

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 the NUGGETMASTER

This instrument is very sensitive and has flexible methods of operations which varies in different areas due to the mineralization of these areas, the type of formation the instrument is operated over, and several other factors.

One should choose the best method of operation for the area to be prospected for the most suitable results.

This instrument is not a deep detecting type of instrument as it is not designed for this work, but it is a shallow detector for detecting small detectable mineral or metal objects relatively close to the surface. The depth of detection will vary in different areas due to the mineralization in the soil, the size of the object, the kind of overburden, the type of formation, the size of the object being detected, its associated minerals and several other factors. The detectable depth will vary anywhere from a few inches to several feet, depending on these conditions and the loop used, due to this fact the instrument is not usually bothered with damp soils, muds, clays, rocks, roots, and various other things that may many times give erroneous readings. The instrument is designed to detect only detectable minerals and metals and a reading will not be secured on a rock unless it has a detectable mineral or metal content.

The instrument comes complete with 5 exploring loops which are matched for this particular model. There is a 12" loop, which is the general prospecting loop, and is used for locating fairly large objects of either detectable metals or minerals. The 12" loop is used for detecting moderately sized objects from approximately the size of a dollar on up to large sizes. There is the 3 1/2" loop which is used for detecting very tiny objects that are too small to be detected with the larger loops, such as small coins, rings, gold nuggets, small pieces of mineral float etc. The large 18" loop connects to the exploring rod in place of the 12" loop and this is used for detecting larger objects at more depth. In general, the smaller the loop the smaller the object that may be detected but the shorter is the detectable range of the loop. The larger the loop the deeper the object may be detected, but the larger the object must be. Large objects such as buried treasures and mineralized veins that may be beyond the detectable range of the 12" loop may many times be located by using the 18" loop. For buried treasures approximately the size of a one pound coffee can or larger one would normally use the 18" loop.

In searching along gravel bars and in gravels, sands, etc., for very small objects the 3 1/2" loop is the one most suitable for use as usually these small objects will not be detectable with the 12" loop or the 18" loop especially if it is in highly mineralized areas. River banks, gravel bars, etc., usually have a very high concentration of minerals in the gravels and sands. One can tell very quickly if an area is mineralized. After the instrument is adjusted for operation for the height which is normally used to prospect with and with the exploring loop attached, slowly raise and lower the instrument approximately two to three feet. If you get an increase or decrease either in the reading or

the sound, it is a sure sign of mineralization. If there is no variation in the reading or in the sound then you are over a non-mineralized area or zone. In highly mineralized areas over gravel bars, etc., one usually cannot use the instrument in the automatic position due to the fact that the operator will not be able to carry the instrument steady enough to maintain constant and accurate readings without reducing the sensitivity of the instrument and reducing its detectable range. Under these conditions one should use either the mineral or metal meter alone for these areas.

If operating in a highly mineralized area you should select the lower mineral meter alone adjusting the instrument for a zero reading. You are then zeroing out the reading from mineralized objects, pockets or veins.

When looking for treasure you should select the upper metal meter and adjust the upper meter as described in the operating instructions. The instrument will usually not react to anything but a metal object and will then be read only on the UPPER meter. When so adjusted there will be no sound or reading until the exploring loop is passed over a detectable metal object.

Due to the flexibility of the instrument, one should not expect to learn everything in one day. Experience comes only with the operation of the instrument over various areas and formations.

Usually the longer one uses the instrument, the more familiar he becomes with it and the better the results that are obtained. It takes patience and experience to become a very good operator and the more one practices with the instrument, the better.

A special 6" coin loop is included with this instrument. This loop is especially designed for coins and will react to a single gold dollar, which is approximately 1/2 the size of a dime. Many of these gold pieces have been found in ghost towns. This loop will react to a single coin a little deeper than the 3 1/2".

The X3 Gold Probe is a waterproof 3 1/2" loop on a long handle. This loop may be used in water over three feet deep in checking streams and it may be submerged in water deeper than the other loops can, due to its long handle with connecting cable. When using any of the loops submerged in water; first submerge the loop in the water, being careful not to submerge either the plug of the loop or to allow water to enter the instrument's case, which houses the electronic circuits. This could temporarily prevent the instrument from operating. Then adjust the instrument the same as for use on dry land. In order to obtain the best results, it is necessary that the loop be held as steady as is convenient, at a constant distance from the stream bottom.

