

EM

# 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

G O L D M A S T E R    O P E R A T I N G  
I N S T R U C T I O N S

To put this instrument into operation, proceed as follows:

1. Install the exploring loop rod and the exploring loop by first inserting the rod in the sleeve located underneath of the instrument so that the rod protrudes out from the front of the instrument.
2. Install the loop selected on the front end of rod. Spiral the surplus cable around the rod and plug the loop cable's four pronged plugs into the front of the instrument in the socket provided. It is important that the surplus cable be wrapped around the loop rod so the cable does not catch on brush, twigs, etc., when prospecting. You cannot make an improper connection as the loop plug has two large prongs and two small prongs which must match the holes in the socket or the plug cannot be inserted.
3. Turn the large Radio Tuning Control to #50 so that the #50 is directly at the top of the dial and is in line with the marker.  
  
\* On some models this control is numbered from 1 to 10; turn to 5 instead of 50.
4. (Model S-63 Only) The Speaker Control should be turned to the extreme RIGHT. This is your Volume Control. Turning this control to the LEFT reduces the volume in the speaker and to the RIGHT increases the volume. Normally the instrument is used with full volume.
5. (Model S-64 and S-65 Only) Turn the Range Control to #1
6. Turn the Metal-Null-Mineral Control (White Knob with Red Marker) so the marker is in line with the circle just below the word NULL.
7. Turn the OFF-ON Power Switch from the OFF position to the ON position.
8. If a squeal or motorboating is heard, then slowly turn the Selector Control Knob located on the front end of the instrument to the Left or to the Right, whichever direction that lowers and slows the sound until the sound just stops. If you continue to turn this control after the sound stops it will again start. If this occurs, back the control up, until the sound stops and leave it set in the center of the dead spot (where no sound is heard).
9. Turn the Metal-Null-Mineral Control to the LEFT until the Motorboating sound just starts in the speaker.
10. Very slowly turn the large Radio Tuning Control to the RIGHT until the motorboating sound slows to a slow beat.

While this adjustment (Step #10) is being made, the instrument should be held with the exploring loop just three to four inches above the surface to be explored, when using the 12" loop; and one to two inches above the surface when using the 3 1/2" loop and searching for smaller objects. The instrument is set on the Metal setting, and when the exploring loop passes over a detectable metal object, the motorboating sound will increase. As soon as the loop passes the metal object, the motorboating sound will slow to normal. The larger the object, the faster the motorboating sound; the smaller the object, the slower the motorboating sound. Native gold, copper, silver and coins are never magnetic and are detectable on the Metal setting of the instrument.

To set the instrument for detecting minerals, follow the same procedure, beginning with Step #3. In Step #9 turn the Metal-Null-Mineral Control to the RIGHT; and in Step #10 turn the Radio Tuning Control to the LEFT. The instrument is now adjusted for the detection of minerals, and when the exploring loop passes over any detectable mineral with a light magnetic field, the motorboating sound will increase in the speaker, and will continue as long as the loop is held over the mineral. As soon as the loop passes a mineral, the motorboating sound will slow to normal. The larger or richer the mineralized object, the faster the motorboating. (Nail and steel objects, bolts, etc., being very hard, will usually be detected on the Mineral setting.)

If you wish to set the instrument for the automatic detection of metals or minerals, you may turn the Metal-Null-Mineral Control to the Metal setting until the motorboating sound is twice as fast as normal (120 beats per minute). Then pass the loop over the metal sample that comes with the instrument. You will notice that the motorboating sound will increase in frequency and volume. Then, move the loop away from the sample. You will notice that the motorboating will slow down to its regular adjusted beat. Then pass the loop over the mineral sample. The motorboating will slow or cease. If you wish to adjust the instrument for the automatic detection of minerals and metals so that the instrument will sound off on the minerals and slow or cease on the metals, reverse the above procedure. Pass the loop over your mineral sample and the motorboating sound will increase in volume and frequency. Pass it over the metal sample and the motorboating sound will cease or slow down. This is desirable in checking mineralized veins. The larger the vein and richer the ore the louder the sound and faster the frequency.

When prospecting with the instrument, the exploring loop should be held as uniformly as possible at the same height that you held the loop from the ground when you adjusted the Radio Tuning Control. If this loop varies up and down more than an inch or two in walking, the motorboating will increase or decrease as the loop is raised or lowered. This is especially noticeable in highly mineralized areas, and the more mineralized the area becomes, the steadier one must hold the instrument and the more careful he must be in prospecting, especially if looking for small objects. You may compensate for this by slowly raising the exploring loop two or three inches, such as you would carry the instrument in your normal walking while prospecting. At the same time slowly adjust the Radio Tuning Control until the motorboating is normal at the highest point. The instrument is then adjusted for the variation such as would occur in walking and will not motorboat until you detect a detectable object or raise the loop to this high point.

