

KELLER'S CONSTRUCTION TOOLBOX TALKS



Lockout/Tagout — An Overview

Overview Of Topic

The unexpected start up of machines or equipment, or the release of stored energy, can cause injury to employees. Lockout/tagout procedures can prevent accidental exposures from sources such as electrical, mechanical, pneumatic, hydraulic, chemical, and thermal energy. Some of the problems an accidental release of stored energy could cause are: (1) unintentional start-ups, and (2) electric shock.

What is lockout/tagout?

Lockout is the process of turning off and locking out the flow of energy from a power source to a piece of equipment or a circuit, and keeping it locked out. Lockout is accomplished by installing a lockout device at the power source.

Tagout is placing a tag on the power source. The tag acts as a warning not to restore energy—it is **not a physical restraint**. Tags must clearly state: **Do Not Start**.

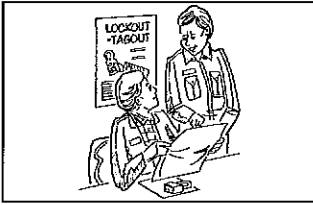
What must be locked or tagged out

The construction rules actually mention lockout/tagout in only a few places. A lockout/tagout program, such as is in general industry, does not exist. Although the specific rules are limited, OSHA expects you to always protect your employees from situations that can cause injury or illness. In situations where there is not a specific construction regulation, the general duty clause would apply. The limited construction rules require you to do the following.

Electrical controls, equipment and circuits

- Tag all controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits.
- Render equipment or circuits that are deenergized inoperative and attach tags at all points where such equipment or circuits can be energized.
- Place tags to plainly identify the equipment or circuits being worked on.

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Mechanical equipment

- No employee shall be permitted to perform maintenance or repair activity on equipment (such as compressors mixers, screens or pumps used for concrete and masonry construction activities) where the inadvertent operation of the equipment could occur and cause injury, unless all potential hazardous energy sources have been locked out and tagged.
- Tags shall read **Do Not Start** or similar language to indicate that the equipment is not to be operated.

Although lockout/tagout is mentioned in the construction rules at these few places, those rules can be applied to all electrical and mechanical lockout/tagout situations at your worksite. It would be foolish to just apply them to electrical and concrete work.

The best approach to take is to follow the general industry lockout/tagout rule at 29 CFR 1910.147 and put together a written program to cover all lockout/tagout situations at your worksites.

Employee Training

There are no direct references to lockout/tagout training. However, the “general” training requirements (#1926.21(b)(2)) require you to train your employees in the recognition and avoidance of unsafe conditions and the regulations applicable to their work environment to control or eliminate any hazards or other exposure to illness or injury.

A good solid lockout/tagout program will control and/or eliminate the unexpected energization or start up of machines or equipment, or release of stored energy that can cause injury.

Training Tips

Make sure your employees understand your lockout/tagout program.

Where To Go For More Information

Specific lockout/tagout procedures for construction can be found at 29 CFR 1926.417—Lockout and tagging of circuits, and 29 CFR 1926.702—Requirements for Equipment and Tools for mechanical lockout/tagout procedures.

For an excellent lockout/tagout program refer to 1910.147—The control of hazardous energy (lockout/tagout). This is a general industry standard.

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Lockout/Tagout — An Overview

The unexpected start up of machines or equipment, or release of stored energy can cause injury to you and your co-workers. Your company's lockout/tagout program can prevent exposure to accidental, injurious and even life-threatening situations from energized equipment.

Controlling Energy Sources

Many energy sources require lockout/tagout procedures to protect employees from the release of hazardous energy. Some of these include: electrical, mechanical, pneumatic, hydraulic, chemical, and thermal sources. Some of the problems an accidental release of hazardous energy could cause are: (1) accidental start-ups, (2) electric shock, and (3) release of stored, residual, or potential energy.



These accidents often occur when someone takes a short cut during machinery servicing, or when workers don't understand the equipment or the lockout/tagout procedures for the job.

What is Lockout/Tagout?

