

A alpha 2000 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 sensitivity only 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.

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

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

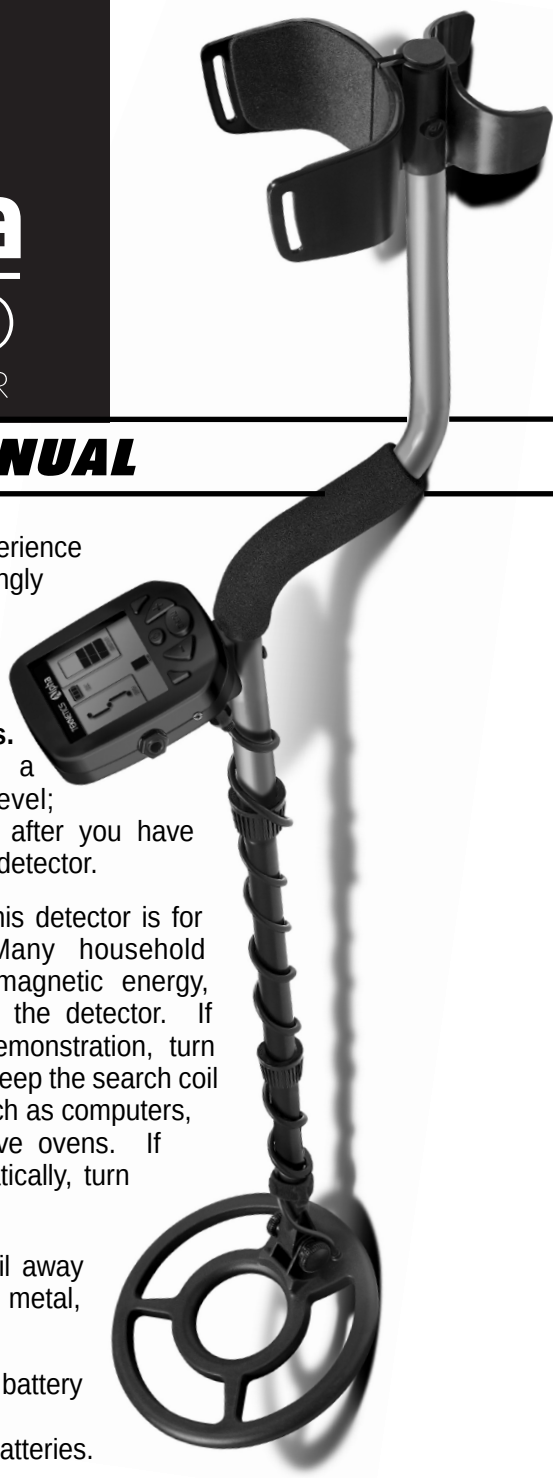


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TERMINOLOGY

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

Assembly is easy and requires no tools.

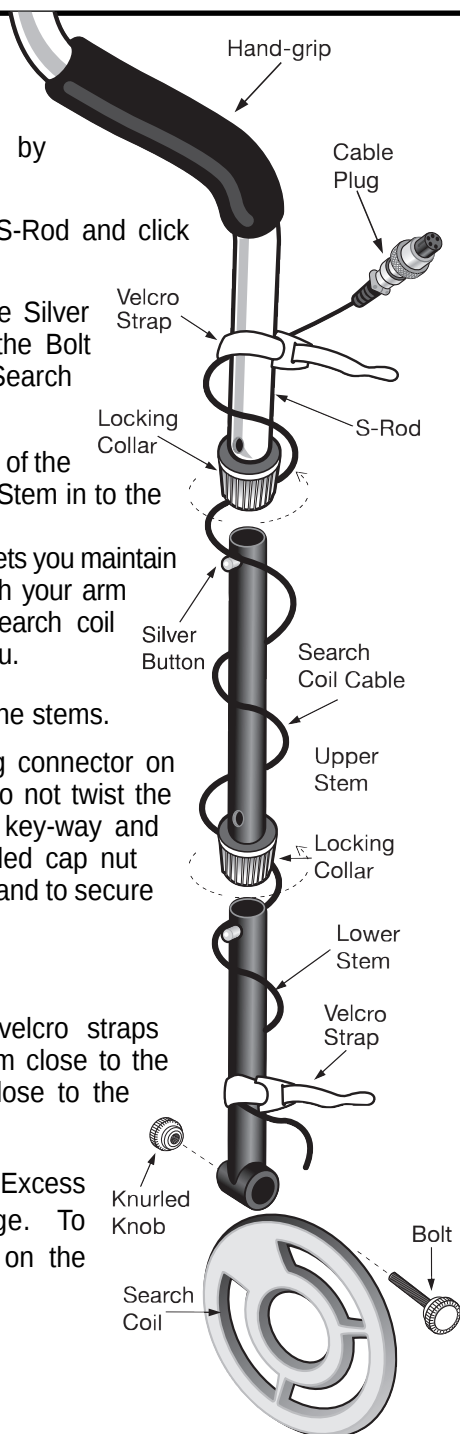
- 1 Loosen both Locking Collars by rotating 100% counterclockwise.
- 2 Insert the Upper Stem into the S-Rod and click Silver Button into hole.
- 3 Position the Lower Stem with the Silver Button toward the back. Using the Bolt and Knurled Knob, attach the Search Coil to the Lower Stem.
- 4 Press the button on the upper end of the Lower Stem and slide the Lower Stem in to 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.

