

# PYLE

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## PHMD74 USER MANUAL



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# Metal Detector Owner's Manual

This metal detector has excellent sensitivity and intensive ability to identify and display six types of metals. It can indicate the material of the metal target through the latest patent design and the full digital location circuit, improved accuracy and stability of the location. In the field of electromagnetic interference, the full digital location circuit has good anti-interference ability. It will bring enjoyment of high-end products.

Read this manual carefully before using. Most importantly, review the Quick-Star Demo and Basic Operation.

## TABLE OF CONTENTS

Terminology

Specification

Assembly

Battery

Panel and LCD

Controller

Quick-star

Basic operation

Caution

TROUBLE SHOOTING GUIDE

## TERMINOLOGY

The following terms are the common terminology among metal detector.

### ● Motion Mode

This is one of the circuit operation modes in the metal detection technology. When detecting, you should move the search coil continuously. In general, motion mode can reduce the effect of the soil mineralization, and it will have better discrimination ability.

### ● Non-motion Mode

This is another circuit operation mode in the metal detection technology. When detecting, you do not need to move the search coil continuously, as long as the search coil approaches the metal at a certain distance. In the non-motion mode, the detector can't discriminate the metal types.

### ● Elimination

This mode of operation eliminates a particular metal type. During this process, when the detector find the specified metal, the detector will not send prompt signal, such as light, electricity and sound.

### ● Discrimination

To differentiate the types of metals, the detector will sound a different tone or give a different indication, as it eliminates the specific metal. It is an important ability of the detector referred as "discrimination".

- **Iron**

Iron is a common metal. It's usually not the detection target, undesirable iron objects contains iron nail, bolts, old cans, caps and so on. But some valuable relics may also be made of iron, such as old ornaments, old armature and so on.

- **Ferrous**

Metals which are made of, or contains iron.

- **Trash metals**

Caps, pull-tabs, S-caps are the most bothersome trash items for treasure hunters; you should eliminate them during detecting. But some other valuable objects have a similar magnetic with the above trash metals, and will also be eliminated as trash when discriminating.

- **Pinpoint**

Pinpoint is a process of determining the exact location of the buried metal object. On this motion mode, you need to move the search coil continuously when detecting, if it's hard to determine the exact location of the buried metals. In the Pinpoint mode, select Non-motion technology to let the center of the search coil be aligned with the location of the buried metal, to help your excavation.

- **Ground balance**

Metals buried in the earth mineralized material in the soil affect metal detection. The ground balance will eliminate or weaken the shielding effect of the mineralized soil. The ground balance is divided into built-in ground balance and adjustable ground balance.

- **Coins depth**

The coins depth the detector referred to, which is generally the approximate distance that the 25 ¢ silver is in the neutral soil or in the air. It's not an exact depth.

## **Specification**

- Operation mode: four plus one

Motion mode: ALL-METAL, DISCRIM, JEWELRY, CUSTOM and COINS

Non-motion mode: PINPOINT

- Coins depth indication: 1,2,3,4,(2",4",6" and 8+)

- Sensitivity control: 4 SENS SEGMENTS

- Target metals discrimination: 6 kinds

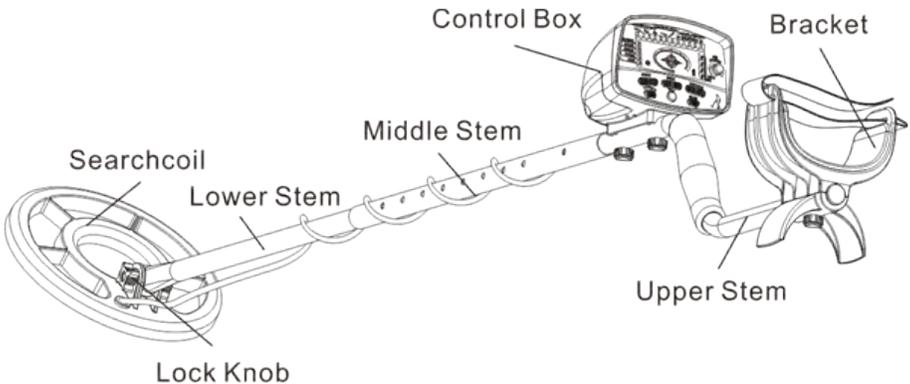
10 to 99 double digit

- Sound frequency: three kinds of sound indicate different metals

- Battery indication: three SEGMENTS, blinking means time to change the batteries

- Power off prompt : sound a prompt tone every ten minutes
- Search coil: 210X70mm open waterproof search coil
- Earphone jack: 1/8 inch earphone jack(earphone not supplied)
- Power supply: 6 AA batteries (batteries not supplied)

**Note:** When the power supply is switched on within a few seconds, the metal detector will go into self-inspection program. Don't let the search coil approach the metal, nor carry out any operation, until the self-inspection is completed. This action is done when you hear a beep tone.



