

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

MODEL 65 TREASUREMASTER

Operating Instructions for Conductive Metals and Treasure Hunting

Note: This is the latest model and has a special loop selector control on the front end of the instrument. To put this instrument into operation, proceed as follows:

1. Install the loop rod and the exploring loop by first inserting the rod in the sleeve located underneath the instrument, so that the rod protrudes out the front of the instrument.
2. Install the loop selected on the front end of the rod. Spiral the surplus cable around the rod and plug the loop cable's four pronged plug into the front end of the instrument in the socket provided. It is important that the surplus cable be wrapped around the loop rod, so that 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. (One prong has a hole in it. This one fits into the top hole of the plug.)
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.

There are four sizes of exploring loops normally supplied with the instrument, unless additional loops are ordered. A small 3 1/2, a 6 inch, a 12 inch, and the 18 inch loops are supplied. On the front end of the instrument, you will see a small knob which is the loop selector control. This selector control is incorporated in the instrument to tune the instrument for the loop you have selected to use.

4. Turn the Meter Control knob, (located just behind the handle) to the #1 position.
5. Turn the Metal-Null-Mineral control (Located just above the large Radio Tuning Control) to NULL (located between the Metal and Mineral setting) so that the marker is in line with the yellow circle located just below the word Null.
6. Turn the Range Control to the #1 position.
7. Turn the Off-On Power Switch from the Off position to the On position. A squeal or motorboating sound should now be heard, unless the selector is already adjusted for this loop.

8. Slowly turn the selector control knob (located on the front end of the instrument) to the Left or to the Right, whichever direction lowers and slows the sound, until the sound just stops. If you continue to turn this control after the sound stops, it will start again. If this occurs, back the control up until the sound stops and leave it set in the center of this dead spot (where no sound is heard). The only time this selector control knob is used, is to adjust the instrument to Null, where no sound is heard, and it is left in this position and not adjusted again, until you change to another loop. It is never used to tune the instrument in prospecting.

9. Turn the Metal-Null-Mineral control to the LEFT, until the motorboating sound just starts in the speaker. Then very slowly turn the large Radio Tuning Control to the Right, until the motorboating sound just stops, but turn the control no more than necessary to just stop the motorboating, as this control adjusts the sensitivity of the instrument, and turning the control to far to the Right will greatly reduce the sensitivity of the instrument and its detectability. While this adjustment is being made for the 12 or 18 inch loops, slowly raise and lower the instrument two or three inches from the normal prospecting height, until the motorboating stops and does not start when raising and lowering the instrument these few inches, such as would occur in normal walking. This will adjust the instrument for the walking up and down movement, and will not cause the instrument to read or a sound to be heard in normal walking, until a detectable metal object passes under the exploring loop, then the motorboating sound will at once start, and the meter hand will swing from Zero to 50, which is a full scale reading. When adjusting the instrument for the 3 1/2 or 6 inch loops, the loop should be held one or two inches above the surface. These loops are used when searching for the smallest objects.

When the instrument is set on the Metal setting (On the Metal side of Null), and the exploring loop passes over a detectable metal object, a motorboating sound will, at once, be heard in the speaker and the meter pointer will swing toward the Right. As soon as the loop passes the metal object, the motorboating sound will cease and the meter pointer will swing toward the Left. Also, the larger the object, the louder and faster the motorboating sound, and the smaller the object the slower and lower is the motorboating sound. Native gold, copper, silver and coins are never magnetic and are detectable on the Metal setting of the instrument when a detectable quantity is present, as they are all high conductive metals. (Tin foil, bottle caps, cans and many other man made metal objects are also conductive and are detectable.)

When a detectable metal object passes under the exploring loop, and the meter hand swings from Zero to 50 (which is a full scale reading), you may turn the Range Control from the #1 position to the #2 position, and the meter hand will return towards Zero. You may then continue to check over the surface that you are receiving this reading from. Be careful to hold the exploring loop parallel with the surface and as evenly as possible, and maintain it at the same height as much as possible, that you held it when you adjusted the Radio Tuner Control, and do not lower or raise the loop more than necessary in walking. The steadier you hold the loop, the more accurate the readings will be. (Raising and lowering the loop excessively will cause false and fluctuating meter readings.) Should the meter hand again go to a full scale reading while checking over the formation or surface that you are receiving the high reading from, turn the Range Control to the #3 position and locate the spot where the reading is the highest. The highest reading that you receive on the least sensitive meter range would usually be over the center of the object you are detecting. If the meter hand again goes full scale, turn the Range Control to the #4 position, and locate your highest reading on the #4 position. After passing away from this particular spot and the reading drops back to 0, turn the Range Control back to the #1 position to resume prospecting.