- 5 Wind the cable securely around the stems.
- 6 Insert the plug into the matching connector on the back of the detector body. Do not twist the cable or plug. Be sure that the key-way and pins line up correctly. Turn knurled cap nut only. Tighten knurled cap nut by hand to secure cable connection to housing.
- 7 Tighten both Locking Collars.
- 8 Secure the cable with the 2 velcro straps provided, one on the Lower Stem close to the coil, one on the Upper Stem, close to the housing.

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.



ASSEMBLY

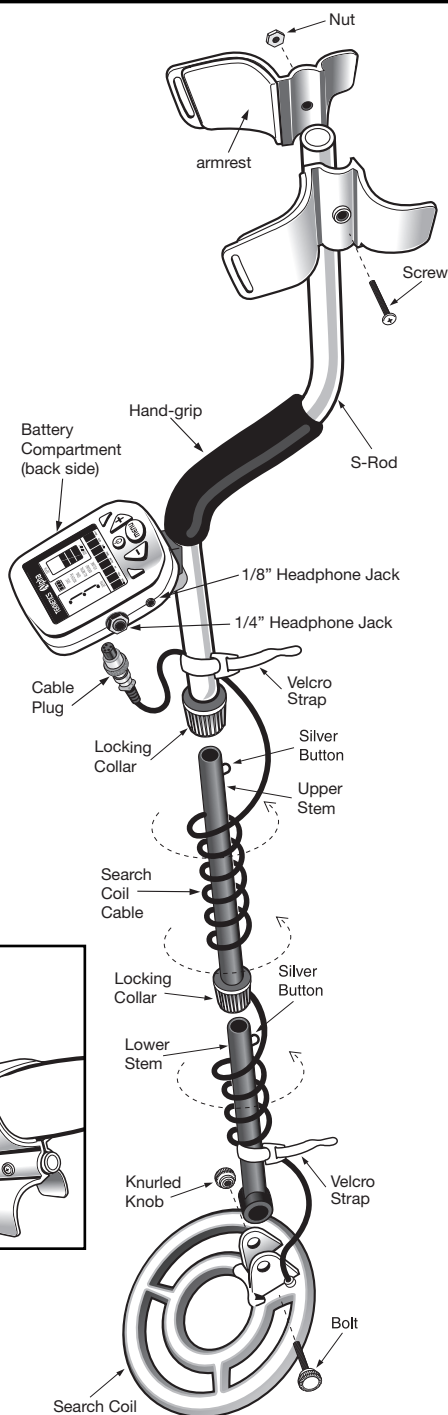
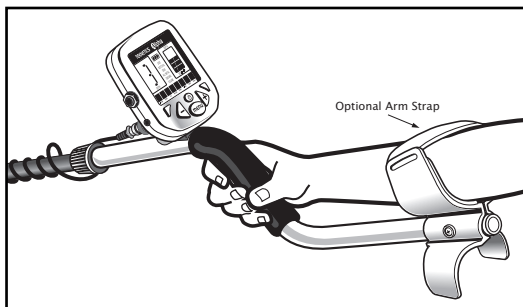
Adjusting the Arm Rest

The arm rest may be moved forward or backwards by removing the single screw and nut, and then repositioning the 2-piece arm rest. Users with shorter arms may find the arm rest more comfortable in the forward position. In order to move the arm rest backwards, the plastic plug must be removed from the aluminum tube.

