

welcome to... Dive Into Studio 2

Instructor: Blair Anderson

www.silverworksglenechopark.com

Week 1 & 2, Project: Spinner Ring

In this session we will incorporate a number of tools and their uses to culminate into a single project. You will have lots of choices to make your spinner distinctly yours.

Tools we will use for this project:

- 1. Rolling mill for patterns.
- 2. Rolling mill for milling "D" wire.
- 3. Steel dapping punches.
- 4. Pen plater (for gold accent).
- 5. micro machine for sanding.

Steps for Spinner Ring: For main band...

- 1. Get your ring size measurement.
- 2. 20 gauge sheet cut to desired width. Anneal.
- 3. If you choose, pattern using rolling mill (following mill instructions)
- 4. Cut metal to desired size length. (size measurement + with of sheet).
- 5. Stamp .925 on inside.
- 6. File and bring together ends.
- 7. Solder the seam.
- 8. Shape around ring mandrel with rawhide. Sand rough edges if any.
- 9. Dapping punch to flare one side.
- 10. Add spinners.
- 11. With Dapping punch in vise use a second punch to flare the other side.

For spinners...

- 1. Size measurement should be approx 3 sizes larger than the ring size after embellishment.
- 2. So many choices for embellishment... round wire, copper wire, stones, textures, messages.
- 3. Sand, polish and finish setting stones before assembling.

The Rolling Mill

for designing:

• to pattern metal • fold-forming for practical use:

• to reduce metal thickness – like creating 24g sheet from 20g. • to reduce wire thickness • to manufacture square, round and half-round wire.

Instructions for Pattern Plates in The Rolling Mill

- 1. Wipe rollers before using.
- 2. Anneal metal.
- 3. Clean and dry plate and metal.
- 4. Place metal and plate between rollers -tighten until snug.
- 5. Make note of number on the mill gauge. (this is called a dead pass reading)
- 6. Open rollers slightly to remove the stack.
- 7. Close rollers back to the dead pass reading. Then close an additional 10-15 units (turning left)
- 8. Roll metal with pattern plate.
- 9. Wipe down rollers and metal plate. Oil.

- 6. Letter stamps
- 7. Variety of pliers
- 8. Flexi shaft for drilling
- 9. Fretz texturing hammers
- 10. Cutter



Easiest way: stage with solder under the seam with ring sitting in a vertical position



Dap to flare the ends.



dead pass





+ 10 units







Dive Into Studio 2: The Pen Plater www.silverworksglenechopark.com

Instructor: Blair Anderson

What you will learn in this session...

The basic principles of electroplating How to use a pen plater

Electroplating is the process of coating a metal object with a thin layer of another metal by means of electrolysis. The electroplated coating is usually no more than .002 inch (.05 mm) thick.



How it works

The alligator clip attaches to the item being plated (a **negative** charge) and the fiber tip has a **positive** charge. A small DC electrical current, low voltage passes from the pen to the item from positive (anode) to negative (cathode). The negative charge attracts and deposits metal ions in the plating solution onto the object.



dipped in a

solution filled

with metal

ions.

Steps:



volts



different metal solutions require different voltage: 24 k = 6-8 volts Silver = 1-4 volts touching of the pen makes a complete circuit making the ions attach

the of the surface of

1. Surface to be plated must be clean of oils. This can be achieved by ultrasonic cleaning, acid bath (pickle) or tumbling.

2. Pour a small amount of solution into a small beaker to use while plating.

3. Tip of pen must soak in solution for at least two minutes before use. (Always use separate pen tips for different solutions.)

4. Slowly brush the area to be plated using a wet (not dripping) pen tip. Replenish by dipping repeatedly into solution. Several passes over an area may be required to achieve desired results.

5. Water-rinse plated workpeice and dry with paper towel. **Do not** allow plating solution to air dry on workpiece. This will cause spotting and streaking.

6. When plating job is completed pour existing solution into a secondary storage container. The metal ions will be depleted in this solution but still may have some left. **Do not** put it back into original jar as this will dilute the unused solution.





Safety! The plating solution is toxic.Wear rubber gloves and eye protection.

Designing for pen plating

1. A design that has natural dividing lines or patterns are great for plating.

2.Use a razor blade or x-acto knife to modify the pen tips for more detailed designs.

3. Pen plating is best for accents. Bath plating is meant for the coverage of a whole piece.



welcome to ...