If you should detect a vein containing a high conductive metal content, and give a high metal reading, you may determine the edges of the vein, the center of the vein, and you may trace the detectable vein with this instrument as follows: As you approach the edge of the vein that has a detectable metal content and the meter hand swings to the extreme Right, turn the Range Control from the #1 position to the #2 position, and as you pass over the edge of the vein, onto the vein, and the reading becomes higher, and if the meter hand again goes to the extreme Right, turn the Range Control from the #2 position to the #3 position. If the meter pointer again swings to the extreme Right, turn the Range control to the #4 position, and notice where the reading is the highest, as you pass across this vein. Mark the highest readings on the #2, #3 or #4 positions, whichever range it is necessary to be operating on, and these highest reading spots will be the richest concentration in the deposit. As soon as you pass off of the vein, the meter reading will return to 0 and the sound in the speaker will decrease or cease. The louder the sound in the speaker, the richer is the ore, and the higher is the reading on the meter. For example: When the Range Control is on the #2 position, the metal content would have to be approximately twice as rich to give the same reading on the #2 position, as it would in the #1 position. When the Range Control is set on the #3 position, the metal would have to be approximately three times as much to give a full scale reading in this #3 position, and when the range control is set in the #4 position, the metal content would have to be approximately four times as rich to give a full scale reading in this #4 position, if the size of the object is the same. So the higher the reading in the #2, #3 or #4 positions, respectively, the higher the

metal content, or the larger the body. It takes very little metal to give the instrument a full scale reading on the #1 position, and it will take four times as much to give a full scale reading on the #4 position.

By locating the center of the vein, and following along the vein, you may detect the high grade pockets by the higher reading that you will receive, and also by the louder sound that you will hear in the speaker at the same time. By marking these high readings and loud sounding spots, you can pick out pockets or kidneys of high grade detectable metallic ore that is causing this reading.

For no apparent reason the beat may slowly increase or slowly decrease, along with corresponding changes in the meter reading. This is characteristic of this instrument when operated at a slow beat, and is also caused by very slight atmospheric temperature changes. A slight frequent adjustment of the Radio Tuner Control will adjust the beat and meter reading when required. (Turning the Radio Tuner slightly to the Left lowers the reading, and turning this control to the Right raises the reading.)

When the instrument is detecting a metal object, the beat and reading will instantly increase just as soon as the loop passes over the metal object, and not the slow increase or decrease as occurs in temperature changes. To retain a high degree of sensitivity, when operating the instrument with no beat, it is a good policy to slightly adjust the Radio Tuner every 5 or 10 minutes by turning this control slightly to the Left, until the beat just starts, then very slightly to the Right, until the beat just stops. This will compensate for any possible drop in sensitivity from temperature changes, and will retain the peak sensitivity of the instrument. This is very important for the best possible detection on small objects as well as the detection of deeper objects.

**For Mineral Prospecting
and locating mineralized veins**

For locating ore bodies containing magnetic iron or black sand, which is so universally distributed throughout the world in mineralized veins, the instrument is used on the Mineral setting.

To prospect for Minerals, set all of the controls the same as for Conductive metals, with the exception of the Metal-Null-Mineral Control:

When all the controls are set the same as for conductive metals and with the Power Switch ON:

1. Slowly turn the Metal-Null-Mineral Control knob to the Right, toward the Mineral side of Null, until the instrument just starts to beat.
2. Slowly turn the Radio Tuner Control to the Left, until the beat is slow, and an average meter reading is anywhere from 0 to 20 on the meter. (Turning the Radio Tuner Control to the Left will lower the meter reading and beat, and turning this control to the Right will increase the reading and beat.

When making this adjustment, be sure to hold the instrument with the loop parallel with the ground or surface, then proceed to prospect the same as outlined on the conductive metals. The instrument is now set, so that it does not respond to conductive metals, but will now respond to magnetic iron and black magnetic sand found in these mineralized veins.