Arm Rest 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.

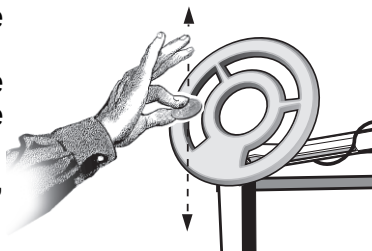
QUICK-START DEMONSTRATION

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 search coil hanging over the edge. Or better, have a friend hold the detector, with the search coil off the ground.
- Keep the search coil 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 search coil back.



III. Power Up. Press .

IV. Wave each object over the search coil.

- 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 search coil to be detected.

V. Then press .

- The word "IRON" disappears from the display

VI. Wave the nail over the search coil.

- 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 ALPHA 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. Electromagnetic Interference (EMI)

The search coil 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.**

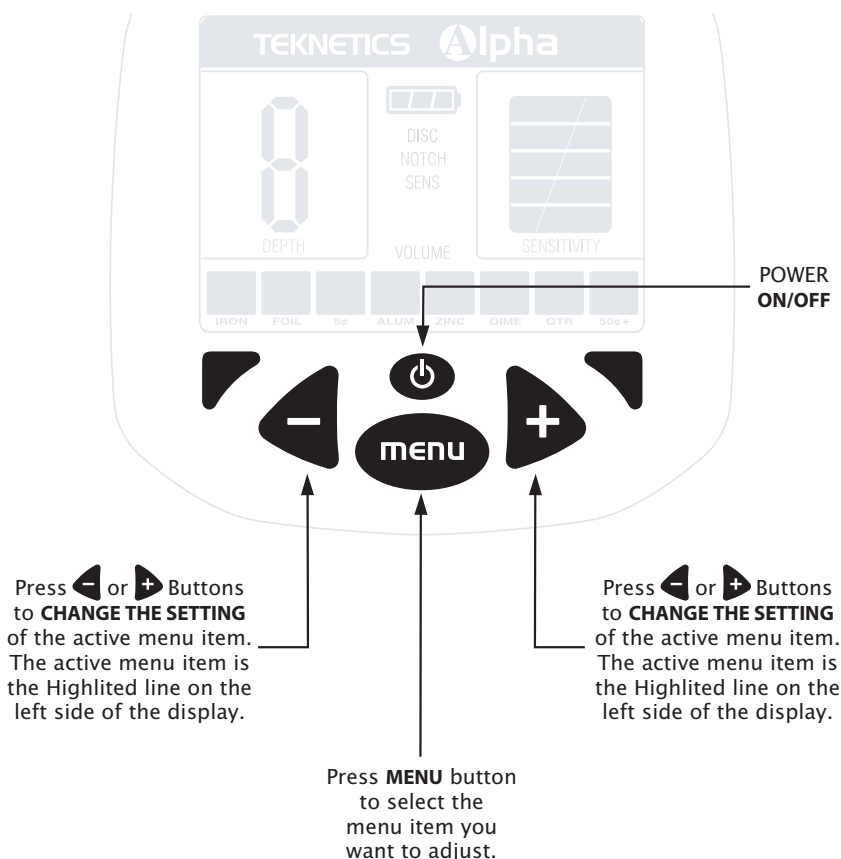
OPERATION and CONTROLS

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

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 search coil 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 Alpha Metal Detector will detect a coin-sized object, like a quarter, to a distance of about 9" from the search coil. 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 Sacajawea dollar coins
Flattened aluminum cans (with a stronger signal than a coin)

LOW TONE	MEDIUM TONE	HIGH TONE
		
Nails & Steel Bottle Caps, & Small Gold	Pull Tabs, Nickels, Smaller & Larger Gold, Zinc Pennies (Post 1982), Many screw caps	Copper, Silver & Brass Copper Pennies (Pre 1982)

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, Qts. 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

