

# **Professional Metal Detector**

## **OWNER'S MANUAL**

## **MAIN FEATURES**

The detector has two distinct systems:

1. **ALL METAL No-Motion Mode:** In this setting, detected targets will cause the detector to sound off for as long as the target is under the searchcoil—motion is not required to detect a target. When operating in the ALL METAL Mode, adjust GND BAL(GROUND BALANCE) to ensure proper mineral elimination. It is required to push GND TRAC several times after adjusting GND BAL. All targets will be detected with a medium tone.
2. **Motion DISC (DISCRIMINATION), NOTCH and AUTO NOTCH Modes:** Operates with three tone audio target identification. GND TRAC does not apply in these modes. User can adjust DISC and NOTCH to reject any trash item. Motion is now required to make a detection. Items will be tuned out if coil is not in motion.

Note: Do not attempt to test unit by placing a coin or metal objects onto a floor. Most floors contain metal which interfere with the detector's operation.

## **ASSEMBLY**

Assembling your metal detector is easy and requires no special tools.

Just follow these steps:

1. Clockwise turn the stem's locknut to loosen it.
2. Press and hold down the spring button at the back of the stem to lengthen or shorten the stem. Then release the button. Make sure the button is in proper hole.

Adjust the stem to a length that lets you maintain a comfortable upright posture, with your arm relaxed at your side and the searchcoil level to the ground about 1/2 to 2 inches (1~5cm) above the ground.

3. Counter clockwise tighten the locknut.

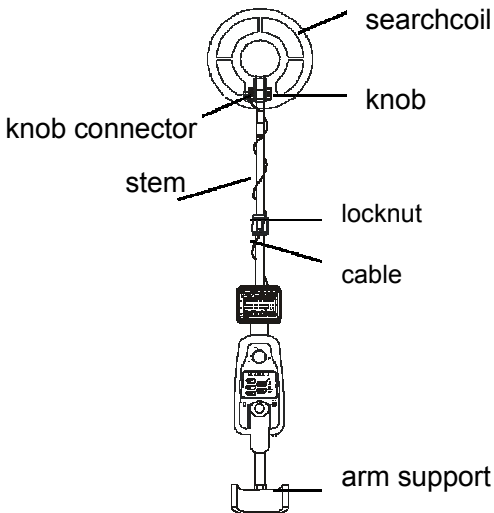
4. Unscrew the knob on the search coil and remove the knob connector. Insert the stem and align the holes on the search coil bracket and the stem. Push the connector through the holes and tighten the knob.
5. Wind the search coil cable around the stem. Leave enough slack in the cable.
6. Insert the search coil's plug into the matching jack on the detector's control housing.

**Caution:**

7. Adjust the coil by loosening then tightening the knob on the coil.

Note: Do not overtighten the knob, nor use tools to tighten it.

8. Insert the arm support into the end of the stem and tighten the fixing screw.



**INSTALLING BATTERIES**

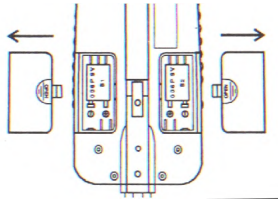
Your metal detector requires two 9V batteries (not supplied).

Use only fresh alkaline batteries of required size.

Do not mix the old and new batteries or different types of batteries.

Follow these steps to install batteries.

1. Slide the POWER button to POWER, if the unit is powered on.
2. Slide the left and right battery covers off in the direction of the arrow.
3. Place a 9V battery into the battery compartment matching the polarity symbols (+ and -) marked inside.
4. Replace the battery covers.



**Warning:**

Dispose of old batteries promptly and properly. Never bury or burn them.

**Caution:**

If you don't plan to use the unit for a week or more time, remove the batteries. Batteries can leak chemicals that can destroy electronic parts.

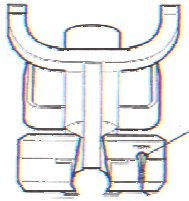
To extend the battery life, exchange the left and right battery after 3~4hours of operation.

