

Gm m/m

White's *ELECTRONICS*

1218 MAIN STREET SWEET HOME, OREGON

OPERATORS INSTRUCTIONS



Manufacturers of OREMASTER

MINERAL and METAL
DETECTORS

OIL PROSPECTING
EQUIPMENT

SUPRE BEIDER AND
SCINTILLATION COUNTERS

ULTRA VIOLET
LIGHTS

STANDARD GOLDMASTER MINERAL AND METAL DETECTOR

OPERATING INSTRUCTION SHEET

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 of the rod. Spiral the surplus cable around the rod and plug the loop cable's four pronged plug 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. The speaker control should be turned to the extreme right which it usually is when the instrument leaves the factory as 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.

There are two sizes of exploring loops normally supplied with the instrument unless additional loops are ordered. A small 3½" loop labeled #1 and a larger 12" loop labeled #2. On the instrument you will have a selector control labeled #1 and #2. This selector control is incorporated in the instrument to automatically tune the instrument for the loop you have selected to use. If you desire the #1 loop, turn the SELECTOR CONTROL to #1. If you desire to use the #2 loop, turn the SELECTOR CONTROL to #2. The instrument then is automatically tuned in for the loop desired. (After the loop selected has been installed, be sure to turn the SELECTOR CONTROL on the instrument to the number matching the loop.)

- #4. Turn the Mineral-Null-Metal control to NULL which is located just above the large Radio Tuning control. You will notice a black circle located just below the word NULL. Turn the Mineral-Null-Metal control so the red marker is in line with the black circle just below the word NULL. The word NULL is located between the metal and mineral setting. ★
- #5. Turn the OFF-ON Power Switch to the ON position. Turn the Mineral-Null-Metal 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 too far to the RIGHT will greatly reduce the sensitivity of the instrument and its detectability. While this adjustment is being made, the instrument should be held with the exploring loop just three or four inches above the surface to be explored when using the 12" loop, and one to two inches above the surface when using the 3½" loop when searching for the smallest objects. When the instrument is set on the metal setting and the exploring loop passes over a detectable metal object, a motorboating sound will at once be heard in the speaker. As soon as the loop passes the metal object the motorboating sound will cease. 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.

To set the instrument for detecting minerals, slowly turn the MINERAL-NUL-METAL Control to the RIGHT towards the mineral setting until the motorboating sound again starts very slowly. Carefully adjust this control till the motorboating sound is as slow as you can get it without the motorboating sound stopping. Then turn the Radio Tuning Control slightly to the LEFT until the motorboating sound just stops but no more than necessary to stop the motorboating in the speaker. The instrument is then 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 start 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 cease. The larger or richer the mineralized object, the louder and faster will be the motorboating. (Nail and steel objects, bolts, etc., being very hard will also usually be detected on the mineral setting.)

AUTOMATIC DETECTION OF METALS AND MINERALS

If you wish to set the instrument for the automatic detection of metals or minerals, you may turn the MINERAL-NUL-METAL CONTROL to the metal setting until the motorboating sound is very slow. Then leave it motorboat and pass the loop over the metal sample that comes with the instrument and you will notice that the motorboating sound will increase in frequency and volume. Then move the loop away from the sample and you will notice that the motorboating will slow down to its regular adjusted beat. Then pass the loop over the mineral sample. When the instrument is adjusted for a slow motorboating sound on the metal setting of the instrument, the motorboating sound will increase over metals and cease over detectable minerals. 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 die on metals, you may turn the MINERAL-NUL-METAL control to the RIGHT to the mineral setting until the motorboating sound just starts very slow, then pass the loop over your mineral sample and the motorboating sound will increase in volume and frequency as long as the loop is held over the mineralized sample. Then pass the loop over the metal sample and the motorboating sound will cease the instant the loop is passed over the metal object. This is desirable in checking mineralized veins, as the larger the vein and richer the ore, the louder the sound and faster the frequency over the richer or highest mineralized spots or zones of the deposit.

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 may start in the speaker as this loop is raised and lowered. This is especially noticeable in a highly mineralized area 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 vary the instrument in your normal walking while prospecting and at the same time slowly adjust the Radio Tuning Control until the motorboating just stops. The instrument is then adjusted for the variation such as would occur in walking and then will not motorboat until you detect a detectable object.

The 3½" loop is designed for detecting very small objects but the loop must be passed very closely over the object as the field from the loop is highly concentrated to react to very small mineral 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 reading. For example: If you have the instrument set on the mineral setting and you place the small loop too close or against the aluminum metal sample you received with the instrument, you may get an indication on this metal sample by the circuit becoming overloaded. This may also occur if you have an exceptionally highly magnetic ore sample and the instrument is set on the metal setting and if 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 12" loop is used for prospecting for larger objects and will detect deeper than the 3½" loop but will not respond to as small an object as the 3½". The 3½" loop should always be used when checking along gravel bars for small metal objects due to the high magnetic content of the gravel.

