



Workplace Safety

## 5 Big Machine Guarding Mistakes and How to Avoid Them

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**New machinery does not necessarily meet safety standards: Facilities need to carefully survey all new equipment to make sure it is outfitted with appropriate machine guards.**

**Employees sometimes remove machine guards to save time, or forget to put them back on after performing maintenance.**

**When replacing or installing guards, facilities should make sure the materials, including the fasteners, are strong enough to withstand the application.**

**The use of automated processes and robots has only increased the challenges of machine guarding, creating more moving parts and more diverse processes to put workers at risk.**

**Employee training should address the importance of machine guards, how to use machines when they are in place, and how to maintain and replace them.**

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These common machine guarding safety issues could lead to life-changing bodily injuries in the workplace. Here are the assumptions, process loopholes and human errors to avoid.

Inadequate machine guarding consistently lands on the Occupational Safety & Health Administration (OSHA) **Top 10 list** of most-cited violations. According to OSHA, workers who operate and maintain machinery suffer approximately 18,000 amputations, lacerations, crushing injuries or abrasions each year, and there are about 800 annual deaths.

OSHA regulations on machine guarding (**1910 Subpart O Machinery and Machine Guarding (1910.211 - 1910.219)**) require that facilities protect employees operating machines and other employees in the machine area from hazards created by machine operations.

More specific guidelines can be found in ANSI B11.19-2010 – Performance Criteria for Safeguarding. ANSI also offers standards for guarding specific types of machinery in its B11 series standards.

The regulations are designed to protect machine operators and employees nearby from hazards such as nip or pinch points, exposed blades, rotating parts, or flying chips and sparks. According to OSHA, machines that typically require machine guarding include cutters, shears, power presses and power saws, milling machines, forming rollers and portable power tools.

Here are five mistakes that lead to machine guarding accidents and tips on how to avoid them:

## More Ways to Stay On Guard

Machine guards can help prevent injuries caused by machines, but sometimes more is needed. If employees are also using protective clothing or personal protective equipment, such as hard hats, safety goggles, boots, gloves, hairnets or protective coveralls, *OSHA recommends*:

- It should be appropriate for the hazards employees are trying to avoid.
- It should be maintained in good condition.
- It should be stored when not in use so that it is not damaged or lost.
- It should be kept clean and fully functional.

Looking for machine guards and shields? Take a look at the *options*.

### 1. Assuming New Machinery Meets Machine Guarding Safety Standards

Matt Brenner, vice president of sales for Rockford Systems LLC, a provider of machine safeguarding products and services, writes in *OH&S* that buyers should not hesitate to spell out the ANSI or European standards they want new equipment to meet. In addition, new equipment should be examined to make sure it meets OSHA machine guarding standards. Just because a machine is right out of the box doesn't mean it will have all the required shields and plugs needed to keep workers safe. "For both new and old machines, a machine survey will identify OSHA machine guarding violations, along with recommended products and services to bring those machines into full compliance," Brenner writes.

### 2. Removing Machine Guards or Failing to Replace Machine Guards After Their Removal for Maintenance

An OSHA review of mechanical power press point of operation injury reports examining incidents between 1994-2000, many of which resulted in amputations, shows that the second most common cause of injuries (after accidental trips) was the failure to use a safety guard.

Facilities must be vigilant in ensuring that guards remain in place, using disciplinary measures if needed to enforce workplace safety. Workers may try to save time by removing guards intentionally, or guards may be intentionally or accidentally left off machines after they've been removed for maintenance.

"It's amazing how you put a guard in place and somebody will defeat it," says Frank Quarato, president of the Center for Safety & Environmental Management. "Or, employers will take the guards off for maintenance, but once the machine is back up and running, they won't put the guards back on."

*Confused about what the "point of operation" means? Get visual guidance in our helpful infographic.*

### 3. Using Inadequate Materials When Installing or Replacing Machine Guarding Parts

John Peabody, vice president of major accounts for Omron Inc., writes in an article for *EHS Today* that barrier guards should not be made of materials that can break, bend or distort. "Similarly, materials that deteriorate in the presence of airborne swarf, ultraviolet radiation, temperature extremes, oils,

coolants, solvents, cleaners or other environmental contaminants/agents can compromise the intended protection of fixed guards,” Peabody says.

An OSHA *hazard information bulletin* notes that when replacing machine guarding observation windows, manufacturers should make sure to use either an original manufacturer’s part or a material with the same impact resistance as the original. Some materials may have the same name as the original material used by the manufacturer, the bulletin notes, but without the same impact resistance, they pose a hazard when used for machine guards.

Peabody adds that fasteners for machine guards should not only be strong enough to withstand their intended use, but should also need special tools to remove. “This latter feature—which automatically precludes the use of wing nuts, standard screws (slotted or Phillips), latches, hasps, magnets, and hooks and eyes—is designed to prevent unauthorized removal, circumvention or adjustment of fixed guards.”

**“Every machine guarding application has its own set of unique challenges and associated risk. The choices a facility manager makes for one application might not be the same—or appropriate—for the next.”**

Eric Esson

Global Sales and Marketing Manager, Rite-Hite Machine Guarding

#### **4. Not Updating Machine Guarding Safety Practices to Meet the Needs Created by New Technology**

In an article for *OH&S*, Eric Esson notes that the growth of automation and robots has only increased machine guarding challenges, creating more moving parts and processes to endanger workers. “Every machine guarding application has its own set of unique challenges and associated risk,” writes Esson, the global sales and marketing manager for Rite-Hite Machine Guarding. “The choices a facility manager makes for one application might not be the same—or appropriate—for the next. In most cases, safety-conscious managers would not guard an industrial robot the same way they would guard other equipment, because the risk associated with each differs greatly.”

Types of guards vary from machine to machine based on the type of operation, feeding type, shape of the work area and production methods. One machine may need a fixed barrier guard, while another may use a laser scanner or a pressure-sensing device. Facilities need to weigh the safety needs created by each machine and use appropriate guards.

#### **5. Not Providing Adequate Machine Guard Safety Training**

It’s not enough to install machine guards; facilities must also make sure employees receive training in how the guards work. “Associates need training in how important the guards are, how to adjust them to the product, and how important it is if the guard malfunctions to keep their body parts out of the dangerous area,” Brian Drake, assistant regional administrator for enforcement programs, OSHA, Region 7, *told* Better MRO.

OSHA *recommends* that employees get training in the purpose and use of machine guards and how to respond to problems with the devices. In addition, employees should receive training in all workplace hazards, including those that are machine-specific, and safe machine operating procedures, such as lockout/tagout procedures.

*Have you discovered other machine guarding pitfalls in your facility? Share your experiences.*

