

TS130 / TS1132

Metal Detector

Users Manual

Read this manual thoroughly before use

INTRODUCTION

This unit is manufactured using advanced technology and high quality components. It features larger detection depth, accurate locating, high resolving power, easy operation, and etc.

It is mainly designed to detect and identify underground metallic objects. Besides its applications in military, it can also be used to:

- Perform safety inspection in customs, airports, ports, etc.
- Search for metallic objects by lawman
- Check for metal objects in material, fuel or food.
- Detect metal objects in post and baggage.
- Detect underground pipes and cables.
- Perform archaeological study or detect minerals.
- Search for buried gold and silver cultural relics.

When using a conventional underground metal detector, the most troublesome problem is the influence of ground/soil: The signal of the conventional detector will change as the distance between the search coil and the ground changes. If the ground surface is uneven, the signal will change more greatly and operator will hear that the signal sounds everywhere, thus he cannot make certain of the accurate location of the target. It is called effect of mineralization.

The cause of the effect of mineralization is that various kinds of mineral in the soil cause metal detector to give signal. In the place where the geologic conditions are complex, the very strong effect of mineralization will cause larger signal than the metal signal. Thus, it

is very hard for operator to identify whether the signal is of the metal or of the effect. In contrast, TS130/TS1132 detector is equipped with advanced ground balance system, and it is very effective in eliminating the effect of mineralization. Thus the instrument will sound the signal only when meeting metal, and the depth and precision of detection is enhanced greatly.

Except where noted specially, the descriptions and instructions in this manual apply to both TS130 and TS1132.

GENERAL SPECIFICATION

Maximum Detection Depth: 1.5m

Operate Mode: Ground Balance mode/Discrimination mode

Search Coil Transmitting Frequency: 7.2kHz \pm 0.2kHz

Signal Frequency: 450Hz \pm 10Hz

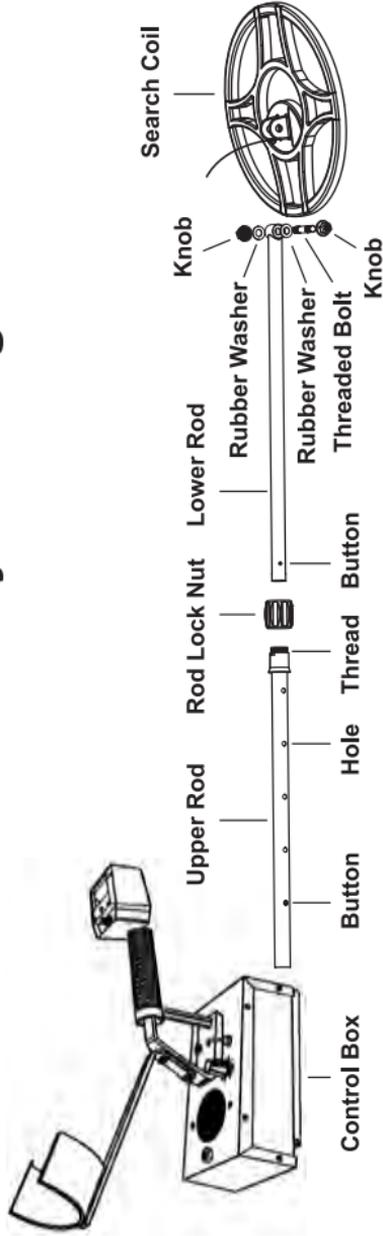
Power source:

TS130: 1.5V battery, AA or equivalent, 6 pieces

TS1132: 11.1V lithium ion battery

Power Consumption: 0.6W

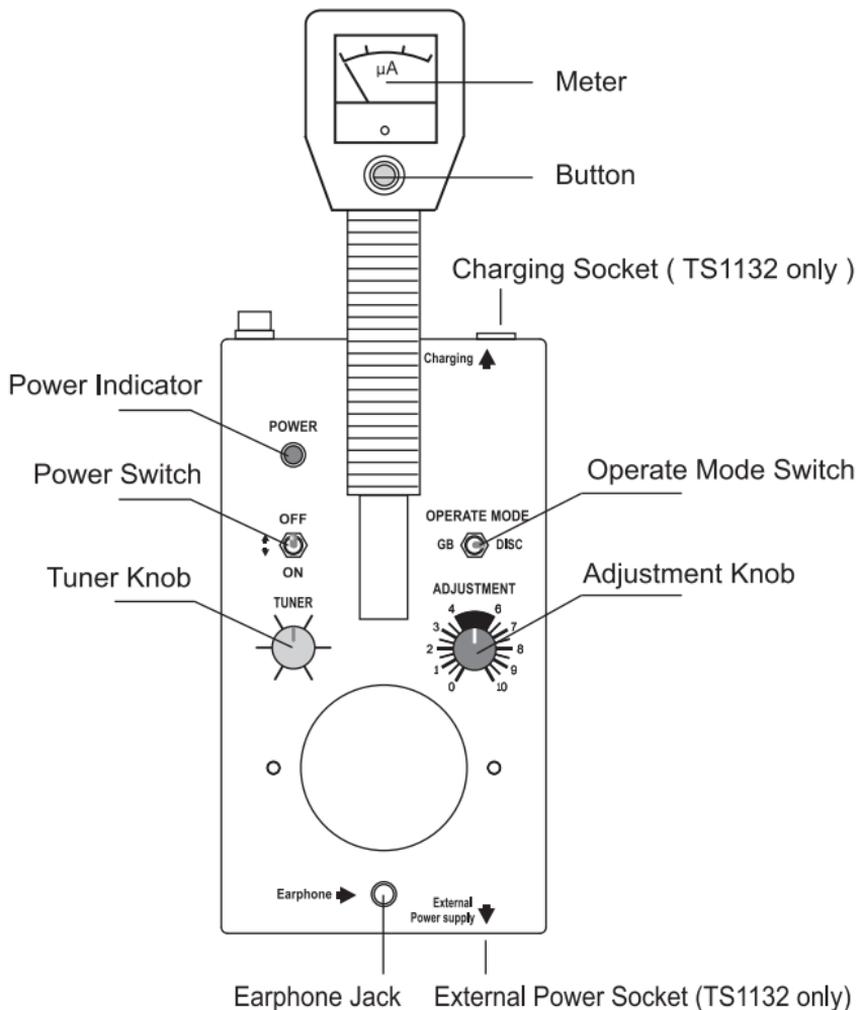
Assembly Drawing



Note:

