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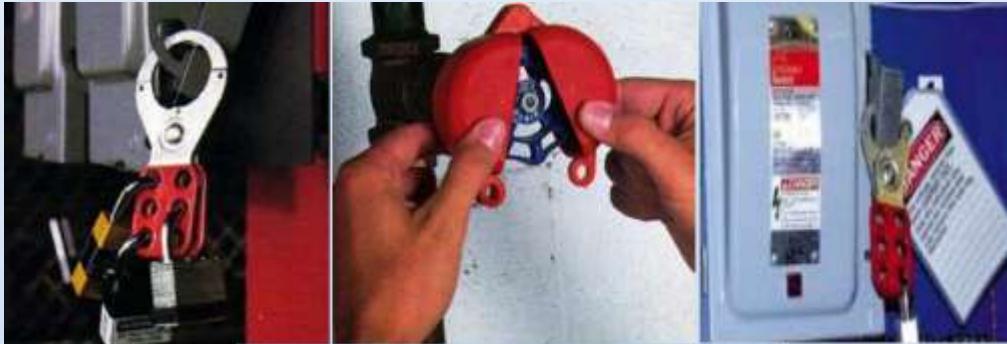
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LOCKOUT TAGOUT

Methods and Sample Procedures



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This document is neither a substitute for nor a legal interpretation of the occupational safety and health regulations. Readers shall refer directly to Title 8 of the California Code of Regulations and the Labor Code for detailed information regarding the regulation's scope, specifications, exceptions and for other requirements that may be applicable to their operations.

LOCKOUT BLOCKOUT

Methods & Sample Procedures

Introduction

Why is lockout/blockout so important?

Failure to develop and follow lockout and blockout procedures before working on machinery is one of the major causes of serious injury and death in California.

Workers can become electrocuted - or suffer permanent disfigurement - due to inadvertent activation of a machine while it is being maintained, repaired or adjusted.

Many occupational injuries and deaths occur during the cleaning, adjusting, unjamming, and servicing of machinery. Here is a situation that could happen at your facility:

Your facility may have a machine that needs to be serviced. To the untrained worker, the machine is turned off from the power source and service work may begin. In the meantime, another employee arrives and reactivates the machine while unaware that the worker is still working inside the machine. The maintenance worker is then injured or killed by moving parts in the reactivated machine.

Failure to lockout, blockout and tagout machinery, as required by Cal/OSHA regulations, can cause devastating injuries and/or death to workers.

These injuries can be prevented by having effective hazardous energy control procedures.

Real cases of fatality and injuries

- A worker from a tire recycling facility climbed on top of a tire shredder to clear a jam. His foot was caught by the in-feed shredding wheels. The lower part of his body was shredded by the cutters.



Cause: failure to block out potential energy sources (tire shredding wheel).

- A cotton gin operator climbed into a jammed cotton cleaner/sePARATOR to clear a jam. The toggle switch controlling the operation of the gin was turned off but not locked out. For reasons unknown, a fellow worker turned the machine back on, not realizing the operator was inside the gin. The operator's left leg was pulled through the feed rollers.

Cause: failure to disconnect the power source and lockout the machine.

- Three men were performing maintenance inside an asphalt pug mill mixer. One employee was still inside the mixer when the power was turned back on, thereby starting the mixer. He was killed instantly.

Cause: failure to disconnect power source and lock out the pug mill mixer.

- A warehouse worker was repairing an air-operated valve which he had turned off but was not disconnected and locked out.

During the repair operation he slipped and inadvertently turned on the switch which let air into the valve. His hand was caught and crushed in the valve.

Cause: failure to disconnect power source and lockout the valve.

- A maintenance employee was changing V- belts on an exhaust fan. He de-energized the fan before the start of the regular work shift but did not secure the blades of the fan from moving. The suction in the duct work turned the fan blades and belt drive, and his hand was caught in the V- belt drive.

Cause: failure to secure the fan blades from moving.

More real cases:

- Worker loses finger in clearing jam in a bag manufacturing facility.
- Worker's arm pulled off while cleaning a processing machine in a string cheese manufacturing facility.

Key terms

Lockout is the placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Tagout is the placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Affected Employee is an employee whose job requires them to operate or use a machine or equipment on which cleaning, repairing, servicing, setting-up or adjusting operations are being performed under lockout or tagout, or whose job requires the

employee to work in an area in which such activities are being performed.

Authorized Employee is a qualified person who locks out or tags out specific machines or equipment in order to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing cleaning, repairing, servicing, setting-up and adjusting operations covered under this section.

Lockout devices are devices that use a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.



Tagout devices are warning devices, such as a tag which can be securely fastened to an energy-isolating device in accordance with an established procedure to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.



Tagout

Blockout devices prevent the unexpected movement of machinery/ working parts or other sources of energy within a machine.



