

 <b>CITY OF TUCSON</b>	<b>City of Tucson</b> Central Safety Services Number: S-012 Subject:	Page 1 of 6
		Effective Date: July 30, 2009
	<b>Hand and Power Tools</b>	Reviewed/ Revised: January 1, 2013

## 1.0 PURPOSE

This procedure has been established to provide employees with a uniform policy for the safe operation of hand, electric, pneumatically, or powder-actuated tools.

## 2.0 SCOPE

This procedure will apply to all employees within the City of Tucson who are required to or work with hand or power tools.

The policies and procedures contained in this section are intended to assist in identifying and complying with OSHA Safety Standards. In all cases where there is a difference between specific OSHA standards and Hand and Power Tool policies set forth in this policy, the stricter of the two shall apply.

## 3.0 DEFINITIONS

**Hand Tool:** tools that manually operated and powered by human force such as screw drivers, pliers, wrenches, hammers, shears, etc.

**Pneumatic Tools:** tools that are powered by air, such as air impact wrenches, air grinders, spray guns, and air fasteners.

**Portable Power Tools:** tools that are manually operated and powered by electricity or other fuel source.

**Powder-actuated Tools:** tools that are powered by an explosive, powdered charge that is identical to that of a handgun or similar that propels a fastening or anchoring device into hardened (concrete) surfaces.

## 4.0 RESPONSIBILITIES

### A. Department/Division Managers

1. The Department shall ensure employees have the proper hand or power tool and job training to complete the assigned job task.

### B. Supervisor

1. The Supervisor shall ensure that a Job Hazard Assessment has been performed that will adequately identify the proper tool(s) needed to perform each job task and that each employee has been properly and adequately trained in the use of the hand or power tool.
2. Supervisors shall ensure that employees do not remove or circumvent portable power tool machine guarding from operating equipment and

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replace machine guarding after repairs or maintenance have been performed.

3. Supervisors shall ensure that all hand tools are maintained in good operating condition and that all wood, fiberglass, or other handles are replaced or discarded when the material is split or becomes damaged.
4. Supervisors shall ensure that all electrically powered tools are utilized according to this policy, are in good condition and that electrically powered tools with damaged housing or electric cords are removed from service and promptly repaired.

### **C. Employees**

1. Employees shall not remove or circumvent machine guarding from operating equipment and shall promptly replace machine guarding after maintenance or repair of equipment.
2. Employees shall also immediately report damaged hand or power tools to their supervisor and shall not utilize damaged hand or power tools that may cause injury to the employee.

### **D. Central Safety Services**

1. Central Safety Services shall inspect hand and power tools for damage and for adequate and appropriate guarding during the annual facility safety inspection (MAIT) and shall remove damaged or unsafe tools from service and/or recommend repair, maintenance, appropriate guarding or the disposal of the damaged tool.

## **5.0 EDUCATION AND TRAINING**

- A.** All departments/divisions shall provide initial employee training to every employee that will operate electrically, pneumatically or manually driven tools and shall repeat the training when:
  1. Changes in the work process render previous training obsolete;
  2. Changes in the types of hand or power tools to be operated render previous training obsolete;
  3. An effected employee's is observed operating hand or power tools in an unsafe or inappropriate manner.
- B.** Departments/divisions, in coordination with Central Safety Services, will verify that each effected employee has received and understands the required training through a written documentation that contains the name of each employee trained, the date(s) of training, on the subject of Hand and Power Tool Safety.

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## 6.0 GENERAL

### A. Personal Protective Equipment

1. Employee shall wear eye protection in the form of safety glasses when operating hand and power tools. In some cases face protection in the form of a face shield may be required in addition to eye protection.
2. Hand protection in the form of gloves may be required per the Job Hazard Assessment.
3. Employees operating hand or power tools shall wear foot protection in the form of safety footwear with a protective device that covers the toe area of the foot. In some cases additional protection to the sole or metatarsal area of the foot may be required.
4. Employees shall utilize ear protection in the form of ear plugs and/or ear muffs when directed by safety sign on the tool, manufacturer's instruction or posting of official notice in the area of tool operation.

### B. General Safety

1. Before using a hand or power tool, employees shall:
  - a. Receive training from Supervision on tool operation;
  - b. Keep all tools in good condition with regular maintenance;
  - c. Use the proper tool for the job;
  - d. Examine each tool for damage;
  - e. Operate the tool according to the manufacturer's instructions;
  - f. Utilize Personal Protective Equipment;
  - g. Clear the work area of trip or other hazards.

### C. Hand Tools

1. Hand tools are non-powered tools. The following conditions shall cause a hand tool to be removed from service:
  - a. Chipped blade of a screw driver or chisel;
  - b. Excessive mushroom head on a cold chisel;
  - c. Cracked or broken handles;
  - d. Excessive wear (hair) on a fiberglass handle that may compromise the fiberglass matrix.

