



**Protect yourself:
Use a
lockout/tagout
program**

LOCKOUT/TAGOUT

A maintenance worker electrocuted—another worker accidentally energized the wrong circuit. A diver killed while cleaning a propeller—the skipper started the engine without knowing that the diver was working on his boat. A fish processor's feet amputated—the machine she was cleaning was accidentally turned on. A crabber's hand amputated—he accidentally turned on the bait chopper while cleaning it.

A lockout/tagout program could have prevented these accidents. Lockout/tagout is an essential tool to protect you and your crew. It can take a little time, but isn't it worth some time to save a limb or a life?

The only way to protect workers from hazardous energy is to have and follow a lockout/tagout program. Lock out any sources of hazardous energy before you begin work so that you are safe while you are working. Remember that nobody can accidentally turn on the circuit breaker if it is locked out. If there is no way to lock out energy from a piece of equipment, then modify the equipment to allow lockouts or physically disable the equipment by pulling fuses, or disconnecting and locking out power.



Hazardous energy is:

- **electrical power**
- **compressed air in receivers or accumulators**
- **steam, hydraulic or other fluid systems under pressure**
- **power from engines**
- **stretched springs**
- **suspended weights**
(e.g. anchors or crane loads)

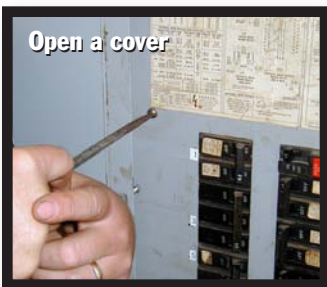
LOCKOUT

Locks and tags are always required, since locks physically prevent someone from operating the switch. Make sure tags are securely attached and will not come loose accidentally. Tags should be labeled with the worker's name and the date the equipment was locked out.

When locks or tags are used, they should only be removed by the person who applied them. In an emergency, the chief engineer or skipper may remove the lock, but only if they can't contact the worker who applied the lock, the worker has left the boat, the worker is warned that the lock has been removed before he returns to work, and everybody working on or near the affected equipment is warned that the lock has been removed.

Lockout/tagout procedures should be used whenever you:

1. Open covers or expose wiring connections on any electrical or electronic equipment
2. Remove a guard to work on machinery
3. Place any part of your body near moving parts or in the danger zone of the machinery



Ask yourself what would happen if someone started the equipment you are working on. If there is any risk of injury, lock out the machine before beginning work.

These are the critical steps:

1. **Check the equipment** to identify all sources of energy for the equipment. In addition to electrical power, make sure that you consider hydraulics, compressed air, engine starting switches, etc. When deciding what to lock out, think about what would happen if someone fell against controls for the machine. Would you and your crew still be safe?
2. **Notify everyone** who will work on or near the equipment that lockout procedures are being used. Make sure that everyone understands which equipment will be safe to work on, and which equipment will be operating normally.
3. **Shut down** the equipment and shut off all sources of energy identified in Step 1. Close valves, shut off circuit breakers, isolate starting switches, etc.
4. **Lock and tag out** all sources of energy. Don't forget to lock out remote or timer switches, battery backups, and air or hydraulic lines. Always use locks and tags or physically disable the equipment. If more than one person is working on the equipment, each person should put their own lock on the lockout device.

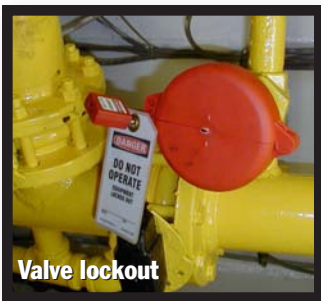
/ TAG OUT

5. **Bleed off** pressure on piping systems, discharge capacitors, block up suspended weights that might come loose, and release or secure any other forms of stored energy.
6. **Check** that no workers are in the danger zone, and test the controls to make sure the machine will not start. Double-check that all control buttons are isolated. Test electrical circuits to ensure that they are not energized.

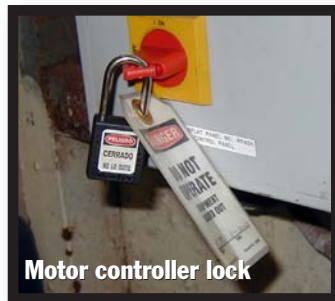
The equipment is now locked out and work can safely begin.

After work is complete on the equipment, follow the procedure below to restart the equipment:

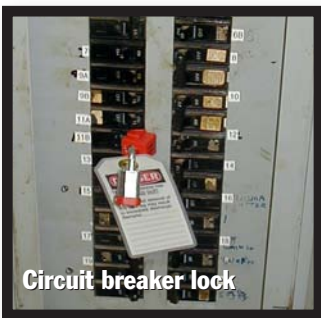
1. Check the area around the equipment to make sure that nobody is in danger if the equipment is started. Notify everyone working on or near the equipment that the equipment is ready to be restarted.
2. Remove all tools and reinstall all guards on the equipment.
3. Remove lockout/tagout devices. Remember that only the person who applied the locks or tags should remove them.



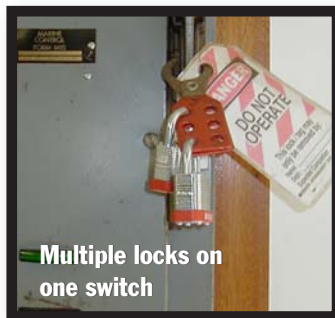
Valve lockout



Motor controller lock



Circuit breaker lock



Multiple locks on one switch

If you think you and your crew are safe as long as nobody turns on the equipment, you are in danger. Accidents happen, but it is your responsibility to protect yourself and your crew at work. Using a lockout/tagout program will help keep you safe on the job.

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