When removing the loop from the water, allow a few minutes for the loop to become temperaturized (to arrive at the same atmospheric temperature as the air around you) and then adjust the instrument for dry land use.

dial. Turn the Metal-Null-Mineral control which is #1 to the LEFT to the metal side and listen for the slow motorboating sound. (The further you turn this control to the right the faster will be the sound.) Turn the Range Control to the #1 position which is the most sensitive position. Take the instrument by the handle and while standing in a comfortable position, like you will use in prospecting, and with the exploring loop a few inches above the surface to be prospected, slowly turn this Metal-Null-Mineral control until the motorboating sound is slow while slowly raising and lowering the instrument 2 or 3 inches from the prospecting height that you will carry it, until the motorboating sound is as slow as you can get it without the motorboating sound stopping. Then turn the Vernier Zero control to the RIGHT until the motorboating sound just stops and no sound is heard while you are walking along over the surface that you are prospecting. The meter hand on the metal indicating meter will then read zero and no sound will be heard until the loop is passed over a detectable metal and then the motorboating sound will again be heard and the meter hand will swing to the right. One should be very careful to maintain the proper height of the exploring loop in relation to the ground in which the instrument was adjusted. If one lowers the loop closer to the ground or raises it further away from the ground than it was adjusted for, it can give a sound in the speaker and a reading on the meter.

When prospecting and the meter hand goes to the extreme RIGHT, one should pass the loop away from the spot that is giving the reading and see if the reading drops back to zero. Then pass the loop back over it and if the reading is again obtained and the sound is again heard, you are detecting something directly under the loop. The Range Control may then be turned from the #1 position to the #2 position and see if the meter hand drops back toward zero. If it does not, turn the Range Control to the #3 position and then slowly pass the loop over the spot where you are receiving the reading, being careful not to lower or raise the loop while this is being done and note the meter reading. If the meter hand goes to the extreme right, turn the Range Control to the #4 position and locate the exact spot where the reading is the highest. This will be directly over the center of the object. By very carefully watching the meter reading you can usually determine the approximate size of the object being detected, for as soon as the edge of the exploring loop passes away from the object, the reading will start dropping back toward zero, and while you are directly over the center of the object, the reading will be the highest. Passing the loop over the object from left to right and from the top to the lower side will usually outline the size.

The Range Control should then be turned back to the #1 position for further prospecting.

For Automatic Detection of Metal and Minerals using both Meters - -To use the instrument for automatic detection of metal and minerals, should you desire to prospect for minerals and metals at the same time and are looking mainly for high conductive metals, you may set the instrument up as follows, leaving the controls set as just described.

Turn the Auto-Off switch to the AUTO position. Turn the Range Control from the #1 position to the #2 position and then while holding the instrument by the handle in a comfortable prospecting position, slowly turn the Metal-Null-Mineral control

to the LEFT until the motor boating sound starts and a reading of approximately 10 is had on the metal meter. Then slowly adjust the Vernier Zero Control until you receive a reading on the UPPER metal meter between 10 and 20, while slowly raising and lowering the instrument approximately 3 or 4 inches, as you would move it in normal walking. Carefully adjust the Vernier control so that the meter hand will not fall below zero and will give an average reading of between 10 and 20. You may find that you are unable to hold the instrument steady enough in the #1 position for accurate reading on the metal indicating meter when in highly mineralized areas.

In the automatic position it is very important that the instrument be carried as steadily and evenly as possible, with the least possible up and down movement. Normally, the instrument may be used with the Range Control in the #2 position. However, if you are over a highly mineralized area where the reading may be erratic with too much variation while moving about, you may change the Range Control over to the #3 position and readjust the instrument for your average reading of between 10 and 20, being careful to adjust the instrument so that in normal walking the meter hand will not fall below zero. If the metal meter hand drops below zero, the mineral meter hand will register and give an indication.

