



Approximately 3 million workers service equipment and face the greatest risk of injury if lockout/tagout is not properly implemented. Compliance with the lockout/tagout standard prevents an estimated 120 fatalities and 50,000 injuries each year. Workers injured on the job from exposure to hazardous energy lose an average of 24 workdays for recuperation.

Lockout/tagout is a way to make sure energy is not turned on (or released) while working on machinery. Turning off a power switch is not enough. You must de-energize (prevent equipment from starting or moving), lock it out, release stored energy (for instance, bleed air from a pneumatic hose) and test to make sure the energy is off.

Before performing LOTO:

- Ensure all machinery or equipment capable of movement is deenergized or disengaged and blocked or locked out during cleaning, servicing, adjusting, or setting up operations.
- If the power disconnect for equipment does not also disconnect the electrical control circuit, the appropriate electrical enclosures must be identified and a means provided to ensure that the control circuit is also disconnected and locked out.
- All equipment control valve handles are required to be locked out.
- Stored energy (mechanical, hydraulic, air, etc.) must be released or blocked before equipment is locked out for repairs.
- Authorized employees will have individually keyed personal safety locks.
- Employees must keep personal control of their key(s) while they have safety locks in use.
- Employees must check the safety of the lockout by attempting a startup after making sure no one is exposed.
- Employees must push the control circuit stop button prior to re-energizing the main power switch.
- Are all authorized employees who are working on locked-out equipment identified by their locks or accompanying tags?
- Accident prevention signs or tags and safety padlocks are provided for repair emergencies.
- When machine operations, configuration, or size require an operator to leave the control station and part of the machine could move if accidentally activated, the part must be separately locked out or blocked.
- If equipment or lines cannot be shut down, locked out and tagged, a safe job procedure must be established and rigidly followed.



Procedures for the application of lockout/tagout shall cover the following elements and actions and shall be done in the following sequence:

1. Preparation for shutdown. Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

2. Machine or equipment shutdown. The machine or equipment shall be turned off or shut down using the procedures required by this standard. An orderly shutdown must be utilized to avoid any additional or increased hazards to employees as a result of equipment de-energization.
3. Machine or equipment isolation. All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).
4. Lockout or tagout device applied.
5. Stored energy. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.
6. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.
7. Verification of Isolation. Prior to starting work on machines or equipment that have been locked out or tagged out; the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.
8. Release from lockout or tagout. Prior to release, all employees located in proximity to the de-energized equipment shall be notified that the equipment is being restarted. Authorized employees will ensure the safety all employees in the area. Step-by-step procedures shall be followed to reenergize the equipment. Ensure all tools; supplies, etc. have been removed from the area.

IMPORTANT NOTICE - The information and suggestions presented by Michigan Millers Mutual Insurance Company in this Safety Talks Toolkit Bulletin are for your consideration in your loss prevention efforts. They are not intended to be complete or definitive in identifying all hazards associated with your business, preventing workplace accidents, or complying with any safety related, or other, laws or regulations. You are encouraged to alter them to fit the specific hazards of your business and to have your legal counsel review all of your plans and company policies.