CM II 10

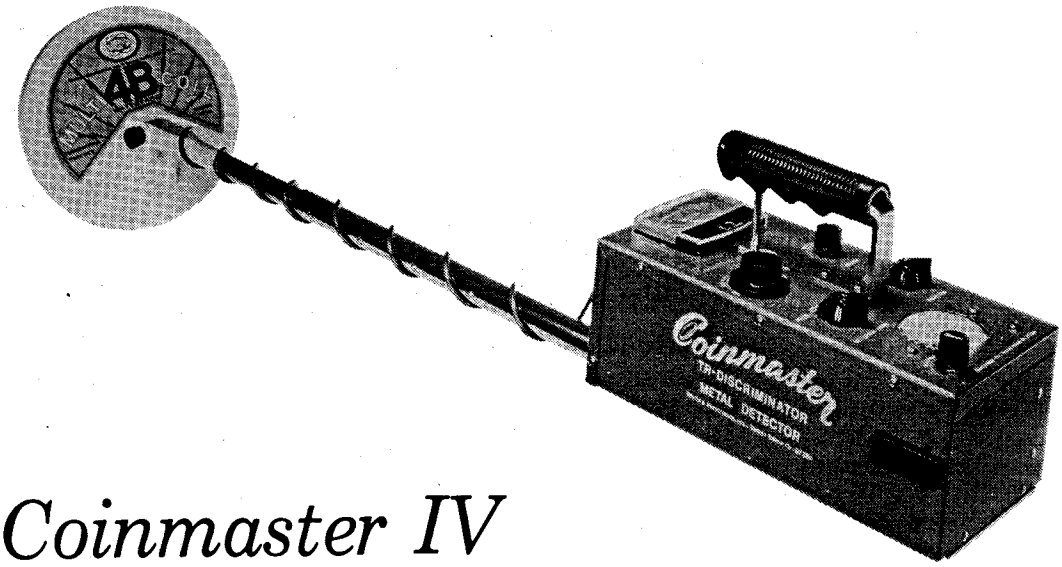
White's Electronics, Inc.

1011 PLEASANT VALLEY ROAD SWEET HOME, OREGON 97386

OPERATORS INSTRUCTIONS

Manufacturers of The World's Largest Line of Mineral and Metal Detectors

MINERAL AND METAL DETECTORS | ELECTRONIC MAGNETOMETERS | SUPER GEIGER AND SCINTILLATION COUNTERS | ULTRA VIOLET LIGHTS



Coinmaster IV

Discriminator

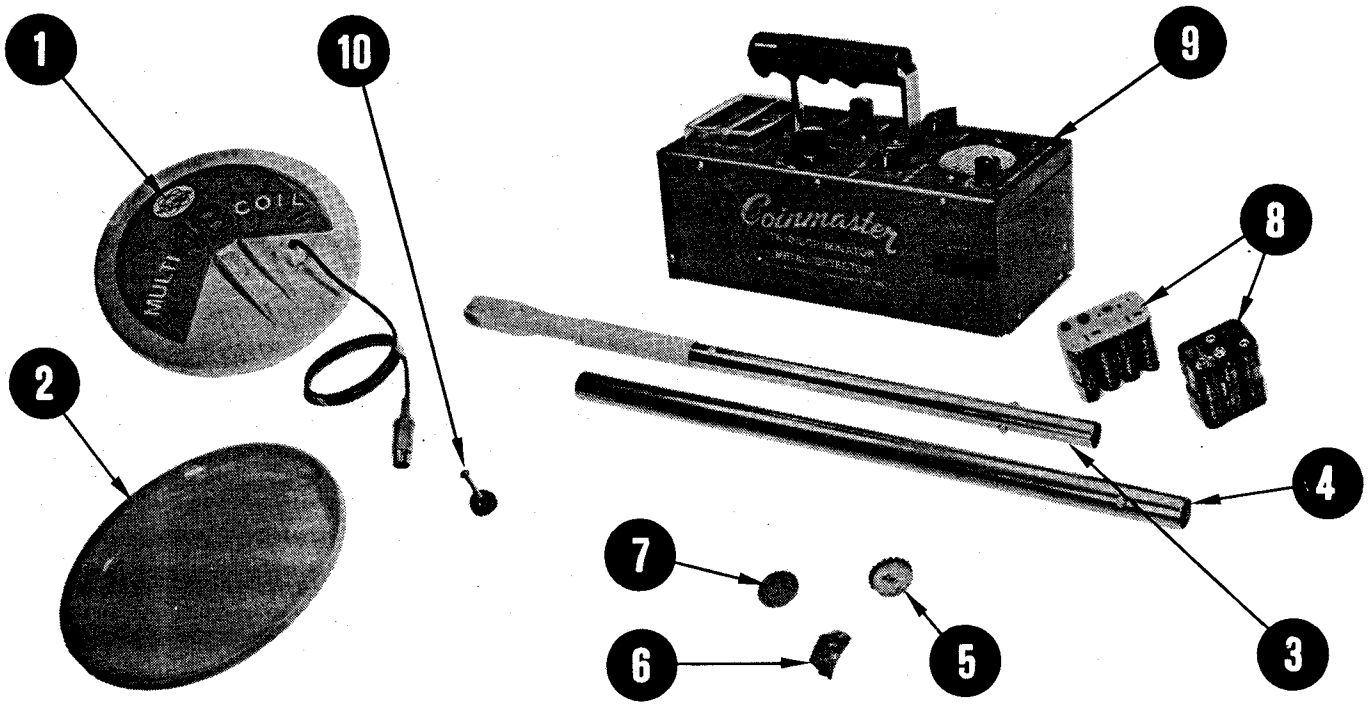
Introduction

There are two types of metal detector currently available: Beat Frequency Oscillators (BFO) and Transmitter-Receivers (TR). For many years the BFO was the best available, but recent developments have made the TR instruments much more sensitive, reliable, and easier to use. The Coinmaster IV Discriminator by White's Electronics incorporates the very latest of these advances and is unexcelled for performance among metal-mineral detectors.

