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|  | <h2>Machine Guarding</h2> | Effective: | February 06, 2006 |
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1. Purpose:

To familiarize people with the requirements related to machine and equipment guards.

2. Scope:

These guidelines apply to all trained facilities and outdoors staffs only.

3. Procedure

OSHA requires machine guarding be provided and maintained to protect employees from the hazards associated with the operation of machinery. The need for machine guarding may be found in machine shops in academic departments, maintenance shops, print shops, restaurant kitchens, and other areas where mechanical equipment is used.

Any machine part, function, or process within seven feet of the work surface that might cause injury must be safeguarded. When the operation of a machine or accidental contact with it could injure the operator or others in the vicinity, the hazards must be either controlled or eliminated. The following information is provided to assist in assuring machine safety through hazard identification and evaluation, safeguarding, training, and safe operation.

How do you identify safety hazards associated with guarding? You must be able to recognize the contributing factors, such as the mechanical components of machinery, the mechanical motion that occurs at or near these components, and the specific worker activities performed with the mechanical operation. Typically, the following areas on machinery are dangerous and can be a risk to anyone near the machine:

Parts that move or transmit power: Parts that do the work:

- Belts and pulleys
- Flywheels and gear wheels
- Shafts and spindles
- Slides and cams
- Chain and sprockets gears
- Tools and dies
- Guillotine blades
- Milling cutters
- Circular saws
- Drills and chucks

To help identify dangerous machine parts, look for:

- ‘Drawing in’ points
- Shear points
- Impact and crushing points
- Cutting areas
- Entanglement areas
- Stabbing points
- Abrasion areas
- Flying particles
- Any protrusions which could cause injury

How can you control potential hazards? Machine safeguarding is the primary way to control amputation and personal injury hazards associated with machinery. Work practices, employee training, and administrative controls also play an important role in preventing and controlling these workplace hazards. Anyone working around machinery should be able to identify potential amputation and personal injury hazards. Understanding the mechanical components of machinery, the mechanical motion that occurs at or near these components, and the specific worker activities performed in conjunction with machinery operation will help workers avoid injury.

Machine hazards may be controlled by guarding against the following:

- Contact or entanglement with machinery
- Being trapped between the machine and material or fixed structure
- Contact with material in motion
- Being struck by ejected parts of machinery
- Being struck by material ejected from machine
- Release of potential energy

Safeguarding requirements: Safeguards must meet the following minimum requirements:

- **Prevent contact:** The safeguard must prevent hands, arms, and any other part of an operator’s body from making contact with dangerous moving parts.
- **Secure attachment:** Operators should not be able to easily remove or tamper with the safeguard.
- **Protection from falling objects:** The safeguard should ensure that no objects could fall into moving parts.

- **Create no new hazards:** A safeguard defeats its own purpose if it creates a hazard such as a shear point, a jagged edge, or an unfinished surface that could cause a laceration.
- **Create no interference:** Any safeguard that impedes an operator from performing the job quickly and comfortably might soon be overridden or disregarded.
- **Allow safe lubrication:** If possible, workers should be able to lubricate the machine without removing the safeguards.

Training: Even the most elaborate safeguarding system cannot offer effective protection unless the operator knows how to use it and why. Specific and detailed training is therefore a crucial part of any effort to provide safeguarding against machine-related hazards. Thorough operator training should involve instruction or hands-on training in the following:

- A 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 by 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.
- Lock out/tag out procedures.
- All training must be documented in writing.

Information Resources

[U.S. Department of Labor – Safety and Health Topics: Machine Guarding](#)