The left and right battery covers can't be exchanged. B1 and B2 are marked at the back of the cover and in the compartment.

If LCD displays "LOW BATT" at the right lower corner, replace the batteries.

**USING HEADPHONES**

1. Insert the stereo headphones' 3.5mm plug into the PHONE jack. At this time the internal speaker disconnects.
2. Set the VOLUME to the desired setting.



phone

### Listening Safely

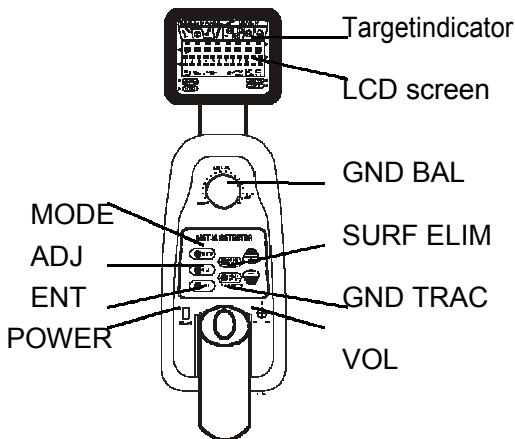
To protect your hearing, set the volume to the lowest setting before you begin listening, adjust the volume to a comfortable level.

Do not listen at extremely high volume levels. Extended high volume listening can lead to permanent hearing loss.

Do not wear headphones while operating your detector near high-traffic areas. Pay attention to traffic safety.

## FUNCTIONS AND INDICATIONS

### 1. A QUICK LOOK AT THE DETECTOR

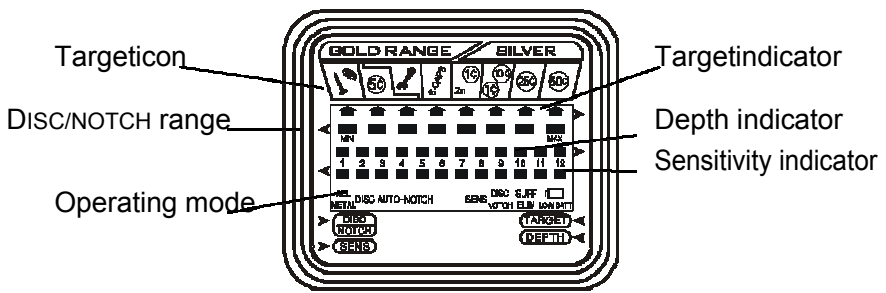


## PANEL WITH TOUCHPADS

1. MODE—lets you choose detection modes.
2. ADJ—to adjust sensitivity and the range of discrimination
3. ENT—to confirm accepting or rejecting the target being detecting in NOTCH mode.
4. SURF-ELIM: Applied in DISC, NOTCH, AUTO-NOTCH modes and is used to eliminate metallic trash present on the surface or at shallow depths.
5. GND TRAC—It is applied in ALL METAL mode and permits the unit to maintain optimum ground balance at all times.
6. +, - --Used to increase or decrease the sensitivity and the range of discrimination.

Please refer to the detailed instructions for above touchpads in OPERATION.

## DISPLAY



The indicator of target includes target icons and LCD displays and is located at the top of the detector. It can indicate coins of different type, gold, silver etc. When the detector detects an object, an arrow appears below the target icon of probable type of metal being detected. Also displays the depth of the

target. If the detector receives a strong signal, the arrow appears steadily. If the signal is weak, the arrow blinks or does not appear.

**Note:**

If an arrow points to a coin denomination, the detector might be detecting either a coin or another type of metal (such as jewelry, tokens, medals, or even junk metal) about same size and type as the coin.

Since the indications are approximations, the detector might not have actually found the item it indicates. The indicator is only a visual reference to help you decide if an item is worth investigating.

