



Tools & Machines – Hand & Power



Hand and power tools pose injury hazards that may result from contact with their sharp edges, sharp tips, moving surfaces, power source, point of operation, and material waste generated during operation. Additional injury hazards are presented from inappropriate use.

Training is a critical component for the safe use of hand and power tools. All employees and students must receive documented training before using designated hand and power tools. Follow these general safety guidelines to reduce your risk of injury.

General Use

1. Wear the proper personal protective equipment:
 - a. Safety glasses, goggles, and, when necessary, a face shield when working with tools that generate debris, such as dust, splinters, chips, flakes, or shards or when the materials being worked with may snap, such as wires, as they are cut. Note: the use of a face shield by itself does not qualify as wearing appropriate eye protection.
 - b. Hearing protection devices when power tools and woodworking machines are in use even if you are not the operator.
 - c. Appropriate shop attire when using hand and power tools including full-length pants (or equivalent) and closed-toe shoes.
 - d. N-95 dust masks when generating saw dust, such as sanding operations.
 - e. Tight-fitting work gloves only for handling materials. Never wear gloves while working with power tools.
 - f. Consult with the EH&S Department and refer to the UC PPE Policy for more information.
2. Leave your rings, watches, necklaces, other jewelry, and loose clothing in your locker or bag.
3. Restrain long hair to keep it away from machinery, tools, and points of operation.
4. Never use a tool without prior training regarding its safe use.
5. Comply with the manufacturers' instructions on tool use and care.
6. Inspect tools before each use to identify any defects, such as frayed power cords, damaged casings, damaged handles, or damaged working surface.
7. Remove defective tools from service and immediately report it to your supervisor or instructor.
8. Direct the action end of the tool away from your body during use.
9. Keep observers at a safe distance away from the work area.
10. Service and maintain tools as specified by the manufacturer.
11. Sweep up the floor and work surfaces to remove the waste generated by the use of the tool.
12. Properly dispose of the waste. Consult the EH&S Hazardous Waste Program for assistance.

Power Tools (tools with power sources: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated)

1. Never use power tools on wet surfaces or in wet conditions.
2. Never use a tool with its machine or blade guard altered or removed.
3. Never carry or hoist a power tool by its power cord.
4. Never yank the cord or the hose to disconnect it from the receptacle.
5. Keep your finger away from the power switch while carrying a tool connected to a power source.
6. Keep power cords and hoses away from sources of heat and sharp surfaces or edges.
7. Turn off and unplug power tools before servicing or making any adjustments, such as loading them, changing blades or bits, adjusting settings, or cleaning them.
8. Turn the power switch off, unplug the tool, and properly store it at the end of each use or end of the work period.
9. Secure the work piece with clamps or a vice to ensure the tool is controlled with both hands.
10. Secure work with clamps or a vise, freeing both hands to operate the tool.

**Hand Tools (tools that are powered manually)**

1. Use hand tools only for the purpose for which they were designed; i.e., use a screwdriver as a screwdriver only.
2. Remove tools from use when their handles are damaged. Wooden tool handles are damaged when the shaft is splintered or cracked or handle is loose.
3. Remove wrenches from use if the jaws are sprung.
4. Remove impact tools, such as chisels and wedges, from use when the head of the tool is mushroom-shaped.

Talk to your supervisor if you have any questions about this information.