

Gold

METAL DETECTOR

OWNER'S MANUAL



If you do not have prior experience with a metal detector, we strongly recommend that you:

1) Adjust the Sensitivity to a low setting in the event of false signals.

Always begin use at a reduced sensitivity level; increase to full sensitivity after you have become familiar with the detector.

- 2) Do not use indoors.** This detector is for outdoor use only. Many household appliances emit electromagnetic energy, which can interfere with the detector. If conducting an indoor demonstration, turn the sensitivity down and keep the searchcoil away from appliances such as computers, televisions and microwave ovens. If your detector beeps erratically, turn off appliances and lights.

Also keep the searchcoil away from objects containing metal, such as floors and walls.

- 3) Use a 9-volt **ALKALINE** battery only.**
Do not use Heavy Duty Batteries.

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TERMINOLOGY

The following terms are used throughout the manual, and are standard terminology among detectorists.

ELIMINATION

Reference to a metal being "eliminated" means that the detector will not emit a tone, nor light up an indicator, when a specified object passes through the coil's detection field.

DISCRIMINATION

When the detector emits different tones for different types of metals, and when the detector "eliminates" certain metals, we refer to this as the detector "discriminating" among different types of metals. Discrimination is an important feature of professional metal detectors. Discrimination allows the user to ignore trash and otherwise undesirable objects.

RELIC

A relic is an object of interest by reason of its age or its association with the past. Many relics are made of iron, but can also be made of bronze or precious metals.

IRON

Iron is a common, low-grade metal that is an undesirable target in certain metal detecting applications. Examples of undesirable iron objects are old cans, pipes, bolts and nails.

Sometimes, the desired target is made of iron. Property markers, for instance, contain iron. Valuable relics can also be composed of iron; cannon balls, old armaments, and parts of old structures and vehicles can also be composed of iron.

FERROUS

Metals which are made of, or contain, iron.

PINPOINTING

Pinpointing is the process of finding the exact location of a buried object. Long-buried metals can appear exactly like the surrounding soil, and can therefore be very hard to isolate from the soil.

PULL-TABS

Discarded pull-tabs from beverage containers are the most bothersome trash items for treasure hunters. They come in many different shapes and sizes. Pull-tabs can be eliminated from detection, but some other valuable objects can have a magnetic signature similar to pull-tabs, and will also be eliminated when discriminating out pull-tabs.

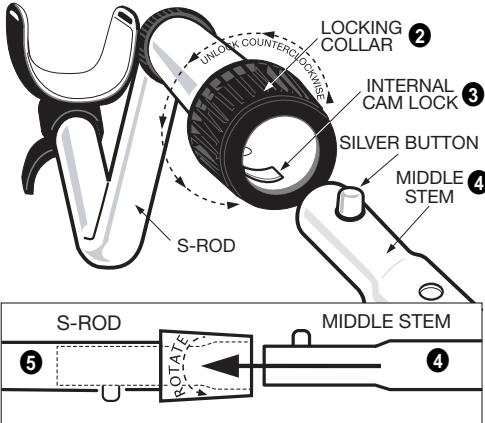
GROUND BALANCE

Ground Balancing is the ability of the detector to ignore, or "see through," the earth's naturally occurring minerals, and only sound a tone when a metal object is detected. This Detector incorporates proprietary circuitry to eliminate false signals from severe ground conditions