When the instrument is set up to prospect in this position and the exploring loop passes over a detectable metal object, you will receive a higher reading on the UPPER metal meter and an increase in sound in the speaker. Should you pass over a detectable mineral containing a hard or magnetic metal, such as a piece of mineralized float or a detectable mineralized vein, the metal indicating meter hand will drop to zero and the sound will die out in the speaker and the lower mineral indicating meter will swing toward the RIGHT side of the scale. As long as the exploring loop is held over the detectable mineral there will not be any sound in the speaker or a decrease in the sound, depending on the size of the object and the richness of the ore, and the mineral indicating meter hand will show a reading. As soon as the exploring loop has passed this detectable mineral, the mineral meter hand will again drop back to zero and the metal meter hand will resume its normal reading, which the instrument was adjusted for and the sound in the speaker will resume. Should you believe this to be a vein, you may set the instrument up for detecting minerals so that the speaker will operate when detecting minerals and the lower mineral meter will also indicate the detectable rich and lean spots and pockets and also indicate large and small mineralized objects as follows:

To use the the Lower Meter For Minerals only - First, move off the vein. Then turn the Off-Auto Switch to OFF and the Mineral-Metal control to the mineral position. Turn the Vernier Zero control to 50 and turn the Metal-Null-Mineral Control slightly to the RIGHT to the point of null or "no signal" and then continue to the RIGHT until a slow motorboating sound is heard in the speaker. Slowly turn the Vernier Zero control to the LEFT until the mineral indicating meter hand drops to zero and the sound stops in the speaker while holding the instrument in the normal prospecting height and then proceed to check this mineralized zone. You will notice that the instruments speaker will not die out over this mineralized vein or zone but the sound will increase with the increase in the richness of the ore and a higher reading will be secured on the mineral indicating meter, which is

the lower meter of the instrument. Passing over the rich portions of the vein, should the meter hand swing to the extreme RIGHT, you may turn the Range Control from the #2 to the #3 position. The richer the ore the faster and louder will be the sound in the speaker and the higher will be the reading on the mineral indicating meter.

Should the meter hand go again the extreme right on the mineral meter, you may turn the Range Control from the #3 position to the #4 position, which is the instrument's least sensitive metering position and this is the position where the richest ore or the largest bodies of ore give the reading depending on their magnetic content.

By tracing the direction that you receive the highest reading in the #3 or #4 position, you can trace the veins and search for the high-grade pockets or richest portions of the vein, as these will be the spots where the mineral meter will read the highest in the least sensitive positions and the sound in the speaker will become faster and louder when the loop is passed over these particular higher mineralized and magnetic spots.

The #1 position of the Range Control is the most sensitive position and is the position to start prospecting. The #2 position is approximately half as sensitive as the #1. The #3 position is approximately 1/3 as sensitive as the #1 and the #4 position on the Range Control is approximately 1/4 as sensitive, so the very richest of the ores will read on the #4, the little leaner ores will read on #3, the lower traces on #2, and the smallest and leanest on #1, depending on their magnetic content.

Also the larger the body of ore, the higher it will read on the #4 or #3 position, depending on the size, richness and magnetic field. The reason the instrument is changed over from the automatic position to the mineral indication position when a mineral is indicated is so that you may use the speaker and meter together to detect the magnetic field from the mineral so as to be able to use the Range Control to determine the richness and leanness and the tracing of the veins containing the minerals. In this position the speaker will sound and the meter will read higher on an increase in mineralization and the speaker will not die out as in the auto position. (Be sure that the Metal-Null-Mineral control, located above the Vernier Zero Control, is turned to the mineral side of null.

For Auto Detection of Minerals and Metals Using Both Meters-Should you wish to set the instrument up for the automatic detection of both minerals and metals you may turn the Vernier Zero Control to the #50 position. Turn the Off-Auto switch to the AUTO position. Turn the Range Control to the #2 position and the Metal-Null-Mineral Control to the right to the mineral side of the null until the meter reading on the lower meter hovers between 10 and 20 and so the mineral meter hand does not fall back to zero in normal walking and the motor-boating sound will be heard constantly in the speaker. You should be able to walk along carefully and hold this meter reading between 10 and 20. Occasionally it may vary a little below 10 or a little above 20, but this is permissible as long as the meter hand does not fall below approximately 5. Should the variation be too much a slight adjustment of the Vernier Zero control as one moves along is usually all that is necessary. However, should you be in highly mineralized area and you find it difficult to hold the reading on the

