

SAFE USE OF HAND AND POWER TOOLS

Severe injuries can result from the abuse, neglect or incorrect use of hand and power tools. Always use the correct tool for each task. Machine wrenches used as hammers can become distorted and unsafe. Do not use a file or a screwdriver to pry or use pliers instead of a wrench. Tools should be kept in good condition. Wrenches with cracked or worn jaws, screwdrivers with broken points or split or broken handles, hammers with loose heads, broken or split handles, chisels with mushroomed heads and dull blades on saws should be tagged and taken out of service.

a) Safety Procedures and Tool Inspection

- All employees using tools are required to follow the procedures relating to the safe storage, inspection, and use of hand and power tools.
- All tools used by the employees, including tools and equipment furnished by the employees, will be inspected before use to ensure that they are in a safe condition.

b) Tool Storage

- Do not leave tools on the floor in the work area as they present a tripping hazard.
- Tools, when not in use, must be safely stored in toolboxes, tool racks or shelves or other appropriate storage locations.
- Dust, debris, moisture and grime must be removed from tools before they are stored.

c) Personal Protective Equipment

- Appropriate eye protection must be worn by all employees using hand tools which could generate sparks, airborne particulates or flying debris.
- Spark resistant tools are required in environments that potentially contain flammable or explosive substances.

d) Impact Tools (chisels, punches, hammers)

- Hammers and other striking tools should be made of forged, hardened steel which will withstand blows without mushrooming excessively, but not be so hard that they chip or crack.
- Do not carry chisels, punches or any sharp tools in clothing pockets.
- Keep chisels sharp and ground to a 60-degree angle. If the head is mushroomed it should be ground off.
- Always wear eye protection and use a shield or screen to prevent injury to others if there is a risk from flying particles, and hearing protection if noisy.
- Hammers must have secure handles suited to the type of head used, and be smooth, free of oil, shaped to fit the hand, and properly sized for the task.

- Carpenter's or claw hammers designed primarily for driving and drawing nails are unsuitable for striking heavier objects, such as cold chisels. Do not use the corners of the claw as pries as they may chip or break.

e) Wrenches

- Use the wrench that is correct for the nut or bolt as oversize openings will not grip the corners securely. Never use shims to compensate for an oversized opening.
- Using the wrong size wrench can round the corners of the bolt or cause slippage making it difficult to then apply the proper size.
- Always inspect the wrench before using it, and remove dirt and grime from inside sockets so that they will seat properly.
- Never attempt to increase the force applied to a wrench by using a pipe extension on the handle or strike the handle with a hammer.
- Use caution when using adjustable wrenches, as can slip if they are not the correct size or are improperly seated causing the jaws to "work" as the wrench is being used. Use adjustable wrenches only for light-duty jobs or when the proper sized, fixed-opening wrench is not available.
- When using a wrench overhead be careful that it does not slip causing a head injury or a loss of balance and fall.

f) Screwdrivers

- Do not use a screwdriver as a punch, wedge, pinch bars or priers as it can be easily damaged causing the blade to slip off and injure the hands.
- Ensure that the screwdriver tip fits the screw as an improper size can slip easily and requires greater pressure. Keep the tip clean and sharp to permit a good grip on the head of the screw.
- Never hold the part being worked in the hand. Lay it flat on a bench or flat surface, or hold it in a vise.
- Where there is a potential for contact with electricity, do not use a screwdriver with blades or rivets extending through the handle. Both blade and handle should be insulated.

g) Bladed Tools

Bladed tools such as knives, axes and wedges can cause serious injury when used in an unsafe manner, when carried in pockets or placed in unprotected in toolboxes or on workbenches. Knives are most frequent the source of disabling injuries, more than any other hand tool. The most common injuries occur as a result of the hand slipping from the handle onto the blade. Knives with loose handles or wedges struck with a glancing blow can become projectiles.

- The cutting stroke should be away from the body. If not possible, then ensure that the hands and body are clear of the trajectory of the knife.
- Knives should be kept in sheaths or holders, especially when they are carried. Always carry a sheathed knife over the right or left hip, toward the back, and never on the front of the body to prevent severing a leg artery or vein in case of a fall.
- Never attempt to catch falling knife. Let it drop to the ground, and pick it up by the handle.
- To use an axe safely, it must be lifted properly, swung correctly, the stroke placed accurately. The proper grip for a right-handed person is to have the left hand about 3 inches from the end of the handle, and the right hand 3/4 of the way up on the handle. A left-handed person should reverse the position of the hands.
- Never use a wedge unless no other option is available. When wedges are struck with a hammer, there is a danger that the head of the hammer will be released from the shaft and strike someone causing injury. Safety shoes and protective eyewear must be worn if a wedge must be used.

h) Pliers and Nippers

Pliers are often seen as a general-purpose tool and used for purposes for which they were not designed. Pliers are meant for gripping and cutting operations. They are not a safe substitute for wrenches as the flexible jaws can slip and do not hold the work securely.

