JT Turning Tools Vacuum System

by Kurt Hertzog

A brief overview of the JT Turning Tools Vacuum System was published in *Woodturning Design* Issue #44: "More Goodies from SWAT, Part 2." Space permits a more in-depth review of the system here so that you can better understand the design and functionality of the product.

HANDWHEEL

Both specialized and custom handwheels are available for just about any lathe manufactured. Many come with handwheels, while others come with a hub that allows you to create your own handwheel; but if you are like me, the hub still sits idle after many years and will probably remain on the bucket list for eternity. The available JT Turning Tools handwheels are not only nicely made aluminum handwheels designed to fit your lathe threading, but they are also ready to accept the JT Turning Tools rotary vacuum adapter (see Fig. 1). With the handwheel in place, the rotary union easily slides into the handwheel and seals on the two O-rings that are seated in the shaft of the union (see Fig. 2). The rotary union is lightweight and sports a 17" length of tubing complete with a *Milton* fitting to be connected to your system (see Fig. 3). With the tubing length provided, you can easily plug into a connector mounted to your lathe or an in-line hose to your vacuum pump. If you have your own homebuilt vacuum and plumbing system as I do, you'll be glad to be able to connect your system with the *Milton* fitting and control the vacuum with your own mechanism (see Fig. 4). If you don't have a vacuum pump, JT Turning Tools also sells those.

PRECISION VACUUM HUB

With the rotary union and the connections to the vacuum system (yours or one purchased from JT Turning Tools), you are ready for the heart of things—the actual chuck. The neatest part of the JT Turning Tools system is the precision vacuum hub. These machined aluminum hubs are available with threading for nearly any lathe available—if yours is a real oddity, you can contact them for a custom part. The threaded hub allows you to add standard PVC plumbing from your local store and create whatever size and length vacuum chuck you need (see Fig. 5). The machined aluminum hub has an O-ring gland and O-ring seated in the bottom that provides the seal when you install the PVC fitting. A fairly straightforward process of pressing the fitting into place

Fig. 1

The JT Turning Tools handwheels are designed to accept the rotary union from their vacuum system.

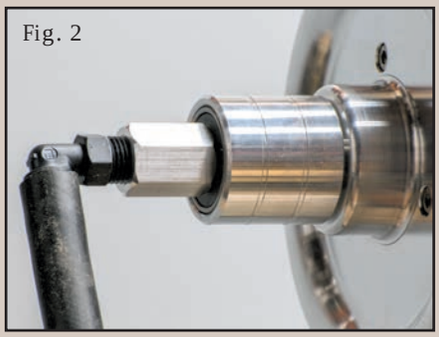
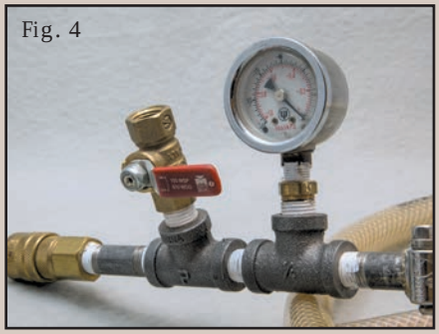


Fig. 2

Precision-turned from aluminum, the handwheel and union fit perfectly and seal with two O-rings.

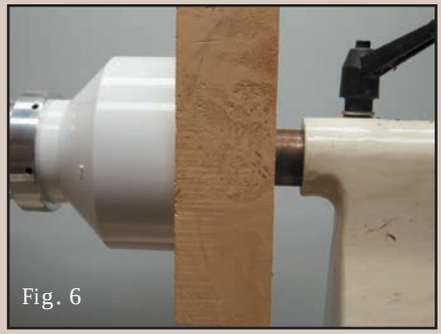
Fig. 3

The rotary union will fit into other handwheels of the correct inside diameter and have a 17" tubing with a *Milton* fitting for connection to the vacuum pump plumbing.



Regardless of your vacuum pump setup and plumbing, the widely available *Milton* fitting will make a proper connection.

The clever part of the system is the vacuum hub with the O-ring gland, O-ring, and groove that will accept standard PVC fittings.



The setscrews are tightened after using the lathe and a wood block to compress the O-ring and seat the PVC fitting.

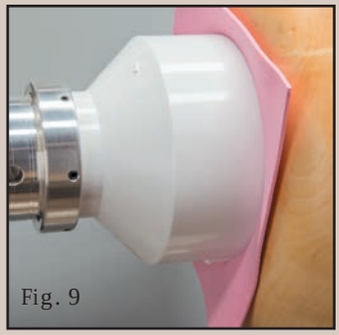
and then tightening the setscrews seals the unit and makes it ready for use (see Fig. 6). Once seated and the setscrews are tightened, it can be used over and over, or you have the option of removing the current PVC unit and replacing it with a different setup (see Fig. 7). Personally, I find it worthwhile to have a few vacuum hubs to accommodate my needs and leave them set with the PVC in place rather than changing things. However, if you'd rather change fittings, it isn't a major undertaking (see Fig. 8). For a better seal, I found that just placing a piece of 2mm craft foam with a small slit in the center worked nicely (see Fig. 9). It saved the adhesive bonding and eliminated any potential truing of the PVC material when attached to the PVC fitting. With the PVC fitting seated properly from the earlier step, the simple foam pad placed between the turning and the PVC fitting created a great seal that was clean and easy to use.

The JT Turning Tools vacuum system is a top-shelf product. The various parts are well made, high quality, and fit perfectly. The design demonstrates the thought that went into it and the workmanship shows the attention to detail. I can recommend the product without reservation.

I've used a vacuum system for many years and have components ranging from homemade to unions and vacuum chucks from other manufacturers. This system works as nicely as any of them and better than many. You will do very well to give the vacuum system from JT Turning Tools a consideration if you are in need of one. You can find more information at www.jtturningtools.com.

With the PVC fitting seated and setscrewed in place, the vacuum chuck is ready for use.

You can buy several hubs and make as many vacuum chucks as you need or you can change PVC fittings as needed.



I find a very workable seal can be made with a piece of 2mm craft foam without any permanent attachment to the chuck.