

JEWELRY & SMALL METALS AREA ORIENTATION

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Purpose: To ensure the safety of DMS members using equipment and tools, and protect the condition of available department resources.

Agenda:

1. Safety Resources

- a. Eye protection, aprons, hair restraints, removal of dangling jewelry
- b. Fire extinguisher location and usage (P.A.S.S.)
- c. First aid cabinet by interactive classroom
- d. Chemical Material Safety Data Sheets (MSDS)

2. Rolling Mill-Please keep covered when not in use

When the rolling mill is not in use, apply a thin coating of rust preventative liquid. (we recommend that you use Durston rust preventative). Using a clean and dry paint brush (approximately 12mm wide) apply the rust preventative across the rolls. Turn the rolls as you do this. Make sure the rolls are nearly closed. This will spread the liquid evenly over the surface. It is very important that your rolls are always protected, especially in moist/wet/hot conditions or where temperatures are changing. Once your rolls are marked/rusty/corroded they will be like this for life until you have them removed and reground. (However, please note that it is almost impossible that you will end up with perfect rolls. Over time and use they will get slightly marked). It is also recommended that you cover your mill when not in use. This is to prevent the rust preventative from collecting dust and dirt. When using your mill again remove all rust preventative and ensure your rolls are clean and dry before you start to roll material. See "Removing rust preventative" on page 2.

KEEP ROLLS CLEAN. Do not touch the rolls. Oils and acids from your body can damage the rolls leaving behind small marks and eventually rust. Only roll through dry materials

Do not use your mill with the rolls completely closed.

DO NOT roll ferrous metals such as iron or steel through the mill.

ALWAYS release pressure on rollers after you have completed your job.

3. Buffing Machine-Wheels and compounds are a consumable item if you use please make a donation.

- a. Hold on tight!
- b. Consider finger cots or finger tape
- c. Do not mix compounds on wheels
- d. Use your own wheels if polishing anything other than silver, gold, copper, or brass
- e. If wheels are imbalanced do not use.
- f. Always sweep up your mess

Safety

- Always wear the appropriate respirator for the buffing compound you are using.
- Always wear eye protection.
- Do not wear loose clothing or jewelry when operating the lathe.
- Always secure long hair to prevent it being entangled during operations.
- Do not overload the lathe by using excessive pressure on the accessory.

4. Flex Shaft-Training videos @ www.foredom.net

- Drill bits are a consumable item if you use please make a donation
- Chuck should be kept in the top right-hand drawer of the bench. Remove bits after use
- Power off after each use and clean up your mess

Safety Instructions

Before using your Foredom power tool, please read safety instructions. They are for your protection and should always be followed to reduce the risk of personal injury or damage to the tool.

- **Always** wear proper eye and face protection. Wear safety glasses or face shields whenever you operate a Foredom or any power tool to prevent serious eye or face injuries.
- **Secure the work piece or item that you are working on** in a vise or other work holding device. Holding it with your hand can result in serious hand injury.
- **Always use a proper dust collection system or wear a respirator** to prevent the inhalation of dust particles, polishing compounds, or other debris into the lungs.
- **Do not wear loose fitting clothing or jewelry.** Loose clothing or jewelry can become entangled in the rotating accessory. Do not wear items such as neckties, necklaces, or bracelets when operating power tools. Be sure to **tie back or secure long hair.**

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- **Secure the power tool to motor hanger or work surface.** Flexible shaft power tools can “jump” at start up or vibrate during operation. The tool should be properly secured in order to prevent it from vibrating off of the motor hanger, work bench or wall.

- **Never use any accessory at speeds above its maximum rated speed.** When properly used, all of Foredom’s accessories can be operated at the speed ratings listed in the Foredom Accessory Catalog or specified on kits and packaging. **Always** find out the manufacturer’s speed rating before using accessories other than those from Foredom.

- **For added safety and comfort** while using this power tool for carving or other applications, it is recommended that you wear a heavy canvas or leather apron. It will protect you from dust, debris and chips as well as help prevent injury if the handpiece slips off the workpiece. It will also help prevent loose clothing from getting caught in a rotating cutter, bur or other accessory.

