Abstracts

and selection, tuning your drum, and playing techniques, ending with a jam session.

Anthony Harris

Dual-Chambered Tobacco Pipes

The pipe Sherlock Holmes is commonly depicted smoking is a dual-chambered design, first made in the late 1800s as the answer to a cool, dry smoke. Anthony features a more compact, modern design that fulfills the same functions. Pipe smoking may not be your thing, but the demonstration will include hand-chasing threads and eccentric, multiaxis, and hollow form turning - and the result will fit in one hand.

Steven Kennard

Teardrop Box

Steven will review reasons for choosing the wood type and necessary tools to make a teardrop box of African blackwood, will discuss preparing the material and chucking methods, and will turn the body and top. He will demonstrate fitting the lid, parting off, and reverse chucking for final finishing, concluding with sanding methods and finishing.

Bill Ooms

Mini Metal Lathe for Woodturning

There are several mini metal lathes that sell for around $600 and can be used very effectively in woodturning. They offer the advantage of very precise control of dimensions for small items such as boxes with snug-fitting lids. Bill will address safety issues unique to this kind of equipment, the parts of the lathe, the initial set-up and adjustment, options and accessories that are essential for the woodturner, various kinds of cutters and how to sharpen them for wood, and how to make basic cuts. He will make a small wooden box with a snug-fitting lid to show how best to use the metal lathe effectively.

Thin-Layered Boxes

This demonstration will build on the foundation set by “Mini Metal Lathe for Woodturning” to show how to build up very thin layers of wood on the exterior or interior of a box (layers on the order of 0.020” thick). To achieve such thin layers, the precision of a mini metal lathe is required. Once the layers are built up, they can be cut through by hand carving, using a rotary tool, or by means of an ornamental lathe.

Making Pen Parts

This demonstration will build on the foundation set by “Mini Metal Lathe for Woodturning” to show how to make precision metal components for pens from aluminum, brass, silver, or other materials. The metal parts are combined with wood in a way to make a perfectly smooth joint between metal and wood. The demo will show how to make a simple wood pen with a metal nib that is matched to a screw-in cartridge. Additional parts required for a more complex design will be discussed with a photo presentation.

Lee Sky

Birdhouse Ornament with Threaded Top

Lee will show how to enhance birdhouse ornaments by adding a threaded cap, when opened revealing a nest with eggs inside. This demonstration will review thread chasing techniques, sheer cutting to produce nest material, turning miniature eggs from palm seeds, and texturing methods. Participants will learn how attention to the details will turn their ornaments into gems.

Alan Trout

Bill Ooms

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Bill was raised on a farm south of Chicago, where wood has always been a part of his life. As a second generation woodturner, he learned basic woodworking techniques from his father. Even as a young man, his desire was to envision and create new things. This led him to his first career in engineering, and now he has returned to his roots as a full-time woodworker.

Much of Bill's early work was turning hollow vases inspired by the pottery of Native Americans in the Southwest. Later he combined his woodturning skills with his math and engineering background to create unique wood sculptures. Most recently, Bill has designed and built a complex and unique ornamental lathe to create highly decorated objects of wood art.

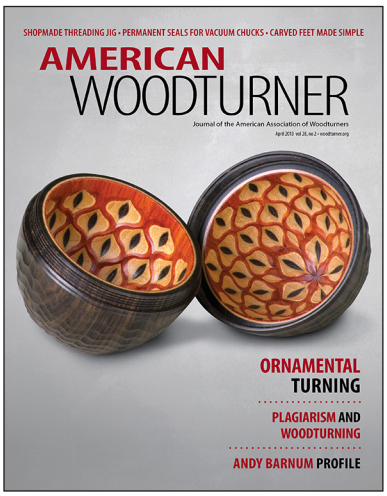
Bill and his wife Pam have their home and studio in the country north of Prescott, overlooking the Williamson Valley.

"Wood is a unique medium for an artist - it was once a living thing of beauty. A wood artist has the opportunity to transform the wood into something different that will continue to have beauty long after the tree has died to something that will last for generations.

