Guard Machines for Safety

Goals

This safety session teaches trainees to:

- Understand the importance of machine guarding for preventing serious injuries.
- Know the most common types and methods of machine guarding.
- Follow safe work practices when using machinery.

Applicable Regulation:
Cal OSHA GISO 4184.
Guarding Required.

1 Contact with moving parts of machinery causes thousands of serious injuries each year to operators—especially when proper guards are not in place. Danger spots on machines include:

- Point of operation where the actual work is performed:
  — The machine may cut, punch, shear, or bend metal, wood, plastic, meat, or some other material.
- Power-transmission apparatuses, such as flywheels, pulleys, belts, chains, couplings, spindles, cams, and gears.
- Ingoing nip points, where moving parts contact or come close to other parts.
- Rotating parts, such as rollers, grinding wheels, or circular blades.
- Blades or other cutting parts.
- Pinch points or similar moving parts.
- Other machine components that move during machine operation.

2 There are several common types of machine guards.

- Some are fixed and are never removed.
- Interlocked guards are designed to be removed or opened to allow the worker access to the hazard zone.
  — Opening or removing the guard will cause the equipment to shut down, effectively eliminating the hazard.
  — Unfortunately, sometimes workers have found ways to prevent the machine from shutting down and have caused accidents.
- Some guards may be adjusted by the operator according to the size or thickness of the material being handled.
- Self-adjusting guards automatically open enough to allow work to enter the machine but not enough for an operator to be injured.

3 Sometimes other methods are used to eliminate hazards.

- Some machines have an automatic shutoff if an operator's body part enters the guarded area—these shutoffs can be activated by various sensing methods.
- — Light curtains have photoelectric presence-sensing devices.
- — Other devices use radio beams to sense movement in the danger area.
- — Pressure-sensitive devices can tell if a worker walks into the area.
- Restraint and pullback devices can be attached to an operator's hand or arm to prevent access to the point of operation.
- Two-hand control devices require the operator to use both hands.
- Sometimes the entire machine is enclosed in a locked cage.
  — The worker never enters the area where the machine is located.

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4 These are some general requirements for machine guards. They must:

- Prevent operator contact with danger spots.
- Be durable, secure, and not easily removed.
- Protect against things falling into the guarded area where a small object or tool could cause a jam or malfunction.
- Create no additional hazards.
- Allow for safe lubrication of the machine without their removal.
- Create no interference with efficient machine operation.

5 Here are some questions to ask before using any machine:

- What kind of guards does it have?
- Are they securely in their place? Make sure before you turn on the power.
- What are the proper procedures if there is a jam of some sort?
- How do you turn the power off quickly if necessary?

6 Following good safety practices will help to keep you safe.

- Always read the manufacturer's instructions, and be sure you understand how to operate the machine properly.
- Always operate the machine according to your training.
- Feed material into the machine with hand-feeding tools, not your hands.
- Find a comfortable working position to minimize fatigue.
- Take it easy—rushing through a job is one of the major causes of accidents.
- Pay attention—machines are very powerful, and you must be alert in order to stay in control.
- Check machines before use. If anything seems to be missing or not working properly, report it promptly.
- Make sure maintenance is performed when it is required.
- Follow lockout/tagout procedures when a machine needs repair or maintenance.
- Check machines after repair or maintenance to be sure that all guards are securely back in their proper places.
- Be sure no other workers can enter a danger area where machinery is operating.

Discussion Points:

- Review the types of machinery in your workplace. What special sorts of hazards are there?
- Do the guards protect properly against these hazards?

Conclusion:

Powerful machinery can cause serious injuries, amputations, or even death. Guards can help to protect you, but you must also follow safety rules and pay attention to be safe.

Test Your Knowledge:

Have your employees take the Guard Machines for Safety quiz to see if they understand the importance of proper guarding to protect themselves when operating machinery or whether they need to review this subject again soon.