

**ESSENTIAL
STANDARD
no.19**

Safe Use of Quick-Hitches



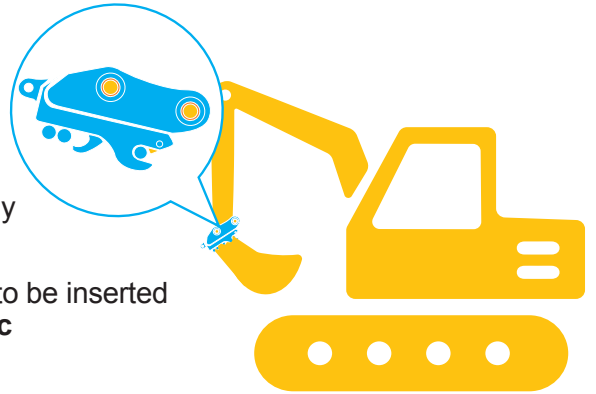
KEY MESSAGES

- Semi-automatic quick-hitch systems are not permitted on any Thames Water site.
- Work must be planned so that no one is required to work under a suspended load or quick-hitch attachment.
- Operators and supervisors must be able to demonstrate they are familiar with the type of quick-hitch in use.
- All quick-hitch mechanisms must be regularly inspected and properly maintained to ensure safe operation.

1. Introduction

A quick-hitch on an excavator is a latching device that you can use to connect attachments to the dipper arm and change them quickly. Quick-hitches are used throughout the construction industry. If they are properly designed, maintained and used they can save a great deal of time when working with excavators.

Semi-automatic quick-hitches have a manual safety pin that has to be inserted as part of the locking system. **You must not use semi-automatic quick-hitch systems on any Thames Water site.**



2. Types of Quick-Hitch

There are two broad types of quick-hitches:



Dedicated quick-hitches:
Dedicated quick-hitches are made specifically for a particular machine or series of attachments.



“Pin system” quick-hitches:
You can use pin system quick-hitches on standard buckets using the original pins. These are useful because you can use more attachments.

All quick-hitches engage with the pins or lugs on the attachment and then retain that engagement with a latching mechanism. This latching mechanism must be secured to ensure that it does not accidentally disconnect.

Quick-hitches work in different ways:



- **Manual:**
When using a manual quick-hitch system the bucket must be changed manually, for example, by winding a screw thread to open and close a latch, or using a bar to open a spring actuated latch. Although manual quick-hitch systems are faster than the conventional method of bucket change, this method is slower than other quick-hitch systems and you can't change the attachment from inside the excavator cab.



- **Semi-automatic:**
Semi-automatic systems requires the operator to leave the cab after operating the hydraulic quick-hitch latch to insert a retaining pin in the hitch as additional security. This pin usually works by locking the latch in its closed position. The safety pin can't be inserted unless the latch is in its fully closed position (see figure 1). **You must not use this type of quick-hitch.**



- Fully automatic, next generation type:**
 Fully automatic quick-hitches have a device that physically locks or secures both pins of the accessory. They are made to not detach from the dipper arm if there is a mechanical or hydraulic failure. The automatic system can be safely operated from inside the cab. All quick-hitches used on Thames Water sites must be next generation and fully automatic.

Ensure that the automatic system has a method for you to verify that the hitch is locked from inside the cab. For example, locking pins that protrude from the side of the hitch when the latch is in its unlocked state could indicate that the system is not safe.

3. Acceptable Types of Quick-Hitch Attachments

You must choose an appropriate quick-hitch for the type of machine. Use this table to determine which types of quick-hitch are acceptable on Thames Water sites for the type of machine:

Machine	Quick-Hitch
8t and over	Double-locking* fully automatic
Between 3t and 8t	Manual or double-locking* fully automatic
3t and below	Manual only

* A double locking quick-hitch must have a device that physically locks or secures both pins of the accessory. (See figure 2).



All new plants on Thames Water sites must come fitted with these quick-hitch systems, and all existing plant on Thames Water work must have the correct quick-hitch fitted.

Semi-automatic quick-hitches are not permitted on any Thames Water sites.

