

30 Top Shop Tips

“Shop Tips” has always been the most popular American Woodturner journal article for AAW members. What woodturner wouldn't want to know how to complete a project faster, more accurately, and for less money? In celebration of the AAW's 30th anniversary, here are 30 shop tips that we've gleaned from more than 250 pages of shop tips over the association's history. Enjoy!

American Woodturner 1986-2016

Naptha uncovers scratches (1997)

I sometimes use naptha to check my finished sanding before I put on any oil. It dries in seconds and does not raise the grain. And, it lets you see any scratches on the finished surface.

—Mike Kornblum, Mountain Home, AR

Eliminate bowl nubs (1995)

Often when I've finished turning the inside of a bowl, there is a small nub at the bottom. To remove the nub, use a 1½" roundnose scraper. Position the tool rest so the scraper is just below the center of the nub. As the piece turns, make fine cuts by lowering the handle and bringing the tip up to the center. As you remove wood in the center, slide the cuts toward the sides of the bowl to blend the surface.

—David Ellsworth Quakertown, PA



Hook-and-loop sanding discs (2002)

I cut my hook-and-loop (Velcro is a trademark name) sanding pads at my drill press using sharpened holesaws. Because only the first third of the edge is worn out on used pads, I also re-cut worn-out 3"-diameter pads into discs that are 1½" or smaller in size.

I grind off the teeth on the old holesaw, then sharpen the tool on my grinding wheel. I always cut my discs a little larger than the sanding pad I'm going to use so I can remove it easily.

—Pat Bookey, North Pole, AK

Shrink-wrap aids for vacuum chucking (1996)

Some time ago on a visit to Georgia, Nick Cook showed me his vacuum system, and I was hooked. Unfortunately, some of my pieces have areas of bark inclusion that don't allow for a good vacuum. For most turnings, the solution was incredibly simple. I wrap the piece in shrink-wrap, place it back in the chuck, and switch on the vacuum.

On most pieces, I have adequate vacuum suction to complete the piece. I purchase my shrink-wrap from my local building and supply.

—Bob Rosand, Bloomsburg, PA

Fill hairline cracks (1996)

When I want to fill those hairline drying cracks in my nearly finished turning, I reach for 320-grit sandpaper and my bottle of cyanoacrylate (CA) glue. A light sanding across the crack fills it with wood dust. Now it's time to put a drop of CA on the crack.

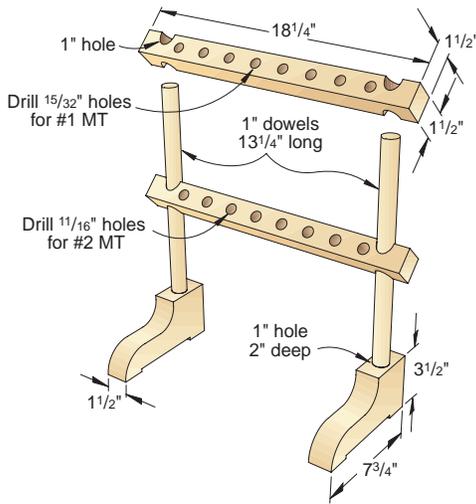
I've found that the smallest hole in the nozzles on the plastic bottles gives me too much adhesive. Instead of applying the adhesive directly, I twist a small piece of paper towel between my fingers to make a toothpick-like tool. Apply a drop of adhesive to this (not over your work) and use it to carefully paint adhesive over the crack. One or two repeats of this procedure will fill small cracks. Larger voids may require pre-packing with tiny turning chips followed by adhesive. This system used very carefully avoids staining the wood surrounding the crack.

—Charles Brownold, Davis, CA

Tear-out problems (2000)

When tear-out occurs close to the finishing stage of a turning project, try putting a little paste wax on the damaged area. Then lightly re-turn the area until it is cleaned up or the tear-out is minimal. If the tear-out is deep, sometimes it will take more than one application. This will save countless hours of sanding.

