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M&EE Networking Group Code of Practice for
Safe use of Quick Hitches
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Supersedes COP0021 Iss 1 on 05/03/2011

Document revision history

Issue	Date	Reason for change
1	Mon 06	First issue – replacement for M&EE TAN001 and additional operational instructions added (now withdrawn)
2	Jan 11	Tilt rotators added

Background

A sub-group of the M & EE Networking Group has looked at HSE SIM02/2007/01 Version 2 Safe use of Quick Hitch Devices on Excavators following several incidents that have been notified to the industry including fatalities. This document provides clarification and covers the safety issues regarding this equipment and is provided by the M&EE group as industry good practice.

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Sign off

The M & EE Networking Group agreed and signed off this Code of Practice on 19 January 2011 and published on 5 March 2011

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Purpose

This Code of Practice identifies the types of quick hitches as categorised by the HSE and details the safety issues and provides safe systems of work related to the use of quick hitches for the rail industry.

Scope

This Code of Practice concerns quick hitches when used on on-track machines, on-track plant and construction plant, including lifting operations.

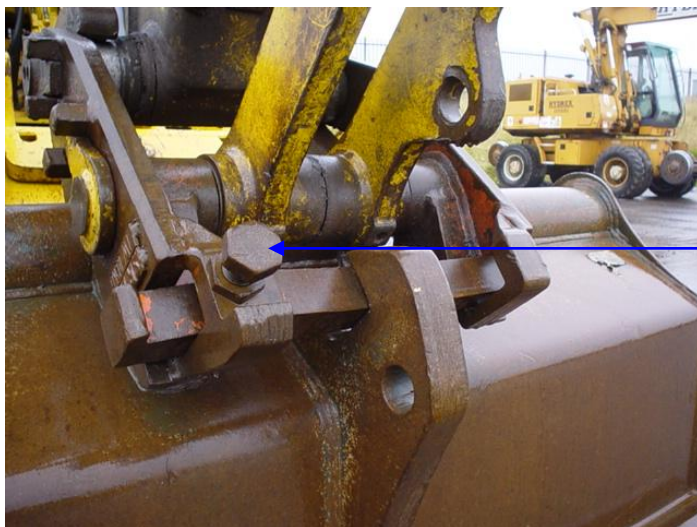
Definitions

Adaptor plate	The arrangement fitted to an attachment that enables it to be used with a quick hitch
Lifting Equipment	The lifting machine as defined in LOLER
Lifting Accessory	Any Item or device between the lifting equipment and the load, as defined in LOLER
Quick hitch	A device that enables attachments including buckets to be connected to the machine and interchanged quickly
Thorough examination	An inspection carried out by a competent person as defined in LOLER.

1 The three categories of quick hitch

1.1 Manual system

- 1.1.1 Requires the operator to change the bucket/attachment manually for example by winding a screw thread to open and close a latch, or using a bar to open a spring-actuated latch.



Bolt which has to be tightened when fitting attachment to quick hitch

Fig 1 Example of manual quick hitch

1.2 Semi-automatic system

- 1.2.1 Requires the operator to manually insert a retaining bar in the hitch after he has operated the Quick Hitch latch. This bar works by locking the latch in its closed position and is often referred to as the “safety bar”. It cannot be inserted unless the latch is in its fully closed position.
- 1.2.2 One common type of Quick Hitch has 3 holes to accommodate a range of attachment pin centres. Once the Quick Hitch latch has been operated the safety bar should be inserted in the respective hole that restricts the latch from any opening movement. The quick hitch should be designed that only one hole will be available for the safety bar so it is not possible to insert the bar in the wrong hole
- 1.2.3 The safety bar is not a load bearing part of the Quick Hitch



Semi Automatic -
Safety Bar Fitted in
one of these holes

Fig 2 Example of semi-automatic quick hitch

1.3 Automatic system

- 1.3.1 Is operated entirely from the cab and usually has an independent locking system which functions automatically and which does not rely on hydraulic pressure to hold the latch in its closed position.
- 1.3.2 Irrespective whether the quick hitch is thought to be an automatic type or not the operator must visually inspect the locking arrangements.
- 1.3.3 It should be noted that the use of large attachments may inhibit the automatic action.



