

Injuries most often occur when workers operate unguarded or inadequately safeguarded machinery.

- Any machinery that can cause injury must be safeguarded such that the hazards must be eliminated or controlled.

Criteria for Safe and Effective Machine Guarding:

- Prevents contact with the hazards during operation
- Does not create additional hazards
- Is secure, tamper-resistant, and durable
- Avoids interfering with normal operation
- Allows for safe lubrication and maintenance



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There are four general types of machine guards:

1. A **fixed guard** is a permanent part of the equipment. It can be constructed of sheet metal, screen, wire cloth, bars, plastic, or any other material that is strong enough.
2. When an **interlocked guard** is opened or removed, the machine will stop and will not resume movement until the guard is back in place.
3. An **adjustable guard** can be useful to accommodate various sizes of material and provides a barrier that can be adjusted for a variety of different operations.
4. A **self-adjusting guard** is pushed away when the operator moves material into the danger area, providing an opening which is only large enough to admit the material. After the action is complete, the guard returns to the rest position.

Other safeguarding devices include:

- **Pullback Devices** withdraw the hands from the point of operation during the machine cycle
- **Restraint Devices** limit the operator's hands from reaching the point of operation at any time
- **Presence-Sensing Devices** stop operation when the sensing field is disturbed
- **Two-Hand Control** requires continued use of both hands, keeping them away from danger area



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## Employee responsibilities when working in an area with machinery:

- Only machine operators should be close to the machinery and all other workers must remain at a safe distance. Machine operators must be trained.
- Do not override, disable, remove, or alter any machine guards or safeguarding devices. Know who to contact if a machine guard or safeguarding device is damaged, missing, or not working properly.
- Avoid wearing loose-fitting clothing, dangling jewelry, hanging badges, or long hair that could get caught in moving parts. Wear personal protective equipment (PPE) as required.
- Use eye contact and hand gestures when approaching equipment. If an employee who is not the machine operator needs to approach a piece of equipment, they should make eye contact with the operator and use clear hand signals to indicate they are approaching.
- De-energize equipment when not in use to keep the machine from accidentally starting. The lockout/tagout procedure is especially important when doing any kind of work on the equipment such as repairs, changing accessories, or performing routine maintenance.

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