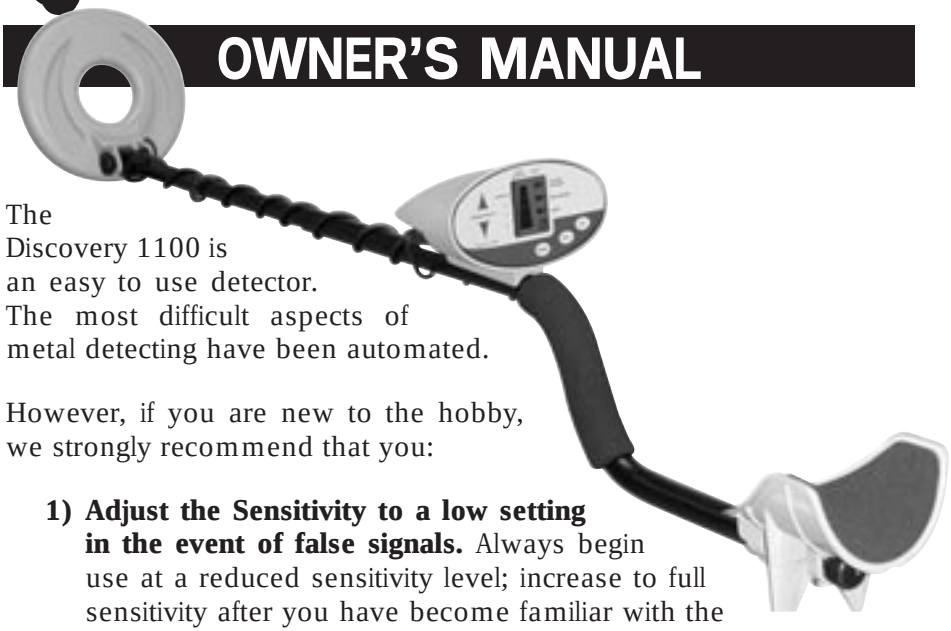
Discovery™ 1100

by BOUNTY HUNTER®

OWNER'S MANUAL



The Discovery 1100 is an easy to use detector. The most difficult aspects of metal detecting have been automated.

However, if you are new to the hobby, 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 search coil away from appliances such as computers, televisions and microwave ovens. If your detector beeps erratically, turn off appliances and lights (especially those with dimmer switches).

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

3) Read this manual. Most importantly, review the **Quick-Start Demo** (p.7) and **Basic Operation** (pp. 9-12)**.**

4) Use 9-volt **ALKALINE** batteries 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

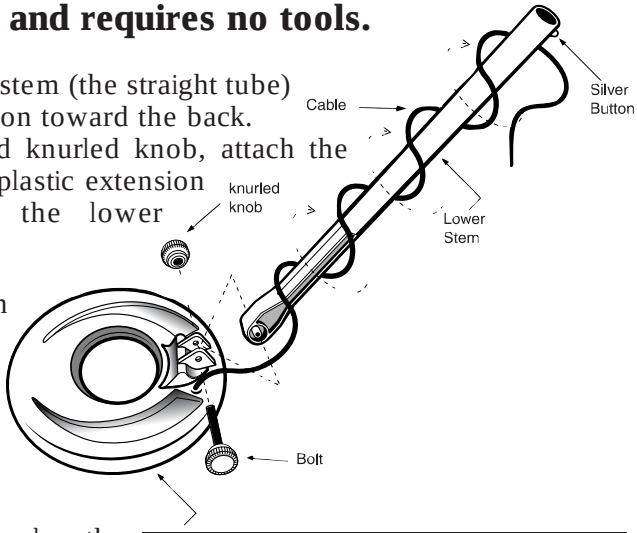
Discarded pull-tabs from beverage containers are the most bothersome trash items for treasure hunters. They come in many different shapes and sizes. Most pull-tabs can be eliminated with the Mode Control, but some other valuable objects can have a magnetic signature similar to pull-tabs, and will also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

ASSEMBLY

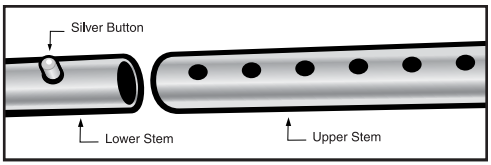
Assembly is easy and requires no tools.



❶ Position the lower stem (the straight tube) with the silver button toward the back. Using the bolt and knurled knob, attach the search coil to the plastic extension protruding from the lower stem.

