

TS1135 / TS1136

Metal Detector

Users Manual

Read this manual thoroughly before use

INTRODUCTION

This detector is a result of applying of advanced technology, refined design and high quality components. It features large detection depth, accurate identification's capability and convenience of operation, and etc.

This detector is mainly used to detect and identify the metal objects buried in the earth. Besides the use in military affairs, it can also be used as follows:

1. In customs, airports, ports, etc. for safety check-up
2. In police stations, courts for metal detection and search
3. Detecting the metal concealed in raw material, food and fuel
4. Checking the metal objects in parcels and luggage.
5. In prospecting or archaeological search
6. Detecting pipes or wires buried in earth
7. Searching for the jewelry and metal cultural relic buried in earth
8. Recycling used metal

While operating an oldstyle detector, the most troublesome problem is the influence from soil - The signal of the instrument will change as the distance between the head and the ground changes, and if the earth surface is uneven, the signal will change more greatly. Operator will hear that the signal sounds everywhere thus he cannot find out the exact location where the target is buried. It is called effect of mineralization.

The cause of mineralization effect is that in the soil there are various

kinds of minerals that causes oldstyle metal detector to give signal. In the place where the soil constituents are complex, mineralization effect is very strong so that the signal caused by soil is higher than the signal caused by metal, and as a result it is very hard for operator to identify whether the signal is from metal or from soil.

The TS1135/TS1136 metal detector has been equipped with advanced ground balance system and is very effective in eliminating the mineralization effect, thus it will sound signal only when it meets metal so that the depth and precision of detection is enhanced enormously

GENERAL SPECIFICATION

Maximum Detection Depth: 2.5-6m

Operate Mode: Ground Balance mode/Discrimination mode

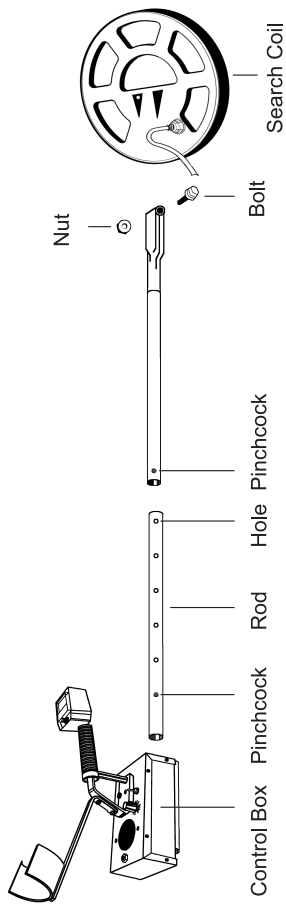
Signal Frequency: 7200Hz \pm 50Hz

Power Supply:

1.5V battery, AA or equivalent, 6 pieces (TS1135 only)

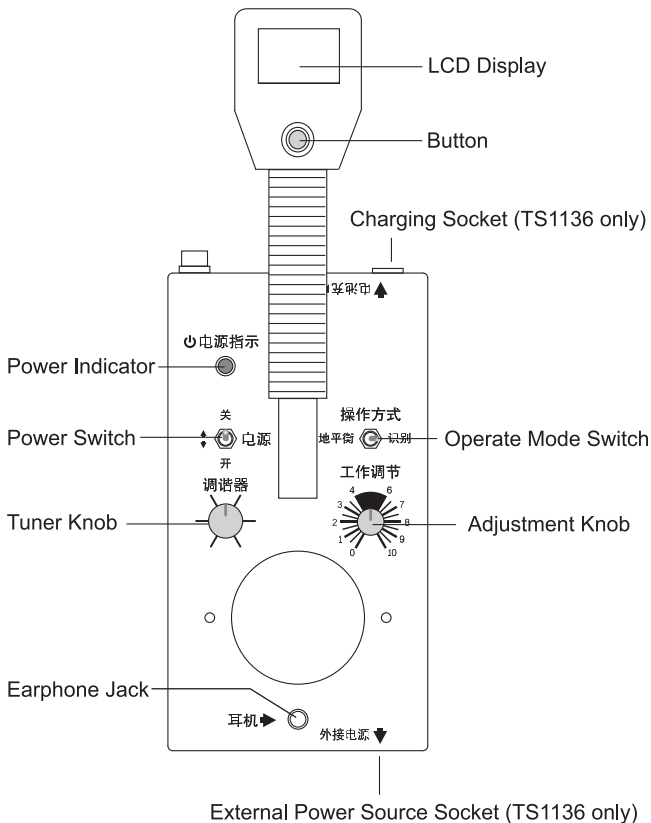
11.1V lithium ion battery (TS1136 only)

