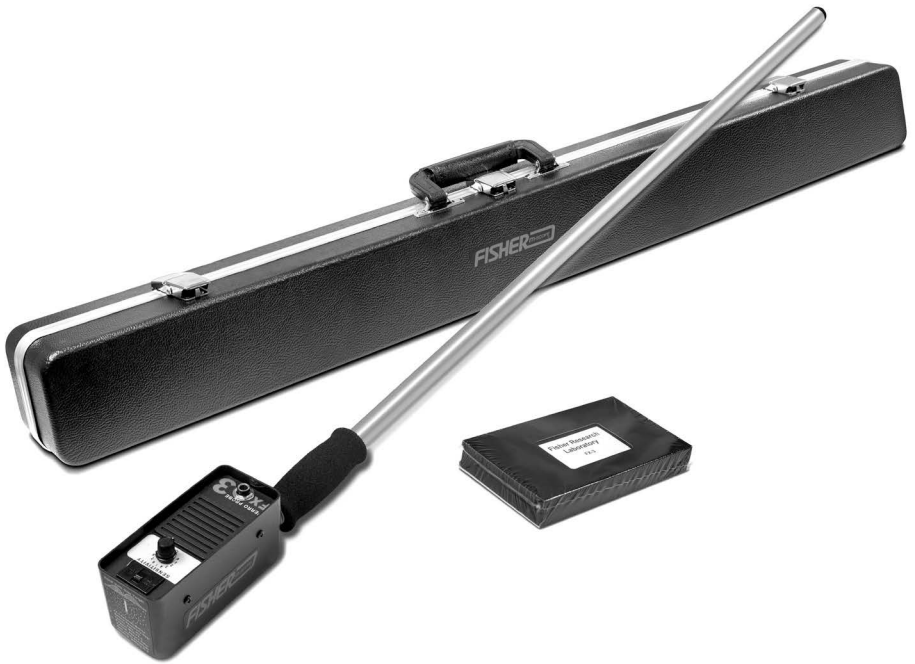




Fisher Labs

**FX-3**

Ferro Magnetic Probe



Test Equipment Depot - 800.517.8431 - 99 Washington Street Melrose, MA 02176

TestEquipmentDepot.com

**Operating Manual**

**FISHER RESEARCH LABORATORY**

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# INTRODUCTION

The FX-3 FERRO PROBE is a precision state-of-the-art differential induction magnetometer designed to locate survey markers, pipes, valves, well casings, septic tanks and a variety of other ferromagnetic objects. It is also used by relic and treasure hunters to seek out buried objects far beyond the reach of ordinary metal detectors also use it.

The FX-3 is similar to other magnetic locators in that it has two sensors, which respond only to the magnetic field of ferromagnetic objects, ignoring all other materials (copper, aluminum, brass, etc.). It also has three very significant differences:

1. The FX-3 is a "motion" detector. It responds only when it (or the target) is in motion.
2. The FX-3 "nulls" over targets. As a target is approached, the output tone increases in volume and pitch then momentarily disappears as it passes over the target.
3. The FX-3 costs less. Less to manufacture, less to purchase and less to use. Advanced solid state technology combined with Fisher engineering has made possible a one knob, one battery locator so reliable that it's backed by a 2 year warranty.

Advanced, solid-state technology combined with Fisher engineering has made possible a reliable one knob, one battery locator.

Fisher Research Laboratory has been producing rugged, high quality metal detectors longer than any company in the world. The FX-3 is a product of that proud heritage. Read this instruction manual carefully and spend sometime practicing. Treat it as you would any fine instrument and the FX-3 should take care of your ferromagnetic locating needs for years to come. If you have any questions, problems or suggestions, please feel free to phone or write.

# DESCRIPTION

- 1. Carrying Case:** Heavy duty, impact resistant, foam lined.
- 2. Sensor Probe:** Waterproof to control housing.
- 3. Stereo Headphones (Optional):** For use in noisy areas or areas where you don't want to attract attention. Heavy-duty coil cord, dual volume controls.
- 4. Handle Grip**
- 5. Headphone Jack:** For optional stereo headphones. Accepts most stereo/mono headphones with 1/4-inch plug. Speaker is automatically disconnected when headphones are plugged in.
- 6. Speaker**
- 7. On-Off/Sensitivity Control:** Controls power and sensitivity level.
- 8. Battery Access Panel:** Remove this door to replace 9-volt transistor battery.

