

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

OPERATING INSTRUCTIONS
for
COINMASTER MODEL #3 TR-AM
ALL METAL DETECTOR

Please follow these instructions carefully, to operate the instrument correctly. Please practice with the instrument at every opportunity.

INTRODUCTION

We do not believe that you can buy a finer instrument than you have chosen for the use that the instrument is designed for, but remember that the instrument is no better than its operator, (even though we have heard customers say that the instrument was smarter than they.) You are the operator, and the more familiar you become through use and practice, the better operator you will be. The better the operator, the more finds you will make.

GENERAL DESCRIPTION

These instruments are completely transistorized (solid state), giving maximum sensitivity, excellent reliability and economy in operation. They are specifically designed for coin hunting, but have features which allow them to be used for general exploration.

The audio system is complete, offering both earphone and speaker operation, controlled by a common volume control.

There instruments have a sensitive meter giving good reactions on finds, as well as testing the battery system under operating conditions.

These instruments employ the balanced induction principle of operation, the loop being the heart of this system.

Batteries used are penlight, size "AA" 1 1/2 volt cells. Fourteen are required for operation, 6 cells in one holder, yielding 9 volts, and 8 in the other, yielding 12 volts.

The Single Tuning Control controls the tuning of the instrument for the easiest and simplest operation.

ROD AND LOOP ASSEMBLY

Note Rod Mounting Bracket is located on the bottom of the instrument. The Rod has two sets of Retainer Pins in it, (See Figure #1). One set located in the large end for locking the Rod in place, to the bottom of the instrument. The other set, located in one end of the small section for locking the two sections of Rod together.

To extend the Rod, depress the two pins located in the small rod. Pull the small rod out of the large, align the retaining pins to match the holes in the large rod, which has the small rod extending from it, snap into place. Place the loop on the free end of the small rod, removing the thumb nuts from the mounting studs on the loop. Insert them up through the holes in the small end of the rod, install the thumb nuts, finger tight.

Inserting the large end of the rod into the mounting bracket on the bottom of the instrument, depress the retaining pins and align to match mating holes. Lock into place. Spiral the loop cable snugly around the rod.

Plug the loop cable into the socket on the front end of the instrument. This socket and plug are marked with yellow alignment dots. Align these dots and insert the plug. This plug and socket are also keyed to allow mating with only the correct pin arrangement.

BATTERY INSTALLATION

Now, open the battery compartment by releasing the latches on each side and swinging the door open from the top. Free the battery connectors by removing the tape. Note a black holder (6 cells), this is 9 Volt D. C. Snap the black battery connector onto the battery holder, noting the connector and battery holder are set up to match in only one polarity. Be sure to observe this polarity because damage can be done to the electronics if forced together in error. The white holder is for 12 volts D.C. and connects to the white connector. (See battery diagram)

TESTING THE BATTERIES

To test your batteries, turn the POWER SWITCH to the battery check positions and note the readings. Good batteries will read between 30-40 on the meter. When your reading drops to 30 on the meter, it is time to replace that set of batteries.

Batteries should be tested prior to your regular hunting ventures and once a day during periods of heavy usage.

METAL SETTING

The Metal Control adjusts the level of sensitivity. Very slowly rotate this control clockwise, (Right) and you will hear a tone in the speaker and notice a slight reading on the meter.

It is impractical to attempt to maintain the meter at any exact-setting, because all normal movements in the field affect meter readings to some degree, depending on the amount of mineral in the area you are working. For effective results, these adjustments must be made with the instrument in hunting position, (See Figure #2) holding the loop as close to the surface of the area to be explored as is practical for movement of the loop. You are now adjusted for detecting metal.

INTENSITY METER ZERO

It is normal for our intensity meters to read below zero when the instrument is in a state of "NULL". (Null is the position where no sound is heard.) This is due to reverse bias applied to the meter to give a faster response time.

Meter readings are a relative indication of the strength of the find. A strong signal could be a large object or an object very close to the surface.

