

DRAPER[®]

Combined Metal, Voltage & Stud Detector

Stock No.13818

Part No.501G

INSTRUCTIONS**03/2010****WARNING:**

Shielded wires or live wires in metal conduits, casings, metal walls or thick, dense walls will not be detected, and the presence of foil backed plasterboard or insulation materials.

Use caution when nailing, cutting or drilling in walls, ceilings and floors that may contain wiring or pipes near the surface.

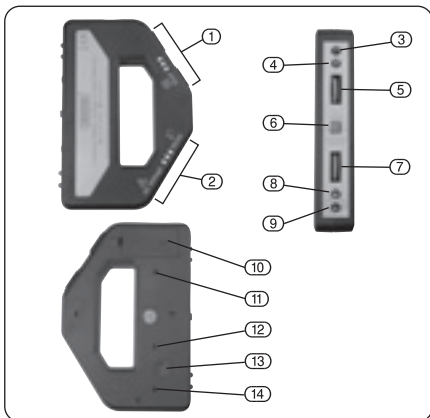
When working near ac electrical wires, always turn off the wires' power.

Caution should always be used when nailing, sawing or drilling into walls, floors and ceilings that may contain cable or wire.

DRAPER[®]

GETTING TO KNOW YOUR DETECTOR

1. Stud detection face.
2. Voltage detection face.
3. Red LED indicator.
4. Green LED indicator.
5. Sensitivity dial (stud detector).
6. Selector switch.
7. Sensitivity dial (ac voltage/metal detector).
8. Green "ON" LED.
9. Red LED indicator.
10. Battery compartment.
11. Trimmer for stud detector.
12. Trimmer for voltage/metal detector.
13. Buzzer.
14. AC voltage detection adjuster (Factory adjustment only. Do not tamper with this setting).

**DRAPER**[®]

ASSEMBLY

CONNECTING THE BATTERY (Fig.1):

Unclip battery compartment cover on the back of the unit, and connect a new 9V-PP3 battery. Replace cover and securely snap in place. The unit is now ready for use.

Fig.1



- **METAL/AC VOLTAGE DETECTION (Figs 2-4):**

Hold the unit as shown in fig. 2 and turn knob (A) fully downwards.

Move the selector switch to AC VOLTAGE/METAL DETECTOR position. The green "ON" LED will come on immediately. Make sure that the unit is far away from any metal or current-carrying conductor.

Turn the dial (A) upwards until the indicators come on (Red LED lights and Buzzer sounds). Reverse the dial (A) gently until the indicators just go off. The unit is now ready for use.

Hold the unit as shown in fig. 3 and move it sideways (in horizontal position), across the wall. The Red LED and continuous Buzzer sound will come on when a metal object is in the vicinity. Current carrying conductor will be shown with a Red blinking LED and beeping sound of Buzzer (see Fig. 4).

If the indicators can not work normally after the unit has been switched on, the unit needs to be adjusted. For details refer to "UNIT ADJUSTMENT".

Safety

Check the unit on a known voltage source before detecting any ac voltage.

Caution

It cannot detect shielded current conductors i.e. those in metal conduit. It only shows presence of METAL.

Note:

Some walls may contain metallic fibre for fireproofing (e.g. foil backed plasterboard), this will spread the area of voltage pick-up. Placing your free hand on the wall may cancel the effect. Rubbing or banging the unit on the wall may generate static electricity and cause a false reading.

Leakage Current

Because of the extremely small current required to cause a reading on the unit, an apparent false reading may be seen in some situations, e.g. a conductor with poor insulation touching a damp wall, the unit will show a voltage on the wall. In this situation the unit is indicating a potential hazard which should be checked out by a competent certified professional.

- **WOOD FRAME DETECTION (Figs. 5-7):**

To locate vertical batons or wall studs, refer to the following procedures :

Place the unit on the wall with the detection face marked "STUD" leaning against the wall.

Turn the dial (B) fully downwards (see Fig.5).

Move the selector switch to STUD DETECTOR position.

Turn the dial (B) upwards until the Red LED and Buzzer come on. Reverse the dial (B) gently until the Green LED comes on and the Buzzer sound disappears.

If the unit can not be set it needs to be adjusted. For details refer to "UNIT ADJUSTMENT".

Move the unit horizontally across the wall (Fig.6). Make sure that the detection face marked with "STUD" is placed flat against the wall, otherwise the Green LED will go out and calibration procedures need to be repeated from the beginning.

When the edge of a batten or wall stud is under the groove of the unit, the Red LED will come on and Buzzer will sound.

