



Machine Guards Protect YOU!

Machine guards are your first line of defense against injuries caused by machine operations. Each machine must have adequate safeguards to protect the operators from the machine's hazards.

Three Parts of Every Machine

All machines consist of three fundamental areas: the point of operation, the power transmission device, and the operating controls.

Point of Operation: The point of operation is where work is performed on the material, such as cutting, shaping, boring, or forming of stock. Follow the machine's operating instructions to ensure that the machine is being run correctly and safely. Understand how the machine works, and you will reduce your risk of injury.

Examples of mechanical hazards that can hit, grab or trap an operator are:

- Hazardous motions.
- Points of operation.
- Pinch points and shear points.

Power Transmission Device: The power transmission apparatus is all components of the mechanical system which transmit energy to the part of the machine performing the work. These components include flywheels, pulleys, belts, connecting rods, couplings, cams, spindles, chains, cranks, and gears.

There are different types of hazardous mechanical motions and actions:

- Hazardous motions such as rotating parts, reciprocating parts or traversing parts.
- Hazardous actions such as cutting, punching, shearing or bending.
- There are also non-mechanical hazards that can injure operators, or those nearby, including, flying chips, splashes, or sprays that are created when the machine is running.

Operating Controls: A mechanical or electrical power control shall be provided on each machine to make it possible for the operator to cut off the power from each machine without leaving his position at the point of operation.

Requirements for Safeguards

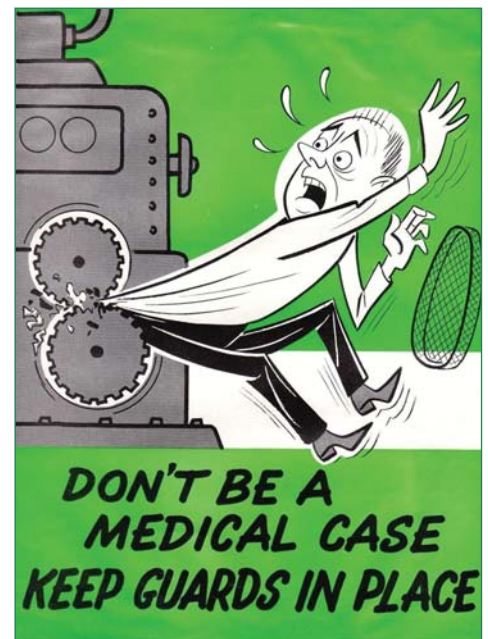
Safeguards must meet minimum general requirements:

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 firmly be 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.



The National Safety Council poster is a reminder of how easy something can happen when you remove a machine guard. Guards are in-place for a reason.



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 as 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.

Employees Should Be Mindful

Even the most elaborate safeguarding system cannot offer effective protection unless the worker knows how to use it and why. Read and understand all operating manuals. Do not use the machine for other intentions than it was designed for.

Specific and detailed training is crucial to provide safeguarding against machine-related hazards. Thorough operator training involves instruction or hands-on training in the following:

1. a description and identification of the hazards associated with particular machines;
2. the safeguards themselves, how they provide protection, and the hazards for which they are intended;
3. how to use the safeguards and why;
4. how and under what circumstances safeguards can be removed, and by whom (in most cases, repair or maintenance personnel only); and
5. when a lockout/tagout program is required.
6. what to do (e.g., contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection.

FIVE GENERAL METHODS OF SAFEGUARDS

GUARDS

- These are physical barriers that prevent contact. They can be fixed, interlocked, adjustable or self adjusting.

DEVICES

- These limit or prevent access to the hazardous area. These devices can be: presence-sensing devices, pullback or restraint straps, safety trip controls, two hand controls or gates.

AUTOMATED FEED & EJECTION MECHANISMS

- These eliminate the operator's exposure to the point of operation while handling stock.

MACHINE LOCATION or DISTANCE

- This method removes the hazard from the operator's work area.

MISCELLANEOUS AIDS

- These methods can be used to protect both operators and people in the area. Examples include: shields to contain chips, sparks or sprays; holding tools that an operator uses to handle materials going into the point of operations; and awareness barriers to warn people about the hazards in the area.

Safety is only possible if you work responsibly and remember to be alert to the guards and why they are in place. If a guard is missing, do not operate the machine, contact your supervisor.

SAFETY TRAINING SIGN-IN SHEET

Company Name: _____ Date: _____

Subject: Machine Guarding - Be Safe

The following employees participated in this training.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
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