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One of the hazards too often overlooked is associated with stored or potential hazardous energy. OSHA has a specific standard to deal with this and it is often referred to simply as Lockout Tagout.

Unfortunately, many workers get confused about lockout tagout because they don't think it applies to them. This might be because they think that lockout tagout is just for electrical work – and that is a grave mistake.

All workers could be exposed to the dangers of hazardous energy. Workers need to be familiar with how lockout tagout could affect them, how to recognize when lockout tagout is needed or is in place, and what is required before doing any job that requires lockout tagout.

**OSHA Standard 1910.147(a)(1)(i) [Lockout/Tagout]** *This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy, could harm employees. This standard establishes minimum performance requirements for the control of such hazardous energy.*

- Lockout tagout is required to protect workers from unexpected startup or release of hazardous energy.
- Failure to properly lockout and tagout equipment can result in injuries to the workers who are servicing, repairing, or adjusting the equipment.
- Lockout tagout may be required with all types of work and tasks such as:

- Plumbing
- Servicing
- Maintenance
- Cleaning
- Lubrication
- Setting up
- Making repairs



(\*2) ANSI safety symbols

**OSHA Standard 1910.147(a)(2)(i)** This [lockout/tagout] standard applies to the control of energy during servicing and/or maintenance of machines and equipment.

**1910.147(b)** Servicing and/or maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

- Part of understanding lockout tagout is to recognize the types of hazardous energy that a worker may be exposed to on the job.
- Types of hazardous energy include:
  1. Chemical – such as chemicals stored in pipes, tanks, and/or held under pressure.
  2. Pneumatic – trash compactors, compressors, lifting equipment.
  3. Thermal – extreme heat from heating elements or furnaces or cold energy from refrigeration units or compressed gases.
  4. Electric – electrical equipment which is either wired or operated by cord and plug.
  5. Mechanical – stored energy in rotating or moving parts or conveyor belts.
  6. Other – such as x-ray, radiation, laser, microwave, radio frequency, or others.



Three examples of different lockouts – (\*3) valve handle chained, (\*4) cord operated machine and (\*5) control on a manufacturing tool.



# LOCKOUT TAGOUT || Lockout/Tagout Awareness

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(\*6) Worker checking lockout/tagout tags.

- Recognize when equipment is locked out, tagged out, or both – look for tags, signs or locks at startup points, switches, valves, or control panels.
- Tagout devices are designed to notify other personnel that the machine, tool, or equipment is being worked on and it is unsafe to tamper with it.
- Lockout devices are designed to keep the equipment from being turned on or energy source from being released.
- Never tamper with or remove a lockout or tagout device!

**DANGER**

**DO NOT  
OPERATE**

**EQUIPMENT  
LOCKED OUT**

This Lock/Tag may only be removed by:

Name: \_\_\_\_\_

Dept: \_\_\_\_\_

Expected Completion: \_\_\_\_\_

**DANGER**

This energy source has  
been **LOCKED OUT!**

Only the individual who  
signed the reverse side  
may remove this lock/tag.

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Remember the following tips to avoid potentially serious injuries:

- Failure to properly lockout and tagout equipment can result in injuries to the workers who are servicing, repairing, or adjusting the equipment.
- Recognize when equipment is locked out, tagged out, or both – look for tags, signs or locks at startup points, switches, valves, or control panels.
- Lockout devices are designed to keep the equipment from being turned on or energy source from being released.
- Never tamper with or remove a lockout or tagout device!
- Only personnel that have received specific training and follow the correct procedures are authorized to perform lockout tagout.
- Never attempt to bypass a lockout or tagout device!





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