Even a locked-out machine may not be safe

A locked-out machine may not be safe if there are parts of the machine, or nearby machines, that are not BLOCKED to prevent inadvertent contact with the worker.

Interlocks are not a substitute for lockout

Electrical interlocks are safety devices which are used to help prevent a machine from harming its operator or damaging itself by stopping the machine when tripped. It is not to be used as a substitute for lockout because it is prone to failures.

OFF vs. Locked Out

There is a difference between turning off a machine and actually disengaging or de-energizing a piece of equipment. When an employee simply turns off a control switch, there are no positive means in place to prevent other employees from reactivating the machine while the worker is performing maintenance work inside the machine.

In a lockout situation, an authorized employee places a lock on an energy isolating device to prevent reactivation by other employees during maintenance activities.

OFF vs. Disengaged/De-energized Real Cases of Injuries

Statistics show that of the 20 percent of workers who simply turned off the machinery, about half of them were injured when someone - generally a coworker who was unaware that the machine was being serviced - reactivated the

machine while the maintenance worker was still inside..

Approximately one fifth of those workers were injured by the residual energy inside the machine. The moving parts of the machine either continued to coast or the parts moved once a jam was cleared. Here are examples of past incidents:

- A table saw was turned off, but the saw blade was still coasting and had not come to a complete stop. An employee began cleaning the machine, and his finger was amputated by the blade.
- Accidents have occurred when the control switch on a machine was turned off, but a short in the switch restarted it.
- Accidents have occurred even when workers took the necessary steps of disconnecting the main power source but did not test the equipment to verify that the machinery was, in fact, de-energized.
 - One case, the lockout had been done on the wrong power line.
 - In another case, a second power line had been spliced into the wiring beyond the point of the lockout.

California standards for lockout / blockout / tagout

Title 8 of California Code of Regulations (T8 CCR) Section [3314](#) of the General Industry Safety Order specifies requirements to the cleaning, repairing, servicing, setting-up and adjusting of machines and equipment in which the unexpected energization or start-up of the machines or equipment, or release of stored energy could cause injury to employees.

The cleaning, repairing, servicing and adjusting activities include unjamming prime movers, machinery and equipment.

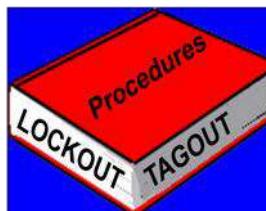
T8 CCR Sections [2320.4](#), [2320.9](#), [2941](#), [2943](#), and [2944](#) and several other sections of the Electrical Safety Orders specify the requirements for working on energized electrical systems. Section [2320.4](#) lays out the basic requirements for lockout, blockout and tagout.

T8CCR Section [3203](#) of the General Industry Safety Order requires every employer to implement and maintain an Injury and Illness Prevention Program which shall include but not be limited to the following:

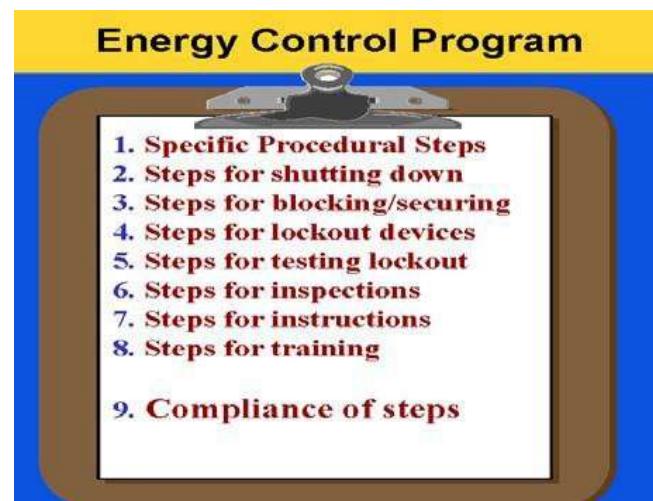
1. A training program designed to instruct employees in general safe work practices, plus specific instruction with regard to hazards unique to any job assignment.
2. Scheduled inspections to identify and correct any unsafe conditions and work practices that may be found. The employer shall correct unsafe conditions and work practices found as a result of the required inspections.

You need effective lockout, blockout and tagout methods and procedures

In order to control the hazards that arise from the unexpected energization or start up of the machines and equipment, or release of stored energy, you need to implement and maintain an effective hazardous energy control program.



An effective hazardous energy control program includes the components given in the figure below:



Effective hazardous energy control methods and procedures should include:

- A survey of the equipment by responsible persons who are thoroughly familiar with its operation and associated hazards, in order to identify which machinery should be locked and blocked out.
- Identification and labeling of lockout devices.
- Selection and purchase of locks, tags, blocks and other related devices suitable for your operations.
- A standard operating procedure that is written and followed.

If hazardous energy is not controlled, employees may be exposed to serious harm or death.