The 3 1/2" loop is designed for detecting very small objects, but the loop must be passed very closely over the object. The field from this loop is highly concentrated to react to very small or metal objects. The smaller the object, the closer the loop must be to it. It will also react to large objects as well, but the small loop should not be placed too close to large metal objects as this may overload the circuit and give a false signal. For example, if you have the instrument set on the Mineral setting, and you place the small loop too close or against an aluminum metal sample you received with the instrument, you may get an indication on the metal sample by the circuit becoming overloaded. This may also occur if you have an exceptionally highly magnetic ore sample. If the instrument is set on the Metal setting and you place the small loop against the sample, you may get a metal indication. If in doubt, and it is a rock you are getting the indication from, set the instrument on the Mineral setting, and adjust it to a slow motorboating sound away from the rock. Then slowly move the loop closer to the rock you are testing. If the motorboating sound increases then the rock is magnetic, but if the motorboating decreases and stops, then this indicates the rock has a metal content. The 3 1/2" loop should always be used when checking along gravel bars for small objects due to the high magnetic content of the gravel.

\* (Model S-64 and S-65 Only) Always start prospecting with the Range Control set on #1, and when you detect something that is large enough or rich enough to take the meter hand to full scale (the extreme right), and cause a fast motorboating, then turn the Range Control to #2 and continue to pass the loop over the surface to be prospected, and locate the spot where the reading is the highest on the #2 position. This will be the richest spot, center of the object, or where it comes closest to the surface and nearest to the loop. When passing away from this spot, turn the Range Control from #2 back to #1.

As you are prospecting with the instrument you may notice that the motorboating sound will increase or decrease for no apparent reason. This can be caused by slight mineralization changes in the soil or gravels and sands or by drift. This must be occasionally adjusted by just very slightly turning the Radio Tuning Control until the motorboating sound increases or decreases to the proper beat.

REMEMBER: When prospecting and you pass the exploring loop over a mineralized piece of float or rock and the motorboating sound starts, do not push the loop any closer to the rock than you were holding from the surface when prospecting. If you push the loop against the rock that the instrument is reacting to, you can overload the oscillator section of the instrument and get a reverse indication. And when this occurs, you would get an indication on the Metal setting of the instrument for a mineral, and you would get a mineral indication on a metal; so always hold the loop as uniformly as possible at the prospecting height that you have adjusted the instrument for and NEVER touch the object with the loop that you are receiving the reaction from.

Before putting the instrument away, be sure that the POWER SWITCH is turned to the OFF position, or the batteries will become discharged and damp, and can severely damage the instrument case. When the instrument is put away for a period of time, it is a good policy to remove the batteries from the case to safeguard against the instrument becoming accidentally turned on and discharging the batteries, as well as damage to the case. Always remove all discharged or dead batteries from the instrument promptly.

If ever in need of service, the instrument should be returned prepaid to the factory.

If in need of new fresh batteries, they may be ordered directly from this factory.

