

Doughnut Chuck

The first thing that many woodturners do when seeing a new bowl or hollow form is to pick it up and look at the bottom. The reasons for doing this are to see the artist's signature and to see that the bottom is appropriately finished. For many years, an unturned bottom has been regarded as unacceptable. Thus, one of the important steps in turning a piece is to turn the bottom.

There are several methods to hold a bowl or hollow form for this "reverse turning". As each turning presents its own challenges, it is worth having several options in your mental tool kit.

For large bowls, I use a vacuum chuck. For very small bowls, I often use commercially made "Cole jaws" mounted on my standard chuck. Another option for bowls is to use a "doughnut chuck" and for my hollow vessels I use a slightly modified "doughnut chuck".

In my local woodturning club, many of the newer members aren't familiar with these doughnut chucks, so I thought that a description might be of general interest.

The doughnut chuck, in its simplest form, consists of a plywood circle attached to a faceplate, a separate plywood ring, and

three or more bolts with wing nuts. (Alternatively, the faceplate circle could be made to fit into the jaws of a chuck.) A bowl or hollow vessel is then sandwiched between the two pieces of plywood and the bolts hold the whole thing together.

To make a doughnut chuck, you will need plywood, a dedicated faceplate, screws for the faceplate, some foam padding, several bolts of the same diameter in various lengths and matching wing nuts.

Begin by selecting some plywood of the appropriate thickness. As my vessels are generally small and lightweight, I use 3/4" plywood for the faceplate circle, and 1/4" plywood for the ring. For heavier pieces, you may want to use thicker plywood.

Attach two (or more) pieces of plywood face to face with double stick tape.

Cut this stack of plywood into circles with a bandsaw. The diameter of these circles should be at least two inches larger than the diameter of the largest bowl (or vessel) for which the chuck will be used.

While the plywood circles are still connected by the tape, drill three (or more) equally spaced holes centred approximately 1/2" in from the outer diameter of the circles. The diameter of these holes depends on the bolts you will

be using (I use 1/4" bolts of lengths ranging from 3" to 6").

Bolt the circles together.

Attach the faceplate circle to a faceplate with screws of appropriate length.

Mount the entire assembly on the lathe.

True up the outer edges of the circles on the lathe.

Mark the edges of the circles so that you can align them the same way each time.

With a parting tool, remove a circle of an appropriate size to create the plywood ring.

Safety Tip

Always put the head of the bolt on the tailstock side and the wing nuts behind the faceplate circle on the headstock side. Be sure to keep your fingers away from those spinning wing nuts!

Note that the diameter of the opening in this ring should be large enough to allow the foot of the bowl to be fully exposed for the reverse turning, but not too large. I make several different rings with openings of various diameters so that the chuck system can accommodate a wide range of turnings.

Dismantle the assembly.

Cut some protective foam padding and



DOWELMAX

Precision Engineered Dowel Jig

Create professionally made joints which are quick, easy, accurate and strong.



Dowelmax is a versatile, adjustable jig that can be disassembled and re-arranged to accommodate virtually any joint configuration. Accessories are available to further expand the capabilities of the jig.

www.dowelmax.com
Tel. 604.986.1850
Fax 604.986.9406

WoodWorkingStuff.com

Check Out Our Web Site

1 (800) 296-6041

"Cutting Price not Quality"

Featuring: Euro carbide - Anti-Kickback - Super slick finish

Face Mould Bits



1/2" Shaft
3 sizes

Only \$47

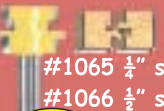
Straight Bits 2 Flutes



1/4" & 1/2" Shafts

Starting at \$8

Glue Joint Bits



#1065 1/4" shk.
#1066 1/2" shk.

Only \$42

Rabbit Bits c/w 4 bearings



#1110 1/4" shk.
#1111 1/2" shk.

Only \$32

Locked Miter Bits



#1133-1/4shk.for 1/2"mat.\$43
#1134-1/2shk.for 1/2"mat.\$43
#1135-1/2shk.for 3/4"mat.\$56

Only \$43

Call for a FREE Catalog

Email info@woodworkingstuff.com

Same day shipping -MasterCard or VISA
Shipping only \$6.00 per order

212 Parkland Rise S.E.
Calgary, AB T2J 4K8

NO PST
Charged

glue it to the surfaces of the faceplate circle and the ring where they will touch the turning.

You are now ready to use the chuck.

Mount the bowl in the chuck with the rim on the faceplate circle and the bottom protruding through the ring. Secure with bolts, being careful to put the wing nuts on the headstock side.

Mount the assembly on the lathe. The tailstock can be used to align the centre of the bowl and hold it in position as you tighten the wing nuts. Don't over tighten, as it is possible to crack a thin bowl.

When the chuck is fully tightened, you can turn the bottom. I usually leave the tailstock in place as long as possible for safety, but it can be removed for completing the bottom. I always use this chuck at a fairly low speed – perhaps 600 or 800 rpm at maximum.

The hollow vessels that I turn have small entrance holes – from 1" to 2" in diameter. To aid in aligning a vessel, I add a wooden cone in the centre of the faceplate.

ART LIESTMAN is a woodturner in Coquitlam, BC
www.artliestman.com artliestman@shaw.ca



7



8



9



10



11



12



13



14