—Jerry Fant, Wimberly, TX



Space-saver for tools (1998)

It is amazing how many widgets and gadgets we woodturners collect. The problem is that shelf space is at a premium.

This rack keeps my #2 Morse center visible and handy. Drill $\frac{11}{16}$ " holes for #2 Morse tapers; $\frac{15}{32}$ " for #1 Morse tapers. In addition, there is a lot of room underneath the rack for more turning supplies.

- Bob Vaughan, Roanoke, VA



Wood hardener rescues spalted wood (2000)

Because spalted wood is soft and tends to tear out on the lathe, try soaking the wood in a solution of 50 percent white glue and 50 percent water. Soak the turning stock for several hours or even overnight. Let dry, then turn as normal. The water helps the glue soak deeper than normal to stabilize the wood.

This also helps cure end grain cracks in some wood. Soaking them overnight or longer in the solution might be necessary. In many instances, the water swells the cracks closed and the glue keeps them from opening back up.

—S. Gary Roberts, Austin, TX

Grind closer to your nose (1994)

If you are having trouble sharpening your tools, one thing you may want to try is raising your grinding wheel to the height of your lathe. The shaft of the lathe or grinding wheel should be about elbow height from the ground. I recently did this with my grinding wheel and was pleasantly surprised at how comfortable the change was. Now it's much easier to see and control the grind.

After all, you use the tools at one height, why sharpen a foot or so below that? John Jordan discusses this advice in one or more of his videos.

Bob's update: On many tools, I use a magnifying device (OptiVi-sor is one familiar brand name) for close examination of the tool edge.

- Bob Rosand, Bloomsburg, PA



Mark the bevel (1999)

For sharpening by hand at the grinder, a use wide felt-tip marker to color the bevel and grind. This removes the guesswork from where you have been and will help you attain a sharper edge.

—Abe Harper, Berea, KY

Get rid of sanding scratches (2000)

To avoid those stubborn cross-grain scratches that just seem to show up when you apply the finish, try this. With each grit up to 180, turn off the lathe and sand WITH the grain by hand until the scratches are gone.

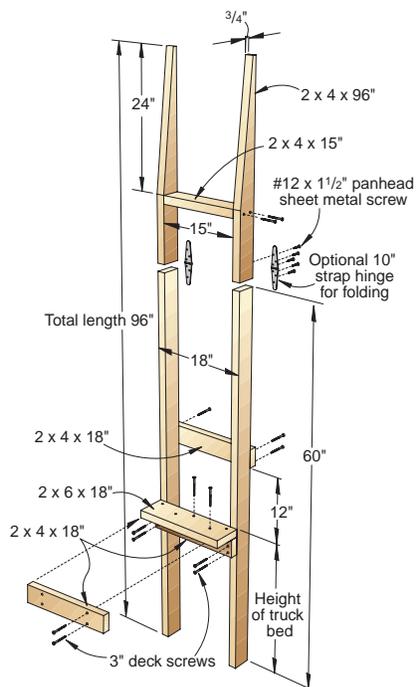
Clean the dust off of the piece with a lint-free cloth, use good lighting, and look for the rings. If you can still see the scratches at that point, you will really see them when the finish is applied, so never hesitate to drop back a grit size to clean them up. It only takes a few moments to take them out, and your end product will have a much better finish.

- S. Gary Roberts, Austin, TX

One-person log loader (2002)

Lifting logs into the back of a pickup truck can be quite a chore. I designed a log loader that enables one person to load heavy logs with much less effort. To position the log loader, stand it upright and tilt it slightly forward so it's leaning against the truck bed. Now lay it flat on the ground. A log can then be rolled on from the tapered end or placed on the loader above the ledge. A cross member on the bottom 12" above the ledge causes the loader to tip forward to help prevent the log from rolling back. Lifting the loader from the tapered end raises the log, which then rolls onto the truck bed. There is a lot of stress on the parts, so use long screws for assembly. I also used heavy-duty strap hinges so my loader would fold to fit in the back of my truck.