Automatic –
Locking mechanism
on fixed jaw

Fig 3 Example of automatic quick hitch

1.4 Compatibility of different quick hitches

- 1.4.1 There is little standardisation of quick hitch attachment pin sizes and distance between pins. Care must be taken to ensure that a compatible match of quick hitch to the attachment adaptor plate is achieved prior to use.
- 1.4.2 Any other attachment that has also got an inbuilt quick hitch eg tilt rotator should also meet the requirements of 1.4.1

2 Installation of the quick hitch to host machine

- 2.1 The quick hitch can be a permanent or temporary installation on the host machine.
- 2.2 Permanently fitted quick hitches could have been installed after the machine has been tip tested and duty tables produced. Where machines are used for lifting they should comply with 2.3. There are some machines where it is not permitted to remove the quick hitch as its weight forms part of the basic machine stability.
- 2.3 Where the quick hitch is permanently attached to the host machine after original certification, consideration should be given to setting up the RCI to produce the load radius tables taking this in to account. Or Duty chart annotated “these capacities to be reduced by ***kg for quick hitch”

3 Connection of attachments to the quick hitch

- 3.1 The adaptor plate must be of sufficient strength and compatible with the quick hitch both in terms of pin diameter, pin centres, width between cheek plates and load rating..
- 3.2 For all 3 categories of quick hitch the operator must get out of the cab to confirm the quick hitch and any safety devices are correctly engaged and to ensure that any necessary safety bar is correctly located. **This is the only way to ensure the integrity of the attachment and must be undertaken every time connections are made.**
- 3.3 Consideration should be made during the planning process to allow for the operators safe egress from the machine cab to ground when undertaking this operation, as this may not be possible in all locations or superstructure positions.

4 Lifting operations through a quick hitch

- 4.1 Where the quick hitch and anything attached to it via its jaws is intended to be used for lifting any load, they must be approved for lifting by the manufacturer. It should be marked up with its safe working load and have undergone a thorough examination. This includes items like tilt rotators that may also act as a quick hitch.
- 4.2 Where an adaptor plate is used to enable a lifting accessory to be attached to a quick hitch the adaptor plate will become part of the lifting accessory and included in the six monthly thorough examination.
- 4.3 All lifting accessories should be used in a pendant configuration free hanging under all operating conditions from the lifting point or quick hitch.
- 4.3 The quick hitch can be permanently or temporarily fitted to the host machine and the machine owner should record the status on the machine records;
- If the quick hitch is permanently installed and is likely to be used in any lifting operations then the record of thorough examination should cover both the host machine and quick hitch and should have a thorough examination on an annual basis. In this case the quick hitch must be detailed on the host machine record of thorough examination, which should be carried on the machine at all times.
 - Where the quick hitch is not permanently fitted but is likely to be used in any lifting operations it should be classed as a lifting accessory and marked with a unique ID and Safe Working Load . It should have a thorough examination on a 6 monthly basis and carried on the machine that it is currently fitted to.
- 4.4 If the crowding ram is not fitted with burst hose protection then the quick hitch must be rotated such that the lifting point is directly under the dipper arm nose pin, as shown in Fig 4.



Fig 4 Example of correct orientation of quick hitch

5 Training and competence

5.1 Plant selection

- 5.1.1 The person ordering the vehicle should check with the supplier that any Quick Hitch and the equipment to be attached are compatible and suitably certified (this should be done at the planning stage)

5.2 Operator

- 5.2.1 The operator should:
- Be trained and competent in the quick hitch being used
 - Be trained and competent to confirm the quick hitch is coupled correctly, any safety lock is engaged and ensure that any necessary safety bar is always in place – see 3. 2
 - Only use the quick hitch in accordance with the manufacturers instructions.
 - Only use attachments known to be compatible with the quick hitch.

5.3 Machine/crane controller

- 5.3.1 The Machine/crane Controller should:
- Be aware whether a Quick Hitch is fitted.
 - Confirm with the operator whether or not a safety bar is required.
 - Confirm with the operator that pre work checks of the Quick Hitch have been carried out.
 - Observe the operator at each change of attachment undertaking a physical check of the connection. .

6 Labelling for quick hitches

6.1 Every machine fitted with a quick hitch should have a label fitted adjacent to the quick hitch stating one of the following 3 options. This includes items like tilt rotators that may also act as a quick hitch.

- a) Manual quick hitch fitted
- b) Semi automatic quick hitch fitted
SAFETY PIN REQUIRED
- c) Automatic quick hitch fitted

References

Document	Title
LOLER	Lifting Operations and Lifting Equipment Regulations
SIM02/2007/01 Version 2	Safe use of Quick Hitch Devices on Excavators