



LOCKOUT/TAGOUT PROCEDURES (LOTO)

An estimated 3 million workers are exposed to risk of injury or death if lockout/tagout is not properly implemented. Proper implementation of lockout/tagout prevents an estimated 120 deaths and 50,000 injuries per year. Anyone who operates, cleans, services, adjusts, and repairs machinery or equipment should be aware of the hazards associated with the possible unexpected startup or release of stored energy from the machinery. Any powered machinery or electrical equipment that can move in a way that would put people in danger is a hazard that can be prevented by following locking or tagging procedures. Failure to lock out or tag power sources on equipment can result in electrocutions, amputations, and other serious, sometimes fatal, accidents.

The following are examples of lockout/tagout procedures to follow when servicing and maintaining machinery or equipment:

Electrical

- Electrical sources will have the main power switch locked out, and if possible, the fuses removed. Locks with dissimilar keys will be provided to each person working on the affected job. Only the person attaching the lock shall remove it. Multiple locking devices shall be provided. Tags will be attached to each lock indicating the name of the person attaching the lock, the location where he/she is working and the person's foreman or supervisor. Hot work will be avoided, if possible.

Moving Equipment

- The main power source, or sources, shall be locked out; drive gear disengaged and locked out; and appropriate tags applied.

Piping

- Piping shall be blanked or valves shall be closed, chained and locked. Where possible, at least two valves before and after the affected section should be chained, locked and tagged. Piping shall be de-pressurized, drained and purged, if necessary.

Other Energy Sources

- Other power sources shall be rendered inoperative as directed by a qualified supervisor or manager.

Locks and Tags

- Locks and tags will be attached and removed only by the individual employee directly involved in the operation. The last person removing his/her lock shall ensure that there are no persons exposed should the power be turned on.
- If equipment can be activated from more than one location, then additional locks and tags must be used as required.

Affected Employee

- An employee whose job requires him/her to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee

- A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section. Note: *It is not only important to train affected and authorized employees, but all employees so they don't attempt for any reason to start a piece of equipment that has been locked out or tagged out. Employees must be retrained when exposed to new job hazards, new equipment, or when new lockout/tagout procedures are developed.*

Capable of being locked out

- An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which a lock can be affixed, or it has a locking mechanism built into it.

Energized

- Connected to an energy source or containing residual or stored energy.

Energy Isolating Device

- A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. The energy isolating device should identify the employee applying the device and should be standardized by facility. A proper energy isolating device must be able to withstand accidental or inadvertent removal. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

DO

- Know the hazardous energy associated with your equipment prior to doing any work on it.
- Know all the energy that could affect the task (electric, gravity, water, pneumatic, hydraulic, steam, etc.)
- Control the accidental release of the energy prior to working on the equipment through lockout, tagout or alternative measures identified for your specific equipment.
- Test the energy after you believe it to be isolated. This is one of the most overlooked steps and probably the most important. Employees may think they have isolated the energy at the source, but it is not isolated for one reason or another.
- Lock out when possible. Tagout devices are warning devices and are easier to remove.
- Have written procedures for controlling hazardous energy sources.

DON'T

- Do not reach into moving equipment. In the blink of an eye you could have a life changing injury.
- Do not remove a lock or tag unless you were the authorized installer of that lock or tag.

REVIEW QUESTIONS

1. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment is?
 - a) An affected Employee
 - b) Capable of being locked out
 - c) An authorized employee**
2. Anyone who operates, cleans services, adjusts, and repairs machinery or equipment should be aware of the hazards associated with that machinery
 - a) True**
 - b False
3. What can you do to prevent accidental injury from moving machinery?
 - a) Test the energy after you believe it to be isolated
 - b) Ensure you know the hazardous energy associated with your equipment
 - c) Ensure you know all the energy that could affect the task

d) All of the Above



OSHA Standard
No. 1910.147
Lockout Tag-out (LOTO)

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