- Carl Schneider, Boca Raton, FL



Stop tailstock creep (1994)

When mounting large pieces of wood between centers on the General 260 lathe, the tailstock will creep backwards under the pressure needed to secure the wood. That's because the plate that connects the tailstock to the bed was designed for spindle turning and is only 1 1/2" long. Remove this plate and have your machinist make you another that's 4 1/2" long. Works great and costs about \$14.

- David Ellsworth, Quakertown, PA

Mark depth with tape flag (2001)

A bright piece of tape on the shank of a tool can help keep the tool from going too deep into a turning. After you measure the maximum depth of the piece, transfer that measurement onto your turning tool. Mark this depth with bright tape (similar to the technique you may use for drilling holes). When the tape edge gets to the rim, you know you are at maximum depth with the tool.

- Phil Brennon, Chino Valley, AZ

Divvy tape (1994)

Dividing a round piece on the lathe into equal parts can be easy if you have a dividing (indexing) head. Some of us don't, so here's a way to do it simply.

Wrap a strip of masking tape around the piece. Mark where the tape ends meet, then gently remove the tape to avoid stretching it. Adhere the tape to a metal surface and divide the space into the number of parts you desire by measuring the distance point to point and calculating the divisions. Or use a pair of dividers. Mark the tape, reapply to the turning, and mark off the points on the turning. I use the tool rest as a straightedge.

- Palmer Sharpless, Newtown, PA



Boost your vacuum power (2003)

Green-wood bowls often warp out of round, which causes problems with the vacuum-chuck seal. If the seal on the chuck doesn't have enough give, there is a loss of vacuum. Here's how I solve this problem.

I cut a 1" hole in the center of a square sheet of white closed-cell material used to wrap electronics and computers.

Then I place the material between the bowl and chuck. The material seals nicely and eliminates the low vacuum reading. I don't trim off the corners on the material so that I can adjust the sheet if it slips while centering the bowl.

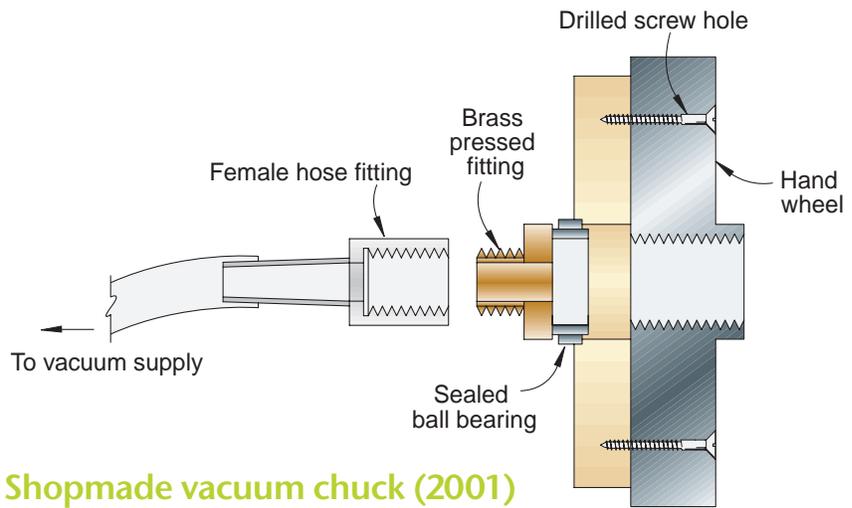
- Richard Preston, Richmond, VA



Homemade collet chuck (2003)

Because I need to turn several small items without scarring them with the chuck jaws, I make a collet chuck to fit each item. I make these out of hardwood scraps.

