

Contents

GENERAL	3
Purpose	3
Regulatory Reference.....	3
Scope	3
Responsibility	3
TRAINING AND RECORDKEEPING	4
GENERAL SAFETY REQUIREMENTS.....	5
Guards.....	5
Personal Protective Equipment (PPE)	6
Hand Tools	6
Power Tools	7
Electric Tools.....	8
Pneumatic Tools.....	9
Liquid Fuel Powered Tools	10
Hydraulic Power Tools	11
Operating Controls and Switches.....	12
Powder-Actuated Tools.....	13

GENERAL

Purpose

L.D. Docsa Associates, Inc. (LDD) has developed this policy to ensure the safety of employees working with hand and portable powered tools and other hand-held equipment. This program is intended to comply with the Occupational Safety and Health Administration (OSHA) Standards contained in 29 CFR 1910.241-244.

Regulatory Reference

29 CFR 1910 Subpart P - Hand and Portable Powered Tools and Other Hand-Held Equipment OSHA Publication 3080 – Hand and Power Tools

Scope

This policy applies to all employees and staff who may use hand and portable powered tools and equipment during the course of work. Faculty and staff must be able to use hand and portable powered tools and equipment safely and shall comply with manufacturer guidelines.

Responsibility

Environmental Health and Safety is responsible for:

- Ensuring that hand and portable powered tool safety measures are in place according to this program and the applicable OSHA standards;
- Maintaining training records; and
- Periodically evaluating program implementation.

Supervisors are responsible for:

- Ensuring that all hand and portable powered tools and other hand held equipment used at LDD are free from defects and are working and maintained properly;
- Ensuring that tools are used in accordance with manufacturer recommendations;
- Ensuring that all affected employees have been trained;
- Ensuring that all affected employees comply with this program;
- Taking damaged tools out of service immediately if they are defective; and
- Conducting periodic inspections of work areas.

Employees are responsible for:

- Attending required training programs;
- Inspecting hand and portable powered tools and equipment for defects or possible hazards prior to use;
- Tagging any defective tools as out of service immediately; and
- Reporting any defects to their supervisor immediately.

TRAINING AND RECORDKEEPING

All employees shall be trained in the proper use of tools prior to using hand and power tools and other hand-held equipment. Employees shall be trained in the following:

- Recognition of the hazards associated with different types of tools and the safety precautions necessary for use;
- The PPE required during use; and
- The proper use of hand and power tools and other hand-held equipment.

Employees shall be retrained as necessary to maintain their understanding and knowledge on the safe use of hand and power tools and other hand-held equipment.

GENERAL SAFETY REQUIREMENTS

Tools and equipment shall be kept in safe condition. The following help prevent hazards associated with the use of hand and power tools:

- Keep all tools in good condition with regular maintenance;
- Use the right tool for the job;
- Inspect each tool for damage before use;
- Never use damaged tools - take damaged tools out of service immediately;
- Operate tools according to the manufacturers' instructions; and
- Use the proper personal protective equipment (PPE).

Guards

The exposed moving parts of power tools shall be guarded. Safety guards must never be removed when a tool is being used. Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts of equipment must be guarded.

Machine guards must be provided to protect the operator and others from the following:

- Point of operation;
- In-running nip points;
- Rotating parts; and
- Flying chips and sparks.

Personal Protective Equipment (PPE)

Employees who use hand and power tools and are exposed to the hazards of noise, vibration, falling, flying, abrasive, and splashing objects, or to harmful dusts, fumes, mists, vapors, or gases must be provided with the appropriate personal protective equipment.

The following considerations should be evaluated at a minimum in the selection and use of PPE when using hand and portable powered tools:

- Safety glasses or goggles must be worn at all times when using hand and powered tools;
- A face-shield may be used in addition to safety glasses or goggles to protect the face and neck;
- Composite-toe leather shoes should be worn while working with power tools to prevent injury from dropped tools; and
- Hearing protection is recommended when using power tools.

Before working with hand and power tools consult the hazard evaluation for the job you will be conducting to determine if additional PPE will be needed. Refer to the PPE Policy for specific information regarding the safe use of PPE.