The depth displayed is only a reference, not a real value.

**GOLD Range**

**IRON & FOIL**—indicates that the target is probably iron or foil. Some oxidized iron might register somewhere within the SILVER range.

**5¢(NICKEL)**—indicates that the target is probably 5¢ or a nickel. Some fine gold ring might register in this range.

**PULL TAB**—indicates that the target is probably a pull tab of an aluminum can. Some rough gold items might register within PULL TAB category. **S-**

**CAPS**—indicates that the target is probably a type of metal like bottle cap with whorl. Some small gold items might register within this category.

**1¢(new version)**—indicates that the target might be 1¢ or a zinc penny and a copper coin. Some large gold items might register within 1¢ category.

**SILVER Range**

**10¢/1¢(old version)**-- indicates that the target is probably old 1¢, or 10¢, or an aluminum coin.

**25¢**--indicates that the target is probably 25¢ or small silver coin. Some large aluminum coin might register within this category.

**50¢**--indicates that the target is probably 50¢. Some big silver coin might register within this category.

**AUDIO TARGET IDENTIFICATION**

When the unit is in DISC, NOTCH, AUTO-NOTCH modes, its audio identification system automatically classifies metal objects into three categories with three different tones—low, medium and high. It makes it easier to identify the type of the target being detected.

Three different tones to distinguish different items detected:

Low tone for: bottle caps, nails, small gold ring and nickel (5¢)

Medium tone for: pull-tabs, S-CAPS, zinc pennies or 1¢(post 1982)

High tone for : 1¢(dated 1950), 10¢, 25¢, 50¢

When operating in ALL METAL mode, only one constant medium tone is emitted when a target is detected. LCD only displays the depth of the target.

## **OPERATION**

### **TURNING ON THE DETECTOR**

Slide the power switch to ON. The unit displays all symbols on the LCD screen. The detector sounds low , medium, high tones respectively. After about 2 seconds the detector enters stand-by state. At this time the LCD displays SENS, DISC, and the value of SENS and DISC set before power off.

### **SETTING THE OPERATING MODE**

The detector comes with four operating modes of ALL METAL, DISC, NOTCH, AUTO-NOTCH. You can select DISC, ALL METAL, AUTO-NOTCH, NOTCH respectively by touching MODE. LCD will display the mode selected.

- a. **DISC**-used for target discrimination. Press MODE several times to get DISC mode. LCD will display DISC at the left lower corner of the screen. Then press ADJ to adjust the range of discrimination. LCD displays DISC/NOTCH at the right lower corner of the screen. You also can use buttons + or – to increase or decrease the range of discrimination.



b. **NOTCH**-- to ignore the metal type you do not want, or to accept the one you want. Press MODE to NOTCH mode. LCD displays NOTCH on the screen.

There is one line of bars below the icons. Press + or -, one of the arrows above the bar will blink. At this time, if you press ENT, the bar below the arrow will disappear. This means the target pointed by the blinking arrow is notched. If you want to pick up the notched item, press ENT again. Then the bar below the arrow will be recovered. Repeat the above operation to reject items you don't want.

c. **AUTO-NOTCH**—Press MODE to get AUTO-NOTCH mode. LCD displays AUTO-NOTCH. In this mode, the unit rejects automatically some trash items, such as bottle caps, pull tabs, S-CAPS without loss of coins.

In modes of DISC, NOTCH, AUTO-NOTCH, press ADJ to adjust the sensitivity. LCD displays SENS. Press + to increase the sensitivity. Press – to decrease it.

**Note:**

In order to detect the target deeply buried, you can adjust the SENS to a high position. But not to set the level of SENS to Max position, or the detector will receive interference and false signal from broadcast antenna and other electronic lines. The detector will have unstable arrow and irregular tone indications.

In AUTO-NOTCH mode, user can't make selection to reject object undesired.

In modes of DISC, NOTCH, AUTO-NOTCH, controls of GND BAL and GND TRAC don't apply.