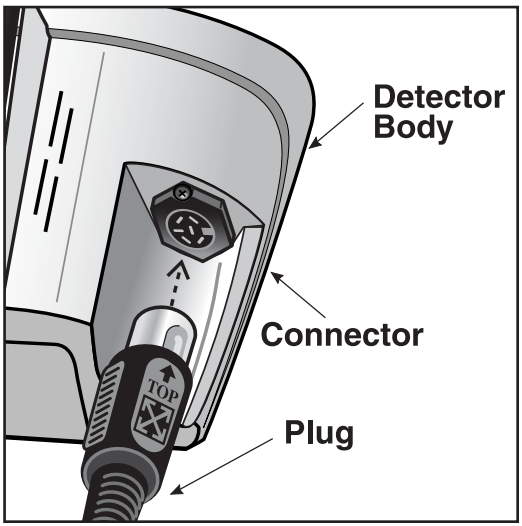
❷ Press the button on the upper end of the lower stem, and slide the lower stem into the upper stem.

Adjust the stem to a length that lets you maintain a comfortable upright posture, with your arm relaxed at your side, and the search coil parallel to the ground in front of you.



❸ Wind the cable securely around the stem.

❹ Insert the plug into the matching connector on the right underside of the detector body. Be sure that the key-way and pins line up correctly.



Caution: Do not force the plug in. Excess force will cause damage.
To disconnect the cable, pull on the plug.

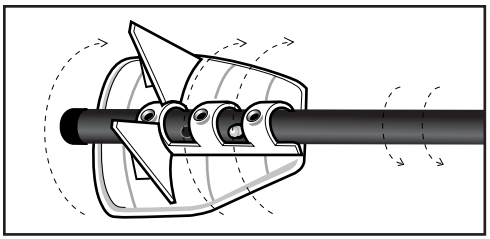
Do not pull on the cable.

Adjusting the Arm Rest

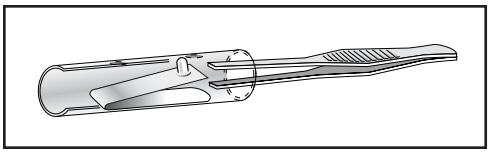
Most people will find the standard position of the armrest very comfortable. Very large forearms and short forearms (particularly children's arms), can be accommodated by moving the armrest forward.

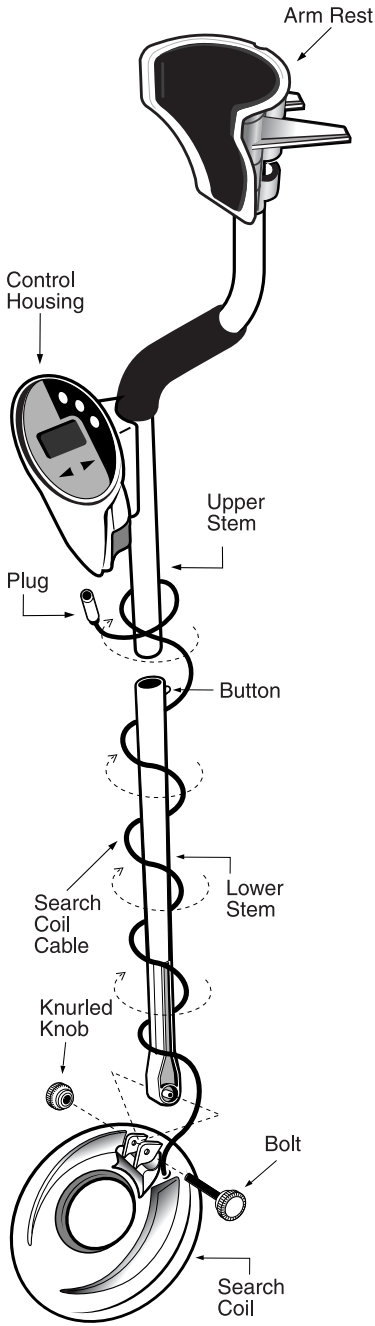
The armrest is adjustable to three positions.

To adjust, press the silver button on the underside, and move the armrest to one of the alternate positions. If you cannot fully depress the button with your finger, use a narrow object, such as the blunt end of a ballpoint pen. The armrest must be twisted with moderate force to move it to an alternate position; this adjustment is usually made infrequently.



If the button becomes disengaged inside of the tube, remove the plastic cap at the end of the tube to access the clip inside. With a pair of needle-nose pliers, reengage the button. Then replace the plastic cap.

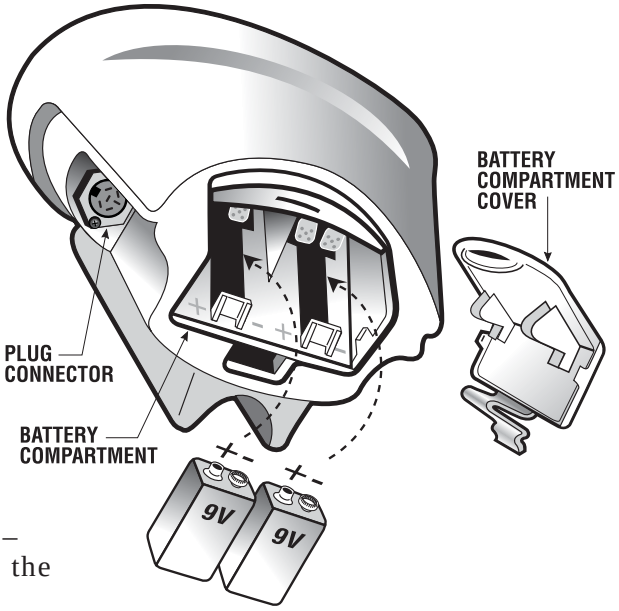




BATTERIES

Use **ALKALINE** batteries only.