As you are prospecting with the instrument you may notice that the motorboating sound may start in slowly in the speaker for no apparent reason. This can be caused by slight mineralization changes in the soil or gravels and sands or by having the Radio Tuning Control just a little bit too sensitive for the area. This can be occasionally adjusted if necessary by just very slightly turning the Radio Tuning Control until the motorboating sound just stops.

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 it 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 become damp and can severely damage the instrument's 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 complete with the loops but not the exploring loop rod.

WHITE'S ELECTRONICS RESEARCH LABORATORY

1011 Pleasant Valley Road
Sweet Home, Oregon 97386
Ph. (541) 367-2138

INSTRUCTIONS FOR BATTERY TESTING

To test the batteries in the instrument, the instrument must first be turned on and then the BATTERY CHECK SWITCH turned to each one of the 1.5 positions in turn which read the voltage on the two $1\frac{1}{2}$ volt batteries. This is read on the lower scale of the battery volt meter which has a two volt scale. Fresh batteries read approximately 1.5 and they should be replaced when the battery voltage drops to 1 volt or the middle of the meter scale. The instrument has a $67\frac{1}{2}$ volt B battery and when turning the Battery Check Switch to 67.5 this battery voltage is then read on the top scale of the meter which is a 100 volt scale. A fresh battery will test approximately 65. This battery should be replaced when the voltage drops to 50 volts or the middle of the meter scale. When through checking the batteries be sure to turn the Battery Check Switch to the OFF position. As you have two $1\frac{1}{2}$ volt batteries in the instrument and should one of them read low and need replacing, you can always tell which one of the batteries it is by leaving the Battery Check Switch in the position of the low battery and unplug each of the A batteries in turn. And when the battery that reads low has the plug removed from it, the meter reading will drop to zero as this battery is removed. This indicates which one of the batteries is under test. However, the instrument may still operate when the batteries need replacing and the instrument may still be used as long as it will operate and will do no harm but may be weaker or less sensitive.

~~If in need of new fresh batteries, they may be ordered direct from this laboratory and we pay the postage. A new fresh set is \$5.50.~~

WHITE'S ELECTRONICS RESEARCH LABORATORY

MINERALS 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 metals 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 and etc., which results in lots 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, sands and water.

To check a quartz vein or outcroppings or to prospect for single surface nuggets or high grade gold bearing quartz, the instrument should be used on the metal setting and with the small loop.

To check a placer deposit as it is assumed the deposit will have a high magnetic content with lots of black sand, the instrument should be zeroed in over the deposit on the mineral setting using the larger loop to locate the highly mineralized concentrations, reefs, or pockets. If there is any gold 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 any 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 intensely concentrated 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 HIGHER CONCENTRATED TO OVERRIDE THE MAGNETIC COUNTER AFFECT OF THE NATURAL MAGNETIC CONTENT OF THESE FORMATIONS.

Without the small especially designed and engineered loop these nuggets or small objects would not be detected. The larger loops spread their field over too wide an area, absorbing 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 especially 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 straight mineral detector would leave much to be desired.

WHITE'S ELECTRONICS RESEARCH LABORATORY

INSTRUMENT SET ON MINERAL SETTING

MAGNETIC BACKGROUND
HIGH FREQUENCY & SOUND
LOW FREQUENCY & SOUND

Highest Frequency

Higher Frequency

Raise in Frequency

Motor Boating Starts

Very Low Frequency
No Sound

Fastest Motor Boating Sound

Fast Motor Boating Sound

Raise in Motor Boating

GROUND

No Mineralization

Light Mineralization

Gain in Mineralization

LEVEL pocket

High Mineralization

High Mineralization

Richest Mineralization

High Frequency

Moderate Frequency

Fast Motor Boating Sound

Background Frequency Instantly Stops!

Normal Background

Frequency return instantly after passing metal object

GROUND

LEVEL



High Mineralization



Unconcealed metal objects:
Nuggets, copper, silver coins, etc.)

MAGNETIC BACKGROUND

HIGH SOUND & FREQUENCY

LOW SOUND & FREQUENCY

INSTRUMENT OF DETAIL SETTING
For detecting nuggets, copper
silver, coins, etc.

Highest Frequency

Raise in sound &
Frequency

Very low Frequency Motor boating

No Sound starts

GROUND

LEVEL

Still larger quantity
of metal

No metal Content

Single coin or
other metal
Scattered coins or
other metal objects.

Small bag of coins
or small quantity of
other metal.

High Frequency

High Frequency

Background Frequency
Instantly Stops !

