

Master Lock Safety Solutions™

Why Lockout Is Important / Hazardous Energy Awareness

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The Master Lock Company (TMLC) overview

Our Mission:

The Master Lock Company provides peace of mind and protection where people live, work and play.

We have the most recognized, trusted and iconic security brands in our markets that promise best-in-class value, ease of use, durability, reliability, quality and service.

Our Vision:

To be a global leader in protecting property, people, and life through innovative, technology-based security and safety solutions while enhancing our core and entering new markets.



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Your individual lockout policies may be more restrictive than the minimum requirements set forth by the American National Standards Institute (ANSI) or the Occupational Safety and Health Administration (OSHA) regulations and must be followed as directed.

Lockout/Tagout Overview

Lockout is defined in the Canadian standard CSA Z460-20 "Control of Hazardous Energy - Lockout and Other Methods" as the "placement of a lockout device on an energy-isolating device in accordance with an established procedure.

Specific work safety procedures and practices that safeguard employees from:

- *The unexpected powering or start up of machinery or equipment
- *The release of hazardous energy during service or maintenance activities

Hazardous energy sources are isolated and inoperative before any service procedure is started.

Facilities are responsible for:

- *Developing a lockout program which clearly outlines the process for isolating hazardous energy:
 - *How to lockout each piece of equipment
 - *Who is authorized to complete lockout
 - *Use of padlocks and devices

Training all employees on LOTO procedures ****Affected person **Authorized person**

Enforcing, monitoring, and maintaining LOTO procedures

Inspecting and auditing procedures and employees (annually at minimum).



Lockout Tagout ensures employees return home safe every day.

Where do we control Hazardous Energy?

