

SD-200 Metal
Detector
Operator's
Manual



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圣火大地

Brief Introduction

This unit, the SD-200 Metal Detector, as a result of applying of the advanced technology, refined design and sophisticated foreign units, is of quite depth of detection, accurate identification's capability and convenience of operation. It is a new example of the modern technologies. The metal detector is Primarily used to detect and identify the metal objects buried in the earth; its applicable scope besides in the military affairs as follows:

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

While operating the old detector, it would be affected inevitably by the ground: the signal of the instrument will change as the distance between the head and the ground changes. If the earth surface is uneven, the signal will change more greatly. Operator will hear that the signal sounds all over: thus he cannot make sure of the accurate location of the target. It is called effect of mineralization.

The reason for the effect 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 the larger signal than the metal signal. Thus, it's very hard for operator to identify whether the signal is of the metal or of the effect. The SD-200 metal detector has been 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, the depth and precision of detection is enhanced enormously

Main Specification

Maximum depth of detection: 3 M

Operate mode: "ground Balance"/ "Discriminate "

Oscillate frequency: 460.18KHZ+/- 2KHZ

Power consumption: 450HZ+/-10HZ

Power consumption: 1W

Power supply: 12VDC

Explanation of Controls

1. Tuner Button

Press and release the button beneath, the meter will return and regain the threshold sound. This is done whenever any control has been adjusted.

2. Tuner Dial

a. The Tuner control turns the detector on and off. Set the Threshold sound.

b. After the detector is turn on, go on to turn the control clockwise, the sound of the instrument will be increased gradually from weak to strong.

c. The Threshold is indicated by an audio tone that is barely heard. It represents the detector's maximum operating sensitivity.

d. To set the Threshold

1) Set the Tuner dial to left end and set the Operate Mode Switch to ground balance position.

2) Hold the detector so that its loop is in the air, straight out in front of you, waist high.

3) Press and hold in the Tuner Button, turn the tuner dial clockwise to the right till the tone is barely heard. Release the Button.

e. The threshold needs to be reset whenever any of the other controls are adjusted, or change of threshold sound happens (increase, decrease or

fade). To reset the threshold, raise the loop waist high and press and release the Tuner Button.

3. Operate Mode switch

The mode switch has two positions: ground balance position and discrimination position.

Set Operate Mode Switch to GB position and then the instrument can make sounds, furthermore, it can neutralize the effects of ground mineralization. Set the Operate Mode Switch to DISC position. With this mode the instrument can distinguish different kinds of metals.

4. Power Switch

After detecting, Remember turn off the power button, then turn off the power.

5. Work Adjusting knob

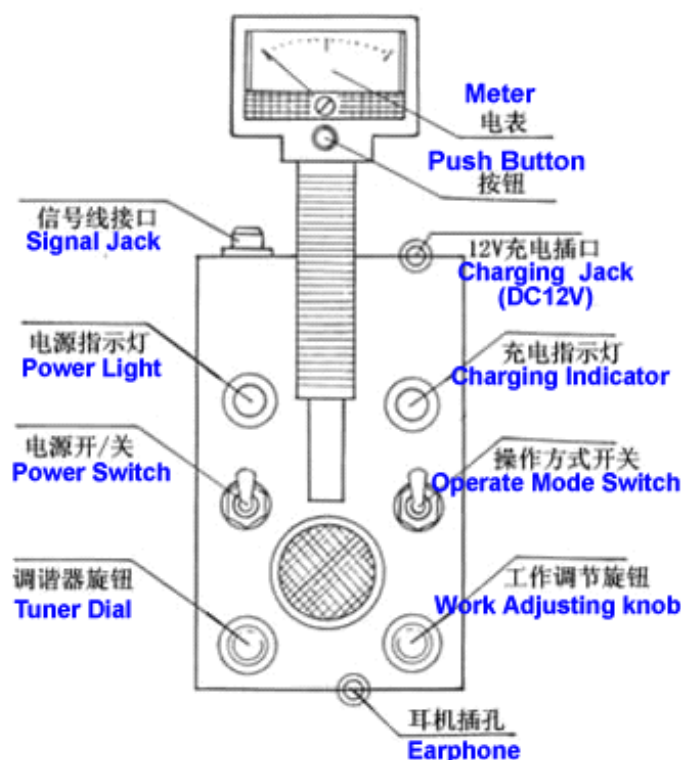
Work Adjusting knob cooperates with the Operate Mode Switch. It has the range of the dial from “1” to “10”. In the mode of GB, through adjusting this knob, it can neutralize the effects of ground mineralization. And in the mode of DISC, it can distinguish different kinds of metals.

6. Charging Jack (DC12V)

When charging battery, the charging light on device will lighting. First charging time over 12 hours is better, after, charging time is 6-8 hours. when the charging light changed from RED to GREEN, means charging is finished.

7. Earphone

The earphone can infix the SD-200detector. After operator can hear the sounds from the earphone that in order to work at night or in the noisy place.



V20+ Explanation of Controls

Search Method

Swing the loop in front while searching. Each swing may cover an area from 10-15cm in width.

1. Ground Balance mode

The GB mode can neutralize the effects of ground mineralization, furthermore, the detector has excellent see-through capability, and so the mode is used most commonly. Discrimination mode isn't used usually until a target has been found by GB mode.