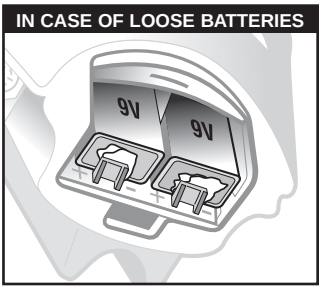
To install the batteries:



1. Remove the battery cover by disengaging the clip at the back.
2. Align the polarity of the batteries correctly, with the positive "+" toward the coil plug connection, as indicated by the + and – indicators on the housing.
3. Insert (2) 9-Volt **ALKALINE** batteries, with the contacts pointed inward, and press down on the back of the batteries to snap them into place.

   Some brands of batteries will require moderate force to clear the retaining tabs.

   If the batteries fit loosely, and you want to guarantee a very secure electrical contact, insert a piece of paper or thin cardboard between the back of the battery and the supporting post.



4. Replace the battery door.

The Low Battery Indicator will come on and stay on if the batteries need to be replaced.

Most metal detector problems are due to improperly installed batteries, or the use of non-alkaline or discharged batteries. **If the detector does not turn on, please check the batteries.**

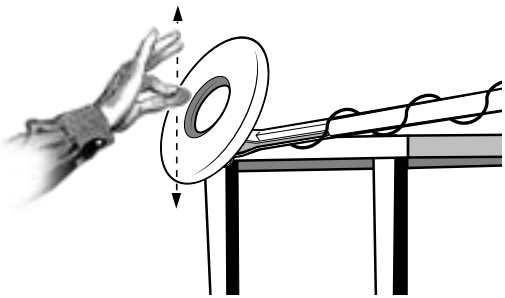
If the detector does not turn on, check to see that the batteries fit tightly. If the batteries are loose, press them forward while pressing the ON touchpad. To tighten up a loose battery, wedge a piece of paper or thin cardboard between the back of the battery and the supporting post, as illustrated above.

QUICK-START DEMONSTRATION

I. Supplies Needed

- A Nail
- A Pull-Tab from a beverage can
- A Quarter
- A Zinc Penny (dated after 1982)

II. Position the Detector



a. Place the detector on a table, with the search coil hanging over the edge. (or better, have a friend hold the detector, with the coil off the ground)

b. Keep the search coil away from walls, floors, and metal objects.

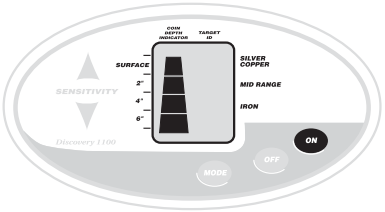
c. Remove watches, rings and other jewelry or metal objects from hands and wrists.

d. Turn off appliances or lights that cause electromagnetic interference.

e. Pivot search coil back toward the detector body.

III. Power Up

Press the ON touchpad.
The detector will beep twice and the full sensitivity setting will be indicated on the left of the display.



IV. Wave each Object over the Search Coil

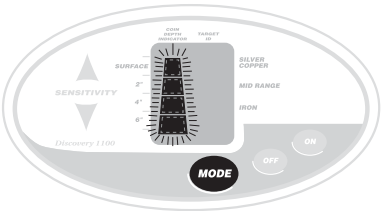
a. Notice a different tone for each object.

Low Tone: Nail
Medium Tone: Pull-tab & Zinc Penny
High Tone: Quarter

b. Motion is required. Objects must be in motion over the search coil to be detected.

V. Press the MODE touchpad

The detector will beep twice and the sensitivity setting will flash on the left side of the display.

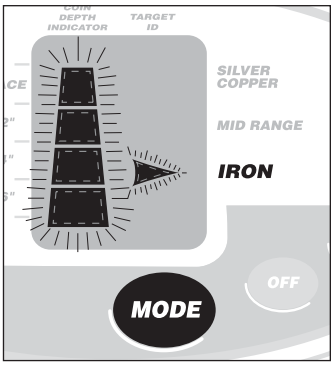


Quick-Start Demo continued on next page

VI. Press the MODE touchpad again.

a. A flashing indicator will point toward IRON.

b. The flashing indicator tells us that Iron has been eliminated from detection.



VII. Wave the Nail over the Search Coil

a. The Nail will not be detected.

b. The Nail has been "Discriminated Out."

VIII. Wave the Quarter, Penny, and Pull-Tab over the Search Coil

These non-ferrous objects will be detected with their own distinctive tones.