Power Consumption: 0.6W



Assembly Drawing

INSTRUCTION OF CONTROLS



1.Button

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

2.Power Switch

Used to turn on or the metal detector.

3.Tuner Knob

The tuner knob allows you to make adjustments until you find the "Critical Sound". Turn the tuner knob clockwise, the instrument will sound faintly and then 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 the button once. If the "Critical Sound" increases or disappears gradually during detection, you should press and release the button to restore the "critical sound".

4. 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 eliminating mineralisation effect.

If the operate mode switch is in the " DISC " position, the instrument is in Discrimination mode and can distinguish between ferrous metal and non-ferrous metal.

5. Adjustment Knob

The Adjustment knob needs to be used in conjunction with the operate mode switch. It has a scale of from 0 to 10. When the instrument is in the Ground Balance mode, the mineralisation effect can be eliminated by adjusting this Adjustment knob. When in Discrimination mode, the Adjustment knob can be adjusted to distinguish between different types of metal.

6. 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.

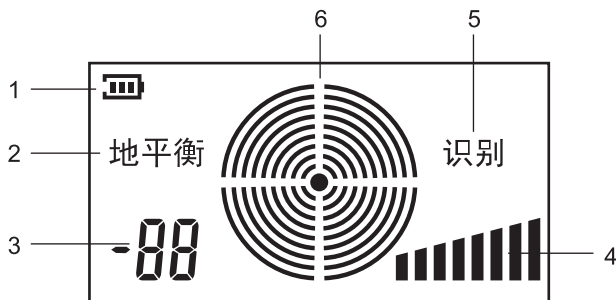
6. Charging Socket (TS1136 only)

Plug-in socket for the charger for charging the built-in lithium battery.



7. External Power Source Socket (TS1136 only)

Plug-in socket for connecting external power source to power the instrument.

READING THE LCD DISPLAY



1. Battery Charge Indicator

This battery charge indicator indicates the charge level of the battery. The number of the bars in it indicates the charge level. "  " means " FULL ", while "  " means " EXHAUSTED " and the battery should be replaced immediately (TS1135 only) or charged (TS1135 only).

2. " 地平衡 " Icon

When the operate mode switch is in the " GB " position, this " 地平衡 " icon will appear on the display.

3. " 地平衡 " / " 识别 " Level Reading

This reading is a 2-digit number. When this reading is " 00 ", it means that the adjustment knob is in the midvalue position. A negative reading means that the adjustment knob is on the left -hand side of the midvalue. (In "识别" mode, if you want to detect non-ferrous metal, this reading must adjusted to be a negative reading.) A positive reading means that the adjustment knob is on the right -hand side of the midvalue. (In "识别" mode, if you want to detect ferrous metal, this reading must adjusted to be a positive reading.)

Note: The " midvalue " mentioned above is not equivalent to the midvalue " 5 " of the scale of the adjustment knob, this is normal and wil not affect detection.

In ground balance mode, this reading indicates the offset of the ground balance adjustment according to the setting of the tuner knob. In normal applications, this reading should be adjusted to -10 to 10.

4. Sensitivity Adjustment Level Indicaor

This sensitivity adjustment level indicaor indicates the magnitude of the present sensitivity adjustment level according to the amount of the adjustment of the tuner knob.