In DISC, NOTCH, AUTO-NOTCH modes, if there is a lot of metallic trash on the surface or at shallow depths, use SURF ELIM to balance the signal of the relatively big object and optimize the detection result. With SURF ELIM unit can discriminate objects deeply buried.

d. **ALL METAL**—used for detecting any type of metal. Press MODE to

get ALL METAL mode. LCD displays ALL METAL at the left lower part of the screen.

Press GROUND TRAC several times to allow the unit to stabilize when first going into ALL METAL mode.

Lower the searchcoil to about one inch (2.5cm) above the ground. Slowly sweep the searchcoil above the ground. When the unit passes over metal object, LCD will display the depth of the object. Also the unit emits a tone. When the unit approaches the target, it emits a higher tone.

When searching in the ALL METAL mode, it is important that the detector be ground balanced to offset the effects of any minerals present in the soil or to balance the effects of saltwater when you search near the ocean.

**GROUND BALANCE**—used to offset the effects of any minerals present in the soil or to balance the effects of saltwater.

1. Begin with the GROUND BALANCE button adjusted to PRE SET and lift the searchcoil about waist high in the air. Press GND TRAC several times to let the unit stabilize before starting an effective detection.
2. Lower the searchcoil to about one inch (2.5cm) above the ground. If a tone is not being emitted, the PRE SET position is the proper ground balance for that area. If a tone is being emitted, readjust the GND BAL.
3. Lift the searchcoil in the air, turn the GND BAL counterclockwise slightly. Push GND TRAC several times. Then repeat step 2. If the unit still emits tone, repeat the procedure until the unit does not emit tone.

**Note:**

1. Always be careful that there's no metal on top of or under the ground where you proceed ground balancing.

2. When adjusting GND BAL counterclockwise, be careful to turn it in small increments—This will assure that you achieve optimum condition for operation. If you turn the knob too far counterclockwise, you can turn it clockwise using same ground balancing procedure until a tone is being emitted and then cut it back counterclockwise slightly until a tone is no longer being emitted.
3. Anytime the GND BAL control is moved, the GND TRAC touchpad must be pushed afterwards.

## TESTING AND USING THE DETECTOR

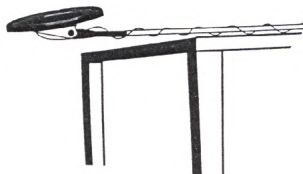
To learn how the detector reacts to different metals, you should test it before you use it the first time. You can test the detector indoors and outdoors.

### Indoor Testing and Use

1. Slide POWER to ON
2. Set the operating mode.
3. Place the detector on a wooden or plastic table, then remove any watches, rings, or metal jewelry you are wearing.
4. Adjust the searchcoil so the flat part points towards the ceiling.

#### **Note:**

Never test the detector on a floor inside a building. Most buildings have metal of some kind in the floor, which might interfere with the objects you're testing or mask the signal completely.



5. In modes of DISC, NOTCH and AUTO-NOTCH, slowly sweep a sample of the material you want the detector to find (such as a gold ring or a coin) 4~5 inches (10~12cm) or more above the face of the searchcoil. When the detector detects any metal, it sounds a tone and an arrow appears below the target icon. Also LCD displays the depth of the target.
6. In ALL METALmode, hold a metal sample one feet (25cm) or more above the face of the searchcoil, then slowly move to searchcoil. If the unit detects the object, it emits a tone and LCD displays the depth of the object.

**Note:**

If you are using a coin, the detector will detect it more easily if you hold it so a flat side is parallel with the flat side of the searchcoil. A sweep with the side of coin over search coil might cause false indication and unstable display of arrow.

**Outdoor Testing and Use**

1. Slide POWER to ON. Set the operating mode.
2. Find an area on the ground outside where there is no metal.
3. Place a sample of the material you want the detector to find (such as a gold ring or a coin) on the ground.

