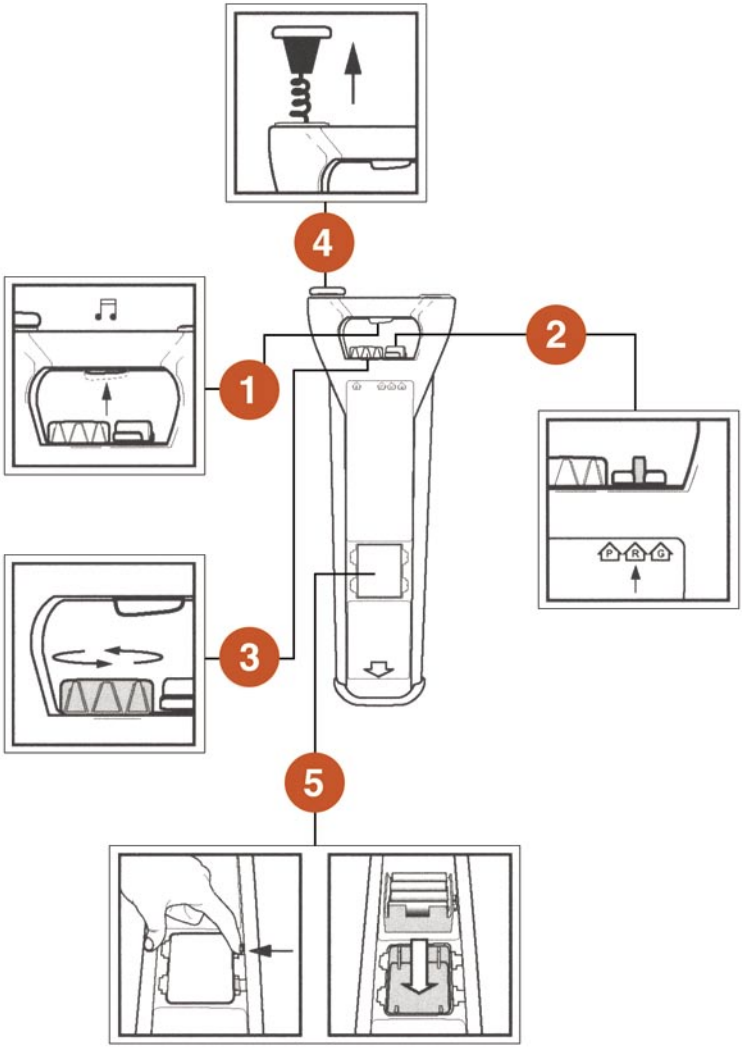
Introduction

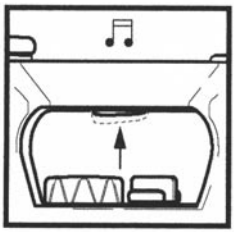
The **TOMCAT Cable Locator** is the ideal instrument for use in underground cable avoidance. It's robust construction and easy-to-use controls make it the perfect tool for the professional utility specialist.

What's in the Manual

The manual explains how to prepare the TOMCAT for use and then describes the function of each control. There is a section devoted to operating the TOMCAT and this is followed by general locating tips which will help you get the most out of your TOMCAT.

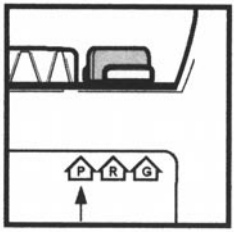
Operating Controls





1. On/Off Switch

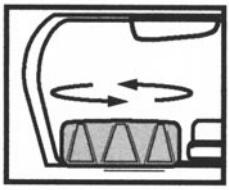
Depress this switch to turn the unit on. Release it to switch the unit on. When the switch is depressed the unit will emit a beeping sound. If no sound is heard, refer to the Preparation for Use section.



2. Mode Selector Switch

Use this switch to select the required operating mode. The three modes are:

A. Power
B. Radio
C. Generator
The method of using the different modes is described later.



3. Sensitivity Control Knob

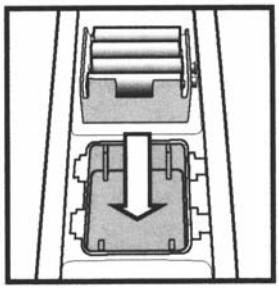
This is used to eliminate background noise and minimize the response width of the instrument.

4. Speaker

Warning: To avoid to much exposure to noise do not hold the speaker too close to the ear when in use and avoid using it for long periods.

The speaker can be unscrewed and held close to the ear when locating in noisy environments. When not is use the speaker should be replaced back into its housing.