The procedures need to be in writing and used for cleaning, unjamming, repairing, servicing, setting-up or adjusting prime movers, machinery, and equipment.

Each machine, piece of equipment or prime mover must have separate procedural steps for their safe lockout/tagout.

Exception

The same procedural steps may be used for the safe lockout/tagout of types of prime movers, machines or equipment, under the following conditions:

- Operational controls are configured in a similar manner, and
- Locations of disconnect points (energy isolating devices) are identified, and
- The sequence of steps to safely lockout or tagout the machinery or equipment are similar.

Or

- Machinery or equipment has a single energy supply that is readily identified and isolated and has no stored or residual hazardous energy.

The procedures must clearly and specifically outline at least the following:

- Machines, equipment, operations, and processes where they apply (i.e., scope)
- What the procedures are used for (i.e., purpose and intended use)
- Names of the people who will carry out the procedures (i.e., authorization)
- Rules for carrying out the procedures
- Means to enforce compliance with procedures
- Techniques used for the control of hazardous energy
- Steps specifying procedures and requirements for:
 - Shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy;
 - Placement, removal, and transfer of lockout/tagout devices and who is responsible for each activity;
 - Testing to verify the effectiveness of lockout and tagout devices and other hazardous energy control devices.

Equipment Survey: Identifying & Labeling the Energy Disconnecting Means

Make an initial survey of the plant or operation to identify all energy sources.

This must be done by a physical inspection, possibly in combination with a study of drawings, wiring or piping schematics and equipment manuals.

Lockout/Blockout Program Planning Study: locate and identify the disconnecting means, by indicating their function. Categorize identification details as to equipment supplied, energy type and magnitude, from material worked out beforehand.

Example:

Line #1, Press #4, Electrical 480 volts
A sign or sticker—"LOCKOUT HERE"—placed at the disconnecting means will help direct workers to correct lockout devices.

After surveying the operation, additional and more practical means may be installed.

In more complicated operations, schematics of just the disconnecting means may need to be drawn up by the plant's engineering department or by qualified personnel.

Methods of Locking Out Controls

There are many different ways to lockout a piece of equipment. Typically, the main disconnect switch has one opening where a lock can be placed when in the off position.

If more than one employee works on the equipment, a lockout adaptor suitable for the installation of several locks must be used, enabling all workers to lock out the machine with their individual locks. See *Figure 1*.

If the switches are in a metal box, the box itself must be locked out. See *Figure 2*.

If a fuse was removed in order to de- energize the equipment, the fuse box must be locked.

If the controls are in a metal-covered box, a common hasp can be welded or riveted to the

door, along with a lock staple. Then the switch can be “opened” and the door closed and padlocked. Fuse boxes can also be locked in this way. Machines activated by compressed air or steam will have valves that control movement. These valves will need to be locked out, and also bled to release any back pressure.

Figures 3 and 4 show examples of bleeder valves that can be locked out.

When absolute closure of a pipe, line, or duct is needed blockout methods such as blanking and blinding need to be used.

Figures 5 and 6 show examples of blanking and blinding.

Cleaning, servicing, adjusting, repairing and setting-up works on cord and plug-connected electric equipment are allowed if the hazards of unexpected energization or start-up of the equipment is controlled by the unplugging of the equipment and by the plug being under the exclusive control of the employee performing the work.

General Lockout Guidelines

1. All maintenance personnel are issued a suitable lock (or locks). The lock has the individual worker's name and identification on it. Each worker will have the only key to his/her assigned lock.

2. The machine operator is informed before the power is turned off. The worker checks to be sure that no one is operating the machinery BEFORE turning off the power. Sudden loss of power could cause an accident.

3. Steam, air and hydraulic lines should be bled, drained and cleaned out. There should be no pressure in these lines or in reservoir tanks.

4. Any mechanism under load or pressure, such as springs, should be released and blocked.

5. Each person who will be working on the machinery should put a lock on the machine's lockout device(s). Each lock must remain on the machine until the work is completed.

Only the worker who placed the lock should remove his/her lock.

6. **All energy sources which could activate the machine must be locked out.**

7. The main valve or main electrical disconnect must be tested to be sure that power to the machine is off.

8. Electrical circuits must be checked by qualified persons with appropriate and calibrated electrical testing equipment. An electrical failure could energize the equipment, even if the switch is in the off position. Stored energy in electrical capacitors should be safely discharged.

9. **CAUTION:** Return disconnects and operating controls to the off position after each test.