The Amazing Hydraulic Press

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Instructor: Blair Anderson

The basics of die forming with the hydraulic press.

Silhouette die forming (also called matrix die forming) is a technique where a sheet of metal is forced through an opening in a rigid solid surface. If the target metal is larger than the die opening a domed shape will be formed in the metal leaving a flat flange of surrounding metal.

You will create puffed forms...

- 1. Using a stock silhouette die plate
- 2. using a die plate you make from scratch

and...

You will be introduced to Incorporating pattern plates for texture

Project #1 Stock die: 24 gauge: 1200 psi

What you need:

- 2" square of 24 gauge copper
- forming container (die cup)

• 60 g durometer urethane

(translucent or black)

- desired stock die plate
- Liquid Bur Life

steps

- 1. cut out metal to fit into round forming container
- place selected stock die into container and screw tight
- put a drop of bur life on the die 3. place your annealed metal on top of die plate
- 4. place urethane on top of metal
- 5. place punch on top of urethane
- 6. center container in press
- 7. pump arm to desired psi for the gauge and metal
- 8. turn key to release pressure
- 9. turn key to right to stop (do this quickly so the press platform doesn't go all the way to the bottom.

Softer urethanes will move metal more easily and deeply into a die opening than a harder urethane. However, the hard urethane will apply more force to the ouside edge of the target making it less likely that the edge will also be drawn into the die.

Some Definitions:

• URETHANE: Urethane pads are the most useful item used in the hydraulic press. This incompressible material forces metal into every detail of your die or over every part of your form.

• **DUROMETER:** Durometer measurements indicate the hardness of the urethane. Red (95d) is hardest, translucent ivory or orange (80d) is softer, and black or very light translucent yellow (60d) is softest. • **INTENSIFIERS:** Intensifiers are small pieces of 80d urethane placed over areas of a die to build up the

form. They are typically sandwiched between the metal and a urethane pad. • **PUSHER:** Pushers are solid steel cylinders that force a punch or other tool into a contained urethane block to achieve a desired form.

• **SPACER:** Spacers take up excess space in the work area to reduce the travel distance required for the platens to begin applying pressure to the workpiece.







Durometers (hardness of the urethane) hard (95) = Red med (80) = Orange soft (60) = Black or Translucent



Creating an original die 24 gauge: 2000-3000 psi

What you need:

- 3" acrylic blank
- course saw blade #4-#6)
- 3" metal sheet 24 gauge or thicker
- Liquid Bur Life



Creating an original blank

 Draw your design on your acrylic plate.
Drill a hole in your acrylic.
Thread your sawblade through the hole and fasten blade,
Saw out your design
Tip: Saw straight for a clean design

When pressing, if you hear a loud "POP" you have pressed too much!

tip: approx 1/4" border outside of die shape will help from tearing





Embossing with the Hydraulic Press

www.silverworksglenechopark.com

Instructor: Blair Anderson What you will learn in this workshop...

EXPLORE, CREATE, AND INNOVATE. Explore the textures and designs that can be created embossing with the hydraulic press

You will create embossed designs...

- 1. Using a stock embossing plate
- 2. Using random objects or design with wire
- 3. Using a embossing plate you carve from scratch

How the press works

By sandwiching metal between a hard body (the material creating your embossed image) and a soft body (urethane) and compressing it under great pressure the metal forms into the hard body.





#1 Test tile using a stock pattern die: 26-24 gauge: 6000psi What you need:

- 2" square of 24 gauge copper
- forming container (die cup)
- 80 durometer urethane
- desired stock die plate
- Liquid Bur Life

#2 Test tile using random objects: 26-24 gauge: 6000psi

What you need:

- 2" square of 24 gauge copper
- forming container (die cup)
- 60 or 80 durometer urethane
- object to for embossing
- packing tape
- Liquid Bur Life

#3 Original die 30 gauge: 9000-10000 psi What you need:

- 3" acrylic blank
- drilling burs and flexishaft
- 2" metal sheet 30 gauge
- Liquid Bur Life



Creating an original blank

- 1. Draw your design on your acrylic plate.
- 2. Carve a design in your acrylic.
- 3. Brush off acrylic dust.
- 4. Wash blank with soap before using.

It is best to carve in stages. Start with the outline of your design and the first "layer" of relief.



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Translucent

Softer urethanes will move metal more easily and deeply into a die opening than a harder urethane. However, the hard urethane will apply more force to the outside edge of the target making it less likely that the edge will also be drawn into the die.