As you approach the edge of a detectable mineralized vein, it may now be detected by a full scale reading on the #1 position. Passing over onto the vein will result in a higher reading on the #2 position, and may also be secured in the #3 or #4 position, depending on the richness of the vein, and the high magnetic metal content of the deposit. The larger or richer portions will read on the #4 position, and the less rich and smaller will read on the #3 and #2 positions. By crossing the vein, and noting where the meter reading first starts, and the sound first starts, this will be the edge of the deposit and when passing over the deposit the motorboating sound will be the loudest and the meter reading will be the highest. As soon as the vein is past, the sound will stop and the meter hand will return to Zero. By following along the direction of the highest reading, you receive from the center of the vein, you can trace the vein, noting very carefully any exceptionally high readings you receive as you trace this deposit. The higher reading will usually be the highest concentration of magnetic metal, high grade kidneys, pockets, etc. These should be carefully marked for further exploration. It is of extreme importance to hold the exploring loop as constantly as possible to the same height, and not to raise and lower the loop excessively in order to get the truest indications and readings.

To resume further prospecting, turn the Range Control back to the #1 position.

Automatic Detection of Magnetic and Non-Magnetic Metals

Should you wish to use the instrument for the Automatic Detection of both magnetic and non-magnetic metals, as many veins or mineral deposits contain both types of metals, proceed as follows:

Adjust the instrument for the metal detection by turning the Range Control to the #2 position, and the Metal-Null-Mineral control to the Left to the Metal side, and adjust it to a steady motorboating sound while holding the instrument by the handle, and the normal comfortable prospecting position, and adjust the Radio Tuner Control, until the meter hand reads in the center of the dial, between 25 and 30. If the instrument is too sensitive in the #2 position, turn the Range Control to #3 and adjust the motorboating faster, until the meter hand reads in the center of the dial.

One must hold the loop as steady as possible, when using the instrument in this position. Should you pass the loop over a detectable conductive metal, the motorboating sound will increase much faster and the meter hand will raise to a higher position on the scale (to the right). Should you pass the exploring loop over a magnetic metal, the motorboating sound will decrease and the meter hand will drop towards zero to the Left, and if the magnetic metal is large or rich enough, the motorboating sound will stop completely, and the meter hand will swing to the Left to zero or no reading. This way it is possible to detect both magnetic and non-magnetic metals automatically. The instrument will indicate whichever is predominate should you pass over a mineralized vein while prospecting in this automatic position. You may set the instrument up for mineral detection, and proceed to check the width and length of the vein and locate the highest detectable mineralization in this particular deposit. In the various settings of the instrument for prospecting for conductive metals or magnetic metals separately, be sure the instrument has the Metal-Null-Mineral Control set in the proper position.

REMEMBER: When starting your prospecting, the Range Control is always in the #1 position, unless you set it for automatic detection of magnetic metals and non-magnetic metals, then the Range Control is set in the #2 or #3 position, and the meter hand is in the center of the dial.

Use the samples which came with the instrument to become familiar with the settings for mineral deposits, and for metals. The metal plate will substitute for your metal deposit, and your mineral sample will substitute for your magnetic deposit.

There are four loops accompanying this instrument: The 3 1/2 inch loop, which is used for the detection of very small mineral or metal objects; the 6 inch loop used for beachcombing and checking around old ghostowns, for coins, rings, etc. The 6 inch loop is also used for float the size of a walnut or larger, or surface nuggets of fair size, etc. The 12 inch loop is used for general prospecting for moderately sized objects, and the 18 inch loop is used for checking veins, and is called the Loadmaster. The 18 inch loop is also recommended for buried treasures which may be a foot or so in size. The small 3 1/2 inch loop does not have nearly the detectable range of the 12 inch loop, but it can detect very small magnetic and non-magnetic metal objects in an out-cropping, vein or detectable gold nuggets laying on placer gravels or with the gravels, as the saturation effect of the minerals over-ride the detectable effect of the smaller objects. As the field is so intense, and concentrated over a small area with the small loop, it is used for the detection of these small detectable metallic pieces that would be undetectable with the larger loop. It is also used around the edges of washed boulders to detect a detectable concentrated metal content. The 6 inch loop is used for detecting single coins, rings and other small objects that are too small to be detected with the larger loops.