lower mineral meter, you may turn the Range Control to the #3 position and again slightly adjust the instrument Vernier Zero control to give you an average reading. In this position the instrument is not nearly as sensitive as when using the mineral or metal meter alone, but it will react to both detectable minerals (magnetic) and metals (non-magnetic) as follows: Passing the exploring loop over a detectable mineral object, the sound will increase in the speaker and the mineral meter will read higher on the scale, but as the Range Control is set for less sensitive positions, it will not react nearly as much on smaller objects as when the Range Control is set on the more sensitive position and the single meter is used. As soon as the exploring loop is passed over a detectable metal object, the sound in the speaker will decrease or cease depending on the size, and the mineral meter hand will swing to or toward zero and the metal indicating meter hand will show a meter reading as soon as the mineral meter hand returns to a zero reading. The sound in the speaker will decrease or cease as long as the exploring loop is over the metal object and just as soon as the exploring loop is passed away from the metal object the sound will again increase or resume in the speaker and the metal indicating meter hand will again return to zero and the normal mineral meter hand will again register the reading which the instrument was adjusted for.

To set the instrument up for prospecting for minerals alone (Refer to For Minerals only Using Lower Meter) turn the Vernier Zero Control to the #50, the Off-Auto control to OFF and the #3 Mineral-Metal switch to the MI position. Turn the Metal-Null-Mineral control slightly to the RIGHT of null until the motorboating sound starts slowly. Turn the Range Control to #1 and then holding the instrument in the normal prospecting position and while slowly raising and lowering the instrument 3 or 4 inches as one normally would in walking, adjust the Vernier Zero control the the LEFT until the motorboating sound ceases and no sound is heard in the speaker and no reading is indicated on the mineral indicating meter. Just as soon as a detectable mineral object is present under the exploring loop, the speaker sound will again be heard and the mineral indicating meter hand will swing to the right. Should you receive a full scale reading on the mineral meter, you may turn the Range Control from the #1 position, to the #2 position and the meter hand will swing back towards zero unless the object is large or rich enough to hold the meter reading higher on the scale. If it is, then turn the Range control from the #2 position to the #3 position, which is a less sensitive position and the meter hand should swing back towards the left of the scale. If the object being detected is a vein, you may determine its width by crossing the vein and watching the high reading. The original reading that you received in the #1 position would be the edge of the vein and the center of the vein would normally be the reading that you would receive on the #2, #3, or #4 positions, depending on the richness or the size of the vein. Normally the larger and richer the vein, the higher the reading. Just as soon as this vein is crossed and the exploring loop passes off the far side of the vein, the sound in the speaker will die out and the meter hand will return to zero on the lower mineral meter.

By marking the spots with a monument of rock where you first received the reading and the spot where the reading ceased, it will give you an idea of the size of this vein and you can then determine the direction that the vein runs by following the direction that you will receive the highest reading in the less sensitive position. The #1 and #2 positions are usually too sensitive for vein tracing unless the vein is very small. By following the direction of the highest reading on the #3 or #4 you can determine the direction the vein runs and also note the highest reading spots on the least sensitive positions and also the loudest sounds in the speaker, as the speaker will increase in sound over the highest mineralized magnetic pockets, kidneys or mineral concentration, and the sound will lower and the meter will drop, in the leaner spots. By carefully marking these spots one can many times determine the high grade and rich reading pockets that may occur in these deposits. When there is nothing visible to the naked eye, this greatly increases the chances for successful exploration of these veins when no other method may be available. There is a hazard to bear in mind when checking a highly mineralized vein. Should an extremely high detectable soft metal content occur in this vein such as a high concentration of detectable gold, native silver, or native copper, this could have a counteracting reading against the high reading of the mineral meter when the loop is reading against the high reading of the mineral meter when the loop is passed over this vein, if the metal ore is predominate and richer than the mineral in that particular spot. In this case, as soon as the exploring loop is passed over this particular spot the mineral meter reading would lower and the sound would weaken or die out in the speaker similar to what occurs over a barren spot in the vein. A pocket like this would most likely be unusual, but it could occur and the reason that the sound will weaken or die out and the mineral indicating meter would lower or drop to zero, is because the metal content of the vein is stronger and richer than the mineral and is predominate in the vein and will give this counteracting effect. These spots should also be very carefully marked and should be investigated. This is something that the prospector would not normally expect and is another reason why this instrument is so designed to locate these deposits that were before possibly undetectable.

