

# MIOSHA Fact Sheet



## Quick Couplers on Construction Equipment

Construction companies want their excavation equipment to be as versatile as possible. This has led to equipment that is designed for multiple uses. It is not uncommon for excavation equipment to be used with a hydraulic jackhammer, a bucket, and a hydraulic tamper, sometimes all in the same day. Equipment manufacturers and suppliers are making it possible to change attachments quickly using devices commonly referred to as "quick couplers." With a quick coupler, an excavator can be converted from one operation to another, often in a matter of minutes. If a quick coupler is not fully engaged and locked, is not maintained properly and/or coupler springs have loosened or lost tension, it can unintentionally release, causing the piece of equipment to detach and fall.

Various manufacturers make quick couplers. Manufacturers of quick couplers have recognized the hazard of the bucket or other attachments being unexpectedly released from the quick couplers and in most cases, have provided users with a retrofit locking pin which is manually inserted behind the front lever (stick pin) or rear lever (link pin) of the couplers to prevent unintended releases.

Construction Standard [Part 15, Excavators, Hoists, Elevators, Helicopters, and Conveyors](#), addresses the installation, inspection, and use of these attachments.

- **Rule 1522.** An employer shall assure that a prospective operator, before being assigned as an operator of an excavator, has been trained in all the following areas:
  - (a) The capabilities of equipment and attachments.
  - (b) The purpose, use, and limitations of controls.
  - (c) The making of daily inspections.
- **Rule 1523.** (1) A thorough, annual inspection of all excavators shall be made by a qualified person. An employer shall maintain, on the jobsite or attached to the equipment, a copy of the latest equipment inspection record with the date and results for each piece of equipment.
- **Rule 1526.** (9) An employer shall comply with the requirements of the Power Crane and Shovel Association (PCSA) standard No. 5 "Mobile Hydraulic Excavator Standards," 1983 edition and "Referenced Material for PCSA Standards No. 4 and No. 5", 1982 edition as adopted in R 408.41505

LEO is an equal opportunity employer/program.



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## Safety Measures to Prevent Accidents

Employers using hydraulic excavators with quick-coupling devices can protect employees from the unintended release of attachments by:

- Inspecting all quick couplers to determine if they are subject to unexpected release hazards. Determine whether a manually installed locking pin and installation procedures have been provided by the manufacturer.
- If necessary, obtain and install retrofits recommended by the manufacturer, including positive locking pins and other devices that need to be manually installed. On a used excavator, contact the quick coupler manufacturer to see if there are any Technical Service Bulletins that relate to the quick coupler.
- Consider the use of newer models of quick couplers that have been specifically designed to prevent the unintended release of attachments.
- Follow the manufacturer's recommendations for maintenance and inspection of the quick coupler to prevent a malfunction that could cause an unintended release of the attachments. Include the inspection of the quick coupler in the excavator's annual/periodic inspection.
- Follow the manufacturer's installation procedures and recommendations on testing quick coupler and attachment connections every time an attachment is made.
- Train employees in the proper use of quick couplers, making visual inspections, procedures for engaging attachments and methods for testing connections.
- Require employees to use the proper procedures for engaging attachments and incorporate the procedures into the company's Accident Prevention Program required by Construction Standard [Part 1, General Rules](#), Rule 114.
- Check the machine or manual for warning signs or symbols.

The key to preventing injuries and fatalities related to the use of quick couplers is good employee training and frequent/thorough inspections of equipment to identify problems. Additional information on quick couplers can be found through the Occupational Safety and Health Administration's Safety and Health Bulletin "[Hazards of Inadequately Securing Hydraulic Excavator Buckets When Using Quick Coupling Devices.](#)"

Employers are encouraged to contact the MIOSHA Construction Safety and Health Division at 517-284-7680 if they have questions regarding jobsite health and safety or compliance issues. The MIOSHA Consultation Education and Training (CET) Division provides training and onsite audit services for residential and commercial builders at the employer's request, free of charge. The CET Division can be contacted directly at [www.michigan.gov/cetrca](http://www.michigan.gov/cetrca), or at 517-284-7720.