Hand Tools

Hand tools are tools that are powered manually. Some examples of hand tools include anvils, axes, chisels, files, hammers, hand boring tools, planes, pliers, punches, saws, scissors, screw drivers, tin snips, and wrenches. Hazards associated with hand tools result from misuse and improper maintenance. To prevent injury, follow the guidelines listed below:

- Hand tools shall be used for their intended purpose. For example, if a screwdriver is used as a chisel, the tip of the screwdriver may break and fly off, hitting the user or other employees;
- Inspect tools for damage prior to use;

- Hand tools shall be maintained in good condition free of damage. For example, wooden handles on tools, such as a hammer or an axe, shall be tight and free from splinters or cracks;
- Bent screwdrivers or screwdrivers with chipped edges shall be replaced;
- Always direct tools such as knives, saw blades, etc. away from aisle areas and away from other employees working in close proximity;
- Knives and scissors must be sharp; dull tools can cause more hazards than sharp ones;
- Cracked saw blades must be removed from service;
- Wrenches must not be used when jaws are sprung to the point that slippage occurs;
- Impact tools such as drift pins, wedges, and chisels must be kept free of mushroomed heads;
- Iron or steel hand tools may produce sparks that can be an ignition source around flammable substances. Spark-resistant tools made of non-ferrous materials should be used where flammable gases, highly volatile liquids, and other explosive substances are stored or used;
- Keep the work area and tools clean. Dirty, greasy tools and floor may cause accidents;
- Tools shall be stored in a dry secure location;
- Carry and store tools properly. All sharp tools shall be carried and stored with the sharp edge down. Do not carry sharp tools in a pocket; and
- Wear the proper personal protective equipment (PPE).

Power Tools

Power tools must be equipped with guards and safety switches. They can be hazardous when used improperly. Types of power tools are determined by

their power source: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated.

To prevent hazards associated with the use of power tools, workers should observe the following general precautions:

- Read the owner's manual to understand the tool's proper applications, limitations, operation, and hazards;
- Never carry a tool by the cord or hose;
- Never yank the cord or the hose to disconnect it from the receptacle;
- Keep cords and hoses away from heat, oil, and sharp edges;
- Ensure tools are properly grounded; use Ground Fault Circuit Interrupter (GFCI) for corded tools;
- Disconnect tools when not using them, before servicing and cleaning, and when changing accessories such as blades, bits, and cutters;
- Keep all people not involved with the work at a safe distance from the work area;
- Secure work with clamps or a vise, freeing both hands to operate the tool;
- Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool;
- Maintain tools sharp and clean;
- Be sure to keep good footing and maintain good balance when operating power tools;
- Wear proper apparel for the task. Loose clothing, ties, or jewelry can become caught in moving parts; and
- Inspect tools for damage before each use. Remove all damaged portable electric tools from use and tag them: **"Do Not Use."**

Electric Tools

Electric tools may cause electrical burns and shocks. To prevent the user from electrocution, electric tools shall have a three-wire cord with a ground and be plugged into a grounded receptacle, be double insulated, or be powered by a

low voltage isolation transformer to protect from burns and shocks. Three-wire cords contain two current carrying conductors and a grounding conductor. When an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong must never be removed from the plug.

Double-insulated tools are available that provide protection against electrical shock without third-wire grounding. On double insulated tools, an internal layer of protective insulation completely isolates the external housing of the tool.

The following general practices should be followed when using electric tools:

- Operate electric tools within their design limitations;
- Use gloves and appropriate safety footwear when using electric tools;
- Store electric tools in a dry place when not in use;
- Do not use electric tools in damp or wet locations unless they are approved for that purpose;
- Keep work areas well lighted when operating electric tools;
- Ensure that cords from electric tools do not present a tripping hazard.

