



The Burl

A monthly newsletter for the
Willamette Valley Woodturners
e-mail: wvwtturners@gmail.com
We are also on Facebook



Member chapter

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A non-profit/501(c)(3) corporation

July, 2020

Next Meeting
Thursday July 9, 2019 6:30 pm
using ZOOM

President's Message June 2020

The Vacuum Chuck, Part I

This month I'll begin describing the process I used to create a vacuum chuck for my lathe

What's a Vacuum Chuck?

For our new turners, let me toss out a few definitions and descriptions to make what follows more understandable. A vacuum chuck is a work-holding device that attaches a workpiece – typically a bowl or something similar – to your lathe for some final cuts, or perhaps sanding or finishing. It's composed of a few discrete parts: the chuck itself, which is the portion in contact with your workpiece, and the vacuum system, which consists of a vacuum pump, associated tubing, and a means of attaching the tubing to your headstock. This article will describe how I fabricate the chuck, and next month I'll jump into the tubing and connections to the lathe.

How do these things work? It's amazingly simple – but complicated. At sea level the weight of the atmosphere presses down on every surface with the force of 14.7 pounds per square inch. If you were to take a plastic water bottle, empty out the water and then start sucking out the air, the bottle would collapse under the weight of the atmosphere. The uneven pressure between the outside and the inside of the bottle causes it to collapse.

We use the exact same principle in a vacuum chuck. We create a pressure gradient between the “inside” (the part of the workpiece in contact with the chuck) and the “outside” (everything else on the workpiece). The atmosphere presses against the workpiece everywhere there is that gradient, with a force approaching 14.7 psi. I say “approaching” because we never create a 100% vacuum, so there is always some residual air pressure inside the chuck. This atmospheric pressure creates enough friction while the lathe is turning to permit you to do what you need to finish the work.

The Chuck

Here is what I use to make the chuck portion of this contraption. There are some other options; I will explain these at the end. Make several, of different sizes while you're at it, to handle different sizes and shapes of workpieces.

- A piece of pipe, or a pipe coupling, sized as you choose.
- A piece of wood sized to accommodate the diameter of the pipe.
- A Beall spindle tap sized to fit your lathe.
- A drill bit 1/8" smaller than your spindle size.

Step 1. Select and Cut the Wood



FIGURE 1 THE RAW MATERIAL

I used a piece of white oak for these chucks (Figure 1). White oak is an okay species – cherry, hard maple, or any other fine-pored, close-grained wood would work just as well. I would stay away from red oak, and other softer woods, because this bit is about to turn into a faceplate, and you'll want it to be durable.



FIGURE 2 SQUARING THE BLANK

The next step is to cut some squares. I simply started at a corner, marked out some 45-degree lines, and then squared a line across the board. These angled lines also let me find the center (Figure 2). Then I went to the chop saw to cut them apart.

If you are going to use a band saw to rough out the circle you will turn, draw the diameter of your pipe using a compass and the center mark you just made. Draw an oversized circle for now. For the chucks I made, I omitted this step and just turned the square to a round on the lathe.

Mount the Blank on your Lathe



FIGURE 3 MOUNTING THE BLANK

Next mount one of the squares on your lathe. I used a four-jaw chuck (Figure 3). Note that it is not critically important that this piece be exactly centered on the spindle, because you are going to turn it round. If your center mark does not line up precisely with your drill in the next step, don't sweat it. It's not an issue.

Drill and Tap the Spindle Hole



FIGURE 4 DRILL A CENTER HOLE

Next, use a Forstner bit 1/8" smaller than the diameter of your Beall spindle tap, and drill a hole in your blank (Figure 4). I like to do this on the lathe, but you could use a drill press too, if you prefer. Again, if this hole does not line up with your center mark, it's still okay at this point. Drill slowly, back the drill out of the cut often to clear the chips, and be sure to turn down the speed of the lathe. You don't want to burn this hole or overheat the drill bit.

Now remove the drill bit and get ready to tap the hole. I like to use a tap follower for this step and highly recommend one if you are tapping on the lathe. (Figure 5). Turn your tap, backing out of the hole half a turn every so often to clear chips, and tap all the way through your pre-drilled hole (Figure 6). When you're done tapping, turn a little recess slightly larger than the tapped hole for the lip on your spindle (Figure 7).

