

Metal Spinning Demo for Nutmeg Woodturners

by **Carl Ford** and **Ken Rist**, March 14th, 2011

Books:

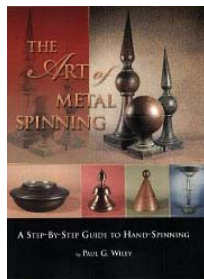
Note: Most books are reprints from the 1930s or 40s. Below are some recent books:

The Art of Metal Spinning, A Step-By-Step Guide to Hand-Spinning, by Paul Wiley, 2004 (Spiral-bound), www.paulwileyspinning.com

A good book for tools and techniques.

Turn a Bowl with Ernie Conover, by Ernie Conover, 2000

Just one "Pewter Spinning" chapter in this book. Shows using small Robert Sorby spinning tools that are no longer available. **However**, the text and diagrams are great for beginners!



DVDs:

Metal Spinning Workshop, Part 3, Mini Lathe Metal Spinning, by Terry Tynan, www.metalspinningworkshop.com (2 disk set)

You should skip Part 1 & 2 and start by viewing Part 3 first!

This is Terry's most "Woodturning Symposium Demo" like DVD. A good arm-chair intro to Metal Spinning.

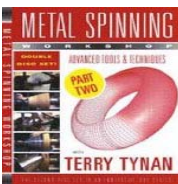
Metal Spinning Workshop, Part 1, The Four Basic Shapes, by Terry Tynan, (2 disk set)

Lots of good info you need to know after you decide you want to get into Metal Spinning. Make your own tools, 4 basic shapes, etc.

Metal Spinning Workshop, Part 2, Advanced Tools & Techniques, by Terry Tynan, (2 disk set)

More good **basic** stuff you need to know, like: Metal Preparation, and Comparison of Silver, Brass, Copper, Aluminum, Pewter.

YouTube, Spinning a Pewter Cup at www.gibsonpewter.com/blog/videos, Previews of Terry's DVDs, etc



Classes:

Terry Tynan, At his studio by arrangement, NW of Phila PA. www.metalspinningworkshop.com. Also see Terry's eye candy at www.terrytynan.com.

Paul Wiley, At his studio by arrangement, NW of Phila PA. www.paulwileyspinning.com

John C. Campbell Folk School, Metal Spinning, by David Hout, Brasstown, NC, Sept 16-18, 2011.

Tools:

Note: Most metal spinners made their own tools. Part of there apprenticeship. Very little is available commercially.

Terry Tynan, Makes and sells tools. Also sells lube. www.metalspinningworkshop.com.



Robert Sorby Spinning Tools, Appear to be no longer available from Highland Woodworking or directly from Sorby? Beware! Most people think the Sorby Tools are to small and light weight.

Make Your Own, See Metal Spinning Workshop, Part 1, DVD by Terry Tynan.

Ebay, Flea Markets, Look for tools 24" to 36" long overall with a 2" diameter at armpit end.

Oneway Lathes, Metal Spinning Toolrest, \$132, www.oneway.ca

Lathes:

You need a lathe that can handle a lot of tool & tailstock pressure against headstock. Robust bearings!

Oneway 2xxx or 1640, Powermatic 3520B, work good.

Most Mini Lathes are to light weight. Terry Tynan spins on a **Rikon**. How long will the bearings last?



Metal:

Purchase metals by their size in decimals, for example, .040" to avoid confusion caused by multiple "gague" systems.

Aluminum, Should be 1100-O grade, .040" thick, www.metalspinningworkshop.com has best price for small quantities of 6.5", 8" or 10" circles.

Copper, Roofing Flashing from local store, 16oz (.0216", 24 gauge) or 20oz (.027", 22 gauge)

Pewter, Ask for lead-free. .040" circles from www.osterpewter.com, .040" and .051" sheet from www.rotometals.com and www.stellartechnical.com



Chalk

Eraser

Spinning a Pewter Salt & Pepper Shaker Set

by *Ken Rist*, March 3th, 2011



1. Prepare Mandrels

- Glue one hard maple blank ~4" long x ~2.5" diameter
- Glue a second hard maple blank ~4" long x ~3" diameter.
- Drill and tap a 1" x 8TPI threaded hole in one end of both mandrels. (Make sure tapped hole is deep enough to allow mandrel to thread to shoulder of headstock.
- Turn a maple tailstock "follower" ~1.75" diameter x 1.75" long. (Final diameter should be slightly less than top of salt shaker body)



- Attach 4" x 2.5" mandrel to lathe and turn to final shape of salt shaker body (~2" diameter x 3.5" long)

Make sure shape is a cylinder or slightly tapered, larger diameter toward headstock so pewter can be easily removed after spinning.

Also provide ~.25" or larger radius on end of mandrel so pewter will have a gradual transition from top to side of shaker.