The 12 inch loop has greater range of detection than the 3 1/2 or 6 inch loops, but it does not detect as small objects. The 18 inch loop is used for tracing veins, looking for buried treasures, etc., and for larger mineralized or metal objects, but it does not respond to as small an object as the 12 inch loop. These loops are all interchangeable and the only difference is that the detection is for various uses which the instrument may be used for. The small loops will detect large objects, as well as small objects, but it does not detect them as deep.

For checking along streams, gravel bars, dry gulches, etc., for small objects, one should always use the 3 1/2 inch loop. For larger pieces of mineralized float, the 6 or 12 inch loop may be used.

All loops are waterproofed and may be submerged in water in checking along streams. The loop is first placed in the water and the instrument is adjusted the same as for use on dry land. When the loop is removed from the water, the instrument must be readjusted.

Do not expect to learn all of the possibilities and uses of this instrument at once, as due to its flexibility, you will find that you will constantly learn more things, and more uses for the equipment with experience. Do not place the loop down on the object as you could receive a reverse or false reading by overloading the oscillator circuit. The loop should be held at the normal prospecting height, and should never be pushed down on a detectable mineral or metal object that has been detected.

The meter going full scale, as it will on mineralized and metal objects does not do any damage, so will not be of any harm. This instrument reads similar to a geiger or scintillation counter in operation, but the instrument does not detect radiation, but reads directly to the presence of the detectable mineralized or metal object.

With proper care this instrument is guaranteed for 2 years, except batteries, for defects in workmanship or materials.

In case of service, always return the instrument directly to this laboratory and should you need new batteries, you may order them directly from this factory, and we will ship them prepaid to you. Batteries used are; two #266 9 volt eveready batteries. Be sure to order batteries by battery number.

BATTERY TESTING

To test the batteries, proceed as follows:

1. Turn the Power Switch ON, and the Metal-Null-Mineral Zero Control to NULL, or point of no signal, so no sound is heard in the speaker.
2. Turn the Battery Check Switch to each of the battery check positions in turn, and note the meter reading in each position. Fresh charged batteries will read between 30 and 40 on the meter dial. Whenever the reading drops to 25, which is the center of the dial, the batteries are in need of replacing, but they may still be used as long as the instrument continues to operate. Be sure to remove discharged batteries when the instrument will no longer operate.

WHITE'S ELECTRONICS, INC.

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Special Notice-- On Water Pipes

Do Not try to check the instrument out on water pipes. They are not designed for water pipe finders. If you desire to locate water pipes, we have a special instrument just for pipe finding, but we do not recommend pipe finders for prospecting.

Our instruments are of a special design just for shallow and moderate depth, to react only to detectable minerals and metals and to usually determine the difference between a mineral containing or associated with a light, medium or strong magnetic field or content, and a soft malleable natural metal and man-made objects.

Nails and bolts will usually be detected on the mineral setting of the instrument.

In checking a high grade mineralized object, do not place the loop any closer to the object than is necessary for the instrument to react to it.

To place the loop too close to large objects may overload the circuit and give an erroneous or opposite reading than normally is received.

In checking corn size, (or slightly smaller) gold nuggets, lay the nugget on a piece of quartz (quartz is where the gold normally originated), then using the small 3 1/2" loop adjust the instrument to its highest degree of sensitivity about 3" or so off to the side of the nugget but about the same height as the nugget, then pass the loop very closely over the top of the nugget.

Never lay the nugget on concrete or cement to test the instrument's sensitivity.

Do not expect to learn all about the instrument the first few times you use it. The longer you use it, the more familiar you become and the better work you should do with it.

When looking for small objects, the slower you must hunt and the closer the object will have to be to the surface to be tested, as the smaller the object, the closer the loop must be to it to be detectable.

SPECIAL NOTICE

High Power vs Low Power in an Instrument

Occasionally a customer will request High Power in an instrument to give greater depth of the transmitted waves from the instrument, and ask why we do not incorporate Higher Power.

There are several reasons why we do not do this and some of them are as follows:

To produce a High Powered instrument would be to considerably add to the instrument's weight, which is not desirable.

The strength of the radio waves are limited by the FCC to 15 Microvolts per meter, which should not be exceeded and would be required to get more power.

Increasing the power reduces the detectability of the instrument on small objects, which is undesirable, and reduces efficiency and results.