The lathe is used as a carving tool, and the overall shaping is done with handheld chisels. The goal is to create curves and shapes that are pleasing to touch and pleasant to view. Decoration often requires more complex machinery in the form of an ornamental lathe wherein the artist determines the patterns and the location of each cut. Each piece is a unique combination of the natural wood and the touch of the artist's tools.

All work is done completely by the artist, from selecting the wood, the drying process, shaping and hollowing, decoration, sanding, and finishing. Most pieces are finished using an oil finish and/or natural waxes to preserve the warm feel of the wood.

Some wood is gathered from local tree removal services or from storm-damaged trees. Some wood is obtained from other wood workers in various parts of the country or purchased from wood suppliers who can certify that no endangered species are used. All wood is kiln-dried to ensure stability."



Making Pen Parts

WEBSITES

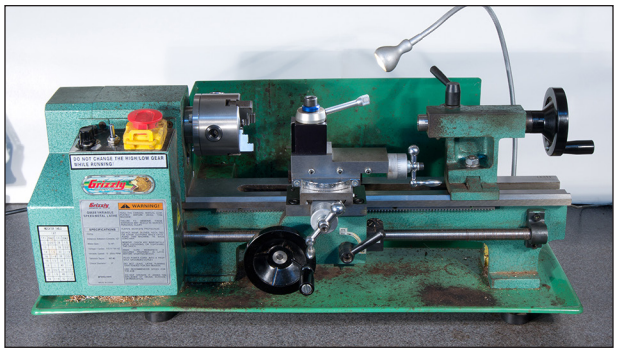
- techtv.mit.edu/search?q=machine+shop&x=0&y=0 - metal working videos
- youtube.com/user/mrpete222/ - metal working videos
- onlinemetals.com - source for aluminum and brass
- billooms.com/resources.html - detailed drawings of pen parts with dimensions

A Mont Blanc roller ball cartridge screws in, so there is no need for a spring to hold the cartridge in place. You can adapt the design to fit other common cartridges. There are 3 main parts: the nib, the body insert, and the optional end button. Suitable materials are aluminum (6061 alloy), brass (360 alloy), or silver.

Detailed drawings of the parts and dimensions can be downloaded from billooms.com/resources.html. The drawings also state what order to drill holes, the size of the drills used, etc. Wood covers all but 0.2” of the nib, leaving the threads exposed.

The nib end of the wood can be turned down to precisely match the metal. The body insert (and the optional end button) are glued into a hole in the wood - no brass tube is used. The wood is then turned down to precisely match the metal on the body insert (and optional end button) and may be of any contour you like. With the pen halves screwed together, the body end of the wood on the nib is turned down to precisely match the metal on the body insert.

Mini Metal Lathe for Woodturning



SAFETY

- A metal lathe is different from a wood lathe. If in doubt, seek additional instruction.
- You can turn metal, too, but seek additional instruction (see online videos below).
- Wear safety glasses at all times.
- No long sleeve shirts or clothing that could catch.
- Don't remove any safety shields while turning.
- Use good lighting.

WEBSITES

- grizzly.com - my lathe is a Grizzly G8688 - 7" swing with 12" between centers
- mini-lathe.com - good reviews of other similar lathes
- littlemachineshop.com - good source for accessories listed below
- techtv.mit.edu/search?q=machine+shop&x=0&y=0 - metal working videos
- youtube.com/user/mrpete222/ - metal working videos

ACCESSORIES

- A 3-jaw chuck generally is included with import lathes - no need to buy another.
- Quick Change Tool Post Kit (LMS #2461 $100)
- Drill Chuck for tail stock, center drills, tool bits (LMS #1796 $33)
- Cut-off Blade (LMS #1929 $8)
- Boring Bars (LMS #1246 $18)
- Tail Stock Cam Lock (LMS #2018 $30 if the lathe doesn't have one already)
- Live center for tail stock (use the one from your wood lathe)
- Dial Calipers (or digital if you like)
- Optional - 1/2" diameter 2-fluted end mill (Enco #320-0090 $8)

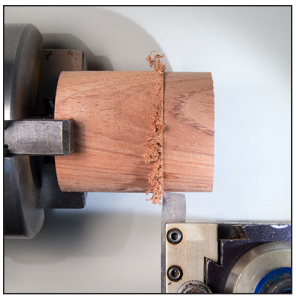
MODIFICATIONS

If your lathe doesn't have a carriage lock, you will need to make that modification yourself. Use a brass screw so it doesn't mark the bed of the lathe.