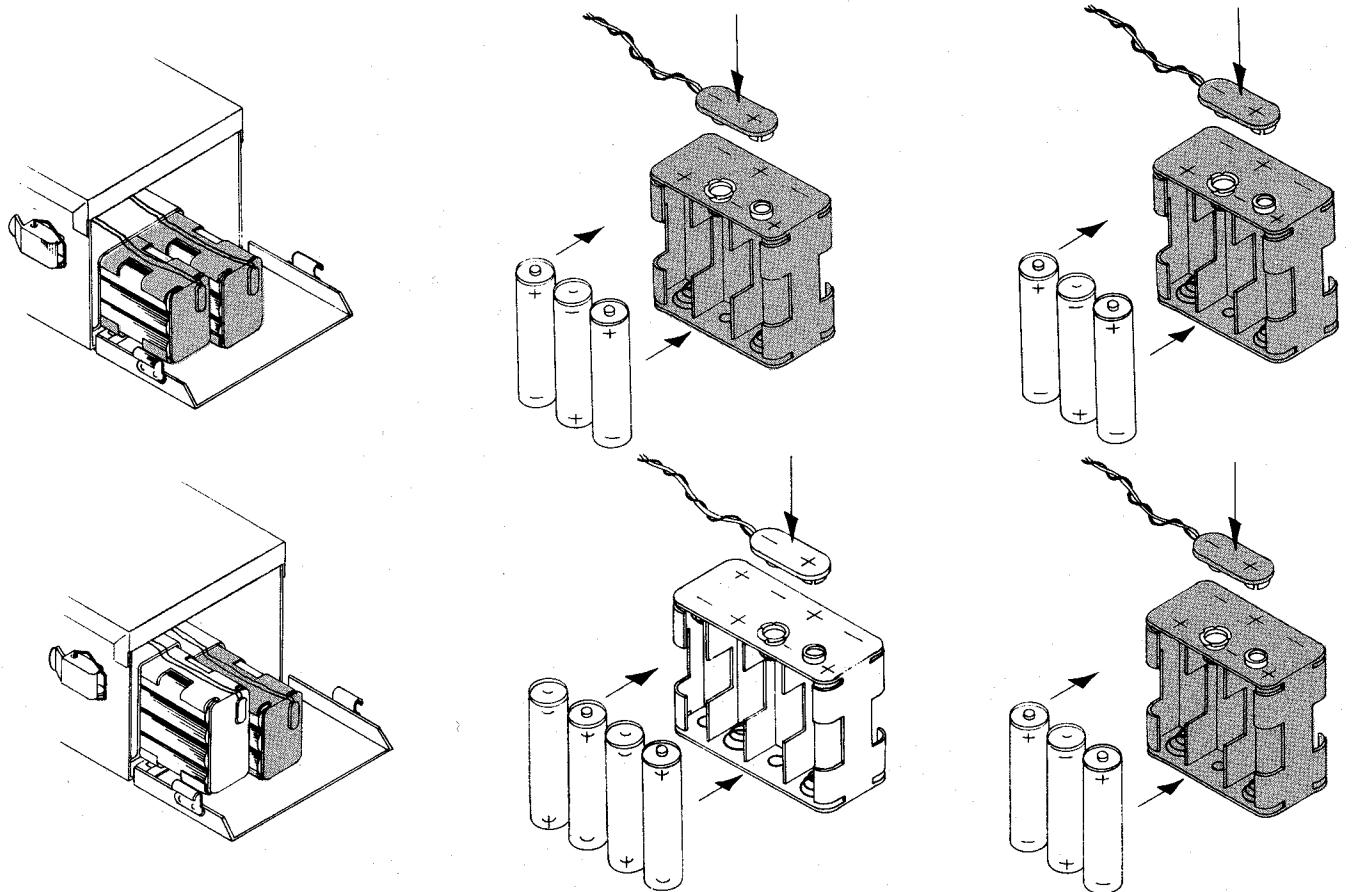
WHITE'S ELECTRONICS, INC.  
1011 Pleasant Valley Road  
Sweet Home, Oregon 97386

Telephone: 503-367-2138

# BATTERY DIAGRAM

*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.



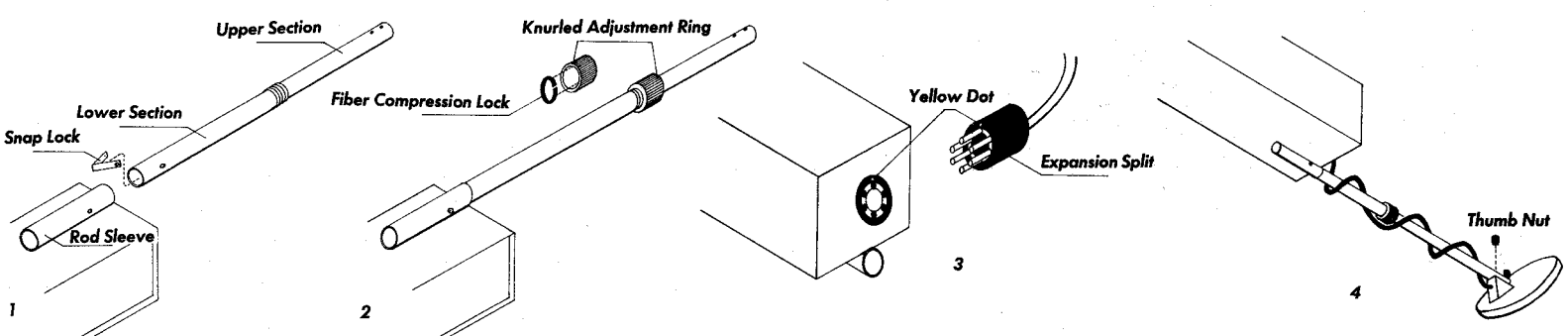
9 volt (6 Pak) Black Connection  
12 volt (8 Pak) White Connection

