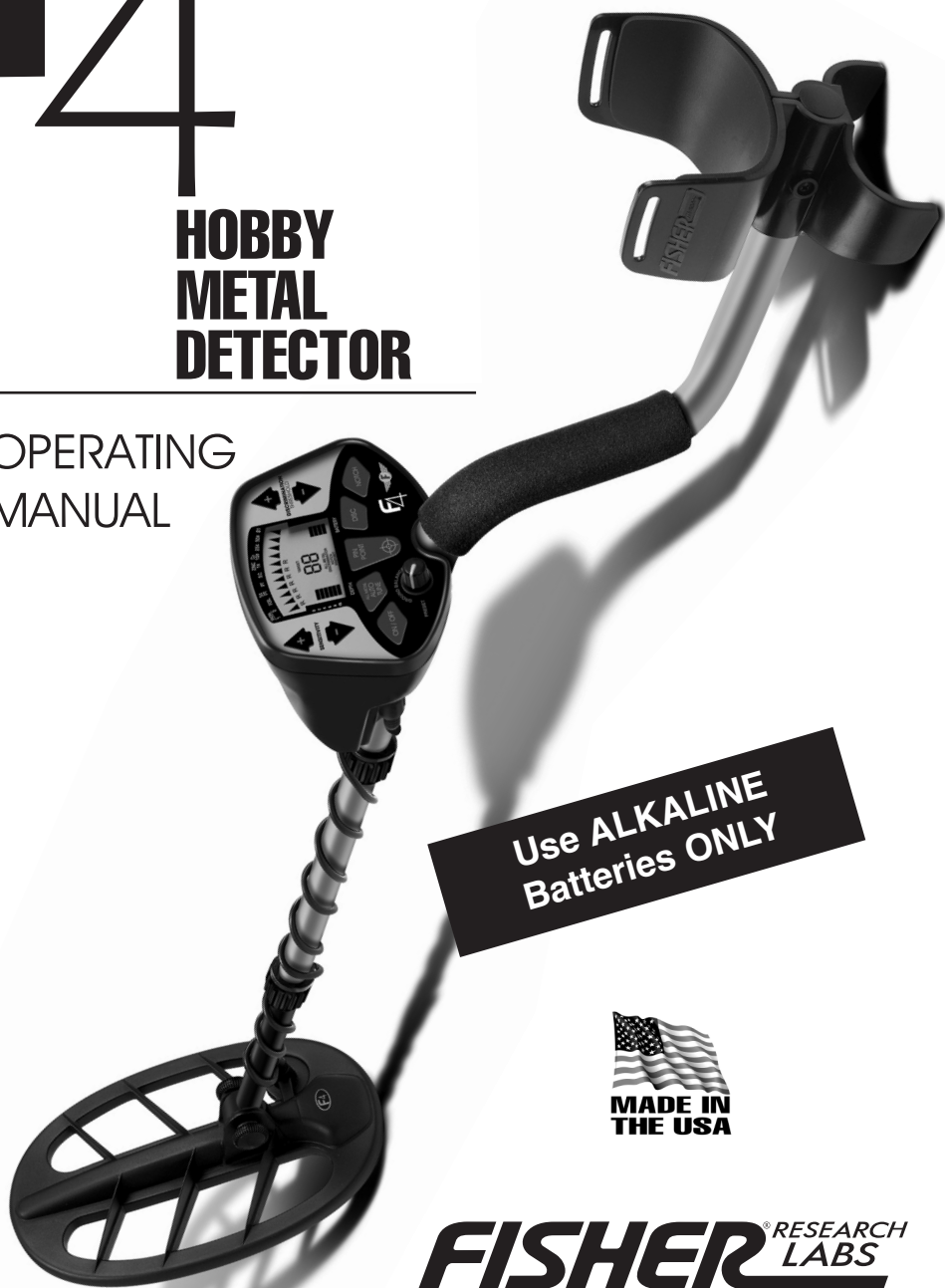


# F4

## HOBBY METAL DETECTOR

OPERATING  
MANUAL



Use ALKALINE  
Batteries ONLY



**FISHER** RESEARCH  
LABS

# TERMINOLOGY

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

## **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 searchcoil'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 essential feature of professional metal detectors. Discrimination allows the user to ignore trash and other 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 to the eye 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 an especially bothersome trash item 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. The Gold Bug incorporates proprietary circuitry and programming to eliminate false signals from severe ground conditions.