1. The two rubber washers are to be placed in the two circular slots at the two sides of the end of the lower rod before slipping the search coil onto the end of the lower rod.
2. Turn the rod lock nut onto the threaded end of the upper rod in proper direction to fasten the lower rod only after the lower rod is inserted into the upper rod and the two buttons on the lower rod pop into desired holes on the upper rod.

CONTROLS



1. Button

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

2. Power Switch

Used to turn on or off the detector.

3. Tuner Knob

Used to make the instrument emit a "Critical Sound". As you turn the Tuner knob clockwise, the instrument will sound faintly and then the sound will become gradually louder. Adjust the tuner knob until the detector 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, 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".

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. In this mode, whenever the instrument 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.

5. Adjustment Knob

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

6. Earphone Jack

Should you need to operate the instrument in noisy environment or during the night you can use it with earphone. After you insert the plug of the earphone into the earphone jack, the loudspeaker in the control box will be disabled and you can hear the instrument through the earphone.

Note:

For safety reasons, do not use earphone near traffic.

To avoid hearing loss, do not use earphone if using it makes you feel uncomfortable.

7. Charging Socket (TS1132 only)

Used to connect the supplied charger for charging the built-in lithium battery.

8. External Power Socket (TS1132 only)

Used to connect the optional external power source to power the instrument.

Note: Use this external power socket only with the optional dedicated power source purchased from our company. To ensure safety, never connect any power source from other company to this socket.

THE METHOD OF DETECTING METAL

When you detect along the ground, the search coil should be 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. Turn on the instrument. Press and hold down the Button, adjust the Tuner knob until you hear the "Critical Sound". 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 described 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 encounters 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 down 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 and release 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 the meter will display a larger reading.

2. Discrimination Mode

Discrimination 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. Turn on the instrument. Press and hold down the button, adjust the tuner knob until you hear the "Critical Sound".
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, move the search coil away. Press and hold the button, and turn the Adjustment knob a little anticlockwise, then release the button and try again. If the sound decreases move the search coil away, then press and hold the button, 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 likely 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 analyze the situation and make judgments accordingly.

DETECTING FOR MINERAL

You can use the metal detector to detect underground minerals which are not deeply buried, such as 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 to 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 magnitude of the sound. You should remember to press and then release the button whenever you finish scanning a ore. 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 minerals. In fact, some of the discarded minerals also contain gold.

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 BATTERY (FOR TS1132 ONLY)

If the Power Indicator on the control box lights green, the charge level of the built-in lithium battery is high enough. If the Power Indicator lights dimly or is dead, the battery is not high enough and must be charged immediately.

To charge the built-in lithium battery:

1. Turn off the detector. Insert the output plug of the supplied charger into the charging socket on the detector.
2. Plug the charger to wall outlet. The Charging Indicator on the charger lights red and the charger starts charging the battery.
3. When the Charging Indicator lights green, the battery has been fully charged. Remove the charger from the detector and then remove it from the outlet.

Note:

1. Only TS1132 has charging function. TS130 does not have charging function.
2. Never short battery's terminals, and do not abuse battery. Never place battery or the detector in high temperature environment. Always keep battery dry.

BATTERY REPLACEMENT (FOR TS130 ONLY)

If the Power Indicator on the control box lights green, the batteries are high enough. If the Power Indicator lights red, the batteries are not high enough and must be replaced immediately.

To replace the batteries:

1. Turn off the detector first.
2. Open the battery covers. Replace the old batteries with new ones of the same type, make sure that the polarity connections are correct.
3. Reinstall the battery cover.

Warning:

The batteries that TS130 uses are not chargeable. Never charge any battery that is not chargeable; otherwise it will explode.

MAINTENANCE

Cleaning:

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 plug

of the search coil cable must be dry, the detector will lose its detecting ability if the plug gets wet. The control box is not waterproof, never wash it with water; it can be cleaned with a towel. The instrument must not be used outdoors on rainy days.

Temperature:

Never put the instrument beside a stove or in 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.

Never allow any water enter the control box.

CAUTION

1. If the instrument does not operate correctly or the sound can't be decreased after increasing, it shows that the battery level are not high enough. In this condition, replace the batteries of TS130 detector or charge the built-in lithium battery of TS1132 detector.
2. For TS1132, if the built-in lithium battery's life has come to the end and charging is impossible, the battery must be replaced. Please contact our company or the detector's dealer.

3. Before adjusting the Metal Detector, press and hold down the button. After finishing adjustment, release the button.
4. When you adjust the Metal Detector for "Critical Sound" or ground balance, don't press the button with the search coil near metal, you should press the button after lifting up the search coil high. While detecting, you should not keep pressing the button.
5. On rainy day or after raining, the soil contains too much water so that the detector can not detect metal normally. Perform detection only when the soil is dry enough.
6. 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 relevant 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 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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