ASSEMBLY

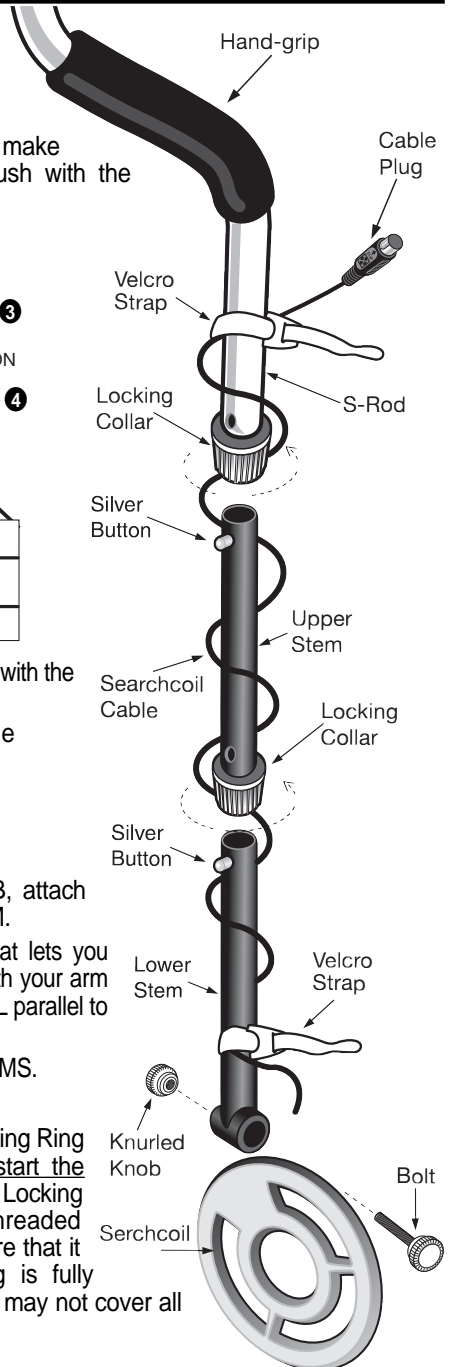
Caution: Forcing in MIDDLE STEM with CAM LOCK raised may form a burr on camlock. If this happens, remove burr with knife to allow insertion.

- 1 Position S-Rod upright.
- 2 Rotate the LOCKING COLLAR fully in the counterclockwise direction.
- 3 Insert your finger inside the tube and make sure the INTERNAL CAM LOCK is flush with the inside of the tube.



- 4 Insert the MIDDLE STEM into the S-ROD, with the SILVER BUTTON pointed upward
- 5 Rotate the MIDDLE STEM until the SILVER BUTTON locates in the hole.
- 6 Twist the LOCKING COLLAR fully in the clockwise direction until it locks.
- 7 Repeat this process on the LOWER STEM.
- 8 Using the BOLT and KNURLED KNOB, attach the SEARCHCOIL to the LOWER STEM.
- 9 Adjust the LOWER STEM to a length that lets you maintain a comfortable upright posture, with your arm relaxed at your side, and the SEARCHCOIL parallel to the ground in front of you.
- 10 Wind the CABLE securely around the STEMS.
- 11 Connect CABLE PLUG to housing. Do not twist the Cable or Plug. Turn Locking Ring only. Use minimal finger pressure to start the threads. Do not cross-thread. When the Locking Ring is fully engaged over the threaded connector, give it a firm turn to make sure that it is very tight. When the Locking Ring is fully engaged over the threaded connector, it may not cover all of the threads.
- 12 Tighten both LOCKING COLLARS.