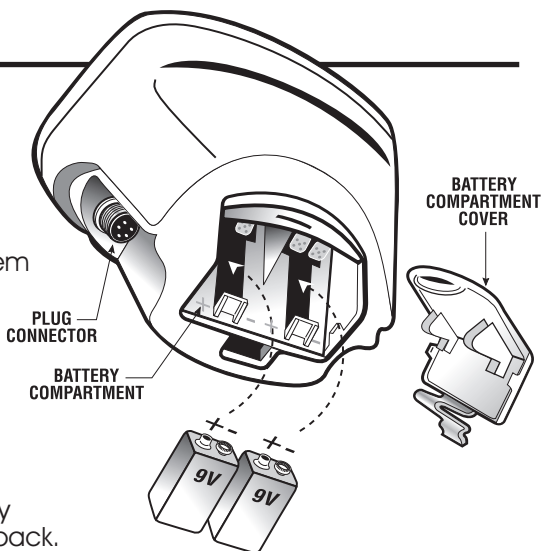
# BATTERIES

Two 9-Volt batteries are supplied with the F2.

The batteries have been inserted backwards in the compartment for storage during transportation. Please remove batteries, turn them around, and install correctly.

Use **ALKALINE** batteries only.

**DO NOT MIX OLD AND NEW BATTERIES.**



## To install the batteries:

- 1 Remove the battery cover by disengaging the clip at the back. **Do not hinge door upward; pull straight back**
- 2 Align the polarity of the batteries correctly, with the positive "+" toward the coil plug connection, as indicated by the + indicator 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.

- 4 Replace the battery door.

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.**

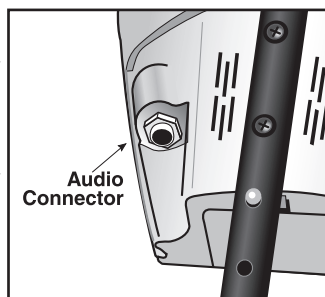
## BATTERY DISPOSAL & RECYCLING

Alkaline batteries may be disposed of in a normal waste receptacle or recycled. Non-Alkaline batteries should be recycled. In the state of California all battery types must be recycled. Please refer to local municipalities for detailed disposal and recycling requirements.

## USING HEADPHONES

Using headphones (not included) improves battery life, and prevents the sounds from annoying bystanders.

It also allows you to hear subtle changes in the sound more clearly, particularly if searching in a noisy location. For safety reasons, do not use headphones near traffic or where other dangers are present. This device is to be used with interconnecting cables/headphone cables shorter than three meters.



# QUICK-START DEMONSTRATION *(continued)*

## VI. Wave the Nail over the Searchcoil

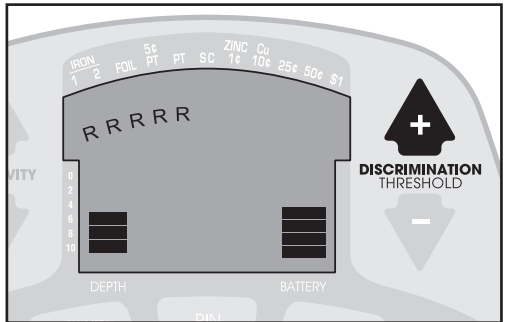
- The Nail will not be detected.
- The Nail has been "Discriminated Out."

## VII. Press the "DISCRIMINATION + " touch pad 3 times.

Five "R"s are now displayed.

## VIII. Wave all objects over the Searchcoil

The Nail and Pull-Tab will not be detected.  
The other objects will be detected with their own distinctive tones.