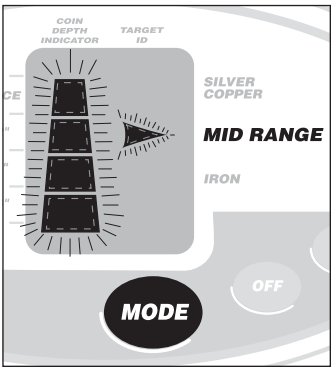
IX. Press the MODE touchpad again.

a. The detector will beep twice and the sensitivity setting will flash on the left side of the display.

b. Notice the flashing arrow pointing toward Iron.
The flashing arrow indicates that this target category is currently "Discriminated Out."

X. Press the MODE touchpad again.

The flashing arrow will now point toward MID-RANGE.



XI. Wave all objects over the Search Coil

The Pull-Tab and Zinc Penny will not be detected.

The other objects will be detected with their own distinctive tones.

XII. Toggle modes by pressing the MODE touchpad again.

a. Press once to see the current discrimination status of the detector (Mid-Range Eliminated).

b. Then press again to toggle to the third discrimination setting.

i. Iron is eliminated.

ii. Mid-Range Metals are eliminated.

iii. Only high-tone metals like silver and copper will be detected.

BASIC OPERATION

POWERING UP

Press the ON touchpad.

All display indicators will illuminate momentarily.

The 4-segment pyramid-shaped Sensitivity Indicator will illuminate on the left side of the display. The 4-segment pyramid indicates that the detector is at full sensitivity.

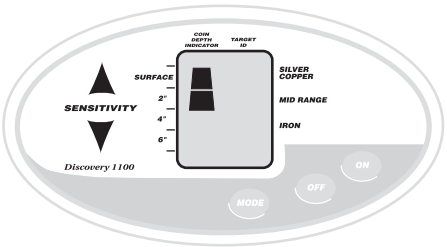
When an object is detected, the object will be identified by a tone, a display indicator, and a depth indication.

A two-minute "warm-up" is required before the detector reaches full sensitivity.

UNDERSTANDING THE DISPLAY

The LEFT SIDE of the display has a dual purpose:

❶ SENSITIVITY LEVEL

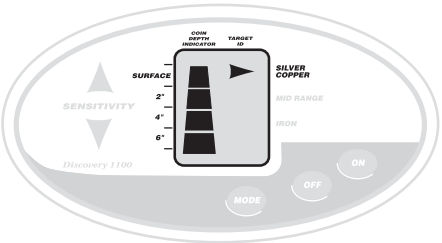


Upon power-up, and after pressing either the up- or down-sensitivity pads, the pyramid-shaped display indicates the detector's **sensitivity level.**

The sensitivity level can be changed using the up- and down-pads.

At maximum sensitivity, the unit can detect a coin-sized metal object buried about 6" beneath the surface; larger objects can be detected much deeper.

❷ DEPTH INDICATION



After detecting an object, the pyramid-shaped display indicates the approximate **depth** of buried, coin-sized objects.

Objects at or near the surface will illuminate the single segment at the top of the scale.

More deeply buried objects will illuminate more segments, indicating depths of 2, 4, or 6 inches, as identified to the left of the display.

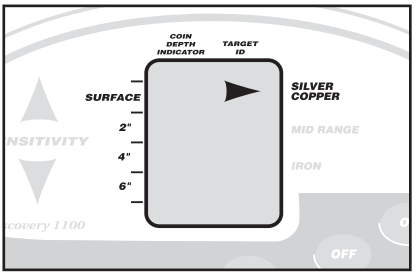
The depth indicator is not accurate for large, or irregularly shaped, objects. However, the scale will provide relative depth indications for larger objects; a given object will induce deeper readings the farther it is from the search coil.

BASIC OPERATION (continued)

The RIGHT SIDE of the display classifies objects into three categories.

Silver/Copper: ——————————

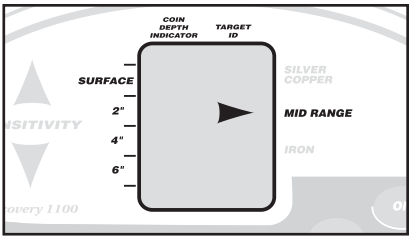
Objects composed of silver and cooper will illuminate this arrow. Buried and heavily oxidized metal objects, such as old tin cans, can also fall into this category. Larger aluminum objects, like beverage cans, will sometimes fall into this category.



Mid-Range: ——————————

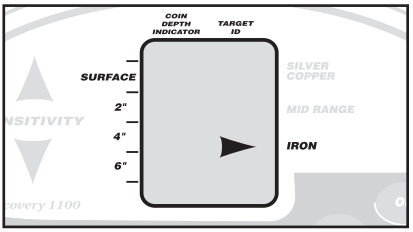
Mid-range objects cover a large variety of metals.

