Machine Safeguarding Program

# Purpose

## To provide guidance on the minimum safety requirements related to machine safeguards which are used to protect employees when the operation of machines/equipment or accidental contact with it could cause an injury.

# Eligibility

## This program applies to all employees at (Insert Company Name)’s (Insert location name) location who work in areas where potential exposures to any machine where parts, functions, or processes may cause an injury.

# Definitions:

## **Device:** A press control or attachment that restrains the operator from inadvertently reaching into the point of operation.

## **Enclosure:** Guarding by fixed physical barriers that are either mounted on or around the moving parts of the machine/equipment.

## **Fencing:** A locked fence or rail enclosure that restricts access to the machine, except by authorized personnel. The dangerous operation of the machinery must be at least 42 inches away from the fencing.

## **Guard:** A barrier (fixed or movable) that prevents contact with moving parts. Guards are more protective and are preferred over devices.

## **Hazards:** A source of potential harm or damage, or a situation with potential for harm or damage.

## **In-going Nip Points:** Two or more mechanical components rotating in opposite directions in the same plane and in close conjunction or interaction.

## **Pinch Point:** Any place where a body part can be caught between two or more moving parts.

## **Point-of-operations:** The point at which cutting, shaping, boring, forming, or processing is accomplished on or within the equipment.

# General Requirements & Procedures

## Guards must be placed on machines to protect the operator(s) and other employees in the area from hazards such as those created by the point of operation, in-going nip points, rotating parts, moving belts, cutting teeth, flying chips/sparks, and any parts that impact or shear.

### The following are example equipment and/or areas where machine guarding is required: LIST EQUIPMENT AND AREAS

## **Safeguarding Methods**

### There are 2 main ways for safeguarding equipment:

#### Install a Guard

#### Install a Device

### Guard – Prevents entry

#### Guards are preferred over devices for controlling entry dangerous areas. Devices are discussed in the next section.

#### There are 4 types of guards:

##### Fixed – This type of guard is a barrier or enclosure that permits material to enter into the operation zone, but not the operator’s body or body parts. Fixed guards are not dependent upon moving parts to perform its intended function.

##### Interlocked - When this type of guard is opened or removed, the tripping mechanism and/or power automatically shuts off or disengages, and the equipment cannot operate until the guard is back in place.

##### Adjustable – This type of guard is adjustable and protects the operator by placing a barrier between dangerous areas and the operator.

##### Self-adjusting – This is similar to an adjustable guard, except that it is automatic and the opening is determined by the movement of parts of the equipment.

### Device – Controls entry

#### Devices may replace or supplement guards.

#### To qualify as a device, it may perform one of the following functions:

##### Stop the equipment if a hand or any part of the body is inadvertently placed into equipment.

##### Restrain or withdraw the operator's hands during operation.

##### Require the operator to use both hands on equipment controls.

##### Provide a barrier which is synchronized with the operating cycle of the equipment in order to prevent entry during the hazardous part of the cycle.

#### Descriptions of types of devices:

##### Gate - A moveable barrier that protects the operator at the point of operation before the equipment can be started.

##### Presence sensing device – These devices either stop the equipment, or will not start the cycle, if a hand or any part of the body is inadvertently placed into a dangerous area.

##### Safety trip controls – These devices provide a quick means for deactivating the equipment in an emergency situation.

##### Two hand control/trip – These devices prevent the operator from reaching into the point of operation by requiring concurrent pressure of operator’s control buttons to activate the equipment.

### Additional Methods

#### When guards or devices cannot be used, there are additional methods that can be used such as fencing, safe distance, safe opening, and safe position of controls.

#### These additional methods do not provide the same level of protection of guards or devices. They depend upon specific procedures, work rules, training, and/or supervision to prevent entry into dangerous areas.

## **Requirements for Safeguards**

### Prevent contact:

#### The safeguard must prevent hands, arms, and any other part of a worker's body from making contact with dangerous moving parts. A good safeguarding system eliminates the possibility of the operator or another worker placing parts of their bodies near hazardous moving parts.

### Secure:

#### Workers should not be able to easily remove or tamper with the safeguard, because a safeguard that can easily be made ineffective is no safeguard at all. Guards and safety devices should be made of durable material that will withstand the conditions of normal use. They must be firmly secured to the machine.

### Protect from falling objects:

#### The safeguard should ensure that no objects can fall into moving parts. A small tool which is dropped into a cycling machine could easily become a projectile that could strike and injure someone.

### Create no new hazards:

#### A safeguard defeats its own purpose if it creates a hazard of its own such as a shear point, a jagged edge, or an unfinished surface which can cause a laceration. The edges of guards, for instance, should be rolled or bolted in such a way that they eliminate sharp edges.

