SAFEGUARDS ARE ONLY SAFE WHEN IN PLACE

Never remove safeguards from a machine. They are there for a reason. If you must remove a safeguard to clean or service a machine, use lockout/tagout procedures, and don't put the machine back in service until the guard is replaced.

Nonmechanical Hazards

The moving parts of a machine are not the only hazards you need to safeguard against. The following nonmechanical hazards can also put you at risk.

Noise can be a safety hazard in several ways. Noise can damage your hearing, make it difficult to communicate with co-workers and startle you or disrupt your concentration.

What to do: Install sound dampening guards if they are available for your type of machinery. Wear earplugs or earmuffs to help reduce noise.

Coolants, fuels and other chemicals used to run machinery can be toxic. Contact with these substances can cause problems ranging from skin rashes to serious respiratory illness.

What to do: Ensure that vents, fans, valves, hoses and other parts of the machinery you work with are functioning properly and are in good repair. Reduce contact with hazardous substances by wearing protective clothing.

Power sources such as electrical or hydraulic systems can explode, cause electric shock and other injuries.

What to do: Follow proper lockout and tagout procedures when servicing or cleaning machinery, and never remove guards or safety devices that keep you from coming in contact with a power source.

Don't Forget Your PPE

The guards attached to machines are only part of the safety solution. You also need to wear the correct personal protective equipment (PPE) for the task you are performing.

Ear protection. Even if you don't feel pain or discomfort in your ears, you could be experiencing hearing loss from machinery noise. Hearing loss is cumulative — it builds up slowly over time — and you may not notice it until years from now. Earplugs and earmuffs not only reduce noise, they help prevent permanent hearing damage.

Eye protection. The majority of eye injuries happen because a person is not wearing eye protection, or the eyewear does not fit properly. Safety glasses or goggles should fit well and be the right type for the job. For example, goggles that are snug to your face protect against projectiles and chemical splashes. Eyewear should also be clean and free from scratches or damage, so you can see clearly.

Hand and foot protection. Ranging from chemical gloves and shoe coverings to steel-toed boots, the right handwear and footwear can protect you from many machinery related hazards such as chemicals, falling objects, pinching and crushing.

The bottom line: Don't think you're safe simply because the machine you work on has adequate guards. Take charge of your own safety with the right PPE.

Remember: Protective clothing should be appropriate for the particular hazards, maintained and in good condition, properly stored when not in use, and kept clean and functional.

PC 5415

Machine Safeguards

Machine Safeguarding: What's the Point?

Machine safeguards prevent injuries to hands, arms or any other part of the body by preventing contact with the dangerous moving parts of a machine. Guards usually are made of durable material; they are secured firmly to the machine and are not easily removed.

3 Areas That Require Safeguards

1. Point of operation

Where the machine's function is performed, such as cutting or boring.

2. Power transmission parts

These are the parts of the machine that transfer energy to the point of operation, including flywheels, pulleys, belts, cranks and gears.

3. Moving parts

Any part of the machine that moves while the machine is working, including the feed mechanisms, attachments and auxiliary parts.

Learning to recognize hazardous mechanical motions, understanding the types of machine safeguards, and taking precautions against the dangers of nonmechanical hazards as well, can prevent injuries.

Read on.

Basic Hazardous Mechanical Motions

■ **Rotating** (including in-running nip points): Dangerous because even slowly rotating shafts can grip clothing and can force arms and hands into dangerous positions.

■ **Reciprocating** Dangerous because during the back-and-forth or up-and-down motion, a worker may be struck by or caught between a moving and a stationary part.

■ **Transversing** Movement in a straight continuous line ... dangerous because a worker may be struck or caught in a pinch or shear point by the moving part and a fixed object.

Basic Hazardous Mechanical Actions

■ **Cutting** May involve rotating, reciprocating or transverse motions. The hazards are not only for hands and arms near the point of operation but for the head, eyes and face as a result of flying debris.

■ **Punching** Typically involves power presses used for blanking, drawing or stamping metal or other materials. The hazard occurs at the point of operation where stock is actually inserted, held or withdrawn by hand.

■ **Shearing** Involves applying power to a slide or knife in order to trim or shear metal or other materials. The hazard occurs at the point of operation where stock is actually inserted, held or withdrawn.

■ **Bending** Results when power is applied to a slide in order to draw or stamp metal or other materials. The hazard occurs at the point of operation where stock is actually inserted, held or withdrawn. Equipment that uses bending includes power presses, press brakes and tubing benders.

Watch out! **Working with machinery poses many hazards including crush injuries to hands, arms and feet, eye injuries and injuries that occur when a person's clothing gets caught in a machine. THE IRONCLAD RULE: Any machine part or function that has the potential to cause injury must be safeguarded. And you should never wear loose, flapping clothing, jewelry, ties or scarves around machinery. They could get caught and cause serious injury.**

What Are the Different Types of Machine Guards?

People who work with machinery are at risk from a variety of mechanical hazards such as vibration, cutting, pinching or crushing. Different guards and safety devices protect you, depending on what type of machine you use and what dangers it presents:

■ **Guards** create a barrier between you and a machine's dangerous parts. They can be fixed, meaning that they are only removed for cleaning or servicing, or adjustable, to allow you to move them at certain times to feed materials into the machine. Some guards are interlocked so that the machine will not run unless the guard is in place.

■ **Presence-sensing devices** use a photoelectric "eye," a radio-frequency signal or a mechanical arm to sense when your hand or another body part enters a hazard zone, stopping the machine's operation. Some devices require that you keep both hands on the machine in order for it to run.

■ **Pullback devices** use cables attached to your hands, wrists or arms to physically withdraw your limbs from the dangerous area during machine operation.

■ **Restraint devices** attach to your hands and only allow you to move your arms within a specific safe area.