## IX. Press the NOTCH touch pad.

A flashing "s " will appear under the IRON-1 segment.

## X. Press the DISCRIMINATION + touch pad 3 times.

The flashing "s " will move to the 5¢ segment.

## XI. Press the NOTCH touch pad again

The "R" will disappear under 5¢ segment.

## XII. Wave the nickel over the searchcoil.

The nickel is detected.

## XIII. Wave the penny over the searchcoil.

## XIV. Press the NOTCH touch pad twice.

The arrow under the 1¢ segment will flash & then the "R" will illuminate.

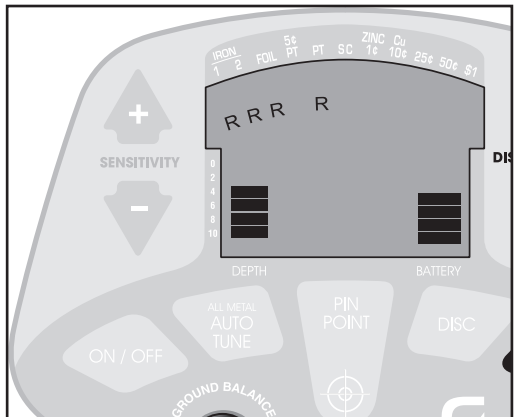
## XV. Wave the penny over the searchcoil again.

The penny (the most recently detected item) is eliminated from detection.

## XVI. Press the PINPOINT touch pad.

Hold one of the metal objects motionless over the searchcoil.

- All Metal objects are now detected.
- One monotone sound indicates the presence of any type of metal.
- A 2-digit numerical display indicates approximate target depth, in inches.



# CONTROL PANEL *(continued)*

## **DISCRIMINATION (THRESHOLD) + AND –**

The **function of this control depends upon the operating mode** you are in before you press these touch pads.

### AUTO TUNE

+ **and** – will change the threshold sensitivity of the detector in this mode. This **Threshold control** operates like a fine adjustment for setting the sensitivity level and the volume of the background audible hum. If you continue to press +, you will cause the detector to make a sound, or hum, when no metal is present. Depending upon skill level and environment, some users prefer to operate in AUTO TUNE with an audible hum active at all times. At such a high “threshold,” faint signals from deeply buried or very small objects will be more apparent to the user.



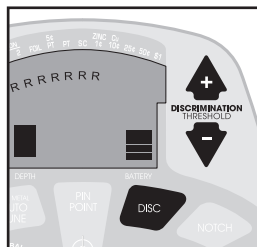
### PINPOINT

Not applicable.

The + **and** – touch pads have no function in this mode.

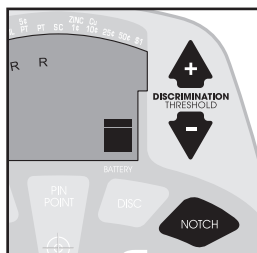
### DISC

+ **and** – will increase or decrease the level of discrimination. Each press of the pads will cause an “R” to appear or disappear on the display. When the “R” appears, the corresponding target category will be eliminated from detection. No audible tone nor target-arrow will appear when the searchcoil passes by an object in a category with an “R” illuminated. A maximum of seven “R”s can be displayed, eliminating objects up to the Zinc-1¢ category. The four right-most target categories cannot be eliminated from detection.



### NOTCH

When Notching-Out a target, the + **and** – pads will move a flashing arrow to the target category selected for notching. This feature allows you to discriminate items selectively across the target spectrum. While the “discrimination” control eliminates all targets from left to right, this control allows you to either add back categories previously eliminated (changing from “R” to “blank”) or to selectively eliminate categories (changing from “blank” to “R”).



# CONTROL PANEL (continued)

As you sweep the searchcoil over a metal object, a *numeric target identification* will appear in the center of the display. At the same time, the *bar graph* on the left of the display will indicate the target depth, in inches. See the scale printed on label to left of the bar graph. This scale is calibrated to coin-sized objects. If the target is larger than a coin, it can be used to approximate relative target depth.