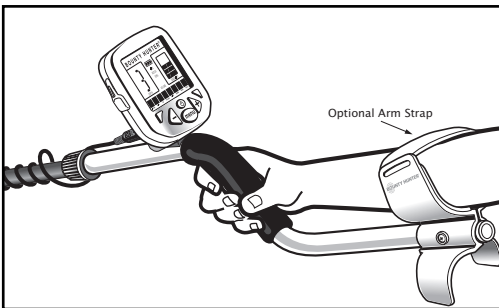
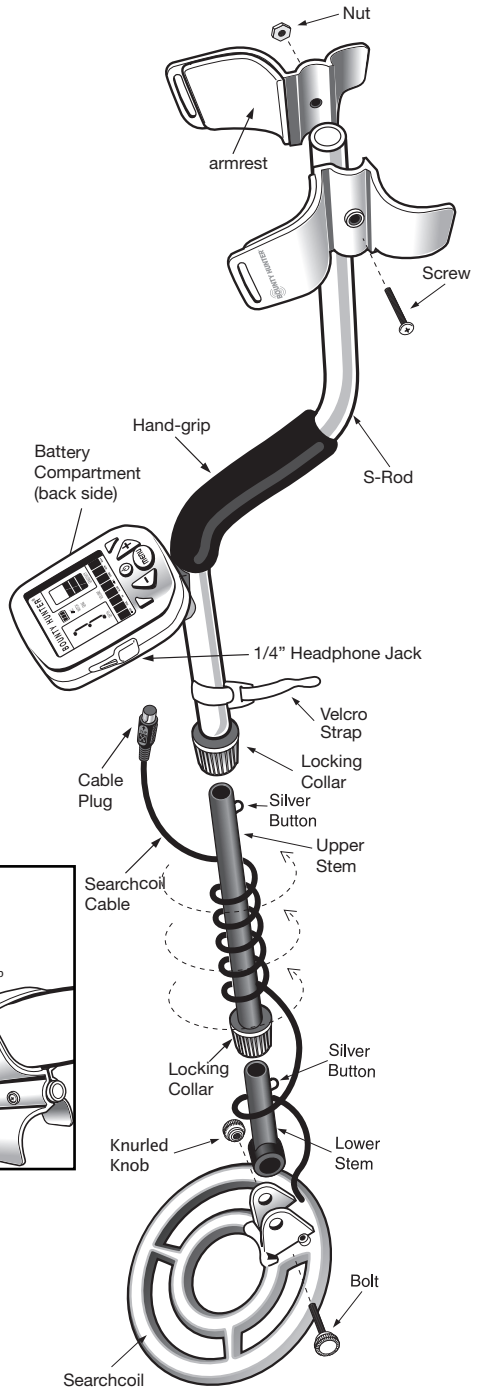
* Note: Very tall users can purchase the optional Extended Lower Stem (TUBE5X), for extended reach.



ASSEMBLY (continued)

Armrest Strap (not included)
Some users prefer to use a strap when swinging the detector vigorously, in order to hold the detector secure against the arm. The strap may be purchased as an optional accessory.

The detector can also be used without the strap with no compromise to detector balance and stability under most conditions.



BATTERIES

The detector requires a single 9-volt **ALKALINE** battery (battery not included).
Do not use ordinary zinc carbon batteries.

Rechargeable batteries can also be used.

If you wish to use rechargeable batteries, we recommend using a Nickel Metal Hydride rechargeable battery.

The battery compartment is located on the back side of the housing. Slide the battery door to the side and remove it to expose the battery compartment.

BATTERY LIFE

Expect 20 to 25 hours of life from a 9-volt alkaline battery. Rechargeable batteries provide about 8 hours of usage per charge.

SPEAKER VOLUME AND BATTERY CHARGE

You may notice the speaker volume drop while one battery segment is illuminated.

With one segment flashing, low speaker volume will be very apparent.

BATTERY INDICATOR

The 3-segment battery indicator has 4 stages of indication. These indications are accurate for a 9-volt alkaline battery.

<u>Segments Illuminated</u>	<u>Battery Voltage</u>
3 -segments	more than 8.3 volts
2 -segments	more than 7.0 volts
1 -segment	more than 6.2 volts
1 -segment flashing	less than 6.2 volts

After the battery indicator begins flashing, expect the detector to shut off within 10 minutes.

A rechargeable battery will usually illuminate all segments throughout most of its useful charge. But as soon as it drains to the 2-segment level, it will then discharge very rapidly.

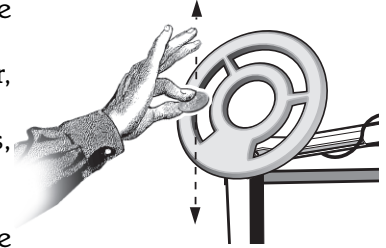
QUICK-START DEMONSTRATION

I. Supplies Needed

- a Nail
- a Nickel
- a Zinc Penny (dated after 1982)
- a Quarter

II. Position the Detector

- Place the detector on a table, with the searchcoil hanging over the edge. Or better, have a friend hold the detector, with the searchcoil off the ground.
- Keep the searchcoil away from walls, floors and metal objects.
- Remove watches, rings and jewelry.
- Turn off lights or appliances, whose electromagnetic emissions may cause interference.
- Pivot the searchcoil back.



