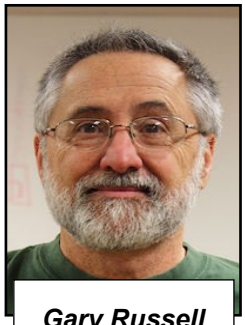
Finger Lakes Woodturners

A Chapter of
The American Association of Woodturners



Gary Russell

Presidential Mumblings—Oct 2016

Last month we had a very interesting meeting. Lots of Club information disbursed and a great demo by David Gilbert on making a vacuum hub. Since we all don't have a vacuum system, the Challenge Project for this month will be either a vacuum hub or any home made chucks or jigs. This could be very interesting.

This month's meeting will be ***Making a Windsor Chair***. Don Debolt and Jeffery Cheramie will be doing a slide show and some turning as well. They are also planning to do chair making workshops if there is interest. They will discus the workshop details at the meeting. This will be a long and informative demo so we are going to try and keep the Club news to a minimum and start precisely at 6:45 so plan on coming early.

Yea! We have a new Newsletter Editor - David Banister. Dave will be working with Dan Meyerhoefer to insure an easy transition. Everyone please wish him well and give Dan a big well done pat on the back. Thank you Dave for stepping up to the plate.

We are still looking for a new Treasurer to take Dave Verver's place when his tenure is over. Please consider volunteering. This is a vital Board position, and we can't not fill it. Most of the setup work has been done so a couple of hours of work each month is all that needs to be done. Please talk to Dave or any Board member if you can do this for the Club.

Jeffery Cheramie will be addressing the Club to see if there is any interest in purchasing Club hats, shirts or smocks. This again begs the question of replacing our logo. There has been much talk about this in the past but we can't seem to agree on something that depicts our Club in a simple format. Does anyone have any background in graphic arts to help with this? Please see Jeff if you can help.

FLWT, in coordination with Perinton Rec. Center, will host a demo on Wed. Jan. 25th from 6:30 to 8:30. Cost will be $6.00 per person. The fees will be split between the Club and the Rec. Ctr. Since this will be our first foray into our outreach program, please tell everyone about this demo. We need for it to be a success. Our very own Jim Echter will be doing much of the demo. I would, however, like to have some of our turnings on display. So if you have a nice piece you could lend us, please let me know.

See you at the meeting and keep on turning those tops.

Gary

FLWT meetings are held from 6:45 to 9:00 PM (pre-meeting Show and Share starts at 6:00 PM) on the 3rd Thursday of the month each month. Our meetings are held at the Isaac Heating and Air Conditioning University classroom, 50 Holleder Parkway, Rochester, NY 14615 . For more information, go to http://fingerlakeswodturners.com/.

Instructions to Make a Vacuum Hub

September 15, 2016 Presentation to FLWT

There is an old saying, “If you are a hammer then every problem is a nail.” Likewise, if you have a vacuum system on your lathe then every project needs a vacuum. I’m sure that you will find that using a vacuum system significantly enhances your lathe’s flexibility and safety and will help you to make higher quality turnings. This article deals with only one aspect of the system and that is how your turned objects are attached to the lathe with a vacuum hub. The hub is an assembly that tightly attaches to the spindle so that it holds your turned object on the lathe with a vacuum. There are two parts to this hub. The first part is the outer vacuum cup that actually contacts your turned object and is easily made from a PVC plumbing adapter. The second part is the base that attaches the PVC adapter to the lathe’s spindle. The design for my hub is very similar to the JT Turning Tools Vacuum Hub ($79). Go to http://www.jtturningtools.com/ for lots of useful information about vacuum systems. I use their vacuum adapter to attach the vacuum pump to my lathe.

Vacuum systems use air pressure to hold your turned object onto the lathe. A full vacuum corresponds to 30 inches of mercury. None of our vacuum systems can achieve this but you should get 20 – 25 inches of vacuum. Lower vacuum levels down to 4 -5 can be used with very gentle cuts. The pounds per square inch of air pressure that hold your object on the lathe are proportional to the area of the hub or the square of the diameter. This means that going from a 1 inch diameter hub opening to a 2 inch will give you four times the holding power. Going to four inches will give you 16 times the holding power of the 1 inch hub. Care needs to be taken to not put too much vacuum on thin objects since you can implode them and that probably means that you will throw them off the lathe. If the bottom of a bowl gets too thin you may be able to see the bottom flex as you apply the vacuum.

When I make a bowl or a platter I use my vacuum for several different steps of the project. I always start my bowls between centers. I turn the outside and adjust the bowl’s grain pattern for symmetry and add a tenon for the chuck. Once the outside is done, I turn the blank around, mount it in a chuck and turn the inside. After the inside is done, it’s time for the vaccum. I turn the bowl around and mount it on the vacuum hub with the inside facing the headstock. Since I start between centers, the mark from the live center is used to center the bowl on the hub. With the vacuum on, I then I cut off the tenon and generate the foot. Once the bowl has dried it’s time for our favorite activity, sanding, and the vacuum is a probably the best way to hold your bowl while you generate clouds of sanding dust. I use the vacuum to hold and sand both the inside and outside. After sanding, the vacuum has one last use and that is to hold the bowl for finishing.

There are several other systems that can do some of the things that a vacuum system can do. The first are jam chucks and they work wonderfully for many situations. In fact you can use these vacuum hubs as jam chucks. If you are making boxes a jam chuck will probably give you better results than a vacuum because it more precisely posi-

tions the box. However, in my experience, most bowls and platters are held more effectlvely with a vacuum than a jam chuck. Cole jaws also have some advantages, especially if you have holes in your turning since it won't hold a vacuum. The biggest problems with Cole jaws are the safety issues involved in throwing a turning off the the lathe.