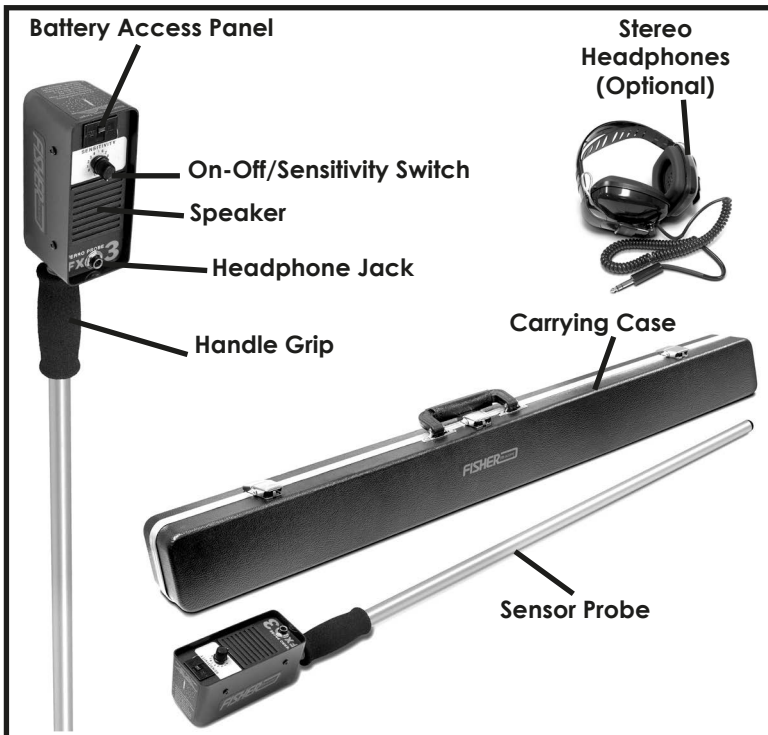


Figure 1. FX-3 and Accessories

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# TURN ON AND BATTERY TEST

1. Lay the FX-3 on a flat surface face up, or hold it motionless and point it upward away from any metal objects.
2. Turn the on-off/sensitivity control to zero.
3. A soft "tick... tick..." will indicate a good battery and properly working electronics. No sound or very, very slow ticking indicates a dead or weak battery.

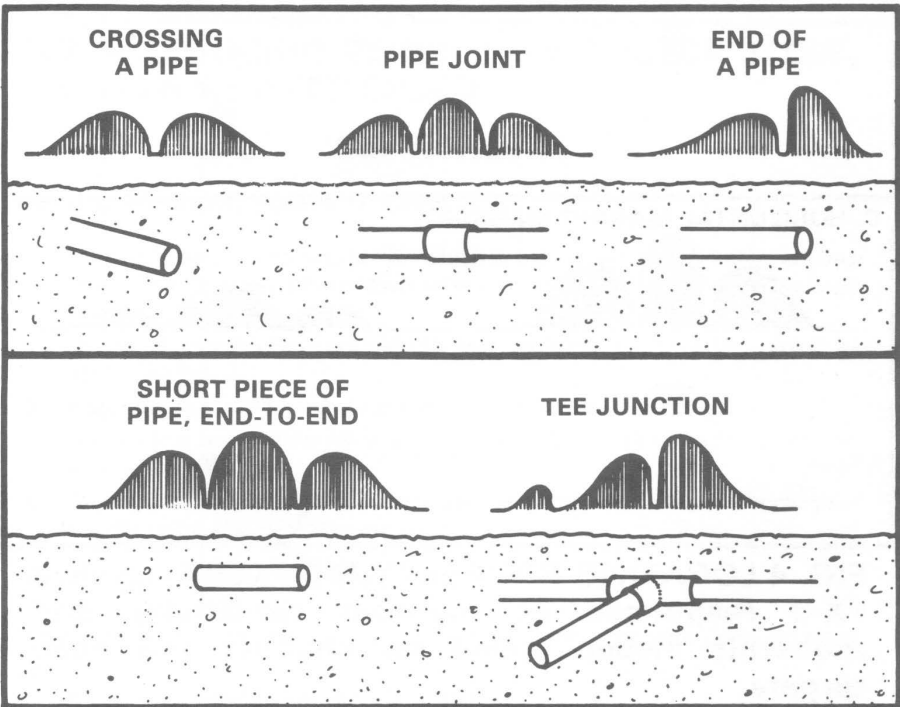
## PRETEST

1. Scatter a few sample targets on the ground at least two feet apart such as a nail, a piece of rebar and a length of iron pipe.
2. Turn the on-off/sensitivity control to "5" and grasp the handle grip with the control panel facing downward.
3. Hold the probe tip two to three inches off the ground and move it slowly over the samples. As you approach each target the "tick-tick" will give way to a solid tone increasing in volume and pitch. As the probe tip passes directly over the target, the tone will suddenly disappear and then return as it leaves the target.



