

Read this owner's manual thoroughly before use



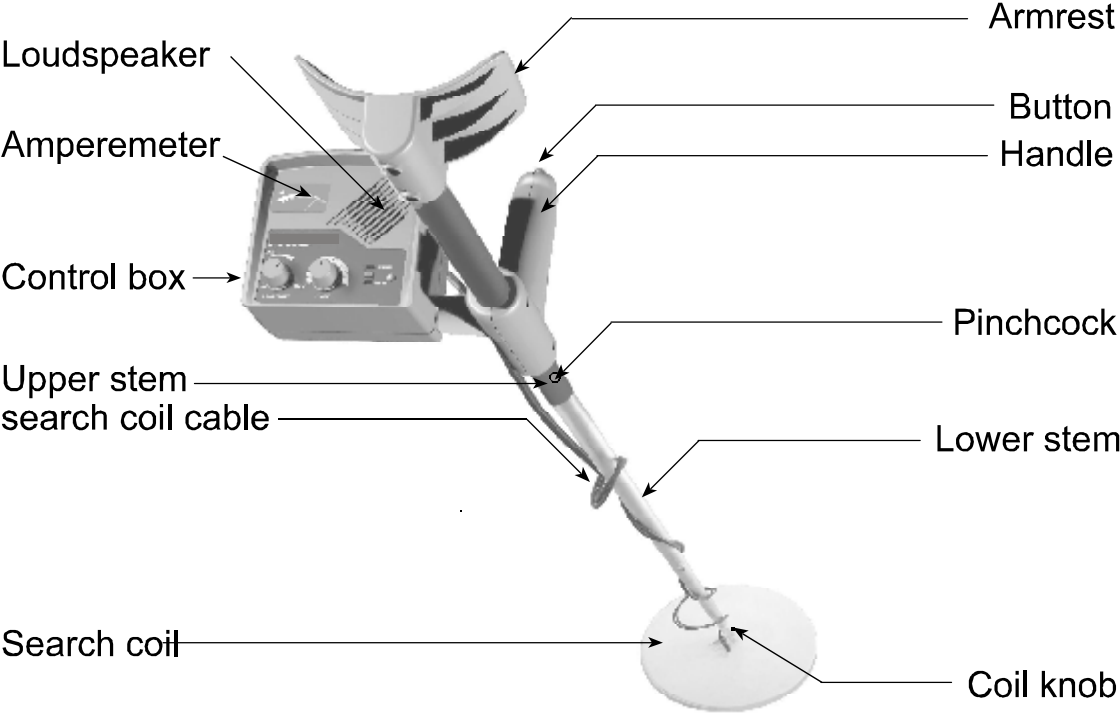
# **METAL DETECTOR**

## **OPERATION MANUAL**

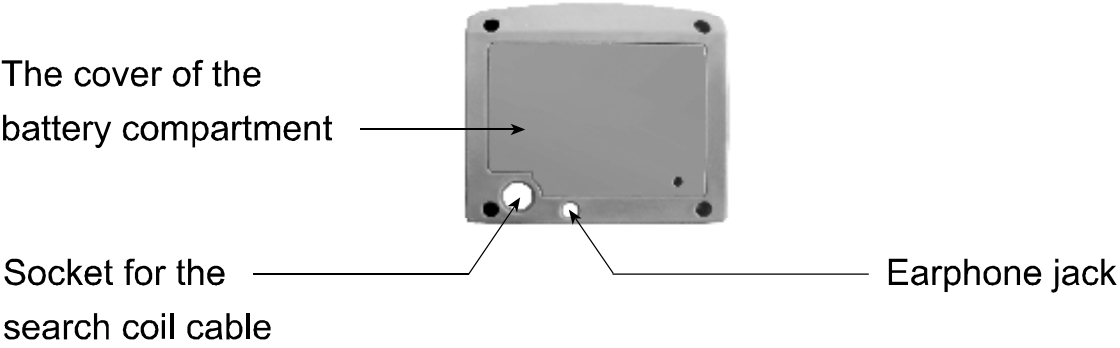


# SPECIFICATIONS

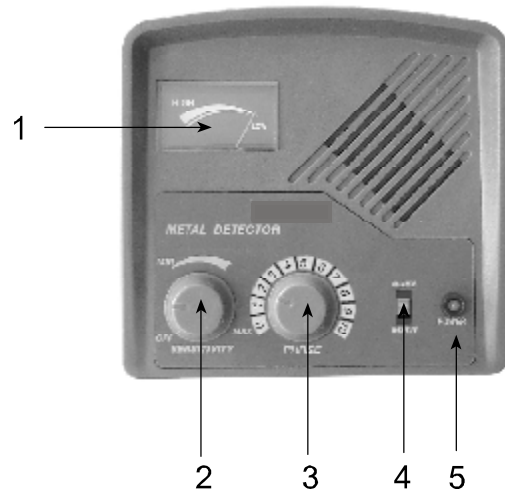
## General Figure:



## The Back Of The Control Box:



## Panel Of The Control Box:



1- amperemeter  
3- phase knob  
5- power lamp

2- sensitivity knob  
4- operating mode switch

## Assembly:

To assemble your Metal Detector, follow this simple procedure:

- 1) Unpack your detector and find the following parts:
  - Search coil and attached coil knob.
  - Upper Stem with control box and armrest.
  - Lower Stem.
- 2) Depress the pinchcock on the lower stem and push the lower stem into the upper stem.
- 3) Wind the search coil cable around the two-piece stem.
- 4) Attach the search coil to the lower stem by using the attached coil knob.

- 5) Install six 1.5-volt AA batteries.
- 6) Set the plug of the search coil cable to the socket on the back of control box.

## **Caution**

1. Do not force the plug in, Excess force will cause damage.
2. To disconnect the cable, pull out the plug. Do not pull on the cable.

## **BRIEF INTRODUCTION:**

This metal detector can locate the target accurately. It has strong resolving power and can be operated easily. The instrument is mainly used for the detection and identification of the metal object which is buried underground. Besides the use in military affairs, it can also be used as follows:

- ◆ Check in custom and check for safe
- ◆ Be used by police for detection
- ◆ Detect metal object in material, fuel and food
- ◆ Detect the metal object in post and baggage
- ◆ Detect the underground pipe and cable
- ◆ Archaeological studies and detect mineral
- ◆ Search the underground golden and silver treasure besides underground metal cultural relic

There is a Ground Balance circuit in the metal detector, and the circuit can exclude all the disturbances from soil (The disturbance is called "Mineralization Reaction" ). The instrument will not give signal until the search coil meets metal, so the detecting accuracy and detecting depth can be improved greatly.

