

## CONTROL OF HAZARDOUS ENERGY - LOCKOUT /TAGOUT/TRY OUT (LOTOTO)

Many serious accidents have happened when someone thought a machine or the power to it was safely off. "Lock-out Tag-out" is a way to protect yourself and others by ensuring that machines remain Completely, Temporarily off. Without a Lock-out Tag-out system there is the Possibility that a machine will unexpectedly start up, either because of stored energy which was not correctly released or through the actions of someone starting the process without realizing that it isn't safe to do so.

### What is a hazardous Energy?

Energy sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other sources in machines and Equipment can be hazardous to workers. During the servicing and maintenance of machines and equipment, the unexpected startup or release of stored energy can result in serious injury or death to workers.

### What are the harmful effects of hazardous energy?

Workers servicing or maintaining machines or equipment may be seriously injured or killed if hazardous energy is not properly Controlled. Injuries resulting from the failure to control hazardous energy during maintenance activities can be serious! Injuries may include electrocution, burns, crushing, cutting, lacerating, amputating, or fracturing body parts, and others.

- A jammed conveyor system suddenly releases, crushing a worker who is trying to clear the jam.
- Worker working over shut down line & suddenly it got charge.
- The truck bed was raised and no mechanical bracing was used to ensure that gravity could not cause the bed to unexpectedly descend.

### What Can be Done to Control Hazardous Energy?

Proper lockout/tag out (LOTOTO) practices safeguard workers from the release of hazardous energy.

**LOCK OUT:** A lock out is a device which provides a positive means for rendering a switch, valve, raised load, coiled spring or any energy source inoperative. Lock out is a necessary step for ensuring worker safety prior to performing maintenance or service. The lock out device may be pad lock, blanking plate, restraining bar, chain & pad lock or any device which prevent a machine from being energized or releasing stored energy.

**TAG OUT:** A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device, to indicate that the energy isolating device and the equipment being controlled shall not be operated until the tag out device is removed. It shows who locked the mechanism, the time date & depart. Lockout tags warn of danger. Do not temper with the switches or mechanisms which they are attached to.

**TRY OUT:** It's created measure of trying to turn back of machine once isolated, confirming the successful lockout.

**Energy Isolation Device:** Any mechanical device that physically prevents the transmission or release of energy. These includes but are not limited to, electrical breakers, switches, live valves & blocks etc.

### Basic Actions to be Perform

- Step 1: Prepare for shutdown – authorized employees must know the type and magnitude of the energy, the hazards involved, and the means to control the energy.
- Step 2: Notify all affected employees.
- Step 3: Shut down the equipment in an orderly and safe manner.
- Step 4: Release all stored energy & isolate all energy sources by blocking, bleeding & venting stored energy.
- Step 5: Lockout all switches & energy controls in the "OFF" or "SAFE" position.
- Step 6: TEST –To ensure the machines will not operate, test the operating control in on position. Make sure no one can get hurt before testing.
- Step 7: Return all operating control to the OFF position after test.
- Step 8: Perform require task.

### Before removing locks/tags & returning machinery to operation, be sure that.

- All safety guards are back in place.
- Work is complete & tools are put away.
- Workers are positioned safely for startup.
- Controls are positioned correctly for startup of m/c is ready for operation.
- The Person who applied the Lock/ Tag should remove it.

