

HAND and POWER TOOL SAFETY

Hand and power tools are a common part of our everyday lives and are present in nearly every industry. These tools help us to easily perform tasks that otherwise would be difficult or impossible. However, these simple tools can be hazardous and have the potential for causing severe injuries when used or maintained improperly. Special attention toward hand and power tool safety is necessary in order to reduce or eliminate these hazards.

In the process of removing or avoiding the hazards, workers must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards.

Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.

Some examples:

- Using a screwdriver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees.
- If a wooden handle on a tool such as a hammer or an axe is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker.
- A wrench must not be used if its jaws are sprung, because it might slip.
- Impact tools such as chisels, wedges, or drift pins are unsafe if they have mushroomed heads.

General Hand Tool Guidelines:

- Wear safety glasses whenever you hammer or cut, especially when working with surfaces that chip or splinter.
- Do not use a screwdriver as a chisel. The tool can slip and cause a deep puncture wound.
- Do not use a chisel as a screwdriver. The tip of the chisel may break and cause an injury.
- Do not use a knife as a screwdriver. The blade can snap and injure an eye.
- Never carry a screwdriver or chisel in your pocket. If you fall, the tool could cause a serious injury. Instead, use a tool belt holder.
- Replace loose, splintered, or cracked handles. Loose hammer, axe, or maul heads can fly off defective handles.
- Use the proper wrench to tighten or loosen nuts. Pliers can chew the corners off a nut.
- When using a chisel, always chip or cut away from you. Use a soft-headed hammer or mallet to strike a wooden chisel handle. A metal hammer or mallet may cause the handle to split.
- Do not use a wrench if the jaws are sprung.
- Do not use impact tools, such as chisels, wedges, or drift pins, if their heads are mushroom shaped. The heads may shatter upon impact.

- Direct saw blades, knives, and other tools away from aisle areas and other employees.
- Keep knives and scissors sharp. Dull tools are more dangerous than sharp tools.

Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated. Employees should be trained in the use of all power tools. They should understand the potential hazards as well as the safety precautions to prevent those hazards from occurring. Injuries from misuse could result in amputation, loss of vision, hearing loss, impalement, and even death.

General Power Tool Safety:

- Read all manufactures guidelines before working with a tool and follow all safety guidelines.
- Make sure all guards are in place and in proper working condition.
- Always wear Personal Protective Equipment (PPE), e.g., goggles, face shield, hearing protection, etc., according to the PPE hazard assessment.
- Operate a machine only after you have received thorough instructions and been advised by your Supervisor that you are qualified to operate that machine or tool.
- When working around machinery, do not wear loose clothing, torn sleeves, ties, key chains, rings, watches, or any item that could become entangled in the machinery. Contain long hair when working around machinery.
- Make all adjustments with the power off.
- Never attempt repair on live circuits, electrical appliances, power tools, cables, or wiring unless you are qualified.
- Inspect all portable power tools before operating. Inspect power cables, extension cords, and adapters. Do not use if defective or damaged.
- Use Ground Fault Circuit Interrupter (GFCI) protected circuits to operate all portable power tools.
- Never carry a tool by the cord or hose and never yank a cord or hose to unplug or untangle.
- Make sure pedestal equipment is firmly secure and not able to “walk.”
- When operating scroll saws, stop the machine before removing scrap pieces from the table.
- Always keep hands and fingers away from the saw blade. Use a push stick
- Disconnect the machine from the power source when making adjustments. Observe proper Lockout/Tagout procedures if applicable.
- Shut off power. Clean the saw and work area before leaving.
- Do not operate any power saw unless properly trained by the Supervisor or other qualified trainer.
- Do not operate equipment unless the safety guards and anti-kickback devices are in place and operational.
- Clamp the work when using the hole saw or cutting tool larger than 1/2 inch diameter.

- On band saws, adjust the upper blade guide about 1/8 inch above the material being cut.
- On band saws, check adjustments for taut blade tension and centered blade tracking.
- Hold work piece firmly against the table.
- Use push sticks when operating power table saws.
- Adjust grinder tool rest to within 1/8 inch of the abrasive wheel and thoroughly tighten in place so it cannot shift position while in use.
- Adjust the movable tongue guard on grinders to within 1/4 inch of the abrasive wheel.
- Inspect grinder wheels for chips, cracks, or grooves on the face or side before turning on grinder. Do not use wheels if any of these problems are recognized.
- Dress grinding wheels on the face only.
- When grinding, use the face of the wheel only.
- If the grinding wheel vibrates, do not use it. Tag it as out-of-service and report it to the Supervisor.
- Do not touch the ground portion of work piece until you are sure it has cooled.
- When finished using the grinder, shut off the power. Do not leave until the wheel has come to a complete stop and the work area is clean.
- Do not operate grinders near flammable containers or where gasoline fumes are present.