LAFAYETTE COLLEGE

Lathe Safety Program

Department of Public Safety - Environmental, Health and Safety
Standard Operating Procedure (SOP) #47

Purpose

To establish and define the procedures to ensure that lathe machines at Lafayette College are installed, used, inspected and maintained in accordance with applicable standards.

Responsibilities

Supervisors are responsible for implementing, maintaining, and auditing the requirements of this procedure and ensuring that all affected personnel are trained in the requirements of this procedure.

Procedures

Lathes can be dangerous if not used properly.

- Read the owner's manual carefully.
- Make sure you understand instructions and are properly trained before operating a lathe.
- All lathes owned by Lafayette College shall be inspected by the user prior to each use. Inspection checklist below.

The Centre Lathe is used to manufacture cylindrical shapes from a range of materials including; steels and plastics. Many of the components that go together to make an engine work have been manufactured using lathes. These may be lathes operated directly by people (manual lathes) or computer-controlled lathes (CNC machines) that have been programmed to carry out a particular task. A basic manual lathe and benchtop wood lathe are shown below.

Photo - Realistic View of a Typical Center Lathe

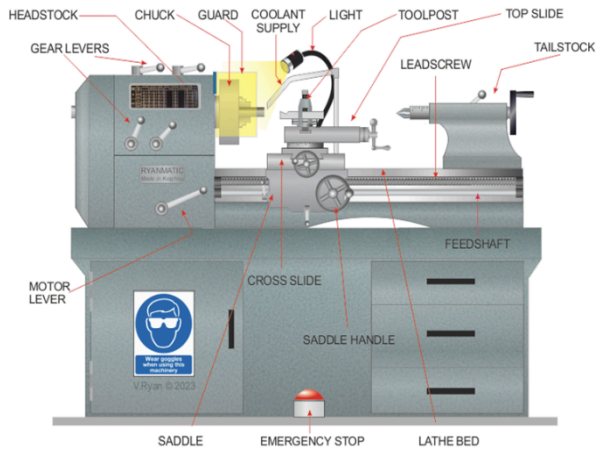

Photo – Benchtop Wood Lathe

Rules for Lathe Machines

The following rules apply to ***all lathe machines****:*

- Do not wear gloves, rings, watches or loose clothing. Tie back and confine long hair.
- Do not lean on machine. Stand erect. Keep your face and eyes away from flying chips.
- Do not make adjustments while the machine is operating. Wait until the machine has come to a complete stop.
- Do not place hands on work turning in the lathe.
- Do not use calipers or gauges on a workpiece while machine is moving.
- Do not make heavy cuts on long slender pieces because the work could bend and fly out of the lathe.
- Do not leave lathe unattended while it is running.
- Wear appropriate CSA-certified safety glasses. It may be necessary for others in the area to wear safety glasses too as objects will fly off the work.
- Make sure entanglement hazards are removed (e.g. loose clothing, jewelry, etc.). Tie back and confine long hair.
- Keep the floor free from obstructions or slip hazards.
- Make sure the lathe has a start/stop button within easy reach of the operator.
- Make sure the lathe has an emergency stop button (e-stop).
- Follow job specifications for the speed, feed and depth of cut for materials being turned. Make sure all work runs true and centered.
- Center-drill work deeply enough to provide support for the piece while it is turning.
- Secure and clamp the piece being worked.
- Adjust tool and tool rest so that they are slightly above the center of the work.
- Use a lifting device to handle heavy chucks or work.
- Inspect chucks for wear or damage. Flying pieces can be very dangerous.
- Remove chuck wrench immediately after adjusting chuck.
- Use a barrier guard when operating the lathe in semi-automatic or automatic mode.
- Guard all power transmission parts.
- Remove all tools, measuring instruments and other objects from saddle or lathe bed before starting machine.
- Keep all lathe cutting tools sharp.
- Ensure that the chip and coolant shields are in place.
- Shut off the power supply to the motor before mounting or removing accessories.
- Stop lathe before taking measurements of any kind.
- Use a vacuum, brush or rake to remove cuttings only after the lathe has stopped moving.
- Keep working surface clean of scraps, tools and materials.
- Keep floor around lathe clean and free of oil and grease.

Lafayette College Lathe Inspection Checklist

Equipment Name:	
Location	
Inspector's Name	
Date of Inspection	
Have you been instructed in the safe use and operation and have been given permission to use the machine?	

Mechanical Inspection	**Condition OK**	**Needs Repair**
Belts and Pulleys		
Bearings		
Gears		
Lubrication		
Tool Rest		
Electrical Inspection		
Power Cords and Plugs		
Switches and Controls		
Wiring and Connections		
Emergency Stop Button		
Motor and Motor Starter		
Safety Inspection		
Guards and Shields		
Safety Labels and Warnings		
Emergency Stop Functionality		
Fire Extinguisher		
First Aid Kit		
Environmental Inspection		
Lighting		
Noise Level		
Ventilation		
Cleanliness		
Ladders binding in guides		
Ladder and rail stops broken, loose and missing		
Rail supports broken or section of rail missing		
Trolley wheels out of adjustment		
Trestle Ladders		
Loose hinges		
Wobbly		
Loose or bent hinge spreaders		
Stop on hinge spreader broken		
Center section guide for extension out of alignment		
Defective locks for extension		