Workplan: Machine Guarding



Machines are the Tyrannosaurus Rex of work hazards. They mangle flesh, crush bones, sever fingers, amputate limbs and end lives. And there are so many ways for your workers to suffer a machine-related injury. Some examples include:

- Being hit by the part of the machine that presses, punches, cuts, shapes, etc.
- Getting trapped between moving parts.
- Limbs, hair, clothes or jewelry entangled in a chain, belt, shaft, gear, blade, etc.
- Being burned or electrocuted after accidental startup.
- Being hit by material thrown from the machine.

Here's a look at what machine guards are all about and the key role supervisors play in implementing and enforcing a company's machine guarding program.

Step 1: Help Assess Risk

Work with your safety director to do a hazard assessment of each machine in the workplace.

- Do the hazard assessment:
    - When the machine is first installed.
    - At least monthly or more often if the manufacturer recommends it.
    - After injuries, near misses and other incidents.
    - After the machine malfunctions or is moved.
- Cover the four areas where machine injuries are most likely to occur:
    - The point of operation, or machine part where the cutting, shaping, boring, forming or other operation is done on the material.
    - Moving parts, including flywheels, pulleys, belts, couplings, chains, gears, conveyors, feed mechanisms, etc.
    - In-running nip points, or spaces between rotating and/or slowly-moving parts.
    - Primary power source, including engines, turbines and other equipment used to power the machine.

Step 2: Help Select Guards

The principle means of preventing machine injuries is the use of guarding devices. Your challenge is to decide which guards to use to control risks you identify in your hazard assessment.

There are four basic types of machine guarding methods you can use alone or in

combination, including:

1. Physical barriers that block workers' access to the danger area, which may include:
   a. Fixed guards – which are a permanent part of the machine, such as gates.
   b. Adjustable guards – they can be flexed in size depending on the materials being worked on.
   c. Interlocked guards – automatically stop the machine when a tripping mechanism is activated until the guard is back in place.
   d. Self-adjusting guards – here the size of the opening in the barrier adjusts to accommodate the stock/material.
2. Automatic stopping devices – such as presence sensing devices and pullback devices.
3. Automatic or robotic feeding and ejection so that materials don't have to be manually fed into and taken out of the machine.
4. Location/Distance guarding – placing machines away from work areas and/or in locations that are impossible or difficult for workers to get to.

Step 3: Inspect Guards

Once machine guards are in place, they must be properly and regularly inspected. Inspection details and schedules will depend on the specific machines and guards used. But there are also general things to check, including verifying that guards are:

- Effective in keeping the worker's body, hair and clothing from contacting moving parts.
- Firmly secured so that workers can't easily remove them.
- Free of jagged edges, shear points, unfinished surfaces and other hazards.
- Allowing workers to do their job quickly and comfortably—if they don't, workers may try to remove them.

Finally, make sure your inspection covers:

- Guards used at the point of operation.
- Guards at the power source.
- Each continuous line of shafting.
- Pulleys, ropes, belts, chains and chain drivers, sprockets and gears.

Step 4: Provide Training
At a minimum, workers need to walk away with an understanding of:

- The hazards posed by the machines at your workplace.
- How machine injuries can happen.
- The guards in place to control the hazards.
- The reason to never, ever remove or tamper with machine guards.
- The kind of clothing to wear—and not wear—to avoid machine injury.
- The PPE to use when working near machines.
- Any other steps they must take to protect themselves.

Workers who operate machinery also need technical safety training for each machine they use. This training must be delivered by somebody who is qualified to operate and understands the hazards associated with the machine. So, while being a supervisor qualifies you to provide general safety training, it may not be adequate for providing technical training.