Lockout is the process of turning off and locking out the flow of energy from a power source to a piece of equipment or a circuit, and keeping it locked out. Lockout is accomplished by installing a lockout device at the power source. Lockout is accomplished by installing a lockout device at the power source so that equipment powered by that source cannot be operated.

Tagout is placing a tag on the power source. The tag acts as a warning not to restore energy—it is not a physical restraint. Tags must clearly state: **Do Not Start**. Both locks and tags must be strong enough to prevent unauthorized removal and to withstand various environmental conditions.

Electrical controls, equipment and circuits

- Tag all controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits.
- Render equipment or circuits that are deenergized inoperative and attach tags at all points where such equipment or circuits can be energized.
- Place tags to plainly identify the equipment or circuits being worked on.

Mechanical equipment

- No employee is permitted to perform maintenance or repair activity on equipment (such as compressors mixers, screens or pumps used for concrete and masonry construction activities) where the inadvertent operation of the equipment could occur and cause injury, unless all potential hazardous energy sources have been locked out and tagged.
- Tags shall read **Do Not Start** or similar language so the equipment is not operated.

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Lockout/Tagout — An Overview Sign-Off Sheet

This sign-off sheet documents the employees who have taken part in a training session on Lockout/Tagout — An Overview at _____.

(company name)

The session covered the following:

- The definition of lockout and tagout.
- The equipment and machinery that must be locked out.
- How the general industry lockout/tagout program applies to construction work.
- Training requirements.

The space below is for each individual who has been trained on this topic to sign his/her names.

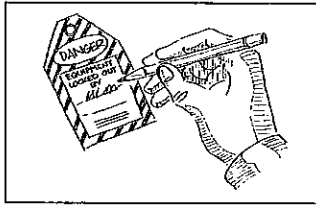
Date of Training:

Job Location:

Employee Signature

Print Name Here

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Lockout/Tagout—Electrical Equipment

Overview Of Topic

When it is necessary to perform maintenance or servicing on machines or equipment, unexpected activation, reenergization, or release of stored energy is a real possibility.

Failure to adequately control energy accounts for many serious accidents in construction. Lockout/tagout procedures help safeguard employees from the unexpected start-up of machinery or equipment or release of hazardous energy while performing servicing or maintenance tasks.

What is lockout/tagout?

Lockout is the process of turning off and locking out the flow of energy from a power source to a piece of equipment or a circuit, and keeping it locked out. Lockout is accomplished by installing a lockout device at the power source.

Tagout is placing a tag on the power source. The tag acts as a warning not to restore energy-it is not a physical restraint. Tags must clearly state: Do Not Start.

A real life example (OSHA Fatal Fact No. 60)

An employee was attempting to correct an electrical problem involving two non-operational lamps. He proceeded to the area where he thought the problem was. He had not shut off the power at the circuit breaker panel nor had he tested the wires to see if they were live. He was electrocuted when he grabbed the two live wires with his left hand and then fell from the ladder.

What must be locked or tagged out

The employer should not allow work to be done on:

- Electrical circuits unless an effective lockout/tagout program is implemented.
- Energized electrical circuits which are not positively deenergized or tagged out.

The construction rules actually mention electrical lockout/tagout briefly and in only one place. (29 CFR 1926.147)

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However, this one place gives you some good rules to apply to lockout/tagout procedures for electrical equipment. They are:

- Tag all controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits.
- Render equipment or circuits that are deenergized inoperative and attach tags at all points where such equipment or circuits can be energized.
- Place tags to plainly identify the equipment or circuits being worked on.

Although the above rules use tagout procedures, OSHA says that lockout is more effective for deenergizing equipment. It should always be the preferred method.

In order to properly lockout and tag equipment you must have an effective program/procedure. A written program is a positive step to protect your employees against accidental or inadvertent equipment operation. Although not required, the best approach is to follow the general industry lockout/tagout rule at 29 CFR 1910.147 and put together a written program to cover all lockout/tagout situations at your worksites.

Employee Training

There are no direct references to lockout/tagout training in the construction rules. However, you must follow the "general" training requirements at 1926.21(b)(2).

Training Tips

Instruct employees in the safety significance of your company lockout/tagout procedure.