10. Attach accident prevention tags which state the reason for placing the tag, date and time the tag was placed, name of the person placing the tag, how he/she may be contacted. **No one removes the lock without proper authority.**

Figure 1



Locked out with multiple locks

Figure 2



Locked out electrical box

Figure 3

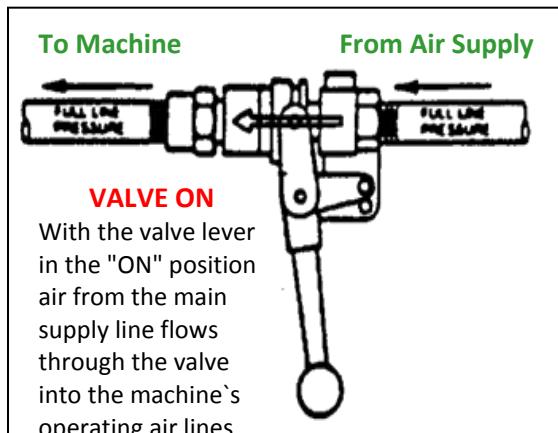
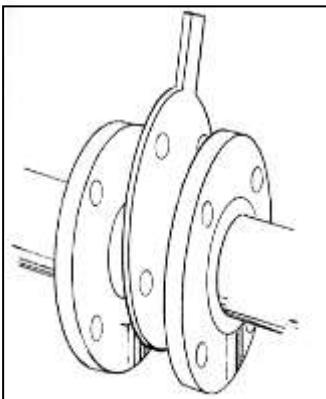


Figure 4



Bleeding air pressure by opening a valve

Figure 5



Example of blinding

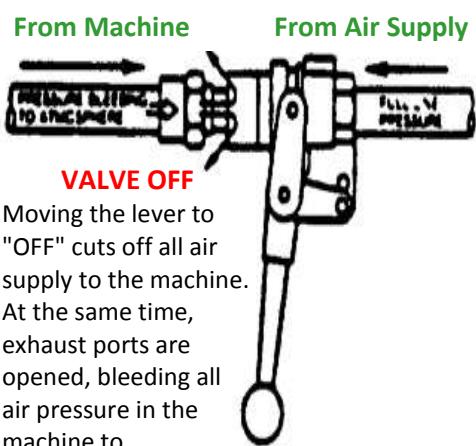
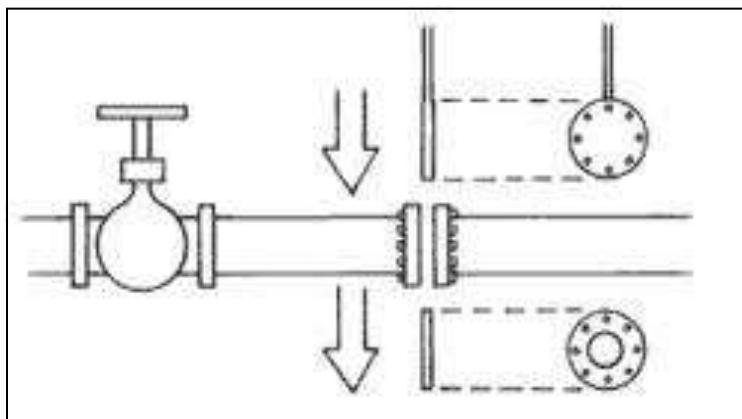
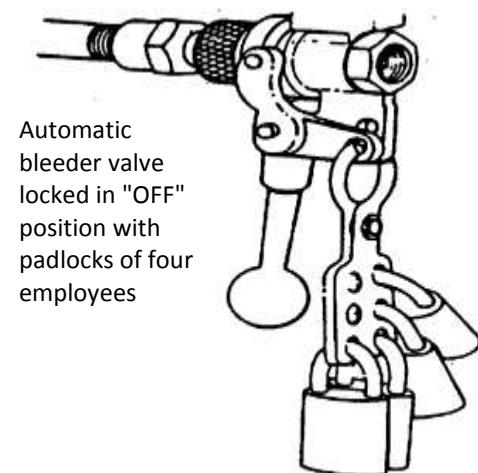


Figure 6



Example of blanking



Examples of bleeder valves

Locks, Blocks, & Accident Prevention Tags

Locks

Each authorized person must have his/her own unique lock and key.

The lock should be substantial and durable, and should have the name of the employee on it. In addition, locks can be color-coded to indicate different shifts or types of crafts.

When more than one worker is servicing a piece of equipment that must be locked out, a lockout adaptor can be used which allows all workers to place their locks on the disconnecting means. After servicing is completed, each worker removes his/her lock and the machine is then returned to operations.

Tags

DO NOT USE TAGS ALONE.

Use tags or signs in addition to locks.

Tags must state the:

- reason for the lockout.
- name of the employee who is working on the equipment and how that person may be reached.
- date and time the tag was put in place.

Tagout devices shall be capable of enduring at least 50 pounds of pull, and be of a non-reusable type.

Figure 7

Source: Concepts and Techniques of Machine Safeguarding, OSHA Publication OSHA 3067, 1981.