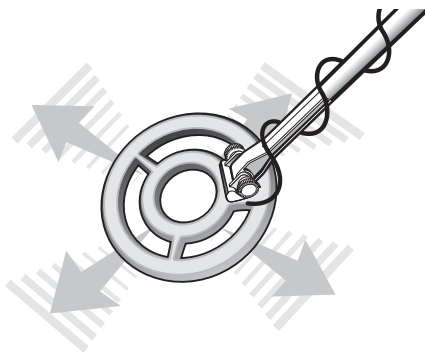
When passing over an object, the indicators will light up and stay illuminated for three seconds. If the depth indication varies with each sweep, try sweeping at different angles; there may be more than one target present. With practice, you will learn the difference between accurate readings, multiple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

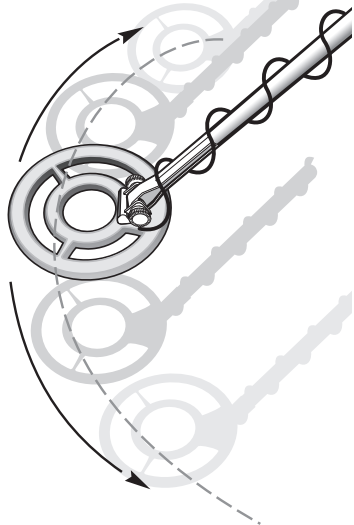
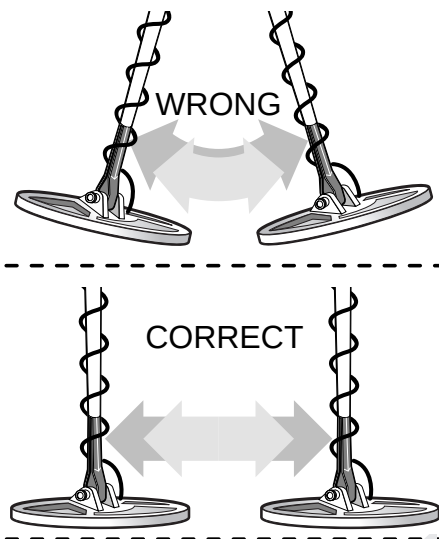
1. Once a buried target is indicated by a good tone response, continue sweeping the coil over the target in a narrowing side-to-side pattern.
2. Take visual note of the place on the ground where the “beep” sounds.
3. Stop the coil directly over this spot on the ground.
4. Now move the coil straight forward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



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

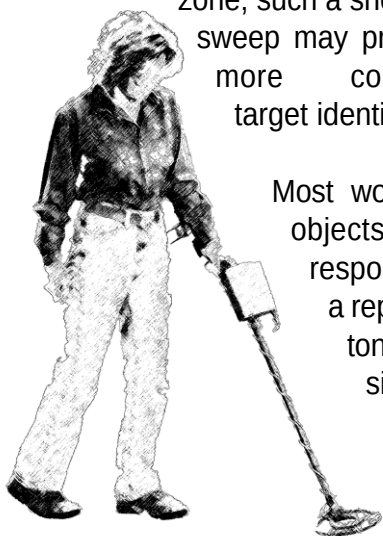
COIL MOVEMENT

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)

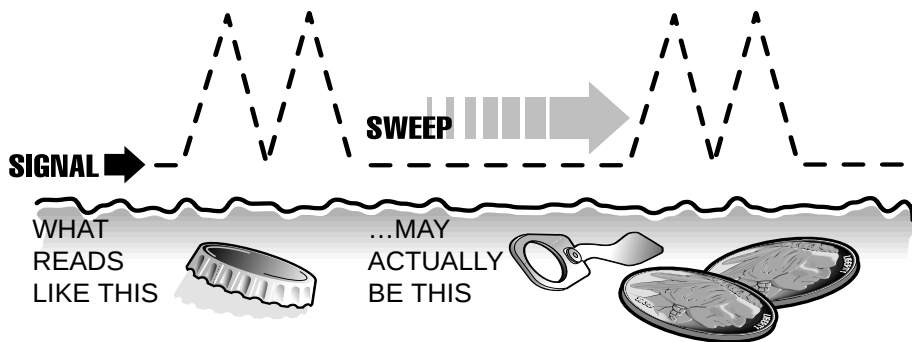
Swing the search coil slowly, overlapping each sweep as you move forward. It is important to sweep the coil at a consistent speed over the ground as you search. After identifying a target, your sweep technique can help in identifying both the location and the nature of the target. If you encounter a 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 at different angles, you may have encountered multiple objects. If you are new to the



IN THE FIELD TECHNIQUES (continued)

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 trashy 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.