Dive Into Studio 2: Cutting, Dapping, Forming... Oh my!

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Week 4, Project: Pendant, Earrings, or Bracelet

The tools we use for cutting, shaping and forming are foundational in expanding your jewelry designs. Tools we will use in this session:

- 1. Vertical Vise, Stakes, Urethane Hammer for anticlastic forming
- 2. Disc cutter/shape cutters
- 3. Steel dapping blocks
- 4. Ring making pliers
- 5. Knew concept saw

Anticlastic Earrings Tools:

1. Stakes

2. Urethane hammer

Steps:

- 1. Cut two strips of silver (approx 1/2"x 3"), 26-22 gauge.
- 2. Cut the ends round with shears or saw.
- 3. File those ends.
- 4. Drill holes for earwire.
- 5. Using stake in vertical vise hammer the strip with urethane
- hammer until desired shape is achieved.
- 6. Polish.

Disc Cut Pendant

Tools:

- 1. Disc cutter
- 2. Dapping block

Steps:

- 1. Cut 2 discs with disc cutter. One with a hole inside.
- 2. Drill if making bead.
- 3. Dapp with steel dapping block.
- 4. Solder together (pre-solder is best)





Disc Cut Bracelet Steps: 1. Cut multiple discs of different

- sizes. 2. Drill holes for loops
- 3. Make jump rings with jump ring
- pliers.
- 4. File, assemble and solder

Free Form Earrings Tools: Knew Concept Saw

1. Saw out design blanks

- 2. Drill holes for earwire or post back
- 3. Polish to mirror finish.



Squish Bracelet with the Hydraulic Press

How to create a free form synclastic bracelet (squish bracelet)

Steps:

- 1. cut a 8" x 1 1/2" strip of metal (22 gauge or thicker).
- 2. anneal
- 3. wrap around urethane bracelet mold
- 4. place constricting rings at the top and bottom trapping the metal against the urethane
- 5. put into press
- 6. pump until desired result is acheived
- 7. the 8" will give you a complete bangle (circle).
 - for a bracelet you will need to trim down.

urethane with constricting rings











welcome to. Dive Into Studio 2: Hot Metal **Sand Blasting**

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What is sand blasting and how does it work?

• How to make a mask.

Week 5, The Sandblaster

What is sand blasting?

Sand blasting (or bead blasting) uses small beads made of alass or other non-metal materials and pressurized air to create a uniformly matte surface finish on raw metals. The results, from coarse to fine matte, are determined by the type and size of bead, as well as the metal being blasted. Bead blasting may also be used to selectively remove a patina from masked finishes to reveal the raw metal beneath.

BLAST IT!

How does the blaster work?

An air compressor pressurizes the blaster. Then when you turn it on that pressure circulates the glass beads through the unit, enabling a "blast". When the pressure runs out the air compressor will come back on and repressurize the unit.

Tips for success:

- well prepared metal (item should be finished and polished)
- mask should be thick enough to withstand the blast
- mask should adhere well
- the design of the mask should be clear and cut cleanly
- sand blaster needs to be set at an appropriate pressure (65-80)



masked to remove a patina



after blasting before removing mask



masked to create a matte finish to contrast with shine



after removing mask



3. mask it 4. blast it

2. polish it

STEPS: 1. make object



this is what the blasting nozzle looks like

Polishing For a High Mirror Finish:

- 1. buff with blue universal compound.
- 2. wash piece with detergent.
- 3. buff with orange high luster compound.
- 4. wash piece with detergent.

Making a mask:

If there are areas that you do not want to have blasted (matte finish) then you have to mask them. Many things can work for this.

- Masking tape is fine for simple lines.
- Adhesive vinyl is good for more detailed designs cut with an X-acto knife.
- Paper shaped punches can also be adhered into place with spray adhesive
- Pin striping tape also works.
- Nail polish.

Do NOT overblast! you will warp the piece (yea, its that strong!)

- Blasting
- 1. open the cover of the unit (3 clamps).
- 2. put your piece in the unit.
- 3. close the unit (make sure 3 clamps are secured).
- 4. put hands inside the rubber gloves.
- 5. grasp your work with one hand.
- 6. hold it directly under the nozzle.
- 7. flip the ON switch to activate the blaster.
- 8. move your work under the nozzle where you want it blasted. This takes only a few seconds.

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