Should you wish to use the Range Control over the metal objects you may set the control back for the metal indicating position, that is the #3 Mineral-Metal control to the ME position, the Vernier Zero control to the #50 position and the Metal-Null-Mineral control, is turned from the mineral side past the point of null to the metal side until the motorboating sound starts slowly. Then turn the Vernier Zero control until the sound stops and a zero reading is received on the metal meter with the Range control in the #1 position. These adjustments should be made away from the spot where you receive your metal reading and then pass the loop over this spot and if you get a full scale reading, turn your Range Control back to your the #2 position and check the spot again. Then to the #3 or #4 position, if necessary, and the highest readings in the least sensitive positions will be secured when the loop is over the center of the object. The reading does not have to be high to be good. Just a low metal reading may be a rich metal ore, in a magnetic vein, as the magnetic vein would normally reduce the reading that would be received from a soft metal.

In checking placer ground to locate the highest concentration of minerals, one should always start with the instrument set up for detecting mineral pockets of black sand. Use the 18" loop. The Range Control should be on the #1 position and the instrument carefully adjusted for a zero reading on the lower mineral

indicating meter and no sound in the speaker. The higher mineralized the area is, the more evenly and carefully the instrument must be carried because the higher the mineralization is the more sensitive the instrument is to this up and down movement which occurs in normal walking. As soon as the mineralization or concentration or mineral increases in the soil the sound will again start in the speaker and the lower mineral indicating meter hand will swing toward the RIGHT. Occasionally there will be a very slight mineral indication on the meter and the speaker may sound off, which would be of no value but could also be mineralization from more depth which could be marked and checked later. In this case a slight adjustment of the Vernier Zero control will again return the meter hand to zero and the sound in the speaker will cease. Slight temperature changes will sometimes cause this as well as very light mineralization changes. As your mineral increases, as over a shallow pocket, the sound will abruptly increase and the meter hand may swing very quickly toward the extreme right, and if this occurs, you may turn the Range Control to #3 and continue prospecting. If the meter hand again swings to the RIGHT turn the Range Control to the #4 position and locate the spots where the reading is the highest.

In case you should locate a spot where the meter hand again swings to the extreme RIGHT and the Range Control is already in the #4 position and no more ranges are available, you may use the speaker alone and locate any spots where the sound increases still greater and these spots will usually contain the highest concentration of minerals. As soon as you pass away from the high grade pockets containing the highest concentrations, the sound will decrease and the meter readings will also decrease. The larger the pocket the higher the sound and the higher the reading over the area. The smaller the pocket, the smaller the area which you will receive the highest readings over.

NOTICE - In placer areas, it is possible to receive a lower than normal reading and lower sound in the speaker over a very high grade and very shallow gold pocket, when the instrument is adjusted for mineral detection, while the loop is held over the pocket. Also if the gold content is high enough so that it is predominate over the mineral content, this pocket can cause the sound to die out in the speaker completely and the mineral hand to fall to zero. This is also true of high grade gold bearing quartz, if the gold content is high enough. these unusual reading spots should be carefully investigated. (Rusty metal objects and also give this effect.) It is a good policy to always investigate any unusual reading on either Mineral or Metal.

If you have ever used a geiger or scintillation counter, you are probably familiar with the Range Control, where the most sensitive range is first used to start prospecting and as you find radio-active minerals, the less sensitive ranges are used to take your readings on from the vein to locate the high grade ore. The Range Control of this instrument acts very similarly and it is possible for one to locate the high reading pockets the way it is done with a geiger counter on radio-active minerals. While this instrument does not detect any radio-activity, it reacts to the detectable mineral (hard or magnetic metal) or metal (soft and non-magnetic metal) contents and also many of your radio active rare earth minerals as well as some of the uranium deposits may be detected with this instrument, due to the fact that it does react to many of the minerals or metals themselves that may be in these deposits. So not only may the instrument be used for locating the presence of treasures and minerals and metals, but also can detect the presence of some of the radio-active deposits that contain the detectable minerals or metals along with the other

valuable ores associated with it. One should use the samples which accompanies the instrument for practice to become familiar with the operation of the equipment and he should not expect to learn all there is about the instrument in just a few minutes, or even hours or days, due to the fact that the equipment is so flexible and so advanced and has so many features that you will find out other things about the ways it may be used and ways to operate it in different areas and as one becomes accustomed to the operation better results may be obtained and a greater number of uses are discovered. While the instrument is very sensitive it is also very ruggedly built, but should not be subjected to undue shocks and jars, as this is a very sensitive electronic instrument and such jolts can cause a shifting of electronic elements inside the instrument which could develop into an erratic or improper operation.