III. Power Up. Press

IV. Wave each object over the searchcoil

- Notice a different tone for each object:

Low Tone:

Nail

Medium Tone:

Zinc Penny, Nickel

High Tone:

Quarter

- Motion is required.

Objects must be in motion over the searchcoil to be detected.

V. Then press

- The word "IRON" disappears from the display

VI. Wave the nail over the searchcoil

- The nail will not be detected
- The nail has been "discriminated out."

VII. Press four more times

- The words FOIL, 5¢, ALUM and ZINC disappear.

VIII. Wave the Nickel

- The Nickel will not be detected.

IX. Press to toggle down to NOTCH

Then press  3 times

- 5¢ reappears on the display

X. Wave the Nickel

- The Nickel is now again detected.
- The Nickel has been "notched in."

THE BASICS OF METAL DETECTING

A hobby metal detector is intended for locating buried metal objects. When searching for metals, underground or on the surface, you have the following challenges and objectives:

1. Ignoring signals caused by ground minerals.
2. Ignoring signals caused by metal objects that you do not want to find, like pull-tabs.
3. Identifying a buried metal object before you dig it up.
4. Estimating the size and depth of objects, to facilitate digging them up.
5. Eliminating the effects of electromagnetic interference from other electronic devices.

Your GOLD metal detector is designed with these things in mind.

1. Ground Minerals

All soils contain minerals. Signals from ground minerals can interfere with the signals from metal objects you want to find. All soils differ, and can differ greatly, in the type and amount of ground minerals present. The detector incorporates an automated ground-balancing feature which will eliminate false signals from most types of soils.

There is no user adjustment. If you experience false signals from severe ground conditions, such as highly mineralized soil found in many gold prospecting locations, or red-clay soils, reduce sensitivity.

2. Trash

If searching for coins, which will induce higher tone sounds, you want to ignore items like aluminum foil, nails and pull-tabs. These undesirable items induce lower tones. You can listen to the sounds of all objects detected, and decide on what you want to dig up. Or you can eliminate unwanted metals from detection by using the DISCRIMINATION feature.

3. Identifying Buried Objects

Different objects induce different tones (high, medium, low) and are classified on the display screen in different categories from left to right.

THE BASICS *(continued)*

4. Size and Depth of Buried Objects

The relative depth of an object is displayed at the left of the display as a 1 digit number, 0 to 9 inches. The size of an object can be determined using sweep techniques described later in the manual.


5. (EMI) Electromagnetic Interference

The searchcoil produces a magnetic field and then detects changes in that magnetic field caused by the presence of metal objects. This magnetic field that the detector creates is also susceptible to the electromagnetic energy produced by other electronic devices. Power lines, microwave ovens, lighting fixtures, TVs, computers, motors, etc.... all produce EMI which can interfere with the detector and cause it to beep when no metal is present, and sometimes to beep erratically.

The SENSITIVITY control lets you reduce the strength of this magnetic field, and therefore lessen its susceptibility to EMI. You may want to operate at maximum strength, but the presence of EMI may make this impossible, so if you experience erratic behavior or "false" signals, **reduce the sensitivity.**