- **Never** wear open shoes or sandals. Use footwear that is tough enough to protect your feet from falling tools.
- **Never use or continue to use any accessory which appears to be damaged, loose, vibrating, or out of balance.** Inspect each accessory for cracks or flaws before using it. Avoid knots, imperfections in wood or metal objects like nails, which could damage or catch the accessory.
- **Always** insert the shank or arbor of an accessory or mandrel into the collet or chuck of the handpiece as far as possible in order to provide proper support and tighten the collet or chuck securely.
- **Never** use excessive side pressure which may bend or break the shank or arbor of an accessory. Let the speed of the accessory do the work.
- **Do not** stall the motor by jamming or using excessive pressure on the accessory. This can result in damage to the motor or flexible shaft.
- **Never operate the motor with the outer sheath removed from the flexible shaft.**
- **Always disconnect** the power cord before servicing the motor or removing the flexible shaft or sheath.

Never change motor direction while the motor is running.

OFF – no rotation.

FORWARD – counterclockwise shaft rotation.

Forward is going to be the most commonly used setting. Right-handed people will get the most control in the forward direction.

At Foredom we define motor rotation this way: Forward motor rotation means that the motor is turning an accessory (bur, bit, drill, cutter, etc.) counterclockwise when holding the handpiece upright in your hand and you are looking down on to the front of the accessory. When the handpiece/accessory is applied to the workpiece, your viewpoint changes to the back end of the handpiece and accessory and the forward rotation direction can be described as clockwise.

Forward Motor Rotation

- **ONLY** use Chisel or Hammer handpieces or Angle Grinder attachment for H.30® handpiece in Forward Rotation. Using Chisel or Hammer handpieces or Angle Grinder attachment in reverse can damage the handpiece, attachment, flexible shaft, or motor and may cause injury.
- Use the forward motor direction **ONLY** for fluted burs, drills and cutters. Most will cut efficiently only when turning in this direction.
- Many mandrels have right-hand threaded arbor screws which will unscrew in the reverse direction.
- Dust and debris flies away from the user when operated in forward in the left hand.
- Whether you are right or left handed or

operate in forward or reverse, precautions taken against dust and debris are always necessary and important.

- **Always** securely tighten chuck nut or chuck jaws of handpiece with wrench or chuck key so that it will not come loose in the reverse or forward operating directions.



REVERSE – clockwise shaft rotation.

Advantages of Reverse Rotation

- Left-handed users will have better control in the reverse direction.
- For right handed use, dust and debris flies away in reverse.
- Alternating motor direction helps to extend the life of mounted abrasive points, buffs, brushes, sanding bands, and Typhoon® burs.
- Reverse helps with accomplishing symmetrical grinding and carving techniques.
- Reverse is good for “backing out” stuck drill bits.
- Alternating motor direction makes it easier and faster to polish metals.
- Be sure to use a mandrel with a left-hand threaded arbor screw.

5. **Disc Cutter – Training videos @**
www.riogrande.com

- a. Always wear eye protection
- b. Not intended for steel

6. **Bench Shear—Training videos @**
www.riogrande.com

- a. This bench shear is made entirely of precision-machined parts with careful attention to the design and construction of the shear and its components. **Please Note:** Maximum cutting thicknesses for this shear are: 18 ga. for soft metals, 22 ga. for non-ferrous metals, 24 ga. for mild steel.
- b. Measuring tool in the tool box to determine gauge if you're not sure.
- c.

Safety Instructions

1. Always wear safety glasses.
2. Complete all installation and set-up operations prior to operating the shear.
3. Check all bolts, nuts, screws, fittings, shields, etc. for proper tightening.
4. Keep the shear and work area clean.
5. Do not remove the safety shields except for maintenance and adjustments.
6. Do not operate the shear without the safety shields in place.
7. Do not operate the shear if it is not functioning properly.
8. Do not operate the shear if the blades are damaged or not sharp.
9. Do not operate the shear without reading these instructions.