Where To Go For More Information

Specific electrical lockout/tagout procedures for construction can be found at 29 CFR 1926.417—Lockout and tagging of circuits.

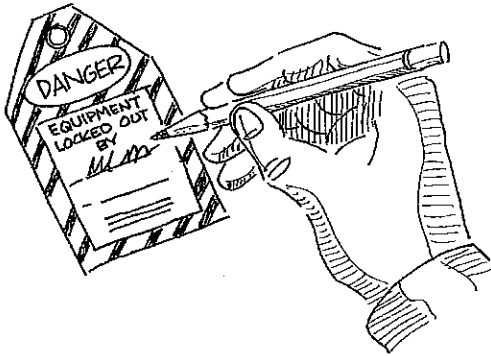
For an excellent lockout/tagout program refer to 1910.147 and 1910.333.

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Lockout/Tagout—Electrical Equipment

You may, from time to time, be called on to perform maintenance or service machines or electrical equipment. You could also, through no fault of your own, cause an unexpected activation, reenergization, or release of stored energy.

Failure to adequately control energy accounts for many serious accidents at construction sites. Lockout/tagout procedures help safeguard you and fellow employees from the unexpected start-up of machinery or equipment or release of hazardous energy while performing servicing or maintenance tasks.



What is lockout/tagout?

Lockout is the process of turning off and locking out the flow of energy from a power source to a piece of equipment or a circuit, and keeping it locked out. Lockout is accomplished by installing a lockout device at the power source.

Tagout is placing a tag on the power source. The tag acts as a warning not to restore energy—it is not a physical restraint. Tags must clearly state: Do Not Start.

What must be locked or tagged out

You should never work on:

- Electrical circuits unless an effective lockout/tagout program is implemented.
- Energized electrical circuits which are not positively deenergized or tagged out.

The construction rules actually mention electrical lockout/tagout briefly and in only one place. However, this one place gives you some good rules to apply to lockout/tagout procedures for electrical equipment. They are:

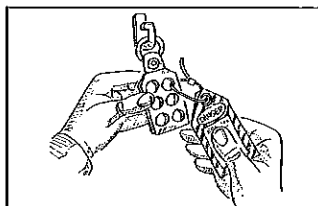
1. Tag all controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits.
2. Render equipment or circuits that are deenergized inoperative and attach tags at all points where such equipment or circuits can be energized.
3. Place tags to plainly identify the equipment or circuits being worked on.

Although the above rules use tagout procedures, OSHA says that lockout is more effective for deenergizing equipment. It should always be the preferred method.

In order to properly lockout and tag equipment your company must have an effective program/procedure. A written program is a positive step to protect you against accidental or inadvertent equipment operation. Be aware of any company policies and procedures regarding lockout or tagout of electrical equipment.

LOCKOUT/TAGOUT—ELECTRICAL EQUIPMENT HANDOUT

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Lockout/Tagout — Mechanical Equipment

Overview Of Topic

Servicing and/or maintenance of equipment is an important aspect of keeping your assets protected. It can also be a source of tragedy if not approached properly. This means your company needs proper lockout/tagout procedures.

Sometimes employees are required to place parts of their bodies into areas on machines or pieces of equipment where work is actually performed. Lockout/tagout procedures can prevent accidental exposures from electrical, mechanical, pneumatic, hydraulic, chemical, and thermal energy sources.

What is lockout/tagout?

Lockout is the process of turning off and locking out the flow of energy from a power source to a piece of equipment or a circuit, and keeping it locked out. Lockout is accomplished by installing a lockout device at the power source.

Tagout is placing a tag on the power source. The tag acts as a warning not to restore energy—it is not a physical restraint. Tags must clearly state: **Do Not Start**.

A real life example (OSHA Fatal Facts No. 5)

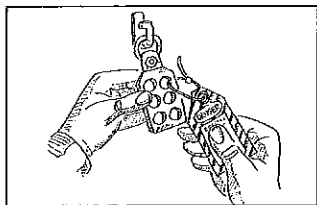
A construction worker was required to steam clean a piece of heavy equipment called a scraper. The bowl apron had been left in the raised position and was not blocked to prevent it from falling. The apron did fall unexpectedly and the employee was caught between the apron and the cutting edge of the scraper bowl. The apron weighed approximately 2500 pounds. You can imagine what happened to the worker.