The specific measurements in this article are for Jet 1642 and Powermatic 3520b lathes. Depending on your lathe, the measurements and threads may need to be changed. Go to any plumbing supply store to select the PVC plumbing adapters you like. I prefer the PVC 2 x 2, 2 x 3 and 2 x 4 inch adapters. You can also add PVC pipe to make longer hubs so you can hold deeper bowls.

One issue that impacts the hub design is how tightly the hub will be attached to the spindle. The only situation that I have found where I need it firmly attached is when I am sanding larger bowls with the lathe running in the reverse direction. Having the hub or a chuck and your turned object unscrew itself from the spindle rarely generates a desireable result. Many lathe spindles can accept grub screws that firmly attach the chuck to the spindle. I initially added the O-Ring to help hold the vacuum but discovered that its main role is to help the hub be easily removed. For your hubs, if O-Rings are installed then I suggest that grub screws be added to prevent it from unscrewing. If an O-Ring isn't included then adding the rabbits to the hub will assist in its removal.

The base of the hub needs to be made from a nonporous material that is easily turned and machined. I used Azek PVC decking for the demo but any nonporus wood (hard maple, beech, etc.), hardboard, or plastic will also work. I really like a phenolic plastic, Garolite, that I found at a garage sale. It can be purchased from McMaster-Carr but is quite expensive, (1 x 3 x 24" = $58).

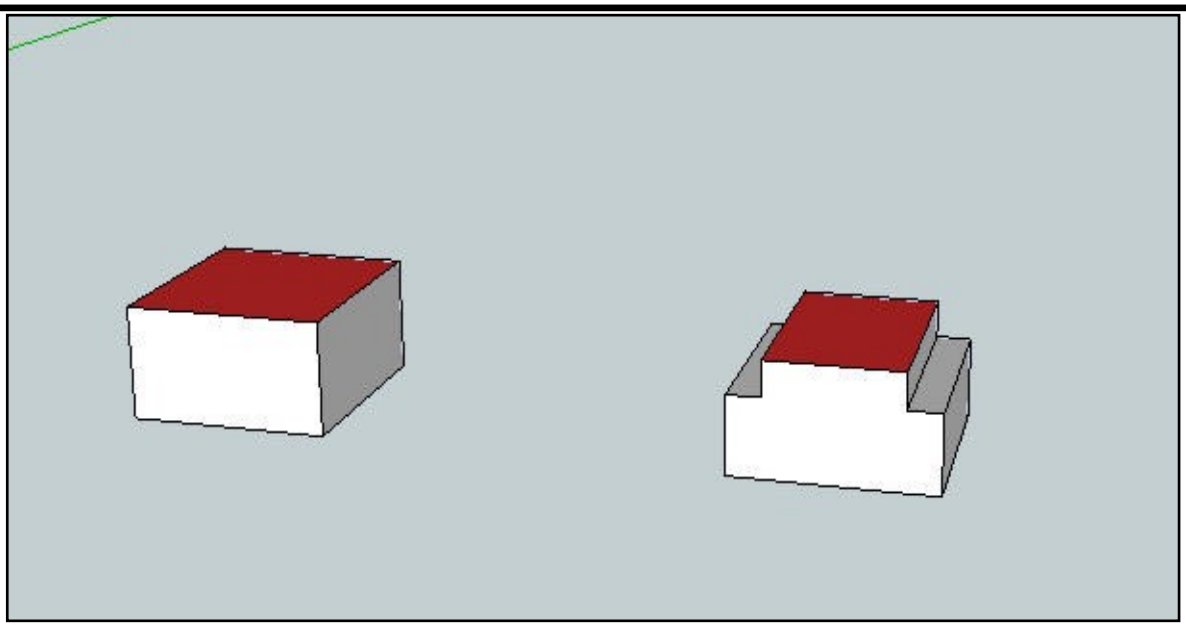
There are only a few turning tools needed to make a vacuum hub. I used a spindle or bowl gouge, pyramid tool, 1/8" parting tool, and a curved negative rake scraper. You will also need scroll and Jacobs chucks, and an assortment of Forstner and drill bits along with your usual measurement tools.

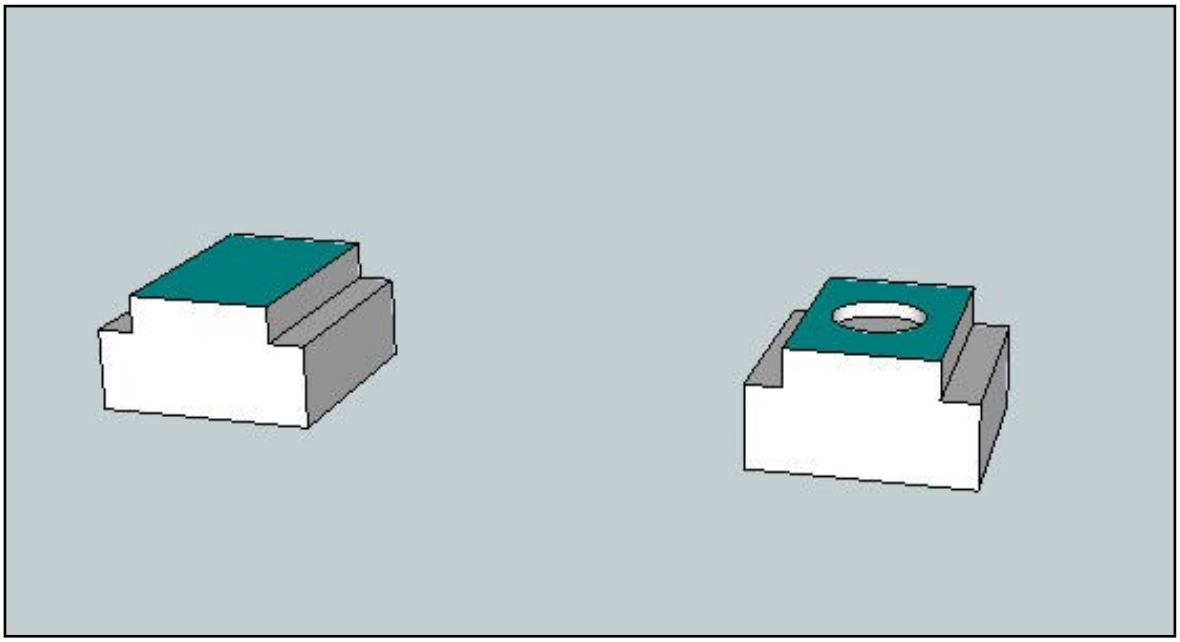
Step 1. Start by cutting the stock for the base into a square and pick the face for the back of the hub (this is the reference face). I used dimensions of 3 x 3 x 1 inches.