- When working around electricity, ensure that the handles of pliers and nippers are insulated.
- Nippers can cause injuries to the eyes and hands when used to cut short ends of wire. Always wear CSA approved eye protection worn when using nippers to prevent injury from flying short ends of wire.
- Always use special cutters for heavy wire, reinforcing wire, and bolts.

i) Vises

Vises are used for holding material while it is being worked. Material must be securely clamped in the jaws of a vise and held in place while the work is performed.

- The handle used to tighten the jaws of the vise should not be struck with a hammer to gain additional holding strength. Tighten with hands only.
- Wear eye protection when working on material held in a vise if there is a risk of sparks, dust or flying particles from the work being done.

j) Crowbars

- Use the proper size and kind of crowbar for the job.

- Never use a makeshift bar such as a piece of pipe or an iron bar as it may slip and cause injury.
- The crowbar should have a point or toe of such shape that it will grip the object to be moved, and a heel to act as a pivot or fulcrum. In some cases, a block of wood under the heel will prevent the crowbar from slipping and injuring the hand.

k) Saws

- Saws should be properly selected for the job.
- Saws must be kept sharp and the teeth kept well set to prevent binding.
- Hacksaw blades should be adjusted in the frame to prevent buckling and breaking, but not so tight as to break off the pins that support the blade. Install a hacksaw blade with teeth pointing forward.

l) Portable Grinders

As with all power tools, portable grinders can present safety concerns, including flying particles and electrical hazards. Before using a portable grinder, inspect it to ensure that it does not vibrate or operate roughly. Check the manufacturer's instructions before using a portable grinder. Always use the correct wheel for the grinder speed. The operating speed in revolutions per minute must be permanently marked on the grinder.

Inspection and Testing

- Sound or "ring test" the abrasive wheel before it is mounted to ensure that it is free from cracks or defects. A stable or undamaged wheel will give a clear metallic tone or ring when tapped with a light, non-metallic instrument. If the wheel makes a cracked or dead sound, it could fly apart in operation.
- Remove a defective wheel or a grinder that is not operating properly from the work area and place a "Do Not Use" tag on it.
- Avoid accidental starting by keeping fingers away from the switch button when carrying or plugging in the grinder.
- Ensure that equipment will not operate when unattended by checking the constant pressure (dead man) switch.
- Do not wear loose fitting clothing or jewellery that could become entangled in moving parts. Tuck or secure long hair.

Personal Protective Equipment

- Use the protective equipment appropriate to the task being performed.
- Both eye protection and a face shield are recommended when performing grinding in confined spaces, or in close or cramped conditions, or when others are performing work in the immediate area.
- Kneepads should be worn to reduce the potential of kick back at knee or calf level when grinding in a kneeling position.

- Hearing protection is required when grinding or when working in close proximity to grinding activities.
- If grinding is done overhead or in a kneeling position, ensure that proper protective clothing is worn to protect against kick back.

Operating the Grinder

- Ensure that the grinder is equipped with a guard to provide protection should the abrasive wheel break while rotating. If a guard is missing or damaged, do not use the grinder.
- Request others in the work area to remain at a safe distance before starting the grinder. Set up screens and shields around work area if appropriate to protect others.
- Remove all flammable and combustible materials from the work area. Have a fire extinguisher immediately available.
- Check that the surface to be ground is stable and secure. Use clamps or a vice if necessary so that both hands are free to operate the tool.
- Check the floor surface for water or oil so that stable footing is certain. Keep the work area free of tripping hazards.
- When starting the grinder, stand away from the wheel and prepare for a kick back.
- Do not use the sides of an abrasive wheel for grinding unless it is designed for that use.

Changing Grinding Wheels

- Always unplug the grinder before changing the wheel.
- Never force an abrasive wheel onto a grinder or change the size of the mounting hole. To prevent the wheel from cracking, it must fit freely on the spindle and be tightened to hold the wheel in place without distorting the flange.
- Never over-tighten the mounting nut. Always follow the manufacturer's instructions.

Maintenance and Storage

- Store portable grinders on racks or hooks, not on the ground.
- Clean and service grinders according to the manufacturer's recommendations, including lubricating and changing accessories.
- Keep written maintenance record on portable grinders, as well as other power tools.