

Machine Guarding Part 1: Hazards

Machines can be dangerous when they aren't guarded. Before you can protect yourself, you must first understand what the dangers are.

Machines may have hazards including:

- Motion
- Chemicals
- Dust and particles
- Light
- Noise
- Vibration
- Pressure
- Electricity
- Extreme temperatures

ALL hazards require your attention, but the focus of this job aid is the physical hazards presented by machine motion.

There are two specific areas where you should expect machine motion hazards:

- Point-of-operation or danger area (where machines perform work)
- Power train or transmission

Hazards associated with machine motion may include:

- **Nip and pinch points.** Nip and pinch point hazards occur where rotating machine parts contact other surfaces or parts.
- **Entanglement hazards.** Rotating parts can grab, snag and entangle body parts, hair, and loose clothing or items, pulling you into moving machine parts and causing broken bones, amputations and other serious injuries.
- **Shearing and crushing hazards.** Back-and-forth, sliding, reciprocating or traversing motions are shearing and crushing hazards.
- **Machining, breakage and projectiles.** The normal operation of machines may produce flying dust and cuttings. When machines, machine parts and materials break violently, they may become high-velocity projectile and impact hazards.

You can identify hazards around machines by using:

- **Warnings and signs.** Manufacturer decals, employer warning signs and high visibility paint help you identify and avoid hazards. Pay attention to colors, symbols, pictograms and warning statements and ask your supervisor if you have questions. We must maintain these warnings to keep everyone safe.
- **Training.** Your employer will train you about your workplace, its machines and specific hazards and safeguards. Machine manuals and procedures, lockout/tagout procedures and job hazard analysis forms also contain valuable safety information.
- **Senses, observations, inspections and reports.** Pay attention to your own senses and observations. Heat, vibration, intense sound, light and even the smells of machine operation can be clues that indicate that hazards are present. Use your employer's process to document inspections and report concerns, close calls, incidents, and missing or damaged guards.