Mark this position on the wall (Fig.7).

Resume the movement of the unit. When the Green LED comes on and Buzzer ceases, mark this position too.

Fig.2

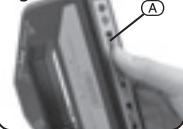


Fig.3



Fig.4



Fig.5

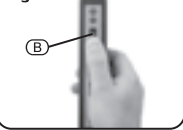


Fig.6



Fig.7



These marks indicate the edges of the batten or wall stud. The middle point between two marks is the centre of the batten or wall stud.

Locating horizontal battens or stud braces, refer to the following procedures.

Place the unit horizontally against the wall (Fig.8).

Use the same method of locating vertical battens or wall studs to detect horizontal battens or stud braces.

Note:

The stud detection can be carried out normally on wall papered walls. However it may not function on some types of foil backed or metallic fabric surfaces.

If by chance the unit is placed over the wall batten or stud to process calibration, the Green LED may go off and Buzzer may cease when the edge of batten or wall stud is under the groove of the unit, it means that the detection may fail.

Before detecting, calibrate the unit with the required detection face against the wall along which you want to detect.

It is advisable to take several readings along the batten or stud because a nail may change the apparent centre position.

Frequent re-calibrations can help to avoid any false readings.

We always recommend carrying out metal/voltage detection to ensure the detected batten or wood stud is not a pipe or cable.

Please note that some small securing screws or nails may be detected.

If there are two studs existing adjacently, the unit may not work correctly.

- MAXIMIZING ACCURACY.

The sensitivity of the unit can be pin-pointed at the exact place of pipes, cables, battens or studs. To do this sweep the unit across the area in question, with the red light and buzzer sounding. After each sweep, gradually adjust the knob until the red light and buzzer are no longer activated. Gently reverse the knob before each subsequent sweep until the red light and buzzer come on at the location of hidden pipes/cables or battens or studs.

- UNIT ADJUSTMENT (Figs.9-11):

A small screwdriver is provided for this, located under the battery compartment cover (Fig.9). Don't lose it.

Metal/AC Voltage Detection Adjustment.

Turn the Metal/Voltage sensitivity dial by ½ turn.

Place Selector Switch to AC VOLTAGE/METAL DETECTOR position.

Turn the trimmer (C) by using the small screwdriver (Fig.10).

If the Green LED is on, slowly turn the trimmer CLOCKWISE until the Red LED and Buzzer just come on. Slowly turn back the trimmer until the Red LED just goes off and the Buzzer ceases.

Now the unit is correctly adjusted.

If the Red LED and Buzzer come on, slowly turn the trimmer ANTI-CLOCKWISE until the Red LED just goes off and the Buzzer ceases. Now the unit is correctly adjusted.

Stud Detection Adjustment.

Turn the STUD sensitivity dial by ½ turn.

Move Selector Switch to STUD DETECTOR position.

Hold the unit with "STUD" face against the wall.

Adjust the trimmer (D) for STUD DETECTOR (Fig.11).

If the green light is on, slowly turn the trimmer ANTI-CLOCKWISE until the Red light and Buzzer just come on. Slowly turn back the trimmer until the Red LED and Buzzer just turn off and the Green LED just turns on. Now the unit is correctly adjusted.

If the Red LED and Buzzer come on, slowly turn the trimmer CLOCKWISE until the Red LED and the Buzzer just turn off and the Green LED just turns on. Now the unit is correctly adjusted.

Fig.8



Fig.9



Fig.10

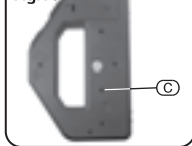
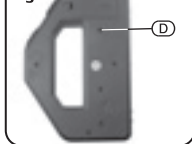


Fig.11



Wood Test	Compound wood, thickness 10mm.
Metal Test	Diameter 20mm, Iron pipe (depth 25mm max.).
AC Voltage test.	AC220V Electric wire, (depth 25mm max.).
Ambient condition.	-20°C to 60°C below 80% RH
Battery	PP3, 9V.

Note:

Detection depth and edge detection can vary due to moisture content of materials, wall texture, paint and the presence of foil backed plasterboard or insulation materials, etc.

CAUTION:

Remember to switch off the unit when not in use (move selector switch to the middle).
If you don't use the unit for a long time, please remove the battery.

If at some point you intend to dispose of this article, then please keep in mind that many of its components consist of valuable materials which can be recycled.

Do not dispose of WEEE* as unsorted municipal waste.



* Waste Electrical & Electronic Equipment.