With enough increased power, the instrument will be subjected to excessive capacitance effects and most objects will give a reading which can include trees, country rock, mud, moist earth, clay, etc. This is detrimental and results in needless digging with no results.

To obtain a good Super Sensitive field instrument that will detect the presence of small ferrous and non-ferrous objects, the instrument should be low power and high sensitivity and have a small loop and a large loop. With lower power and high sensitivity a single Gold Nugget may be detected, whereas high power would not detect it, as the object is too small for the power used. The small loop is used for detecting very small objects (and has a very intense field) that are much too small for the larger loop to detect. The larger loop is used for detecting larger objects at more depth that are far beyond the detectable range of the small loop. The smaller the loop, the smaller the object it will detect.

You may also determine the difference between ferrous and non-ferrous material, and this is very desirable. Ferrous is a material or ore containing Iron. Non-ferrous is a material or ore containing no Iron.

Mineral is any naturally occurring substance that is neither animal nor vegetable, containing a mineral or minerals. Magnetite FeO_4 is a black Iron Oxide (magnetic).

Ore is any natural combination of minerals, especially from which a metal or metals can be extracted.

Gold is not a mineral but a natural Metal and is never Magnetic. Native Copper and Silver are also Metals and are never Magnetic. Gold, Copper and Silver are high conductors.

Detectable Depth Bulletin

The detectable depth may vary anywhere from a few inches to several feet depending on the conductivity or magnetic content of the object being detected, the mineralization in the soil or formation, the shape and size of the object, and the angle it is laying. Therefore no guaranteed depth of detection can be made on any object.

As a guide one may use the following depth approximations, bearing in mind that this may vary from a few inches to several feet depending on the above mentioned numerous conditions, as well as the amount of sensitivity that you are using and the skill of the operator. (If you wish the maximum sensitivity, one can let the instrument motorboat very slowly as this is the very highest sensitivity setting of the instrument.

A single silver or gold ring from 2 to 4 inches with the 12" loop, but some have reported 8" of detection.

A single 50¢ or \$1.00 coin from 4 to 8 inches, or more (more than one coin laying flat will increase the range of detection.) The coin or coins do not have to be in a container of any kind to be detected.

A single metal object the size of a pie tin from 1 to 2 feet.

An iron pot full of coins 1 to 3 feet depending on its size and conductivity.

A single 1/2 ounce gold nugget can be detected through approximately 1 to 3 inches or more of exposed solid barren slate bedrock or non-magnetic quartz. (Some high grade lode gold is found in non-magnetic quartz.) You do not have to have any other metal or mineral in the bedrock or quartz to get a reading or indication from the gold content.

The instrument will usually react to a single high grade gold nugget the size of a small pea when embedded just under the surface of a piece of quartz and using the 3 1/2" loop. For more than 1 nugget or a group of nuggets the 3 1/2" loop is best and for a pocket of nuggets under exposed non-magnetic bedrock the 12" loop may be used. For nuggets over 1/2 ounce we recommend the 6" loop as the detectable range of the 6" loop is a little greater than the 3 1/2" loop. The 6" loop is also recommended for single coins which are too small for the 12" loop and beyond the detectable range of the 3 1/2" loop.

One of our customers stated that while checking exposed bedrock on the Feather River, he detected a pocket with the 12" loop containing 12 oz. of gold nuggets. This pocket was under the bedrock and was roughly 4 inches wide, 10 inches deep and 2 feet in length.

For checking for single nuggets laying on the gravel bars, one should use the 3 1/2" loop as the field is more concentrated and the single nugget may be detected when you may not detect it with the 12" loop. The 6" loop could also be used for this, if the nuggets were approximately 1/2 ounce or more. It is a good policy to first use the 3 1/2"

or 6" loop on all gravel bars for small surface nuggets, then go over it again with the 12" loop for pockets and large pieces of gold bearing quartz that may be beyond the range of the 3 1/2" loop.

The 3 1/2" loop will detect smaller objects than the 12" loop or the 6" loop but the range is shorter. The 12" loop will detect deeper than the 6" loop but not as small an object. The 6" loop will detect deeper than the 3 1/2" loop but not as small an object.

We also have under-water loops available in 3 1/2", 6", 12" and 18" sizes with cables up to 150 feet in length for checking old wells, pools, lakes, rivers, etc., for metal objects or pockets that may occur.

