CONTROL OF HAZARDOUS ENERGY
(LOCKOUT / TAGOUT)
1910.147

Lockout/Tagout Procedure

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Lockout/Tagout Procedure

I. **Objective:** The objective of this procedure is to establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned, and/or serviced. This plan is used in conjunction with the Brady Link 360 LOTO procedures for each piece of equipment. All records, to include audits and periodic inspections are also maintained in the Brady system.This program serves to:

A. Establish a safe and positive means of shutting down machinery, equipment, and systems.

B. Prohibit unauthorized personnel or remote-control systems from starting machinery or equipment while it is being serviced.

C. Provide a secondary control system (tagout) when it is impossible to positively lockout the machinery or equipment.

D. Establish responsibility for implementing and controlling lockout/tagout procedures.

E. Ensure that only approved locks, standardized tags, and fastening devices provided by the company will be utilized in the lockout/tagout procedures.

II. **Assignment of Responsibility**

A. ***Projects, Environment, and Safety Manager (PESM)*** will be responsible for implementing the lockout/tagout program.

B. ***PESM/Managers and Supervisors*** are responsible for enforcing the program and insuring compliance with the procedures in their department.

C. ***PESM/in Conjunction with Supervisors*** are responsible for monitoring the compliance of this procedure. LOTO team will conduct the periodic inspections and certification of the authorized employees that are not within their area of responsibility .

D. ***Authorized Employees*** are responsible for following established lockout/tagout procedures. An authorized employee is defined as a person who locks or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized when that employees duties include performing servicing or maintenance covered in 29CFR 1910.147, The Control of Hazardous Energy (lockout/tagout).

E. ***Affected Employees*** (and all other employees in the facility) are responsible for ensuring they do not attempt to restart or reenergize machines or equipment that are locked out or tagged out. An affected employee is defined as a person whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

III. **Procedures** The below items are basic steps to follow to ensure both compliance with the OSHA Control of Hazardous Energy Standard and, more so, the safety of UMA employees.

A. Preparation for Lockout or Tagout

1. Employees who are required to use the lockout/tagout procedure must be knowledgeable of the different energy sources, the magnitude of those energy sources, the proper sequence of shutting off or disconnecting energy means and the means to control those sources of energy. The type of energy sources are but not limited to:
   a) Electrical (most common form)
   b) Hydraulic or pneumatic
   c) Fluids, gases, and chemicals
   d) Thermal
   e) Mechanical (including gravity)
2. More than one source of energy may be used on some equipment and the proper procedure must be followed in order to identify energy sources and lockout/tagout accordingly.

B. Electrical
   1. Shut off power at machine and disconnect.
   2. Disconnecting means must be locked or tagged.
   3. Press start button to see that correct systems are locked out.
   4. All controls must be returned to their safest position (i.e. off, closed position)
   5. Points to remember:
      a) If a machine or piece of equipment contains compacitors, they must be drained of stored energy.
      b) Possible disconnecting means include: the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches, and electrical interlocks.
      c) Some equipment may have a motor isolating shut-off and a control isolating shut-off.
      d) If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee or the plug end of the cord must be locked out or tagged out.

C. Hydraulic/Pneumatic
   1. Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout or tagout the valve supplying energy to the piece of equipment being serviced.
   2. Stored pressure from hydraulic/pneumatic lines shall be drained/bled when release of stored energy could cause injury to employees.
   3. Make sure controls are returned to their safest position (off, stop, standby, inch, jog, etc..).

D. Fluids and Gases
   1. Identify the type of fluid or gas and don the applicable personal protective equipment (if necessary).
   2. Close valves to prevent flow, and lockout/tagout.
   3. Determine the isolating device, then close, and lockout/tagout.
   4. Drain and bleed lines to zero energy state.
   5. Some systems may have electronically controlled valves. If so, they must be shut off and locked/tagged out.
   6. Check for zero energy state at the equipment.

E. Mechanical Energy includes gravity activation, energy stored in the springs, etc..
   1. Block out or use safety chain.
   2. Lockout or tagout safety device.
   3. Shut off, lockout, or tagout electrical system.
   4. Check for zero energy state.
   5. Return controls to the safest position.