## Assembly

1. Loosen the two triangular fasten buttons under the control box, insert to the bracket, and lock the two triangular buttons. See Fig.1.

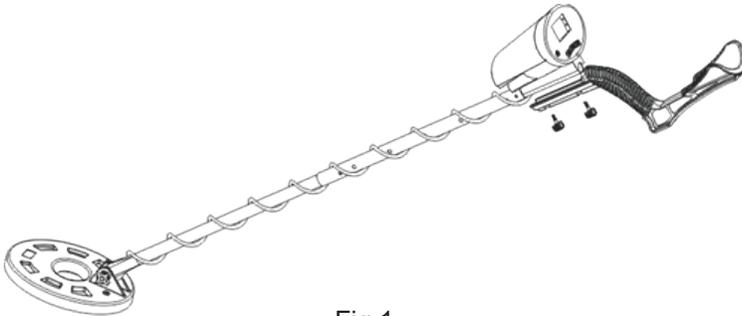


Fig.1

2. Press down the silver shrapnel on the plastic stem, and insert it to the black aluminum stem. When the silver shrapnel popping up from the black aluminum stem, you can use it. The black aluminum stem is with four holes, for you to adjust the length of the connecting rod, so that you can comfortably erect and straighten your arms, and keep the search coil away from the ground about 1/2 inch. See Fig.2, 3.

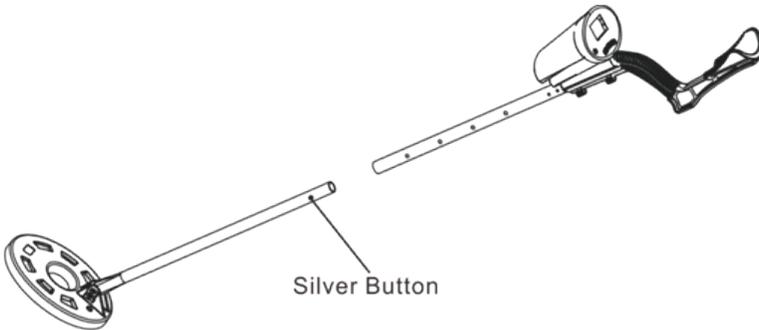


Fig.2

3. Wind the electronic line on the search coil around the aluminum stem; keep the elastic moderate, so that the cable won't sway.

4. Relax the nuts at the two ends of the search coil, and adjust the location of the search coil, to let the search coil be parallel with the ground. Be careful not to mistake the location of the search coil (See Fig.3).



Fig.3

## Battery

Use 6 alkaline AA batteries.

1. Press the “key” on the battery cover in the direction of the arrow, pull out the battery cover.

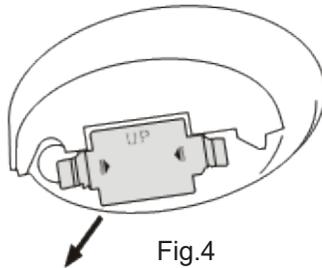


Fig.4

2. Insert 6 AA batteries as indicated by the polarity symbols marked inside the battery box

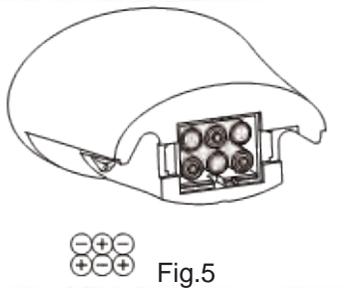


Fig.5

3. Close the battery cover. When a KATA tone being heard, which means the battery cover has been covered well. Ensure the direction of “UP” on the battery cover is followed.

*These batteries are expected to last for about 40 hours. If you don't use the detector for a long time, please remove the batteries from the battery box.*

## Panel and LCD

All the controller adjustment displays on the LCD, and all the detection results are also shown on the LCD. LCD See Fig.6