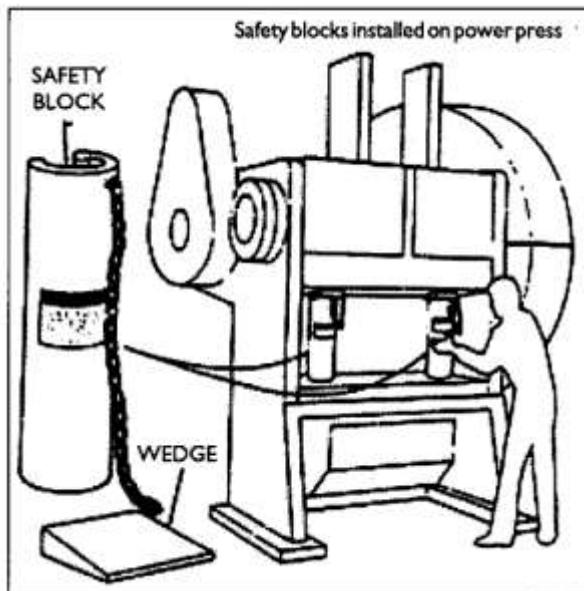
Blocks

Suitable blocks are another important safety device for making a piece of equipment safe to be repaired or serviced. Blocks must be placed under raised dies, lifts, or any equipment that might inadvertently move by sliding, falling or rolling onto an employee.

Blocks, special brackets, or special stands such as those commonly used under raised vehicles, must always be available and used.

Another form of blocking is the placement of a blind. A blind is a disk of metal placed in a pipe to ensure that no air, steam, or other substance will pass through that point if the system is accidentally activated. See *Figure 5*.

Before installing blinds or blocks, bleed down steam, air, or hydraulic lines to get rid of any pressure. Coiled springs, spring-loaded devices, or suspended loads must also be safely released so that stored energy will not result in inadvertent movement. See *Figure 7*.



Written Standard Operating Procedures

A lockout usually requires coordination between the production and maintenance departments.

Maintenance activities frequently extend over multiple work shifts, which adds to the number of employees involved and complicates portions of the lockout/blockout procedure.

The best way to put an effective lockout program into practice is to first prepare a written, standardized Hazardous Energy Control Procedures, then carry out necessary training and responsible supervision.

A hazardous energy control procedure needs to be used when employees perform activities such as cleaning, unjamming, repairing, servicing, setting-up or adjusting of prime movers, machinery and equipment.

The procedure needs to include the scope, purpose, authorization, rules, and techniques to control hazardous energy.

Steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy need to be mentioned in your company's procedures. Typically, these steps are given in the manufacturer's instructions and procedures for lockout/tagout.

The requirements for testing a machine for effective lockout also need to be included in the procedure.

Employers must provide separate lockout tagout procedures for each machine or piece of equipment affected by the hazardous energy control procedure.

Similar lockout/tagout procedures may be used for a group or type of machinery or equipment if:

(1) operational controls are configured in a similar way, disconnect points are identified and sequence of lockout tagout steps are similar.

or

(2) machinery or equipment has a single energy supply that is readily identified and isolated and has no stored or residual hazardous energy.

The employer needs to inspect and evaluate the energy control procedure at least annually.

Employers need to ensure that outside contractors also follow the host employer's lockout procedures.

In addition to the items/steps mentioned above, employers must include all of the items/steps as required by T8 CCR Section [3314](#) and other relevant T8 CCR Sections.

*The employer **is required to** conduct a periodic inspection of the energy control procedure(s) at least annually to evaluate their continued effectiveness and determine necessity for updating written procedure(s).*

Written Standard Operating Procedure **Cont.**

In a check list format, prepare a written sequence for access, de-energizing, lockout, clearance, release and start-up that includes consideration of stored sources of energy.

Conditions that are not hazardous during normal operations can become hazardous when guards are removed during maintenance and servicing.

In writing a lockout procedure, consider:

- job objectives and equipment involved.
- detailing the energy sources for each machine and lockout procedures.
- steps for shutting down and securing machinery.
- steps to verify/testing lockout effectiveness.
- procedural steps for applying lockout and tagout.
- procedural steps for restarting.
- employees authorized to perform lockout.
- annual compliance audit.

In training for lockout procedure, consider:

- Employees must understand what tagout means, and what to do if they want to operate equipment.

- The authorized person must be trained in the written procedure and understand the specific hazardous energies related to equipment.
- Employees reassigned to different equipment must be retrained.
- Contractors working on site must have a general understanding of lockout/tagout and follow the host employer's written procedures.

This guide provides examples of lockout/tagout procedures. See the "Sample Lockout Procedure" and "Equipment Specific Sample Lockout/Tagout Procedure" sections for details. These samples are for reference only, to aid you in developing lockout/tagout procedures that are specific to your equipment and machinery.

In large and more complex facilities, permits signed by designated supervisors should be obtained before beginning a lockout. This permit is not required by Cal/OSHA. See *sample permit* in this publication.

A signed permit is particularly important if maintenance work is being performed by an outside contractor who may already be familiar with the particular piece of equipment being serviced, but who does not have the overall knowledge of the plant's operation.

