

# G916D

## Excavation and earthworks

### SAFE OPERATING INSTRUCTIONS FOR EXCAVATORS

**Related procedures:** P916 *Excavation and earthworks*  
P914 *Control of lifting operations*

**Do not deviate,  
Do not improvise,  
Operate SAFELY or not at all**

**This is a mandatory briefing note for all excavator operators and is to be delivered in conjunction with the 'Safe lifting instructions' (G914B) during:**

- site induction of excavator operators;
- method statement, risk assessment and lifting plan briefings where excavators are to be used.

#### **Responsibility and competence:**

1. As a machine operator, you are responsible for your own safety and for the safety of those working around you. You must operate the excavator in accordance with your training, the instructions on safe start-up and shut-down that are in the manufacturer's handbook and the safe system of work on which you have been briefed.
2. To operate an excavator on a Black & Veatch site you must have the appropriate CPCS card and be authorised. In addition, if you will be involved in lifting operations or the use of quick-hitch devices, you must have had suitable training on these activities.

#### **Induction and authorisation:**

1. On arrival on site you will be given a specific excavator operator induction. This will include an assessment of your competence and your understanding of the machine you will be operating. During this assessment you will be required to carry out an inspection of the excavator.
2. When you have satisfactorily completed the induction assessment, the Site Manager will authorise you to operate the excavator. Those who are not authorised must not operate the equipment.

#### **Before operating the excavator:**

1. If you are not familiar with the machine, study the manufacturer's handbook before starting and operating the excavator. The handbook will normally be behind the seat in the cab.
2. Make sure that you know the position and function of the various safety features, interlocks, gauges and operating controls in the cab.
3. Make sure you know which type of quick-hitch system is fitted. Refer to the quick-hitch manufacturer's handbook to confirm how it works and how to check that the bucket is secure (*see below*).
4. Carry out a pre-use inspection of the excavator and record the result on the inspection register form for excavators (F914/4). If there are any defects, report these to your supervisor — do not start or operate the machine until the defects have been rectified.

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#### **'Quick-hitch' devices for bucket attachment:**

A 'quick hitch' on an excavator is a latching device that enables different buckets and attachments to be connected to the dipper arm and interchanged quickly.

There are three types of quick hitch system:—

**Manual:** To change a bucket, a screw has to be turned manually to open or close a latch or a bar has to be used to open a spring-actuated latch. This system is often fitted on smaller machines, such as those of less than 10t capacity.

**Semi-automatic:** After operating the 'quick-hitch' latch, the operator has to leave the cab to insert a retaining pin in the quick hitch as an additional security. This pin (often referred to as the 'safety bar') is not a load-bearing part of the hitch — it usually works by locking the latch in its closed position. The safety bar cannot be inserted unless the latch is in the fully-closed position.

**Automatic:** Automatic systems can be operated entirely from the cab and usually have an independent automatic locking system which does not rely on hydraulic pressure to hold the latch in its closed position. Normally the automatic system has a means for operators to check that the hitch is locked: for example, locking pins may protrude from the side of the hitch when the latch is in the unlocked state. Larger attachments such as rammers may prevent the locked condition being verified from the cab, in which case the operator will need to get out of the cab to check the locked condition.

**Before starting work and whenever a different attachment has been fitted, always check that the safety pin has been correctly inserted. If it cannot be inserted or you are having problems in doing so, report this to your supervisor.**

Further instructions on the fitting of safety pins:—

- Only use retaining pins that are purpose-designed by the manufacturer of the excavator. The use of a large bolt, wire or another substitute is not permitted in any circumstances.
- If the hitch has two holes for the safety pin (to suit different bucket sizes), ensure that the pin has been inserted into the correct hole.
- Do not use the machine until you are satisfied that the hitch is correctly secured — if you cannot see this from the cab, you must climb down to check.
- Use a method of checking the security of the hitch that is recommended by the manufacturer or agreed with your supervisor. Some manufacturers advise the 'shake, rattle and roll' method (in a safe location), others suggest placing the bucket flat on the ground and then trying to uncrowd it so that the bucket tries to disengage from the hitch.
- Ensure that any loose pins or clips are retained or attached to the quick hitch.

If the quick hitch is used for lifting (many quick hitches have a lifting eye for this purpose), the weight of the quick hitch has to be deducted from the SWL of the excavator.

Ensure that nobody works close to or underneath the bucket of your excavator.

#### **When is a banksman required?**

A banksman is required for all activities involving an excavator except where the risk assessment has determined that a banksman is not required.

**Before carrying out a work activity:**

1. Before starting a work activity, make sure you have been properly briefed on the risk assessment, method statement and, if applicable, the 'Permit to dig'. If the work involves lifting operations, you must also be briefed on the Lifting Plan. You will be required to sign the method statement, Lifting Plan or briefing note to confirm you have received and have understood the instructions. If the nature of the work subsequently changes significantly from that planned, you should stop work and consult your supervisor.
2. Make sure you know who is in charge of the work area.
3. If a banksman has been provided, make sure you know who this is. Agree with the banksman the method to be used for communicating — the method must be simple and easy to understand. Stop the excavator immediately if the banksman disappears from your view.
4. Carry out a visual check around the excavator to ensure that the slewing radius and/or tracking area is clear of people or obstructions that could be struck — there should be a minimum of 600mm of clearance from fixed objects.
5. If your vision is restricted, do not start work until the banksman has confirmed that the area around the excavator is clear and that it is safe to start the machine and commence work.
6. Always start the excavator as recommended in the manufacturer's handbook and follow the system in accordance with your training.
7. Switch off your mobile phone. On B&V sites, the use of mobile phones is prohibited except in designated areas.

**Finishing the work or leaving the excavator unattended:**

1. Always park the excavator in a safe place. If you can not see to park the machine, your banksman should guide you to a place of safety for you to park.
2. Always lower the excavator bucket to the ground and set the lock lever (the dead man's handle) into the locked position. Never switch the excavator off when the bucket or main boom is in a raised position — accidental operation of the levers is not uncommon and this can cause the boom or the bucket to move unexpectedly.
3. Always remove the keys and take them with you. If required to do so, hand them to your supervisor for safe keeping until the start of the next shift.

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