

# BUFF

for the Perfect Finish

Don McIvor



Buffing is not meant to replace sanding but is an easy way to step up your final finish.

Applying an increasingly fine series of abrasives to a piece of spinning timber is a process few of us anticipate with relish. But once a few tricks of the trade are mastered and you can regularly achieve a good, blemish-free surface, consider taking your finishing game a step further by adding a set of buffs to your turning kit.

Compared to the drudgery of sanding, buffing is an easy way to crank up finish quality. The task relies on two super-fine abrasives and one of the hardest known natural waxes, each applied with its own dedicated buff. The result can be a surface that gleams, turns heads, and invites closer inspection.

Bufs are available from a number of sources and in a variety of shapes and sizes. Not all buffs are created equal, and each shape has its strengths and weaknesses. The Beall Tool Company has been thinking about buffs for a

long time. Its line of products is deep, perhaps to the point of being overwhelming, and in my mind its name is synonymous with buffing for woodturning. But there are other alternatives on the market at a lower price point. Before getting to the qualities that distinguish various manufacturers' products, consider shape, because that is a characteristic that transcends brand.

## Shapes and sizes

Bufs are sold in two basic shapes—wheels and mushrooms, the latter also called bowl (or in slightly smaller form, goblet) buffs (*Photo 1*). The stitched wheels are 4" or 8" (10cm or 20cm) in diameter and are most effective for spindle-turned pieces or flat work, but can be used on the exterior of most vessels. The 8" wheel is a good general-purpose size. Where wheels perform poorly is in reaching the inside of vessels, but this is where mushroom buffs excel. Because

mushroom buffs also perform well on the outside of vessels, they are a universally useful shape and a good place to start for your first entree into the world of buffing (*Photos 2, 3*). Mushroom buffs are available in 4", 3", and 2" (10cm, 8cm, and 5cm) diameters, the smaller sizes being useful for goblets or diminutive bowls.

## Buff composition

While buffs from different manufacturers may appear indistinguishable, they are made in subtly different ways. My first set of mushroom buffs was made from tightly woven cotton cloth (*Photo 4*). Until I put the first coat of finishing material on the wheels, each wheel was identical to the other and entirely interchangeable. In contrast, each Beall buff is comprised of a combination of weaves and materials tailored to work with a specific abrasive or wax. They are either color coded or

clearly labeled for their intended use. While my generic set performed well enough for years and I recommend it as a set for a budget-conscious turner, the Beall set is noticeably more efficient in its performance.

### Spinning the buff

Beall recommends spinning the 8" wheels at 1725 rpm for optimal results. Because of their smaller diameter, the 4" wheels and mushrooms work more efficiently at higher speeds; I use mine at 2000 rpm. The good news is that most of us already have a motor—our lathe—to spin the buffs. For some, particularly production turners, it may be worth considering a dedicated motor for buffing. Just be sure to consider the motor's speed and the direction of travel (counter-clockwise) when acquiring a motor.

Depending on design, the buffs attach to the lathe either with the use of a mandrel held in a drill chuck, a threaded bolt and a Morse taper adapter or an adapter that threads onto the lathe's drive shaft. An extension for the headstock adapter is handy for reaching into vessels and getting some working distance from the headstock.

### The process

Before getting started, consider the forces at work. The buffs generate friction to accomplish their task and the various abrasives and wax give them some grip. The buffs are adept at ripping work from your grip and hurling it against the lathe bed, nearby wall, or floor. This is particularly true if the buff can catch the edge of a bowl, foot, void, or end of a spindle. Buffing requires a firm grip on the workpiece to counteract these forces, and I have tried to capture the essence of that technique in the accompanying photos. Covering the lathe bed and possibly other surfaces with something soft to catch the wayward piece's first bounce is cheap insurance. I often▶

## Match the buff to the task



Wheel and mushroom buffs, along with a Morse taper adapter and extension. Buffs come in numerous shapes and sizes to accommodate specialized needs, but one or two sets may serve all of one turner's needs.



## Mushroom buffs are versatile



Mushroom buffs can be used on both the inside and outside of an open vessel, making them highly versatile in the turner's shop.

## The budget option



The author's first set of buffs, made of tightly woven cotton cloth. Each buff is mounted in a drill chuck that is inserted into the lathe's headstock spindle.

## De-lint and charge the wheel



A new wheel will throw off a cloud of lint and should be de-linted before use. This can be done using an abrasive wrapped around a wooden block.



No matter the shape, each buff is charged with a dedicated abrasive compound or wax.

use a piece of dimensioned lumber resting on the lathe bed, but a piece of foam may be a better alternative.

Although the abrasives used in buffing are many grades finer than our usual progression of sanding abrasives, the good news is that it is easy to achieve excellent results starting relatively early in the sanding process. In general, I will sand a piece destined for buffing to 600 grit, rarely finer. Pieces finished with cyanoacrylate (CA) glue are carried through the entire sanding and polishing routine described in “Finishing with Cyanoacrylate” (*AW*, vol 29, no 4, page 22) before facing the buffs. Other film finishes should be given time to cure (and thus harden) before buffing.

A new buff will require de-linting. It is natural for the buff to shed copiously on its first use. The consequences can be controlled by good dust extraction and the use of a scrap piece of dimensioned lumber and a piece of 100-grit abrasive. Fold a piece of abrasive over the end of the scrap lumber and hold it against the rotating buff (*Photo 5*). Much of the loose fiber will be removed by the abrasive or captured by the dust extractor.