### D. Portable Power Tools

1. Portable Power tools are normally electrically powered but may also be powered by pneumatics, hydraulics, or liquid fuels. The following safe practices shall be utilized when operating power tools:
  - a. Power tools shall not be carried or lifted by the power cord;
  - b. All guards shall be in place and functioning as per design of the manufacturer;

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- c. Electrically operated power tools shall have the grounding lug intact or shall be double insulated;
  - d. Employees shall not operate electrically powered tools in or near “standing” water;
  - e. Extension cords used to power electrically operated tools shall be rated for the power tool;
  - f. When utilizing electrically powered tools outdoors, tools shall be plugged directly into a GFCI outlet or a GFCI extension cord shall be utilized.
  - g. Cords shall not be “yanked” from an electrical outlet. The employee shall grasp the head of the cord at the outlet to disengage the cord from the power source;
  - h. Portable power tools shall never be clamped into a vise to substitute the tool for fixed machinery;
  - i. Cords shall be inspected before use for damage to include fraying, cuts, exposure of wire through the insulating jacket, bare wire and exposed wire at the strain relief or entry into the body of the tool.
2. Any unsafe condition from above shall cause the tool to be removed from service (tagged out) and repaired or replaced.

#### **E. Fixed Machinery**

1. Fixed Machinery shall be anchored securely to a bench (or similar) or to the floor to prevent vibration and movement of the machine during operation.
2. All machine guards shall be in place and functioning as per the intended design of the manufacturer. Chip guards or face protection shall be available for employee use during the operation of a:
  - a. Drill press
  - b. Bench grinder
  - c. Vertical or horizontal band saw
  - d. Metal or wood lathes

#### **F. Power Tool Switch Control**

1. Constant pressure switches on electrically powered tools shall not be compromised as to interfere with the manufacturer’s intended operation which is to ensure the tool immediately winds down when the power trigger is released.
2. Employees shall exercise care when operating power tools with “lock-type” switches which allow the energy to be locked in a constant on position. Employees shall manually disengage the locking switch and let the tool wind down to the static position, before releasing the tool.

#### **G. Guards**

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1. Employees shall not remove a machine guard on a portable power tool or fixed machinery except to perform a maintenance function. Employees shall immediately replace all guards after maintenance and before use of a power tool.
2. Employees shall not compromise a machine guard on a portable power tool or fixed machinery in manner that prevents its' operation as intended by the manufacturer, nor shall an employee modify a machine guard on a portable or fixed power tool to limit its' protective capability.
3. Self-adjusting guards and return guards on portable power tools or fixed machinery shall function as intended by the manufacturer. A power tool or fixed machinery with a self –adjusting guard that does not function as intended by the manufacturer shall be removed from service until repaired or replaced. A portable power tool or fixed machine with a spring activated or gravity activated return guard that does not function as intended by the manufacturer shall be removed from service until repaired or replaced.

#### **H. Powder-actuated Tools**

1. Powder-actuated tools utilize an explosive charge identical in design to a firearm. Employee use of a Powder-actuated tool is prohibited, unless the employee has been trained and certified on the operation of the tool. Separate training and certification is required for each manufacturer or brand of Powder-actuated tools.
2. Employees shall follow the following instructions when operating a powder-actuated tool:
  - a. Powder-actuated tools shall not be utilized in an explosive or flammable atmosphere, area of work shall have passive cross ventilation or mechanical ventilation;
  - b. Before loading the explosive charge (cartridge), employees shall ensure the barrel is free from obstruction by opening the breech and looking down the breech to see the end of the muzzle;
  - c. Employees shall not remove or modify the barrel guard or safety interlock device (muzzle pressure switch);
  - d. Employees shall not point a Powder-actuated tool at anyone;
  - e. Employees shall not discharge a Powder-actuated tool into friable (wood, drywall, etc.) material;
  - f. Employees shall not load the tool unless it is to be used immediately and a loaded Powder-actuated tool shall not be left unattended;
  - g. Employees shall wear eye and face protection;
  - h. If a Powder-actuated tool misfires, the employee shall wait at least thirty (30) seconds before attempting to fire the tool again;
  - i. If the Powder-actuated tool misfires again, the employee shall wait at another thirty (30) seconds before removing the explosive charge (cartridge). Defective cartridges shall be disposed in a proper manner;

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- j. Employees shall ensure the explosive charge (cartridge) is appropriate for the job.

**I. Compressed Air**

1. Compressed air utilized for cleaning shall be:

- Regulated to less than 30 pounds per square inch (PSI); and
- Cleaning nozzles shall have a “blow back” feature (hole in the side of nozzle) in where any compressed air forced directly against the skin of an employee will be directed out the side or behind the tip of the nozzle.

2. Operators, repair or maintenance personnel shall wear eye protection when utilizing compressed air for cleaning purposes.

**7.0 ADVICE AND COUNSEL**

Central Safety Services shall provide advice and counsel on this procedure by referencing OSHA 29CFR 1910.243 – Guarding of Portable Hand Tools and 1926.302 – Power-operated Hand Tools and shall review the procedure and appendix on an annual basis.