Normal background
Frequency instantly returns
after passing mineralization

GROUND

LEVEL

Fast Motorboating

No Sound



Coins in glass jar
with glass lid

Pocket of Mineralization
in soil

Quartz rock with
High Gold content.



SPECIAL NOTICE - TEMPERATURE CONTROL

This is the latest model instrument and we have now added a special temperature control which is marked zero control which is located on the front end of the instrument and just above the handle.

This control will adjust any loop that may shift either to the right or to the left of null. You will notice that it is now set on the center of the large red zero which is correct for this area and this temperature.

To adjust the Mineral-Null-Metal control for the loop being used, proceed as follows:

1. Install the loop desired and turn the loop selector to the same number as is on the loop.
2. Turn the Mineral-Null-Metal control so the red line is in line with the black zero under the word Null.
3. Turn the Radio Tuner control so that #50 is at the TOP of the dial in line with the black line.
4. Turn on the power switch with the loop away from any metal object. There should not be any sound heard in the speaker if the loop is in balance with the instrument. If you hear any motorboating sound, turn the zero control either to the right or to the left whichever direction is necessary to stop the motorboating sound. If you continue to turn the zero control after the motorboating sound stops, it will again start if you turn it too far. If this happens, turn it back just a little till the motorboating sound stops, then the loop and instrument are balanced for the temperature of the area you are in and the Mineral-Null-Metal control is correct.

You may retune any of the loops this way to compensate for any temperature change in any area at any time.

This is the latest model instrument and the circle under the word NULL is yellow instead of black, and the marker line on the Mineral-Null-Metal control knob has a WHITE instead of a red line.



SPECIAL NOTICE -- ON WATER PIPES

DO NOT try to check the instrument out on water pipes. They are not designed for waterpipe finders. If you desire to locate water pipes, we have special instruments 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 metal 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 received.

In checking a corn size (or slightly smaller) gold nugget, lay the nugget on a piece of quartz (quartz is where gold normally originates), then using the small $3\frac{1}{2}$ " 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.

BULLETIN -- IRON NUGGETS

For amateur and professional prospectors.....LOOK.....Now available in a plastic box with a HISTORICAL CHINATOWN label.....A GENUINE NATURAL IRON NUGGET right from the historical Chinatown, Montana gold mining deposit where over \$33,000,000.00 in gold has been recovered.

Get one of these historical Iron Nuggets from this historical deposit for comparison purposes. Look at the Nugget - study it- notice its weight and color so you can readily identify this type of a Nugget in the field while prospecting.

REMEMBER: The old time prospector looked for these nuggets when hunting for new gold deposits as he knew that these nuggets were always found in the rich placer gold deposits. The old timers would say -- "You may find these nuggets without gold, but you will never find a good gold deposit without these Iron Nuggets".

Notice also how one of the Oremaster Mineral and Metal detectors will respond to one of these single Iron Nuggets on the mineral setting. As the old timer had no sensitive electronic equipment he had to rely on locating these nuggets. You may now combine both the old and new prospecting methods by securing one of these nuggets right from the Historical Chinatown, Montana deposit and carry it for comparison while using one of our new mineral and metal detectors. It is always a good policy to know what to look for in prospecting.

GENUINE CHINATOWN IRON NUGGET in plastic box -- prepaid and insured to you -- \$5.00 each.

Small vial of gold bearing black sand -- \$5.00 per vial. YOU CAN SEE THE GOLD IN THIS SAND. Prepaid and insured.

ORDER FROM

WHITE'S ELECTRONIC RESEARCH LABORATORY

"OREMASTER POCKET MAGNETOMETER"

This picture shows the OREMASTER "POCKET MAGNETOMETER" pin pointing the very centers of the magnetic fields in this high grade ore sample from a new discovery made by one of our customers near one of Oregon's largest gold mines.

Notice the positive and negative readings that are obtained by moving this meter over the sample. This rich ore is in quartz and the vein is highly magnetic.

As the meter is so sensitive and will react through metal, glass, etc., these meters may be used in mobile prospecting for checking large areas for detectable magnetic veins. (Gold, copper, silver and other valuable metals are frequently found in magnetic veins.)

This meter will not react to gold, copper or silver, but will react to the magnetic veins that may contain them as well as to magnetic veins containing valuable minerals. (The Oremaster Mineral and Metal locators are designed to react to a detectable quantity of native gold, copper or silver.)

Each meter is fully guaranteed for one year on workmanship and material and comes with a high grade magnetic ore sample.

While the price is low, the sensitivity of the meter is very high and the possibility of discoveries that may be made with it, along with one of our mineral and metal locators, is very great.

PRICE: \$29.50 -- No sales tax -- Terms if desired, \$10.00 down and \$5.00 per month.

WHITE'S ELECTRONIC RESEARCH LABORATORY

Manufacturers of OREMASTER Space Age Instruments