Step 2. At this point, rabbits can be cut on the back to help mount and unmount it from the spindle. These rabbits are optional since in most cases the hub can be easily removed by hand. (Most of the Sketchup figures show the rabbits but I have stopped using them.)

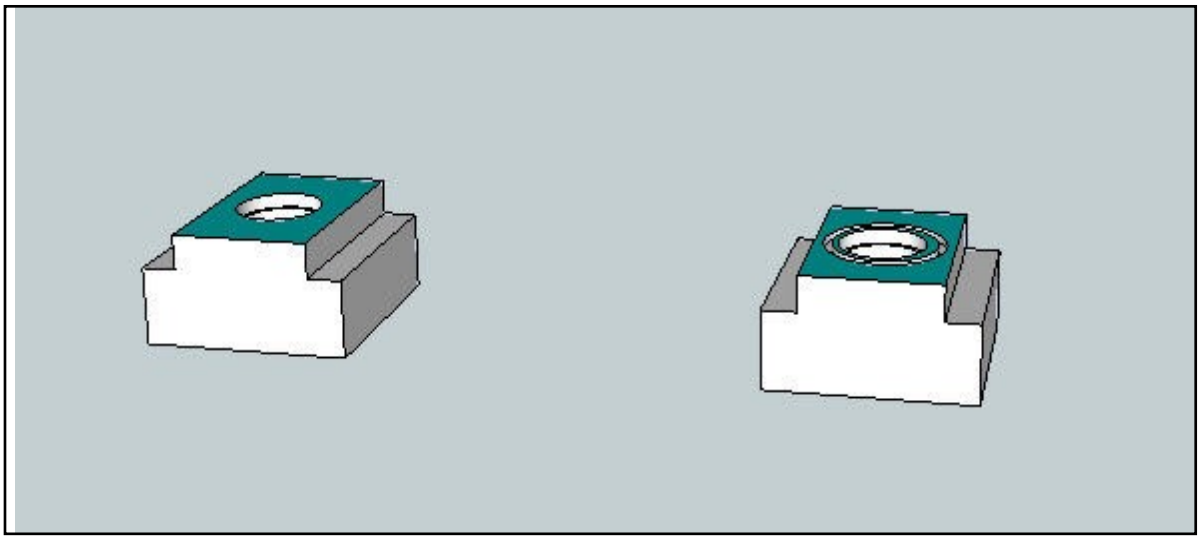
Step 3. Mount the base in a chuck, I used a Oneway Talon chuck with #3 serrated jaws, with a wood spacer behind the base and true up the face with a negative rake scraper. This is the reference face. A traditional scraper can be used but you will learn that scrapers with PVC can be very catchy and the negative rake scraper is essentially uncatchable. I put a wood spacer behind the base so I can drill through it without drilling into the chuck.

Step 4. Mount your 1¼" Forstner bit in a Jacobs chuck and drill a 3/16" deep hole for the spindle collar.