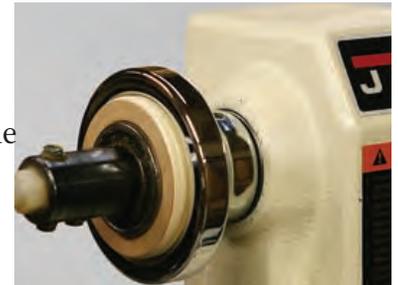
I fit a scrap piece in my Vicmarc chuck and mark the #1 spit so I can re-chuck it in the same orientation in the future. Then I turn a hollow about 1 3/4" deep to snugly fit the item I'm making. I then turn the outside so that it's about 3/8" thick and back at least 2". This leaves a 3/4" recess on the outside edge about 1/16" deep for the hose clamp. I then cut equally distant slots perpendicular to the hole using the bandsaw. (Eight slots at 22.5 degrees work fine for me.) Place a hose clamp around the outer edge to hold the item in the chuck, and you are in business.
- Dale Beckman, Klamath Falls, OR



Shopmade vacuum chuck (2001)

The diagram *above* shows a variation of the sealed bearing vacuum chuck. This has two advantages: The handwheel stays on the lathe at all times, and you can use the knockout bar with all but the hose intact. The set-up time for this vacuum chuck is very fast. The pressed brass fitting was turned to the diameter of the bearing and pressed into place.

The bearing was epoxied into the wooden insert (don't get epoxy in the bearing). For the wooden insert, use a stable material such as MDF, plywood, or acrylic. Otherwise, the bearing will only fit properly a few times a year. —Jerry Kroehn, Portage, MI



Freeing frozen drive spurs (2003)

Here are four simple solutions to free a drive center from the headstock:

- 1) A good way to protect the spindle threads is to put a nut in the spindle before inserting the drive center. If the center gets stuck, you have a nut already in place.
- 2) Make a split nut by sawing in half a nut with the appropriate thread. Use an open-end wrench on the split nut to hold it together and back out the drive center, as shown *above*. An adjustable wrench has too much play to hold the nut well but may work in a pinch.
- 3) If the drive center doesn't come loose from the pressure of the nut, try using the knockout bar again with the pressure still on.
- 4) Be careful when removing a stuck drive center, as the drive center can come out with considerable force. Under pressure, observe proper safety precautions. Simply place a towel over the drive center to keep it from flying across the room.

—Scott Hogsten, West Jefferson, OH



Avoid a spinning spur drive (2004)

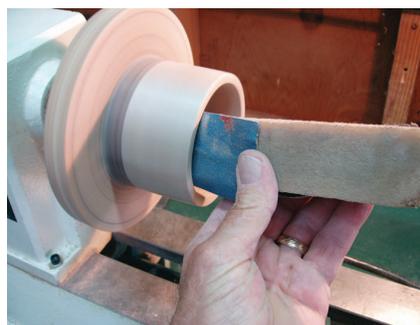
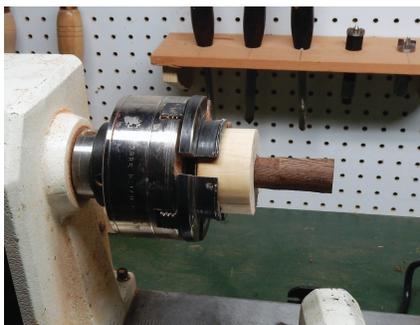
For extra safety, I drill a hole about 1/4" deep and the diameter of my spur drive. That locks the spur drive in position. To keep the spur drive from spinning in green wood, I put a few drops of cyanoacrylate glue in the hole, which hardens the wood. Since following this practice, I haven't had a spur drive spin out of the stock. If I need to shift the bowl to realign the grain, I move the tailstock.

—Ric Erke, Davidson, NC

Jig for mounting small finials (2016)

I liked Ted Rasmussen's AW article, "Turning a Five-Sided Box" (vol 30, no 6) and decided to use his method for turning the finial. I found a couple of scrap pieces of wenge that would be perfect, except they were too small to be held in the jaws of my chuck. I solved this problem by making a sacrificial mounting jig.