Developed primarily for the "coinshooter", the Coinmaster Discriminator can be tuned to reject such unwanted items as bottlecaps, tinfoil, and nails. The coinshooter equipped with this instrument can therefore spend much more time digging up valuable coins and less time chasing after gum wrappers and other refuse.

Unlike most competitive equipment, the Coinmaster IV is actually three metal detectors in one. In the NORMAL MODE it is a highly sensitive metal-mineral detector. When the operator selects AUTO MODE, the Coinmaster will surpress most of the unwanted false signals caused by highly mineralized soil conditions. In the DISC MODE the "Coin Four" assumes its discriminator role. No other detector on the market can match this performance.

This USER'S MANUAL, along with White's METAL DETECTOR FIELD GUIDE, is designed to help you get the most out of your Coinmaster IV Discriminator. Read the instructions carefully, practice often, and take care of your instrument - you have the finest equipment money can buy. The rest, of course, is up to you!



Unpacking Your "Coin Four"

When you unpack your Coinmaster Discriminator, compare what you've got with the picture above. Fill out the Warranty Card and mail it within ten days of purchase.

IF ANY PARTS ARE MISSING, CONTACT YOUR DEALER AT ONCE. If you cannot do that, note the problem on the Warranty Card when you send it back to the factory. Your problem will receive prompt attention. In any case, this is what you should have:

COINMASTER IV DISCRIMINATOR

1. Detector Loop
2. Protective Loop Cover
3. Lower Loop Rod
4. Upper Loop Rod
5. Bottlecap
6. Mineral sample
7. Coin Sample
8. Battery Packs (2)
9. Coinmaster IV Discriminator
10. Loop Bolt and Thumbnut.

SHIPPING DAMAGE

If your Coinmaster Discriminator appears to have been damaged in shipment, contact the CARRIER for a SHIPPING DAMAGE INSPECTION. Save the original packing and all labels - these will be required for insurance coverage.

Assembly

I. Detector Loop to Loop Rod (Figure 1):

A. Put white plastic end of Lower Loop Rod (1) between mounting flanges of Detector Loop (2); line up bolt holes.

B. Gently push Loop Rod Bolt (3) through holes; screw Thumbnut (4) onto Loop Rod Bolt (3).

C. Tighten Thumbnut (4) FINGERTIGHT.

CAUTION!!
DO NOT USE PLIERS ON THUMBNUT - TIGHTEN IT FINGERTIGHT ONLY!

DOUBLE CAUTION!!
DO NOT DISTURB LOOP CABLE CONNECTOR [5] IN ANY WAY - LOOP CABLE CONNECTOR HAS A WATER-TIGHT SEAL THAT WILL BE DE-STROYED IF YOU TRY TO TIGHTEN IT OR LOOSEN IT. THIS WILL VOID YOUR WARRANTY!

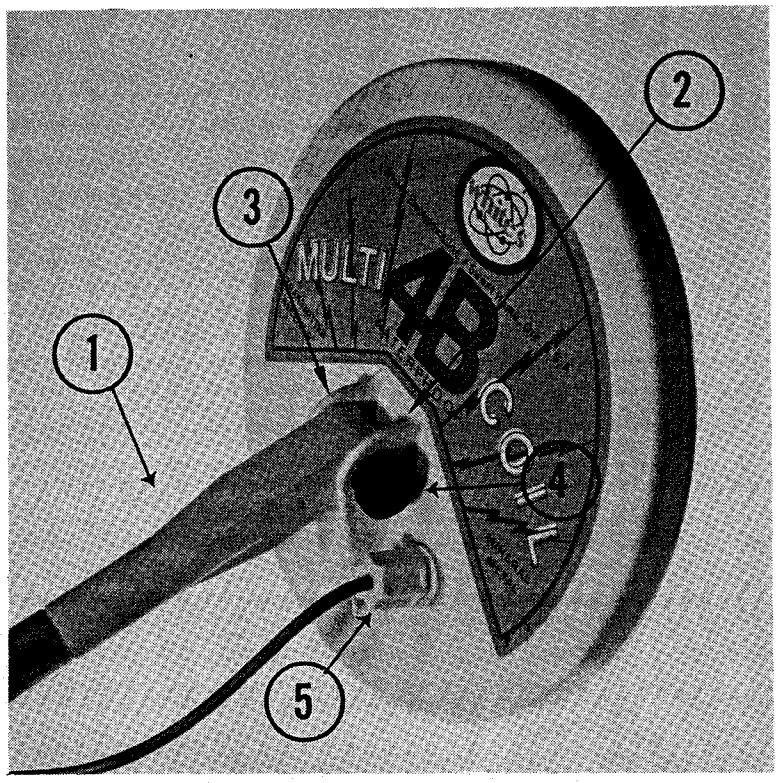


Figure 1

II. Lower Loop Rod to Upper Loop Rod (Figure 2):

A. Insert Lower Loop Rod (1) into Upper Loop Rod (6); press Retainer Buttons (7) so that they go inside upper rod.

B. Line up the Retainer Buttons (7) with one of four sets of holes (8) in Upper Loop Rod (6) they will 'click'' into place.

C. Which set of holes (8) you choose will be determined by how tall you are and what you find to be comfortable when you start to use your Coinmaster Discriminator.

