



Metal Detector

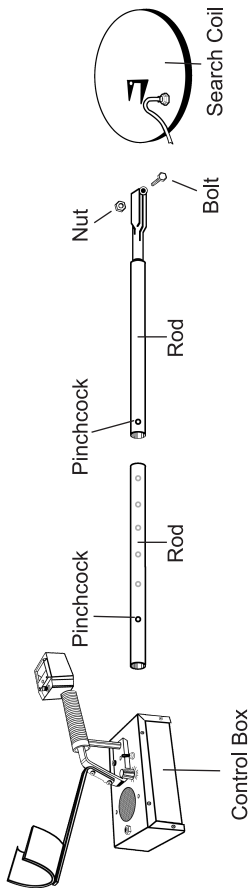
Users Manual

Read this manual thoroughly before use

GENERAL DESCRIPTION

The metal detector can be used for the detection and identification of metals buried underground. It is easily operated, has high resolving power and is extremely accurate. Complete with ground balance circuit it can exclude the effect that iron ground minerals have over metal targets (mineralisation reaction) so that the instrument will not sound signal until the search coil detects metal. This means the detecting accuracy and detecting depth is greatly improved. Besides the use in military affairs, it can also be used as follows:

1. To check for metal objects in material, fuel and food.
2. To detect metal objects in post and baggage.
3. To detect underground pipes and cables.
4. For archaeological studies and for detecting minerals.
5. To search for buried gold and silver cultural relics.



Assembly Drawing

GENERAL SPECIFICATION

Maximum Detection Depth : 1.5 M

Operate Mode : Ground Balance mode / Discrimination mode

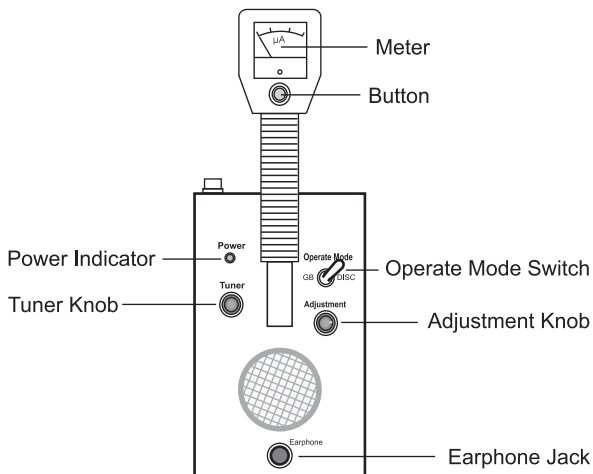
Master Frequency : 465kHz

Signal Frequency : 454Hz

Power Consumption: 0.6W

Battery: 1.5V, AA, 6 pieces

INSTRUCTION OF CONTROLS



1.Button

The button located on the handle of the instrument is very important. After you press and release this button, the memory circuit will automatically memorise the adjusted running status. It is often pressed and released during adjustment and detection.

2.Tuner Knob

The tuner knob allows you to make adjustments until you find the "Critical Sound". Turn the tuner knob clockwise, the instrument will be turned on first, then it will sound faintly and the sound will become gradually louder. Don't stop adjusting the tuner knob until the instrument gives a faint buzz, this is called the "Critical Sound". The instrument has the highest sensitivity when operated at this critical sound. If the sound is too loud or not there at all, the instrument's sensitivity will be reduced. Before you start to adjust the instrument for the "Critical Sound", you must press and keep pressing the button. When the "Critical Sound" is audible, you can release the button. If the "Critical Sound" increases gradually or disappears gradually while you are detecting for metal, you should press the button and then release it to restore the "critical sound". After finishing detecting turn the tuner knob to the anticlockwise to switch off the power supply.

3. Operate Mode Switch

The operate mode switch has two mode positions, " GB " (Ground Balance) position and " DISC " (Discrimination) position.

If the operate mode switch is in the " GB " position, the instrument is in Ground Balance mode, and whenever it detects metal, it will sound while excluding the "mineralisation" reaction.

If the operate mode switch is in the " DISC " position, the instrument is in Discrimination mode and can distinguish between different types of metal.

4. Adjustment Knob

The Adjustment knob needs to be used in conjunction with the operate mode switch. When the instrument is in the Ground Balance mode, the "mineralisation reaction" can be excluded by adjusting the Adjustment knob on a scale of 0 to 10. When in Discrimination mode, the Adjustment knob can be adjusted to distinguish between different types of metal.

