

# Pneumatic Carving Stand

Frederick C. Hill with Clifford L. Hill

Cliff and I have been woodturning for more years than we care to admit. We go to as many of the woodturning shows as our schedules allow, but one of them, the Ohio Valley Woodturners Guild's biannual symposium ([www.ovwg.org](http://www.ovwg.org)) is one that we simply don't miss. The 2007 symposium was no exception. One of the featured turners, Trent Bosch, particularly caught our attention. His *Vessel of Illusion* is a work of art and the techniques he has developed in making it are well worth learning. We have known about Trent and his lathe work for years, but this is the first time we were able to devote time to see him in action. He is one

of the best natural teachers we have encountered. Trent is excellent in developing and implementing ideas for unique woodturnings. He is also a well-established toolmaker.

One of the most interesting tools he used during his demonstrations was his Portable Carving Stand ([www.trentbosch.com](http://www.trentbosch.com)). We had seen the stand at previous shows, but this was a time when "readiness met opportunity" and we both really saw it for the first time. We were at the point where we were doing a lot more work off the lathe and were unconsciously looking for a good holder for our turnings so we could sculpt them.

Trent's carving stand is well constructed. It holds a turned object by

attaching the chuck, with the turning still attached, directly to the stand.

This affords the opportunity to carve or modify a turned object in any way conceivable. Trent's stand has the advantage of having a single handle that is used to swivel the items in all directions and lock them in position instantly. Also, the stand can be purchased with the thread size for most lathes so that any chuck will fit. The stand comes with a separate bracket that can be mounted on a workbench so the stand can be mounted wherever you choose. It also fits in the 1" hole in the toolrest base (banjo).

While the stand works very well, we both needed to be able to work on items off the lathe that had been turned using a vacuum chuck. Trent's stand isn't modified for that purpose. We contacted Trent and discussed this with him but he indicated that he wasn't going to make the vacuum chuck modifications. Cliff and I came up with the idea of drilling two intersecting holes in the top of the stand and attaching a male 1/8"-NPT pneumatic coupler. The stainless steel that Trent uses for these stands is soft enough to drill through it easily with a high-speed steel drill bit thus making this modification relatively easy to do.

To make this modification, drill your first hole through the top of the



Drilling the first hole into the carving stand.



Threading the hole in the carving stand where the male pneumatic connector will attach.

carving stand and parallel to the long axis of it (Figure 1). Use a drill press at low speed for accuracy. It is also important to use a good grade of thread-cutting oil for any drilling operation in metal. Drill the hole to a depth that will ensure it intersects with the next hole you are about to drill (1/4" to 1 3/8" deep will work). The diameter of the first hole is not critical since it is simply a vehicle to connect to the next hole you are about to drill (we used a 2 3/4" diameter bit).

Next, rotate the part so you can drill a hole in the flange at 90° to the first hole. This will be used to install the male pneumatic connector. Using a "Q" or "R" size drill bit (0.332 and

0.339-inch diameter, respectively), drill the flange through to the initial hole. Tap the hole using a 1/8"-27 NPT tap (Figure 2). Use a liberal amount of thread-cutting oil.

Once you have drilled these two holes, take great care to ensure that you clean all of the metal shavings from the drilling process. The threads of the male pneumatic connector should then be coated with either plumber's Teflon tape or a thread sealing compound like Rector Seal. The pneumatic connector is then screwed into the hole in the Portable Carving Stand. Once the connector is in the hole, there should be a continuous hole through the top of the carving stand into the pneumatic connector.

Now, attach a flexible vacuum line to the male pneumatic connector using a female pneumatic coupler attached to the line (Figures 3 and 4). In order to successfully use this combination, be sure that the vacuum line you are dedicating for this operation is long enough to reach wherever you

plan on doing your carving. If you do your carving at your lathe, the line you already have to feed the lathe chuck is probably adequate. If you plan on doing carving away from the lathe, it is useful to put a "T" adaptor on your vacuum line after your pressure gauge where it comes to your lathe and run a second line from there to your carving area. In either case, it is useful to have a female pneumatic coupler on the end of each line so that you can attach or detach the line at will while maintaining an airtight seal on the unattached line.

After making this simple modification, any vacuum chuck can simply be screwed onto the Portable Carving Stand and the vacuum attached to hold the piece in place. We now have a rock-solid holding device to hold our work for carving off the lathe.

*Fred Hill is a retired biology professor who lives in the Endless Mountains of Pennsylvania.*

*Cliff Hill is a retired aerospace engineer who lives in coastal North Carolina.*

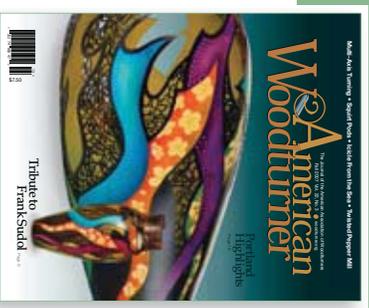
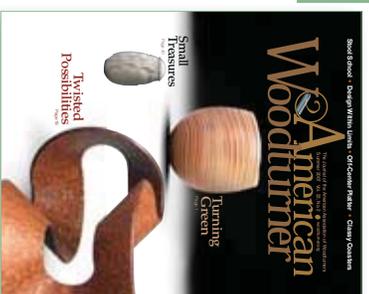
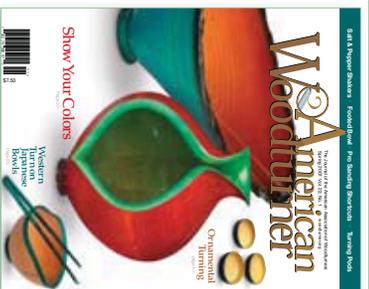
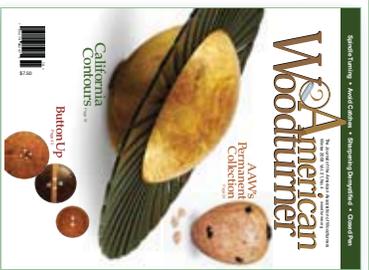


(Above) Completed carving stand holding a bowl for hand carving.

(Left) Carving stand with pneumatic tubing attached.

# JOIN

If woodturning is your relaxation, your passion, your art, the American Association of Woodturners is for you.



## membership benefits

### AMERICAN WOODTURNER

OFFICIAL QUARTERLY JOURNAL OF THE AAW

- New one-of-a-kind projects
- Big, beautiful color photos throughout
- Time- and money-saving shop tips and techniques
- Step-by-step instructions with helpful how-to diagrams
- Calendar of events, seminars, and exhibitions
- Inspiration and insider secrets

### AAW RESOURCE DIRECTORY

With over 250 pages, the directory is jam-packed with complete contact information of AAW members, local chapters by state, turning resources, demonstrators, books, DVDs, videos—everything you need to be a successful turner and have more fun!

### SAVINGS

Discounts on AAW books, videos, DVDs, and logo merchandise.

### EXPERT ADVICE

Looking for expert help in improving your skills? Many of our members get great advice when they participate in local woodturning chapters. There are now more than 270 chapters across the United States and Canada. Most meet on a monthly basis. The members-only portion of the AAW website provides more helpful information.

### INSURANCE

- Free bodily injury liability insurance for all members involved in AAW activities
- Commercial and personal liability insurance available for professional woodturners

Check out our official website!

[woodturner.org](http://woodturner.org)

Click on the link for membership information or call 651-484-9094

