

SECTION 7

Lockout/Tagout

SECTION 7: LOCKOUT/TAGOUT

This section contains information about Lockout/Tagout (LOTO) in compliance with Cal/OSHA Title 8 Section 3314. LOTO is a process used to shut down machinery and equipment for repairs, service, maintenance, and other operations.

What is Lockout/Tagout?

Lockout/Tagout (LOTO) establishes a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced. By physically locking out and tagging out each energy source associated with a machine, accidents can be prevented.

What is the UC LOTO Program?

The UC Lockout/Tagout (LOTO) Program provides an overview of LOTO for campus (and off-campus) operations, and details UC procedures for using LOTO as follows:

1. Establish a safe and positive means of shutting down machinery, equipment and systems.
2. Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
3. Provide a secondary control system (tagout) in addition to, and/or when it is impossible to, positively lockout the machinery or equipment by traditional means.
4. Establish responsibility for implementing and controlling lockout/tagout (LOTO) procedures.
5. Ensure that only approved locks, standardized tags and fastening devices will be utilized in the LOTO procedures.
6. Develop risk assessment procedures to implement alternative methods when traditional LOTO cannot be utilized.

Lockout is a physical process that stops the energy of a piece of equipment at its source, creating a “Zero Energy State”. A typical scenario is that a power switch, circuit breaker, or valve is turned off, and a locking device is attached to prevent the power from being turned back on.

Tagout is a written warning on a tag that describes the tag out procedure. The tag displays the name of the service person and the duration of time that the machine will be locked and tagged out.

Locks and tags must have a similar format and be readily recognizable by shop users. They must be easy to read and durable enough to withstand 50 pounds of pulling force.

Who Can Perform LOTO Procedures?

Only employees who have attended the LOTO training and have received authorization from EH&S can create and carry out LOTO procedures. Training covers how to identify and shut down all live parts of machines and ensure effectiveness of lockout devices and procedures. Trained workers are provided with locks and tags that must be used to clearly indicate who has locked and tagged the machine. Under normal operating procedures, the only person(s) allowed to undo a LOTO procedure is the person(s) that implemented it.

Which Types of Machines Require LOTO?

All machines that are powered by electrical, mechanical, chemical, or other type of energy or have the potential to store or re-accumulate energy may require LOTO.

When Should LOTO Procedures Be Used?

Any machine that is being serviced, repaired or maintained may be required to be locked and tagged out. This includes lubricating, cleaning, un-jamming, removing guards, and/or when the body comes close to machinery parts.

What Steps Must Be Taken When Implementing LOTO?

1. Notify all affected employees before beginning LOTO and verify that they are a safe distance from the machine. Identify any potential hazards and the primary and any secondary energy sources used in the machine.
2. Shut down and terminate the flow of energy into the machine at the local and main power source. There may be more than one local source.
3. Isolate the energy sources and prevent unexpected movement. Bleeding, blocking, venting, etc. may also be needed.
4. Connect the designated lock or tag to the energy control(s). Each user must have their own lock, tag, and key. Place the locks and/or tags so that they are clearly visible.
5. Test the machine to ensure that no energy is flowing. Turn “on” the local switch control(s) to make sure that zero energy is reached. Be sure to turn them “off” before moving to the next step.
6. Perform maintenance, service, or repair.
7. When service or maintenance is complete, remove all tools and keep the energy switches in the “off” position.
8. Remove the lock and/or tag. The individual(s) who placed the lock or tag is the only person(s) authorized to remove it.
9. Make sure affected employees are a safe distance from the machine. Turn on the energy in the reverse order that the energy sources were taken off-line and test the machine for proper operation. Notify other workers that the machine is operational again.

Employees and contractors must follow LOTO procedures ([Appendix J](#)) and must not take short cuts. EH&S requires an initial LOTO training for all shop supervisors who perform servicing or maintenance. A LOTO audit will typically be part of the annual Shop Safety Inspection in order to maintain or correct the LOTO procedures and help keep workers safe.

Refer to your campus-specific Lockout/Tagout Program for specific policies. Contact EH&S for help in developing or completing LOTO procedures and training employees.