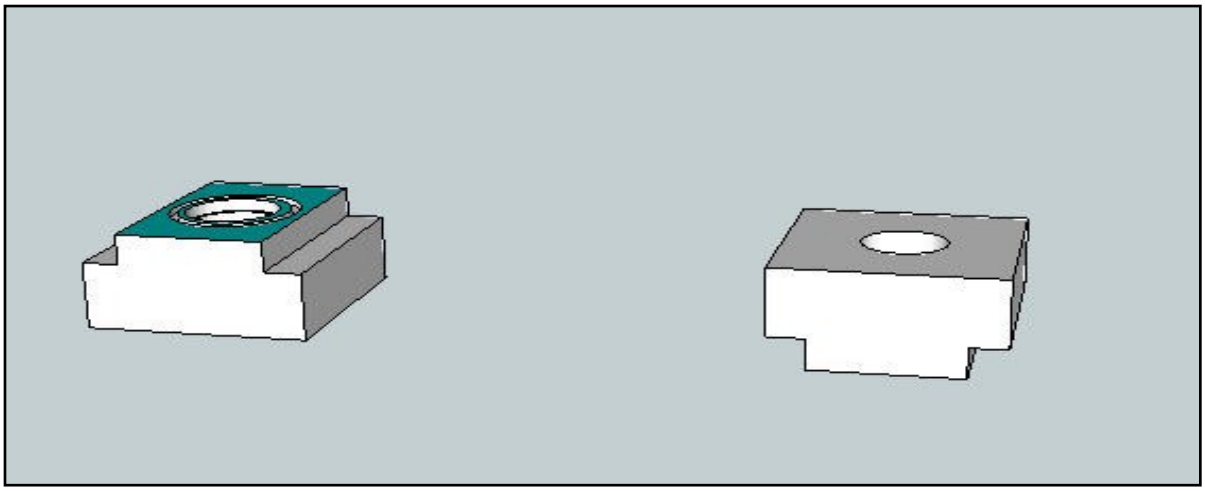


Step 5. Next I drill a hole for the tap (normally 1/8" less than the tap size). For my Powermatic I used a 1 1/8" Forstner bit. Be sure not to drill into your chuck.
Step 6. Cut a groove for the O-Ring if desired. I use 1.75" ID x 1/8" O-Rings from Debbie Supply in Fairport. Use calipers to mark the location being careful to only let the left ear touch the spinning block. Next I use a pyramid tool to create a "V" and then test that the O-Ring fits. Once the size is correct, use a 1/8" parting tool to create the slot for the O-Ring. The slot needs to be a bit less than 1/8" deep since the O-Ring must be proud of the surface. If the slot is cut too deeply you can easily re-true the surface and move it back so the O-Ring can work correctly.



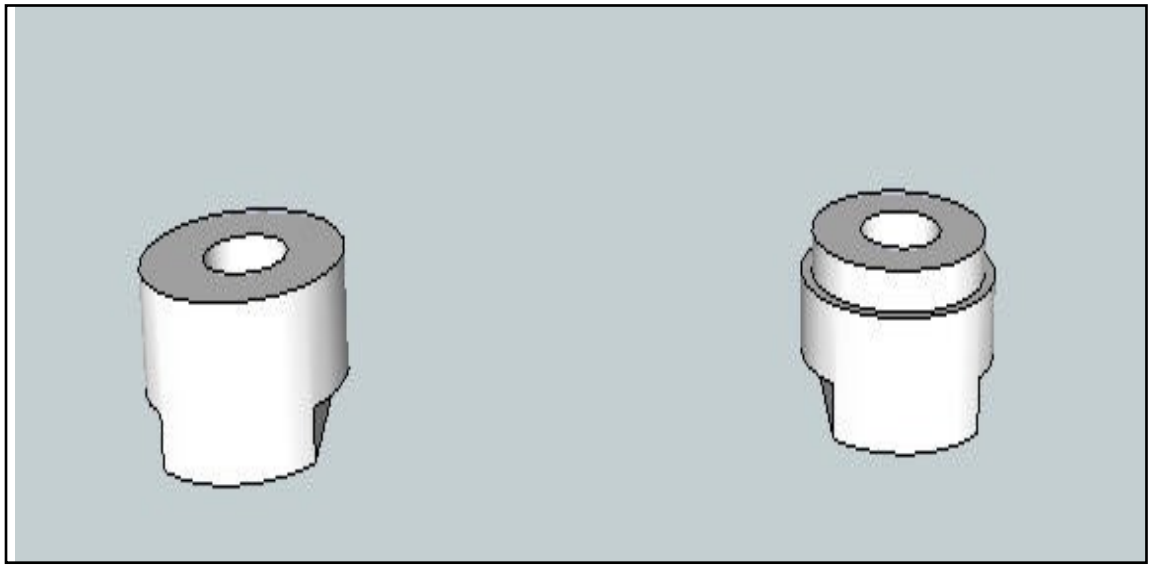
Step 7. Next tap threads with a Beall 1 ¼" x 8 tap ($27.95). Use the tailstock to help align the tap so it is perpendicular to the reference face. The threads should be reinforced with CA glue.

Step 8. If you have access to a drill press you can remove the hub from the chuck. For the demo, I drilled and tapped the holes for the grub screws while it was still mounted in the chuck. I use 5/16" x 18 Allen bolts because they use the same Allen wrench as my scroll chucks and gouges. I drilled two 15/64" holes that were 0.325 inches from the reference face so the screws will fit in the slot on the spindle. If your hub is made with a soft material like decking you may be able to drill the Allen bolts directly in and not use a tap. Clean the threads so the hub doesn't bind on the spindle and CA glue the threads.



Step 9. If the PVC adapter's base is irregular you should true it up. One method to do this is with scroll chuck to hold the adapter on its wider end. Turning PVC with a conventional scraper can be very "catchy" so you will find negative rack scrapers are much more relaxing to use. If you don't have a chuck that can safely mount the adapter, the flashing and irregularities can be filed by hand since the fit to the base doesn't have to be perfect and the hub will be trued up later.

Step 10. Install the O-Ring and mount the base onto the lathe's spindle so the reference face is next to the headstock.
Step 11. Turn the hub into a cylinder that is a little oversized for your PVC plumbing fixture.



Step 12. Turn a collar on the hub to attach the PVC fitting. This is just like fitting the top of a box. I use spindle or bowl gouge and then adjust the fit with a small detail gouge. Scrapers could also be used for this step. The fit should be snug and not loose.
Step 13. Glue the PVC adapter to the hub with epoxy or another suitable glue. After the glue has set, remount and turn the base down to the size of the PVC adapter.
Step 13. Use a negative rake scraper to true up the side and front end of the PVC adapter. If you use a conventional scraper, be very careful since the can be very catchy. It is important that the larger end of the adapter spin without any visible wobble and this may require removal of a lot of material.
Step 14. Attach the closed cell foam seal (from Michaels or Hobby Lobby) with contact cement. The closed cell foam comes in ~1/8" and ~¼" thicknesses. I prefer the thicker material because it has a bit more give than the thinner but you should decide for yourself. Leave exess foam around the outside of the adapter. After it sets, mount the hub on the lathe and use an Xacto knife to trim off the excess material on the outside and inside. I normally leave about 3/8" of the foam on either side of the PVC. The foam lasts for a long time but will eventually wear out. Then I just pull it off, smooth off the edge and reinstall new.
Step 15. Now go use your new vacuum hub and turn something beautiful.
These vacuum hubs can be used with some spindle turning as well. I made a custom hub that was about 1.5" wide by 7" long that I use to sand my darning eggs and mushrooms. It makes sanding off the little nib that is left after parting off the turning