Adjustment procedure of GB mode as follows:

- 1) Set Operate Mode Switch to GB position
- 2) Swing the loop covering an area about 150cm in width.
- 3) Press the Tuner Button, turn on the detector and set the threshold, and then release the Tuner Button.
- 4) Tuner Button ---press and release.
 - a. Lower the loop to the ground. If the tone does not change, the unit is ground balanced already.
 - b. If the threshold increases, keep the loop waist high and turn the adjusting knob slightly counterclockwise if the tone had increased, or slightly clockwise if the tone had decreased. Press and release the Tuner Button beneath the Meter.
 - c. Lower the loop back down to the ground and note any change in tone again. Adjust the GB control as explained above.
 - d. Continue to raise and lower the loop to the ground and make the appropriate correction until there is no change in the tone between air and ground.
 - e. If you have any trouble adjusting the GB control to a constant threshold, you may be over some metal. Move to another spot and repeat above steps. Note: Press and release the Tuner Button after each adjustment to the GB control.

2. Discrimination Mode

The DISC mode can distinguish between ferrous and nonferrous metals and provide audio discrimination between desirable and undesirable targets. However, it can't neutralize the effects of ground mineralization. Therefore when searching, the loop should be kept parallel to the ground

and the distance between the loop and ground also should remain constant. Operate the instrument in this mode as follows:

- 1) Set the Operate Mode Switch to DISC position.
- 2) Press the Tuner Button, turn on the detector and set the threshold, and then release the Tuner Button.
- 3) According to the specific conditions set DISC dial to eliminate the undesirable targets. For example, when searching in the area cluttered with a large number of waste nails, the detector will give nail's signal everywhere and hence it will make trouble in your operation. In this case you should have your loop lowered above the ground, a spot where there is no any metal object; press and hold in the Turn Button to set the threshold, then release the Button. Now, put a nail on the ground, move the loop over it and adjust the Work Adjusting knob until the nail's sound dies away.
- 4) If the Work Adjusting knob is set to the left of "2", the threshold sound will be increased for most of the nonferrous metals. If the dial is set to the right of "7", then most of the ferrous metals will produce an audible signal, but most of the nonferrous metal's signal will not be heard.

3. Searching For Example

This book has introduced two modes how to operate the instrument. Users should operate the instrument in accordance with the actual situations.

For example, you are going to hunt an old house for the buried deeply things left behind by predecessors. It goes without saying that there are also a lot of various abandoned scraps (such as nails, copper, wire, iron wire and some damaged metal appliances) in the ground. These things are generally near the surface of the ground and so will produce strong signals too. In this situation, in order to pinpoint the desirable targets, the first step is to take away all metal sundries, remove all metal furniture, and then use the GB mode to find out the junk in the surface layer of the ground and clean them outdoors. And then search carefully toward depth. Detecting is one of careful and difficult operation, and operator is acquired to be patient, confident and willful. It way by no means like someone's imagination, as long as the loop is passed along the ground, all the things

under the ground are shown clearly. In fact, detector merely indicates target's position most likely. To pinpoint accurately the desirable targets, operator is also required to have rich experiences and is equipped with the ability to make right judgment on the basis of the careful analysis of instrument's responses.

Prospecting

We can prospect or hunt for gold as long as we have some ability to cancel out the ground mineralization. The SD-200 metal detector may detect gold in its natural form as nuggets, rich ore samples or locate black sand deposits.

When nugget hunting, balance the detector, as you would normally do for coin hunting. Remember, most gold is found in mineralized area. So, at first the operator should set GB.

Black sand deposit pockets often contain small nuggets and flour or flake gold, and there are always being a great deal deposit of heavy metal mine. The intermixture make the same signal as the ferrous metal, but the response is weaker and the area of sounds is larger than pure gold.

Also, the SD-200 detector can be used for ore sampling. With the detector tuned as we did. When we bench tested it to determine or threshold, it will correctly analyze an ore sample. Support it with the loop a way from the ground and bring samples within "1-2" of the loop. Any ore sample containing more metal than mineral will respond positive on the detector. If there is more mineral than metal, then the response will be negative (the signal will fade). During this testing, the GB dial is set at the predetermined Null Point. Always remember to touch the Tuner Button after each ore sample is tested. This ore sampling technique is very useful around the tailings of old mines. The miners often only save ore that contains visible gold and toss the rest aside. This technique allows the prospector to look inside the tailing sample and correctly analyze its content.

Care of Your Detector

The following are precautions you should take to protect your instrument from being harmed and ensure its long life and avoid nullifying the



warranty.

Cleaning: The loop can be cleaned with fresh water and a mild cleanser. After cleaning, however, dry the instrument thoroughly. **Caution:** The instrument case and plug connector are not waterproof, and water-if allowed to enter it will damage the electronic components.

Weather Conditions: Protect your detector from excessive cold weather. Freezing can damage the electronic components, the case and battery. Excessive heat can also damage the instrument. Never leave it in the sun. It is advisable not to operate it in the rain, as water may get into the instrument case.

Salty Water: Salty water is very corrosive! Immediately after your detector has been exposed to salt water, rinse it thoroughly with fresh water, being careful not to allow water to enter the instrument case. Then wipe it with a cloth dampened with fresh water and dry it thoroughly.

Battery: Do not allow battery to corrode inside the instrument. **Warranty:** Do not alter or modify your instrument during its warranty period. Alterations will void the warranty.

Cautions:

1. If the instrument can not run correctly and the sound can't be decreased after increasing, it shows that the power of the battery is not enough, please recharge it in time.
2. when adjusting the detector, please press the button for some seconds. After finished adjustment, loose the button.
3. Please don't push any button when the detector is above metal. When detecting, please do not press the button.
4. The metal detector is using high quality rechargeable Li battery, lifetime is over 2 years. when changing battery, please pay attention to the power terminator, and make sure the terminator's anode & cathode is correct setting.
5. If the instrument can't keep the "Critical Sound", it shows that the instrument has malfunction. It is necessary to send it to our company for repair.