

Loss Control Bulletin

Modern production operations require the use of power-driven machinery. Injuries from machines are typically severe, costly, and they are nearly always preventable.

Machine operators must be protected from machine moving parts or processes that can cause serious injury.

Hazardous machinery exposures are associated with:

- Power Transmission Equipment and Other Moving Parts
- The Point of Operation including wrap points, shear points, crushing and pull in points and thrown objects

Power transmission equipment and other moving parts are often guarded by physical barriers or enclosures. These barriers or enclosures may have doors or openings with removable covers to facilitate lubrication or other maintenance. Typically, electronic power interlocking switches are installed on doors and openings to shut off power to the equipment whenever the access door is opened. There are comprehensive State and Federal standards that govern the design and use of such guards and enclosures.

Point of operation guarding presents a far more complex problem. This is due to the enormous variety of machines in use compounded by the limitless sizes and shapes of materials machined on the equipment. The machines can be large or small, intricate, or simple. They perform a wide range of operations including abrading, bending, boring, casting, compressing and baling, combining, cutting, forging, polishing, punching, sawing, spinning, and turning, etc.

Points of operation do not have standard configurations. They vary by machine, by the material worked on, and by the type of operation performed. Two out of ten employers, especially those in industries that are not primarily engineering oriented, will depend upon “Standard” guards, either supplied with the machine, or taken “Off the Shelf” and added to the machine. This can be dangerous. An inadequate guarding system, or one that is improperly adjusted, is a trap for an unwary worker who can become a victim.

Every point of operation must be carefully analyzed, and a safeguarding system must be designed and/or adapted to ensure protection without depending upon the operator’s dexterity, skill, or alertness.

State and Federal safety codes and standards have been written and they apply to many situations. Compliance with them is essential and provides employers with an excellent starting point in setting up equipment guarding.

Just as there is a wide range and variety of point of operation exposures, so are there many systems of equipment guarding. Selection and use of the most appropriate system may require a qualified professional. The continued effective use of the guarding system is a most important management responsibility.

This bulletin is a brief introduction to a very complicated subject. If your operations involve the use of power-driven machinery, as most do today, you are urged to inspect them for appropriate guarding.

The guidelines provided in this bulletin are only intended to provide an overview of some of the more important steps that can be taken by management to establish a safe workplace. The guidelines are not considered exhaustive of all measures and controls that can be implemented by management to address all potential loss or injury producing causes. Ultimately it is the responsibility of management to take the necessary steps to provide for employee and customer safety. It is not intended as an offer to write insurance for such conditions or exposures. The liability of Republic Indemnity Company of America and its affiliated insurers is limited to the terms, limits and conditions of the insurance policies underwritten by any of them. © 2022 Republic Indemnity of America, 4500 Park Granada, Suite 300, Calabasas, CA 91302.

Machine Guarding - Checklist

Project _____

Date _____

N/A	Action Items	Person Responsible	Date
	Requirements for All Safeguards:		
	Do the safeguards provided meet the minimum OSHA requirements?		
	Do the safeguards prevent workers' hands, arms, and other body parts from making contact with dangerous moving parts?		
	Are the safeguards firmly secured and not easily removable?		
	Do the safeguards ensure that no objects will fall into the moving parts?		
	Do the safeguards permit safe, comfortable, and relatively easy operation of the machine?		
	Can the machine be oiled without removing the safeguard?		
	Is there a system for shutting down the machinery and locking/tagging out before safeguards are removed?		
	Can the existing safeguards be improved?		
	The Point of Operation:		
	Is there a point-of-operation safeguard provided for the machine?		
	Are there any unguarded gears, sprockets, pulleys, or flywheels on the apparatus?		
	Are there any exposed belts or chain drives?		
	Are there any exposed set screws, keyways, collars, etc.?		
	Are starting and stopping controls within easy reach of the operator?		
	If there is more than one operator, are separate controls provided?		
	Other Moving Parts:		
	Are safeguards provided for all hazardous moving parts of the machine, including auxiliary parts?		
	Non-Mechanical Hazards:		
	Have appropriate measures been taken to safeguard workers against noise hazards?		
	Have special guards, enclosures, or personal protective equipment been provided, where necessary to protect workers from exposure to harmful substances used in machine operations?		
	Electrical Hazards:		
	Is the machine installed in accordance with National Fire Protection Association and National Electrical Code requirements?		
	Are there loose conduit fittings?		
	Is the machine properly grounded?		
	Is the power supply correctly fused and protected?		
	Do workers occasionally receive minor shocks while operating any machines?		