5. Earphone Jack

Should you need to operate the instrument in noisy environments or during the night you can use it with earphone.

For safety reasons do not use earphone when near traffic.

THE METHOD OF DETECTING METAL

When you detect along the ground, the search coil is parallel to the ground. Keep a distance of 10cm-15cm between the search coil and the ground, and to avoid reducing the detecting depth, don't set the search coil too high.

Operating Modes

1. Ground Balance mode

When the instrument is in Ground Balance mode you can exclude the effect that iron ground minerals have over metal targets (mineralisation reaction), and it will have better penetrability. It is therefore recommended to use this mode regardless of where it is being operated. After you have detected metal you can go on to use the Discrimination mode to identify which type of metal it is. Operating in Ground Balance mode, the instrument will give continuous sound when you move the search coil above the target object. Every type of metal can make the instrument's sound become louder and make the reading of the meter increase.

The process of adjustment:

1. Set the operate mode switch in " GB " position.
2. Lift the search coil to keep a distance of 70cm-80cm or so between the search coil and the ground.
3. Press and hold down the Button, and then turn the tuner knob clockwise to switch the power supply on until you hear the

"Critical Sound" and it remains constant, then release the Button.

4. Move the search coil close to the ground to keep a distance of 10cm-15cm or so between the search coil and the ground. If the sound increases, lift up the search coil, press and hold down the button and turn the Adjustment knob a little anticlockwise, then release the button, move the search coil close to the ground to try again. If the sound increases again, you can continue to turn the Adjustment knob anticlockwise as above. Keep trying until the "Critical Sound" remains constant when you lift and put down the search coil.

The "Critical Sound " will not change until the search coil meets a metal target.

5. If the sound decreases when you move the search coil close to the ground, lift up the search coil, then press and hold the button, then turn the Adjustment knob clockwise, and then release the button, and move the search coil close to the ground to try again. If the sound decreases again, try as above once more. Keep trying until the sound remains constant when you lift and put down the search coil.
6. Note: Press and hold down the button before you make any adjustment, and release the button when the adjustment is completed.
7. After finishing the above adjustment, you can move the search coil slowly along the ground. While detecting, the instrument must keep the buzz "Critical Sound". If the sound increases or decreases gradually, press the button again to restore the "Critical Sound" to its original status. When the search coil meets metal, the instrument will give a louder sound, and the meter will display a larger reading.

2.Discrimination Mode:

This mode allows you to distinguish ferrous metal from non-ferrous metal. By the sound and the reading of the meter, you can also select the metal target you want to find and that which you don't. The Discrimination Mode does not have the function to exclude the "mineralisation reaction" and the disturbance from the ground, so you should keep a constant distance between the search coil and the ground while moving the search coil slowly. Never move the search coil quickly.

The process of adjustment

1. Set the operate mode switch in " DISC " position.
2. Press and hold down the button and turn the tuner knob to switch the power supply on until the "Critical Sound" remains constant.
3. According to the situation, adjust the Adjustment knob to exclude targets you don't wish to find. For example: In an area where there are many iron nails, the signal will exist everywhere, so it is very difficult to detect the target object. To solve the problem, you can put an iron nail on the ground, then move the search coil above the iron nail. If the sound increases, press and hold the button, then turn the Adjustment knob a little anticlockwise, then release the button and try again. If the sound decreases move the search coil away, and then press and hold the button, then turn the Adjustment knob a little clockwise. Finally, release the button and move the search coil above the iron nail to try again, and do not stop trying until the sound remains constant. When the adjustment is complete, underground iron nails and ferrous metal object

which are smaller than the iron nail will not make the instrument's sound increase. However, non-ferrous metal object and ferrous metal objects which are bigger than the iron nail will make the instrument give out a louder sound.

4. Set the index of the Adjustment knob less than the scale "2", a biggish non-ferrous metal object will make the instrument give a louder sound and a biggish ferrous metal object will make the instrument's sound decrease. When you set the index of the Adjustment knob more than the scale "7", a biggish non-ferrous metal object will make the sound decrease and a biggish ferrous metal object will make the sound increase.

If the target to be detected is a sheet of ferrous metal, a strange phenomenon will appear: When you move the search coil close to the edge of the sheet, the instrument reacts just like it meets the ferrous metal, and when the search coil is above the center of the sheet of ferrous metal, the instrument reacts just like it meets non-ferrous metal.