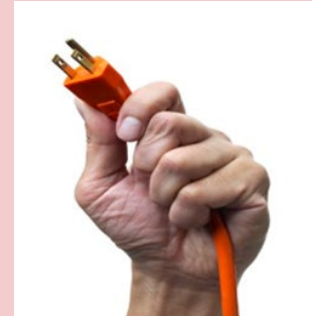
Common energy isolation points



Circuit
breakers



Electrical
disconnect switches



Electrical
cord and plug



Ball valves



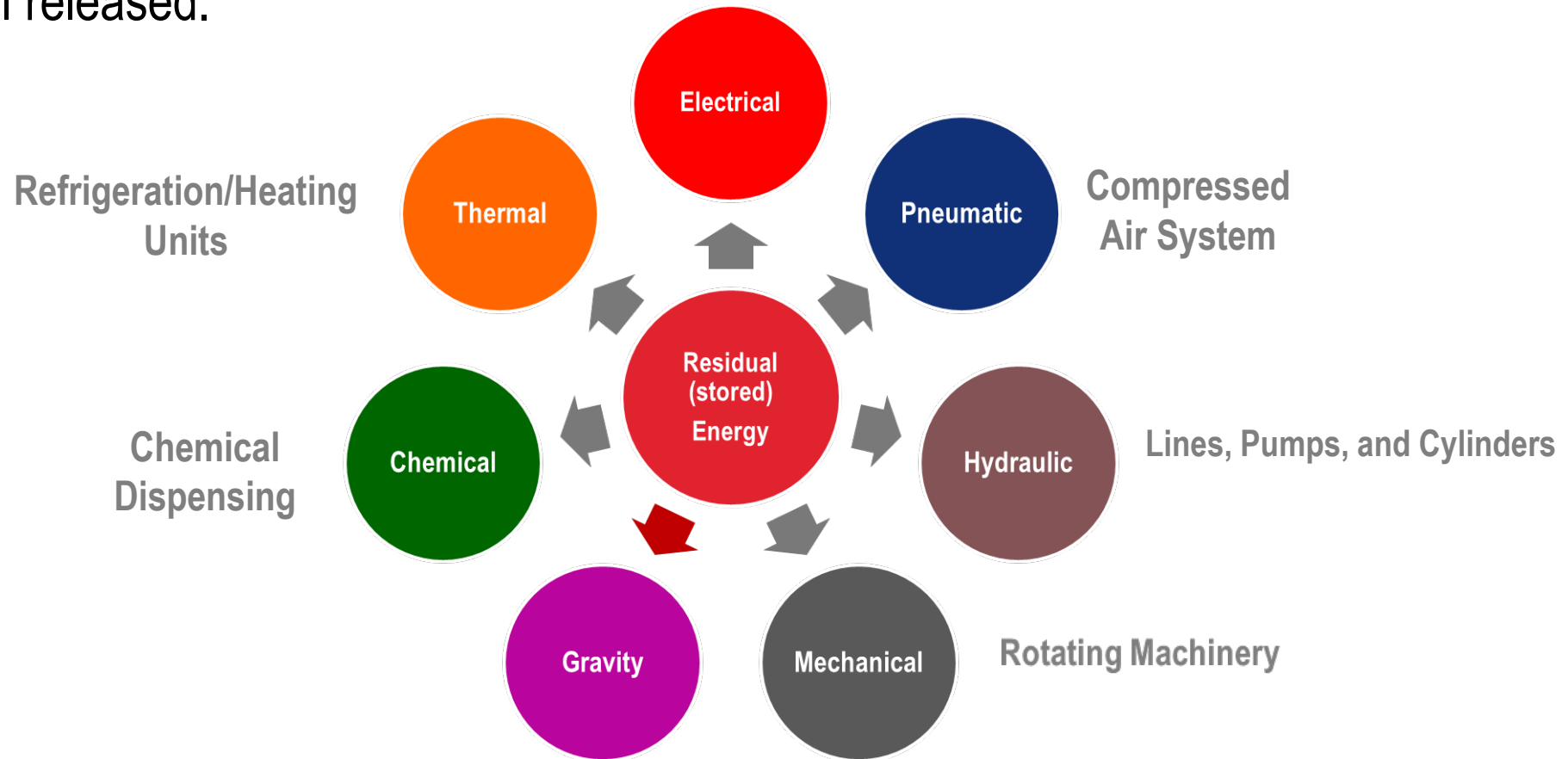
Gate valves



Butterfly valves

Energy is found in many different sources

Each type has the potential for residual (leftover) or stored hidden energy that remains a hazard for workers until released.



Typical Injuries

Hazardous Energy	Potential Dangers
Electrical	Burns, electrocution, shock, equipment damage
Mechanical	Amputations, lacerations, fractures
Hydraulic	Skin cuts or eye damage from pressure
Chemical	Skin burns, harmful gases or fumes
Thermal	Burns, hypothermia
Pneumatic	Impact by high pressure, solids
Gravity	Crushing, trapping



Why Lockout?

A machine doesn't care if you lose your hand.

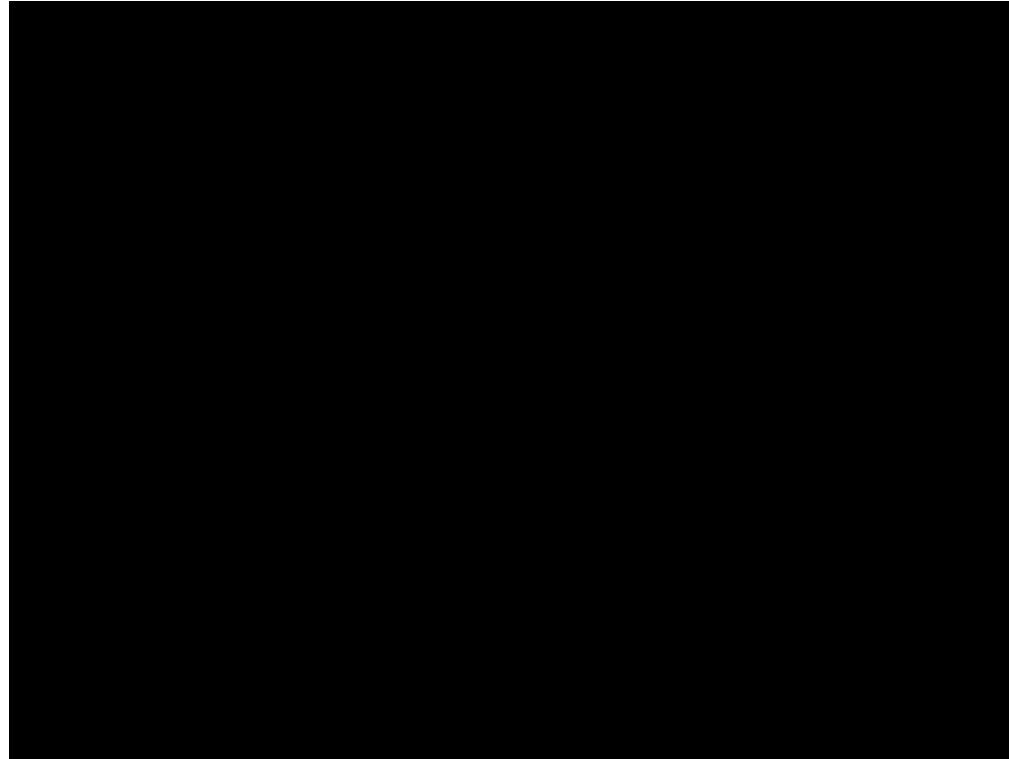
A machine doesn't care if your family loses a parent.

