

Bauman Machine Inc.

LOCKOUT/TAGOUT PROGRAM

INTRODUCTION

Accidents and injuries associated with unexpected equipment start up during maintenance and repair activities can be serious. Amputations, electrocutions and even fatalities can occur due to failure to follow accepted lockout/tagout procedures.

The following written plan was developed to provide information and guidance for those departments on campus who have employees covered by the OSHA Lockout/Tagout standard (29 CFR 1910.147). This program also serves as a supplement to required training. The procedure is basically simple, but very important to any effective safety program. Although the OSHA standard applies to employees, this program was written to include employees and visitors to the Facility where feasible. The term "authorized individual" is used in lieu of "authorized employee" to reflect this fact.

RESPONSIBILITIES

Management

1. Endorsement of the written plan.
2. Delegation of sufficient authority to the respective department heads needed to implement the plan.
3. Appropriate the necessary resources required to implement the plan.

Management Responsibility of the Lockout/Tagout Program

1. Assure that employees receive the necessary training.
2. Assure that all necessary lockout/tagout equipment is provided and maintained in a good state of repair.
3. Enforce the Lockout/Tagout Program.
4. Identify the equipment that requires lockout/tagout.
5. Review and investigate accidents that involve lockout/tagout.
6. Participate willingly in all training programs offered by Bauman Machine Inc. and learn as much as possible about the Lockout/Tagout Program.
7. Abide by all rules and apply to the fullest extent possible the safety and health precautions specified by the University.
8. Report any problems that are observed which could compromise health and safety to the University administration through his or her immediate supervisor.
9. Maintain all items used for lockout/tagout in a safe manner.
10. Ensure that no other individuals are exposed to hazards associated with lockout/tagout.

Procedure

Appendix A contains a generic procedure for lockout/tagout activities.

TRAINING

Authorized individuals shall be trained in lockout/tagout procedures.

Training shall be provided to the following individuals:

- a. New employees via. Correspondence of the Employee Handbook.
- b. Employees who demonstrate a lack of knowledge in the lockout/tagout procedure;
- c. When new equipment is introduced, or when a specific procedure is developed or modified; and
- d. Periodic refresher - recommended annually.

Sources of Training

1. Thru Management provided documents and training.
2. Other approved sources.

The above listed sources of training are generic in nature and provide for the authorized individual an excellent base for knowledge. However, complex equipment, with more than one source of energy, requires a specific written procedure. Individuals performing work on complex equipment should be trained on the procedures for that equipment.

Training Records

Training must be documented and maintained. The following information should be contained in the training record: date of training, instructor, name of employee and a brief description or outline of what was covered.

Provisions shall be made for individuals who have limited reading skills to insure they are familiar with the necessary information.

A test is suggested at the end of each training program to demonstrate that the participants have the requisite knowledge.

Procedure Development and Review

A specific procedure must be developed for equipment containing more than one energy source.

The Lockout/Tagout Procedure (Appendix A) provides a good template for procedure development. Procedures shall clearly outline the scope, purpose, authorization, rules and techniques to be used.

If an error or omission is detected in a specific written procedure, it is the responsibility of the authorized individual who identifies the error or omission to bring it to the attention of his or her supervisor. Corrections must then be made and communicated to each authorized individual who works with this procedure.

Hot Tap Work

Hot taps involve working on equipment while it is energized. Hot tap work is discouraged and should **only** be done where it is infeasible to do otherwise.

Where hot tap work is conducted, additional precautions must be taken and specific written procedures must be developed. Authorized individuals performing hot tap work must be trained in these procedures.

Signs and Warnings

The OSHA standard does not require signs as part of the lockout/tagout standard. However, signs do improve safety by providing a warning.

Signs should be placed on all equipment requiring lockout/tagout. The lock and/or tag should be placed on the equipment.

LOCKOUT/TAGOUT PROCEDURE AUDITING

The OSHA standard requires that each authorized employee be audited annually on lockout/tagout. The audit must be conducted by an authorized individual who is authorized to perform a lockout/tagout, but does not use lockout/tagout on the equipment that is being audited.

To assist departments in auditing, an audit checklist has been developed. See Appendix B at the back of this program. This form, or a similar record, should be maintained in the department's files.

Contractors

The OSHA standard requires that contractors be made aware of specific lockout/tagout procedures. Note this applies to "specific" procedures and not the general procedure found in Appendix A.

Locks, Tags, and Other Equipment

Locks shall be used only for lockout purposes and shall be "heavy-duty." Heavy-duty is defined as a lock that can be removed only with heavy-duty bolt cutters. The locks and tags used for lockout shall be standardized within each department. An authorized individual should never lend their lock or key to anyone else. There may be situations where several locks are necessary for a lockout. A department may elect to have several locks that can be used as a unit. However, control must be maintained over the keys.