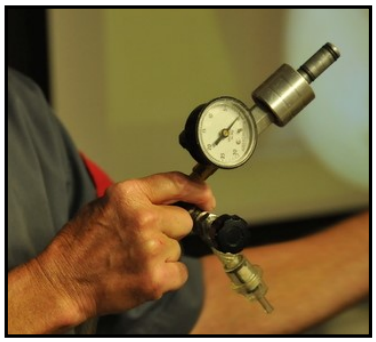
Instructions to Make a Vacuum Hub (con't)

There is an additional use of a vacuum hub that I developed. Since I normally turn green wood to final thickness and then let it dry, the bowls always warp and move. In many cases the bowl's foot also warps so it won't sit flat and the bowl rocks. For some bowls I don't want or care if the bowl sits flat on a table but for others it is essential. Flattening the bottom can be a real pain because of two problems. First is finding where the bottom of the foot should be and the second is cutting or scraping the foot to make it flat. Often the foot is fragile and the process can lead to disappointing results. With a vacuum I can mount the bowl and then adjust it slightly so that the warped foot is in a position that is perpendicular to the axis of the lathe. When I first got a lathe I bought a Reverse Chucking Alignment Adapter from Craft Supplies (https://www.woodturnerscatalog.com/p/112/4287/TMI-Reverse-Chucking-Alignment-Adapter). I made three 6" MDF disks and mounted this adapter in the middle of each. The first was just plain MDF and when mounted in the tailstock I use it to adjust the bowl so the foot is aligned with the disk. The other two were covered with Velcro that I use to hold hook and loop sandpaper. Once the bowl is aligned I use the second disk and start with 80 or 100 grit paper. I run the lathe at low speed and move the sandpaper up to flatten the bottom. Once the entire foot is flat, I move up through several grits and then switch to the third disk that I use by hand. Previously, when I tried flattening a bowl's base by hand, I found that the disk tended to rock and didn't give as good a result.

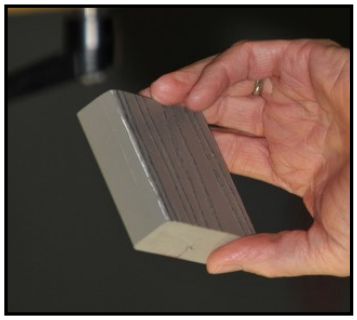
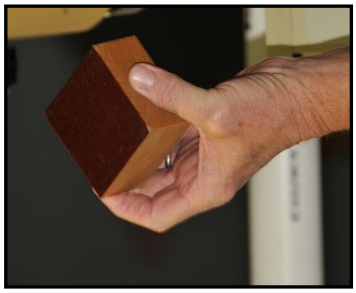
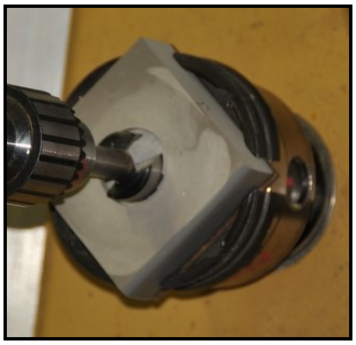
After using my vacuum system for a number of bowls, I discovered that there were problems when I used it to apply a finish to my turned objects. The vacuum holds the turning very nicely but the problem was how do I get it off the lathe without covering it with fingerprints. To help me with this problem I built a finishing stand that used my vacuum. I used the design of the adapter and the closed cell foam for the top. This was mounted in a round piece of MDF that passed through a second piece so that the vacuum adapter could be attached. The second piece is clamped in a vice and they were mounted together with a lazy susan so the top piece with the bowl can rotate. This way I can hold a bowl with the vacuum, apply the finish and then move it to a dust free location. If you need more details on this don't hesitate to give me a call and I will show you how it is made and used.

I hope that you will build some vacuum hubs so that you can take advantage of its flexibility and ease of use.

Photo Essay of Presentation



Instructions to Make a Vacuum Hub (con't)