The maximum detection is directly below the loop and the field extends out approximately 12" on each side of the 12" loop and approximately 18" on the 18" loop and 3 to 6" on the 3 1/2" loop. The instrument will react to large objects from the side of the loop when passing near them, but will be the strongest directly over the object.

The more you use these sensational modern day instruments, the more familiar you become with them and the better work you can do with them.

MINERAL AND METALS BULLETIN

One of the important features of these instruments is the Mineral and Metal Control. When the Mineral-Metal control is set on the Mineral setting, the instrument will react to any mineral or minerals or natural iron in nature possessing or containing a very faint, medium or strong magnetic content which so many minerals or deposits contain. Iron, with a magnetic content will be indicated on the Mineral Setting, as well as magnetic black sands.

Minerals are not found alone, as they do not normally occur alone, but are found in families or groups, as this is the way they are produced in nature and one of this group usually or frequently has a magnetic content which radiates, transmits or projects this field and are detectable anywhere from less than an inch to several inches on small pieces, to a foot or more, on large ones and sometimes several feet on large deposits and pockets depending on the strength of the field and the size and richness of the ore. When the instrument is set on the mineral setting, it does not normally respond to gold nuggets, native silver, copper or silver, copper or gold coins, as these objects are metal and are not magnetic. Gold, native copper and silver are in themselves never magnetic and are soft and malleable.

As natural detectable native gold, copper, silver, as well as bullion, bars and coins are soft, malleable metals and are not magnetic, but are very high conductors, they are detected on the metal setting of the instrument. Man-made metal objects such as rings, watches and other numerous metal objects may also be detected on the metal setting. (Hard steel, bolts and nails are detectable on the mineral setting and not on the metal setting.)

Some instruments respond the same on minerals, metals, moisture, clay, sand, etc., which results in a lot of useless digging.

With the mineral and metal selector control, these instruments normally respond to just detectable minerals and metals as described above and do not normally respond to barren rocks, mud, sand and water.