5. " 识别 " Icon

When the operate mode switch is in the " DISC " position, this " 识别 " icon will appear in the display.

6. Detection Level Indicator

When there is no metal detected, this detection level indicator does not appear. According to the magnitude of the signal level from the metal being detected, this detection level indicator will appear and change from one circle to 10 circles. The more circles the display shows, the higher signal level the metal being detected produces.

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 Detection Level Indicator of the LCD display 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. Turn on the detector. Press and release the Button. Then turn the tuner knob clockwise until you hear the "Critical Sound" .

4. Lower the search coil to the ground until its height is about 10cm-15cm above ground. If the sound increases, lift up the search coil, turn the Adjustment knob a little anticlockwise, then press and release the button. Again, lower the search coil to try again. Repeat the procedure until the "Critical Sound" remains roughly constant as you lift and lower the search coil. The "Critical Sound " will not change until the search coil meets a metal target.
5. If the sound decreases when you lower the search coil, lift up the search coil, turn the Adjustment knob clockwise, then press and release the button. Lower the search coil close 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:** Remember to Press and release the button after you make any adjustment.
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 to restore the "Critical Sound" to its original status. When the search coil meets metal, the instrument will give a louder sound and LCD display meter will show a larger reading by the Detection Level Indicator.

2.Discrimination Mode:

This mode allows you to distinguish ferrous metal from non-ferrous metal. By the sound and the indication of the LCD display, 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. Turn on the detector. Press and release the button. Turn the tuner knob until a faint "Critical Sound" is heard.
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, turn the Adjustment knob a little anticlockwise, then press and release the button and then try again. If the sound decreases, move the search coil away, turn the Adjustment knob a little clockwise, then press and release the button and move the search coil above the iron nail to try again. 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 the 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.

Note: Because of the affection of metal impurities in soil, the impurities, shape and size of the detected object, electromagnetic field in the environment and etc., the correctness of the detector's indication for ferrous and non-ferrous metal is not guaranteed.

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 this job, it is unnecessary to carry the instrument by hand. You can fix it on a nonmetallic 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 sound level. 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 discard 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.

CHARGING THE BATTERY (TS1136 only)


For TS1136, when the battery charge indicator becomes "  ", you must charge the built-in lithium battery.

1. Turn off the instrument. Insert the output plug of the charger into the charging socket of the instrument.
2. Plug the charger to wall outlet. The LED on the charger lights red and the charger starts charging the battery.
3. When the LED on the charger lights green, the battery has been fully charged. Remove the charger from the instrument and the outlet.

Note:

Only TS1136 metal detector has battery-charging function.

REPLACING BATTERY (TS1135 only)

For TS1135, when the battery charge indicator becomes "  ", you should replace the batteries.

1. Turn off the instrument.
2. Remove the two battery covers. Replace the old batteries with new batteries of the same type, make sure that the polarity connections are correct.
3. Reinstall the battery covers.

Note:

The batteries which TS1135 metal detector uses are non-rechargeable batteries. To avoid explosion and personal injury, never charge any non-rechargeable battery.

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.

CAUTION

1. If the instrument does not run correctly or the sound can't be decreased after increasing, it shows that the battery is low and should be replaced (TS1135 only) or charged immediately (TS1136 only).

For TS1136, if the built-in lithium battery can't be charged normally, the battery should be replaced. To replace battery, please contact your dealer or our company.

2. Don't press the button above metal, you press the button only when the search coil is far away from metal. While detecting, do not keep pressing the button.
3. 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.
7. Do not open the control box. Do not drop or bump the instrument.
8. Do not short battery's terminals and do not discard battery into fire; otherwise it may explode.
9. Do not charge any non-rechargeable battery; otherwise it may explode.

NOTE

1. This manual is subject to change without notice.
2. Our company will not take the other responsibilities for any loss.
3. The contents 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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