It is always a good policy when using a rock hammer for breaking off samples of outcropping, to set the instrument to the opposite side from the direction of the blows of the hammer, so as not to strike rocks in the direction of the instrument.

TO TEST THE BATTERIES IN THE INSTRUMENT:

This model has two 9 volt batteries. To test the batteries proceed as follows:

1. Turn the #1 Metal-Null-Mineral control to NULL so no sound will be heard in the speaker.
2. Turn the lower #3 Mineral-Metal control to the METAL setting.
3. Turn the OFF-ON Power switch to the ON position.
4. Turn the battery check switch to each one of the battery voltage positions in turn, noting the meter reading on each position. Fresh new batteries will read approximately 40 on the metal meter. The batteries should be replaced when the reading drops to 25 or 30, but can be used below this if desired, but the volume in the speaker may be weaker.

When through using the instrument, be certain that the Off-On Power switch is turned to the OFF position, to prevent discharge of the batteries, and the resulting damage to the case and components.

Be sure to let the instrument warm up for 5 to 10 minutes to stabilize the voltage and frequency before using it for prospecting. This will give you a more steady and reliable reading.

Should your instrument need service, it should be returned to the factory at Sweet Home. Our service centers at other locations are not trained on this particular instrument.

GOOD LUCK PROSPECTOR

WE WISH YOU VERY HAPPY PROSPECTING AND TREASURE HUNTING

NUGGETMASTER

Transistorized Amplifying Circuit with Front End Tuner Operating Instructions

To put this instrument into operation, proceed as follows:

1. Insert the adjustable loop rod into the sleeve provided under the front end of the instrument, and insert the bolt through the hole in the rod and screw on the composition nut.
2. Install the loop desired on the end of the rod and tighten the two composition nuts.
3. Spiral the loop cable around the rod and insert the plug into the socket provided. You cannot insert the plug incorrectly, as it will only go in when the two large and two small prongs are in the proper position, which is accomplished by slowly rotating the plug on the socket. When the holes are lined up properly, the plug may be inserted and seated snugly against the socket to make a good firm connection.
4. Turn the Range Control to the #4 position. (This control is #4.)
5. Turn the Vernier Zero control to #50, so that the #50 is at the top of the dial, and in line with the marker just above the dial. (This control is #2.)
6. Turn the lower Mineral-Metal knob to the metal setting so the knob pointer is pointing to the ME lettering. (This control is #3)
7. Be sure the Off-Auto Control is in the OFF position.
8. Turn the gold colored knob with the red mark, so that the red mark is in line with zero above this knob. This zero is located just under the word NULL, and is located between the mineral and metal setting, and is labeled Metal-Null-Mineral. (This control is marked #1.)
9. The #5 control is the Battery Checking Switch.
10. On the front end of the instrument there is a small black knob. This knob is used to adjust the instrument to the loop you select to use.
11. Turn the Off-On power switch from the OFF position to the ON position. If a squeal or motorboating sound is heard, slowly turn this knob 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 the dead spot. (where no sound is heard.)
12. Now turn the Range Control from #4 to the #1 position. This protects the meter from any overload while adjusting the loop.

This procedure is repeated whenever you change loops.

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.

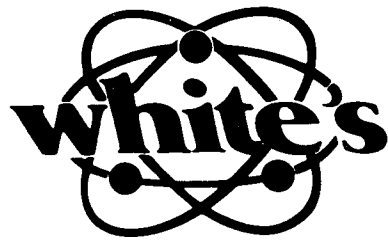
Read your warranty card carefully. It describes completely what is covered and the length of the coverage. If you have any questions don't hesitate to write us. We will be happy to answer any questions you may have.

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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