### Create no interference:

#### Any safeguard which impedes a worker from performing the job quickly and comfortably might soon be overridden or disregarded. Proper safeguarding can actually enhance efficiency since it can relieve the worker's apprehensions about injury.

### Allow safe lubrication:

#### If possible, one should be able to lubricate the machine without removing the safeguards. Locating oil reservoirs outside the guard, with a line leading to the lubrication point, will reduce the need for the operator or maintenance worker to enter the hazardous area.

## **Guard Guidelines**

### Guards designed and installed by the machine/equipment manufacturer are best.

### Guards installed onto machines/equipment are necessary if they are not installed by the manufacturer (e.g., on older machines/equipment). These guards must be designed, built, and/or installed to fit the machine/equipment properly.

### Materials

#### Metal is the best material for guards.

#### Plastic guards or safety glass may be used where visibility through the guard is required.

#### Wood guards are generally not recommended because of their flammability and lack of durability and strength. In areas where corrosive chemicals are used, wood guards may be the best choice.

## **Personal Protective Equipment (PPE)**

### Types of PPE:

#### Hard hats offer protection to the head from the impact of bumps and falling objects when the operator is handling stock.

#### Caps and hair nets may be used to keep the operator's hair from being caught in machinery.

#### If machine coolants could splash or particles could fly into the operator's eyes or face, then face shields, safety goggles, glasses, or similar kinds of protection might be necessary.

#### Hearing protection may be needed when operators operate noisy machines.

#### Operators may protect their hands and arms from the same kinds of injury with special sleeves and gloves.

#### Safety shoes and boots, or other acceptable foot guards, shield the feet against injury in case the operator must handle heavy stock that could drop.

### Always be aware that PPE may create hazards when working with machines (e.g., gloves can become caught between rotating parts).

### Also be aware that operator's clothing may present additional safety hazards.

#### Example: loose-fitting shirts can become entangled or jewelry may catch in rotating parts.

## **Equipment Maintenance**

### All equipment must be properly maintained per the manufacturer’s and/or the equipment owner’s requirements.

### All (Insert Company Name) employees and contractors shall follow lockout/tagout (LOTO) procedures for shutting down equipment prior to removing any safeguards or accessing any equipment where he/she could be exposed to hazardous moving machine parts.

### If maintenance requires testing or adjustment of equipment with its safeguards removed, equipment specific procedures should be developed and followed for performing the task(s) safely.

### After maintenance is complete, replace safeguards before equipment restart.

## **Training**

### Each employee who works with or is potentially exposed to machines/equipment which requires safeguarding will receive training to ensure he/she is familiar with the installation, operation, and removal of machine safeguards and to ensure he/she understands and is able to follow all requirements in this program. This training shall have instructions describing at least the following topics:

#### Description and identification of the hazards associated with particular machines.

#### The safeguards themselves, how they provide protection, and the hazards for which they are intended.

#### How to use the safeguards and why.

#### How and under what circumstances safeguards can be removed, and by whom (in most cases, repair or maintenance personnel only).

#### What to do (e.g., contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection.

### Each employee who works in a general area where safeguards are used shall receive training to understand the requirements of this program and to understand that safeguards shall not be removed or defeated.

# Responsibilities:

## INSERT POSITION TITLE(e.g., Safety Coordinator, Safety Manager, Operations Manager, etc.)

### Ensures this program and its associated documentation is completed and maintained.

### Develops training materials and trains employees on the topics required by this program.

### Reviews the effectiveness of this program to make sure that it satisfies the requirements of all applicable federal, state or local requirements.

### Assists with or completes assessments and inspections, when required.

## INSERT POSITION TITLE (e.g., Managers, Supervisors, Line Management, etc.)

### Ensures employees follow safe work practices when working with or near machines.

### Ensures employees do not remove or operate machines without machine safeguards in-place.

### Ensures safe operating and maintenance procedures are current and are followed by employees.

## INSERT POSITION TITLE (e.g., Employees)

### Operates machines with all safeguards in place and follows all applicable safety requirements (e.g., lockout/tagout).

### Understands hazards related to machines being worked-on and proper safeguarding methods.

### Participates in all required training.

# Associated Documents

## Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910 Subpart O Machinery and Machine Guarding

## U.S. Department of Labor Occupational Safety and Health Administration. Concepts and Techniques of Machine Safeguarding. *OSHA Publication 3067*. Retrieved from: <https://www.osha.gov/Publications/Mach_SafeGuard/toc.html>

# Change Control (optional section)

## Table 1 describes revisions made to this document since the previous version.

Table 1: Change Control Record

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| --- | --- | --- | --- |
| Revision # | Date | Description of Changes | Author |
| 0 |  | Original Documentation for Release. |  |