F. Release from Lockout/Tagout
   1. Inspection: Make certain the work is completed and inventory the tools and equipment used during maintenance.
   2. Clean-up: Remove all towels, rags, work-aids, etc..
   3. Replace guards: Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over, due to possible adjustments. However, all other guards should be put into place.
   4. Check controls: All controls should be in their safest position.
   5. The work area shall be checked to ensure that all employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
   6. Remove locks/tags. Remove only your lock or tag.

G. Service or Maintenance Involving More than One Person:
   1. When service and/or maintenance is performed by more than one person, each authorized employee shall place their own lock or tag on the energy isolating source.
   2. This shall be done by utilizing a multiple lock scissors clamp if the equipment is capable of being locked out.
   3. If the equipment cannot be locked out, then each authorized employee must place their tag on the equipment.

H. Removal of an Authorized Employee's Lockout/Tagout by the Company
   1. Uchiyama MFG America LLC must develop written emergency procedures for use here that comply with 1910.147(e) (3) Emergency procedures for removing lockout/tagout are outlined in SI-022 and cover the minimum requirements as follows:
      a) Verify by the employer that the authorized employee who applied the device is not in the facility.
      b) Make reasonable efforts to contact the employee and make efforts to inform that their device has been removed . (This may be done when they return to the facility).
      c) Ensure that the authorized employee has this knowledge before they resume work at the facility

I. Shift or Procedure Changes
   1. Uchiyama MFG America LLC in accordance with 29 CFR 1910.147(f)(4) will provide continuous protection through change of shigts by only allowing for removal of an outgoing authorized persons lock.
   2. In the event that there is no one coming onto shift, the authorized person may either have a responsible authorized employee perform the LOTO procedures until an authorized employee comes onto shift or by using the transition lock(Yellow Lock) from the LOTO kit following these instructions:
      a) Sign out the (yellow) transition lock and key from the LOTO kit. (Only authorized personnel). Located in the reception area.
      b) Apply the transition lock to the LOTO device for the machine requiring transitional security measures.
      c) The authorized employee can then remove their (red) LOTO Lock from the device while maintaining continuous security.
      d) Replace and sign in the key back to the LOTO kit.
      e) The incoming authorized employee can then sign out the key that corresponds to the lock on the machine in transitional phase.
      f) That employee will apply their (red) LOTO lock to the device and then remove the (yellow) transition lock, again maintain continuous security.
      g) Return the transition lock with key back to the LOTO Kit.
      h) Verify all LOTO Procedures are in place prior to start of any maintenance and/or servicing.

J. Procedures for Outside Personnel/Contractors:
   1. Outside personnel/contractors shall be advised that the company has and enforces the use of lockout/tagout procedures.
      a) They will be informed of the use of locks and tags and notified about the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.
      b) The company will obtain information from the outside personnel/contractor about their lockout/tagout procedures and advise affected employees of this information.
      c) The Outside personnel/contractor shall be required to sign a certification form (see Attachment A).
      d) If outside personnel/contractor has previously signed a certification that is on file, additional signed certification is not necessary.

K. Training and Communication

1. Each authorized employee who will use the lockout/tagout procedure shall be trained in the recognition of applicable hazardous energy sources, type, and magnitude of energy available in the work place, and the methods and means necessary for energy isolation and control.
2. Each affected employee (all employees other than authorized employees) shall be instructed in the purpose and used of the lockout/tagout procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.
3. Training records shall be kept for Authorized and Affected Personnel. The training records shall be retained in Brady 360, Keller Online and/or in Document Control for annual training purposes. They can also be found in the individual employee personnel files.

L. Periodic Inspection

1. Conduct a periodic inspection, at least for each authorized employee under the lockout/tagout procedure. This inspection shall be performed by the LOTO team member not assigned to the area they perform the inspection in and who are trained authorized associates. Since supervisors have the most knowledge concerning their respective machines and personnel, they will be involved with the inspections for their respective areas for which LOTO procedures are required. These periodic inspections will be reviewed by the PESM to ensure that all personnel and machines have periodic inspection performed annually.

