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| **Department:** | **P/W Mechanic Shop** | **Area** | **Shop** |  |
| **Subject:** | **Atlas Lathe** | | |

**ATLAS LATHE**

**Warning:**

The use of this tool may be hazardous. The Atlas Lathe is a high-speed, fast-cutting, rotating power tool so special safety precautions must be observed to reduce the risk of personal injury. It is important to fully understand and observe the safety precautions and procedures below. If not familiar with the use of this equipment, obtain practical instruction from a competent operator or Supervisor. Do not operate without thorough training or unless under the direct supervision of an instructor. Do not operate if safety devices are not in place.

**Purpose:**

The Atlas Lathe is an electrical powered high speed, rotating tool meant for Cutting down the outside diameter of metals and plastics to create different size round stock, threads or grooves into a work piece materials. The work pieces are cut to size by rotating the piece carving the outside with the point of high carbon tool steel kind of like a chisel. The amount of material removed depends on the depth and angle of what that high carbon bit is set at. The speed of the lathe can be fully adjustable as well as the bit angle. Both adjustments completely depend on material being cut, thread size if you are cutting threads.

**Hazards:**

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| * Cuts | * Rotating machinery | * Flying debris | * Burns and heat |

**PPE Required:**

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| * CSA approved face shield or glasses | * Leather gloves | * Safety footwear |

**Pre Set-Up:**

* Ensure lighting is adequate.
* Do not wear loose clothing.
* Make sure there are no flammables around atlas lathe.
* Clamp round working piece to lathe inside universal chuck, and tighten using chuck key, remove chuck key and replace on wall before starting lathe.
* Keep cutting fluid (metcool) close to you as it will be needed.
* Select proper speed that you want for material to be cut.
* Ensure high carbon tooling bit is sharp and at proper angle. Move bit as far from work piece as possible to drill a pilot hole in the end of the round stock using the drill bit anchor and selecting the proper rotation of the universal chuck to pull out material from center of the work piece. Usually 3/16 depth.
* Replace drill bit with the floating pointed bit, slide the anchor back tight the work piece so the point is in the drilled hole for steadiness while rotating work piece at high speed. The floating point bit will keep it balanced while removing material.
* Ensure all locking adjustment handles are tight.
* Ensure nothing is wrapped around work piece or in the same area as the work piece

**Procedure**

* Turn on the machine by flipping the directional switch that will start machine. Double check the direction you are about to turn the work piece, should be counter-clockwise.
* Once turning the proper direction, slowly turn the dials controlling the tooling bit support to bring to the edge of the work piece.
* The tooling will start to make contact with outside of work piece, taking off material at the same time.
* Watch the color of the shavings being removed they should stay the same color as the original work piece metal. If it starts to turn blue, you are trying to take off to much or two high of speed.
* Once you have the small amount taken off, you can start to cut lengthwise using the other dial.
* Only bring tooling bit to within ¼ “ of the universal chuck.
* Keep an eye on the shavings being produced, they should be coiled and silver color.
* You will have to go back and forth on the work piece until you reach the desired thickness.
* You can hit the automatic travel switch as well to feed lengthwise if desired.
* Use a fine file on work piece while spinning to smooth outside
* After lathing is completed, turn lathe switch back to center to turn off machine.
* Loosen universal chuck.
* Remove work piece and clean using appropriate emery cloth, clean work piece.

**Post Procedure/take Down:**

* Keep the work area clean for other people to use it.
* Put scraps in metal bin.

**Summary:**

* Always wear appropriate PPE.
* Watch rotating parts so you don’t get caught in it.
* Remove chuck after universal chuck adjustment.
* Ensure Lathe looks in good working order before you use it.
* Always make sure the rotation has stopped before changing the tooling.
* Consult the supervisor if unsure of how to use.

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