

More Woodturning Magazine

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Product Reviews

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A low cost vacuum system

Product by Frugal Vacuum Chuck

Review by Al Miotke (writer_profile.php?writerid=21)

Have you been interested in getting a vacuum chuck but just haven't made the move because of the high cost of purchasing all the system components or the confusion in knowing what you need? There is an option for you to consider that was recently introduced on the national stage at the AAW symposium in Pittsburgh this past June. The company is called Frugal Vacuum Chuck from Illinois. The Frugal Vacuum Chuck product offering is unique in that the company offers a low-priced system by rebuilding high quality industrial pumps and adding other low cost supporting components to round out the kit.

The original concept was developed by Bob Leonard about three years ago when he was in the market for a vacuum pump system but wanted to try and build his own low cost system after reading a magazine article on the subject. He found a decent pump at a local flea market and cobbled together a system that worked pretty well. Bob then did a demonstration on the approach for his local club followed by a number of other area clubs. To his surprise, many of the members expressed an interest in buying the components from him. Wanting to provide a high quality and all inclusive kit, Bob found a recycler of commercial vacuum pumps used in applications like medical oxygen systems and made a deal to buy the used pumps. He tests and rebuilds each pump as required to get the performance to almost new condition and purchases the remaining components from various suppliers to complete the rest of the system. After he proved the performance of the system and made some improvements, he offered these vacuum pump kits to the local woodturning club members who quickly purchased his entire inventory. Seeing the popularity of the product after selling the system at regional clubs, he decided to make it official and formed Frugal Vacuum Chuck in 2013, built a website, and started attending regional symposiums as a vendor. That success led to his decision to attend the AAW symposium as a vendor in 2015.

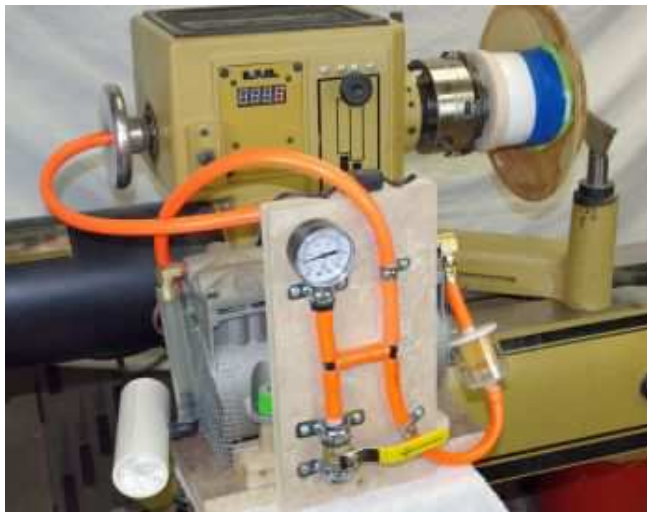
Of course the heart of the kit is the vacuum pump. Bob searches for pumps that have been taken out of service for a variety of reasons in products such as home oxygen systems which must be certified and run 24/7. These products use Gast or Thompson industrial grade pumps which currently are the only pumps that Frugal Vacuum Chuck will use. The company purchases these used pumps from the medical product recyclers

and rebuilds them to almost new condition by replacing the wearable components items like cups, cylinders, and valves as needed to get the pump back to 26 Hg of vacuum or more which is more than sufficient for woodturning applications. Although the pump gets most of the attention, the system has little value to woodturners without a number of supporting components including a vacuum gauge, ball valve, vacuum cup, vacuum adapter, and miscellaneous fittings.



(/ckfinder/userfiles/images/2015/194%20-%20November/a1%20moitke/Photo%201%20-%20Frugal%20Vacuum%20Chuck%20Kit.jpg) Photo 1

The kits offered by Frugal Vacuum Chuck includes just about everything you need including full assembly instructions (Photo 1).



(/ckfinder/userfiles/images/2015/194%20-%20November/a1%20moitke/Photo%202%20-%20Frugal%20system%20kit%20assembled%20and%20in%20action.jpg) Photo 2

After a few hours of sweat equity including a small amount of turning, your system will be ready for operation at a very reasonable cost (photo 2). In addition to the pump, another important item is the vacuum cup which can cost up to a few hundred dollars.



(/ckfinder/userfiles/images/2015/194%20-%20November/al%20moitke/Photo%203%20-%20The%20assembled%20Frugal%20Vacuum%20Cup.jpg) Photo 3

It should be no surprise that a frugal but effective solution is provided using a 4" PVC coupler, low cost foam pads, and other common items (Photo 3). Then there is the vacuum adapter which mounts on the outboard side of the lathe and connects to the vacuum hose. This is eliminated in the frugal system by using a simple rod that is connected to the chuck and passes through the headstock so that it can be connected directly to the pump.

The kit described above is available in four configurations, Better, Best, Best with an assembled vacuum cup, and Plug and Turn. The Better rated system guarantees 24-26 Hg of vacuum and sells for just \$160. The Best system sells for \$195 and has a fully rebuilt pump that will pull a minimum of 26 Hg. If you prefer to get a best system with the cup fully assembled instead of being in kit form, the price will be \$225. In addition to these options, a fourth option was introduced in June at the AAW symposium called Plug and Turn. It's a fully assembled system that is ready to plug in after simply gluing two parts together (which is required for efficient shipping of the kit.) The cost of this option is \$285 but eliminates all the assembly steps. I purchased this option and was glad that I did.



(/ckfinder/userfiles/images/2015/194%20-%20November/al%20moitke/Figure%204%20-%20Plug%20and%20Turn%20option.jpg) Photo 4

For an extra \$90, I received a nicely-assembled product that was up and running in minutes (Photo 4). The company also introduced a 240V, 50Hz system in July for those woodturners outside the U.S.

You might be wondering if there are any downsides to the product. After six months of personal experience I have not seen any. The product works as expected and pulls over 26 Hg as advertised. It might not have all the nicely machined components and a brand new pump that you get with other options, but the Frugal Vacuum chuck offering costs 3-4 times less and gets the job done very well.

There was a recent company announcement in August. The founder, Bob Leonard, has added Jason Swanson as an associate to his company because the product success is much greater than expected. Bob retired from a successful career over 10 years ago and never expected the level of growth that he has seen with this product. He was looking for a part time job to help out local club members and ended up creating a full time business. Bob is now working closely with Jason Swanson who will assume ownership of the company before the end of the year. Jason is a professional turner, demonstrator, and teacher from Wisconsin who is known for his stave-constructed pepper mills. After the ownership transition is complete, you can expect Bob to stay involved to assist Jason in expanding the business.

It is important to note that unlike other options, the product availability is dependent on the company's ability to purchase used Gast or Thompson pumps. This has not been a problem so far but with the increasing product popularity, pump supply could be limited. That means that depending on when you place an order, there could be a waiting list. Considering the savings, it might be worth the wait. If you are interested in learning more about the product, visit the company website at www.frugalvacuumchuck.com (<http://www.frugalvacuumchuck.com>).

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