Finish Up



FIGURE 5 A TAP FOLLOWER



FIGURE 6 TAP THE HOLE

The rest of this is straightforward. Mount your new “faceplate” on the lathe spindle and test the fit. It should turn on snugly but not overly so. Your next step is to turn the square into a round, if you did not do that on the bandsaw. Make the round a little larger than the outside diameter of the piece of pipe or coupling you’re using, and then turn a round tenon that just fits inside the pipe/coupling. You want a nice snug fit here, because minimizing air leakage is important. Glue the pipe and wooden faceplate together using 2-part epoxy, which also helps seal this joint, because epoxy is a gap-filling glue.

Finally cut a round circle from a piece of Craft Foam (available at Craft Warehouse or Michael’s) and mount this on the outer lip of the chuck. This foam will provide a reasonably good seal when you mount your workpiece. I like to use 3M #77 Spray Adhesive for this task.

When you’re all done, your chuck should look something like this (Figure 8):

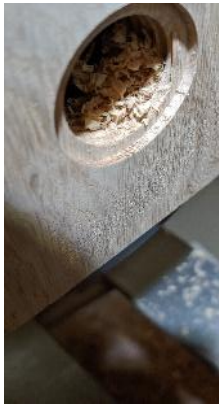


FIGURE 7 TURN A RECESS



FIGURE 8 A FINISHED CHUCK

Next month I will describe the process of evacuating the air from the spindle and creating a vacuum inside your new chuck. Questions? Drop me an email!!

~~Jeff Zens

June Meeting - ZOOM

Submitted by Milt Engelke, Secretary

- V. P. Marc Vickery to the helm in setting up and hosting the first ZOOM club meeting
 - Call to Order – 6:35 pm
 - Pledge of Allegiance
- ATTENDANCE FOR CLUB MEETING 15
 - FORMAT ZOOM on-line meeting
- ANNOUNCEMENTS:
 - Jeff Zens indicated he would set up a Google-form – Survey immediately following meeting asking each of the attendees to respond.
 - Craft supply = presently at \$0
 - By-laws being proposed for modification by board. Once Board approves will be distributed to general membership for vote/approval.
- offering images and documentary of construction.
 - Hopefully, a number of these images will be included with this newsletter.
 - Mark Choitz – Oregon Wood Turning Symposium scheduled for March 19-21, 2021. In early planning stage.
 - Web-site is being transitioned to Silver Sorensen

SHOW & TELL was led by Marc Vickery from images and documents submitted prior to the meeting or during the meeting by individuals.

- Darcy Tataryn, Marc Vickery, and Milt Engelke visited Roger Williams with the Willamette Art Center located at the State Fairgrounds. The meeting was allowing our club members to learn of the Empty Bowl program conducted annually by the Art Center. Their event is scheduled over an entire weekend in November during which time they will display, sell and distribute often more than 1500 bowls. A special Friday night by invitation event only, all day Saturday open to the public and Sunday am. To round out the event Mr. Williams would present the possibility the WAC would extend an invitation to WVV to participate. If the WAC board approves, the invitation would be considered by WVV. Stay tuned for updates but all indications appear positive.
- Darcy Tataryn reported as of meeting date the Willamette Heritage Center was still under restrictions due to COVID-19.
- A total of 15 members attended the dial in ZOOM meeting. Hopefully the results of Google Form survey (Jeff Zens) will be included in this newsletter.
- Format for the next meeting – scheduled for July 9 will also be a ZOOM meeting with details being provided to the membership by Host Marc Vickery prior to the event.
- Meeting adjourned 8:15 pm.

Upcoming Demonstrators for 2020

NOTE: due to the Coronavirus, the next several months are undetermined including the ones shown as scheduled. Scheduled meetings are all subject to change.

Date	Name	Website	Topic	Saturday Class
7/9/2020	Tom Hasting	Hastingcoastalwoodworks.com	Basket illusion lidded boxes	No
8/13/2020 SUBJECT TO CHANGE	Steve Newberry	Word of mouth	Spheres to Cups	Not at this time
9/10/2020	Under consideration. Some possible ideas in the works. Please refer any ideas to Marc Vickery – THANK YOU			
10/8/2020 SUBJECT TO CHANGE	Phil Lapp	Word of mouth	Crotch Bowl	No
11/12/2020 SUBJECT TO CHANGE	Art Liestman	http://artliestman.com/	Demo and class are on the “lost wood process”	YES! Please let Marc Vickery know if interested asap
12/10/2020	Under consideration. Some possible ideas in the works. Christmas???			
Please refer any ideas to Marc Vickery – THANK YOU				
Please express an interest of ANY Demonstrator or weekend workshop you would like to see to Marc Vickery				

Tom Hasting will do his demonstration on Zoom. A link will be provided to all members on Thursday morning. He has a fantastic setup for doing demos, better than many of the “professionals” who actually have assistants. See his website for other background, very high quality work.