## NOTCH

This control allows you to selectively include or exclude target categories from detection. The NOTCH control can be invoked from any search mode. After selecting the categories to notch-in or notch-out, the detector will always return to the *motion discrimination mode*.

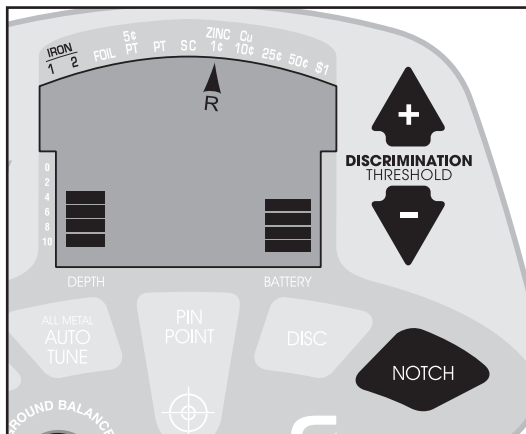
Notching functions in two ways, manual or automatic.

### MANUAL NOTCH

If no target arrows are visible, pressing the NOTCH pad will display an "R" under all target categories currently eliminated and the "s" under Iron1 will flash.

Use the **Discrimination + or -** pads to move the position of the flashing "s". Pressing NOTCH a 2nd time will change the state of the "R" under the flashing "s"; if the "R" was previously illuminated, it will disappear. Conversely, if the "R" was not illuminated, a 2nd press of the NOTCH pad will illuminate the "R", causing this category to be eliminated from detection.

Practice by pressing the NOTCH pad in conjunction with the **Discrimination + and -** pads; their function will quickly become obvious.



### AUTOMATIC NOTCH

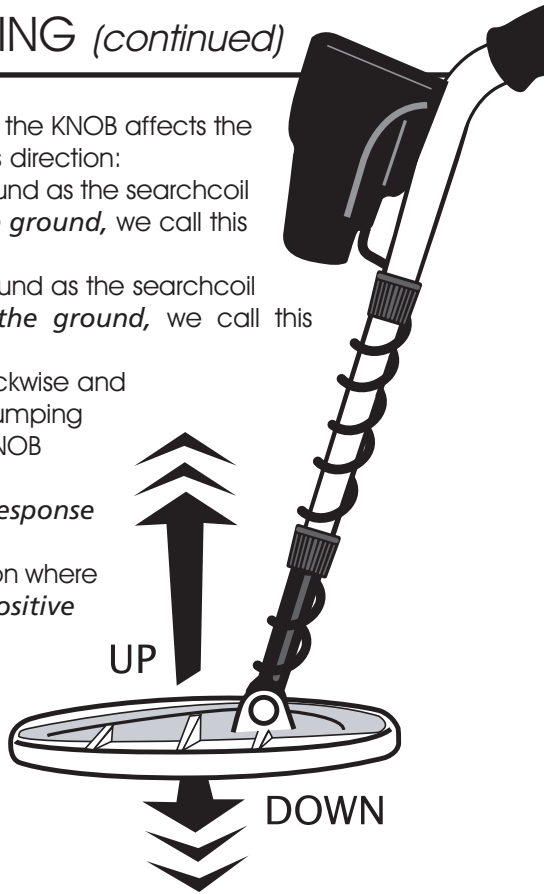
If a target has just been detected and a target arrow is visible, pressing NOTCH will immediately illuminate a flashing "s" under this category.

Press NOTCH a 2nd time to eliminate that target category from detection.

This Automatic Notch feature is a convenient way to quickly eliminate the most recently detected target from future detection.

## GROUND BALANCING *(continued)*

7. Notice that the position of the KNOB affects the sound relative to the coil's direction:
  - a. If you hear a louder sound as the searchcoil is *lowered toward the ground*, we call this *positive response*.
  - b. If you hear a louder sound as the searchcoil is *lifted away from the ground*, we call this *negative response*.
8. Rotate the knob both clockwise and counterclockwise while pumping the coil and notice the KNOB position where the sound changes from *negative response* to *positive response*.
9. Set the KNOB at the position where you achieve a *slight positive response*.
  - i.e. the sound is slightly louder as the coil is lowered toward the ground.