BATTERY-PACK ILLUSTRATION

	EVEREADY	BURGESS	WHITE'S
1.5 Volt "AA" (Battery Pack Models) .....	1015	910	B-1

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

## ROD ASSEMBLY, DRAWINGS



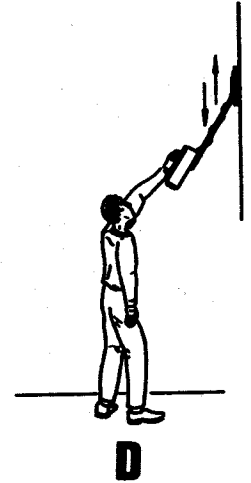
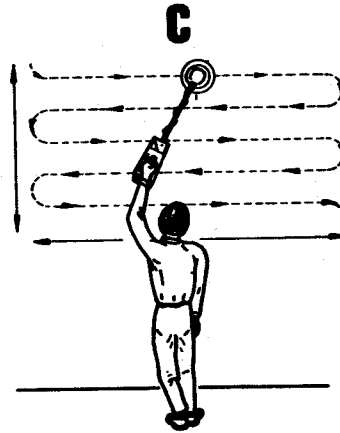
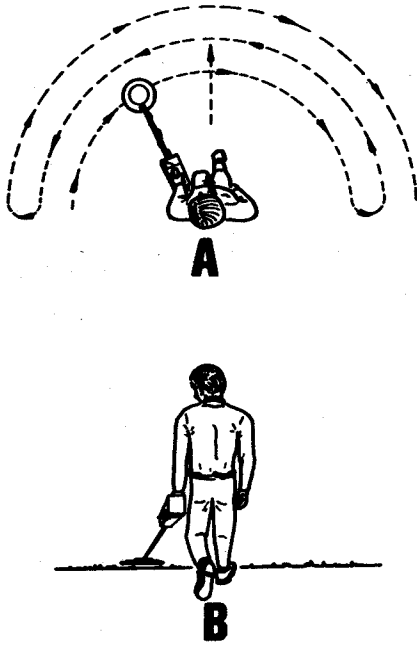
When you receive your instrument with the knurled adjustment rod, it may be necessary to install the snap lock. As illustrated in Figure Number 1. Depress snap lock and insert it in the lower section. Insert the lower section into the rod sleeve.

Figure Number 2 shows the fiber compression lock; make sure it is inside the knurled adjustment ring. Slip the ring over the upper section; adjust rod to desired length and tighten ring as shown.

When attaching the loop cable to the instrument chassis, make sure the yellow dot on the plug matches the one on the instrument. As shown in Figure Number 3 (note: the "Expansion Split", as pictured in Figure Number 3, is to allow assembly and disassembly of the plug cap and is not a manufacturer's defect).

Attach the loop with the thumb nuts as shown in Figure Number 4. Always coil the loop cable as snugly as possible, without pulling or stretching it.

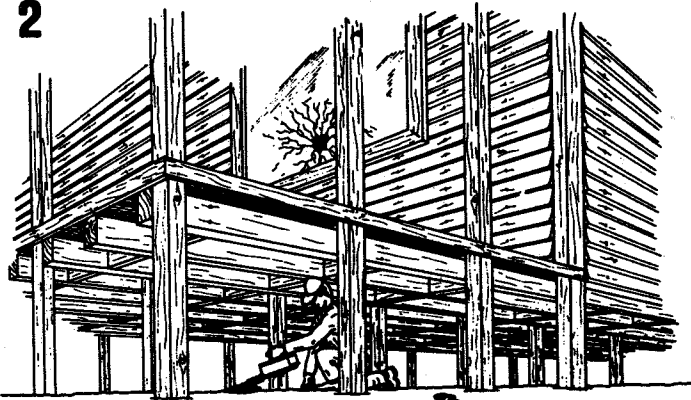
# OPERATING ILLUSTRATIONS



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.

**2**



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.

# 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.

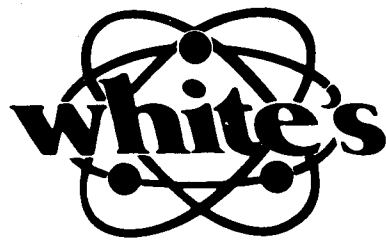
Read your warranty card carefully. It describes completely what is covered and the length of the coverage. If you have any questions don't hesitate to write us. We will be happy to answer any questions you may have.

## 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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