

# SLCC Tool Safety Information

## Overview

Hand and power tools are often taken for granted since they are used so frequently. This can make it easy to forget the potential danger they may pose. Nevertheless, many tool-related accidents occur due to improper maintenance or misuse of hand and power tools. Pay close attention to the condition of your tools and know how to use them properly.

## Basic Safety Guidelines

1. Keep all tools in good condition with regular maintenance.
2. Use the right tool for the job.
3. Examine each tool for damage before use.
4. Operate tools according to the manufacturer's instructions.
5. Use the appropriate PPE for any existing hazards such as dust, fumes, mists, vapors, or gases.

## Hand Tools

Hand tools are manually operated tools such as pliers, screwdrivers, hammers, hand saws, and wrenches. While not powered by an external source, hand tools can be dangerous if improperly handled or used to perform the wrong task. Never use a tool for something other than for what it was intended. Common examples of misuse include using a wrench for a hammer or using a screwdriver as a crowbar. Don't use extender or "cheater" bars to increase leverage or force on wrenches. Keep hand tools in good working condition and always inspect them before using.

## Hand Tool Safety Tips

1. Keep knife and saw blades sharpened.
2. Direct blades away from other workers in the work area.
3. Replace wrenches when jaws are worn and begin to slip.
4. Replace tools with splintered handles, cracked blades, or any other defect.
5. Use tools for their intended use only.

## Power Tools

Power tools are classified by their power source and include electrical, pneumatic, liquid fuel, hydraulic, and powder actuated tools. Potential hazards include electric shock and injury from moving parts. Most power tools are designed with safety in mind. Manufacturers must follow Occupational Safety and Health Administration (OSHA) guidelines that require all power tools to have guards, switches and controls, electrical

grounding, and maintenance guidelines. These features are important for your safety. Do not use any tools that have broken or are missing guards, switches, or grounding conductors. Never remove safety guards.

### **Power Tools that Require Guards**

1. Tools with non-flush projections on revolving or reciprocating edges.
2. Tools with wheels.
3. Tools with blades.
4. Tools with sanding and grinding parts.

### **Electrical Tools**

Examples of electrical power tools include power drills, power saws, and power grinders. Electrical tools introduce the risk of shock, which can potentially lead to heart attacks or serious burns. To help avoid electrical shock, it is required that all exposed non-current carrying metal parts of tools that may become energized be grounded.

### **Safety Guidelines for Electrical Tools**

1. Inspect cords for defects such as cracks, frays, and other signs of wear or faults in the cord insulation.
2. Use properly grounded tools with three-prong plugs and double insulation.
3. Inspect the plug for cracks and for missing, loose, or faulty prongs.
4. Use manufacturer recommended guards and shields.
5. Switch off tools before connecting them to a power supply.
6. Disconnect the power supply before making adjustments or changing accessories.
7. During use, keep power cords clear of tools and away from the path that the tool will take.
8. Use approved extension cords that have the proper wire size (gauge) for the length of cord and power requirements of the electric tool that you are using.
9. Use appropriate PPE for the work you are doing. This may include items such as safety glasses or goggles, hearing protection, dust mask, gloves, safety boots or shoes, or rubber boots.

### **Pneumatic Tools**

Pneumatic tools are powered by compressed air. Common types of these air-powered hand tools include nail guns, stapling guns, grinders, drills, riveting guns, and jackhammers. These tools can cause injuries due to flying parts or loose attachments. Before you begin a job, make sure that pneumatic tools are fastened securely to their air hoses to prevent them from becoming disconnected while in use.

## **Safety Guidelines for Pneumatic Tools**

1. Review the manufacturer's instructions before using a tool.
2. Wear safety glasses or a face shield and, where necessary, safety shoes or boots and hearing protection.
3. Make sure air hoses do not present a tripping hazard.
4. Never point a compressed air gun at another person.
5. Use the recommended air pressure for the task.
6. Post warning signs where pneumatic tools are used. Set up screens or shields in areas where nearby workers may be exposed to flying fragments, chips, dust, and excessive noise.
7. Ensure that the compressed air supplied to the tool is clean and dry. Dust, moisture, and corrosive fumes can damage a tool. An in-line regulator filter and lubricator increases tool life.
8. Keep tools clean and lubricated, and maintain them according to the manufacturers' instructions.
9. Do not attempt to catch falling machinery or power tools.
10. Support heavy tools with a counter-balance when possible.

## **Liquid Fuel Tools**

Liquid fuel-powered tools are usually powered by gasoline. Examples of liquid fuel tools include chain saws, lawn mowers, concrete saws, and pressure washers. When used properly and according to the manufacturer's instructions, these types of tools are very dependable and safe. Like any other kind of tool, there can be some serious hazards involved if they are used improperly. The most serious hazards presented by these tools are dangerous exhaust fumes and vapors that can burn or explode. Proper ventilation, careful handling of fuel, and attention to fire safety can help reduce these hazards.

### **Safety Guidelines for Liquid Fuel Tools**

1. Shut and cool down the engine before refilling a fuel tank.
2. Provide ventilation and/or proper respirators when using a liquid fuel tool in an enclosed area to avoid breathing carbon monoxide.
3. Always transport fuel in approved flammable liquid containers.
4. Have fire extinguishers available when working.
5. Always wear foot, eye, face, head, and ear protection when required.

## **Hydraulic Tools**

Hydraulic tools are powered by a hydraulic pump which can be hand, foot, or engine powered, or even built into the tool itself. Hydraulics tools are used for the generation, control, and transmission of power by the use of pressurized liquids. Examples of

hydraulic tools include jacks, presses, and impact wrenches. Hydraulic power tools present various hazards, including trip hazards or slipping hazards from oil leaks.

### **Safety Guidelines for Hydraulic Tools**

1. Never exceed the load limit marked on the tool.
2. Always use a hydraulic jack on a firm and level surface.
3. Inspect all hydraulic tools at least once every six months
4. Inspect all jacks used outside the shop before they go out and when they return.
5. Immediately inspect any hydraulic tool when subjected to an abnormal load, pressure, or shock.
6. Always use leather gloves, safety shoes, and face, eye and ear protection.
7. Consider using impact-resistant gloves.

### **Powder Actuated Tools**

A powder-actuated tool (often called a "Hilti gun" or a "Ramset gun" after their manufacturing companies), is a nail gun used in construction to join materials to hard substrates such as steel and concrete. This technology relies on a controlled explosion created by a small chemical propellant similar to the process that discharges a firearm. An example of a powder-actuated tool is a concrete fastener.

Powder actuated tools come in both low and high velocity types. Either design can be dangerous to operate. Low velocity tools introduce a piston into the chamber. The propellant acts on the piston, which then drives the fastener into the substrate. In high velocity tools, the propellant acts directly on the fastener, similar to a firearm.

### **Safety Guidelines for Powder Actuated Tools**

1. Never point a powder-actuated tool at another person.
2. Use an alignment guide when shooting a fastener into an existing hole.
3. Do not fire fasteners into materials that would let them pass through to the other side.
4. Stay at least 3 inches away from the edges or corners of materials like brick or concrete.
5. Stay 1/2 inch away from a steel corner or edge. In steel, the fastener must not come any closer than 1/2 inch from a corner or an edge.
6. Do not drive fasteners into hard or brittle materials that might chip or splatter, or make the fastener ricochet.
7. Always wear hand, eye, ear, and face protection.