Testing Equipment During Lockout

In many maintenance and repair operations, machinery may need to be tested and energized before additional maintenance work can be performed.

In that case, follow this procedure:

1. Clear all personnel to safety.
2. Clear away tools and materials from equipment.
3. Remove lockout devices and re-energize systems, following the established safe procedure.
4. Proceed with tryout or test.
5. Neutralize all energy sources once again, purge all systems, and lockout prior to continuing work.

Equipment design and performance limitations may dictate that effective alternative worker protection be provided when the established lockout procedure is not feasible.

If machinery must be capable of movement in order to perform a maintenance task (such as during a cleaning operation) workers can use other methods.

Workers may use extension tools such as extended swabs, brushes, push sticks, grabbers and scrapers to keep themselves away from moving parts of the machine.

Restoring Equipment to Service

After work is completed and the equipment is ready to be returned to normal operation, this procedure must be followed:

1. Remove all non-essential items.
2. See that all equipment components are operationally intact, including guards and safety devices.
3. Repair or replace defective guards before removing lockouts.
4. Remove each lockout device using the correct removal sequence.
5. Make a visual check before restoring energy to ensure that everyone is physically clear of the equipment.

Sample Tag



Sample General Lockout Procedure

LOCKOUT

This is a generic sample procedure. You will need to develop and customize your own procedures that address the elements below.

Scope

This document requires supervisors and employees to follow basic lockout principles when involved in cleaning, repairing, servicing, setting-up, unjamming and adjusting of machinery at our facility.

Statement of Intended Use for these Procedures

(Company) will ensure that employees who are engaged in cleaning, repairing, servicing, setting-up, unjamming and adjusting of machinery follow these procedures at our facility.

Purpose

This procedure establishes minimum requirements for lockout of energy sources that could cause injury to personnel. All employees shall comply with these procedures at all times.

Authorization

The responsibility for seeing that this procedure is followed is shared by all employees. All employees will be instructed in the safety significance of the lockout procedure by (designated individual). Each new or transferred affected employee shall be instructed by (designated individuals) in the purpose and use of the lockout procedure.

Preparation for Lockout

Employees authorized to perform lockout must be certain of which switch, valve, or other energy isolating devices apply to the equipment being locked out. More than one energy source (electrical, mechanical, or others) may be involved. Any questionable identification of sources shall be cleared by employees with their supervisors. Before lockout commences, job authorization should be obtained.

Sequence of Lockout Procedure (Rules & Techniques)

Procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy:

- 1) Notify all affected employees that a lockout is required and the reason for this requirement.
- 2) If the equipment is operating, shut it down according to the manufacturer's normal shut down procedures
- 3) Operate the switch, valve, or other energy isolating devices so that the energy sources (electrical, mechanical, hydraulic, other) are disconnected or isolated from the equipment. Stored energy, such as in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam or water pressure, must be dissipated or restrained by methods such as grounding, repositioning, blocking, or by bleeding down.

(Add additional procedures here)

Procedural Steps for the placement, removal and transfer of lockout devices, tagout devices and responsibilities:

- 1) Lockout energy isolating devices with an assigned individual lock.
- 2) Install any blockout devices on parts of machinery that could move and make contact with employees.
- 3) Employees with attached locks will retain the key until their tasks are complete.
- 4) Employees will fill out a tag and attach it to the lock to indicate who is working on the machine.

(Add additional procedures here)

The requirements for testing a machine or equipment, to determine and verify the effectiveness of lockout devices, tagout devices and other hazardous energy control devices.

- 1) After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. CAUTION: Return operating controls to neutral position after the test.
- 2) The equipment is now locked out.
- 3) All other employees whose work operations may be in an area where energy control procedures may be utilized, will be instructed about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

(Add additional rules here)

Restoring Equipment to Service

- 1) Communicate to all affected and authorized employees that all work is complete.
- 2) When the job is complete and equipment is ready for testing or normal service, check the equipment area to see that no one is exposed to the danger zone.
- 3) When the equipment is cleared, authorized employees will remove all locks and other energy isolating devices. The energy isolating devices may be operated to restore energy to equipment.

(Add additional procedures here)

Procedure Involving More Than One Person

In the preceding steps, if more than one individual is required to lock out equipment, each shall place his/her own personal lock on the energy isolating device(s). One designated individual of a work crew or a supervisor, with the knowledge of the crew, may lock out equipment for the whole crew.

In such cases, it may be the responsibility of the individual to carry out all steps of the lockout procedure and inform the crew when it is safe to work on the equipment. Additionally, the designated individual shall not remove a crew lock until it has been verified that all individuals are clear.

(Add additional procedures here)

Rules for Using Lockout Procedure

All equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device bearing a lock.