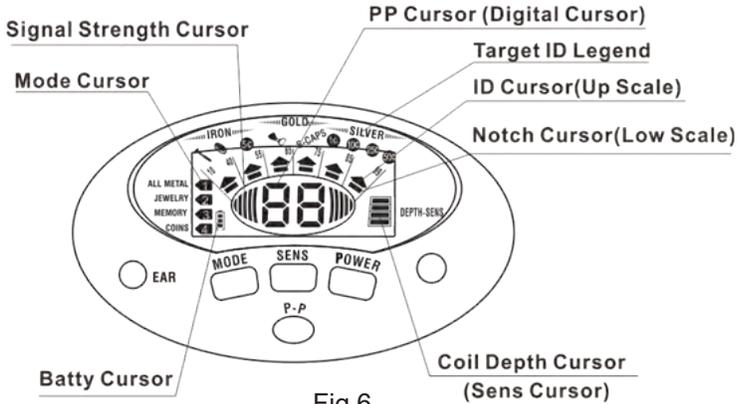


Fig.6

- Mode indication cursor: Indicate the four kinds of operation modes. Make a switch through the MODE button.
- Target ID pattern: It's located above the LCD screen. It indicates the target metal you're looking for. When detecting a metal target, the target ID cursor (upper scale) shows the metal patterns or the words.
- Target ID cursor (upper scale): it's in the shape of . The upper scale consists of 6 segments. When the target ID cursor is lighted, this indicates the probable type of the detected metal. The three kinds of prompted signal, corresponding to the target ID cursor. See the table below:

Low pitch	Mediant	High pitch
IRON	5 ℄,  S-cap	1 ℄, 10 ℄, 25 ℄, 50 ℄

**Note:** The position of the target ID cursor may change as it is affected by the soil composition and the same material metal have in different soil.

- Target identification cursor (lower scale): It's in the shape of, 6 segments making up the lower cursor, which indicates the material types of the detected target objects. In the ALL-METAL mode, the 6 segments are all lighted. While in other modes, when a certain target identification cursor is extinguished, which indicates this type of metal isn't in the detection range, which means this type of metal is eliminated. In the PINPOINT mode, the Target identification cursor is useless.

● Target Digit Cursor: double digit, 10-99 indicates the material of the metal. When detecting, the digit may have some changes, which depends on the composition of the target, the size, the shape, the distance from the search coil and the speed of scanning. The surrounding soil can also affect the value. Refer to the following table as a preliminary guide.

Numerical Range	Possible Target	Dollar Coin	Euro Coin	Pound Coin	Australian Dollar Coin	Canadian Coin
10--40	Iron		1 ¢, 2 ¢ 5 ¢	1P		5 ¢ 10 ¢ 25 ¢ 1 \$
41--55	Nickel	5 ¢		5P 10P 50P	5 ¢ 10 ¢	
56--65	Pull-tab			20P	20 ¢ 50 ¢	
66--75	Zinc		10 ¢ 1 € 2 €			
76--85	Copper, Aluminum	1 ¢ 10 ¢	20 ¢ 50 ¢	1 £, 2 £	1 ¢ 1 \$,	1 ¢
85--99	Silver	25 ¢ 1 \$		2P	2 ¢	

● Coin depth indication cursor: it is used together with the sensitivity cursor. It is divided into 2", 4", 6" and 8+ four segments. It indicates the approximate depth of the 25 ¢ silver in the neutral soil. As the size, the angle and the material of the target, the composition of the soil will all affect the indication value.

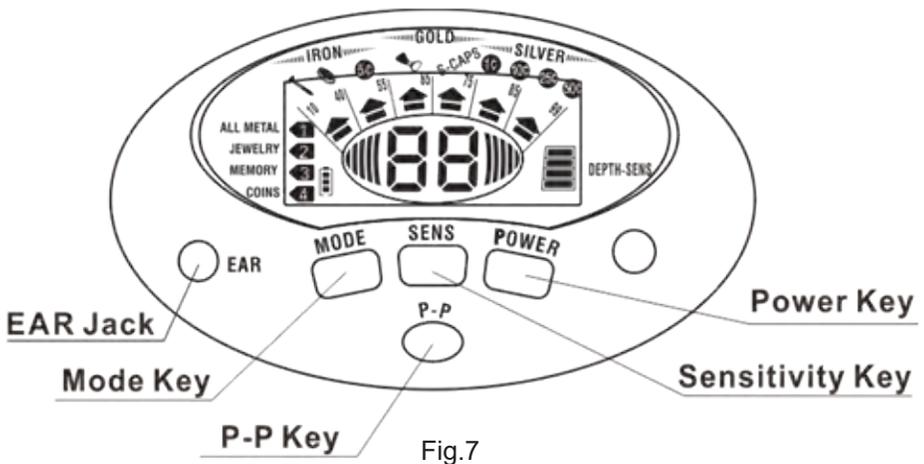
● PINPOINT mode cursor: it is used with the digit cursor. Touch the P-P button, displaying the "PP" character, and appearing a brief flash. At the moment, the unit will be balance the surrounding environment, when PP displays stable, this indicates the pinpoint (PP) state.

