

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
BEACHCOMBER MODEL 2

Please follow these instructions carefully, to operate the instrument correctly and practice with it 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 designed specifically 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.

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

Batteries used are penlight, size "AA" 1/12 volt cells. Six are required for operation. Six cells in a holder yield 9 volts.

The Single Tuning Control incorporates a power switch, as well as controls the tuning of the instrument for the easiest and simplest operation.

ROD AND LOOP ASSEMBLY:

After unpacking your instrument, check the tightness of the screw for the adjustable loop. Tightening this screw limits the ability of the loop to change position in relation to the rod. The loop should be adjustable to different angles, and yet hold the desired position. Mount the loop at half way adjustment point (90° to the rod) during assembly.

Next, align the rod sections and mate by depressing the spring clip and inserting the rod into the larger rod section until the first pair of matching holes align. It may be necessary to feed extra cable length from the end of the rod (near loop) by hand as the rod sections go together. It will also be necessary to remove excess cable length from the rod if it is desired to shorten the rod length to the next pair of matching holes. A small loop in the cable could be formed where it exits the rod.

VOLUME CONTROL

The volume control adjusts the loudness of both the speaker and the earphones or headphones, therefore when using earphones or headphones, be sure to lower the volume control to minimum, and then gradually increase it until you have the desired volume level. Turning the volume control to the right (clockwise) increases the volume or loudness, while to the left (counter-clockwise) lowers or decreases the volume.

LAMP USAGE

When an object is detected the signal is sent to either the speaker or the lamp. The brightest reading on the lamp or loudest volume in the speaker is when the loop is directly over the object.

To use the lamp proceed as follows:

Turn the Volume Control to the extreme left until a click is heard. The lamp can now be used instead of the speaker to indicate a find.

METAL SETTING

The Metal Control adjusts the level of sensitivity as well as controlling the Power Switch. Very slowly rotate this control Clockwise, (Right) and you will hear a distinct "Click". This is the Power Switch energizing the circuit. Continue to turn this Control until a tone is heard in the speaker, (when making these adjustments, hold the loop approximately 1 inch above and parallel (flat) with the ground and do not raise or lower the loop excessively while doing so.)

There may be a sudden loud tone sound, just as soon as the switch clicks on, for a few seconds duration. If so, this is normal- as soon as the tone stops - then continue to turn the control to the right, until the tone again just starts to come in. The instrument is now ready for operation.

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 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 to approximately the same 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.

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 cause a response in the speaker or earphones.

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

When looking for small metal 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 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 in higher. For larger objects, one can hold the instrument approximately 1 to 2 inches above the surface to be explored. 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. 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, tuck 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 tone 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 object. 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.

A NOTE ON HEADPHONES:

Greatest sensitivity or penetration is realized when using headphones. You cannot detect well when you cannot hear the audio changes properly. Headphones concentrate the sound and reveal faint audio changes that couldnot be heard without them. Also, many people have hearing problems that headphones help overcome. They are worth the extra money.

BATTERIES:

To gain access to the battery compartment, hold the instrument as shown in the picture. Place your thumb or fingertips on the rear compartment door labeled, "PRESS". Press inward, to unlatch the lock and then slide the door down. The door will then be open to allow removal of the battery pack.

Be sure, when replacing batteries in battery holder, to maintain proper battery polarity. If your instrument does not operate after installing new batteries, check each battery polarity carefully. For prolonged periods of detector storage (several weeks or longer), it would be wise to store the battery pack in your refrigerator. Also, it is wise to have an extra battery pack or extra batteries along on outings.

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.

SERVICE - WARRANTY - REPLACEMENT BATTERIES

This model contains one battery holder containing 6 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 one 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-Tuner Control to the "Off" position.

Operating Instructions
Beachcomber Model 2

-5-

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

If the instrument is to be laid away for any great length of time, the battery pack should be un-snapped 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 ~~one~~^{two} year warranty on parts and labor (except on batteries) to the original purchaser, from the date of sale, with a \$~~4.50~~^{4.50} handling charge on all instruments returned for service.

If ever in need of service, ship the instrument by insured parcel post, freight or stage, 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.

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

Compiled 10-1-74

Printed in U.S.A.

BATTERY COMPARTMENT

Note:

TO PREVENT DAMAGE IN SHIPPING, the batteries have been removed from your instrument and placed in a separate container within the shipping carton. See following diagram for proper installation.