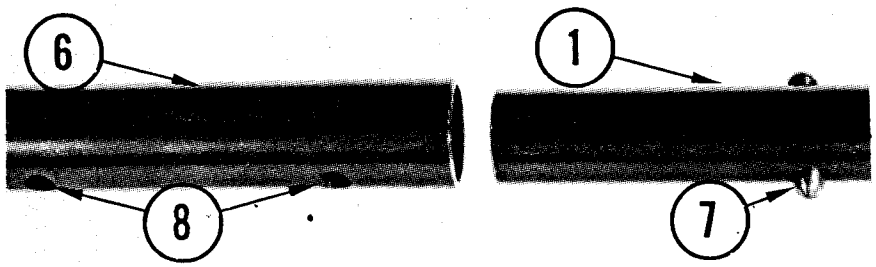


Figure 2

III. Loop Rod to Instrument Case (Figure 3):

A. Slip the Loop Rod (6) inside the Loop Rod Holder (9) on the bottom of the Instrument Case (10); press the Retainer Buttons (11) and push them inside the Loop Rod Holder (9).

B. Line up the Retainer Buttons (11) with the holes on the SIDES of the holder (12); the holes on the bottom are the WRONG HOLES.

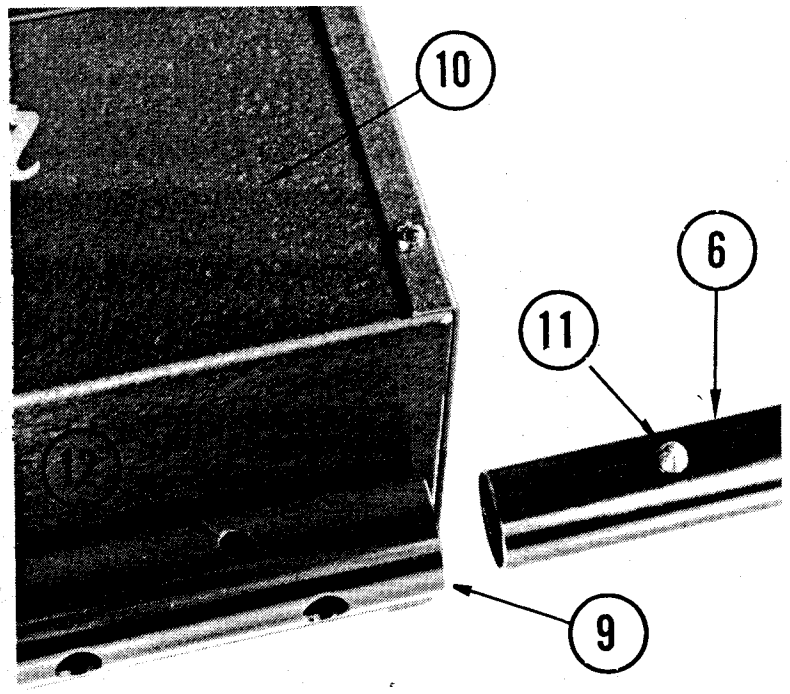


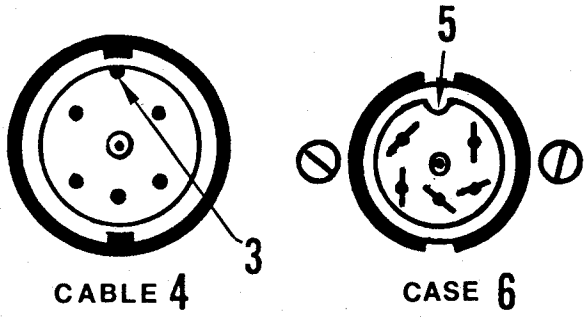
Figure 3

IV. Connecting Loop Cable (Figure 4 & 5):

A. Wrap Loop Cable (1) around Loop Rod (2) as in picture on Page 1.

B. Line up Ridge (3) on inside of Twistlock Connector (4) with Slot (5) on inside of Plug (6) on front of Instrument Case (7).