3. Detecting Examples

When you want to do some detecting you should operate the instrument in accordance to the situation. For instance, if you are looking for a deeply buried relic in an ancient house, there are likely to be all kinds of rejected metal sundries buried underground and they are likely to give large signals. For example, iron nails, copper wires, old locks, fragments of iron boilers, etc will all react strongly. In this situation, you should

firstly take out all of the metal furniture, and then set the instrument in Ground Balance mode to detect and find the metal sundries, then dig out all the metal sundries, and go on to detect the deeper target. Detecting is a hard job, and it is necessary for the operator to have endurance, confidence and willpower. The instrument can only indicate the metal target's position approximately. If you want to find exactly what you seek it is necessary to analyse the situation and make judgments accordingly.

DETECTING FOR MINERAL

You can use the metal detector to detect underground minerals, which are not deeply buried, including nuggets, gangue gold mine, depositing sandy gold mine and all kinds of rich ore.

Detecting nuggets is similar to searching for coins and you should operate the instrument in Ground Balance mode. Because most of the nuggets are buried in terrane, which is highly mineralised, you should adjust the instrument for the Ground Balance beforehand.

In sandy gold mines, the gold is very tiny and is often mixed with sand, soil and other metal depositing substances. The signal caused by this kind of blend is similar to that caused by ferrous metal, but the signal of the blend is weaker than the signal of pure gold, and it is common that the area giving out a signal is wider. The instrument can be operated to filtrate the mineral blocks. When carrying out a job, it is unnecessary to carry the instrument by hand. You can fix it to a non metal holder, and then adjust to locate and maintain the "Critical Sound". Then move the ore close to the search coil one by one, and you can judge how much content there is by the magnitude of the sound. You should remember to press and then release the button whenever you finish detecting. The detecting technology of metal's content is very useful for the filtration of gangue gold mines, and is also very useful for the detecting of relics in old mines. Some people take the minerals on which there is visible gold, and remove the other unwanted minerals. For mines of copper, iron, tin, lead, etc, signal will vary according to its content. The operator can experiment with a standard mineral, and then watch how the instrument responds to the standard mineral to determine the difference between the target mineral and a common mineral.

MAINTENANCE

Washing:

The search coil is the part of the detector that will become most dirty. You can clean it with a moist cloth and then allow it to dry. The instrument can only be used when it is dry. The control box is not waterproof, you can not wash it with water, but it can be cleaned with a towel. The instrument can not be used outdoors on rainy days.

Temperature:

Don't put the instrument beside a stove or expose to any other high temperature environment.

Salt Water:

Salt water tends to cause rust, should the instrument come into contact with salt water clean it with a moist cloth and dry with a towel. Don't allow any water enter the control box.

Battery:

To install batteries, remove the two battery covers on the back of the control box carefully and gently, install three new batteries (AA or equivalent) into each battery compartment, make sure that the polarity connections are correct. Reinstall the two battery covers respectively.

If you will not operate the instrument for a long time, you should take out the batteries to avoid damage to the control box.

CAUTION

1. If the instrument does not run correctly or the sound can't be decreased after increasing, it shows that the batteries are flat and need replacing with new batteries.
2. When adjusting the Metal Detector, press and hold down the button. After finishing adjustment, release the button.
3. When you adjust the Metal Detector for "Critical Sound", don't press the button above metal, and you should press the button after lifting up the search coil high. While detecting, you should not keep pressing the button.
4. If the instrument can't keep the "Critical Sound", it shows that the instrument has a malfunction and needs repairing.

SAFETY INFORMATION

Any metal detector may discover underground power lines, explosives or other items which when struck could cause personal injury. When searching for metals observe these precautions:

1. Do not search in an area where you believe there may be shallowly buried underground electric lines or pipes.
2. Do not detect in a military zone where bombs or other explosives may be buried.
3. Avoid striking any line known to be or suspected to be carrying electrical power.
4. Do not disturb any pipeline, particularly if it could be carrying flammable gas or liquid.

5. Use reasonable caution in digging toward any target, particularly in areas where you are uncertain of underground conditions.
6. Observe all national, state and local laws while detecting.

NOTE

1. This manual is subject to change without notice.
2. Our company will not take the other responsibilities for any loss.
3. The content of this manual can not be used as the reason to use the metal detector for any special application.

DISPOSAL OF THIS ARTICLE

Dear Customer,

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

Please do not discharge it in the garbage bin, but check with your local council for recycling facilities in your area.



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