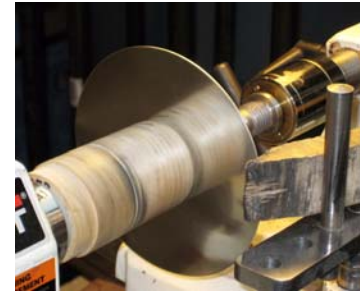
2. Prepare Pewter Discs

- Obtain quantity of two 5" diameter x .040" thick pewter discs for body of salt and pepper shakers.
- Obtain quantity of two 2.25" diameter x .051" thick pewter discs. You may need to buy a sheet of pewter, cut out rough shape on band saw and trim to a circle on lathe.
Make sure diameter is larger than the bottom of the body of the salt shaker.
- Drill a ~.913" diameter hole in the center of each 2.25" diameter pewter discs.

Chalk

3. Mounting and Centering Pewter Disc

- Make sure salt/pepper body mandrel is securely fastened to headstock.
- Bring tailstock close to mandrel; but leave enough room for pewter disc and maple follower.
- Take 5" diameter pewter disc and place between mandrel and follower and tighten tailstock, centering pewter on mandrel.
- AT SLOW SPEED (<500 rpms) use backing stick and metal spinning tool rest/pin align up backing stick so it gradually touches pewter disc. VERY CAREFULLY, slightly loosen tailstock and move backing stick to center the disc; then tighten tailstock.



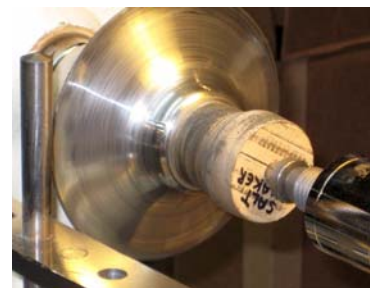
THIS IS A VERY DANGEROUS OPERATION! NEVER ALLOW ANY PART OF YOUR BODY BEHIND PATH OF DISC IN CASE IT DISLODGES FROM LATHE BECAUSE SERIOUS INJURY COULD OCCUR! NEVER ALLOW ANYBODY ELSE TO BE IN FRONT OR BEHIND THE LATHE IN THE PATH OF THE DISC IN CASE IT DISLODGES FROM THE LATHE

4. Spinning the Body

- Apply lubricant to Pewter disc.
- Once pewter disc is securely fastened to the mandrel take combination tool and make sweeping motions to secure disc around the shape of the mandrel.

The first motion is to shape the pewter around the radius of the mandrel. Move the tool in both directions is a broad sweeping motion.

- Use backing stick to prevent unsupported pewter from buckling.
- Use trim tool to cut pewter salt shaker body to final height.



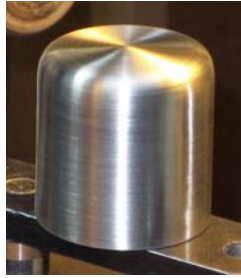
Eraser

- e. Use Scotchbrite pad to finish outside surface of shaker.

5. Drill holes in Tops of Salt and Pepper Shakers.

- a. Drill 4 holes .052 " diameter in a pattern for the pepper shaker.
- b. Drill one hole .078" diameter in the center for the salt shaker.

Remove burrs on both sides of pewter using a chamfer tool.



6. Soldering Pewter Body to Pewter Base

WARNING: Use a turntable with a fire resistant surface for soldering

- a. Light up propane/oxygen torch.
- b. Apply flux to pewter body and center on base.
- c. Cut small pieces of low temperature lead-free solder to body/base seam. (~4 pieces ~.25" long).

- d. Direct torch flame to body/base seam moving torch in a sweeping motion. (Pewter melts at ~500 degrees F so it is easy to burn a hole in the pewter.
- e. Thoroughly wash salt shaker in warm soapy water, inside and out. Then dry.

7. Trimming Base

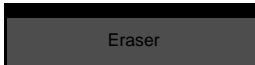
- a. Place salt shaker in wooden mandrel jam chuck.
- b. Use tailstock and follower to support shaker.
- c. Very carefully, trim excess base using cut-off tool. Take very LIGHT cuts so the tool doesn't catch and gouge the shaker.
- d. Use sandpaper and then a Scotchbrite pad to blend the shaker body to the base. The seam should be invisible.

8. Final Steps

- a. Thoroughly wash shaker in warm soapy water, inside and out. Then dry.
- b. Finally, apply rubber bung to bottom hole.