I cut off a 3" (8cm) length of scrap dowel large enough in diameter to be held in my chuck. Then I drilled a 1/2" (13mm) diameter hole in one end. After roughing the wenge finial stock to a cylinder between centers, I turned a 1/2" tenon on one end and glued it into the scrap dowel. I could then easily utilize the entire length of wenge for the finial and cut it free from the scrap dowel when complete. - Bill Wells, Washington



Locating buttons on jumbo jaws (2015)

When screwing the buttons onto my jumbo jaws, I sometimes have a difficult time visualizing the right hole pattern for a bowl or getting all the buttons in the same set of holes. So I color-coded the holes by "connecting the dots" with different colored markers. I rotated the jumbo jaws on the lathe by hand while marking the lines, using large permanent markers. The different colored circles instantly show me what set of holes to use for a bowl and solve the problem of my putting one or more of the buttons in the wrong hole. - Larry Brooks, California

Safe sanding aid (2015)

I have seen many woodturners use their fingers to hold sandpaper when sanding the interior of small bowls at the lathe. I used this method for a while, each time thinking of the potential consequences. I have seen too many industrial accidents involving rotating equipment and a worker's hands. I tried using sandpaper wrapped around the end of a belt sander cleaner (giant gum eraser). It worked perfectly: the gum rubber keeps the sandpaper in place without slipping off; the sponginess of the rubber allows uniform sanding of interior curves; and it keeps my hand and fingers out of harm's way. - Bill Wells, Washington



Storage for small blanks (2014)

I have been turning only two years and until I'm ready to tackle larger projects, my passion has become pens, letter openers, bottle stoppers, fan/light pulls, kaleidoscopes, and other small items. In order to organize the various blanks I have accumulated (totaling more than sixty at this time), I created a wood blank storage system using 4" (10cm) PVC pipe.

I cut the pipe into 6" (15cm) lengths and sanded the front edge with my belt sander to smooth the rough edges. I made supportive sides to hold the stacked cylinders in place. To do this, I screwed two strips of wood with a channel in them to my countertop (channel facing up), placed thin panels into the channel, and screwed the panels to each side of the upper cabinets. My storage system comprises sixty cells, but of course you can create whatever number your space allows. I attached labels below each tube and covered them with packing tape for durability. You could also laminate a sheet of printed labels and cut them apart. My labels identify the type of woods and the country/region the wood came from, as I have found customers are interested in knowing that information when they purchase my products.

- Darcie A. Didden, Arkansas

Easy insulation for garage shop (2015)

Many woodturners create shop space in their garage. Uninsulated steel garage doors are a major source of heat loss, but insulating them is easy. Most home centers carry 1/2" (13mm-) thick sheets of insulation board. The inside of a steel garage door typically has a divider strip on the top and bottom of each panel, forming a lip that can hold sheets of insulation. Cut the insulation board slightly bigger than each panel, gently bend it, and insert it into the panel lips. This will make a big difference in heating and cooling your shop.
- Paul Kaplowitz, South Carolina



Go/no-go for chucks (2010)

In the February 2010 AW, Lee Sky presented a tip for easy tenon measuring, which I thought was great. I tried this method for standard jaws on my Oneway stronghold. Laying a pencil flat on the tailstock gave me a good mark for smallest diameter, but not for largest diameter of a tenon. I cut a piece of wood 1/2" x 0" (13 mm x 23 cm), and glued a pencil to the side. When this piece is placed on the tailstock, it gives the correct diameter for the largest tenon. I can now scribe two quick "go/no-go" marks where I need to turn a tenon. I also use the #4 jaws, which require slightly different-size go/no-go marks. For scribing these marks, I glued a piece of wood 5/8" (16mm) wide on one side of a pencil and 1 1/16" (27mm) on the other. All I need to do is cut a recess just a little larger than the big circle and the size is perfect for expansion chucking in the bottom of a plate.



I made the pieces of wood long enough so that as the pencil wears down, the jig will still rest horizontal on the tailstock. I also glued a magnet on the side of the jigs so I can put them on the headstock or at the end of the ways, depending on what I am making. with the jigs attached magnetically to the lathe, they don't fall into the shavings.
- Dan Burlison, Troy, MO

Mark your pen bushings (2015)

I typically turn about a dozen cigar pens per year—mostly as presents and thank you gifts. Since I don't make them regularly, I don't remember each time the order in which the bushings should be installed on the pen mandrel. Instead of reading the instructions each time I make a pen, I came up with an easy fix: mark the bushings permanently to indicate their order.