The meter readings are not calibrated to give a direct indication of depth, but with practice and experience, it will tell you much about the size, depth and content of the object you have detected.

HUNTING METHODS AND TECHNIQUES

When passing the loop over a non-magnetic conductive metal, such as the metal sample you received with your instrument, the sound will increase in the speaker and a higher reading will be retained as long as the loop is held over the metal object. As soon as the loop passes away from the metal object, the sound will lower in volume and the meter will lower in reading and return to approximately the same reading as before the object was detected.

Earphone Usage: To use the earphone install its plug into the jack on the instrument. Note this cuts off the speaker giving privacy in listening. You may use the earphone whenever you wish, its special feature being that of giving you a concentrated tone close to your ear, which excludes interfering noises about you. Adjust the Volume Control so as to not "Blast" your ears with excessive volume, when a metal object is detected, but still retain enough tone so that even a slight tone change will be easily distinguishable. The small deeper coins, at times give just a slight tone change, due to their depth. In these cases, the phones are the most effective method of detection.

Tin Cans, bottle caps, tin foil, aluminum foil, cartridge cases, coins, silver, gold, copper, lead and brass are some of the highly conductive metals that will read on the meter and cause a response in the speaker or earphones.

The instrument is not designed to react to sticks, rags, bones, paper of any other non-metallic objects.

When looking for small objects, such as coins, the ability of the instrument to detect them will vary in different areas. The more mineralized the soil, the more difficult it is to detect them, and the less mineralized, the easier. Also, the longer the metal object has been buried, usually the easier and deeper it may be detected, as the ground becomes electrically conductive from the metal object over a period of time. In some cases you may detect a very old tin can and after digging it up, still receive a reading over the spot the can was buried in.

To locate hidden or buried metal objects, slowly and systematically sweep the loop across the area to be checked (See Figure A) being very careful to hold the instrument so that the loop is held at as constant and uniform a height as possible with the least up and down variation in relation to the formation or ground you are using the instrument over. When searching for small objects, such as a single coin, the instrument should be tuned in with the loop held as close to the ground as possible. Hold this height as close as you possibly can, and search the ground carefully, usually on the surface, if possible, depending on the surface you are using the instrument over. If the ground is rough you may have to zero the instrument higher. For larger objects, one can hold the instrument approximately 1 to 2 inches above the surface to be explored, but the closer the loop is held over the ground, the deeper is the detection range. Sweep the instrument back and forth as shown in the Diagrams A, B or C. Keep repeating this process, until you have explored the entire area. With each sweep of the instrument you will cover approximately 6 feet by 3 inches, for small objects such as a single coin or ring, and 6 feet by 1 foot, on large metal objects. If there is anything under the surface and it is within detectable range of the instrument, you should be able to find it.

In the short green grass, such as a lawn, it is possible to place the loop on the grass, tune it in and slide the loop over the grass to locate the smaller objects. The loop automatically is kept at the same height by the grass, so a uniform and more constant meter reading may be maintained, which is important for the very small objects. For large objects, the instrument may be carried at a higher elevation and it is not so critical to height variation and will respond to the larger metal objects. To practice, lay some metal objects on a wood floor or on your lawn and move the loop over them, and notice the way the instrument responds.

It is a good policy to slightly adjust the Tuning Control every 5 to 10 minutes to keep the instrument at its highest peak of sensitivity, when searching for small objects, such as single coins, along beaches, etc., and every 10 to 15 minutes or so for larger objects.

The volume is increased by turning the Volume Control to the Right, and is decreased by turning it to the left. The Volume Control does not increase or decrease the sensitivity of the instrument. If the meter is too sensitive to use in some areas, you may adjust the Tuner, until the meter pointer returns to Zero and use it this way, which will be much easier to use in mineralized areas, where the soil has a magnetic content. The instrument may be used around water and the loop submerged and used in fresh water when desired. When using the loop submerged in water, if the water is exceptionally cold or warm, it may be necessary to adjust the tuner frequently, to hold the tuning, until the loop reaches the same temperature as the water, but this is normal.