Show and Tell plan for the 7/9/2020 Zoom meeting:

Since we have a demonstrator, the Show and Tell portion will be shorter compared to the last meeting which took the entire time. The plan is to end club announcements and Show and Tell by 7:00pm and the demo should run from 7:00 to 8:30 approximately. No actual time limits. Members have probably been working on lots of projects with the virus protocol. Please take some pictures and be willing to discuss the projects as to: wood type, source of wood, inspiration, problems and solutions, and anything you learned in doing the project. Sharing is how we all learn and get inspired.

To bring the photos to the meeting, PLEASE forward by email to me at my address below.

In the practice meeting 6/4/2020 I discovered some members found Zoom a bit of a hurdle. Tom and I will host a meeting Tuesday July 7th at 2:30pm. IF YOU want a practice session, please email me a note asking to be invited.

If that time does not work, please email me and we can discuss a time that works for you.

Email to halepaumarc@gmail.com

Call if I can help in any other way.

Membership Rewards

Chain Sharpening Service from [Jeff Zens](#)

I have recently purchased an electric chain sharpener and can accurately sharpen your chains and adjust your depth stops for your saw chains. This will restore the chain to “factory-new” condition. Most chains can be sharpened for \$10.00, but longer chains or badly damaged chains might be a little bit more. This service is only available for club members.

Library

A friendly reminder to members with books and/or videos checked out from the library. Please return them at this next meeting.

Wood Gathering

Sign-up sheets will be available to indicate your availability to help with wood gathering. Anyone who learns of a tree or log that is available to the club should notify Gary Dahrens, (503) 260-9778. .

From Terry Gerros

I am a distributor for Stick Fast CA glue, Sharpfast Sharpening systems, the Holdfast vacuum chucking system and Saburrtooth Carving bits. If you have an interest in these products, give me a call or send me an [email](#) for details.

Supplies

The club purchases a few supplies in bulk and sells it to members at club cost. We routinely have superglue (\$5), black or brown superglue (\$10) accelerator (\$10) and Anchorseal (\$9/gal). The club has a small supply of half round protractors (\$6) used to measure the angle ground on a tool, and depth gauges (\$5). HSS Round Tool Bits rods (1/4" x 8") are also available (\$3). Jerry Lelack will have the resale items available at the meetings, except for Anchorseal which is available through [Jeff Zens](#). You will need to bring your own gallon jug; contact Jeff to make arrangements.

Club Member Discounts

- **Craft Supply:** The club’s order will be going out on the Monday following our Club Meeting if our order equals or exceeds \$1,000. Craft Supply gives us a 10% discount plus free shipping on all items, and occasional additional discounts on certain other items and quantity purchases. If you order from the sales items, you will receive the club discount in addition to the sale discount, making many items available at very attractive prices. For detailed instruction for ordering see the article in the [November](#) 2015 Burl. Questions? See [Jeff Zens](#)
- Club members are registered with **Klingspor’s Woodworking Shop** at www.woodworkingshop.com or 800-228-0000, they have your name and will give you a 10% discount.
- If you show your club card at checkout time to the cashier at **Woodcraft** in Tigard they will give you a 10% discount (May not apply to some machinery).
- **Exotic Wood** is offering a discount of 15% off any orders placed at: www.exoticwoodsusa.com. (This includes sale items and free shipping on orders over \$300). Use promo code ewusaAAW
- **Gilmer Wood** now offers our club a 10% discount on purchases made there. If you haven't been to Gilmer’s, it is well worth the trip to Portland, if only to make your mouth water and make you cry if you leave empty handed.

Club happenings in our area

(Please visit the club's website listed below for additional information)

Northwest Woodturners (Beaverton, OR)

www.northwestwoodturners.com

Cascade Woodturners (Portland, OR)

www.cascadewoodturners.com

Beaver State Woodturners (Eugene, OR)

www.beaverstatewoodturners.com

Oregon Coast Woodturners (Newport, OR)

www.oregoncoastwoodturners.com

Southwest Washington Woodturners (Vancouver, WA)

www.southwestwashingtonwoodturners.com

South Coast Woodturners (Coos Bay, OR)

<http://southcoastwoodturners.com/>

The Burl is a monthly newsletter publication of the **Willamette Valley Woodturners.....**

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Vice President	Marc Vickery
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Video	Jeff Zens Larry Curry Marc Vickery
Craft Supplies	Jeff Zens
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Send all other club correspondence to the clubs official address:

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