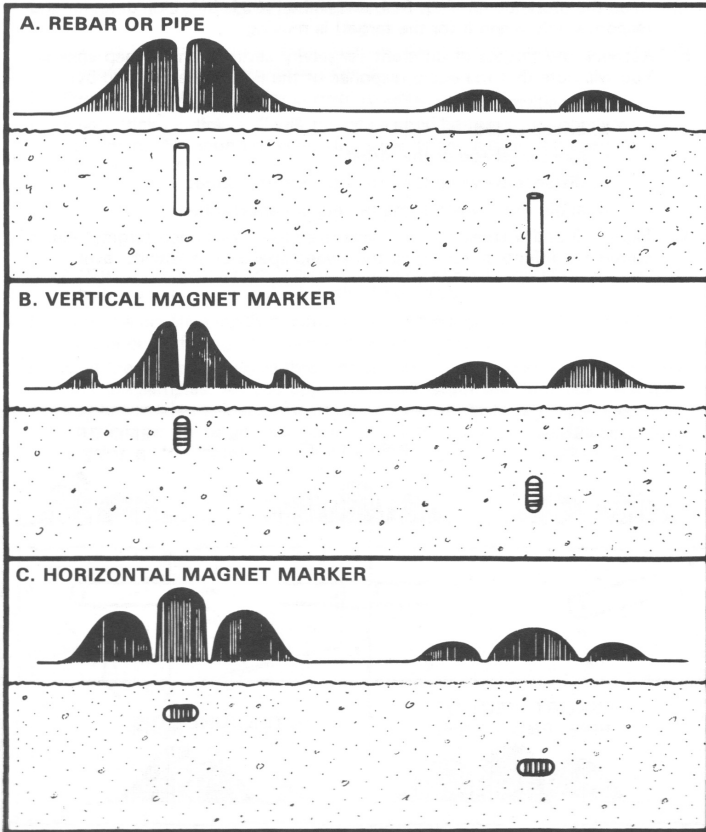
**Figure 2.** Normal search position and search pattern

4. Keep the probe tip moving. Remember the FX-3 is a motion detector and responds only when it (or the target) is moving.
5. Recheck the targets at different sensitivity settings and sweep speeds. You will note that the audio response of the FX-3 is determined by:
  - a. Sensitivity level
  - b. Sweep speed
  - c. Size and shape of the target
  - d. Distance between the probe tip and the target
  - e. Angle from which some targets are approached
6. Figures 3 and 4 show some typical responses for buried targets. Fig. 5 shows the effects of changing

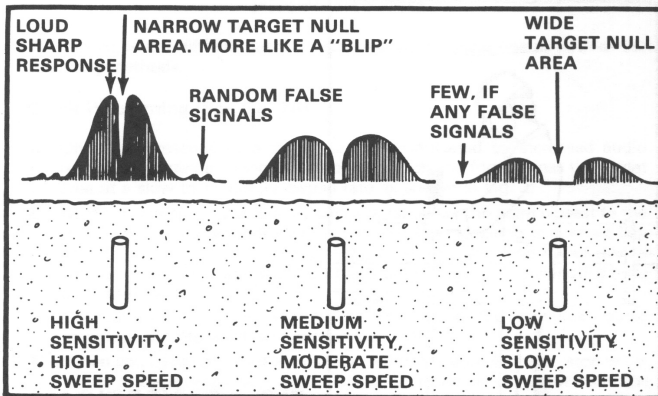


**Figure 3.** Tracing Pipes -Typical FX-3 responses at medium sensitivity and moderate sweep speed.

PRETEST



**Figure 4.** Locating Property Markers -Typical FX-3 responses at medium sensitivity and moderate sweep speed for shallow and deep targets.



**Figure 5.** Reducing sensitivity and/or slowing down sweep speed.

# SEARCHING

## Normal Sensitivity Search Method

1. Set the sensitivity control at “5” which is considered the normal operating point. You may set it even lower when searching for very shallow or large objects.
2. Sweep the probe tip from side to side, holding the FX-3 face down.
3. Keep the probe tip close to the ground and keep it moving.
4. Search in a methodical manner. Pay attention to where you’re going and where you’ve been.
5. If you don’t locate the target, increase the sensitivity level and repeat your search using the following method.

## High Sensitivity Search Method

This method of searching is used for very deep or small targets.