At least one tag must be provided for locations where locks are applied. Note that if more than one energy isolation device (EID) is locked out, there must be a tag at each EID.

Lock Removal

Locks and/or tags must not be removed by any one other than the authorized individual who installed it. There is one exception to this rule. The authorized individual's supervisor may remove his or her lock, but only when it is **absolutely** necessary to remove the lockout/tagout. If the lock and/or tag is removed, every effort must be made to notify the authorized individual that his or her lock has been removed. Efforts to be made to notify the authorized individual that their lock has been removed include:

- i. Call the individual at home;
- ii. Notify the employee immediately when they return to work; and
- iii. Post a note, sign or other warning in a conspicuous location where the employee is working (ideally on the equipment).

Equipment

The following is a list of equipment that may be used in lockout.

1. Tags and ties
2. Multiple lock hasp
3. Lock box (if used in the department)
4. Breaker locks
5. Lock and Key
6. Electrical meter to determine the status of an electric circuit
7. Valve covers
8. Blocks
9. Blanks
10. Jacks
11. Supports (posts, columns, timbers, etc.)
12. Other items as necessary

APPENDIX A: PROCEDURES

INTRODUCTION

Scope: This procedure shall apply to employees, contractors and visitors who are involved in equipment (including piping and processes) servicing, maintenance, repair, tool change, cleaning, modification, and setup where it is necessary to remove a guard or safety feature and where any part of an individual's body comes into contact with the "danger zone." The danger zone is defined as that part or area of the equipment that could cause bodily injury such as energized parts, crush points, shear points, run-in points, pressurized vessels, hazardous materials, etc.

Failure to use lockout/tagout procedure or removal of another individual's lockout/tagout will result in disciplinary action. The degree of disciplinary action (up to and including dismissal) shall be determined by Management to which the individual is responsible.

Exception: The supervisor is the only individual authorized to remove an employee's lockout/tagout. The lockout/tagout can be removed only when it is **absolutely necessary** to be removed. Every effort must be made by the supervisor to notify the authorized individual that his or her lock has been removed.

This procedure does not apply to:

- A. Plug and cord connections under the exclusive control of the individual performing the work. Exclusive controls denotes that the individual is able to keep the plug within reach while performing the work.
- B. Authorized hot tap work where specific safety procedures have been developed and are followed.

All equipment shall be locked out and/or tagged out to protect against injury to individuals during servicing or maintenance. The following procedure is generic in format. Specific written procedures must be developed and followed for equipment having more than one energy source.

If you are uncertain of how to lockout/tagout the equipment you will be working on, you **must** contact your supervisor for instructions.

PROCEDURE

1. Identify all energy sources (e.g. electrical, steam, hydraulic, etc.) and their magnitude (e.g. 120 volts, 60 psi steam, etc.). Look for hidden energy sources such as springs, capacitors, elevated parts, etc. The equipment may contain more than one type of energy.
2. Notify individuals who use the equipment that it will be taken out of service.
3. Stop the equipment by its normal shut down procedure.
4. Isolate the equipment from its energy source. This typically involves closing valves, opening switches or operating other energy isolation devices. Note - an on/off switch or run/stop switch are not energy isolation devices.

5. Dissipate or secure stored energy. This may involve repositioning, blocking, bleeding, braking, etc.
6. Apply your lock to the energy isolation device. Always provide a completed tag with your lock. A tag alone can only be used where it is infeasible to lockout an energy source. Additional precautions must be followed if only a tag is used. Each individual working on the equipment must install their own lock. It may be necessary to use a multiple lock hasp.
7. Insure that no one is exposed to danger, and then as a check to be sure that all energy sources are isolated, activate the equipment's normal controls to make certain the equipment will not operate.

CAUTION: Always return the controls to the "neutral" or "off" position after this test.

Only when the equipment is locked and/or tagged out may work proceed.

Temporary Removal of Lockout for Testing or Adjustments

- i. Clear equipment of tools, etc.
- ii. Remove employees from danger zone
- iii. Remove lock and/or tag
- iv. Proceed with test by energizing the equipment
- v. De-energize equipment (following steps three through seven above)

Restoring the Equipment After Work is Completed

- a. Check the area around the equipment to insure that no one is exposed to danger after servicing or maintenance is complete
- b. Remove all tools, loose parts, etc. from the equipment
- c. Replace all guards, shields or other safety features
- d. Remove the tag and lockout devices. Each person must remove their own lock
- e. Operate the energy isolation device to restore energy to the equipment

Shift Changes and Prolonged Lockout/Tagout

When a shift change is occurring and the out-going shift will be removing their lockout/tagout and the incoming shift will be applying their lockout/tagout, at least one employee from each shift must be present at the equipment for the change. The incoming shift shall apply their lockout/tagout before the outgoing shift leaves.

It is acceptable to maintain a lockout continuously for an indefinite period of time.