5. Battery Housing



Depress this switch to turn the unit on. Release it to switch the unit on. When the switch is depressed the unit will emit a beeping sound. If no sound is heard, refer to the Preparation for Use section.

Preparation for Use

If the TOMCAT does not emit a bleep when switched on, the batteries are flat and need replacing. The TOMCAT is powered by eight 1.5v AA cells, which are housed under the Warning panel on the side of the instrument.

To replace the batteries, remove the panel, push the two retaining clips towards the panel and lift it out of the casing. Remove the batteries and fit new ones. Battery orientation is marked on the battery housing under each battery

Replace the panel and ensure that the retaining clips click into place. Switch on the instrument and ensure that the beeping noise can be heard.

The instrument is now ready for use.

Note: To ensure peak performance always replace the batteries as a set.

Set the instrument controls as follows:

1. Lift the locator so that the little finger can operate the On/Off switch. This leaves the forefinger free to operate the sensitivity control and mode switch.

2. Turn the mode switch to Power Mode.

3. Turn the sensitivity knob fully clockwise.

Location Procedure

Safety

Warning: Although the TOMCAT will locate most services there are some cables which do not radiate signals and which cannot be located with the TOMCAT. Always excavate with care.

Always check for correct operation by using P mode to locate a power cable with which you are familiar and to ensure that the response is what you expect.

Not all cables carry current, and the TOMCAT will not detect these in P mode. For the instrument to locate cables in P mode, they must be carrying current.

Underground pipes can often emit power and radio signals. The instrument cannot recognise if the service is a cable or pipe and will only indicate the presence of a service.

Buried services do not always radiate a detectable signal. To locate these cables use the TOMCAT in conjunction with the Signal Generator. This is the most accurate method for locating, tracing, and identifying a cable.

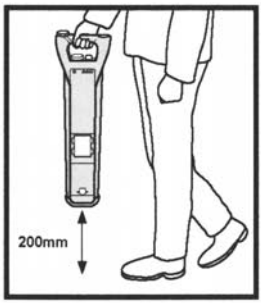
Locating

Warning: There are some cables that cannot be detected using P mode. Once a search of the area has been completed in P mode perform the search again with the TOMCAT in R mode.

Before starting to locate, consult local utility offices to obtain as much information as possible regarding the underground services in the proposed search area. Id available, obtain a utility map of the area as this will assist you in the location of buried services.

When using the TOMCAT always hold it upright and do not swing it from side to side (see illustration)

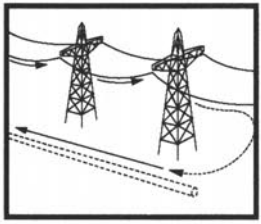
Reinforcing steel bars in concrete can interrupt signals from an underground service by spreading the signal or deflecting it. If you suspect that this is happening lift the locator about 200mm (8"0) from the ground whilst locating.



To locate a cable:

Power Mode

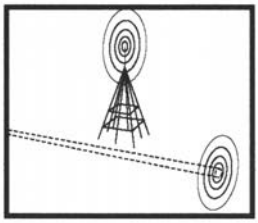
Power signals are those which are emitted by current carrying cables. The current is often generated by nearby load carrying conductors as shown in the diagram.



Radio Mode

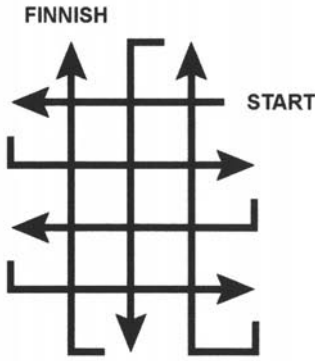
These are often low voltage signals generated by remote radio transmitters. The signals enter the ground and are re-generated by buried conductors.

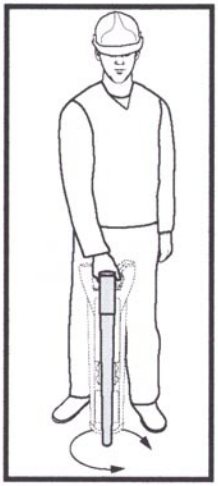
Note: These signals are not always present.



