Article

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Redwing Lathe - Definitions

If you've been following along, we have covered how to open and close a hearing aid properly, as well as how to buff the seam. After our last article on buffing, we got quite a few questions about the Redwing Lathe and accessories, and what the accessories are used for. So we've decided to pull all of that information together in definition format.

Model 26A Redwing Lathe
The Model 26A Redwing Lathe is a 2 shaft, 2-speed lathe primarily used to grind and buff. It used extensively in the hearing aid industry, as well as the dental and jewelry industries to modify and polish a myriad of different components. The 2 shafts make it easy and efficient to perform 2 operations without changing tools, and the 2 speeds offer a variety of applications, from modifying a hearing aid shell, to polishing after modifications.

Chuck
The Redwing is only supplied with a bare shaft – nothing on the end. The chuck is a device, which will push on to the end of the shaft and hold the actual tool for modification. Now, we are going to take some time here with chuck installation because if you've never installed one, you could end up with a loose or poorly fitting chuck, and you will be disappointed with the performance. The chuck is typically press fit onto the end of the shaft, which means it is pushed onto the shaft and is held in place by friction. It is only installed on the RIGHT side when facing the lathe from the front. Typically, to install you would want to drive the chuck on with a rubber mallet. If you don't have a rubber mallet you can also use a metal hammer and block of wood. Place the wood against the end of the chuck and hit the opposite side of the wood with a hammer. You don't need to hit it very hard, just enough to drive it on. Do not strike the chuck directly with the hammer or you will cause damage to the chuck. If the chuck comes loose after use, strike it a little firmer on reinstallation.

What if you want to take the chuck off? The Redwing has a nice feature for that. You will notice where the shaft exits the motor there is a chrome piece with a handle that extends outward from the motor. This is a chuck removal device. Simply grab the handle and unscrew the device until it pushes against the chuck. Keep turning and it will push the chuck right off the shaft.

Using the chuck:
Once the chuck has been installed you're going to want to insert a tool. The chuck has a threaded piece on the end, which opens a set of jaws. Simply unscrew this piece to open the jaws, insert the tool you want to use, and then screw the jaws closed.

About Chucks:
You have a couple of options when it comes to types of chucks. The 8T chuck is usually offered as a standard chuck, and it works well for most conditions.

If you need high precision, and a guarantee that the tool will run true, there is the #18 precision chuck. Quite a bit more expensive, but worth every penny if you need the tool to run true.

Spindles
Spindles are what hold the buffing wheels. They are made for either the Right or Left sides, so you need to pay attention to which spindle goes on which side. The typical size tapered spindle for the hearing aid industry is #7.

Tapered Spindle:
The #7 tapered spindle is a threaded cone shaped spindle which is press fit onto the end of the shaft. Just like the chuck you will need to strike the end of the spindle to drive it onto the shaft, and just like the chuck do not hit it directly with a metal hammer or you will damage it. Where this type of spindle is threaded, all you need to do is thread the buffing wheel onto the end of the spindle until tight. If you have the spindle

installed correctly, and on the correct side, using the buff will tighten the buff even more on the spindle. If you do not have it installed correctly it will spin off the shaft during use.

Arbor and Flange Spindle:
The arbor and flange spindle uses a nut with washer to hold the buff in place. Just slide the buffing wheel onto the shaft, and tighten the nut. You can also get these with a tapered spindle.

Model 16 Quick Chuck Changer
This is one of the most useful devices ever created for the lathe. The Quick Chuck Changer replaces the standard chuck and allows the user to change tools without stopping the motor. With a traditional chuck, every time you need to change a tool, the motor needs to be stopped, you need to loosen the jaws, take out the tool, put in the new tool, tighten the jaws, and turn the motor back on. The Quick Chuck Changer uses a lever, which engages an internal clutch. This stops the chuck from spinning and opens the jaws without stopping the lathe. Then, simply install the new tool and push the lever – back in business. It is lightning fast to change tools, and a must have accessory if you do a lot of modifying. Also, the Model 16 Quick Chuck Changer includes a precision chuck.

You can get the Model 16 Quick Chuck Changer as an add on accessory if you alreadt have a Model 26A lathe, or you can order it installed from the factory which is the Model 16B. The Model 16B is simply the standard Model 26A lathe with the Model 16 Quick Chuck Changer attached.

The Accellerotor
This is probably the most misunderstood accessory for the 26A Redwing, but it can also turn the lathe into a high performance versatile machine. The accellerotor does several things, but mainly it increases the speed of the shafts from 1725/3450 RPM to 12,000/24,000 RPM. Increasing the speed allows the operator the ability to grind the faceplate from the shell. If you do any kind of faceplate replacement, or manufacturing where there is a large amount of faceplate to grind, this is one very efficient way to do it. It will also allow the user to buff the hearing aid shell to a high degree.

The accellerotor also includes a quick chuck changer, and includes a precision chuck.

There are two companies which make an accellerotor device. The manufacturer of the Redwing makes one called the Model 16D and can be installed from the factory. Another company has one called the U011 Gold Chrome Bracket Assembly which is a very nice unit that also includes an overhead light – very handy.

Splash Hoods
As you can imagine, when you start grinding and buffing you will likely make a mess. You will have plastic debris and buffing compound flying around and you will want to contain that. A splash hood is a device that partially encloses the spindles of the lathe, and catches much of the debris. They are available in several sizes, the most common being the Model 86D, which includes a light and safety shield (a must in my opinion).

Dust Collectors
If you need to completely contain the dust and debris from grinding and polishing, you may consider a dust collector. Some dust collectors are bench-top units and include a splash hood. Some bigger units connect to the splash hood by a hose and will typically require the splash hood to have an option flange cutout for connection the hose.

The Model 26A Redwing Lathe is a must-have tool for any office or lab that performs modifications on hearing aids. Using the lathe does require some practice, but you cam get plenty of experience just by playing around with a junk unit or two. The biggest piece of advice for a beginner? Take it slow. Just grind or buff a little at a time to avoid taking too much. But even if you do make a mistake, this type of work is

very forgiving. You can always add more material, or regrind or buff again. It is just a matter of practice and patience.

About the Author

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