Among them are: pull-tabs from beverage containers, nickels, medium-sized gold objects, some types of aluminum, and zinc.

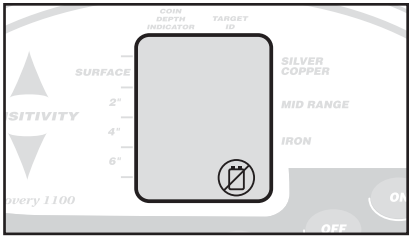


Iron: ——————————

All ferrous objects, and some smaller aluminum objects, fall into the iron category. Small gold objects can also fall into this range.



The BOTTOM RIGHT SIDE of the display will illuminate a Low Battery Indicator symbol if the batteries are discharged. The indicator illuminates, and remains illuminated, when the 9-volt batteries have discharged to a level of 7.35 volts.



Reading the Display IN THE FIELD

With the detector in use in the field, the display will indicate both the DEPTH and the TARGET IDENTIFICATION of each object detected. After a target is detected, these indicators will remain illuminated with this information until the next target has been detected.

The MODE CONTROL

The MODE touchpad allows for the elimination from detection of unwanted metal objects.
By pressing MODE, the user toggles among four different discrimination settings.

> *If an object is detected during mode selection, the detector will exit mode selection. If this happens, you will need to press MODE again and begin mode selection over again. To avoid this, keep the detector stationary and reduce sensitivity before pressing MODE.*

During MODE (or discrimination) selection, the SENSITIVITY INDICATOR on the left of the display will flash continually. The detector will remain in this discrimination selection mode until a metal object has been detected.

The first time you press MODE, the detector will indicate the current discrimination setting, both visually, and with distinctive tones. **Each first time the user presses MODE after powering on,** the detector will do the following:

1. The pyramid-shaped Sensitivity Indicator will flash continually.
2. A Long Tone will sound.
3. A High Tone will sound.
4. No Target Indicators will flash.

After a mode has been selected, and targets have been detected, the detector will store the discrimination settings.

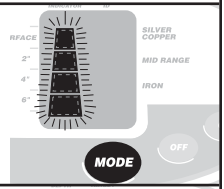
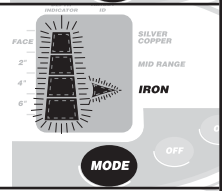
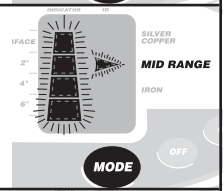
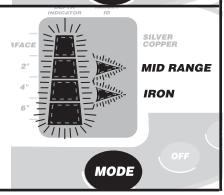
Each subsequent time the user returns to MODE selection, the detector will:

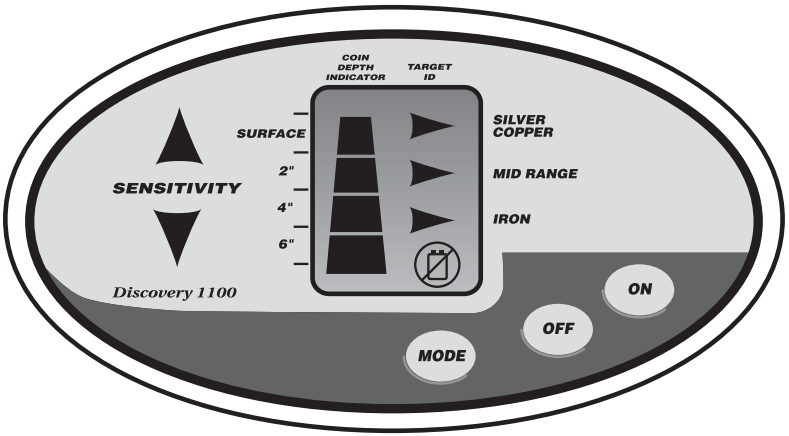
1. first sound a long tone, and
2. then indicate the stored discrimination setting.

The user can then toggle through the discrimination modes by pressing the MODE touchpad.

The detector will store the current discrimination setting until the power is turned off.

Discrimination Settings are as follows:

Mode	Metals Eliminated	Status Tones	Display (During discrimination selection)
All-Metal	None	High	No Target Indicators Flashing 
Iron Discrimination	Ferrous only	Low	Iron Indicator Flashing 
Mid-Range Discrimination	Pull-tabs, Screw Caps, some Foil, medium Gold, Zinc, Nickels	Medium	Mid-Range Indicator Flashing 
Full Discrimination	Ferrous and Mid-Range metals	Low & Medium	Iron and Mid-Range Indicators Flashing 



AUDIO TARGET IDENTIFICATION

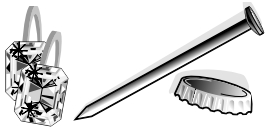
While the LCD (Liquid Crystal Display) is very accurate in identifying buried objects, the user in the field does not always maintain the display screen in his field of vision. Therefore, we have incorporated an audio feedback mechanism to alert the user to the nature of buried objects. This audio feedback system first alerts the user to the presence and classification of objects, whose nature and location can be confirmed using the LCD display.