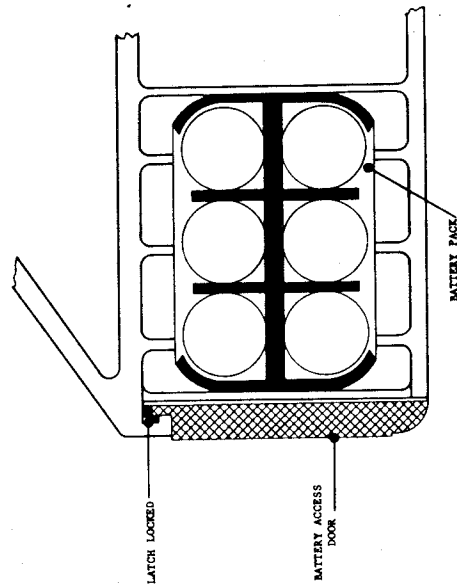


Fig. 1

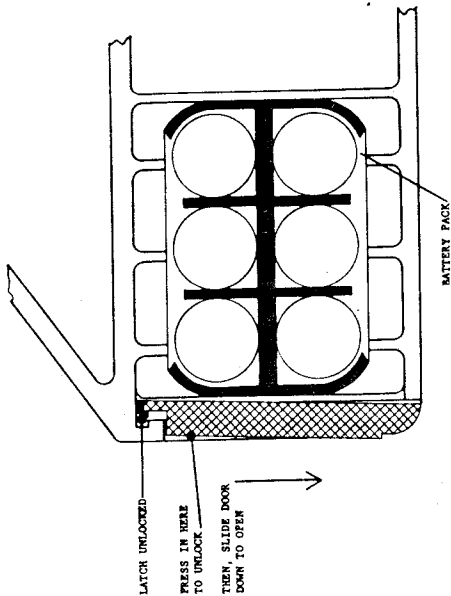


Fig. 2

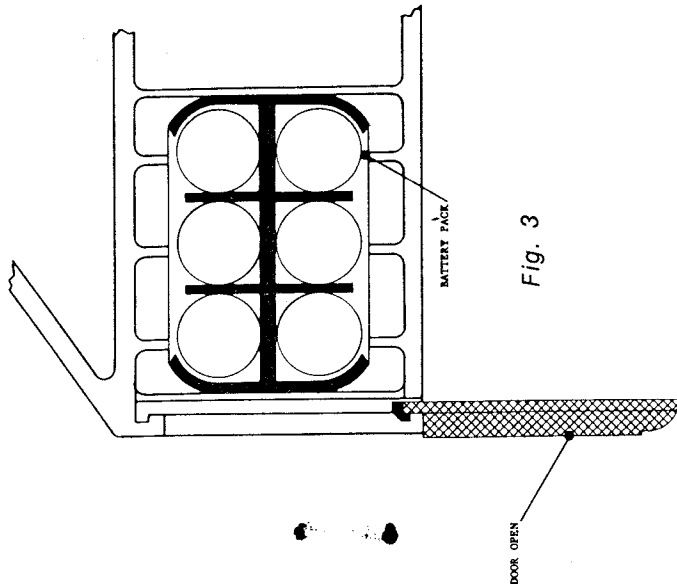
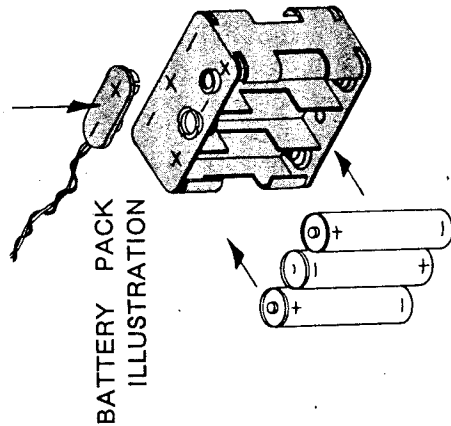
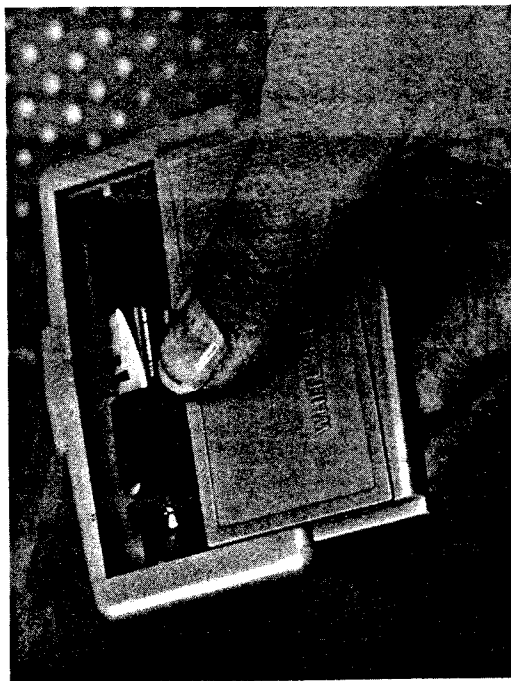