● Signal strength cursor: left and right total has 5 gears, in the Pinpoint state indicating the signal strength.

- Sensitivity indication cursor: It's divided into 4 gears, when they are all lighted; the sensitivity is at the highest. Adjust the sensitivity by the SENS button. It is useless in the PINPOINT mode.
- Battery power cursor: 3 gears indicate the battery power. When all the cursor is lit, this indicates power is enough. While the entire battery indicator is extinct and the battery pattern is glimmered, it's time to replace the battery right away.

### Controller

All the controllers are on the panel. (See Fig.7)



- **Power button:** press the button, the power is on, and press it once more, the power is off.
- **Mode button:** Press the MODE button to choose from the 4 operation modes circularly. Boot setting is in the ALL METAL mode.
  - ALL METAL-**The detector is in the ALL METAL mode, and to all kinds of metals, the detector will make a respond.
  - JEWELRY-**the detector eliminates iron, which means it won't make a respond to the iron, but only be in respond to other metals.
  - MEMORY-** the detector will memory the selected metal, and only be respond to this metal. Press the MODE button once, the detector goes into the MEMORY state (the MODE cursor pointing to MEMORY), at this moment, the six lower cursors all displaying, and the detector goes into the memory state. Scanning above the search coil with the selected metal, the detector will memory this metal, and will only be respond to this metal.

Press the MODE button again, logging out the memory mode, return to the state that all of the 6 lower cursors displaying, and carry on the second set. If no longer set, press the MODE button again, exit the MEMORY state, and enter the next operation mode.

**COINS-** the detector eliminates the iron, pull-tabs and S-CAP, only be respond to all kinds of coins.

- SENS Button: choose the 4 levels with SENS button. Boot setting is at the middle value (the second gear). The highest sensitivity is the fourth level. When there is interference, setting the sensitivity lower properly. In the PINPOINT mode, the SENS button is useless.
- PP Button: touch the "PP" button, the detector turns into PINPOINT mode, and it no longer has the ability to identify. At this moment, the PP cursor is lighted, and indicates the signal strength. The more close to the metal target, the more the strength cursor is lighted, the more louder the sound is, in order to locate the target position accurately. Touch the "PP" button again, exit the PINPOINT state.

### QUICK START

1. Prepare with the four metal samples

- an iron nail
- a 5 ¢ dollar nickel coin
- a 1 ¢ dollar zinc coin
- a 25 ¢ dollar silver coin

2. Lay the detector

Place the detector on a wooden or plastic table, let the search coil exceeds the table edge about more than 30cm. Keep the detector be away from the wall, ceiling and floor, turn off all the equipment which can cause electro-magnetic interference. Please take off the watch, ring or other metal objects on your hand. ( See Fig.8).

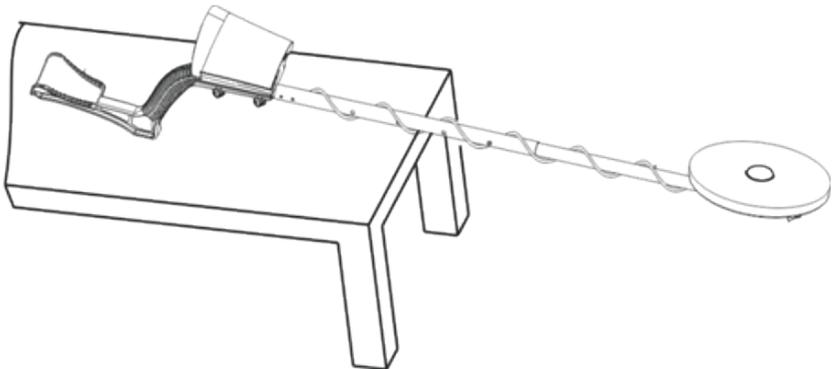


Fig.8

### 3. Turn on

Press the POWER button, and the detector will sound two moo tones, all the LCD patterns will be lighted a moment, the detector will be in the operation mode by default, and the sensitivity will be at the second level. (See Fig.9)

**Note:** Don't let the search coil approach the metal, nor operate the detector, until the detector has the balance completed, and sound tweets.

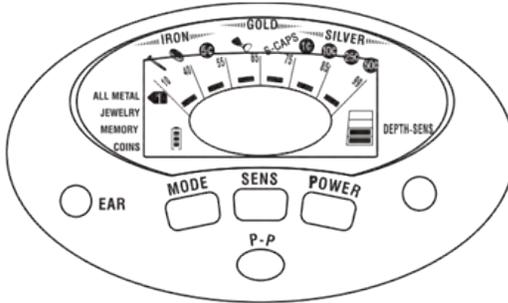


Fig.9

### 4. ALL METAL mode test

Sweep the four metal samples 7 to 10cm above the search coil.