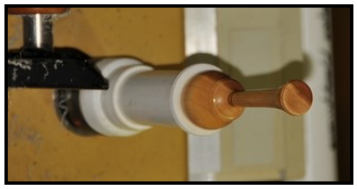




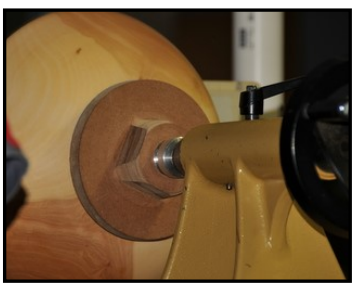




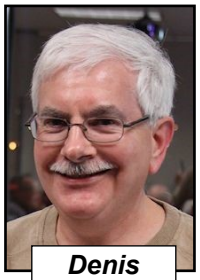






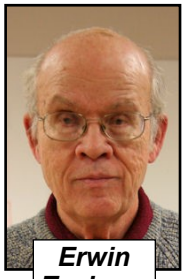



Members Show and Share

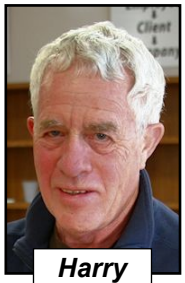


Denis Caysinger

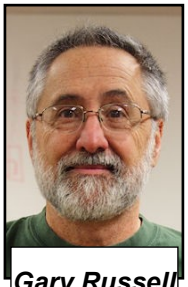
Ed Lehman



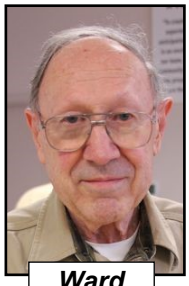
Erwin Tschanz



Harry Beaver



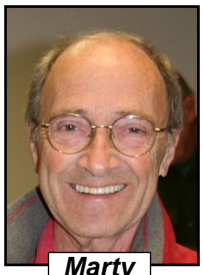
Gary Russell



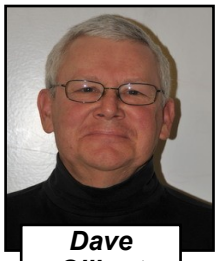
Ward Donahue

Members Show and Share
(con't)

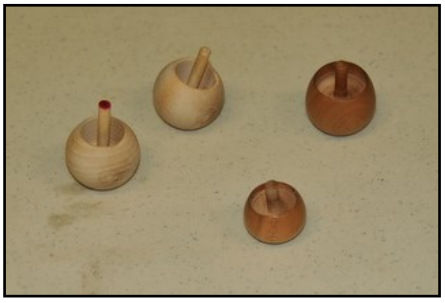
Jerry Sheridan



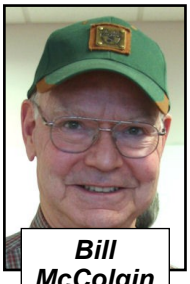
Marty Chatt



Dave Gilbert



Terry Lund



Bill McColgin

David Gould

Let's Build a Steady Rest
By David Gould

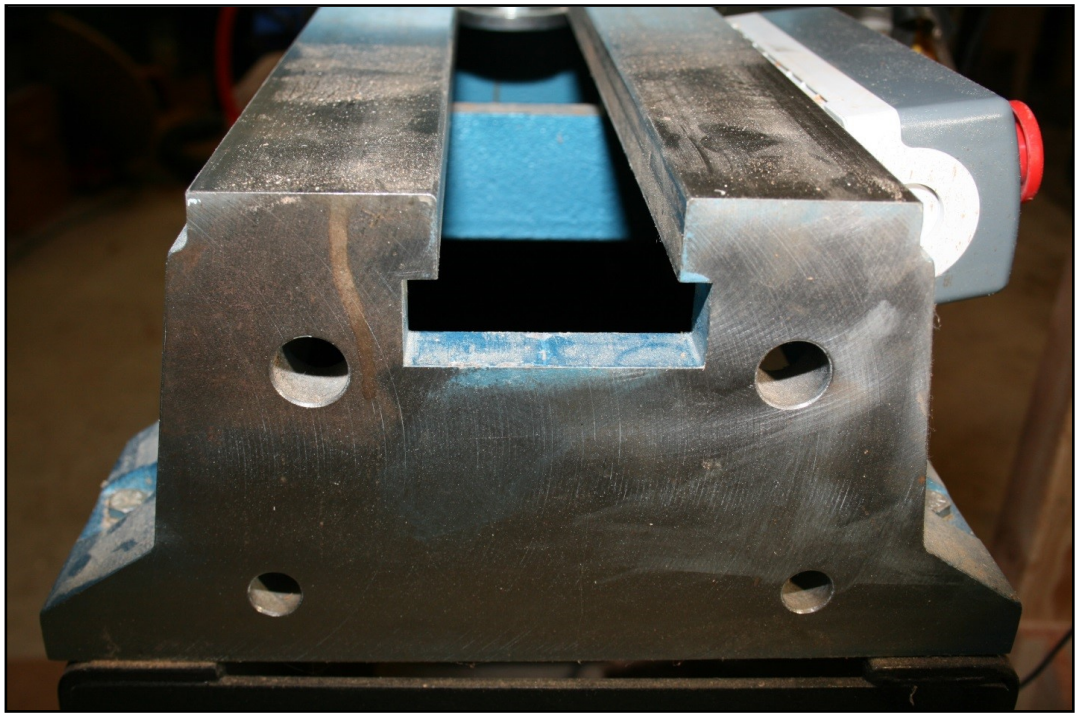
Haven't you always wanted one of these things? If, like me, you have but were put off by the $359.95 price (plus tax and shipping) of the one offered by Carter Products through Craft Supplies or others, then does making your own sound appealing?
Here's what you'd need, most of which you probably have on hand:
Wheels -- Child's in-line skates. The cheapest available are from WalMart which gives you eight wheels and axle that, as chance would have it, perfectly fits the thickness of the arm wood, shown below:

Wood -- 2' x 2' 18mm Lauan plywood for the steady
3/8" x 1 ½" x 48" strip for arms
Scrap shop wood for the base
Hardware -- ½" x 6" threaded rod
7/16" x 3 ½" bolts (2)
3/8" x 1 ½" bolts (6)
Fender washer for ½" bolt (2)
Washers for 3/8" bolts (will fit 7/16" bolts as well) (13)
½" nut (1)
½" wing nut (1)
7/16" nuts (2)
3/8" stop nuts (3)
3/8" wing nuts (3)
2 ½" x 9 exterior screws (4) for the base
Tightbond II wood glue

Helpful -- several clamps; drill press; band saw; scroll saw; plainer; hand drill; carpenters square; compass, etc.