**CAUTION:** cannot ground balance over a metal object.

### Alternate Quick Ground Balancing Method

You may also use the following, simpler method, to ground balance. While not as accurate as the coil-pumping method in AutoTune, it yields an approximate ground balance setting.

Find a patch of ground free of metal

- 1) Set the ground-balance knob at the pre-set position, 100% clockwise.
- 2) Position the searchcoil about 6" over the ground.
- 3) Press PINPOINT button
- 4) Lower searchcoil to within 1" of the ground. Sound will get louder.
- 5) Rotate knob slowly counterclockwise until detector is just silent.
- 6) Rotate knob back slightly clockwise until you hear a low volume sound. At this low-volume setting, the detector is approximately ground balanced.

# DEPTH AND TARGET DISPLAY

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## 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, in inches.

An arrow will illuminate under the target category where an object is best classified, and stay illuminated until another target is identified.

The detector will normally register a repeating, unchanging target identification 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, oxidized metal, or too deep to be classified accurately. With practice, you will learn to unearth only the more repeatable signals.

The segment identifications are highly accurate, when detecting the objects described on the label. However, if you register 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 will register depending upon its size. The smaller the gold object, the further to the left it will register.

**Gold flakes** will register under Iron-1

**Small gold items** will register under Iron or 5¢/PT.

**Medium-sized gold items** will register under PT or S-cap.

**Large gold items** will register under S-cap or Zinc.

**SILVER TARGETS:** Silver objects will normally register to the right of the scale, under 10¢, 25¢, 50¢, or \$1, depending on the size of the object. The larger the object, the farther to the right it will register.

**IRON:** Ferrous objects will register on the far-left side of the target identification scale. 1, or 2 indicates the relative size of iron objects. Small nails, for instance, will usually illuminate the Iron-1 arrow whereas large structural ferrous objects will usually illuminate the Iron-2 arrow.

Objects in this category could be worthless scrap, or a more valuable iron relic.

**5¢/PT:** Nickels and most newer pull-tabs(those that stay attached to the can) will register here.

**PT(pull-tabs):** Pull-tabs from older beverage cans will register here. Few newer pull-tabs will also register here. Many gold rings will also register here.

**SC (Screw Caps):** Screw caps from glass bottles will register here. Large gold rings, like a class ring, could also register here. Some non-U.S. coins will also register here.

**ZINC/1¢:** Newer pennies (post-1982) will register here. Many non-U.S. coins of recent vintage will also register here.



# DD COIL CHARACTERISTICS

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A DD coil is superior to a concentric coil, but sometimes requires a different sweep technique.

Advantages are

1. Better target separation
2. Superior performance in highly mineralized ground
3. Broader Sweep- cover more ground with each sweep

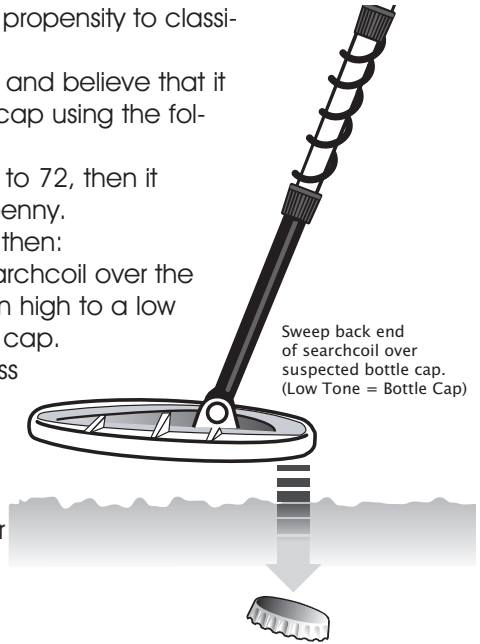
If you experience multiple responses on a shallow target, you can raise the coil, or narrow the sweep over known targets to only intersect the center section of the coil.