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.



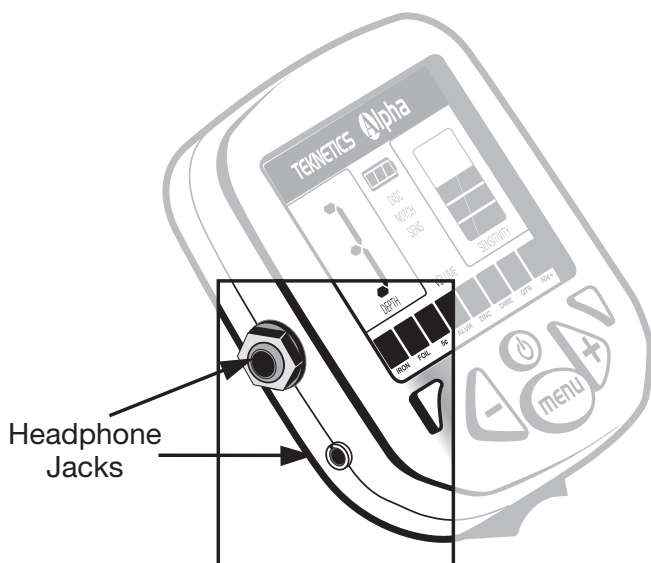
HEADPHONE JACK

The detector has a 1/8" & 1/4" headphone jack on the left side of the housing.

Optional Headphones come standard with a 1/8" stereo plug (the 1/4" adapter is not required).

When the headphone jack is connected, speaker audio is disabled. Using a detector with headphones facilitates detection of the weakest signals and also extends the battery life.

This device is to be used with interconnecting cables/headphone cables shorter than three meters.



TROUBLE SHOOTING

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 • Environmental electromagnetic interference	• Use detector outdoors only • Move away from power lines • Keep 2 detectors at least 20' apart • Reduce sensitivity until erratic signals cease
Constant low tone or constant repeating tones	• Discharged battery • Wrong type of battery	• Replace battery • Use only 9V alkaline battery or rechargeable
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 • Only dig up repeatable signals • Reduce sensitivity
No power, no sounds	• Dead battery • Cord not connected securely	• Replace battery • Check connections

TREASURE HUNTER'S CODE OF ETHICS:

- Always check Federal, State, County and local laws before searching.
- Respect private property and do not enter private property without the owner's permission.
- Take care to refill all holes and try not to leave any damage.
- Remove and dispose of any and all trash and litter found.
- Appreciate and protect our inheritance of natural resources, wildlife and private property.
- Act as an ambassador for the hobby, use thoughtfulness, consideration and courtesy at all times.
- Never destroy historical or archaeological treasures.
- All treasure hunters may be judged by the example you set; always conduct yourself with courtesy and consideration of others

5-YEAR LIMITED WARRANTY

The **Alpha** metal detector is warranted against defects in materials and workmanship under normal use for five years from the date of purchase to the original owner.

Damage due to neglect, accidental damage, or misuse of this product is not covered under this warranty. Decisions regarding abuse or misuse of the detector are made solely at the discretion of the manufacturer.

Proof of Purchase is required to make a claim under this warranty.

Liability under this Warranty is limited to replacing or repairing, at our option, the metal detector returned, shipping cost prepaid to First Texas Products. Shipping cost to First Texas Products is the responsibility of the consumer.

To return your detector for service, please first contact First Texas for a Return Authorization (RA) Number. Reference the RA number on your package and return the detector within 15 days of calling to:

First Texas Products L.L.C.

1465-H Henry Brennan Dr.
El Paso, TX 79936
Phone: 915-225-0333

NOTE TO FOREIGN COUNTRY CUSTOMERS

This warranty may vary in other countries, check with your distributor for details.

Factory warranty follows the channel of distribution.

Warranty does not cover shipping costs.

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Warranty coverage does not include the cost of transporting the detector back to an owner who is located outside of the United States of America.

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TEKNETICS