The detector will sound three different tones. These three tones correspond to the three target categories depicted on the LCD display.

LOW TONE
Ferrous objects, such as iron and steel, will induce a low tone. Small gold objects can also induce a low tone.

MEDIUM TONE
Pull-tabs, newer pennies (post-1982), larger gold objects, zinc, small brass objects, and most bottle screw caps will induce medium tones. Many recent vintage foreign currencies will induce medium tones.

HIGH TONE
Silver and copper coins, larger brass objects, older pennies (pre-1982), and highly oxidized metals will induce high tones. Quarters, dimes and other precious coins fall into this category.

LOW TONE	MEDIUM TONE	HIGH TONE
		
Nails, Bottle Caps, & Small Gold	Old & New Pull Tabs, Zinc Pennies (Post 1982), Nickel, Larger Gold Objects	Copper, Silver & Brass Copper Pennies (Pre 1982)

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

SENSITIVITY ADJUSTMENT

ELECTROMAGNETIC INTERFERENCE

The principle use for the Sensitivity Control is to eliminate Electromagnetic Interference (EMI).
A hobby metal detector is an extremely sensitive device; the search coil creates its own magnetic field and acts like an antenna. If your detector beeps erratically when the search coil is motionless, the unit is probably detecting another magnetic field.

Common sources of EMI are electric power lines, both suspended and buried, motors, and household appliances like computers and microwave ovens. Some indoor electronic devices, such as dimmer switches used on household lighting, produce severe EMI and will cause the detector to beep erratically. Other metal detectors also produce their own electromagnetic fields, so if detecting with a friend, keep two metal detectors at least 20 feet apart.

If the detector beeps erratically, REDUCE THE SENSITIVITY by pressing the Down-Sensitivity Arrow on the left of the control panel.

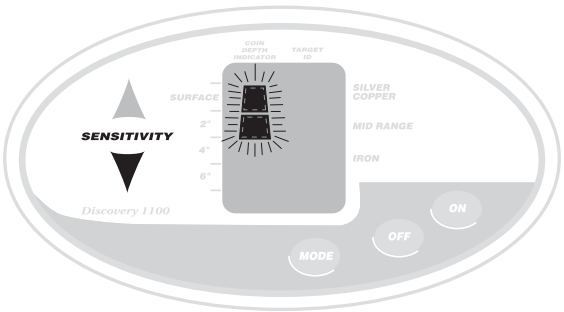
SEVERE GROUND CONDITIONS

A secondary use for the Sensitivity Control is to reduce false detection signals caused by severe ground conditions. While your Discovery 1100 contains circuitry to eliminate the signals caused by most naturally occurring ground minerals, 100% of all ground conditions cannot be anticipated. Highly magnetic soils found in mountainous and gold-prospecting locations can cause the detector to emit tones when metal objects are not present. High saline content soils and sands can also cause the detector to false.

If the detector emits false, non-repeatable, signals, REDUCE THE SENSITIVITY.

MULTIPLE TARGETS

If you suspect the presence of deeper targets beneath a shallower target, reduce the sensitivity to eliminate the detection of the deeper targets, in order to properly locate and identify the shallower target.

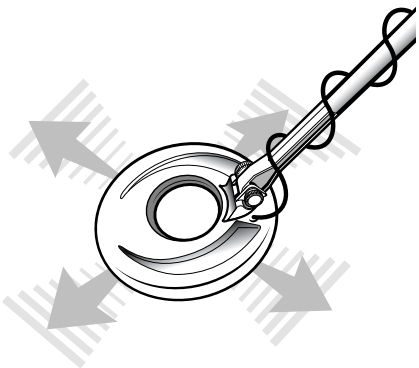


IN THE FIELD TECHNIQUES

PINPOINTING

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

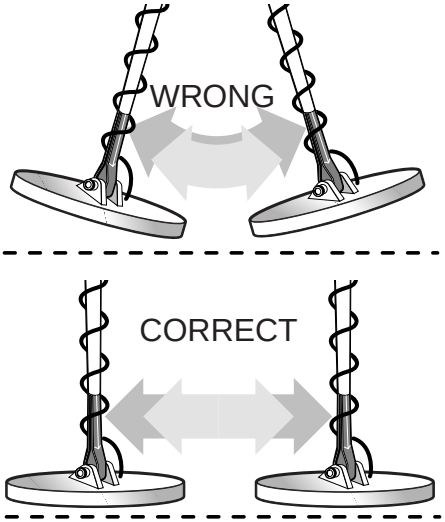
1. Once a buried target is indicated by a good tone response, continue sweeping the coil over the target in a narrowing side-to-side pattern.
2. Take visual note of the place on the ground where the "beep" sounds.
3. Stop the coil directly over this spot on the ground.
4. Now move the coil straight forward 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.

