, use a high speed, perhaps 1500 to 3000 or so RPMs. **Safety Caution:** Face shield not glasses, always check that all tool rest and banjo handles are tight. Be conscious of moving tools or holding with one hand so you don't accidentally hit the propeller! Face off the blank with a 1/2 or 5/8" BG taking light cuts. Make a short tenon approx. 1/4" long to fit your chuck jaws. Insure a square shoulder using a square nose scraper. Reverse chuck the wood.
2. Shape the top of the wings



- a. Start shaping the wings with a pull cut starting 1" from the center. After getting the winged curve right on the top of the box, use a shear scrape to smooth and blend the surface.
- b. Slow the lathe down some and use a smaller BG to hollow the box recess. Check the depth and go about 11/16" deep. Smooth the inside with a round nose scraper. Sand the inside by hand with the lathe running.
- c. Power sand the outside of the wings. I use a square nose scraper to cut a small rabbet 3/16" deep with a 1/8" shoulder that the lid will fit into. Reverse chuck using an expansion into the rabbet. **Caution:** be careful not to damage the inside of the rabbet by over tightening.



### 3. Shape the bottom of the wing

Take light cuts to shape the bottom of the wing with a 5/8" BG cutting from the outside toward bowl. Cut from near the bottom of the bowl to the center of the wing. Aim for a uniform thickness making the bottom of the wing curve match the top of the wing curve. Refine the cut with a small BG to reduce the wing flexing. Check frequently to make sure the wings are a uniform thickness.

### 4. Start refining the bowl outside

- a. Remove the tenon and shape the bowl. Make the bowl wall thickness about 3/32".
- b. Power sand with lathe at a high speed from the edge of the wing, across and up the bottom of the bowl to remove most of the tool marks. After power sanding, also with the lathe running, use a bended piece of sandpaper on the backside so it won't catch. Use this to sand the area missed by power sanding near the shoulder of the bowl where it meets the wing. With the lathe off, hand sand with the grain supporting the back of the wing with your thumb.
- c. Remove the box bottom from the lathe and smooth the edges of the wing. This can be done with a hand plane or careful use of a belt sander or rub against a piece of sandpaper on a flat surface like your table saw. Sign the bottom of the wing and finish.



### 5. Make the lid

- a. Turn the top piece into a cylinder between centers and add a tenon to fit your jaws. Mount in your chuck, and cut a taper that will fit the rabbet in the box. Use the actual box to trial fit. Pencil around the edge to show the top of the lid flange. Use this mark to start the slope of the lid. You want the curve of the lid to start from the top of the wing so it will flow uninterrupted. Dish the inside of the lid slightly with round nose scraper. Finish shaping the lid and turn a knob. Sand and finish the lid as much as possible.
- b. Part off the lid with a detail gouge or skew.
- c. Chuck the lid to finish off the knob and to sand and finish. Options include:
  - i. Jamb chuck: I use discs cut from 2x4s with a tenon turned on them.
  - ii. Wood collet chuck to hold the lid for final shaping and finishing.



## Finish

Finish of your choice. I typically use two or three coats of Minwax Antique Oil on most of my turnings including boxes applying off the lathe. I wait at least a couple of days after I can no longer smell the finish before using the Beall Buff system.