

Safely Perform a Lockout/Tagout on a Jobsite

By Rick Pedley | Tuesday, April 19, 2022

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All construction equipment must be regularly maintained, however, construction crews need to take several precautions before they begin the work. Prior to performing maintenance and repairs, certain equipment must be disconnected from its power source and any built-up or stored energy should be discharged before work can begin. The power source and equipment is locked out to prevent anyone from turning it on by accident while the repairs are being made.

This is what's known as the lockout/tagout (LO/TO) system. Construction professionals use this process to prevent onsite accidents with the equipment being used.

WHY IS LOCKOUT/TAGOUT NEEDED FOR CONSTRUCTION SITES?

The LO/TO system is meant to prevent a machine from being turned on or discharging power while someone is working on it. If the machine were to move or shift in any way, it could easily injure the repairperson, which could lead to permanent disability or death.

All construction crews should have the LO/TO process regularly performed when working with equipment. Simply turning the equipment off or disconnecting the machine from the power source may not be enough to prevent injuring the worker. When performed properly, the LO/TO process essentially eliminates the possibility of the machine functioning or moving in any way.

Tags serve as visual prompts notifying workers of the temporary shutdown. They also provide the contact information of the person who applied the lock and may also include a brief summary of the work that's taking place.

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The LO/TO process focuses on stopping the flow of energy to a machine that's being worked on. Construction sites often use kinetic energy sources that include electrical, thermal, radiant, and sound, as well as potential energy like chemical, suspended, pressurized, magnetic and mechanical. Generators are a common primary energy source, as well as temporary or residual power for construction tools, lighting and other miscellaneous items.

Regardless of the energy source, the risks are the same and the authorized person must disconnect the machine from the live circuit. This often includes tagging out the generator using a physical barrier like a hasp or lock, so that it cannot be turned on while the repairs are being made. The risk of

injury increases when both types of power sources (primary and temporary) are live with separate breakers. The authorized person should make sure both power sources are locked out, and test the circuits before they begin making repairs.

They may also use an energy-isolating device, which prevents any stored energy from reaching the equipment. It should also be locked out, tagged and controlled by the authorized person.

The authorized person should also be aware of any other electrical hazards onsite, including old power lines that may still be energized. These lines could endanger workers during an evacuation.

DISCHARGING BLOCKED OR STORED ENERGY

Not all machines run on electricity, and those that do may still have stored energy, which could still put the repairperson at risk. That's why the authorized person must take the necessary steps to discharge or bleed off any blocked or stored energy before work begins.

Isolated or blocked energy can be stored in a variety of ways. Electrical equipment may have batteries or capacitors with additional energy. Machines that use hydraulic or pneumatic energy can retain pressure between closed energy isolation devices and moving parts. Machines and vehicles may still have fuel in the fuel lines. The authorized person may need to operate the machine to get rid of the excess or blocked energy. Springs and belts can also contain built-up energy that can be released without warning. Pistons can also store gravitational energy. If the part is released unexpectedly, gravity can cause it to swing down or fall. All isolated energy must be de-energized before work can begin.

HOW TO PERFORM A LOCKOUT/TAGOUT AT CONSTRUCTION SITES

To perform the process, the construction crew or manager must first decide who will be responsible for making the repairs, such as a contractor, maintenance person or the machine operator. This individual is known as the authorized person. In addition to performing the required repairs, the authorized person puts on the locks and tags, controls keys to locks and is the only person allowed to remove locks or tags.

All affected employees should be made aware of the repairs. They should also be familiar with the LO/TO process. An affected employee is anyone whose work is interrupted or affected by the repairs.

To complete the process, the authorized person must complete the following steps.

1. Identify all possible energy sources connected to the equipment being repaired.
2. Inform all affected employees that the LO/TO process has started.
3. Ask all affected employees to leave the area.
4. Shut down the equipment according to normal operating procedures.
5. Isolate the main energy sources using appropriate devices for that equipment.
6. Get rid of all excess or isolated energy stored in the machine.
7. Block all moving parts and keep them in a neutral position.
8. Turn on the equipment to confirm that all stored energy has been released.
9. If there is any leftover energy still stored in the machine, let it run for a few seconds until it has been expended.
10. The repair process can begin.


Once the necessary repairs have been made, the authorized person must remove all tools or debris. They should also check to make sure that all parts have been properly installed and that the machine, vehicle or equipment is safe to use.


They can now remove the lock tags and inform the affected workers that the LO/TO process is complete, so they can return to work.

If a shift change occurs during the LO/TO process, a designated worker or manager will need to oversee the safety process. They are responsible for informing the incoming workers of the potential safety hazards and that certain equipment is out of commission. Lockout tags should be stored in a secure

location. Managers and authorized personnel should be the only persons with access to these controls.

The LO/TO process is designed to save lives. The construction industry is full of potentially hazardous equipment that can break down over time. Construction professionals should use this system every time a machine needs to be repaired.

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Rick Pedley joined the family business in 1979. PK Safety, a supplier of occupational safety and personal protective equipment and manufacturer of its own new FR line GRIT, has been operating since 1947 and takes OSHA, ANSI, PPE and CSA work safety equipment seriously.



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