1. Set the sensitivity level at “6” or higher.
2. Hold the FX-3 vertically (as shown in the illustration on the next page) and move it slowly from side to side. The vertical position and slower sweep speed will reduce the number of false signals caused by nearby ferrous objects and buried trash.
3. Keep the probe tip moving and make sure you cover the entire search area.

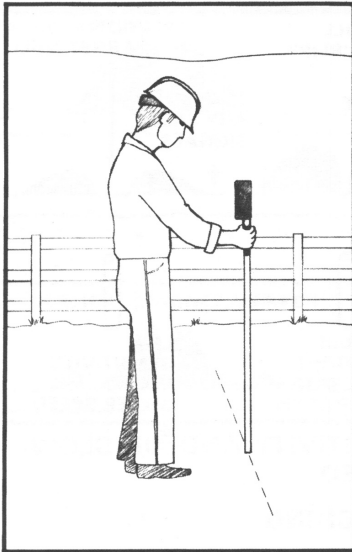
## Searching Tips

1. The FX-3 is an extremely sensitive instrument. Don’t set the sensitivity control any higher than necessary. The higher the sensitivity level, the more false signals you’ll receive from buried trash, nearby objects and even the earth’s magnetic field.
2. If there are large ferrous objects (autos, steel buildings, steel fences, etc.) near the search area, you may obtain better results by turning down the sensitivity control, keeping the probe tip close to the



ground, walking parallel to the object and holding the FX-3 vertically.

3. The FX-3 is just as sensitive near the handle grip as it is at the probe tip. To prevent false signals in the grip area you should:
  - a. Hold the FX-3 away from your body - i.e. away from ferrous belt buckles, key rings, etc.
  - b. Remove your watch or at least put it on your other wrist.
  - c. Remove any large ferrous objects from your person (hunting knife, tools, etc.).
4. Headphones can be very helpful in noisy areas or where you don't want to attract attention. The FX-3 is extremely sensitive to the headphone speakers however, and may detect their magnetic field at high sensitivity levels. Always keep the FX-3 at least



**Figure 6.** Vertical Position  
- Used for searching at high sensitivity levels and precise pinpointing.

# PINPOINTING

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Pinpointing is not difficult, but it does take practice using one or both of the following methods.

## Quick Pinpointing

1. Once the presence of a target has been indicated by increased audio response, continue moving the probe tip back and forth across the target area at a slow to moderate sweep rate.
2. As the probe tip passes directly over the target (or the point closest to the target) the audio response will null very briefly resulting in a short blip sounding almost like a “hiccup”. If you are passing lengthwise over a short horizontal target (nail, short piece of pipe, etc.) you will notice nulls over both ends.
3. Gradually narrow your search pattern around the strongest audio response and the most pronounced null area.
4. When you have narrowed your sweep width to about 6 inches, stop in the center of the sweep and mark the spot directly below the probe tip as the probable target location.

## Precise Pinpointing

1. Once the presence of the target has been indicated by increased audio response, hold the FX-3 vertically.
2. Move the probe tip slower and slower across the target area in a narrower and narrower search pattern.
3. The target has been pinpointed when the search pattern has been narrowed to the “target null area” which becomes wider as the probe tip slows down or the sensitivity is reduced. The FX-3 will not respond while moving the probe tip left to right or front to back in this area, but will sound off with a sharp increase in tone as it moves away from the target.

## Pinpointing Tips

1. For large or shallow targets producing a very sharp audio response, lower the sensitivity level and/or raise the probe tip.
2. For small or deep targets producing a faint audio response, increase the sensitivity level, lower the probe tip closer to the ground and/or increase your sweep speed.
3. Practice over known buried targets.

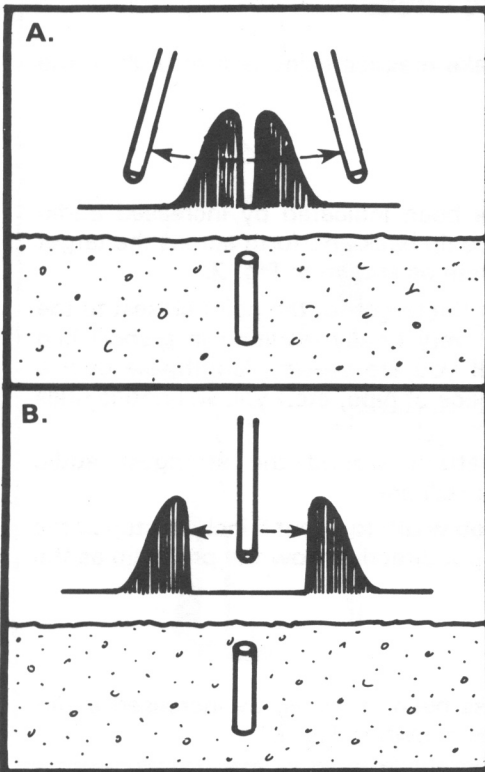


Figure 7. Pinpointing.