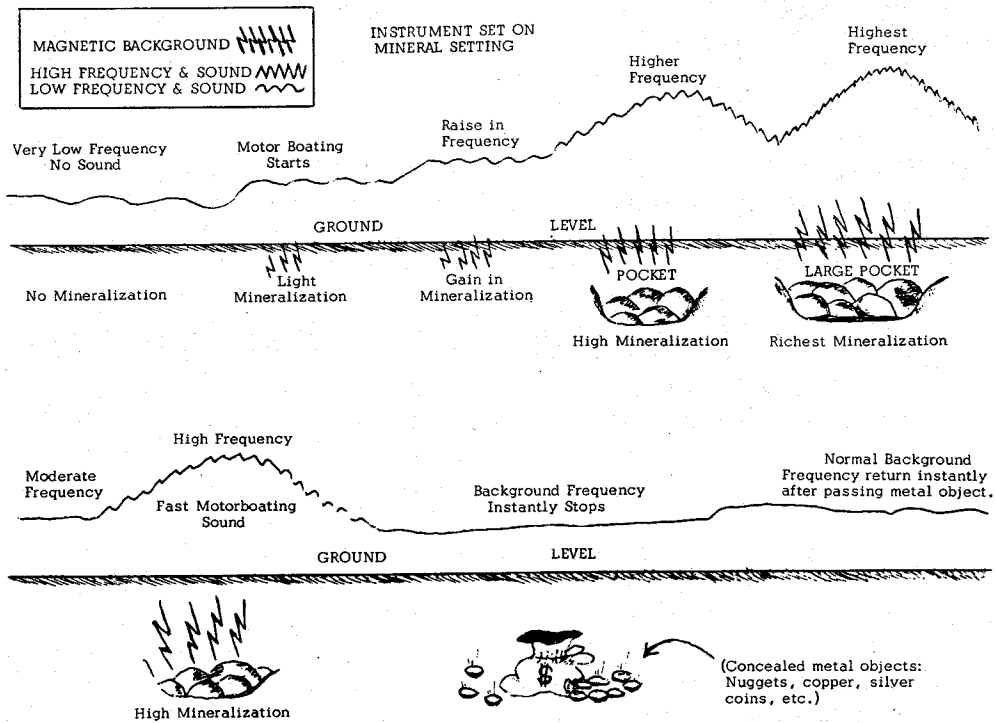
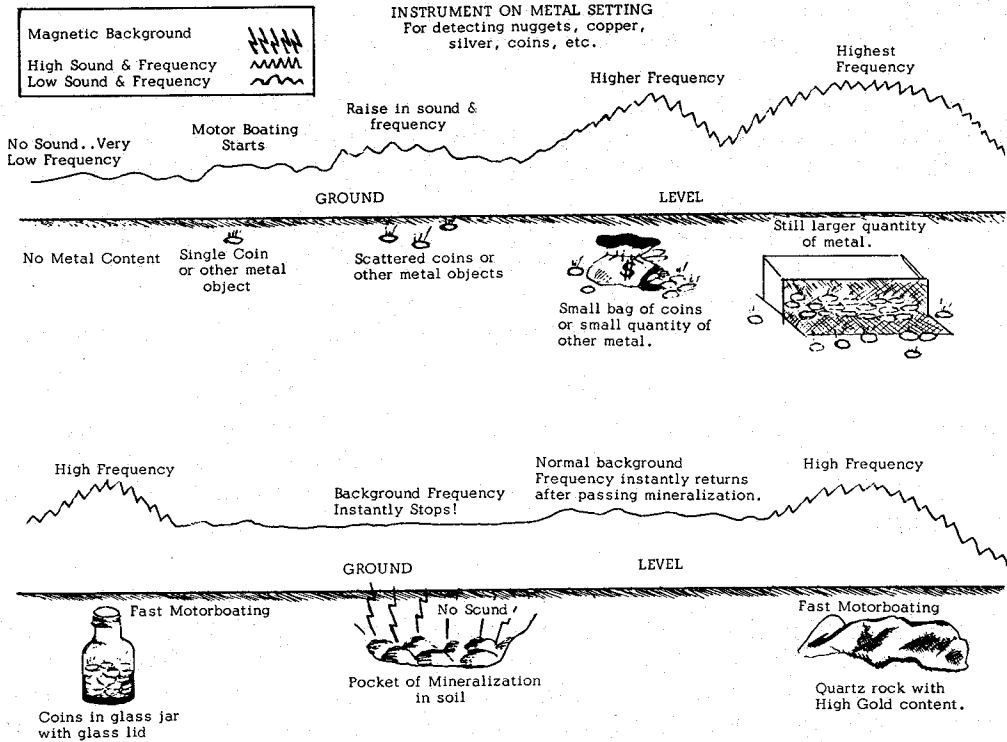
To check a quartz vein or outcropping or to prospect for single surface nuggets or high grade gold bearing quartz, the instrument should be zeroed in over the deposit on the mineral setting using the larger loop to locate the deposit it will naturally and normally concentrate in these places.

Placer gold is not usually detectable on the metal setting as this gold is usually small and fine with small sharp edges and does not have enough body surface to conduct plus the fact that these deposits usually contain a highly magnetic content which would over-ride and detectable conductivity of the gold.

In checking gravel bars and along streams for large single gold nuggets and high grade float, one uses the small loop and the instrument set on the metal setting. These large valuable nuggets having a nice flat surface and being such a high conductor give a very strong indication when the intensified field from the small loop is concentrated on them, which occurs when they are in detectable range and the small loop is passed over them.

The reason the small loop is used for single nuggets is to produce and project a more intense field of radio waves from the loop so that these waves are much stronger and highly concentrated to over-ride the magnetic counter affect of the high natural magnetic content of these formations. Without the small specially designed and engineered loop, these nuggets or small objects would not be detected. The larger loops spread their field over too wide an area, absorb so much of the magnetic field of the formation so that the concentrated intensity of the field is not strong enough and concentrated enough to be effective.

You can readily see why an instrument must be specially designed with the proper loops and have a mineral and metal selector control to be properly designed for prospecting and that a straight metal detector or a straight mineral detector would leave much to be desired.



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.

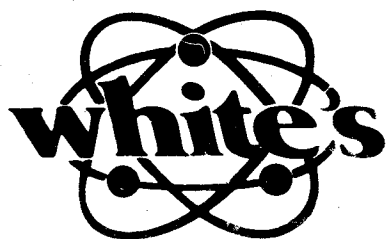
Read your warranty card carefully. It describes completely what is covered and the length of the coverage. If you have any questions don't hesitate to write us. We will be happy to answer any questions you may have.

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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