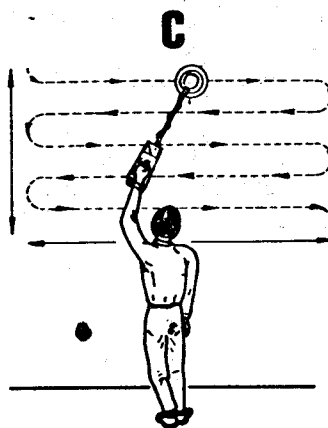
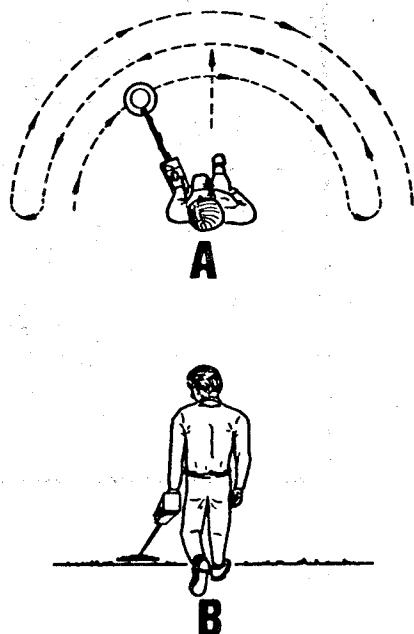
Fig. 3



1.5 Volt "AA"
(Battery Pack Models)
RAY-O-VAC #15

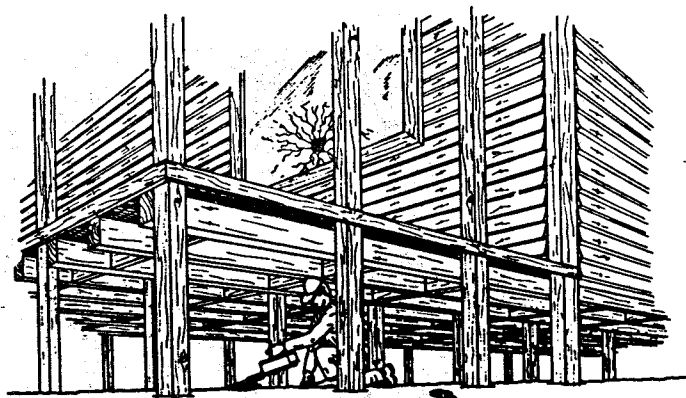
When ordering replacement batteries from the factory, please state the instrument model, voltage of batteries and battery number.

OPERATING ILLUSTRATIONS



As shown in Diagrams A and B, when you are working on the ground, move forward in a straight line, at the same time, moving the loop from side to side across in front of you. The distance between each swath of the loop is determined by the size of the loop you are using. With a 6" loop you would make a 3" step, with 12" loop you would make a 6" step, and so on. Using this method of hunting enables the hunter to cover more ground, more completely, in less time. For tuning your loop, hold it as close to the ground as possible.

Diagrams C and D show you just one more of the many ways the versatile design of the White's instrument can help you either in prospecting or treasure hunting. This diagram demonstrates the extra ability the design gives in reaching to the out-of-the-way places. This system can be used for checking outcroppings, walls, etc.



Remember, a lot of old artifacts and treasure have been found under old buildings, as well as in the attics. When going through an old homestead, never overlook any place or area that could represent a good hiding place. So if you are planning such a trip, follow these simple illustrations and prepare your instrument. At a time like this you don't want to pass up any chances.

SPECIAL NOTICE

" Do not raise the loop higher than the instrument or water may run down inside of the rod and damage the electronic components."

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.

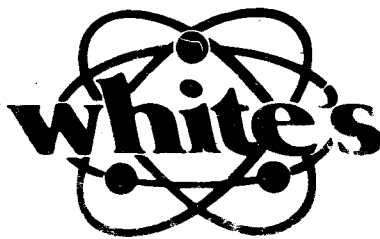
Read your warranty card carefully. It describes completely what is covered and the length of the coverage. If you have any questions don't hesitate to write us. We will be happy to answer any questions you may have.

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.



1011 Pleasant Valley Rd.
Sweet Home, Or. 97386