Here's how:

Using a compass draw the size steady you will need for the swing on your lathe. The outside diameter of the circle used for your steady will be the same as the swing of your lathe. The object is to keep the center of the steady at the spindle height of your headstock.
I made the width of the rim of my steady 2 ½" which I judged sufficient to be solid and not flex and would allow two bolts and washers to be used for each arm without crowding.
The arms of the steady required a ¼" hole at one end to receive the axle of each wheel. They also require a slot running down the center of the arm sufficient to let the arm slide along the holding and directing bolts.
This is the base and securing block, as it looks at the end of the ways on my VicMarc 300 lathe:

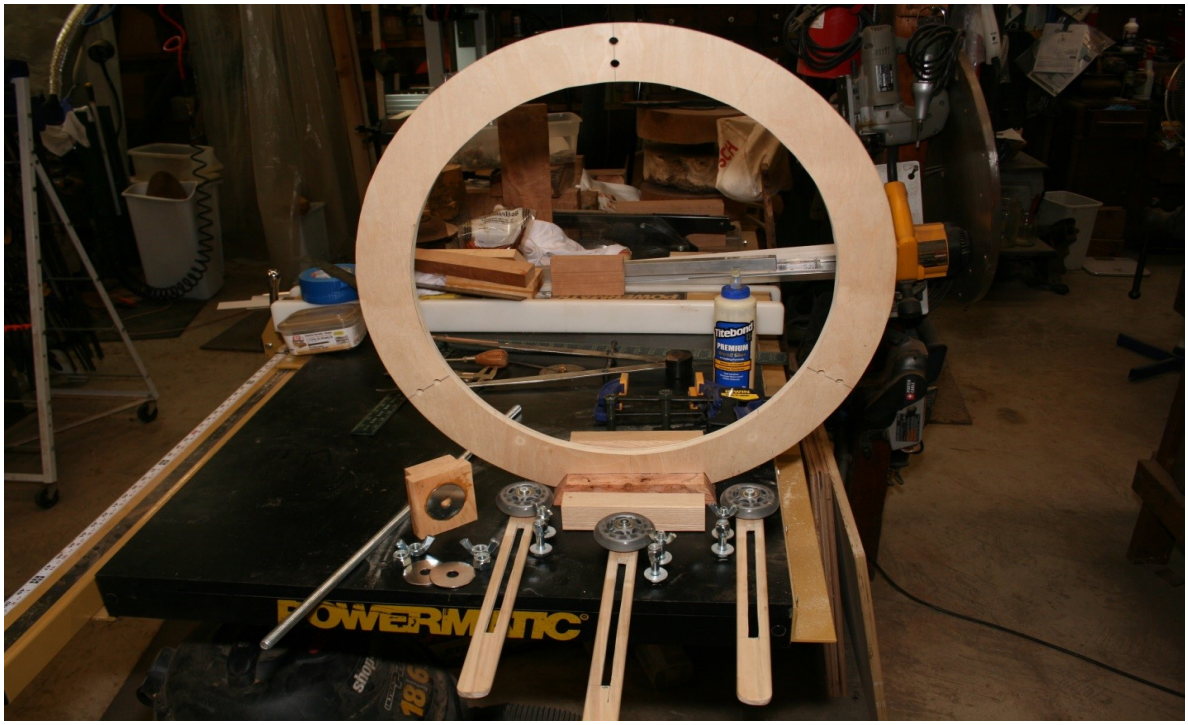


To both center and secure the steady rest on the top of the ways I glued and clamped two pieces of wood that would fit that opening and hold tight anything above.

The block that holds the steady that sits on top of the ways is likely the most important part of the entire build. If it is not solid, its flaws will make the steady function poorly. I had a bowl blank in cherry that had developed a crack across one end. Parting that off with a band saw left me with a base on which that the steady would rest.

