

NZ Safety Alert

Let's work together to keep ourselves and our workers safe

December 2018

Failure of semi-automatic quick hitches

The New Zealand Equipment Suppliers Association (NZESA), in response to New Zealand recording several accidental disengagements of quick hitch couplers, is recommending that a single specific standard be applied to these couplers.

Buckets or attachment detach because the safety pin securing the attachment is not correctly fitted, or the automatic safety system securing the attachment is not engaged. In either situation, the consequences can be fatal.

Accidents usually happen because the quick hitch system has failed, and the person struck by the bucket or other attachment was in an unsafe position, either underneath or in the vicinity of the bucket.

NZESA proposal:

- All NEW quick couplers supplied for use in New Zealand after January 1, 2019 must be fully compliant with ISO 13031.
- Any new machines with a manufacture date of 2019 if fitted with a quick coupler must be fully compliant with ISO 13031.
- Any used machines, imported from overseas after 1st of January 2019, if fitted with a quick coupler must be fully compliant with ISO 13031.

Recently a number of incidents have occurred in mines and quarries involving semi-automatic quick hitches. MinEx supports the NZESA proposal to ensure all quick hitches comply with ISO 13031.



You need to ensure that:

1. Quick hitches are kept in good working order and checks are conducted to ensure the attachment size is suitable for the excavator or backhoe arm's size. Ensure that they meet the quick hitch manufacturer's specifications.
2. The safety pin is securely in place or the automatic system has engaged correctly before starting work, and when fitting a different attachment.
3. An exclusion zone is established below and around the vicinity of the bucket when using the excavator or backhoe if there are other workers on the site.
4. Ensure excavator and backhoe operators are trained in how to use the plant safely and are competent to use the specific quick hitch on the plant they are using.
5. Verify operator competency by assessment and monitoring.

Know of an incident or near miss? Please share the learnings with us.

FACT SHEET

USING QUICK HITCHES SAFELY

A quick hitch allows a bucket or other attachment to be quickly and easily connected and disconnected from an excavator or backhoe arm, saving significant time during mobile plant operation.

Quick hitch devices use a locking system consisting of either a manual locking pin or an automatic hydraulic pressure hitch to hold the attachment to the excavator or backhoe arm.

WHEN QUICK HITCHES FAIL

If the attachment is the wrong size it may not be able to be secured properly, and the quick hitch will fail. If the locking system is not in place, the quick hitch might work for some time but then suddenly swing open, releasing the bucket or other attachment.

Buckets or attachment detach because:

- > the safety pin securing the attachment is not correctly fitted, or
- > the automatic safety system securing the attachment is not engaged.

In either situation, the consequences may be fatal.

Accidents usually happen because of two factors:

1. The quick hitch system has failed, and
2. The person struck by the bucket or other attachment was in an unsafe position, either underneath or in the vicinity of the bucket.

Before operating the mobile plant, the operator must:

- > check that the bucket is securely attached to the excavator or backhoe arm by the quick hitch, and
- > set up an exclusion zone around the area where the excavator or backhoe is operating.



REQUIREMENTS FOR QUICK HITCHES

Quick hitches should clearly display:

- > the model and serial number
- > the manufacturer's name
- > the weight and maximum rated capacity
- > each lifting point's capacity.

If safety pins and other shaped securing devices are used:

- > ensure that they meet the quick hitch manufacturer's specifications
- > keep them with the excavator or quick hitch device when not in use
- > ensure that attachments are fitted with the correct pin centres and diameters.

Note: Do not use substitutes such as a structural bolt or a reinforcing bar.

The area around the safety pin insertion holes may be painted to clearly identify where the pin should be inserted and pins and retaining clips may also be painted to make them more visible. The surface around the pin should be painted a contrasting colour to the pin itself (preferably using bright colours) so if the pin is removed, the exposed area is clearly visible.

HOSE BURST PROTECTION VALVES

Hose burst protection valves must be fitted to all new and used hydraulic excavators with an operating weight of 7 tonnes or more after 1 January 2016.

EXCAVATOR OPERATOR'S RESPONSIBILITIES

The excavator operator should:

- > check the attachment size is suitable for the excavator or backhoe arm's size
- > check the quick hitch is kept in good working order
- > check the safety pin is securely in place or the automatic system has engaged correctly:
 - before starting work, and
 - when fitting a different attachment.

- > ensure that an exclusion zone is established below and around the vicinity of the bucket when using the excavator or backhoe if there are other workers on the construction site. The exclusion zone applies to workers not immediately involved in the excavator or backhoe operation.

The operator should not use the plant unless they are satisfied the quick hitch is secure.

When disconnecting an attachment, the excavator operator should intentionally disengage the quick hitch.

SITE MANAGER'S RESPONSIBILITIES

While the operators are in the best position to safely install the quick hitches and operate the mobile plant, it's still the employer's responsibility to make sure the operators have the knowledge, training, experience and equipment to fulfill these important safety functions.

The site manager is also responsible for:

- > making sure excavator and backhoe operators are trained in how to use the plant safely
- > making sure excavator and backhoe operators are competent to use the specific quick hitch on the plant they are using
- > verifying operator competency by assessment and monitoring.

FOR MORE INFORMATION

Refer to the Best Practice Guidelines for Demolition in New Zealand (section 5.10.3) at www.worksafe.govt.nz

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Exemption of Equipment Capable of Load-lifting" (12 December 2013) 167 New Zealand Gazette 4551.