2. The inspection will include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control (lockout/tagout) procedure. The inspection will also consist of a physical inspection of each piece of the equipment as to the adequacy of the program and the authorized employee while performing work under the procedures.
3. **The LOTO Team Member will** certify electronically that they performed/completed a periodic inspection. The certification shall be in Brady 360 Online.

IV. **EXCEPTIONS AND DEPARTMENT SPECIFICS**

A. MG Department specific procedures include the machines where an operator must enter the machine to remove a jammed or non-conforming part as follows:

1. The operator must be trained as an authorized employee
2. The operator must be in control (within arm's reach) of the E-stop and/or the controller panel.
3. Once the machine is stopped they must place a TAGOUT at the point of the micro switch to the door and latch the door open
4. On the smaller machine where they only open the door and energy is stopped once the door is open, they must depress the E-stop and attach a tag while they are reaching into the machine while making adjustments and/or removing jammed parts. They must be within arm's reach of the E-stop; maintain control of the E-stop at all times.
5. Persons performing Dry Ice cleaning on the mold machines shall place a block of wood under the top mold while performing the task. This will prevent the top mold from inadvertently closing while performing the task.

6. **Bypass Keys:**The MG Supervisor and shift designates and the PESM are the only persons authorized to sign Bypass keys out to authorized technicians. In the event that precise adjustments are needed to the robot/s the use of bypass keys is authorized for Technicians.
    a) Bypass keys shall only be used for a close visual inspection in order to make minor precise adjustments to the robot and machine.
    b) The use of the Bypass Keys does not exempt technicians from placing parts of their bodies in the machine.
    c) Bypass keys are the exception, not the normal activity for performing adjustments.
    d) The MG supervisor shift designate shall control all bypass keys and determine when the need is appropriate to sign keys out to technicians to perform bypass:
        i) Each key shall be signed out for a specific task, for a specfic machine, and is non transferable to another machine, nor to another person.
        ii) If a technician violates this rule and allows another person to use the bypass key, both persons are subject to immediate termination.

B. Gasket Production Department Specifics:
    1. On any of the gasket injection mold machines, in the event of the robot hand replacement, the robot must be placed in manual. In this state, there will be power to perform the maintenance.
    2. During the changeover, while removing the mold, the technician shall turn off the circuit source switch and the temperature source switch and place a tag over the switches. Once the mold is removed the technician will perform LOTO procedures for the entire machine.
    3. While performing PM on the machine appropriate LOTO procedures within the Work Instruction shall be used.

C. Metal Press Department Specifics:
    1. Specifically for die changes; the technician/operator shall turn the operational key to the off position and retain the key in their possession while changing dies. This action prevents the inadvertent startup of the machine.
    2. All other actions require LOTO Procedures.

D. Metal Treatment Specifics
    1. NL-22
        a) In the event of parts jams and cleaning, the technicians/operator shall remove the operational key and retain possession of the key to complete cleaning and/or remove jammed parts.
        b) Place a tag over the key way for tagout until cleaning or removing parts is complete.
        c) In this state, the key removed, the machine will not operate.
        d) All other actions require LOTO procedures.
    2. NL-24
        a) In the event of parts jams and cleaning the technician/operator shall remove the operational; key and retain possession of the key to complete cleaning and/or removed jammed parts.
        b) The computer screen will display a message stating "Don’t Operate" once the key is off.
        c) In this state, the key removed, the machine will not operate.
        d) All other actions require LOTO Procedures.

E. Hub Seal - Grease Curling
    1. Grease Curling
        a) **Bypass Key** - Rework - On GC-1 and GC-2 machines for curling rework
        b) The operator may use the bypass key only for rework
        c) The operator will have the control panel in their possession outside of the machine to operate the curling process.
        d) After they actuate the process they will stop the process and change out the part.

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Outside Personnel/Contractor Certification

I certify that Uchiyama MFG America LLC and (outside personnel/contractor) have informed each other of our respective lockout/tagout procedures.

Uchiyama Employee Signature Date

Contractor Signature Date