Attachment to base



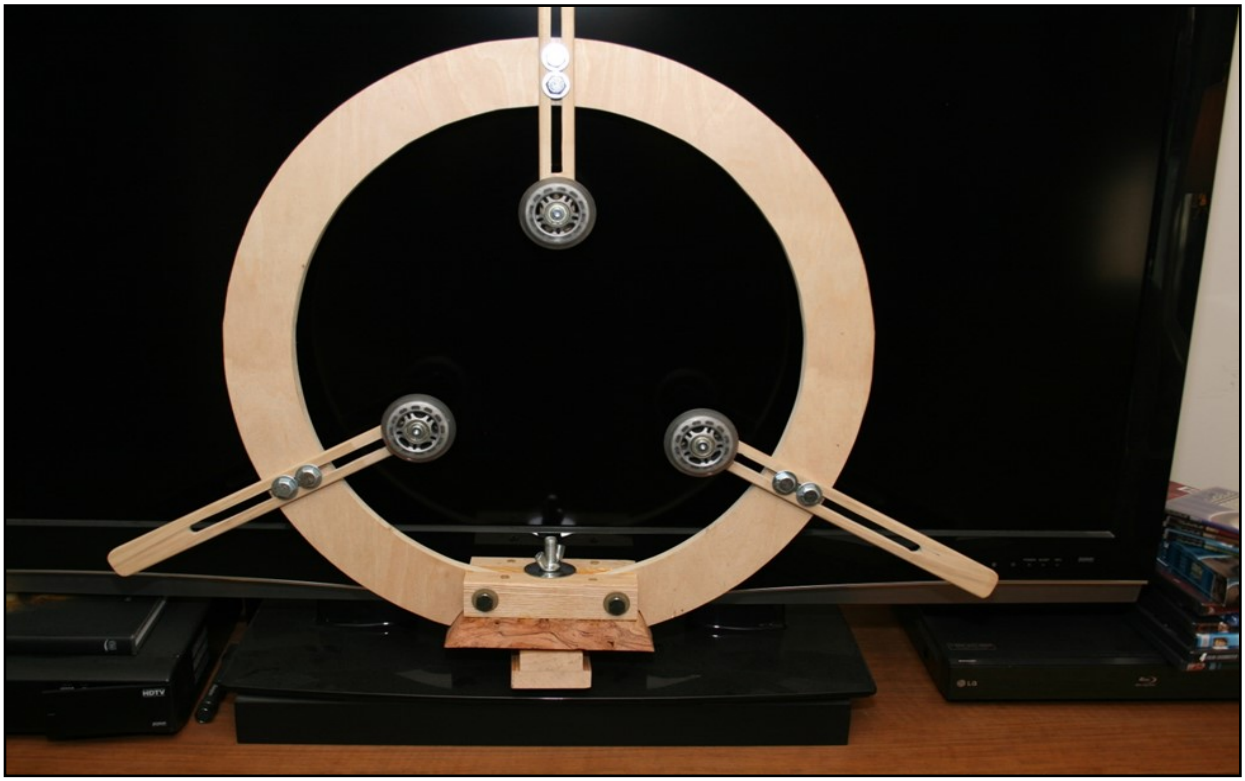


You can see in the picture above the cherry block the rest that is sitting on it. Since the bottom of the rest needed to be at the height of the top of the ways, I made a cut-out in the steady in which the block would fit. That picture also shows two other blocks of wood that would be glued and clamped to either side of the steady and then glued and clamped to the cherry block. Those two pieces and the steady would be drilled for securing the 7/16" bolts, then drilled and secured to the cherry block with the four 2 ½" exterior screws. The result was an exceptionally strong and solid base that would hold the steady with no give.

I had already drilled a ½" hole in the center of the cherry block and it was a simple matter then to invert the rest on the drill press table and, using that hole as a guide, to drill the 1/2" hole through the steady.

The pictures show the 3/8" holes to be drilled for each of the arms. Those are secured with the 3/8" x 1 ½" bolts. The ones with the stop nuts are tightened to allow just the arm to slide. The wing nuts are to tighten and secure the arm and its attached wheel for use on a vessel.

Let's Build a Steady Rest (con't)



Parts and Price List:

18mm Lauan plywood	$ 7.95
3/8" x 1 ½" x 14" strip (3) for arms	$ 2.00
Child's in-line roller blades	$ 21.00
(8 wheels salvaged from the blades)	
½" x 24" threaded bar	$ 6.29
½" wing nut	$ 1.19
½" nut	$ .16
½" fender washer (2)	$ .74
7/16" x 3 ½" bolts (2)	$ 2.78
7/16" nuts (2)	$ .36
7/16" washers (4)	$ .72
3/8" x 1 1/2" bolts (6)	$ 3.30
3/8" stop nuts (3)	$ .51
3/8" wing nuts (3)	$ 1.29
3/8" washers (9)	$ 1.71
Total:	$ 50.00

Now, wasn't that fun?

2016-17 SCHEDULE AND MENTOR CONTACTS

October 20	Don Debolt/Jeff Cheramie – Windsor Chair Making on the Lathe
November 18, 19, 20	**National Turner, Mark Sillay** – specific topics TBD (Friday night meeting, Saturday demo, Sunday Workshop). See Mark's web site for more info on his work.
December 15	Round Robin, Holiday Themed – Jim Echter, Ed Lehman, Gary Russell, Sam Tischler
January 19	Mike Brawley – Designing Turned Forms
February 16	Mark Mazzo – Embellishment Technique
March 16-19	**National Turner, John Beaver** – specific topics TBD (Thurs meeting, Fri RWS presentation, Sat demo, Sunday workshop) See John's web site for more info on his work.
April 20	Denis Caysinger – Pen Making
May 18	Cliff Weatherell – Triangular Bowls

Mentor Contacts[1]

Name	Phone	Email	Turning Skills / Specialty
Mike Brawley	755-2714	mbrawley@rochester.rr.com	Design Principles,Spindles; Bowls and Platters; Sharpening
Ward Donahue	334-3178	wddonah@frontiernet.net	Spindles; Hollowing; Coring; Sharpening
Jim Echter	377-9389	jechter@rochester.rr.com	Spindles; Sharpening; Faceplate turning
Jim Hotaling	223-4877	jhotal2198@aol.com	Christmas Ornaments
Ed Lehman	637-3525	eljw@rochester.rr.com	General Turning
Terry Lund	455-2517	terry.lund@gmail.com	General Turning; Dust Collection Design and Installation
Ralph Mosher	359-0986	2mosher@rochester.rr.com	Bowls; Faceplate Turning, Sharpening
Erwin A. Tschanz	271-5263	TschanzLandscape@aol.com	Historical; Bowls; Plates; Goblets; Boxes; Bone; Antler
David Gould	245-1212	d2sGould@aol.com	Bowls; Plates; Hollow-Forms
Terry Lund	455-2517	terry.lund@gmail.com	General turning
Gary Russell	353-3148	cngrussell@gmail.com	General turning, bowls, ornaments, finials

1. Here's a great way for you to improve your turning skills. FLWT has award winning and expert turners who, at no cost, are willing to share their expertise one-to-one with other club members. A mentoring relationship might be as simple as getting a mentor's advice in a one time conversation. Or, it might include regular hands-on sessions over a lathe. The exact nature is up to you and your mentor. If you feel you could benefit from mentoring, organize your thoughts about your needs and contact an appropriate volunteer mentor above to determine if he or she is a match and available. ♦

FLWT Board of Directors 2015/2016

Position	Name	Phone	Email
President / Chair	Gary Russell	353-3148	cngrussell@gmail.com
Vice President	Sam Tischler	908-295-3010	tischler.sam@gmail.com
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