C. Insert Twistlock Connector (4) into Plug (6) taking care not to use too much force - it should go in very easily.



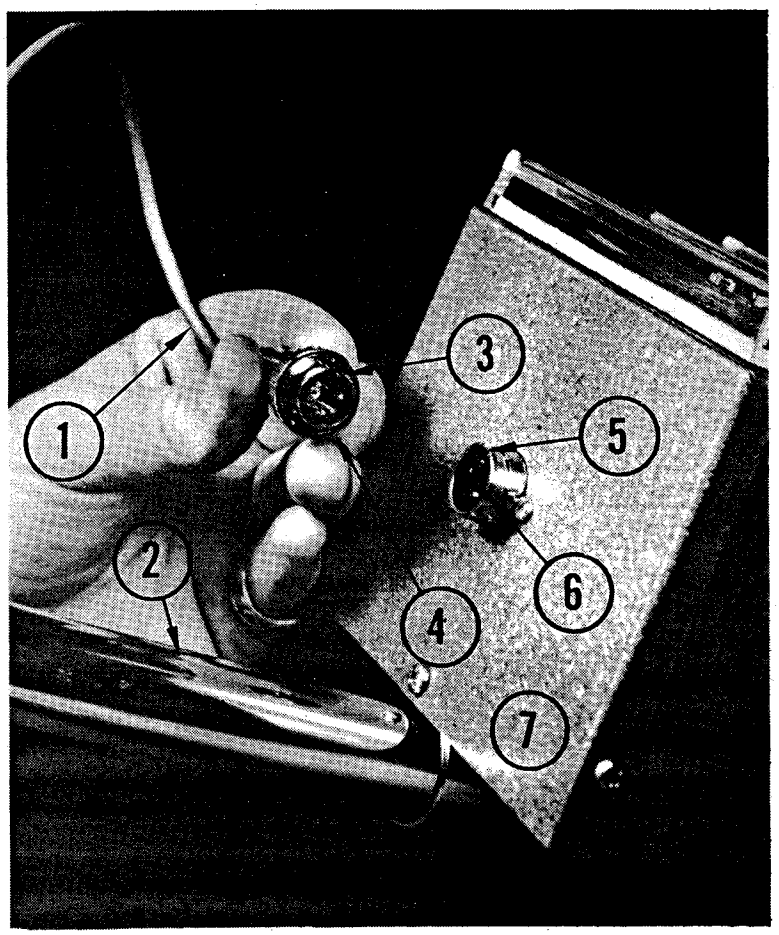


Figure 4

D. With Twistlock Connector (4) firmly seated, turn Locking Ring (8) to the RIGHT as shown in Figure 5.

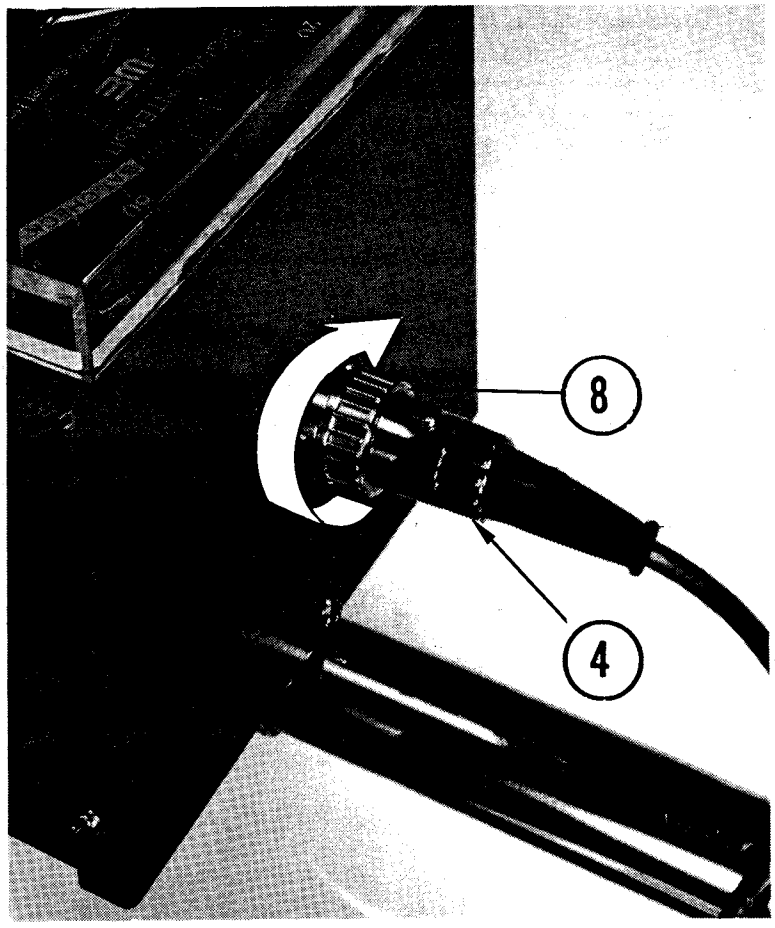


Figure 5

Battery Installation

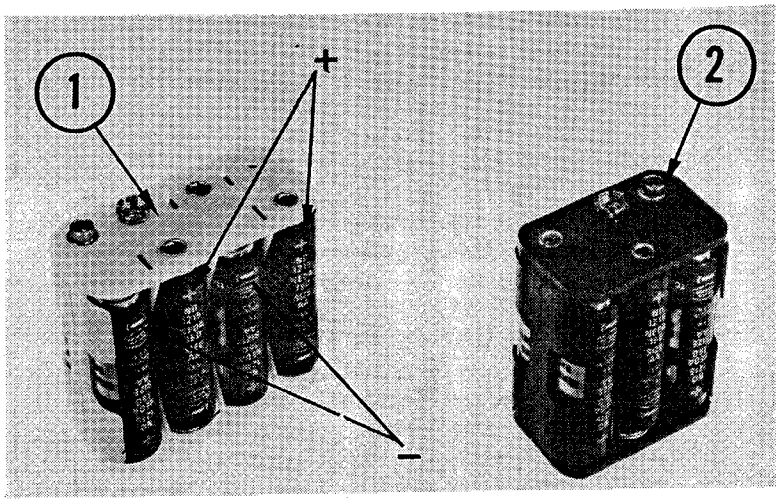
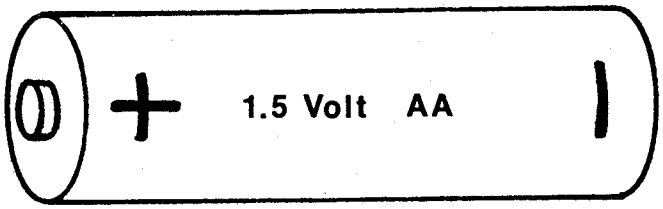