Pneumatic Tools

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders. Some hazards associated with pneumatic tools include noise, vibration, fatigue, and strains. Additional hazards are described below:

- The greatest hazard is being hit by one of the tool's attachments or by a fastener used with the tool. Eye protection must be worn for employees working with pneumatic tools;
- Pneumatic tools must be checked to ensure that they are fastened securely to the air hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool must also be used and will serve as an added safeguard;

- If an air hose is more than 1/2-inch in diameter, a safety excess flow valve must be installed at the source of the air supply to shut off the air automatically in case the hose breaks;
- When using pneumatic tools, a safety clip or retainer must be installed to prevent attachments such as chisels on a chipping hammer from being ejected during tool operation;
- Pneumatic tools that shoot nails, rivets, staples, or similar fasteners and operate at pressures more than 100 pounds per square inch, must be equipped with a special device to keep fasteners from being ejected, unless the muzzle is pressed against the work surface;
- Airless spray guns that atomize paints and fluids at pressures of 1,000 pounds or more per square inch must be equipped with automatic or visible manual safety devices that will prevent pulling the trigger until the safety device is manually released;
- Screens must be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers, or air drills; and
- Compressed air guns should never be pointed toward anyone. Workers should never “dead-end” them against themselves or anyone else.

Liquid Fuel Powered Tools

Fuel-powered tools are usually operated with gasoline. The most serious hazard associated with the use of fuel-powered tools is from fuel vapors that can burn or explode and also give off dangerous exhaust fumes. Fuel must be handled, transported, and stored only in approved flammable liquid containers, according to proper procedures for flammable liquids. Before refilling a fuel-powered tool tank, shut down the engine and allow it to cool to prevent accidental ignition of hazardous vapors. When a fuel-powered tool is used inside a closed area, effective ventilation and/or proper respirators such as atmosphere-supplying respirators must be utilized to avoid breathing carbon monoxide. Fire extinguishers must also be available in the area.

Hydraulic Power Tools

The fluid used in hydraulic power tools must be an approved fire-resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The exception to fire-resistant fluid involves all hydraulic fluids used for the insulated sections of derrick trucks, aerial lifts, and hydraulic tools that are used on or around energized lines. This hydraulic fluid shall be of the insulating type.

The manufacturer's recommended safe operating pressure for hoses, valves, pipes, filters, and other fittings must not be exceeded.

All jacks—including lever and ratchet jacks, screw jacks, and hydraulic jacks—must have a stop indicator, and the stop limit must not be exceeded. Also, the manufacturer's load limit must be permanently marked in a prominent place on the jack, and the load limit must not be exceeded.

A jack should never be used to support a lifted load. Once the load has been lifted, it must immediately be blocked up. Place a block under the base of the jack when the foundation is not firm, and place a block between the jack cap and load if the cap might slip.

To set up a jack:

1. The base of the jack shall rest on a firm, level surface;
2. The jack must be correctly centered;
3. The jack head must bear against a level surface; and
4. The lift force must be applied evenly.

All jacks must be lubricated regularly. Each jack must be inspected according to the following schedule: (1) for jacks used continuously or intermittently at one site—inspected at least once every 6 months, (2) for jacks sent out of the shop for special work—inspected when sent out and inspected when returned, and (3) for jacks subjected to abnormal loads or shock—inspected before use and immediately thereafter.

Operating Controls and Switches

The following hand-held power tools must be equipped with a constant-pressure switch or control that shuts off the power when pressure is released:

- Drills;
- Tappers;
- Fastener drivers;
- Horizontal, vertical, and angle grinders with wheels more than 2 inches in diameter;
- Disc sanders with discs greater than 2 inches;
- Belt sanders;
- Reciprocating saws;
- Saber saws, scroll saws, and jigsaws with blade shanks greater than 1/4-inch wide; and
- Other similar tools.

These tools also may be equipped with a “lock-on” control, if it allows the worker to also shut off the control in a single motion using the same finger or fingers.

The following hand-held power tools must be equipped with a positive “on-off” control switch, a constant pressure switch, or a “lock-on” control:

- Disc sanders with discs 2 inches or less in diameter;
- Grinders with wheels 2 inches or less in diameter;
- Platen sanders, routers, planers, laminate trimmers, nibblers, shears, and scroll saws; and
- Jigsaws, saber, and scroll saws with blade shanks a nominal 1/4-inch or less in diameter.

The constant-pressure control switch should be regarded as the preferred device. Other hand-held power tools such as circular saws having a blade

diameter greater than 2 inches, chain saws, and percussion tools with no means of holding accessories securely must be equipped with a constant-pressure switch.

Powder-Actuated Tools

Powder-actuated tools require special training and shall not be used without prior approval from Safety Manager.