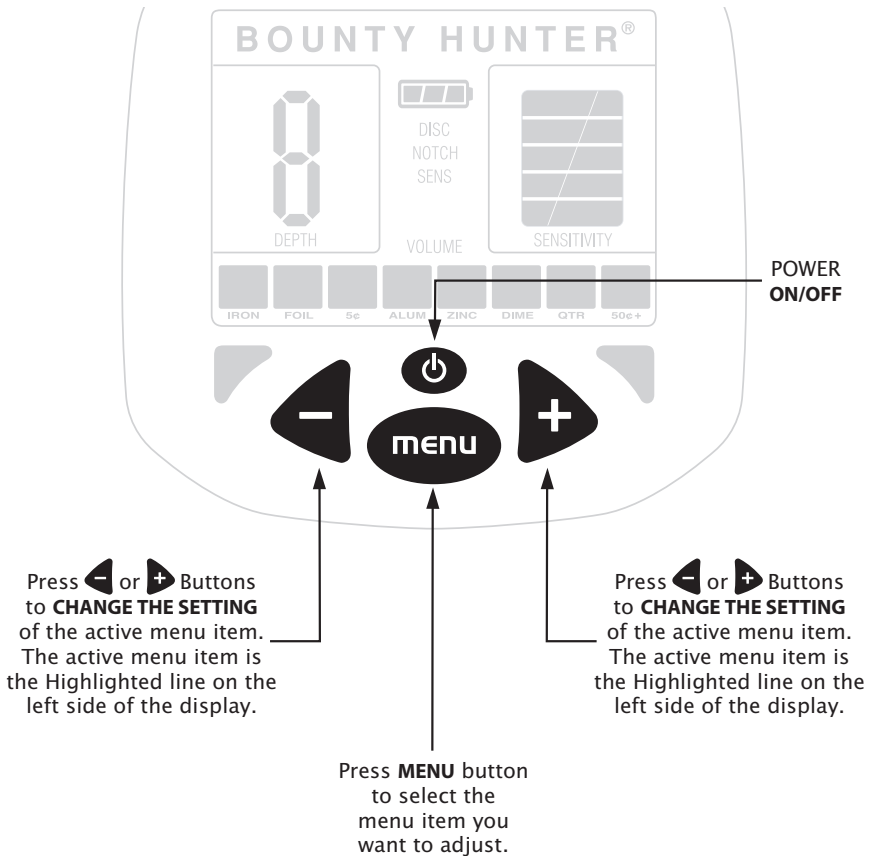
OPERATION and CONTROLS

POWERING UP

Press 

- The detector always starts up with the DISCRIMINATION feature active.
- Motion is required to detect metal.
- Sensitivity is at 70% of maximum
- All target categories are illuminated, meaning that all metal objects will be detected.



HOW TO WORK THE CONTROLS






OPERATION and CONTROLS (cont.)


MENU SELECTIONS

1. DISC


Use  and  to increase or decrease DISCRIMINATION level.



Each time you press , a target category is eliminated from detection. Elimination occurs from left to right. When a category description (for example "IRON") disappears from the display, then targets classified in that category will not be detected.

Pressing  reverses the discrimination process. With each press of , a category description will reappear, indicating that targets classified in that category will again be detected.



Discrimination is a cumulative elimination system. Targets can be eliminated from left to right on the scale, with each additional press of , resulting in more objects being eliminated from detection.

2. NOTCH





Press  until "NOTCH" is illuminated on the display.

Use  and  to notch target categories IN or OUT while the NOTCH line is highlighted.

Whereas the discrimination feature eliminates all categories sequentially from detection, the NOTCH control allows you to selectively include or exclude target categories from detection.

With each press of  or , the notched category moves across the display screen. As you move the position of the notched category, you are *changing the detection status of the selected category*.

- If a target category was previously eliminated (word not visible) then notching that category will return it to detection.
- If a target category was previously retained (word is visible) then notching that category will remove it from detection.

Only one target category at a time can be selected for notching. To notch multiple categories in or out, press  again while NOTCH is highlighted. Each subsequent press of  allows you to set an additional notch. Each time you press , followed by , the notch program will begin by changing the status of the IRON segment.

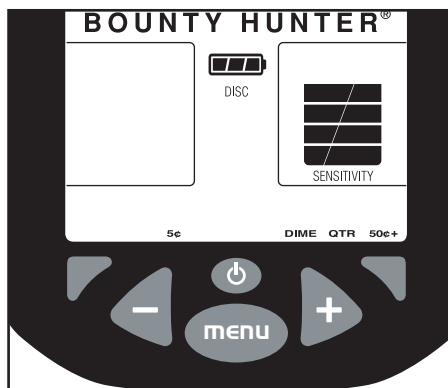
At any time, the display screen indicates the current category notches or discrimination settings. Any category whose description is not visible will not be detected.

OPERATION and CONTROLS (cont.)



NOTCH *continued*

For example, the following settings tell us that:

- The nickel, dime, quarter and 50¢+ categories will be detected.
- All other categories of targets (iron, foil, alum and zinc) will not be detected.



3. SENSITIVITY

Use  and  to increase or decrease sensitivity while the SENS line is highlighted.