1. Switch on the instrument, select P mode and ensure the sensitivity control knob is turned fully clockwise.

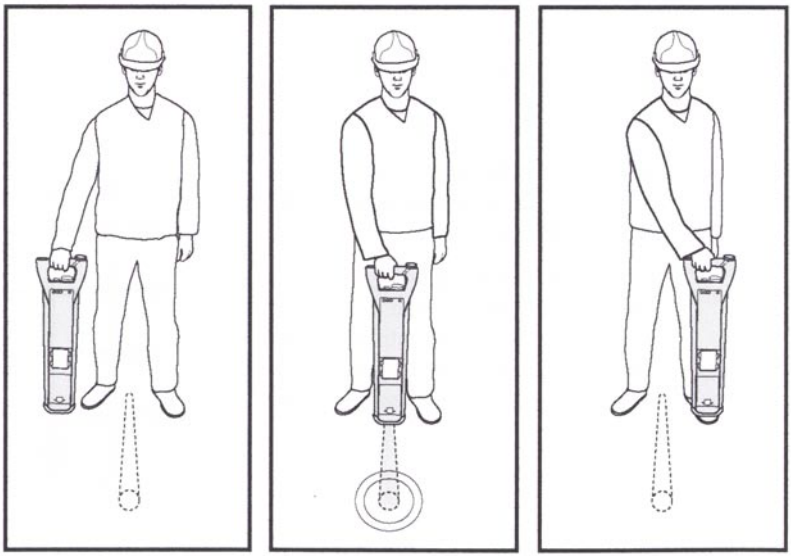
2. Search the area in a grid-like fashion using the sensitivity control knob to reduce background noise and continue searching until there is no further beeping noise from the instrument or you are outside of the search area.





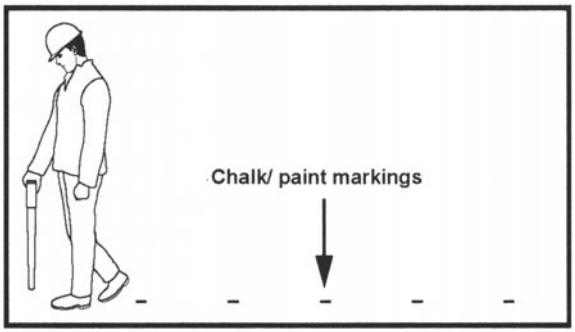
3. Return to the mid point of the signal and, holding the TOMCAT level, rotate it about its axis until the minimum signal is found. Use the sensitivity control to obtain a narrow response (See illustration).

4. Rotate the locator about its axis by 90˚ so that it will be across the run of the service at that point.

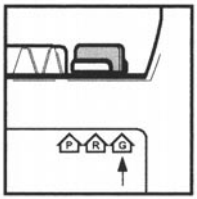


5. Move the locator backwards and forwards across the service whilst reducing the sensitivity to give a narrow response width. The locator is now directly above the service and at right angles to it.

6. To trace the line of the service, walk along the expected direction moving the locator from side to side with the blade at 90˚ to the line of service. Always keep the locator vertical and, using marker paint or chalk, mark the route of the service as required.



7. Repeat the procedure using R mode and with the sensitivity control turned fully clockwise.

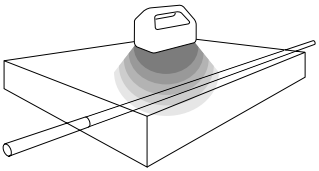


Locating with the TOMCAT and a Signal Generator

Pre-use test

Before using the TOMCAT with the generator, perform a functional check as follows:

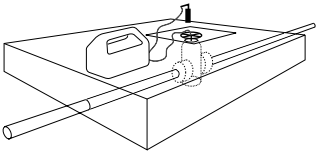
1. Place the generator on the ground and switch it on.
2. Ensure there is a sound from the speaker.
3. Place the TOMCAT on the ground with the foot facing towards the generator, with the TOMCAT switched on and set to maximum sensitivity, check that the audio response is as shown in table 1.



Induction

In this method, the generator signal is induced onto the cable and the TOMCAT is used to trace the signal.

The trace a cable in induction mode, proceed as follows:



1. Locate the cable for a short distance and mark its position.
2. Place the generator over the cable and switch it on.
3. Switch on the TOMCAT and select G mode. Starting at a distance of approximately 2 metres from the generator trace the cable and mark its position.

Direct connection

In this locating method the generator is directly connected to the cable by means of a cable attached to a suitable connection point such as a junction box or meter.

Warning: Direct connections should only be made by suitably qualified users.

Equipment Care and Maintenance

Although the TOMCAT is of rugged design and it must be remembered that it is a precision instrument and should be cared for accordingly. By following these simple precautions it will give many years of useful service.

1. Do not drop the instrument.

2. Keep it clean and properly stored when not in use.

3. Ensure it is calibrated by an approved calibration centre at regular periods.