# **SPECIFICATIONS OF THE CONTROL**

## **1.Button**

On the handle of the instrument, there is a button. Its function is very important. While adjusting and operating the instrument, the button is often pressed and loosed. After pressing the button, the memory circuit in the instrument will automatically memorize the instrument's running status which you have adjusted for. If you forget to press and loose the button, the instrument can't run correctly.

## **2.Sensitivity Knob**

The function of the sensitivity knob is to be adjusted for the "Critical Sound". While you turn the sensitivity knob clockwise, at first the power supply is switched on, then the sound appears faintly, and then it becomes more and more louder. You can't stop the adjusting of the sensitivity knob until you have set the instrument in the status: The instrument gives a faint buzz, the buzz is very faint so that it can barely heard, and the faint buzz is called "Critical Sound". The instrument has the highest sensitivity when the faint buzz is being heard. If the sound is too loud or there is no sound 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 being heard, you can loose the button. If the "Critical Sound" increases gradually or disappears gradually while you are detecting the metal, you should press the button and then loose it to restore the "Critical Sound", and then you can continue to detect.

After finishing detecting, you should turn the sensitivity knob to the left end anticlockwise to switch the power supply off. Make sure that the power supply is turned off after you finish detecting.

### **3.Operating Mode Switch**

The operating mode switch has two mode positions. One is Balance ( It denotes " Ground Balance" in this article), another is Identify. When you set the operating mode switch in Balance position, the instrument will give signal whenever it meets metal. In the mean time, the instrument can exclude the disturbance of the "Mineralization Reaction". If you set the operating mode switch in Identify position, the instrument can distinguish different kinds of metal.