Maximum sensitivity is indicated by 5 bars.

Minimum sensitivity is indicated by 1 bar.

If the detector beeps erratically or beeps when there are no metal objects being detected, **reduce the sensitivity**.



The searchcoil produces a magnetic field and then detects changes in that magnetic field caused by the presence of metal objects. This magnetic field that the detector creates is also susceptible to the electromagnetic energy produced by other electronic devices. Power lines, microwave ovens, lighting fixtures, TVs, computers, motors, etc... all produce EMI which can interfere with the detector and cause it to beep when no metal is present, and sometimes to beep erratically.

HOW DEEP WILL IT GO?

The Gold Metal Detector will detect a coin-sized object, like a quarter, to a distance of about 9" from the searchcoil. Large metal objects can be detected to a depth of several feet. Detectability is directly related to the size of the metal object -- the larger the object, the deeper it can be detected.

Accuracy of target identification is also related to distance from the coil. Beyond a distance of 8", the accuracy of target identification begins to diminish.

4. VOLUME

While the VOLUME line is highlighted, use  and  to change the speaker volume.

The default volume setting is 9. Maximum is 9.

Minimum is 0 (volume off). At levels 1, 2 and 3, high tones will be inaudible or barely audible.

The speaker volume will diminish as battery voltage drops. For maximum speaker volume, use 1 or 2 tones, as the low and bass tones generate the loudest sounds.

TARGET IDENTIFICATION

Targets are identified both audibly and visually as follows:

1. Different pitch tones for different types of metals
2. An illuminated icon within the target category best describing it.

AUDIO TARGET IDENTIFICATION:

Tones identify targets as follows:

LOW TONE




Ferrous objects, such as iron and steel, like nails and tin cans.
Smallest-sized gold objects and steel bottle caps

MEDIUM TONE

Newer pennies (post-1982 are minted from zinc)
Larger gold pieces, small brass objects and most bottle screw caps.
Foil, pull-tabs, nickels and most recent-vintage non-US coins.

HIGH TONE

Silver and copper coins, large brass objects
Older pennies (pre-1982 were minted from copper)
Dimes, quarters, half-dollars, silver dollars
Susan B. Anthony and Sacagawea dollar coins
Flattened aluminum cans (with a stronger signal than a coin)

LOW TONE	MEDIUM TONE	HIGH TONE
 <p data-bbox="74 1388 335 1445">Nails & Steel Bottle Caps, & Small Gold</p>	 <p data-bbox="383 1388 665 1469">Pull-Tabs, Nickels, Smaller & Larger Gold, Zinc Pennies (Post-1982), Many screw caps</p>	 <p data-bbox="718 1388 968 1445">Copper, Silver & Brass Copper Pennies (Pre-1982)</p>

Audio Target Identification (ATI) classifies metals into three categories.

DEPTH AND TARGET DISPLAY

READING THE DISPLAY

The Liquid Crystal Display (LCD) shows the PROBABLE identification of the targeted metal, as well as the PROBABLE depth of the target.

The detector will register a consistent target identification, upon each sweep of the coil, when a buried target has been located and identified. If, upon repeated passes over the same spot, the target identification reads inconsistently, the target is probably a trash item, or oxidized metal. With practice, you will learn to unearth only the repeatable signals.

The segment identifications are highly accurate, when detecting the objects described on the label. However, if an object registers in a given category for an unknown buried object, you could be detecting a metallic object other than the object described on the label, but with the same metallic signature. Also, the greater the distance between the target and the coil, the less accurate the target identification.

GOLD TARGETS Gold objects will register on the left side of the LCD scale.

Gold flakes will register under iron.

Small gold items will register under foil or 5¢.

Medium-sized gold items will register between 5¢ and Alum.

Large gold items will register under Zinc.

SILVER TARGETS: Silver objects will register to the right of the scale, under Dime, Qtrs. or 50¢+.

IRON: All but the very largest iron objects will register on the far-left side of the scale. This could indicate a worthless item such as a nail, or a more valuable historic iron relic.

FOIL: Aluminum foil, such as a gum wrapper, will register as foil. A small broken piece of pull tab may also register here.