- The detector sounds three different tones in turn.
- The depth cursor points to the second gear.
- The Target ID cursor points to the four materials.

As below table

Sample	Iron nail	5 ¢ nickel coin	1 ¢ zinc coin	25 ¢ silver coin
Tone	Low pitch	Mediat	High pitch	High pitch
Target ID Cursor Indication Digit	IRON	5 ¢	1 ¢	25 ¢
Cursor Indication	30-40	40-50	78-82	86-88

(See Fig.10, take iron nail as an example)

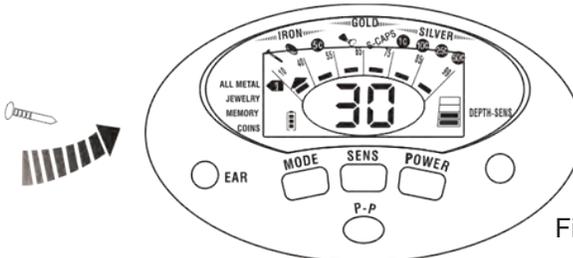


Fig.10

### 5. JEWELRY mode test

- Press the MODE “+” button again, the operation mode cursor points to JEWELRY, and the first target discrimination cursor at the lower cursor are extinguished.
- Sweep the four metal samples about 7 to 10cm above the search coil in turn.
- When sweeping the iron nail, the detector will not respond, meaning the “iron” is eliminated.
- When sweeping the other three samples, the response of the detector is the same with the ALL METAL mode. (See Fig.11, take 1 ¢ zinc coin as an example)

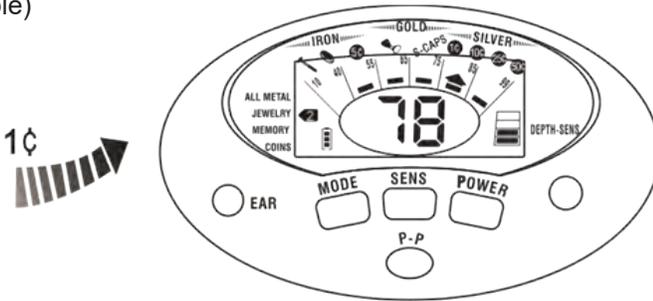


Fig.11

### 6. Memory mode test

- Press the MODE button again, the operation mode cursor points to MEMORY. The target ID cursor (upper cursor) is extinguished, and the target identification cursor (lower cursor) is all lighted. (See Fig.12)

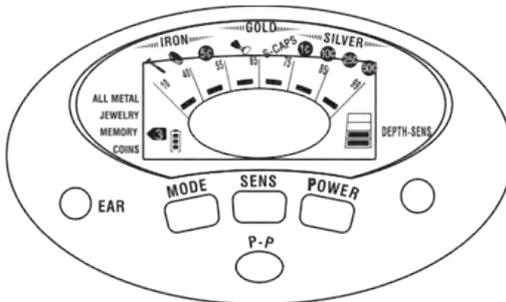


Fig.12

- Imagine to search the 25 ¢ silver coin, but eliminate other metals, carry out the following operations:  
Sweep the 25 ¢ silver coin about 7-10cm above the search coil, the target identification cursor that the 25 ¢ silver coin corresponding to is still lighted, but other identification cursors are all extinguished. (See Fig.13)

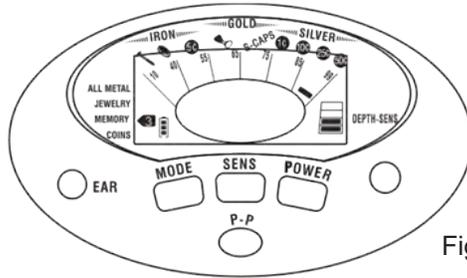


Fig.13

- c) Sweep the four metal samples about 7 to 10cm above the search coil in turn.
- d) When sweeping the 25 ¢ silver coin, the detector will respond, meaning the 25 ¢ has been remembered.
- e) When sweeping the other three samples, the detector won't respond. (See Fig.14, take 25 ¢ as an example)

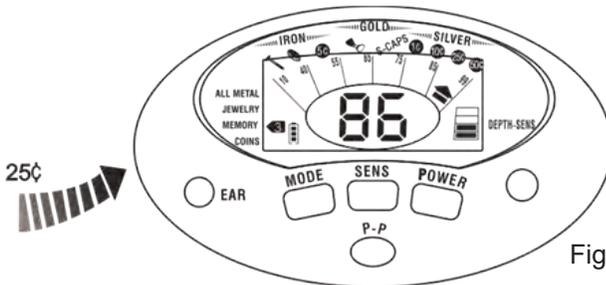


Fig.14

- f) If want to look for other materials, press the "MODE" button once again, so that the operation mode still points to MEMORY, and still shows figure 12. Then, repeat the above operation.
- g) At this time, in order to exit MEMORY mode, press the MODE button, let the detector be back to the state of figure 12. Press the MODE button, exiting the MEMORY mode, and go into the next operation mode.