## BOTTLE CAPS

The disadvantage of the DD coil is its propensity to classify steel bottle caps as coins.

If you hear a high tone in DISC Mode and believe that it is a coin, make sure it is not a bottle cap using the following method.

1. If a repeatable ID# around 68 to 72, then it should be a dime or copper penny.
2. If not in the range of 68 to 72, then:
  - a. Sweep the back end of searchcoil over the target. If tone changes from high to a low tone, it is probably a bottle cap.
  - b. Sweep searchcoil fast across target.
    1. If tone and ID-value drop, it is probably a bottle cap.
    2. If a bottle cap, the faster you sweep, the lower the tone.



## SWEET SPOT

The "center" of the DD-Coil is elongated (elliptical) from top to bottom of the coil. With some practice you will find where the center of this ellipse lies on your coil. Use this center point as a reference in pinpointing.

# SEARCH TECHNIQUES *(in DISC Mode)*

## Target Verification

After detecting a target, do the following:

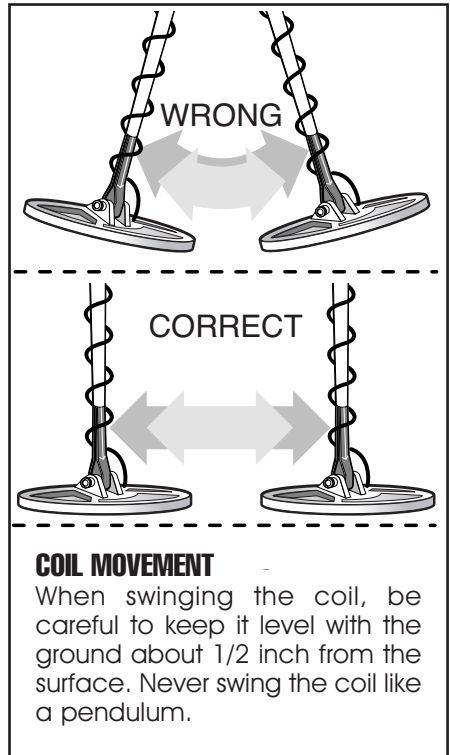
1. Walk around the target in a circle.
2. While circling the target, continue sweeping the searchcoil across the target.
3. Sweep once every 30° or 40° of the circle.

If the tone does not change and the Target-ID value is consistent as you circle the target, you can be highly confident of the target's identification.

If the tone or Target-ID changes as you circle the target, you may have multiple targets or an irregularly shaped object.

If the tone completely disappears at different angles, the target may be trash or a low-value metal.

If you are new to the hobby, dig all targets. With practice in the field, you will soon identify audible and visual target feedback with certain types of metal objects.



## Pinpointing process in motion modes:

1. Sweep over target in narrowing side-to-side pattern
2. Take visual note of spot on ground where "beep" occurs.
3. Step 90° to the side of the target
4. Sweep coil over same area, at 90° to 1st sweep pattern.
5. This pinpoints the target location with an "X"

# 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 leave no 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

According to FCC part 15.21 Changes or Modifications made to this device not expressly approved by the party responsible for compliance could void the users authority to operate this equipment.  
This device complies with FCC Part 15 Subpart B Section 15.109 Class B.

## 5-YEAR LIMITED WARRANTY

Register your warranty on-line for a chance to win a  
**FREE DETECTOR.**  
For details, visit [www.fisherlab.com](http://www.fisherlab.com)

The F4 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 Fisher Labs. Shipping cost to Fisher Labs is the responsibility of the consumer.

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

**FISHER** RESEARCH  
LABS

1465 Henry Brennan Dr.  
El Paso, TX 79936  
Phone: 915-225-0333 ext.118

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.

### **NOTE TO CUSTOMERS OUTSIDE THE U.S.A.**

This warranty may vary in other countries, check with your distributor for details. Warranty does not cover shipping costs.

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Made in the USA from USA and imported parts.

# NOTES

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