Lockout is a combination of processes and products to ensure workers go home safely each day.



Why Lockout?

Why lockout equipment and machinery?



Why Lockout is needed

These statistics provide some insight into the nature of the problems:

- 73% of injuries are machine related
- 42% of injuries are suffered by **operators**
- 70% of injuries occur during production
- 25% of injuries occur while unjamming equipment
- 75% of injuries caught in/ under/ between machine parts
- 70% involve the hand
- **Highest incident of accidents occur shortly after “shift change”**

Why is Lockout Important? Fatal Five

Master Lock applies the foundations of CSA Z460-21 in Procedure Writing, Training, and Program Development

Main causes of machinery accidents

1. Accidental Restarting of Equipment during servicing or repairs
2. Failure to Disconnect from Power Sources
3. Failure to Dissipate Residual Energy
4. Failure to Stop Equipment
5. Failure to Clear Work Areas Before Reactivation

Failure to secure power sources with locks

Insufficient guarding of dangerous machinery

Nonexistent (or removed) machine guarding

Poorly designed/installed machine guarding

Defeat of presence sensing safety devices



Why is Lockout needed – Injury/Fatality Example (2019)

- Low Potential / High Severity
- 1 in 13 lost time injuries result in fatalities
- 15% of injuries and 4% of fatalities in 2019
- Fines can be up to \$25 000 for individuals and \$500 000 for corporations
- Corporations with net earning of 18% need to generate \$7.3M in earning to recover

Incident Costs	
Fines	\$ 674,445
Worker's Comp	\$ 93,600
Lost Productivity	\$ 148,000
Efficiencies	\$ 4,000
PR	\$ 400,000
Total Cost	\$ 1.32M

CSA Z460 Guidelines: Lockout Device Requirements

Requirement	Master Lock Lockout products
Durable: Manufactured with materials that withstand usage environment	✓
Substantial: Can't be removed without excessive force	✓
Standardized: Clearly differentiates from other devices by color, shape or size	✓
Identifiable: Indicates employee that installed Lockout device	✓
Exclusive for safety: Not to be used for purposes other than controlling energy	✓

- 1 An information tag is to be used with each lockout device unless the device has the required information already attached. The informational tag should include the identity of the employee applying device and include the date and reason for the lockout.

Field Example



Master Lock.



Padlocks- Best Practices

How should padlocks be keyed?

“One Lock, One Employee, **One Key**”



KD KD KD KD
Keyed Different

Each lock is opened by its own unique key which does not open any other lock in the set – complying with the “One lock, one employee, one key” mantra



KD KD KD KD
Keyed Different

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MK
Master Keyed

A master key opens all locks within the system while each lock also has its own unique key – allows for responsible removal of improperly placed or forgotten lockouts according to your emergency notification policy

LifeGuard –Best Practice

- **Best Practice:** Employers should keep a record of key codes assigned to each employee so that duplicates are not introduced within a facility.
- During Lockout/Tagout (LOTO) it is important that each employee performing work on a machine has a safety padlock that is unique to them in which other employees do not have the key for. This prevents the accidental energization of equipment during a lock out. However many companies and employees are unaware that key duplication occurs frequently unless the company registers their system with a padlock manufacturer that offers a key registry program.
- To help prevent duplicate keys from jeopardizing your lockout program, register your workplace with Master Lock. Once registered, Master Lock will send you an End User Identification Number for your site's Key Chart.
- When you use that I.D. number on each additional padlock order, Master Lock will use a new key code for each padlock we manufacture for you. When used properly, this free service helps ensure that each employee carries a key unique to them, eliminating unwanted key duplication in a safety lockout program.