NICKEL: Most newer pull-tabs from beverage cans, the type intended to stay attached to the can, will register here. Many gold rings will also register here.

PT: Older pull tabs, which always detached completely from the can, register here. Many medium size gold ring also register here.

ZINC: Newer US pennies (post-1982), and Canadian \$1 and \$2 coins register here. Many non-US coins of recent vintage will also register here.

DIME: Dimes and older copper pennies (pre-1982) register here.

50¢+ Qts: Quarters register here, Silver Dollars, Half-Dollars and very large iron objects, like a sewer lid, will register here.

Caution: The target indications are visual references. Many other types of metal can fall under any one of these categories. While the detector will eliminate or indicate the presence of most common trash items, it is impossible to accurately classify ALL buried objects.

DEPTH INDICATOR: The Depth Indicator is accurate for coin-sized objects. It indicates the depth of the target, in inches.

Large and irregularly-shaped objects will yield less reliable depth readings

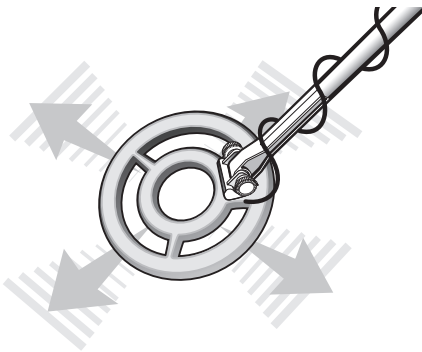
When passing over an object, the indicators will light up and stay illuminated for three seconds. If the depth indication varies with each sweep, try sweeping at different angles; there may be more than one target present. With practice, you will learn the difference between accurate readings, multiple targets and highly erratic readings which evidence trash or irregularly shaped objects.

IN THE FIELD TECHNIQUES

PINPOINTING

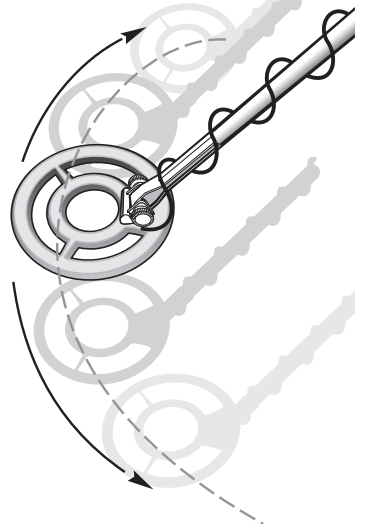
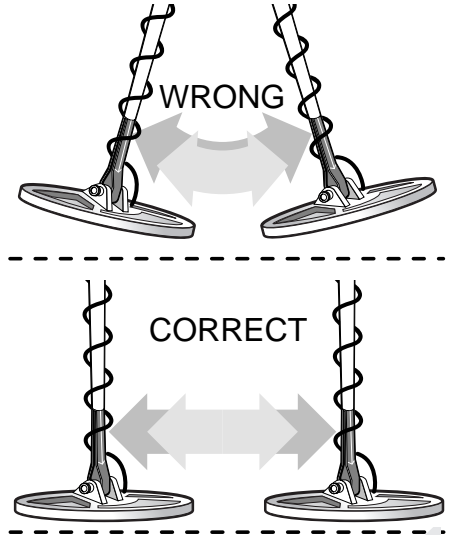
Accurate pinpointing takes practice and is best accomplished by “X-ing” the target area.

1. Once a buried target is indicated by a good tone response, continue sweeping the coil over the target in a narrowing side-to-side pattern.
2. Take visual note of the place on the ground where the “beep” sounds.
3. Stop the coil directly over this spot on the ground.
4. Now move the coil straight forward and straight back towards you a couple of times.
5. Again make visual note of the spot on the ground at which the “beep” sounds.
6. If needed, “X” the target at different angles to “zero in” on the exact spot on the ground at which the “beep” sounds.



COIL MOVEMENT

When swinging the coil, be careful to keep it level with the ground about one inch from the surface. Never swing the coil like a pendulum.



When pinpointing a target, try drawing an “X”, as illustrated, over where the tone is induced.

