Machine Guarding for Public Works (Safety Brief)

Current as of: 5/7/2026

PACIF has developed Safety Briefs to help municipal highway supervisors maintain a high level of safety and hazard awareness among employees. We recommend using these short "tailgate trainings" on a regular basis – and **at least once a month**. If you need a particular safety topic, please contact us at losscontrol@vlct.org.

Information for Supervisors

Moving blades, wheels, gears, pulleys, pistons, shafts and other objects can expose employees to a wide range of injury types. Proper machine guarding prevents employee "access" to specific locations on these machines (often called the "point of operation"). The most common type of guarding is called "barrier guarding" and is essentially the placement of a barrier that prevents the employee from being exposed to the machine or tool's moving parts.

We'll review some of the commonly used equipment and exposures in public works, the proper methods to guard them, the need to use lockout/tagout (LOTO) procedures when removing guards (for repairs, etc.) and guarding best practices.

Talking Points for Training

The proper guarding of equipment and machinery is probably not often thought of as a significant hazard in highway garages, wastewater plants or water facilities. Still, these operations use a wide variety of equipment that do (or should have) guards. Below is a list of commonly found items and guarding concerns. Review these with employees and pay particular attention to equipment that you have and commonly work with. Make sure they know where the guard should be and never operate the tool, machine, or equipment unless the guard is properly attached. Always make sure required attire and PPE is used as well!

- Benchgrinders-this is one of the most common VOSHA safety citations. The spindle nut end and enclosure of the wheel is required, allowing for a maximum of 90˚ exposure. A workrest is required and must be kept within 1/8" of the wheel surface. A tongue guard (on top of wheel) is also required and must be maintained within 1/4" of the wheel periphery. This guard must be substantially constructed, adjustable and oriented in a vertical position relative to the wheel surface.
- All table saw blades and circular saw blades must be guarded. Cutoff saws must have working moveable guards.
- Belts and pulleys present on fans, compressors, electric motors and other equipment must have the in-running section of the belt/ pulley assembly guarded. This is often done with a barrier guard using sheet metal or metal grating that is screwed to the frame. These should be closely fitted to the piece of equipment to offer adequate protection.
- Older sludge "piston" pumps in wastewater plants are often unguarded. The moving shaft creates a pinch point and therefore must be guarded. A tight fitting barrier guard is a good fix for this hazard.
- Mowing equipment, weed trimmers, chippers, etc. Guards should be in good condition, securely attached and adequately enclose the moving parts. In this case, the guards are more designed to control the dispersal of grass, brush and other objects, rather than protect the user - though some protection of the user is provided. Make sure chipper e-stops work!
- When removing any guard, make sure that LOTO procedures are performed PRIOR to guard removal. When the repair is completed, replace the guard and restore the equipment to its normal state using LOTO procedures.

Safety Training Attendance Roster

Trainer: Training Date:

1.	9.
2.	10.
3.	11.
4.	12.
5.	13.
6.	14.
7.	15.
8.	16.

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