Figure 6



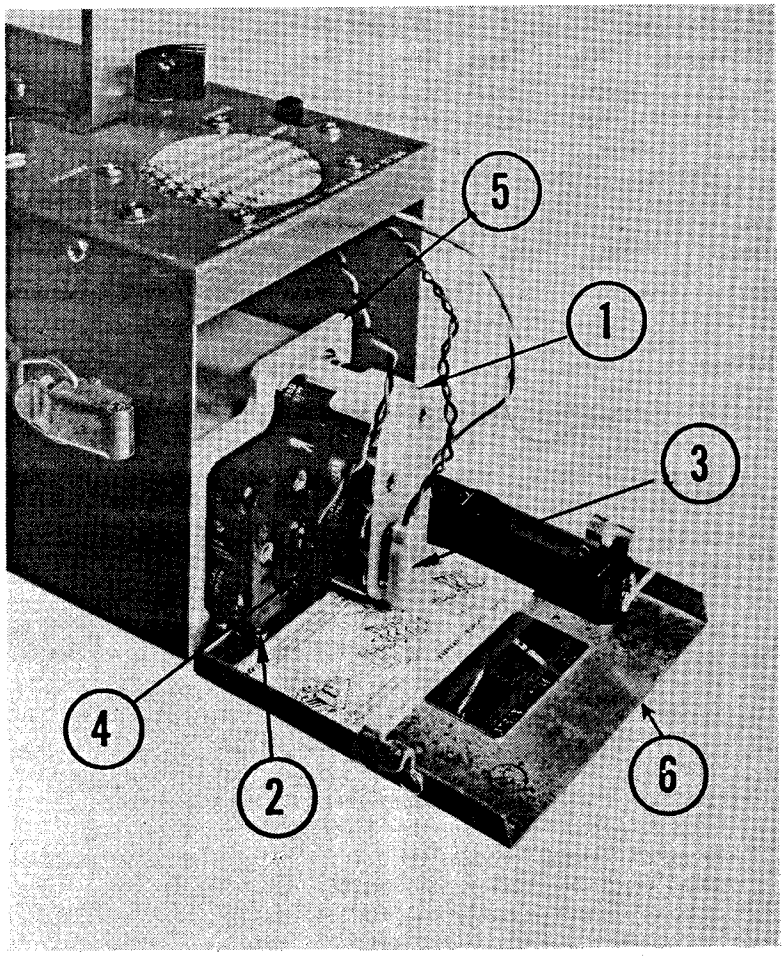


Figure 7

VI. Battery Installation (Figures 6 & 7)

A. Check both White Battery Pack (1) and Black Battery Pack (2) for polarity - each AA penlight battery should have negative (-) end compressing the spring inside its holder and the positive (+) end should be at the end without spring. POSITIVE (+ AND NEGATIVE (-) ENDS OF THE BATTERIES SHOULD ALTERNATE AS SHOWN IN FIGURE 6.

B. Connect White Battery Pack (1) to White Battery Connector (3) and Black Battery Pack (2) to Black Connector (4). NOTE THAT CONNECTOR WILL ONLY FIT ONE WAY.

C. Install Battery Packs (1 & 2) inside Battery Compartment (5).

NOTE:
When closing Battery Access Door [6], always make sure that wires are not pinched between door and instrument case.