If this occurs, you will also notice, after removing the loop from the water, that adjustments will again have to be made for use on land, until the loop reaches the atmospheric temperature out of the water, then it will stabilize.

CAUTION

The instrument should never be left where the sun, on a hot day, will overheat the instrument. It is best to lay it in the shade when not in use. Excessive heat can damage some of the sensitive electronic parts and the batteries. If the instrument is left in a car on a hot day, it should be covered by a blanket or some other covering to protect it from the direct sun rays and the windows cracked to permit ventilation.

Care should also be taken in excessively cold weather to protect the instrument, as well as the batteries from freezing.

SERVICE - WARRANTY - REPLACEMENT BATTERIES

This model contains one battery holder containing 6 AA Batteries, and one containing 8 AA Batteries. You may order new replacement batteries directly from our plant, if you cannot find them locally or at your dealers.

The new penlight battery system is better in many respects to the old type batteries:

1. Longer Life
2. Readily available
3. Superior performance
4. Cheaper in replacement. (If one cell fails, you only need to replace the once cell.)

Replacements: Any AA Penlight Batteries.

Alkaline energizers and batteries of this type may be used and give even longer life.

Note: All Batteries last longer if used in many short periods, rather than in a couple of long periods of use.

When through operating the instrument, turn the Power Switch to the "OFF" position.

If the instrument is to be laid away for any great length of time, the battery pack should be unsnapped and the pack removed from the instrument. This will prevent damage to the instrument in case one or more of the batteries are damaged or in case the power switch is left on or gets turned on accidentally. The damage to the instrument in this case is similar to what occurs in a flashlight, when the battery is discharged and the liquid escapes to damage the case and components.

The instrument has a full two (2) year warranty on parts and labor (except on batteries) to the original purchaser.

If ever in need of services, ship the instrument by insured parcel post, freight or state, prepaid, and enclose a letter advising the nature of your troubles. It may be returned to the factory address listed below, or to one of our Service Centers, listed in the back of this booklet. Additions to the Service Centers are listed in the DISCOVER.

WHITE'S ELECTRONICS, INC.
1011 Pleasant Valley Road
Sweet Home, Oregon 97386

6/22/72

OPERATOR'S T.R. TIPS (REVISED)

With the instrument assembled and ready to operate, bury a coin in the ground approximately one inch down and lying flat. Place the instrument so that the loop is on the ground and horizontal. Next, turn the instrument "on", with it in the Null or "0" position. Start turning the Metal - 0 - Mineral dial, counter-clockwise, until a tone is heard. Now, go back the other way (clockwise) until it just goes quiet.

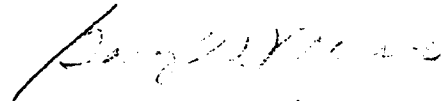
Now you should be able to move the loop about, without it making any noises, unless it is passing over some metal object. If it is making noises, then you may need to turn it a little more toward the Mineral Setting (clockwise).

Be sure that you are rubbing the loop on the ground, and that you are not lifting the edges as you sweep it across the ground. Now, practice on the coin that you buried.

The further counter-clockwise you can turn the Metal - 0 - Mineral dial, without the instrument giving false readings, the more sensitive it will be.

A demonstration is worth a thousand words - for the best results, see your local dealer and ask for a demonstration.

Sincerely,



Gary W. Morris
Service Department Manager

GWM/js

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.

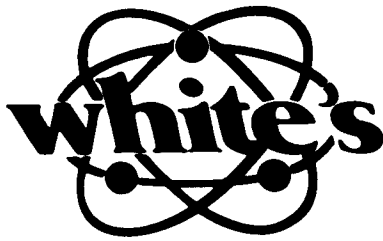
Read your warranty card carefully. It describes completely what is covered and the length of the coverage. If you have any questions don't hesitate to write us. We will be happy to answer any questions you may have.

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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