The coarsest abrasive in the buffing series is Tripoli. It comes in bar form and should be kept in a plastic bag when not in use. To charge the wheel with abrasive, simply hold the bar firmly but with moderate pressure against the spinning buff (*Photo 6*). The object is to get a uniform coat on the buff, but it should not be overly thick. Excess abrasive on the wheel will come off and coat the workpiece. The amount to put on the buff is subjective, but the surface of a properly charged wheel will still show more cloth than Tripoli. And a new wheel will require more abrasive than a previously charged wheel. Until you get the feel of the task, it is better to err on the side of under-charging the wheel and work up to an effective application.

Once the buff is charged, hold the workpiece against the wheel at about the 7-to-9 o'clock position (*as shown in the opening image and Photos 7, 8*). The Tripoli application works best with the workpiece held against the buff with moderate pressure. I keep the workpiece moving to avoid building up heat. Because the scratches left by the Tripoli and white diamond compounds are undetectable to the

eye, grain orientation relative to the spinning buff is not critical, though whenever possible I do try to align the direction of rotation with the wood grain (*Photo 7*). I buff the entire piece, changing the angle of presentation to reach around details such as coves and beads (*Photo 8*). The sheen on the workpiece will be noticeable and the object is to ensure the entire piece achieves a similar degree of polish. I look for any dull spots and give them a little more attention and potentially a little more pressure if they prove to be uncooperative.

The second abrasive for buffing is white diamond. A dedicated buff is charged in the same fashion as the Tripoli buff, with even less white diamond needed for efficient charging. The buffing technique is essentially the same as well, but a lighter touch is required when holding the workpiece against the buff.

The final buff applies carnauba wax to the workpiece. While this step is optional, the wax brings depth to the shine the previous abrasives developed and provides a measure of protection to the object. I hold a small piece of carnauba against the buff for charging (*Photo 9*). The application of the carnauba to both the buff and the workpiece relies on the heat of friction to transfer this hard wax with a high melting point in an even layer to the surface. Again, very little wax is needed to charge the buff, and more is not necessarily better. The workpiece is held against the buff with a degree of force between that applied to the Tripoli and the white diamond buffs.

After considerable use, the buffs will become loaded with abrasive or wax and lose effectiveness. When the stationary buff feels like it is developing a crust or hard, dirty surface, I clean the buff using the edge of a board. Holding the sharp edge of a board against the on-coming surface of the spinning buff will strip the excess material

from the surface. This technique is also helpful in the event a buff gets over-charged.

### Applications and limitations

One of the great attributes of buffing is that it is a fast process. Depending on the size of the workpiece, each buff takes only a minute or two, often less, of actual application.

While buffing develops a terrific surface finish, I do not consider it appropriate for every turning I produce. In sculptural pieces, I am often working to achieve a weathered or textured appearance that would not be served by a high-luster polish. I also feel the effort would be wasted on pieces destined for food service where the first cycle of use would destroy all my buffing glory.

In my shop, buffing excels in three situations. The technique shines in every sense when applied to oily tropical hardwoods, and this challenging group of timbers can be finished using only buffing. I also find the technique useful on small items, which I feel by their nature demand close inspection and therefore perfection in finishing. Finials, pens, shaving brushes, small vessels, goblets, or a presentation gavel (*opening image*) are all projects that benefit from buffing. For items finished with CA, buffing takes the place of plastic polish and adds depth to the shine.

Buffing will not cover poor sanding technique—on the contrary, it will highlight faults. Achieving good results with buffing requires careful sanding and close inspection of the workpiece before confronting the buffs. It is certainly possible to go back and re-sand a piece once a fault is noticed, even after waxing, but it is frustrating to have to do so.

Finally, because buffing generates heat and friction, it is possible to burn through a film finish (such as varnish, CA, or lacquer) and ruin it. Buffing a film finish actually entails “finishing the finish,” and it is important to keep

## Buff the workpiece



The workpiece should be held tightly to counteract the force of the wheel. Best results are obtained buffing with the grain, as with a handle, but sometimes a piece needs to be presented to the buff without grain alignment to reach between details, such as the beads on this gavel head.

## Carnauba wax adds the final touch



After Tripoli and white diamond, an application of carnauba wax helps protect the final work. Charge the wheel with only a very small amount of carnauba wax.

the workpiece moving and not create too much heat in one spot. Despite of this precaution, buffing can create a lustrous, deep finish on film surfaces.

### Safety

Objects held by hand for buffing are more likely to become airborne than stock held between centers or fixed in a scroll chuck. Wear appropriate safety gear to protect your head and face. When buffing, you are the chuck, so keep a firm grip on the workpiece and consider where an edge or change in line could catch the buff. Change the

angle of presentation or approach rims and edges cautiously.

Avoid breathing atomized linen particles or fine dust from the abrasives (which include silica) and their carriers by using a dust collector at a minimum and a mask for a good margin of safety. ■

---

*Don McIvor is a turner, writer, photographer, videographer, teacher, and demonstrator who shaves with a skew chisel in the hinterlands of North-central Washington. He has contributed several articles to American Woodturner. Don can be reached through his website, [mcivorwoodworks.com](http://mcivorwoodworks.com).*