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Lockout handout for workers

What are *de-energization* and *lockout?*

De-energization is removing energy from machinery or equipment. *Lockout* is the use of lock(s) to render machinery or equipment inoperable or to isolate an energy source in accordance with a written procedure.

Maintenance is any work performed to keep machinery or equipment in a safe operating condition. This includes installing, repairing, cleaning, and lubricating the equipment, as well as clearing obstructions to the normal flow of material.

Why are de-energization and lockout important?

Every year, workers are seriously injured because machinery or equipment was not properly de-energized or locked out. This means crushed limbs, severed fingers, even death.

What are your responsibilities?

If you work on machinery or equipment that requires lockout, you must follow written safe work procedures. Take the time to follow these procedures; they will protect you from injuries that will affect you and your family.

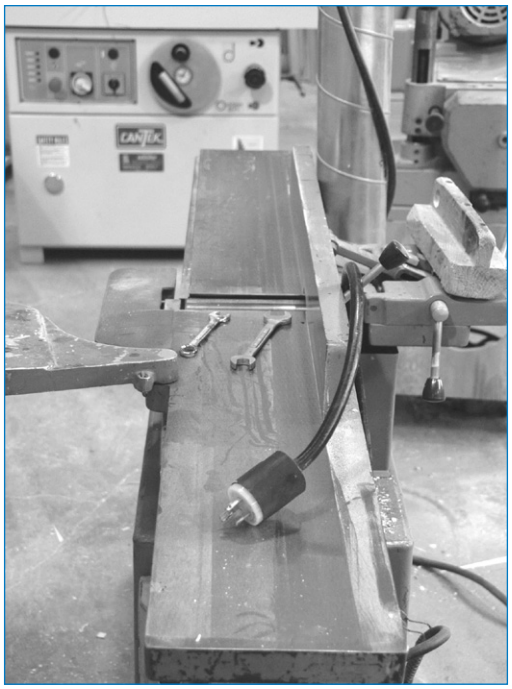
Types of hazardous energy

Kinetic	Energy of moving equipment or materials
Chemical	Energy released by a chemical reaction
Potential	Energy in suspended, elevated, or coiled materials
Thermal	Energy in heat, found in steam, hot water, fire, gases, and liquefied gases
Electrical	Sources include conductors, motors, and generators
Radiation	Includes non-ionizing (such as light and lasers) and ionizing (such as X-rays)

Soft-wired lockout

These are the five basic steps for locking out soft-wired equipment:

1. Identify the machinery or equipment that needs to be locked out.
2. Shut off the machine or equipment. Make sure that all moving parts come to a complete stop. *Ensure that shutting off the equipment will not cause a hazard to other workers.*
3. Unplug the machine.
4. Keep the plug in plain view and within your reach while working on the machine.
5. Try to start the machine. This step is critical; it will tell you if the lockout procedure is effective. *First ensure that everyone is in the clear and that no hazard will be created if the lockout is not effective.*



For machinery equipped with a plug, you must keep the plug within your sight and reach (exclusive and immediate control). If there is more than one person working on the machine, you must lock out.

Hard-wired lockout

These are the five basic steps for locking out hard-wired equipment:

1. Identify the machinery or equipment that needs to be locked out.
2. Shut off the machine or equipment. Make sure that all moving parts come to a complete stop. *Ensure that shutting off the equipment will not cause a hazard to other workers.*
3. Identify and de-activate the main energy-isolating device (such as a switch or valve) for each energy source by placing it in the "off" position. There may be more than one type of power, such as electric, pneumatic, or hydraulic; or the device may be interlocked.
4. Apply a personal lock with your ID tag to the energy-isolating device for each energy source. Ensure that all parts and attachments are secured against inadvertent movement. Each worker must apply a personal lock unless group lockout procedures are followed. If one switch is within your exclusive and immediate control, a lock may not be required.
5. Try to start the machine. This step is critical; it will tell you if the lockout procedure is effective, verifying that all live components have been de-energized. Lockout can be tested after each energy-isolating device is locked out or after a group of nearby devices is locked out. *First ensure that all workers are in the clear and that no hazard will be created if the lockout is not effective.*

Rule of thumb

If there is any potential for equipment or machinery to start up unexpectedly or release energy, then it can cause serious injury. To avoid injury, you must isolate and effectively control the energy source.

Use personal locks with ID tags for machinery controlled by electrical disconnect switches or electrical breakers.

HAZARD ALERT!

Don't become a statistic

An electrician was making adjustments to the switches of a lumber-strapping machine. Without locking out the control device, he placed his head and upper body into the machine between the platen and horizontal cylinder. Without warning, the platen opened vertically and crushed his head against the cylinder. The worker's injuries were fatal.

How could this accident have been prevented?