

LOCKOUT/TAGOUT CHECKLIST

Before servicing, inspecting, adjusting or cleaning a machine or piece of equipment with movable parts, always do the following:

DE-ENERGIZE all sources of hazardous energy.
Examples: disconnect or shut down engines and motors, de-energize electrical circuits, block fluid flow in hydraulic or pneumatic systems.

BLOCK or dissipate stored energy. **Examples:** discharge capacitors, release or block springs that are under tension or compression, vent fluids from pressure vessels, tanks or accumulators — be careful not to vent toxic, flammable or explosive substances into the air.

LOCKOUT and TAGOUT all hazardous energy.
Examples: electrical breaker panels, control valves.

DOUBLE-CHECK that all energy sources are de-energized by testing or observing them yourself.

INSPECT repair and maintenance work before removing your lock and reactivating the equipment.

ALERT co-workers and make sure everyone is clear of danger before re-energizing the system.

PARTICIPATE in all lockout/tagout training and refresher programs offered by your employer. Learn safety procedures for any new piece of equipment.



Emergency! Electric Shock Don't Touch Too Soon

A person who has suffered an electric shock needs help fast. But be careful. Protect yourself first or you could be shocked, too. Do not touch the victim unless you are sure the person is no longer touching the energy source. Unplug or turn off power at the control panel. If you can't turn off the power, use a piece of wood, such as a broom handle, dry rope or dry clothing, to separate the victim from the power source. If the victim is touching a high-voltage wire, WAIT for emergency personnel to arrive.

First Aid for Electric Shock

Keep the person lying down. Place an unconscious person on his or her side. Do not move the person if you suspect neck or spine injuries (such as from a fall). If the victim is not breathing, begin mouth-to-mouth resuscitation. Keep the person warm by covering him or her with a blanket or other material to maintain body heat.

Electrical Burns

What You Should Know

Electrical burn wounds may look minor on the outside, but severe internal damage may have occurred. Electrical burns often run deep, entering the body and leaving another wound upon exit. Burns vary in severity depending on how long the body was in contact with the charge; the strength of the current, the type of current and the direction the current takes through the body.

First Aid for Electrical Burns

Check for shock and follow the same steps as with electric shock (above). If the person is conscious and there are no signs of shock (such as being cold, clammy, pale and having a rapid pulse), begin treating the burned area. Do not apply grease or oil to the burn. Cover it with a dry, sterile dressing, but do not cool the burn. Keep the victim warm; seek medical attention.

(Source: Centers for Disease Control and Prevention)

Lockout Tagout



Lockout/Tagout: What's It All About?

When a machine — electrical, hydraulic or mechanical — can unexpectedly engage during service and maintenance, the action of the device must be blocked; electrical sources must be de-energized and locked in the off position, preventing injuries from “hazardous energy.” Without such a blockout or lockout, workers can be killed; they can be electrocuted or crushed; they can lose fingers, hands and arms.

Simply turning off a machine isn't enough if there's the potential for someone to turn it on, if there's potential for a short in the switch to restart power, or potential for a sudden energy burst.

Locks (for lockout) are the first line of defense for those who are involved in maintenance, repairing, cleaning, servicing and adjusting machinery. Warning tags (for tagout) supplement the use of locks.

Compliance with OSHA's lockout/tagout standard prevents an estimated 120 deaths and 50,000 injuries per year. Anyone who inspects, services, maintains or adjusts a machine or piece of equipment with moving parts is at risk for injury from hazardous energy.

Did You Know?

Workers injured by exposure to hazardous energy need an average of 24 work days for recuperation.

What Is Hazardous Energy?

There are four types of hazardous energy that you could encounter while equipment is installed, serviced, repaired, maintained or cleaned.

1. **Kinetic energy** in the moving parts of mechanical systems
2. **Potential energy** stored in pressure vessels, gas tanks, hydraulic or pneumatic systems and springs
3. **Electrical energy** from batteries, capacitors, static sources and generated electrical power
4. **Thermal energy** from mechanical work, radiation, chemical reaction or electrical resistance

Recognizing Hazardous Energy Sources

Do you think you are safe from injury due to hazardous energy because you are not exposed to it? You might be surprised to learn that energy dangers come from many sources.

Source of energy:

Engines and motors
Electrical circuits
Movable machine parts
Springs
Compressed air or fluid
Electrical storage devices

What to do:

Disconnect
De-energize
Insert block to prevent movement
Release tension or compression
Vent or release
Discharge



LABELING SAVES LIVES

LABEL or TAG all sources of hazardous energy before beginning any installation, maintenance or repair task. Energy-isolating devices such as breaker panels and control valves should also be marked with brightly colored, durable labels.

Do You Hold the Key?

Make sure only one key exists for your assigned locks and that you hold it — don't allow anyone else to use it. Use your individual locks to secure energy control devices such as breaker panels, control valves and manual override switches.

Every time you lock out an energy source, place a warning tag that alerts others to the fact that hazardous energy is being blocked. However, tags are not a substitute for locks. Remember, most workplaces require both lockout and tagout procedures.

The bottom line: Deaths and injuries from hazardous energy are preventable. Follow the correct safety procedures, and wear the right personal protective equipment every time you work on machinery or equipment. You will save lives.

Sources: Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH)

Good Lockout/Tagout Procedures

- ✓ Secure energy control devices with your own individually assigned locks and keys. Don't allow anyone else to use your key.
- ✓ Clearly label or tag each lock used to secure an energy control device that identifies you as the worker assigned to the lock.
- ✓ At shift change, have your replacement apply his or her locks before removing yours.