### **4.Phase Knob**

Phase knob is used in cooperating with the operating mode switch. Around the phase knob, there is a scale from 1 to 10. With the instrument in the Balance mode, the "Mineralization Reaction" can be excluded by adjusting the phase knob. With the instrument in Identify mode, the phase knob can be used to distinguish different kinds of metal.

### **5.Earphone jack**

This metal detector can be equipped with earphone. After connecting the instrument with the earphone, the sound from the loudspeaker stops. But the operator can hear voice from the earphone in order to operate the instrument in noisy environment or at night.

# **THE METHOD OF DETECTING METAL**

You detecting along the ground, the track of the search coil is like a parallel to the ground. In the mean time, please keep a distance of 10cm-15cm between the search coil and the ground. To avoid reducing the detecting depth, don't set the search coil too high.

## **1. Ground Balance Mode**

In this mode, the instrument can exclude the earth's "Mineralization Reaction" and has better penetrability, so this mode is often selected as the first choice no matter where you operate the instrument. After you have found out that there is metal existing, you can go on to use the instrument in the Identify mode to identify metal. With the instrument in Balance mode, the instrument will give continuous sound when you move the search coil above the target object. Every kind of metal can make the instrument's sound become louder and make the reading of the amperemeter increase.

## **The process of adjustment:**

1. Set the operating mode switch in Balance position(Push the switch upwards);
2. Lift the search coil to keep a distance of 70cm-80cm or so between the search coil and the ground.
3. Press and keep pressing the Button, and then turn the sensitivity knob clockwise to switch the power supply on and then find out and keep the "Critical Sound". Finally, loose 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, please lift up the search coil and press and keep pressing the button, turn the phase knob a little to the left anticlockwise, then loose the button, move the search coil close to the ground to try again. If the sound increases again, you can continue to turn the phase knob anticlockwise as above. Keep trying until the "Critical Sound" keep constant when you lift up and put down the search coil. Up to now, you have finished the adjustment of Ground Balance, and the "Mineralization Reaction" of the earth has been excluded on the whole. The "Critical Sound " will not be changed until the search coil meets metal target while you move the search coil randomly above the ground.

5. If the sound decreases when you move the search coil close to the ground, please lift up the search coil, then press and keep pressing the button, then turn the phase knob clockwise, and then loose the button, and move the search coil close to the ground to try again. If the sound decreases again, please try as above once more. Keep trying until the sound keep constant when you lift up and put down the search coil.

6. Note: Press and keep pressing the button before you want to do any adjustment. After finishing the adjustment, you should loose the button.

7. After finishing the adjustment mentioned above, 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, please press the button again to restore the "Critical Sound " to its original status. When the search coil meets metal, the instrument will give louder voice, in the mean time, the amperemeter will display a larger reading.



## **2. Identification Mode:**

In this mode, you can distinguish the non-ferrous metal and the ferrous metal. By the sound and the reading of the amperemeter, you can also select the metal target you need and the metal target you don't need. The identification mode doesn't have the function to exclude the "Mineralization Reaction" and the disturbance from the ground so that you should strictly keep a constant distance between the search coil and the ground while moving the search coil slowly. Never move the search coil fast.

### **the process of adjustment:**

1. Set the operating mode switch in Identify position.
2. Press and keep pressing the button, in the mean time, turn the sensitivity knob to switch the power supply on and then find out and keep the "Critical Sound", then loose the botton.
3. According to the actual situation, adjust the phase knob to exclude the target you don't need. For example: In the place where there are many iron nails, the signals will exist anywhere, so it is very difficult to detect the target object. To solve the problem, you can put an iron nail on the ground beforehand, then move the search coil above the iron nail. If the sound increases, please press and keep pressing the button, then turn the phase knob a little to the left anticlockwise, then loose the button to try again. If the sound decreases, please move the search coil away, and then press and keep pressing the button. In the mean time, you should turn the phase knob a little to the right clockwise, then loose the button and move the search coil above the iron nail to try. You should not stop trying until the sound keeps constant. After finishing the adjustment, the underground iron nails and ferrous metal object which is smaller than the iron nail will not make the instrument's sound increase, but the non-ferrous metal object and the ferrous metal

object which is bigger than the iron nail will make the instrument give louder voice.