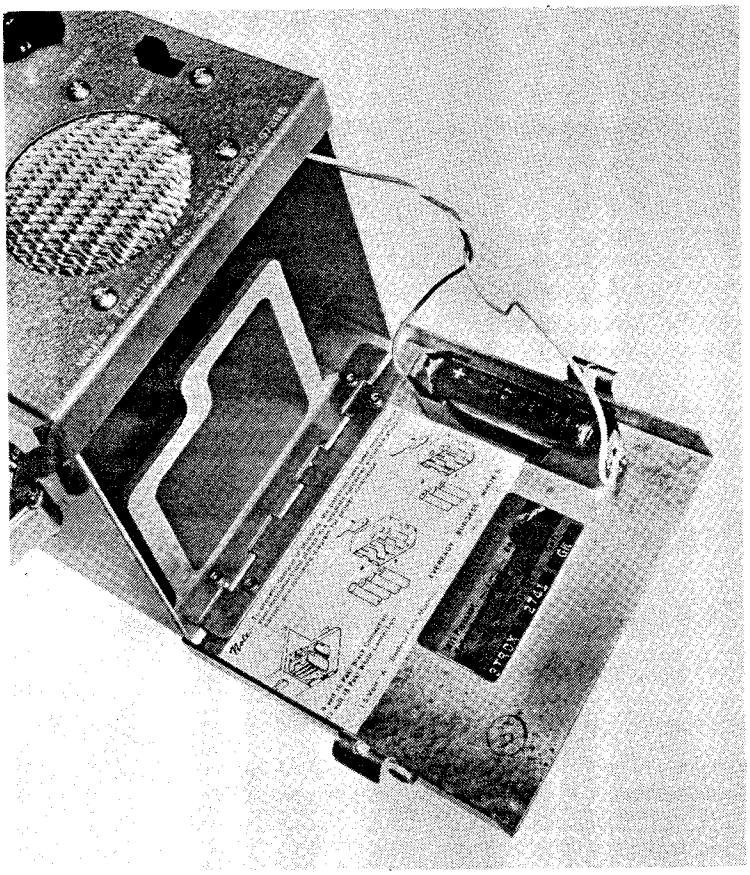


Figure 8

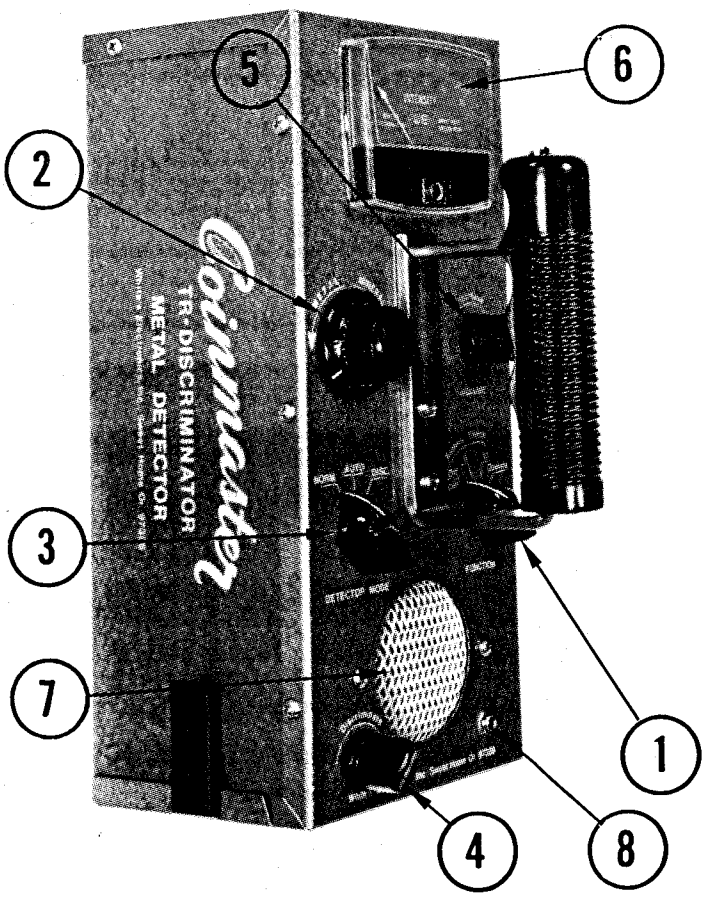


Figure 9

Battery Testing

Condition of batteries may be tested at any time by turning Function Switch (1) to either the "9" or "12" positions. In both positions the meter needle (Fig. 10) should go well into the BAT CHECK zone (2). The "9" position tests the nine-volt (black) battery pack and the "12" position tests the 12-volt (white) battery pack. IF THE METER NEEDLE DOES NOT COME ALL THE WAY UP TO THE "BAT CHECK" ZONE WHEN THE COINMASTER DISCRIMINATOR IS FIRST ASSEMBLED, THEN AT LEAST ONE BATTERY IN THE PACK BEING TESTED IS PROBABLY INSTALLED BACKWARDS. In this case, remove the battery packs and repeat step V -A. If the batteries should ever fail to measure up after a long period of use, then they are probably running down. Remove the battery packs and test each battery separately as below.

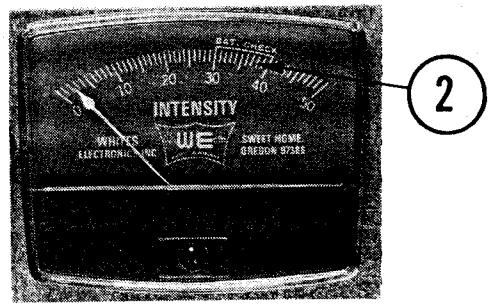


Figure 10

The Coinmaster Discriminator has a single-battery tester inside the battery access door. Single batteries may be removed from the battery packs and tested in this tester as shown in Figure 8. When testing single batteries in this way, the Function Switch (1) has to be in the "Off/1-cell" position.

Tuning Procedure

COINMASTER DISCRIMINATOR CONTROLS

There are five controls on the Coinmaster IV Discriminator: Function Switch (1), Main Tuner (2), Detector Mode Switch (3), Discriminate Tuner (4), and Volume Control (5). In addition the instrument has a Signal Intensity Meter (6), Audio Speaker (7), and Headphone Jack (8).

TUNING THE COINMASTER

Set your Coinmaster Discriminator on a table with loop extending into the air AWAY FROM ANY METAL as shown in Figure 12. Put a medium-thick book under each side of the case so that it remains steady while you are getting familiar with its operation. **NOTE** that the fellow in the picture has removed his watch and ring so that he has no metal on his hands that might interfere with tuning the Coinmaster. You should do the same.

To tune the Coinmaster Discriminator for the best sensitivity, follow these simple steps carefully. If you have never used a metal detector before, BE SURE you "bench tune" the Coinmaster before trying it on the ground. In some areas of the country, the ground itself can cause false signals that make first-time tuning for a novice very difficult.

Figure 11

Figure 12

I. Set controls:

A. Volume (5) - FULL RIGHT (maximum);
B. Discrimiate Tuner (4) - Turn it ten turns LEFT;
C. Detector Mode Switch (3) - NORM Mode;
D. Function Switch (1) - OPERATE.

DO YOU HEAR A TONE FROM SPEAKER?

IF YES - **Then find the NULL** - Turn Main Tuner (2) LEFT or RIGHT until tone GOES AWAY. You will not have to turn the knob more than five turns in either direction.

IF NO - You either have the NULL or the batteries are not connected! Check by turning the Main Tuner (2) RIGHT or LEFT (Four turns at most). If you get a tone, go back to NULL. If you don't get a tone, go to Battery Installation on Page 5.

II. **Set Main Tuner [2] for METAL THRESHOLD tone** - From NULL, turn Main Tuner (2) Left until tone JUST STARTS (10 to 40 on Meter (6) scale). Hold a coin in front of loop face, as in Figure 12, and note how tone changes as you move the coin.

THE COINMASTER IS NOW TUNED FOR NORMAL MODE USE. You have tuned for a METAL tone by turning Main Tuner (2) out of the NULL to the LEFT. Coins, rings, and bottlecaps will now cause tone to INCREASE. Nails, paper clips, and other IRON-CONTAINING objects will cause tone to GO AWAY. Try several objects from around the house and see for yourself what kind of reactions you get with the Coinmaster.

III. Turn Detector Mode Switch (3) to DISC Mode.

IV. Turn Discriminate Tuner (4) RIGHT (with arrow) until tone ALMOST goes away.

V. Hold a bottlecap in front of loop face, as in Figure 12, and note that the tone now goes away. The discriminator is causing the bottlecap to act like an iron object in NORM Mode so that only "good" objects will cause the tone to get louder.

NOTE: There is a place just off the center of the loop where the bottlecap will cause a sharp tone when held very close (less than one inch) to the loop. This is called a "back reading" and is a normal, but useless, reading. For all practical purposes, you can forget it's there.

VI. Turn Discriminate Tuner (4) LEFT (reducing discrimination) a very small amount. Re-adjust Main Tuner (2) RIGHT for threshold tone. Try bottlecap again as in Step V.

VII. REPEAT Step VI until you reach a point where tone DOES NOT go away when you bring bottlecap toward loop face. You have now **removed** discrimination.