### 7. COINS mode test

- a) Press the MODE button again, the operation mode cursor points to COINS. The three patterns of iron nail, bottle cap and pull-tabs in the lower cursor corresponding to the target discrimination cursor are extinguished, which means the three trash metals are eliminated.
- b) Sweep the four metal samples 7 to 10cm above the search coil in turn.
- c) When sweeping the iron nail, the detector will not respond, and the "iron" is eliminated.
- d) While sweeping the other three samples, the response of the detector is the same with the ALL METAL mode. (See Fig.15, take 1 ¢ as an example)

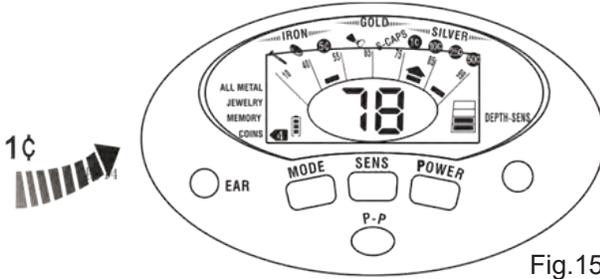


Fig.15

### 8. PINPOINT mode test

a) Touch the “PINPOINT” button, the PINPOINT cursor is lighted and flashed. The PP cursor won't flash until the detector has been balanced. The target ID cursor in the upper cursor and the target discrimination cursor in the lower cursor are all extinguished, and the depth cursor is full-scale, the detector will sound a slight single-frequency mediant. (See Fig. 16)

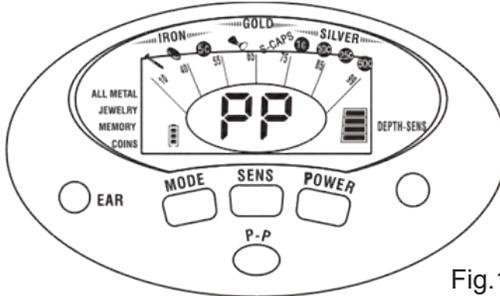


Fig.16

b) Let the 25 ¢ silver coin approach the search coil slowly, in the position of about 7”-8”, the first group of signal strength cursor begins to appear, and the sound turns louder. Continue let the 25 ¢ silver coin approach the search coil, and the signal strength cursor is full-scale quickly, the sound is more louder, then the depth cursor denotes the depth dropping, until one is left, which means the metal is gradually close to the center of the search coil. (See Fig. 17)

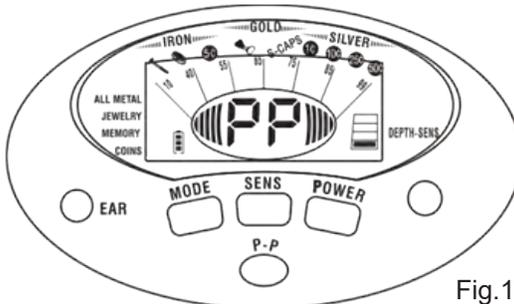


Fig.17

- c) Maintain the position of the silver coin, release the PINPOINT button, exit the PINPOINT mode. Press the PINPOINT button again after several seconds, the signal strength cursor is extinguished, and the sound comes back to the initial state, the depth indication comes back to the full scale.
- d) Let the silver coin move to the center of the search coil again, the signal strength cursor appear again and increase, the sound turns louder, and the depth cursor goes lower, which means the metal target is more closer to the center of the search coil. Up to now, a "PINPOINT" operation has completed.
- e) To the samples with different materials, the detector will give the similar respond.

After doing this steps, you have an initial familiarity to the detector, and you can begin the next step of basic operation.

## **Basic Operation**

Metal detector is used outdoors. There is too much metals indoors, and all kinds of electrical equipment that will bring interference signals. So it is not fit for using the detector indoors.

Field detection is more complicated, the composition of the regional soil, the component, size, shape and the oxidation degree of the underground metals will all affect the detection results. This chapter is only the general steps of the field detection. You should operate again and again, accumulate experience to achieve good results.

