

# Beall Buffing System by Wes Jones

by Wes Jones

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Buffing a turned and finished piece can put the final touch to it and can make a good piece into a great piece. If done properly, buffing can dramatically improve the look and feel of your turnings. How many times have you had a person say “I just love the feel of this bowl”? Your fingers are very sensitive and will often pick up small surface imperfections that your eye doesn’t see. And the tactile feel of your pieces is just as important as the visual appeal.

Unlike paintings or other wall art, woodturnings are picked up and handled and the tactile feedback says a lot about the level of craftsmanship. Does the finish feel smooth and silky or sticky and rough? Can you feel little dust motes in the finish? No matter what finish you use, buffing can help you refine or deluxe the surface.

Some of you are probably thinking “Great, something else I have to do that will make my finishing process longer”. Many new woodturners are surprised to find that sanding and properly finishing a piece may take twice as long as actually turning it. A really nice finish will enhance the overall impression of a piece and may seal the sale. And I’ll show you that buffing the finish does not take long.

Let’s talk a little about the buffing process and the equipment available to do it. Buffing is basically using a spinning cloth buff with some fine abrasives on its surface to polish the workpiece. There are dedicated buffing machines available, which look similar to our double-ended tool grinders. But most turners don’t have room in their shop for another piece of equipment, so we tend to use our existing equipment for buffing. All woodturners have a lathe, so that is the logical tool choice for most people to use for buffing.

The buffing system made by the Beall Tool Company [bealltool.com](http://bealltool.com) is the most widely used, so that is the system I am going to demonstrate and talk about today. Beall buffing systems are sold by Woodcraft, Packard Woodworking, Craft Supplies, Klingspor, and many other suppliers. The basic Beall system costs \$70 -80. It is composed of 3 different 8” diameter buffing wheels, the hardware to mount them, and 3 different compounds for use on the wheels. Each wheel is made a little differently and is designed for use with a different compound.

Wheel #1 is composed of linen and is the stiffest wheel. It is used with Tripoli abrasive compound, which is reddish brown in color.

Wheel #2 is composed of a linen/cotton blend and is a little softer. It is used with White Diamond abrasive compound, which is conveniently white in color.

Wheel #3 is made from all-cotton flannel and is the softest of the three. It is used with Carnauba Wax, which is amber in color.

Buffing wheels are also available in 4” diameter. All wheels come with 3/8 -16 bolts and washers to attach to a mandrel. The system comes with a 1/2” – 5/8” mandrel, which can be mounted on a motor shaft. Beall sells a buffing mandrel extension which adds 3” to the length of the mandrel. If you want to use the system on the lathe, an optional #2 Morse taper adapter is available which attaches to the 1/2 - 5/8 mandrel. The Morse taper adapter should be secured in the spindle with a 1/4” threaded rod drawbolt (not supplied). If you intend to use your lathe to do your buffing, special spindle mandrels are available to mount the wheels and buffs on your lathe. These blue anodized aluminum spindle mandrels are available from Don Pencil [donpencil.com](http://donpencil.com) under his Wood N Things label. This 8” long mandrel sells for \$17.50.

Bowl buffs in 2", 3", and 4" diameter are also available from Beall to buff the inside of small bowls and goblets where the 8" wheels are too big to fit. They are available in the 3 different materials, like the buffing wheels.

The standard 8" wheels are intended to run at approximately 1725 rpm. If you connect them to a 1725 rpm motor, you are good to go. If you run them on the lathe or another piece of equipment, adjust the speed accordingly. When you run wheel #3 with the wax, you may want to slow the speed down a little.

I use my floor mounted drillpress for buffing, because I don't want to disturb whatever is set up on my lathe. I find using the drillpress is more comfortable and convenient than trying to work around the headstock and bed of my lathe. I just swing my drillpress table out of the way, and put the adapter with a 5/8" diameter rod in the drillpress chuck. And since I am not using a Morse taper, I don't have to use a drawbolt to secure it.

No tools are required to mount or change buffing wheels. Just spin them onto the mandrel. They are held in place by friction. So, always buff in the direction that would tighten the wheel on the mandrel. To change wheels or bowl buffs, just spin them off and spin another wheel or buff on.

New buffing wheels and buffs throw off lint when new and should be conditioned before use. Wrap a piece of coarse sandpaper around a piece of scrap wood and hold it against the wheel or bowl buff. Hold a vacuum hose close to the wheel with your other hand to catch the lint that comes off. And of course protect your lungs. Always use good dust protection when buffing.

After using the Tripoli wheel for a while, you may need to clean it. Use the coarse sandpaper method that was used to condition the wheels. The other 2 wheels will not build up compound and should never need to be cleaned.

Start with wheel #1 and charge it with a little Tripoli compound. When buffing, it is important to keep the piece moving and to overlap your strokes. After a few minutes of buffing, recharge the wheel with abrasive. Buff with firm pressure, but not enough to heat up the finish. Let the abrasive do the work. Buff until the surface feels smooth and the whole surface is at an even gloss.

After buffing with the Tripoli, switch to wheel #2 and charge it with White Diamond compound. The #2 wheel will remove any grease that was left from the Tripoli. Buff the whole piece again. Use lighter pressure this time but be sure to cover the whole surface.

Finally, switch to wheel #3 and charge it with Carnauba Wax. This is a very hard durable wax and will protect your turning from fingerprints and the oils in people's hands. Only a little wax is needed. Buff the piece again with very light pressure this time and you are finished.

You can control the amount of gloss by the amount of buffing. If I want to end up with a less glossy finish, I will often use walnut oil as the finish instead of one of the film building finishes.

I also want to show you the Beall "3-on" setup, where the 3 wheels are spaced apart on a rod which you mount between centers on your lathe. This system, complete with hardware and compounds is approximately \$90. I don't have this setup. I borrowed this one to show you what it looks like. This setup won't work very well on large items, but for smaller items like Christmas ornaments and bottle stoppers it is ideal. You can rapidly move from one wheel to the next. And it will mount on a mini-lathe.