KEYING OPTIONS TO FIT YOUR FACILITY'S NEEDS

- A no-charge Key Charting System – Critical for Safety Lockout Padlocks
- Prevent duplicate keys from entering the workplace and jeopardizing your lockout/tagout program
- With Lifeguard™, record all safety padlock key codes assigned to your facility
- Complies with the “one employee, one lock, one key” directive

HOW TO REGISTER YOUR WORKPLACE

- Visit www.masterlock.com/business-use/safety-keying-critical-component-lifeguard for instructions and registration form
- Once registered, Master Lock will send you an End User Identification Number for your site's Key Chart. Use on future padlock orders and Master Lock will use a new key code for each padlock on the order
- When used properly, this free service ensures that each employee at your facility carries a key unique to them



Lockout Product Overview

Visible Difference from Security and Safety

Standardized: Clearly differentiated from other devices by color, shape or size

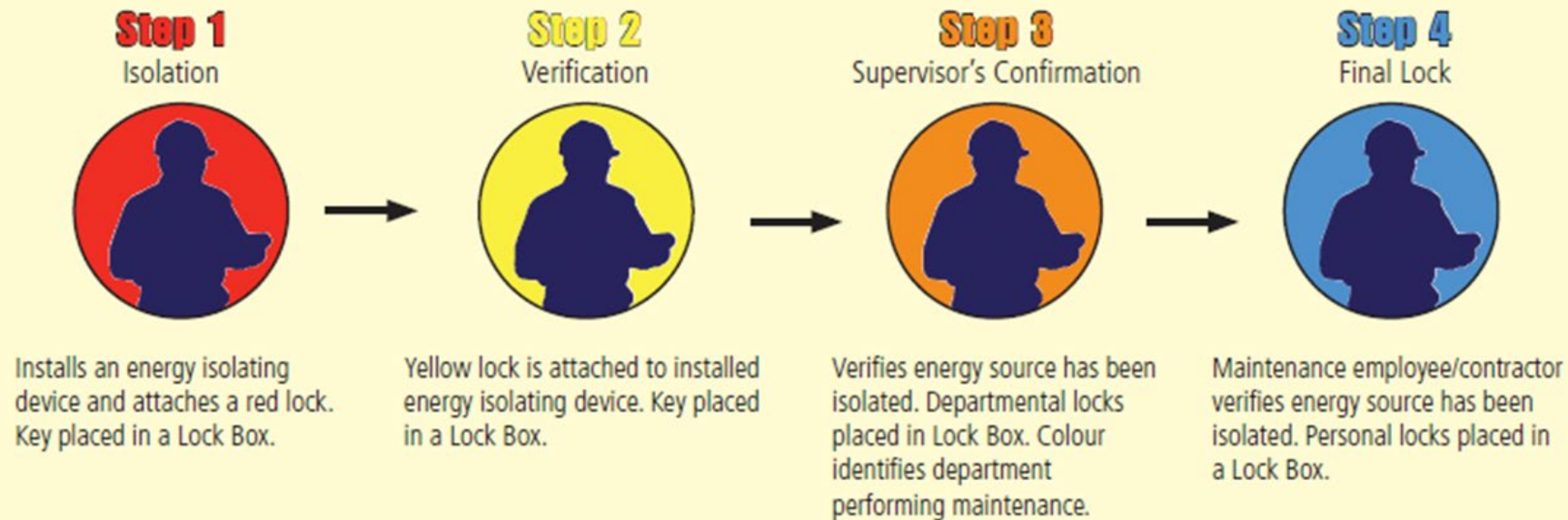
- 1 Safety padlocks must be visually differentiated in style and /or color from security padlocks within a facility
 - **Ensures that workers easily identify LOTO procedures**

BEST PRACTICE: Using colored padlocks for LOTO clearly differentiates them from a security padlock

- Lockout devices can't be removed without the use of excessive force
 - Ex: use of bolt cutters or prying off
- Tags must withstand OSHA's 50 lb. pull force requirement
- LOTO devices are a deterrent to tampering or accidental removal, NOT a security device



The LO/TO Process



After the repair or maintenance has been completed (Step 4), the locks are removed in reverse order, and once the final lock has been removed, the specific piece of equipment may be safely returned to use.

This four-step process has been successfully implemented at the company's sites in the Fort McMurray area and the task force has recommended that this approach be implemented company-wide.

Master Lock Products and Safety Services

How does your Safety Programs stack up?

