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1415 Safety Guidance
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Frank Key PLANT & TOOL HIRE

Cable Locators & Signal Generators

The rules and procedures in force where people are at work may require the person responsible for this equipment to carry out a specific risk assessment.

It is important to read all of this leaflet BEFORE you use the cable locator and signal generator

1. DO NOT connect any part of the signal generator to un-insulated live conductors. If you plan to locate live conductors with the aid of the signal generator, read all of the operating instructions supplied. If in doubt seek competent advice.
2. This equipment is otherwise safe to use on un-energised cables or on metal pipes and conduits, or on non – metallic pipes with trace wires.
3. Incorrect use of equipment, or incorrect interpretation of its findings, may result in accidentally cutting through a services pipe or cable with serious results.
4. Take the time to ensure that you fully understand the equipment and how to use it properly.
5. The cable locator by itself is designed to locate buried cables and other conductors, allowing you to locate or avoid them.
6. The signals generator is designed to send a signal through buried cables and pipes that are 'switched off' or not connected. This enables the cable locator to easily detect them.
7. Personal protective equipment is not needed to operate the cable and signal generators, but site conditions may dictate that you wear: Safety boots EN345 OR BS1870/4972; Safety helmet EN397 or BS5240.
8. This equipment must not be used by minors, or by anyone under the influence of drugs or alcohol.
9. This equipment is designed for operation by an able bodied adult. Anyone with either temporary or permanent disability must seek expert advice before using it.

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HAE HIRE ASSOCIATION EUROPE

Hire Association Europe
2450 Regents Court
The Crescent
Birmingham Business Park
Solihull B37 7YE

Telephone: 44 (0) 121 380 4600
Fax: 44 (0) 121 333 4109
Email: mail@hae.org.uk
website: www.hae.org.uk

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Before Starting Work...

Before Starting Work WORK ENVIRONMENT

1. The cable locator and the signal generator are battery powered and waterproof, they can be used anywhere on site, and in all-weather condition.
2. Make sure that your work environment is clear and safe and that there is no-one near who could distract you.

OPERATORS

1. No special personal protective equipment is required to operate the cable locator and signal generator but site regulations may dictate that the following items of personal protective equipment (ppe) are the minimum that should be worn. Particular jobs or environments on certain sites may require a higher level of protection.
2. You must wear safety boots (EN345 or BS1870/4972) .
3. On a construction site you must wear a safety helmet (EN397 or BS5240) at all times.
4. Anybody who is working near to you will also need to wear appropriate personal protective equipment.

CABLE LOCATOR

1. The cable locator is a precision instrument, and should be treated as such. It should not be dropped, thrown on the ground, or left lying around. The cable locator should be stored safely when not in use.
2. Check your cable locator. If it looks damaged or appears to be faulty, do not use it – contact the hire company.
3. Squeeze the trigger on and off and listen for the audible bleep that tells you that the batteries are good. If there is no bleep, change the batteries.
4. Locate and open the battery compartment. Make sure there are the correct numbers of batteries in use. There may be a spare battery pack in space provided.
5. Change the batteries, and carefully close and lock the battery compartment.
6. Most locators have detachable loudspeakers that can be held close to your ear on noisy sites. Find and check your loudspeaker.
7. Find and check that the function switch operates, usually to three positions. Make sure you understand when to use each of these positions. Some cable locators have electronic function controls: its operation is similar.
8. One of the positions is power mode, which enables the cable locator to locate energised power cables. It will find other pipes and cables, which are near enough to an energised power cable to pick up is signal.
9. Another position is radio mode, which enables the cable locator to locate LONG pipes and cables that have no energy of their own but are resonating certain radio frequencies (Very low frequency) from distant radio, or other VLF transmitters.
10. In these two modes, the cable locator is used without the signal generator.
11. The other position on the function switch is for signal generator mode. In this mode you need the signal generator to produce the signal for the cable locator to detect (see the section signal generator).
12. There should be a sensitivity control: check that it is working. Read the operating instructions, usually printed on the body of the locator, in order to learn how to use it correctly.
13. Do not operate the cable locator within a 5 – meter radius of the signal generator when switched on; direct interference will result.
14. Make sure you understand how the cable locator works, and how to interpret the signals you hear, before you start using it.
15. Spray marker paint on the ground, to mark the location and direction of the pipe you have located.

SIGNAL GENERATOR

1. Check your signal generator. If it looks damaged or appears to be faulty, do not use it – contact the hire company.
2. Find the controls and learn how they work, switch and listen for the audible bleep tells you that batteries are good. If there is no bleep, change the batteries.
3. Locate and open the battery compartment. Make sure there are the correct number of batteries in use, there may be a spare battery pack in space provided.
4. Change the batteries, and close and lock the battery compartment. Switch off to save the batteries.
5. Locate the function switch and check that it moves to all the marked positions. Make sure you understand when to use each of these positions.
6. Check the loudspeaker, if it looks or sounds damaged – contact the hire company.
7. There should be at least two sockets on the signal generator. One is the signal socket allowing you to plug in various cables to carry the signal to the pipe via an alligator clip or clamp. Another socket is where you plug in the earth lead.
8. Do not connect the alligator clips to any live electrical wires weather they are insulated or not.

Signal Modes

9. The signal generator will produce up to three or more signal modes. Remember in each mode you are generating a signal to be picked up by the cable locator. On most signal generators the modes are selected by the operation of one function switch.
10. The first mode is OFF. You must switch the signal generator off when not in use, or batteries will quickly discharge.
11. The second mode is induction. In this mode there should be no wires or cables connecting the signal generators to anything external.
12. For selective induction, i.e. one pipe only, place the signal generator upright, directly above, and in line with, a known part of the pipe located.
13. Use the cable locator to find the signal, and therefore the pipe. Use marker paint to mark the location and direction on the pipe.
14. If the signal generator is laid on its side with the loudspeaker facing up, the generator signal is spread over a wider area into all pipes and cables within the vicinity.
15. The signal can also be induced into underground electrical systems by (for example) placing the signal generator, in the induction mode, against a street lamp .
16. The third mode is connection, which should be used instead of induction mode whenever possible.
17. Plug one end of the lead into the (signal) generator, and fasten the alligator clip or magnet on the other end of the pipe you want to locate.
18. Plug the long ground (earth) lead into jack socket, the alligator clip on the other end is fastened to the metal stake, which has been driven into the ground.
19. Check that the signal has been successfully applied to the pipe by detaching and re-attaching the alligator clip to the pipe. The sound from the signal generator loudspeaker will distinctly change tone.
20. Now use the cable locator to locate the signal, and the pipe. Use marker paint to mark the location and direction of the pipe.
21. This is the mode to use whenever you attach a cable from the signal generator to the pipe located.

Metal cover locator

22. Most signal generators can also be used as a locator. They can locate metal box covers and metal manhole covers.
23. Switch to this mode and adjust the tuning control.
24. Follow the instructions in the instruction booklet or printed on the side of the signal generator.

USING THE EQUIPMENT

1. Wear your protective equipment as required by site rules.
2. If your equipment does not work properly do not attempt to repair it. Contact the hire company.
3. You may want to read this leaflet again. Please keep it until you finish work.

Please keep this leaflet safely as it may be required for future reference

HAE HIRE ASSOCIATION EUROPE

Hire Association Europe
2450 Regents Court
The Crescent
Birmingham Business Park
Solihull B37 7YE

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