4. Set the index of the phase knob less than the scale "2". A biggish non-ferrous metal object will make the instrument give loud voice and a biggish ferrous metal object will make the instrument's sound decrease. When you set the index of the phase 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.

**NOTE:**

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

### **3. Detecting Examples**

We have introduced the two operating modes. When you want to do actual detecting action, you should operate the instrument according to the actual situation. For example, suppose you want to seek a deeply buried relic in an ancient house. There are all kinds of rejected metal sundries buried underground from a long time ago, such as iron nails, copper wires, old locks, fragments of iron boilers, etc. All of them will make the instrument give large signals. In this situation, at first you should take out all the metal furniture, and then set the instrument in balance mode to detect and find the metal sundries, then dig out all the metal sundries in the shallow place, and then go on to detect the deeper target. Detecting is a minute and hard job. It is necessary for the operator to have endurance, confidence and a willpower. No detector has the function to detect the underground metal

object very clearly. The instrument can only indicate the metal target's position approximately. If you want to find out what you need exactly, it is necessary for you to have rich experience, and then analyze the situation in order to judge correctly.

## **DETECT FOR MINERAL:**

You can use the metal detector to detect the underground mineral which is not buried deeply, including nugget, gangue gold mine, depositing sandy gold mine and all kinds of rich ore. Detecting nugget is like seeking a coin, you should operate the instrument in balance mode. Because most of the nuggets are buried in the terrane which is mineralized greatly, you should adjust the instrument for the Ground Balance beforehand. In the sandy gold mine, the gold is very tiny and is mixed with sand and soil, sometimes there are many depositing substances of heavy metal mine there. The signal caused by this kind of blend is like the signal caused by the ferrous metal, but the signal of the blend is weaker than the signal of the pure gold, and it is common that the area giving signal is wider. The instrument can be operated to filtrate the blocks of mineral. When you do the job, it is unnecessary for the operator to carry the instrument by hand. You can fix the instrument on a nonmetal holder, and then adjust the instrument to find out and keep the "Critical Sound", then move the ore close to the search coil one by one, and you can judge how much the content is by the magnitude of the sound. You should remember to press and then loose the button whenever you finish detecting a block of sample. The detecting technology of metal's content is very useful for the filtration of the gangue gold mine, and the technology is also very useful

for the detecting of the relic in an old mine. Some persons take the minerals on which there is visible gold, and forsake the other minerals. Actually, there is still gold in some of the forsaken minerals. For the mine of copper, iron, tin, lead, etc, signal will vary with its components and the 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 dirtiest part. You can clean it with a moist cloth, then blow it until it is dry. The instrument can only be used when it is dry. The control box is not waterproof, you can not wash it with water, and it can be cleaned with a towel. The instrument can not be used outdoors in a rainy day.

### **Temperature:**

Don't put the instrument beside a stove or in other high temperature environment.

### **Salt Water:**

Salt water has a great ability to make something rusty. You should clean the instrument with a moist cloth if there is salt water on the instrument, and dry the instrument with a towel. Don't let any water enter the control box.

## **Battery:**

Install the battery (1.5V AA×6) according to the marked symbol. If you will not operate the instrument for a long time, you should take out the battery to avoid putridness in the control box.

## **Guarantee:**

There is a guarantee sheet of repair for every instrument. Within the guarantee period, our company will repair the instrument by the guarantee sheet of repair without any money. If the owner opens the control box or change the circuit without the permission of our company, our company does not have the duty to repair the instrument without money.

## **CAUTION**

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, and it is necessary to replace it with a new one of the same type.
2. When adjusting the detector, press and keep pressing the button. After finishing adjustment, loose the button.
3. When you adjust the detector for "Critical Sound", don't press the button above metal, and you should press the button after lifting up the search coil highly. 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 malfunction. It is necessary to send it to our company for repair.