To simplify the identification and installation of the bushings, I placed each one in a vise and cut either one, two, three, or four marks on the bushings with a hacksaw. The number of marks corresponds to that bushing's placement on the mandrel. Now it is fast and simple for me to mount bushings and pen blanks.

- Bill Rosener, Oklahoma



Magnets (2011)

I acquired a large box of used computer hard drives so that I could take them apart for the strong magnets inside.

I glue or epoxy the magnets to many things so the objects will stay where I put them and not fall into the piles of shavings and get lost.

I used epoxy to glue magnets onto the top of my headstock so my chuck keys, screw center, spur drive, or what-ever stays there.

I pour finishes into smaller bottles and put a metal washer inside the container (if the finish doesn't react with the metal) or I glue a washer to the bottom of the bottle. The washer sticks to the magnet, keeping the container where I want it. This idea also works well for CA and accelerator containers.

Some items require two or three magnets, such as the plug strip for my vacuum chuck.

The magnets easily break into smaller pieces. I glue a smaller magnet onto the top of calipers, dividers, and my tenon-marking pencils so that they can stick to my lathe, within easy reach.

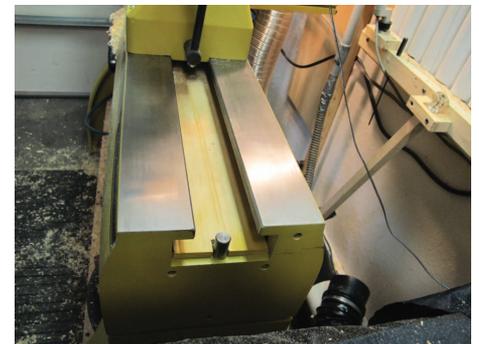
— *Dan Burlison, Troy, MO*



Plywood shelf for Powermatic (2011)

For my Powermatic lathe, I cut thin pieces of plywood to the correct width and inserted them into the bed between the ways. The plywood provides a safe, quick, and temporary place to hold some of the tools I'm using at the time.

— *Jim Brinkman, Texas*



Adjustable lamp mount (2012)

I store sandpaper and tools on the headstock of my lathe, so I don't have room for a magnetic lamp. My early solution was to mount an adjust-able desk lamp to the wall behind my lathe, but over time the springs softened and the lamp wouldn't stay where I needed it. After doing some research, I found "dock-lights," which seemed much more rigid while still being adjustable and seemed like an excellent solution if it weren't for their \$100 to \$150 price tag.

So, I modeled my own lighting system after the dock lights, but built it out of PVC pipe and a clamp-on lamp, and made the whole thing in less than an hour, for about \$20.

I started with a 1" (25 mm) piece of PVC and a 90° elbow, and clamped that piece to the wall using U clamps. The elbow is not cemented onto the post to allow the finished fixture to turn from side to side. Next, I glued in another 1" piece that

was 18" (45 cm) long, and connected a male-threaded endcap, reducing the size to ¾" (19 cm). From there, I threaded on another 90° elbow, and then a threaded T element.

I tightened these pieces enough to hold in place while still allowing them to turn without too much difficulty. Onto the T, I attached an 18" length of ¾" PVC. The length of these longer pieces can be adjusted depending on how far your lathe sits from the wall.

From the 6" (15 cm) aluminum clamp-on lamp, I removed the

spring clamp and discarded it. I then took the metal stud from the clamp and epoxied it into the end of the PVC arm. When the epoxy was set, I attached the lamp onto the metal stud.

The result is a lamp arm that can reach about 3' (90 cm) from my wall, and because of the series of threaded connections, it can move left to right from two different points, and can pivot vertically as well for an almost infinite combination of lighting positions and directions.

—Glenn Schaffer, Washington



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