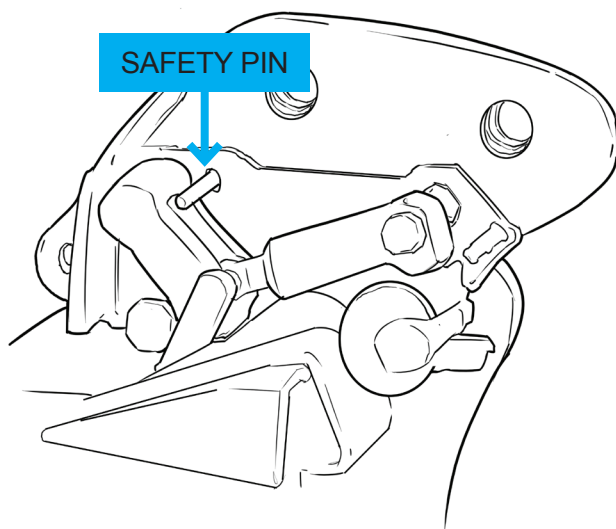


Figure 1 - Semi-automatic type

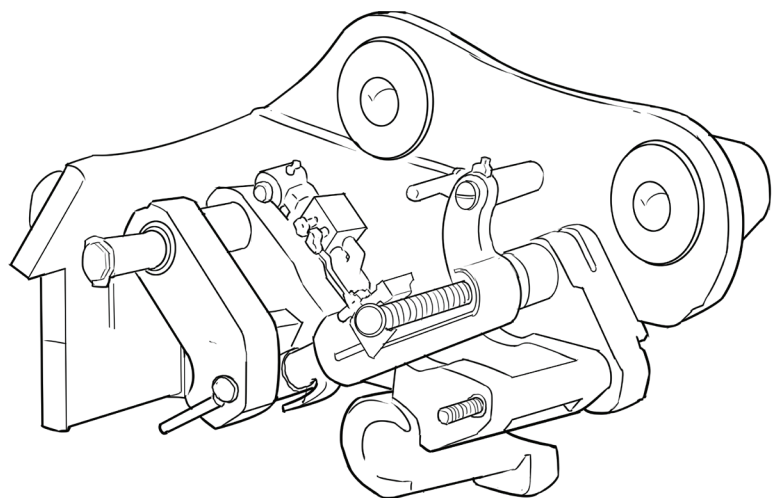


Figure 2 - Fully automatic double-locking type

4. Safe Use of Quick-Hitch Attachments

There are some other precautions, beyond choosing the right quick-hitch, that will help you to reduce incidents related to quick-hitches:



- After changing the bucket or accessory, you must check the security visually and physically, no matter which type of quick-hitch you use to ensure locking systems are fully engaged. This removes the risk of sudden detachment. If you can't see the latching indicator from the cab you must get out of the cab to check it.



- Never let anyone work under a bucket or attachment.



- Make sure that the risk assessment and daily briefings deal with the risk of bucket detachment.



- The quick-hitch must be compatible with the bucket or attachment.



- Excavator operators must be trained to use the specific type of quick-hitch.



- The manufacturer's manual for operating the hitch must be in the cab.



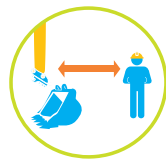
- Supervisors must have a basic understanding of the correct operation, inspection and maintenance of the quick-hitch.



- Checklists for daily and weekly inspections should be available and should include a check of the quick-hitch and lubrication



- The health and safety management system should include information on ensuring the correct selection, operation and maintenance of quick-hitches.



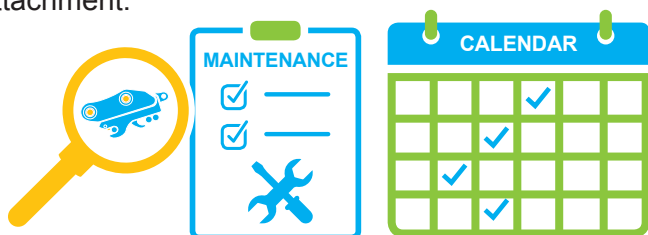
- Where possible, change the bucket or attachment and test engagement away from excavations, work areas or personnel. Larger sites should have an identified area for attachments storage, change and engagement testing.



- Make sure that the risk assessment considers risks to banksmen and communicate those risks in daily briefing sessions. Banksmen should never put themselves in harm's way.

5. Inspection and Maintenance

All equipment on an excavator, including the securing or locking of the latching mechanism on an automatic quick-hitch, is subject to wear and deterioration. Ensure that quick-hitches are regularly inspected and maintained so that wear, damage or foreign bodies do not prevent the locking mechanism from working properly, which could lead to sudden release of the attachment.



Make sure that quick-hitches are examined often. How often depends on how often it is used:

- Quick-hitches that remain permanently fitted to a machine should be thoroughly examined when the base machine is examined.
- Quick-hitches that are suitable for lifting (fitted with a lifting eye) and that are regularly removed from the machine (as interchangeable equipment) must be examined at least every six months.