(Add additional rules here)

Means to Enforce Compliance

(Company) will ensure compliance with Cal/OSHA's lockout requirement by also effectively implementing our written Injury and Illness Prevention Program. All supervisors and employees shall comply with these procedures at all times. Failure to follow (Company)'s lockout procedures will result in disciplinary proceedings.

Contractors

In the event that our employees are directed by management to not perform any cleaning, repairing, servicing, setting-up, unjamming and adjusting of machinery at our facility, we shall provide the qualified contractor with these procedures and any other equipment specific procedures related to the machinery being serviced. When requested, management will provide the contractor with these written procedures in a timely manner and make any other information available in order to complete the work safely.

Written Specific Equipment Procedures

(Company) shall develop, implement and update equipment specific lockout procedures. These procedures will be evaluated and updated annually to ensure their continued effectiveness. If no changes are made, then it will be noted on the procedure and certified by management.

Index of Equipment with Specific Procedures For (Company)

Equipment Specific Sample Lockout/Tagout Procedure

(Source: Occupational Safety and Health Consultation Program Texas Department of Insurance, Division of Workers' Compensation)

You will need to develop procedures specific to your equipment. Feel free to make multiple copies of this sample document to fulfill your needs. You may wish to add images to provide clarification to employees.

Machine Identification

General Description: _____

Manufacturer: _____

Model Number: _____

Serial Number:*

* If more than one piece of same equipment, list all serial numbers.

Location of equipment: _____

Note: You may add images of the equipment here.

Operator Controls

The types of controls available to the operator need to be determined. This should help identify energy sources and lockout capacity for the equipment.

List types and location of operator controls: _____

Equipment Specific Sample Lockout/Tagout Procedure (continued)

Energy Sources

The energy sources, such as electrical, steam, hydraulic, pneumatic, natural gas, stored energy, etc.) present on this equipment are:

ENERGY SOURCE	LOCATION	Lockable		Type lock or block needed
		Yes	No	

Note: You may add images of the energy sources **BEFORE** being disconnected here.

Note: You may add images of the LOCKED/BLOCKED energy sources **AFTER** being disconnected here.

Shutdown Procedures

List steps in the order necessary to shut down and de-energize the equipment. Be specific. For stored energy, be specific about how energy will be dissipated or restrained.

Procedure: _____

Lock type & location: _____

How will de-energized state be verified? _____

NOTIFY ALL AFFECTED EMPLOYEES WHEN THIS PROCEDURE IS IN USE Note: You may add images of the methods to verify energy isolation here.

Equipment Specific Sample Lockout/Tagout Procedure (continued)

Start up procedures

List the steps in order necessary to reactivate (energize) the equipment. Be specific.

Procedure: _____

Energy Source Activated: _____

NOTIFY ALL AFFECTED EMPLOYEES WHEN THIS PROCEDURE IS IN USE.

Note: You may add images of the energy sources and/or steps to be reactivated here.

Procedures For Operations and Service/Maintenance

List operations where the procedures above **do not** apply. Alternate measures which provide effective protection must be developed for these operations. Job Safety Analysis is one method of determining appropriate measures.

Operation Name: _____

Equipment Specific Sample Lockout/Tagout Procedure (continued)

Affected and Authorized Employees

List each person affected by this procedure and those authorized to use it.

AFFECTED EMPLOYEES	
Name	Job Title

AUTHORIZED EMPLOYEES	
Name	Job Title

Certified by

Date

Certified by

Date

Note: Specific procedures must be inspected annually for effectiveness. These procedures must also be certified annually by the employer.

Non-Mandatory Sample Safety Permit

SAFETY PERMIT

DATE _____

TIME ISSUED _____

EXPIRATION TIME _____

PERMIT ISSUED TO:

MAINTENANCE OUTSIDE
 CONTRACTOR NAME _____

JOB DESCRIPTION _____

CHECKED PRECAUTIONS SHALL BE OBSERVED

<input type="checkbox"/> TAG & DISCONNECT ELECTRIC EQUIPMENT	<input type="checkbox"/> FIRE EXTINGUISHER AT SITE
<input type="checkbox"/> LINES BLINDED	<input type="checkbox"/> CONTAINS SPARKS
<input type="checkbox"/> VALVES CLOSED & TAGGED	<input type="checkbox"/> KEEP AREA FREE OF COMBUSTIBLES
<input type="checkbox"/> LOCKED OUT LINES	<input type="checkbox"/> BARRICADE AREA
<input type="checkbox"/> DISCONNECTED	<input type="checkbox"/> SHIELD ARC
<input type="checkbox"/> BLEEDERS OPEN	

PROTECTIVE EQUIPMENT REQUIRED

<input type="checkbox"/> WEAR GOGGLES FACE SHIELD	<input type="checkbox"/> WEAR RUBBER BOOTS
<input type="checkbox"/> WEAR GLOVES RUBBER THERMAL	<input type="checkbox"/> WEAR SAFETY BELT & LINE
<input type="checkbox"/> WEAR HOOD ACID THERMAL	<input type="checkbox"/> WEAR RESPIRATOR DUST CHEMICAL
<input type="checkbox"/> WEAR SUIT RUBBER THERMAL	

OTHER PRECAUTIONS _____

PERMIT CONDITIONS & REQUIREMENTS UNDERSTOOD	APPROVALS	
	SAFETY INSPECTOR	
SIGNED	OPERATIONS FOREMAN	TIME
ENGINEER-FOREMAN-CRAFTSMAN	OPERATIONS FOREMAN	TIME

Work must begin within ninety minutes of issuance of this permit.