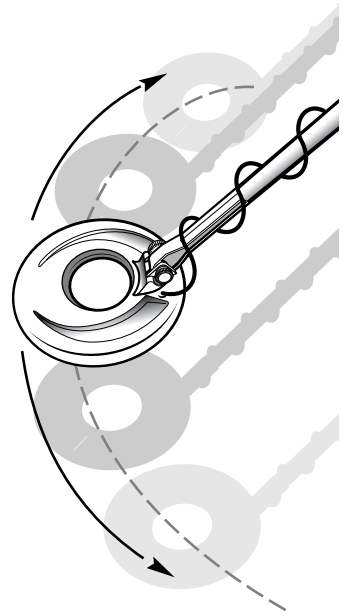


When pinpointing a target, try drawing an "X", as illustrated, over where the tone is induced.

COIL MOVEMENT

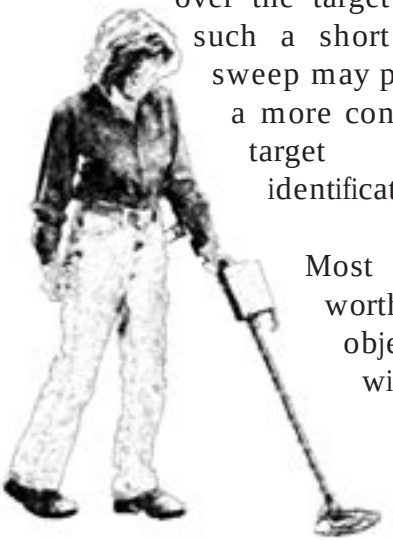
When swinging the coil, be careful to keep it level with the ground about one inch from the surface. Never swing the coil like a pendulum.





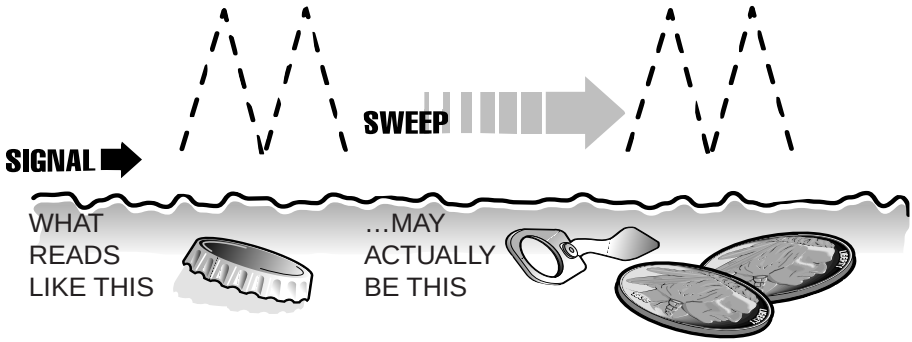
IN THE FIELD TECHNIQUES (continued)

Swing the search coil slowly, overlapping each sweep as you move forward. It is important to sweep the coil at a consistent speed over the ground as you search. After identifying a target, your sweep technique can help in identifying both the location and the nature of the target. If you encounter a weak signal, try moving the coil in short, rapid sweeps over the target zone; such a short rapid sweep may provide a more consistent target identification.



Most worthwhile objects will respond with a repeatable tone. If the signal does not repeat after sweeping the coil directly over the suspected target a few times, it is more than likely trash metal.

Crossing the target zone with multiple intersecting sweeps at multiple angles is another way to verify the repeatability of the signal, and the potential of the buried target. To use this method, walk around the target area in a circle, sweeping the coil across the target repeatedly, every 30 to 40 degrees of the circle, about ten different angles as you walk completely around the target. If a high-tone target completely disappears from detection at a given angle, chances are that you are detecting oxidized ferrous metals, rather than a silver or copper object. If the tone changes a different angles,

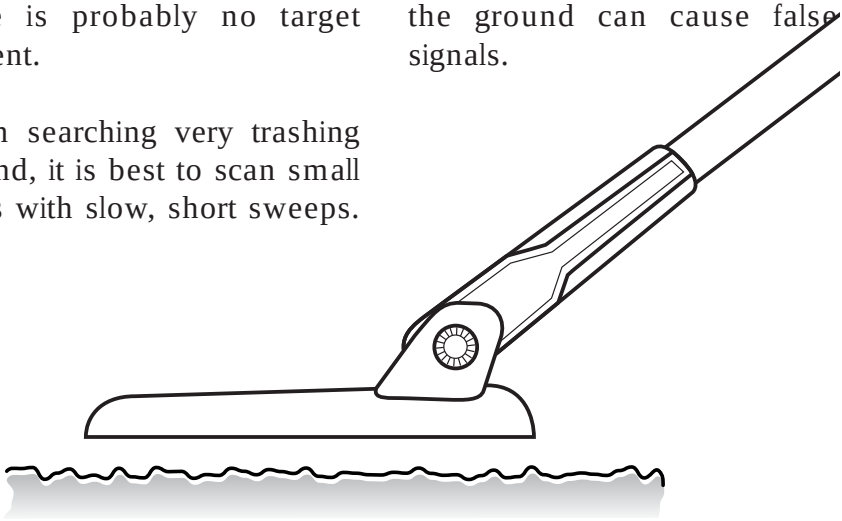


you many have encountered multiple objects. If you are new to the hobby, you may want to dig all targets at first. With practice in the field, you will learn to better discern the nature of buried objects by the nature of the detector's response.

