

# MANUFACTURING

Safety education for provided by the insurance specialists at: Brier Grieves Agency

## TARGET ON SAFETY

### Lockout/Tagout Overview

#### Purpose of Lockout/Tagout

Lockout/tagout (LOTO) is used to prevent the unexpected startup or activation of a machine or equipment during service and/or maintenance operations that might cause injury. In short: lockout/tagout makes certain that no one performing service or maintenance work gets injured or killed.

#### Energy Sources

When LOTO is performed, it is important to identify all energy sources inside a machine or piece of equipment. This is not limited to electrical energy, the most common source; it also must include mechanical energy, pneumatic energy, hydraulic energy, stored energy (particularly when dealing with pneumatic or hydraulic energy) and thermal energy. Consider the impact

gravity will have on equipment released from its energy source and take the steps to prevent equipment or parts from falling.

#### When to Use Lockout

Lockout is used during all service or maintenance when an employee must remove or bypass machine safeguards and have body parts exposed to the point of operation or another danger zone.

LOTO guards against the unexpected energizing or startup of the equipment during all service activities. This includes installing, adjusting, setting up, inspecting, modifying, or servicing machines or equipment in addition to lubricating, cleaning, un-jamming and making adjustments or tool changes.

#### When Lockout Should Not Be Used

Lockout is not necessary during normal production operations provided no guards are removed and employees are not placing any part of their body in a danger zone. Normal production operations are defined as the machine performing its intended function.

#### Work Zones

When service or maintenance work is being performed on live electrical systems, the electrician will establish a work zone around the work. This work zone will be identifiable with safety cones and is off limits to other employees.

#### Training Requirements

All employees must receive LOTO training but there are three different levels that apply to the three types of employees OSHA recognizes. Authorized employees are those who perform maintenance work and who will

initiate lockout procedures. These can be maintenance or production employees performing service/maintenance work.

Authorized employees receive the highest level of training and need to know how to do all the specific steps outlined on the next page. Affected employees are those who work in areas where LOTO is performed, and other employees are those who may pass through LOTO areas and simply need to know not to touch padlocks or attempt to re-energize equipment that has been locked out.

## Steps to Initiate LOTO

When authorized employees need to lockout equipment, they will follow these exact steps to systematically de-energize a machine or piece of equipment before doing work:

1. Notify employees in the immediate area that service/maintenance work will be performed on a particular machine or equipment.
2. Identify all energy control points and necessary equipment for lockout. Refer to the machine's specific procedures.
3. Conduct an orderly shutdown of equipment.
4. Deactivate energy control device(s) from energy source(s).
5. Lockout all the energy control devices with a padlock.

## Written Procedure

The company has a written LOTO program that outlines how the program will be administered. In addition, there are written "machine specific procedures" that define how each machine or piece of equipment will be de-energized. Those who perform service or maintenance work should follow these step-by-step procedures to make sure all energy sources are eliminated before work is performed inside the machine.

6. Dissipate or restrain stored energy through blocking, bleeding, grounding, etc.
7. Verify isolation from energy by attempting to start/operate the machine. This is a very important step and should never be overlooked.
8. Return all energy controls and/or buttons to neutral/off position.

## Steps to Initiate LOTO

There may be times when a padlock cannot be used on an energy control device because there is no place to put the lock. In that case, a tag like this will be used.



Whenever you see this tag, **DO NOT** attempt to use the switch or try to operate the equipment. If you do, you could hurt or kill the person working on the equipment.

Whenever machine safeguards are removed or bypassed and an authorized employee must place his or her hands, or any other body part, in a danger zone to perform service work, the piece of equipment being serviced must be locked out.

When a padlock or a tag is on an energy control device, leave the control device alone and do not attempt to re-energize the machine. An authorized person is working on the machine and if it starts up unexpectedly, that individual may get injured or killed.

Finally, when electricians are working on live electrical equipment, they will set up a work zone with safety barriers. When that work zone is established, only authorized personnel may enter – everyone else needs to stay clear of that area for their own protection.

## Summary