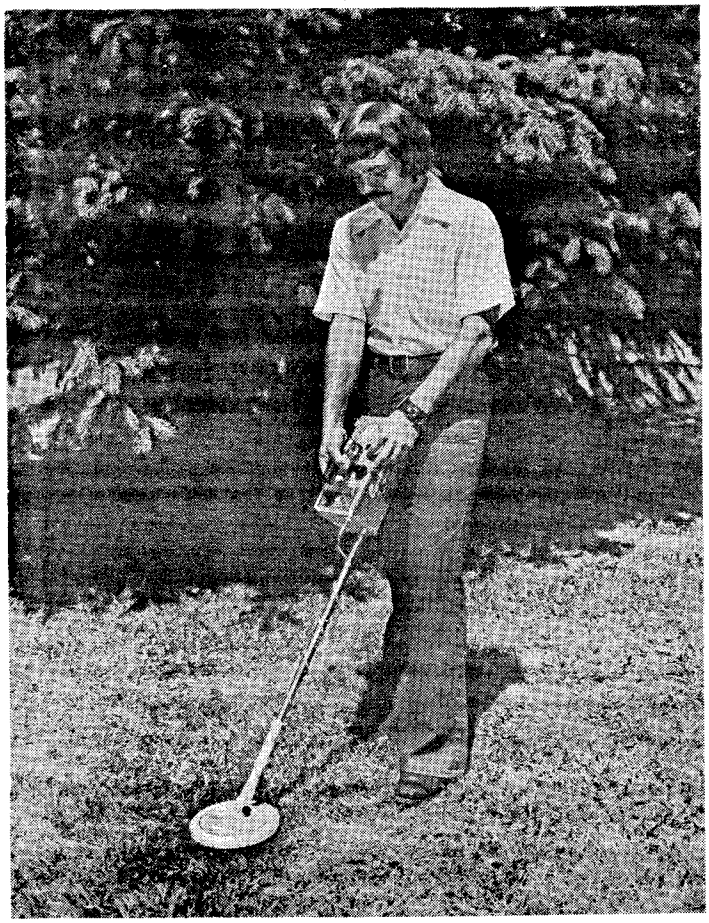
VIII. **JUST BARELY restore discrimination** - Turn Discriminate Tuner (4) RIGHT a very small amount and re-adjust Main Tuner (2) for threshold tone.

THE COINMASTER IS "BENCH TUNED" AT THIS POINT. TEST WITH COIN AND BOTTLECAP TO MAKE SURE COIN CAUSES AN **INCREASE** IN TONE AND BOTTLECAP CAUSES A **LOSS** OF TONE. ANY MORE ADJUSTMENT WILL WAIT UNTIL YOU PUT THE LOOP ON THE GROUND. REPEAT THE TUNING STEPS UNTIL YOU CAN DO A FAIRLY GOOD JOB WITHOUT THIS MANUAL.

HOW TO USE YOUR DISCRIMINATOR

If you were to go outside your house right now and drag a magnet through some loose soil, chances are quite good that it would "grow hair" as particles of magnetic iron collected on its surface. If you are going to use a metal detector in an area like that, you're going to have to cope with the common problem of false signals caused by this "mineralization."

There are at least two ways to test for mineralization. First, lower the loop slowly to the ground after tuning in NORM mode for a metal threshold. Note the height of the loop above the ground when the sound goes away. The closer the loop gets to the ground before the sound disappears, the lower the mineralization. Two to four inches would indicate low to moderate mineralization while eight to ten inches means that it can really be a problem, at least until you learn to handle it. The other method is to tune the detector in NORM mode with the loop on the ground for the metal threshold. The higher you can raise the loop before the sound blares up, the lower the mineralization.



Once you have tuned the detector on the ground and you start sweeping the loop back and fourth, you will notice that you get a "false signal" every time you pass the loop over a depression or raise the loop to go over a clump of grass. There are two ways to cope with this: (I) Detune the detector by turning the Main Tuner back into the NULL; (II) Switch to AUTO mode and sweep the loop fairly quickly back and forth, switching to NORM or DISC when a sharp "bleep" indicates a find.

IN GENERAL, THE BEST WAY TO USE A DISCRIMINATOR FOR PRODUCTIVE COINSHOOTING IS TO SEARCH IN "NORM" OR "AUTO" AND CHECK FINDS WITH "DISC" TO WEED OUT THE JUNK. IF YOU ARE USING THE DETECTOR FOR RELIC HUNTING OR PROSPECTING, THERE WILL BE LESS OCCASION TO USE THE "DISC" FEATURE.

In order to get acquainted with the kinds of sounds produced by various kinds of buried objects, the serious coinshooter plants a "test garden" that serves two function. First, it enables the operator to get familiar with known objects at known depths and the kinds of sounds that can be expected. Second, it provides a method of checking the performance of the instrument over a period of time, making sure that it is still performing at top efficiency. Bury some coins, tinfoil, bottlecaps, and other metal objects at known depths in an area where you can always get to them and will remember where they are. After you have gotten familiar with what you've planted, have someone else plant some of these items where you **don't** know exactly where they are. See if you cannot only find them, but identify them before you dig them up.

NOTE: When you bury coins, do not bury them more than three inches down. This is the limit for a **freshly-buried** coin (in the ground less than a year); a coin that has been buried for a long time (and is thus more valuable!) causes a chemical "halo effect" in the soil around it and acts like a much larger, and easier to find, target.

SPECIAL-PURPOSE LOOPS

Goldmaster

The Goldmaster Discriminator comes with a 10½-inch loop as well as the standard eight-inch loop. The standard loop is used primarily for coinshooting while the larger loop is used for relic hunting - larger and deeper targets. You won't need the DISC mode with the larger loop very often, but it is nice to know the DISC mode with the large loop can be used to eliminate tin cans. You can thus search in NORM or AUTO and check a loud, sharp find with DISC mode. If the indication does not show up in DISC, then you can be reasonably sure that the find is NOT rings, a cache of coins, or buried jewelry.