7. **Ultrasonic Cleaner**

- a. Must be kept full at all times water mix with Dawn dish soap or magic luster
- b. On/off switch is for heater, timer is for sonic action (timer does not work)
- c. Make sure machine is OFF if you must put your hands inside, otherwise use blue tip tweezers
- d. Do not store hanger inside bath
- e. Be careful about what stones you put inside
- f. ALWAYS unplug after use

Tips for Using the Disc Cutter

- Always use a lubricant such as Bur-Life® (available online and in your *Tools & Equipment* catalog) on the punches to prolong the life of the punch and to help ensure a smooth, defect-free cut.
- This disc cutter is suitable for punching soft gold, silver, copper and brass in thicknesses up to 16 gauge (1.29mm). The cutter can be used to punch two or more matching discs at once, provided that their combined thickness of the material is no more than 16 gauge (.051"/1.29mm).
- When punching material thicker than 16 gauge, we recommend using a hydraulic press for cleaner cuts.
- Set the disc cutter on a heavy workbench or other substantial work platform when punching.
Tip: Use a urethane pad (available online and in your *Tools & Equipment* catalog) underneath the plates to help complete the cut cleanly.
- To keep the die plates parallel to each other and to provide the best alignment, always place a shim (a piece of metal the same thickness as the metal you're going to punch) between the die plates across from the hole you will be punching.
- To prevent work-hardening the punches or your hammer, use a 2-lb. brass-head mallet to strike the punch (available online and in your *Tools & Equipment* catalog).

8. Pickle Pot (Large & Small)

- a. Never use steel, copper tongs only
- b. Never allow solution to fall below ¼ of pot
- c. Never dump solution down the drain, add baking soda to neutralize and throw in trash
- d. Always UNPLUG after use

9. Jewel Jet Steamer

- a. To turn on/off you must plug and unplug. Heats up in about 15/20min.
- b. Use on distilled water, 8oz MAX
- c. Use yellow tip tongs
- d. Use pan to capture residual water

10. Ring bender and Stretcher-Require training

- a. Only use with Nonferrous metals
- b. Always keep dry

11. Jeweler Saws-Consumable item. If you use, please make a donation.

- a. Ensure blades are tight
- b. Use bur life
- c. Consider using finger cots or finger tape

12. Files, shears, cutters, pliers- Donations are expected for damaged hand tools

- a. Used only on non-ferrous metals
- b. Use wire brushes to clean
- c. Careful not to break off tips

13. Safety is the priority!

- a. Do not attempt to use something you don't know how to use
- b. Follow all manufacture precautions and any other known safety regulations per any and all regulatory authorities.
- c. If you see someone doing something they shouldn't, please say something!
- d. Under 18 should be supervised

14. Other Need to Know info

- a. Many items in this department are consumables, please make donations to help keep the department stocked.
- b. Items such as metal, solders, and fuel for soldering may be available, maybe be available because it was donated, but otherwise please bring your own.
- c. ALWAYS make sure everything in the area is powered down and TURNED OFF
- d. Please clean up after yourself and put things back where you found them!

15. Resources for jewelry making

- a. www.Ganoskin.com
- b. www.riogrande.com
- c. DMS classes, DMS TALK forum @Jewelry_Team
- d. Books

16. Test your knowledge!



VALIDATE YOUR KNOWLEDGE FOR THE JSM DEPARTMENT

NAME: _____ DATE: _____

1. What is the most important priority when working in the JSM area?
 - a. Collaboration
 - b. Safety
 - c. Creative spirit
2. What should you always do before leaving the JSM area?
 - a. Clean up after yourself
 - b. Turn off all equipment and power strips
 - c. Both A & B
3. What should never be used in the pickle pot?
 - a. Steel
 - b. Copper
 - c. Gold
4. Should you ever put anything wet through the rolling mill?
 - a. Yes
 - b. No
5. Eye Protection should be used when using what piece of equipment?
 - a. Buffing machine
 - b. Flex shaft
 - c. Cutting shear
 - d. All of the above
6. What is the acronym for proper fire extinguisher use?
 - a. OSHA
 - b. PASS
 - c. SMART
7. How to you know if your metal is too thick to be used on the disc cutter or shear?
 - a. If it fits, its ok
 - b. Give it a try and see if it works
 - c. Measure it using the gages in the tool box
8. What do you do if you are unsure how to use a tool or piece of equipment?
 - a. Try it out until it works
 - b. Ask the guy in the woodshop
 - c. Don't use it until you have been trained
9. When should you make a donation to the JSM department?
 - a. When you break something
 - b. When you use consumable supplies
 - c. Both A & B
10. If you see someone in the JSM not following safety rules or being excellent to our tools/equipment?
 - a. Make a note for the next committee meeting
 - b. Tell the guy in the woodshop
 - c. Immediately address the issue and say something to that person