### **1. Turn On**

Hold the detector, keep the search coil be away from the ground. Press the Power button, the detector will sound two moo tones, and all the LCD patterns are lighted at minutes. Then the sensitivity will be set to the second gear, and the operation mode will set to ALL METAL. Prompt once again, don't operate, nor let the metal approach the search coil, until the balance has been completed, and sound a tone.

### **2. Set the operation mode**

In generally, you could choose the ALL METAL mode. At this time, the detector will make identification response to all kinds of metals.

Since the soil will make the detection indication deviate, we suggest you bring some samples, such as 25 ¢ silver coins, 5 ¢ nicker coins and so on. Bury these samples in the soil of the detection region respectively, try to detect, observe the position of the discrimination cursor appear, and how much deviation from the target pattern. It will help you judge the type of the target, in case you omit the treasures that you want to find.

Directly with the PINPOINT to detect, it is also an alternative way. Specifically in the region where the ground is more complicated or in the venues where the electromagnetic interference is larger, the effect may be more better.

### 3. Choose the sensitivity

You always expect to set the sensitivity more higher. However, in the higher sensitivity range, the detector will be sensitive to the electromagnetic interference that comes from the power lines or cables around, and it will do abnormal reaction to the mineralization soil or electrical conductivity soil. If you move the search coil in the detection area, and the detector sends an unstable false signal, please decrease the sensitivity.

If you operate the detector with your partner at the same time, please pay attention to keep more than 10 meters away from each other, and decrease the sensitivity appropriately.

### 4. Move the search coil

When detecting, you should move the search coil at a constant speed, not unsteadily. Let the search coil be parallel with and about 1/2 inch from the surface, not to swing it like a pendulum, high and low above the ground. (See Fig. 18)

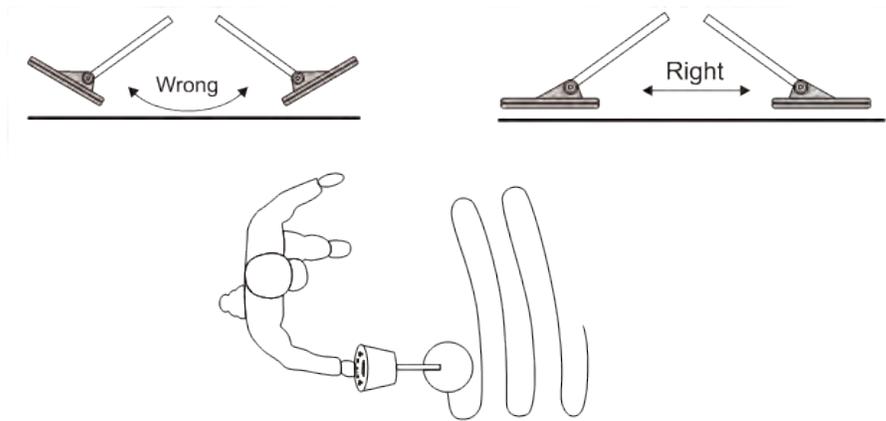


Fig.18

Most valuable metal objects will send repeatable signals. If the signal isn't repeatable, it's mostly a false signal. When there is a clear sound instructing the buried targets, you could read out the approximate target type and depth on the LCD screen. And you could also move the search coil above the target objects fast, in order to get a more stable signal.

### 5. Make use of the sound, to help discriminate

In the process of detection, you don't always watch the screen. And the sound identification system will sound four frequency tones to help you discriminate the targets.

**Low pitch**—ferrous metals, such as iron nail, caps and so on.

**Mediant**—S-caps, 5 ¢ nickel coin.

**High pitch**—zinc, copper, aluminum and silver, such as 1 ¢, 10 ¢, 25 ¢ and so on.

## 6. PINPOINT

When detecting in the motion mode, as you should persistently move the search coil, so although you find the region that burying metals, it's not easy for you to determine the exact location, it gets the digging difficult. At this time, you should recur to the PINPOINT mode.