If the work is interrupted the foreman, craftsman, or contractor must indicate equipment condition to operations foreman or operator when leaving job for more than two hours or when job is complete.

JOB COMPLETED _____

JOB INCOMPLETE _____

THIS PERMIT IS TO BE KEPT ON THE JOB UNTIL WORK IS COMPLETED, PERMIT EXPIRES OR IS REVOKED.

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Lockout/Blockout Applicable Safety Orders

Several sections of the Title 8 of California Code of Regulations apply to the control of hazardous energy in workplace.

Related requirements from the General Industry Safety orders are given in the following sections:

3203 *Injury and Illness Prevention Program.*

3314 *The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout*

3340 *Accident Prevention Signs.*

3341 *Accident Prevention Tags.*

Related requirements from the Electrical Safety Orders are given in the following sections:

2320.4 *De-energized Equipment or Systems.*

2320.5 *Energizing (or Re-energizing) Equipment or Systems.*

2320.6 *Accident Prevention Tags.*

2530.43 *Automatic Restarting.*

2530.86 *Motor Not in Sight from Controller.*

2941 *Work on or in Proximity to Overhead High Voltage Lines.*

2943 *Work on or in Proximity to Underground High-Voltage Cables, Conductors or Equipment.*

2944 *Work on or in Proximity to Conductors and Equipment Located in High-Voltage Stations, or Switchyards.*

Note

The above listings may not include all of the applicable sections. Refer to the Title 8 of California Code of Regulations for complete regulatory requirements.

Resources for Lockout/Blockout/Tagout

- Cal/OSHA Fact Sheet - Lockout/Tagout for Employees
<http://www.dir.ca.gov/dosh/etools/08-003/P08-00302.pdf>
- Cal/OSHA Lockout/Tagout eTool
<http://www.dir.ca.gov/dosh/etools/08-003/index.htm>
- Cal/OSHA Tailgate/Toolbox Topic - Lockout/Tagout
http://www.dir.ca.gov/dosh/dosh_publications/tb_lockblock.pdf
- Cal/OSHA Fact Sheet - When Cleaning, Adjusting, Repairing or Unjamming Machine, Follow These Lockout/Tagout Steps
<http://www.dir.ca.gov/dosh/etools/08-003/LockoutSteps.pdf>
- Cal/OSHA Video - Protect Yourself When Cleaning, Adjusting, and Unjamming Machines. A transcript of the video is also provided
<http://www.dir.ca.gov/dosh/etools/08-003/V08-00301.wmv> [Transcript](#)
- Cal/OSHA Consultation Emphasis in Lockout/Blockout Presentation
<http://www.dir.ca.gov/dosh/etools/08-003/PP08-00301.ppt>
- Worksafe BC Slideshow - Lockout for woodworking
<http://www2.worksafebc.com/media/fss/lockout/slideshow.htm>
- Worksafe BC Hazard Alerts
<http://www2.worksafebc.com/Publications/Topic.asp?ReportID=31209>
- Federal OSHA Lockout/Tagout Website
<http://www.osha.gov/SLTC/controlhazardousenergy/>
- Federal OSHA Lockout/Tagout Interactive Training Program
<http://www.osha.gov/dts/osta/lototraining/index.html>
- State Compensation Insurance Fund Safety Meeting Topics
<http://www.statefundca.com/safety/safetymeeting/SafetyMeetingTopics.aspx>
- State of Washington Lockout/Tagout Website
<http://www.lni.wa.gov/Safety/Topics/AtoZ/topic.asp?KWID=179>
- State of Texas, Occupational Safety and Health Consultation Program
Sample Written Program for Control of Hazardous Energy (Lockout/Tagout)
<http://www.tdi.texas.gov/pubs/videoresource/oloto.doc>

If you have questions or concerns, or if you need additional information on lockout/blockout procedures, contact the [Cal/OSHA Consultation Service office](#) in your area for free assistance. Addresses and phone numbers are listed on the back cover of this publication.

On-site Assistance Program Area Offices



Your call will in no way trigger an inspection by Cal/OSHA enforcement.

- **Research and Education**
Sacramento, CA 95825
(916) 574-2528

- **Voluntary Protection Program**
Oakland, CA 94612
(510) 622-1081