**Note:**

If you are using valuable metal such as gold to test the detector, mark the area where you place the item, to help you find it later. Do not place it in tall grass or weeds.

4. Hold the searchcoil level to the ground about 2.5~5cm above the surface, slowly move the search coil over the area where you placed the sample, sweeping the search coil in a side-to-side motion.

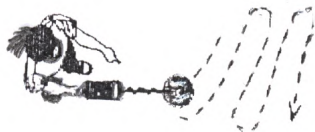
## Searchcoil Sweeping Hints:

Never sweep the searchcoil as if it were a pendulum. Raising the searchcoil while sweeping or at the end of a sweep will cause false readings.



Sweep slowly, hurrying will cause you to miss targets.

It's better you sweep the search coil from side to side in an arc line of 3 inches motion and keep the search coil parallel with the ground.



If the detector detects the item, it sounds a tone, an arrow and the depth appear on the display below the target icon.

If the detector does not detect the item, make sure that the operating mode is set correctly for the type of metal you're searching for. Also make sure that you're moving the search coil correctly.

## Notes:

The detector responds with a signal when it detects most valuable metal objects. If a signal does not repeat after you sweep the search coil over the target a few times, the target is probably junk metal.

## **Pinpointing The Target**

Accurately pinpointing a target makes digging it up easier. But it takes practice. We suggest you practice finding sample on your own property before you search other locations.

Follow these steps to pinpoint a target.

1. When the detector detects a buried target, continue sweeping the search coil over the target in a narrowing side-to-side motion.
2. Make a visual note of exact spot on the ground where the detector beeps.
3. Stop the search coil directly over this point on the ground. Then move the search coil straight forward away from you and straight back towards you a couple of times.
4. Repeat steps 1~3 at a right angle to the original search line, Make a mark of "X" . The target will be directly below the "X" at the point of the beep response.



## **Factors That Affect The Detecting**

It's difficult to have an accurate detecting result. Sometimes the detecting may be restricted by some factors.

The angle of the target buried in the soil.

The depth of the target.

The level of oxidization of the target.

The Size of the target.

Electro-magnetic and electrical interference surrounding the target.

If you detect patiently and correctly and practise more times, you'll get satisfactory result.

## **CARE AND MAINTENANCE**

Your metal detector is an example of superior design and craftsmanship. The following suggestions will help you care for your metal detector so you can enjoy it for years.



Handle the detector gently and carefully. Dropping it can damage circuit boards and cases and can cause the detector to work improperly.



Use the detector only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage the cases of the detector.



Keep the detector away from dust and dirt, which can cause premature wear of parts.



Wipe the detector with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the detector.

## **TROUBLESHOOTING**

The following troubleshooting steps may assist you in case you're having problems with your metal detector.

### **YOUR DETECTOR IS EMITTING FALSE SIGNALS WHEN YOU'RE IN THE FIELD**

Your SENSITIVITY may be set too high. Try cutting back the SENSITIVITY slightly until the false signal disappears. Remember, to swing your coil slowly. Some false signals will occur on highly rusted metals, but if the signal does not repeat over the same area while passing the coil over it, then the target is usually not worthwhile.

### **YOUR LCD READOUT IS NOT LOCKING IN OR ID'ING WHILE PASSING OVER A TARGET & THERE IS MORE THAN ONE TONE BEING EMITTED BY THE DETECTOR OVER THE SAME TARGET**

This will usually occur when there's more than one object over the area you're sweeping. If it's an odd piece of metal that the detector can't recognize, the meter will also not lock in. Sometimes, oxidation can also make the meter ID arrows and tones jump around. This may also occur if the SENSITIVITY is set too high.

### **YOUR DETECTOR IS NOT STABLE AND HAS A PULSING, DISTORTED TONE INSTEAD OF A CLEAR TONE**

This can occur if you are operating near another detector or near power lines that can interfere with the frequency that the detector operates on.