- a) Touch the PINPOINT button, the PINPOINT cursor is lighted, and the depth cursor will be full scale. The detector will sound a low single-frequency tone, the sensitivity is in the highest state.
  - b) Let the search coil approach the ground, move the search coil slowly in the region, where you find the target. In the position where the single frequency tone turns louder, and the signal strength cursor begins to appear. Continue moving the search coil slowly until the sound turns more louder, the signal strength cursor is full scale, and the depth cursor is the lowest.
  - c) Maintain the position of the detector, exit the PINPOINT mode. Touch the PINPOINT button again later, the detector will be self-balanced, and sound a low single frequency tone, the signal strength cursor will be extinguished, the depth cursor will be full scale. Move the search coil slowly again, let the single frequency tone turn more louder, and the signal strength cursor increase, the depth cursor turn to the lowest, which means the position of the metal target has been locked. By the center of the open search coil, mark on the ground, to facilitate mining.
  - d) Repeat the operation for several times and approach the target for several times, until you lock the location of the metal target. You could make notes on the ground by the center of the open search coil, to facilitate your excavation.
  - e) In the process of the PINPOINT, the depth cursor will turn to the signal strength cursor, which denotes the distance between the center of the search coil and the target, to help you pinpoint the location. Finally, the depth cursor will remain at the lowest gear. In fact, it means the target is the nearest from the center of the search coil.
- ## 7. Depth and Target Indication(only in the motion mode)

The detector is preset in the motion mode, The LCD screen will show the rough metal target types and the rough target depth.

When the position and type of the target are determined, the detector will send a repeated signal. If you detect in the same place, while the discrimination display is inconsistent, which means the target may be false, or it may be the trash metal or heavily oxidized metal. Through practice, you must bear in mind only repeatable signal existent, then you do excavation.

When find a metal target, the identification cursor will indicate the metal type. Silver is on the right. In the neutral soil, the identification indication is more accurate, while in the mineralization or salinization soil, the discrimination indication will have various degree of deviation.

The above identification is only a reference, not completely accurate. The depth indication is accurate for coin-sized objects. Large objects or irregularly-shaped objects will yield less reliable depth readings. If sweeping at the same place for several times, but shows the same depth, then it is a more accurate detection. If the depth indication varies, try to change the angle of sweeping. There may be more than one target present.

Remind you once again, when detecting in the wild, due to the impact of the ground condition, the discrimination indication and depth indication will be all deviation. The composition, size and oxidation of the metals will all affect the indication result. It's necessary for you to consider these factors before choosing elimination a certain metal or determining whether there are precious metals present. Not to eliminate the precious metals

#### 8. The use of the non-motion mode.

In fact, the sensitivity in the non-motion mode is high, search metals directly using non-motion mode is also a choice. In some regions, the ground is too narrow to sweep search coil, you could choose the PINPOINT mode. In the severe mineralization or salinization region, you could try to sweep using PINPOINT directly.

### Caution

- 1) In areas with heavy traffic, please not wear earphone, in case an accident occurs.
- 2) Always obtain permission before searching any site.
- 3) Keep away from the region where may bury electrical line, cable line or pipeline, in particular the pipes that are full of flammable gases and liquids.
- 4) Do not detect in the military area where may bury bombs or gas explosives.
- 5) When excavating the target, use the reasonable method, not destroy the vegetation. Leave the land and vegetation as it was, fill in the holes after the excavation.

SYMPTOM	SOLUTION
No power, no boot sound, and the LCD has no indication.	<ol style="list-style-type: none"> <li>1. Be sure that the batteries are installed correctly.</li> <li>2. Be sure that "UP" on the battery cover towards up.</li> <li>3. Replace the batteries.</li> </ol>

## TROUBLE SHOOTING GUIDE

SYMPTOM	SOLUTION
Sound a successive "DI" "DI" tone	1. Make sure that there is no other metal detector operating around.
The LCD displays normal, but the sensitivity is very low.	1. When turning on, there is metal near the search coil. 2. Let the search coil leave the ground, and then turn on the unit again.
Sound an irregular tone, or the target identification cursor chatters.	1. Don't use it indoors, because there is many metals there. 2. Make sure whether there is electromagnetic interference source, such as power lines, cables, electronic fences and so on. Keep away from these areas, or try to reduce the sensitivity.
The signal is unstable, and the position of the target identification cursor is changing.	1. Sweep at a different angle, in order to determine whether you can get a more stable signal. 2. If the target is buried deeply, you could try to increase the sensitivity or speed up the speed of sweeping the search coil, in order to get a more stable signal. 3. Maybe more than one metal targets buried there, try to increase the sensitivity or set different discrimination range to sweep. 4. Maybe you find a severe oxidation target, or the ground is serious magnetic, you should try to decrease the sensitivity.
Using PINPOINT, when the search coil approaching the ground, the unit will sound a tone.	1. The surface is severe magnetic, you need to do the ground balance adjustment, or you should press the PINPOINT button again to reduce the sensitivity. 2. There is large metals underground.
Using PINPOINT, when the search coil approach the ground, the unit will sound a tone.	1. The ground is serious magnetic, need to adjust the balance. In the position near the ground, touch the PINPOINT button, to reduce the sensitivity. 2. There is large metal under ground.