Lathes Meeting Kit



WHAT□S AT STAKE

A lathe is a powered tool that spins wood, metal, or other material at an adjusted speed to allow for sanding, cutting, shaping, etc. Lathes can be used in woodworking, metalworking, glassblowing, and pottery forming. As with all powered equipment, lathe safety training and good work practices prevent serious caught/crush injuries and even death.

WHAT□S THE DANGER

IS LATHE A HAZARDOUS MATERIAL?

Lathes contain several fast-rotating parts that can cause contact and entanglement hazards. Keep all body parts away from all rotating parts. Never wear loose-fitting clothing or jewelry while operating a lathe.

Operators of lathes are one of the largest machine worker populations in the United States, estimated to account for over 140,000 machinists. Of this population, approximately 3,000 suffer lost-time injuries annually in the United States. Some of these are fatal.

The most common causes of death and injury because of lathes include the entanglement of clothing in moving parts, being hit by loose objects on the machine, and being hit by a poorly secured or oversized workpiece. Whether or not you feel comfortable operating a lathe, accidents with the machine can be deadly.

HOW TO PROTECT YOURSELF

THE BASICS OF LATHES AND HOW THEY WORK

Although there are different types of lathes, they all use a similar method in which the workpiece rotates against the cutting tool, the latter of which is stationary. Milling machines, of course, work in the opposite way. With a milling machine, the workpiece is stationary, whereas the cutting tool rotates.

Lathes are designed to remove material from workpieces by exposing them to a

cutting tool. The workpiece is secured to the lathe, at which point it rotates while pressing into a cutting tool. The rotational movement of the workpiece allows for the fast, efficient, and precise removal of material.

Lathes are large and complex machines consisting of many individual components. The headstock, for example, is the component that holds the workpiece as it rotates. Lathes also have a tailstock to which the workpiece can be secured. The tailstock is typically used for exceptionally large or long workpieces.

Fundamentally, Lathes do the opposite of what most other machines do. Lathes spin the workpiece at a high speed and move a stationery cutter into the workpiece.

TYPES OF LATHES

In addition to woodworking lathes, there are also metalworking lathes. Metals are generally harder than wood, so metalworking lathes require a stronger and sharper cutting tool than their woodworking counterparts. Metalworking lathes offer a range of different cutting tools, varying in size, shape, and material, but they are all designed to cut through common metals like aluminum and steel.

A glass-working lathe, of course, is a type of lathe that□s used for glass workpieces. It□s used to make glasses and optical materials by exposing them to a stationary cutting tool. Of course, there are many other types of lathes, some of which include metal-spinning lathes, ornamental turning lathes, cue lathes and patternmaker□s lathes.

WHAT TO KNOW BEFORE USING A LATHE

- 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.

OPERATOR TRAINING & PPE

First and foremost, lathe operators must be trained and held accountable for following safe work practices. This is essential in avoiding injury. Examples of lathe machine safety precautions include not wearing loose clothing, rings and other jewelry, keeping long hair pulled back while operating a lathe and keeping hands and fingers away from rotating parts. As mentioned earlier, these practices are important because rotating parts will catch loose or dangling items and pull the operator into the machine, causing serious injuries or death.

OSHA makes it the responsibility of the employer to provide training that addresses safe start-up and shutdown as well as proper machine operation, speed adjustments and work piece placement, control, and support.

BEST SAFETY PRACTICES TO FOLLOW WHEN USING A LATHE

- 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. 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.
- Centre-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 centre of the work.
- Use a lifting device to handle heavy chucks or work. Refer to Materials Handling for additional information.
- 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.
- Use long strokes, applying pressure only on forward stroke.
- Use approximately 40 strokes per minute.
- Clean loaded file with file brush and rub file teeth with a little chalk.

FINAL WORD

A lathe is a machining tool that features a rotating workpiece and a stationary cutting tool. The workpiece is secured to the headstock or tailstock, which rotates the workpiece while it presses against a stationary cutting tool.