### A. Quick Pinpointing:

Keep the probe moving at a moderate rate until you have centered the null and strongest response within a 6" wide sweep pattern.

### B. Precise Pinpointing:

Hold the FX-3 vertically and reduce sweep speed and/or sensitivity until you can move the probe tip back and forth and from side to side within the target null area.

# BATTERY REPLACEMENT

As long as the FX-3 produces a ticking sound, the battery is okay. As the battery weakens, the ticking will become slower. When the ticking stops, it's time to replace the battery, however, the FX-3 will continue to operate for at least another 30 minutes.

1. Remove the hinged battery access door at the top of the control panel.
2. Replace the battery with a 9V general purpose battery NEDA 1604. Be sure to observe the polarity markings above the battery compartment. Carbon-zinc batteries will provide satisfactory operation for most applications. However, for extended battery life and/or sub-freezing temperatures always use alkaline batteries.

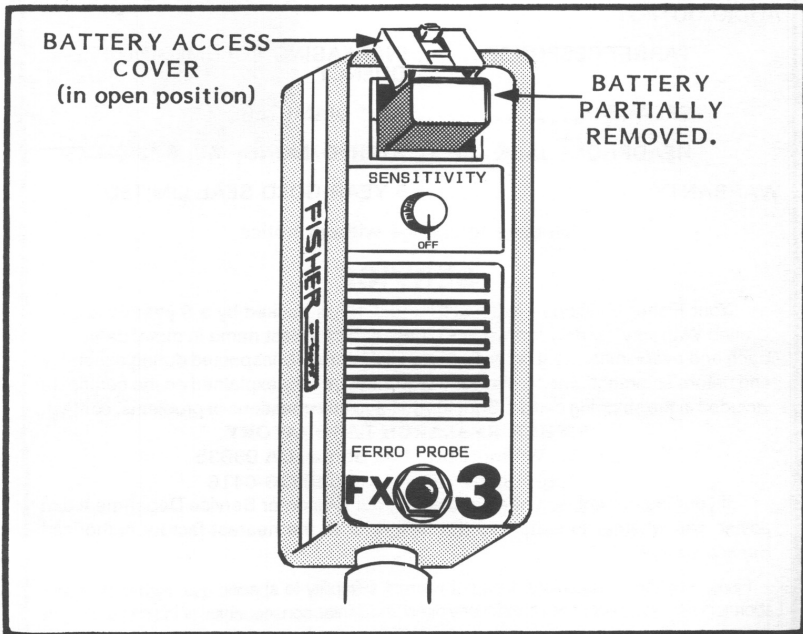


Figure 8. Battery Replacement

# SPECIFICATIONS<sup>1</sup>

Weight ..... 2 1/2 pounds<sup>2</sup>  
Length ..... 42 1/4 inches<sup>2</sup>  
Waterproof Length ..... 36 inches<sup>2</sup>

Types of Operation ..... Differential induction  
Magnetometer, VCO output, Motion Search Mode<sup>3</sup>

Metals Detected ..... Ferromagnetic only (Iron and steel)  
Audio ..... Output  
Target Response ..... Increasing Frequency and Volume  
Speaker ..... 1 1/4 Inch Diameter  
Headphone Jack ..... Stereo/Mono, 1/4 inch, 8-16 Ohms  
Single Control ..... On/Off Sensitivity

Carbon-Zinc Battery ..... 40° F to 122° F (4° C to 50° C)  
Alkaline Battery ..... 0° F to 122° F (-18° C to 50° C)  
Battery (1) ..... 9-volt Transistor, NEDA 1604

Battery Life ..... Carbon Zinc ..... 20 to 30 hours<sup>2</sup>  
Alkaline ..... 30 to 40 hours<sup>2</sup>

## Accessories

Standard Equipment ..... Hard carrying case  
Optional Equipment ..... Stereo Headphones

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### NOTES:

1. Subject to modification or improvement without notice.
2. Approximate.
3. The FX-3 is a "motion" detector, meaning that the probe tip must be moving at least slightly to detect a target.

# USING HEADPHONES

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

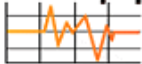
It also allows you to hear subtle changes in the sound more clearly, particularly if searching in a noisy location. For safety reasons, do not use headphones near traffic or where other dangers are present. This device is to be used with interconnecting cables/headphone cables shorter than three meters.





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