You may encounter some false signals as you proceed. False signals occur when the detector beeps, but no metal target is present. False signals can be induced by electromagnetic interference, oxidation, or highly mineralized ground soils. If the detector beeps once, but does not repeat the signal with several additional sweeps over the same spot, there is probably no target present.

When searching very trashing ground, it is best to scan small areas with slow, short sweeps. You will be surprised just how much trash metal and foil you will find in some areas. The trashiest areas have been frequented by the most people, and frequently hold the most promise for finding the most lost valuables. To make searching easier in very trashy areas, consider purchasing the Bounty Hunter 4-inch Search Coil (Radio Shack item 63-3009 or 63-3014). The 4-inch coil's narrower detection field can better distinguish between two objects in close proximity.

Also maintain the search coil positioned just above the surface of the ground, without making contact with the ground. Making contact with the ground can cause false signals.



TROUBLESHOOTING

TROUBLE SHOOTING GUIDE

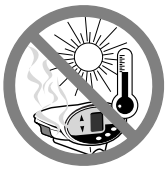
SYMPTOM	CAUSE	SOLUTION
Detector chatters or beeps erratically	• Using detector indoors • Using detector near power lines • Using 2 detectors in close proximity • Highly oxidized buried object • Environmental electromagnetic interference	• Use detector outdoors only • Move away from power lines • Keep 2 detectors at least 20' apart • Only dig up repeatable signals • Reduce sensitivity until erratic signals cease
Constant low tone or constant repeating tones	• Discharged batteries • Wrong type of batteries	• Replace batteries • Use only 9V **alkaline** batteries
LCD does not lock on to one target ID or detector emits multiple tones	• Multiple targets present • Highly oxidized target • Sensitivity set too high	• Move coil slowly at different angles • Reduce sensitivity
No power, no sounds	• Dead batteries • Poor battery contact • Cord not connected securely	• Replace batteries • Push batteries in tighter • Insert paper spacers (see page 6) • Check connections

CARE AND MAINTENANCE

Your Discovery 1100 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 to come.

Keep the detector's chassis dry and do not let water enter it. If the chassis gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.

Use and store the detector only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.



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

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

Use only fresh batteries of the required size and type. Old batteries can leak chemicals that damage your detector's electronic 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 it.

Modify or tampering with the detector's internal components can cause a malfunction and might invalidate it's warranty.

The searchcoil supplied with the detector is waterproof however, and may be submerged in either fresh or salt water. After using the searchcoil in salt water, rinse it with fresh water to prevent corrosion of the metal parts.

TREASURE HUNTER'S CODE OF ETHICS:

1. Respect the rights and property of others.
2. Observe all laws, whether national, state or local.
3. Never destroy historical or archaeological treasures.
4. Leave the land and vegetation as it was. Fill in the holes.
5. All treasure hunters may be judged by the example you set. Always obtain permission before searching any site. Be extremely careful while probing, picking up, or discarding trash items. And ALWAYS COVER YOUR HOLES!

Limited Ninety-Day Warranty

This product is warranted by Radio Shack against manufacturing defects in material and workmanship under normal use for ninety (90) days from the date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. EXCEPT AS PROVIDED HEREIN, Radio Shack MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. EXCEPT AS PROVIDED HEREIN, Radio Shack SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO CUSTOMER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS OR DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY USE OR PERFORMANCE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, INCLUDING, BUT NOT LIMITED TO, ANY DAMAGES RESULTING FROM INCONVENIENCE, LOSS OF TIME, DATA, PROPERTY REVENUE, OR PROFIT OR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF Radio Shack HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. In the event of a product defect during the warranty period, take the product and the Radio Shack sales receipt as proof of purchase date to any Radio Shack store. Radio Shack will, at its option, unless otherwise provided by law: (a) correct the detect by product repair without charge for parts and labor; (b) replace the product with one of the same or similar design; or (c) refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of Radio Shack. New or reconditioned parts and products may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period. This warranty does not cover: (a) damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, lighting or other incidence of excess voltage or current; (b) any repairs other than those provided by a Radio Shack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs of product removal, installation, set-up service adjustment or reinstallation.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. Radio Shack Customer Relations, 200 Taylor Street, 6th Floor, Fort Worth, TX 76102

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