Sources of Material

| Pewter Discs/Sheets | | |
|---|--|--------------------------------|
| Oster Pewter, www.osterpewter.com, recommend by Ken and Ernie Conover. | .040" x 5" Diameter Discs | ~\$4.00 each (Min Order ?) |
| www.stellartechnical.com | .051" x 12" x 24" Sheet | \$124 / sheet |
| www.rotometals.com | .040" x 12" x 24" Sheet .051" x 12" x 24" Sheet | \$109 / sheet \$139 / sheet |
| Low-temperature lead-free solder | | |
| www.stellartechnical.com | Super-Low Temp solder, tin/bismuth P/N 97-125-11 | \$20.74 / spool |
| Flux | | |
| www.micromark.com | Tix Flux, P/N 17111 | \$3.95 |
| Metal Spinning Tools | | |
| Terry Tynan www.metalspinningworkshop.com | Combination Tool and Trim Tool Spinning Lubricant | \$125 and \$99 \$12.99 |
| Soldering Torch | | |
| Smith Little Torch Kit 23-1014 (Ken has 23-1015P) www.weldingsupply.com | Torch, hose, regulators. Dispoable oxygen & MAPP gas from local hardware store | \$158 |
| Salt/Pepper Bung | | |
| Craft Supplies www.woodturnerscatalog.com | | |
| Metal Spinning Toolrest | | |
| Oneway or Local Welding Shop | | |
| Books | | |
| The Art of Metal Spinning by Paul Wiley, 2004 | | \$25.00 |
| The Techniques of Pewtersmithing by Charles Hull & Jack Murrell, 1984 | | |
| Pewter Designs & Techniques by Fleur Grenier, 2010 | | \$27.00 |



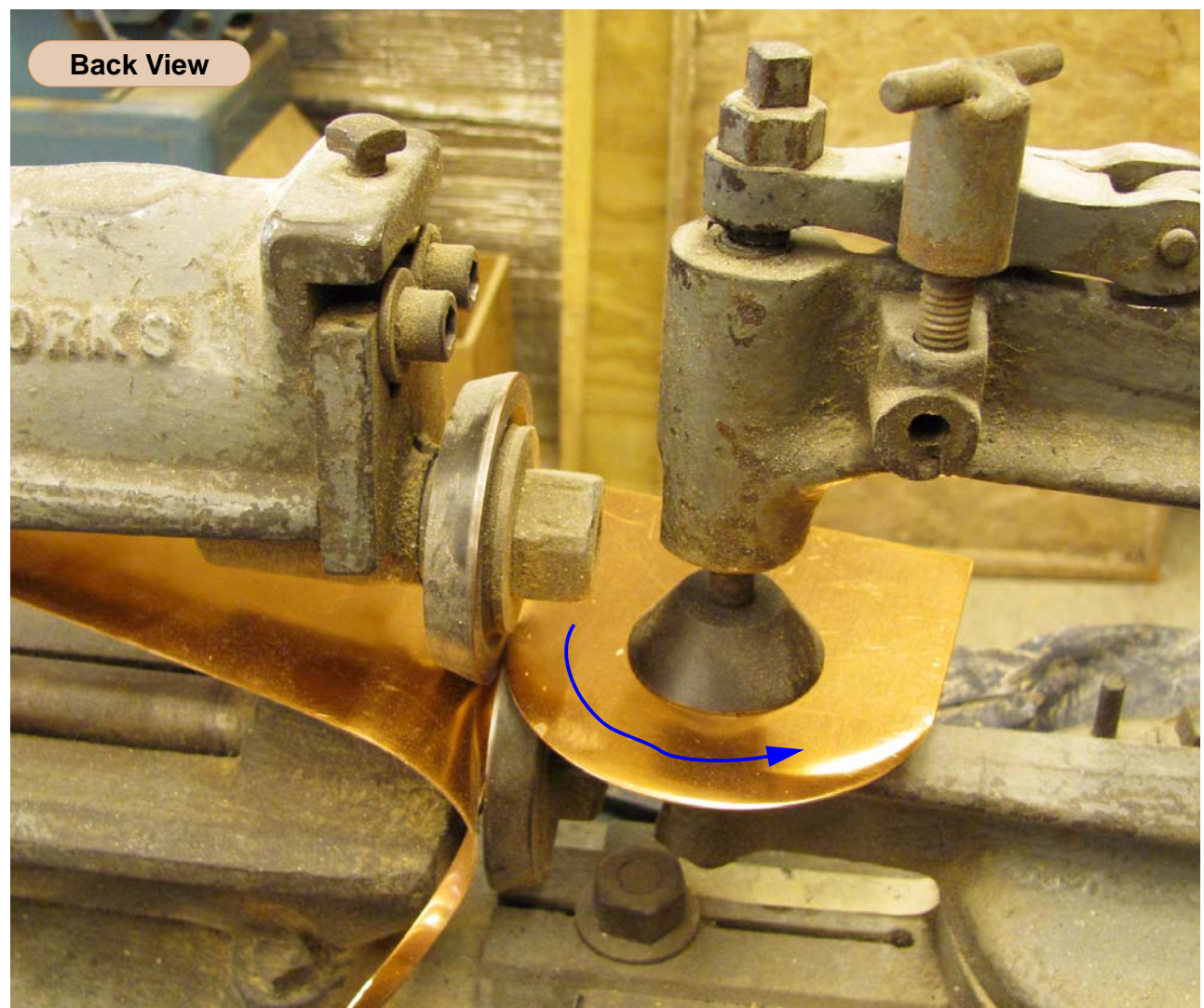
Carl's Circle Shear

Really old Niagra Circle Shear



Crank handle
to cut circle

Front View



Back View