OSHA's regulations say that's bulldozer and scraper blades and similar equipment shall either be fully lowered [and as an extra precaution the controls should be locked out and tagged], or blocked when being repaired or not in use (1926.600(a)(3)(i)).

What must be locked or tagged out

The construction rules actually mention mechanical lockout/tagout in only one place, and that is for mechanical concrete and masonry equipment. However, this one place gives you some good

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Lockout/Tagout — Mechanical Equipment

rules to apply to lockout/tagout procedures for all of your mechanical equipment. They are:

- No employee shall be permitted to perform maintenance or repair activity on equipment (such as compressors mixers, screens or pumps used for concrete and masonry construction activities) where the inadvertent operation of the equipment could occur and cause injury, unless all potential hazardous energy sources have been locked out and tagged.
- Tags shall read **Do Not Start** or similar language to indicate that the equipment is not to be operated.

In order to lock out and tag equipment and ensure the safety of the employee performing the maintenance/repair tasks you need to have an effective program or procedure.

It is critical that everyone knows the exact same procedures, and are performing them the same, otherwise the program is ineffective and an accident waiting to happen.

Although not required, the best approach is to follow the general industry lockout/tagout rule at 29 CFR 1910.147 and put together a written program to cover all lockout/tagout situations at your worksites.

Employee Training

There are no direct references to lockout/tagout training in the construction rules. However, you must follow the "general" training requirements at 1926.21(b)(2).

Training Tips

Get a copy of the OSHA Fatal Fact No. 5 and share it along with your company procedures and equipment for mechanical lockout/tagout.

Where To Go For More Information

Specific mechanical lockout/tagout procedures for construction can be found at 29 CFR 1926.702.

For an excellent lockout/tagout program refer to 1910.147.

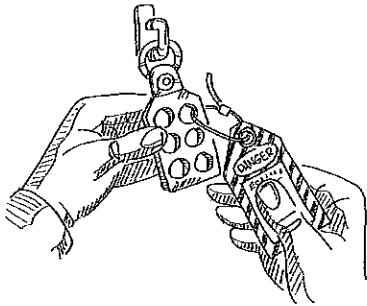
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Lockout/Tagout — Mechanical Equipment

Sometimes you are required to work around equipment on which servicing or maintenance is being performed, or if you are doing the maintenance, to place parts of your body into areas on machines where an accidental start-up could cause an accident.

Servicing and/or maintenance is an important part of keeping your equipment in tip top shape. It can also be a source of tragedy if not approached properly. This means proper lockout/tagout procedures.

Lockout/tagout procedures can prevent accidental exposures to electrical, mechanical, pneumatic, hydraulic, chemical, and thermal energy sources.



What is lockout/tagout?

Lockout is the process of turning off and locking out the flow of energy from a power source to a piece of equipment or a circuit, and keeping it locked out. Lockout is accomplished by installing a lockout device at the power source.

Tagout is placing a tag on the power source. The tag acts as a warning not to restore energy—it is **not a physical restraint**. Tags must clearly state: **Do Not Start**.

What must be locked or tagged out?

The OSHA construction rules only talk about mechanical lockout/tagout in one place and that is for concrete and masonry equipment. However, this one place gives your company some good rules to apply to lockout/tagout procedures for all mechanical equipment. They are:

- No employee shall be permitted to perform maintenance or repair activity on equipment (such as compressors mixers, screens or pumps used for concrete and masonry construction activities) where the inadvertent operation of the equipment could occur and cause injury, unless all potential hazardous energy sources have been locked out and tagged.
- Tags shall read **Do Not Start** or similar language to indicate that the equipment is not to be operated.

In order to lock out and tag equipment and ensure your safety in performing the maintenance/repair tasks your company needs to have an effective program or procedure. And you need to ensure you and your fellow workers follow it religiously.

It is critical that everyone knows and follows the exact same procedures, and are performing them the same, otherwise the program is ineffective. Know your company's lockout/tagout procedures for mechanical equipment.