Alaskan

The Alaskan Discriminator comes equipped with a "Gold probe" four-inch loop. This is primarily a prospecting tool used for pinpointing gold in quartz and, to a limited extent, placer gold within pockets of black sand. Black sand, however, is magnetic, and thus is highly mineralized.

The small loop is used for locating and pinpointing small objects; there is no end to its uses. A veterinary, for example, could use this small probe to help find fragments of metal lodged in the body of an animal, like cows who inadvertently swallow a piece of baling wire. The use is limited by the creativity of the user.

MINERAL SETTING

All through the preceeding instructions, you have been told to tune your detector for a METAL THRESHOLD tone by turning the Main Tuner (2) LEFT out of the quiet NULL. This setting will pick up **non-ferrous** metal objects - gold, silver, etc. - as an increase in the tone and allow **ferrous** (iron-containing) objects to drop the tone. You need to know that there is also a MINERAL THRESHOLD on the other side of the NULL where this order is **reversed.**

NOTE: THE DISC MODE WILL NOT WORK IN A MINERAL SETTING!!

If you wanted to find objects that are primarily made of iron, you would find the NULL as before but turn the Main Tuner (2) out of the NULL to the RIGHT instead of the LEFT. Now, **ferrous** objects will cause the tone to increase and gold and silver and other non-ferrous objects will cause the tone to decrease or go away. This feature is a useful one, especially if you want to clear a driveway of nails, for instance, or find a chunk of barbed wire in that cow's tummy. Be sure, however, that you don't try to go coinshooting with the detector set for a mineral threshold - you are bound to have a bad day!

Proper Care of Your Detector

The following are precautions you should take to protect your instrument from harm, insure its long life, and avoid nullifying the warranty.

Cleaning: The loop and rod or probe are waterproof. They can be cleaned with fresh water and a mild cleanser. After cleaning, however, dry the instrument thoroughly. Caution! The instrument case is not waterproof, and water—if allowed to enter it—may damage electronic components.

Weather Conditions: Protect your detector from excessively cold weather. Freezing can damage the electronic components, the case and/or the batteries. Excessive heat can also damage the instrument. Never leave it in the sun. It's best to lay it in the shade when temporarily not in use. If it's left in a car on a hot day, cover it with a blanket or something similar to protect it from the direct rays of the sun, and then leave the windows slightly open to permit ventilation. Needless to say, protect your detector if you operate it in the rain, as water may get into the instrument case.

Salt Water: Salt water is very corrosive! Immediately after your detector has been exposed to salt water, rinse it thoroughly with fresh water, being careful not to allow water to enter the instrument case. Then wipe it with a cloth dampened with fresh water and dry it thoroughly.

Storage: If you plan to store your detector for any length of time, unsnap the battery and remove it from the instrument. Whenever your detector is not in use, turn the **VOLUME** knob all the way to the **"PWR OFF"** position.

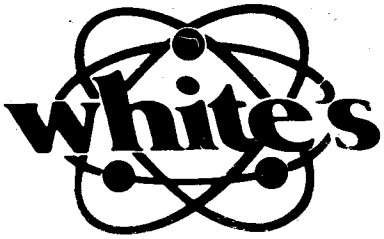
Service And Warranty Information: If your new metal detector is ever in need of service, ship it to us at the factory address below or to one of the Service Centers listed on the back of the warranty statement. Insure it fully, prepay the charges, and enclose a letter describing the nature of the problem. As long as your detector is under warranty there is no charge other than a small handling and postage fee.

Read your warranty card carefully. It describes completely what is covered and the length of the coverage. If you have any questions don't hesitate to write us. We will be happy to answer any questions you may have.

HELPFUL HINTS AND TIPS

1. "How deep will it go?" Detection depth is determined by five main factors.
   a. The SIZE of the object.
   b. The SIZE of the loop.
   c. The LENGTH OF TIME the object has been buried.
   d. The SKILL of the operator.
   e. The ground MINERAL CONTENT.

   The longer an object has been buried, the better you will be able to detect it. A chemical reaction called a "halo effect" between such objects as silver or copper coins and the surrounding soil may cause your detector to register a much larger increase in volume than might otherwise be expected for a small coin. If the halo effect is strong enough, your detector may continue to register even after you have dug up the coin.
2. "What will my detector locate?" Silver, lead, copper, bottle caps, tin foil, pull tabs, cartridge cases, rings, brass and tin cans are just a few of the conductive objects that can be detected. Your detector will not locate sticks, rags, bones, paper, wood or other non-metallic objects.
3. Learn how to interpret the different types of responses from your detector. A nail lying flat in the ground will sometimes produce a double or single reading depending upon whether your loop passed across it lengthwise or across its width. So it's a good idea to sweep your finds from several different directions to try to learn as much as possible about the object you have located. Coins will usually only produce one reading regardless of sweep direction.
4. Rather than waste time, check around the trees for junk items such as foil, pull tabs, bottle caps, etc. This will frequently indicate whether or not someone has already been in the area with a detector.
5. Always "criss-cross" an area when hunting it.
6. After you have dug up a coin, always check the hole again for more. As many as 10 coins have been found in one hole!
7. When beachcombing the best place to look for coins is near the concession stands.
8. Check the shallow water in swimming areas. Most rings and coins are lost when people enter the water.
9. If you make plans for coinshooting, check the history records of the area.
10. Always carry a plastic bag for your detector in case you get caught in the rain.
11. Never ask permission to treasure hunt over the phone. People tend to visualize you using a pick and shovel, making large holes.
12. Join a local historical society or get acquainted with its members.
13. In lawn areas, use a screwdriver of no more than eight inches as your tool. Limit the size of the hole to a MAXIMUM of two inches in diameter. Don't forget to fill in the hole. Public and private officials and property owners will be more likely to allow continued treasure hunting if you do no environmental damage.



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