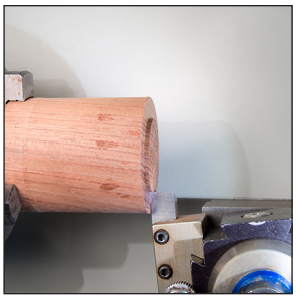
SHARPENING

Basic cutters are 3/8" square HSS stock with a zero rake angle (i.e., the top is flat). Grind the end relief about 15° and side relief about 5°. The angle between the side and the end should be less than 90°. Make separate cutters for left-to-right cutting and right-to-left cutting.

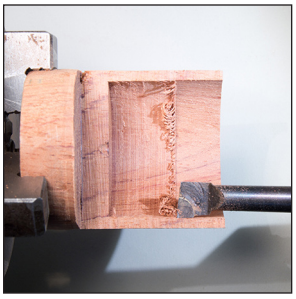
outside cuts



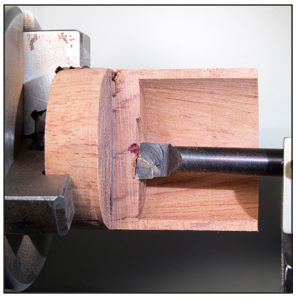
end cuts



inside cuts



inside bottom cuts



Thin-Layered Boxes

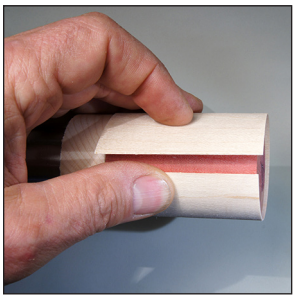
Precision is most important! You want the layers to be concentric. Moving work between lathes causes errors. Morse tapers are more accurate than most chucks.

Use blank morse taper #2 arbors with a machinable head (LittleMachineShop.com #2494). Drill and tap a 1/4-20 hole in the end. You may need a cobalt steel tap for this (McMaster-Carr #2662A11).

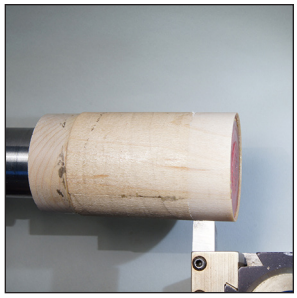
Attach a scrap block to the MT2 arbor with a 1/4-20 screw and glue your work to the scrap block.

Attach the wood for the inner core on one MT2 arbor and mount the wood for the outer layer on a second MT2 arbor. Drill a hole in the scrap mounting block of the outer wood that goes through to the recess for the head of the mounting screw. This will later become a vent hole for letting air out during assembly.

Turn the inner core to the desired diameter. Cut a piece of veneer to fit the circumference and glue with PVA glue (such as Titebond original). Wrap with a big rubber band.



When dry, soak the veneer with CA glue and dry with accelerator. Turn the veneer down to the desired thickness (0.020") and trim the end of the cylinder.



Square off the end of the exterior wood cylinder and drill the interior with a Forstner bit to a size slightly smaller than the final dimension. Drill a 1/4" hole through the bottom to connect with the vent hole. Using a boring bar, enlarge the interior to the final size. Get as close a fit as possible with the inner core.

Use 5-minute epoxy on the bottom surface of the outer shell and up the side about 1/8". Air escapes through the vent hole. When dry, apply CA glue around the joint to seep in.

Cut the exterior off from the mounting block and turn the exterior to its final dimension (0.030" thick). Trim off the end to reveal the inner layers. When cutting the pattern, don't cut to the full thickness all at once. Do this in multiple passes. Soak with CA glue so the outer layer adheres to the inner layers.