

White's Electronics, Inc.

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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 SUPER X500-EE MINERAL AND METAL DETECTOR

The Super X500 is not difficult to assemble and operate. However, as with anything else, better results will be obtained after the operator has had some experience with his instrument. Therefore, we recommend that before a serious prospecting trip is undertaken, the user will practice a little in his backyard. Bury a coffee can a foot or two deep, well away from other metal objects.

The user should follow the tuning instructions (ADJUSTING FOR USE) on the next page very carefully. Unless these instructions are followed closely, the full sensitivity of the instrument will not be utilized. Great sensitivity can be achieved with present day tubes and transistors, but with some makes of instruments, the sensitivity is wasted because of poor design and construction. Some instruments do not have enough circuit stability, and others do not have the rigid construction which is necessary to achieve sharp tuning. With the Model X500 particular attention has been given to stability and rigidity, assuring maximum utilization of its basic sensitivity.

The Model X500 is the product of more than 25 years of field experience with all types of metal detectors. As a result, we have designed into the X500 features not found in other instruments which were designed by "desk" engineers. For example, the multilevel connecting handle makes the instrument easily adjustable to all ground conditions. At the same time, the design is simple enough so that the X500 can be used by the amateur as well as the professional.

Should anything in the following instructions not be clear, we will be happy to answer your questions.

Good Hunting,



WHITE'S ELECTRONICS, INC.
Kenneth G. White, President

GROUND MINERALIZATION

Sometimes a pocket of mineralization will give a signal much like a metal object. This can be caused by damp salt near the surface and can usually be distinguished from metal because the meter reaction (or signal in the headphones) is slow. With the metal object the reaction is usually instantaneous.

Maximum signal intensity will occur when the receiving unit is slightly ahead of the object. However, if the object is quite deep, the maximum signal will occur when the object is closer to the transmitter. If highly mineralized ground is encountered, it will sometimes be difficult to obtain the null. It is then necessary to reduce the sensitivity on the receiver by turning the pointed knob in a counter-clockwise direction. This sensitivity control should be adjusted so that the operator is able to obtain a null of $1/3$ to $1/2$ turn when adjusting the white knob.

GENERAL INFORMATION

The instrument can be used to explore walls. Simply hold it parallel to the wall with the receiver a foot or two away. Then tune the instrument as it is done when it is used above the ground. Next proceed along the wall keeping the detector at the same distance from the wall at all times. An object in the wall will cause the same signal as if it were buried in the ground. Some users like to practice on pipes which run along the street in front of the house to familiarize themselves with their instruments. It will be noted that a pipe will be picked up under the transmitter and not under the receiver as with isolated objects.

The instrument can be operated successfully over pavement, concrete, snow, ice and the signal will penetrate fresh water. Many users like to check shallow stream beds. When using over a stream, be sure to tune the detector after wading out in the water. Avoid getting the instrument wet. Some owners place their instruments in large plastic bags for protection.

Outboard motors sunk in shallow lakes can be picked up from a boat on the surface with the Model X500. The rocking of the boat does not permit as sharp tuning as when carried on solid ground. Therefore, the depth penetration will not be as deep, as the maximum depth it can be detected is 10 to 15 feet.

Generally speaking, the closer the instrument is held to the ground, the better the results will be. Obviously, there will be times when boulders or other obstructions get in the way and the instrument must be held higher.

The X500 uses 6 "C" cells in its power pack. At least 500 hours of use may be expected from a set. However, it is recommended that batteries not be used more than one year without replacing.

ASSEMBLY

Connect the two halves of the handle together by the two studs driven by the two black knobs, alternately turning each knob 1 or 2 turns at a time until good and tight - use only finger pressure - do not use pliers or other tools. At this time, connect power line at point "A" by inserting plug at end of line into receptable.

Proceed now to connect transmitter section to handle by removing knob driven stud from end of handle at point "B", and using this stud to secure transmitter to handle. Transmitter must face in direction illustrated. Connect power line to transmitter by inserting plug into receptable at point "C".

You are now ready to connect the receiver loop. Again refer to illustration for proper positioning. Engage studs alternately tightening the black knob completely, but the white knob no more than 2 or 3 turns, for the present. Now connect cable "D" to output jack "E".

Instrument is now completely assembled and ready to turn "ON".

ADJUSTING FOR USE

The instrument must be adjusted for operation (tuned) at the level it is to be used. Do not tune it and then lower it, as this throws it out of adjustment. Once the instrument is tuned, it must be retuned if it is raised and operated at a higher level.

Turn on both the transmitter and receiver by lifting toggle switch on battery case. Turn the sensitivity control to "F" on the receiver all the way to the right (clockwise) until it stops and then back-off about one-quarter turn.

When the instrument is on, a tone will sound in the speaker unless the instrument already happens, by accident, to be "in tune". Next turn the null adjustment "G" (white knob) on the connecting handle until the tone ceases. This silence is called a "null". The needle on the meter will, at the same time, return to zero.

Next, turn the white knob slowly to the right (clockwise) until the tone is again heard in the speaker. Then back off slightly until the signal again disappears. The instrument is now ready for use. If the above procedure is followed and a null (silence) does not result, back off more on the sensitivity control. In other words, turn this control in a counter-clockwise direction.

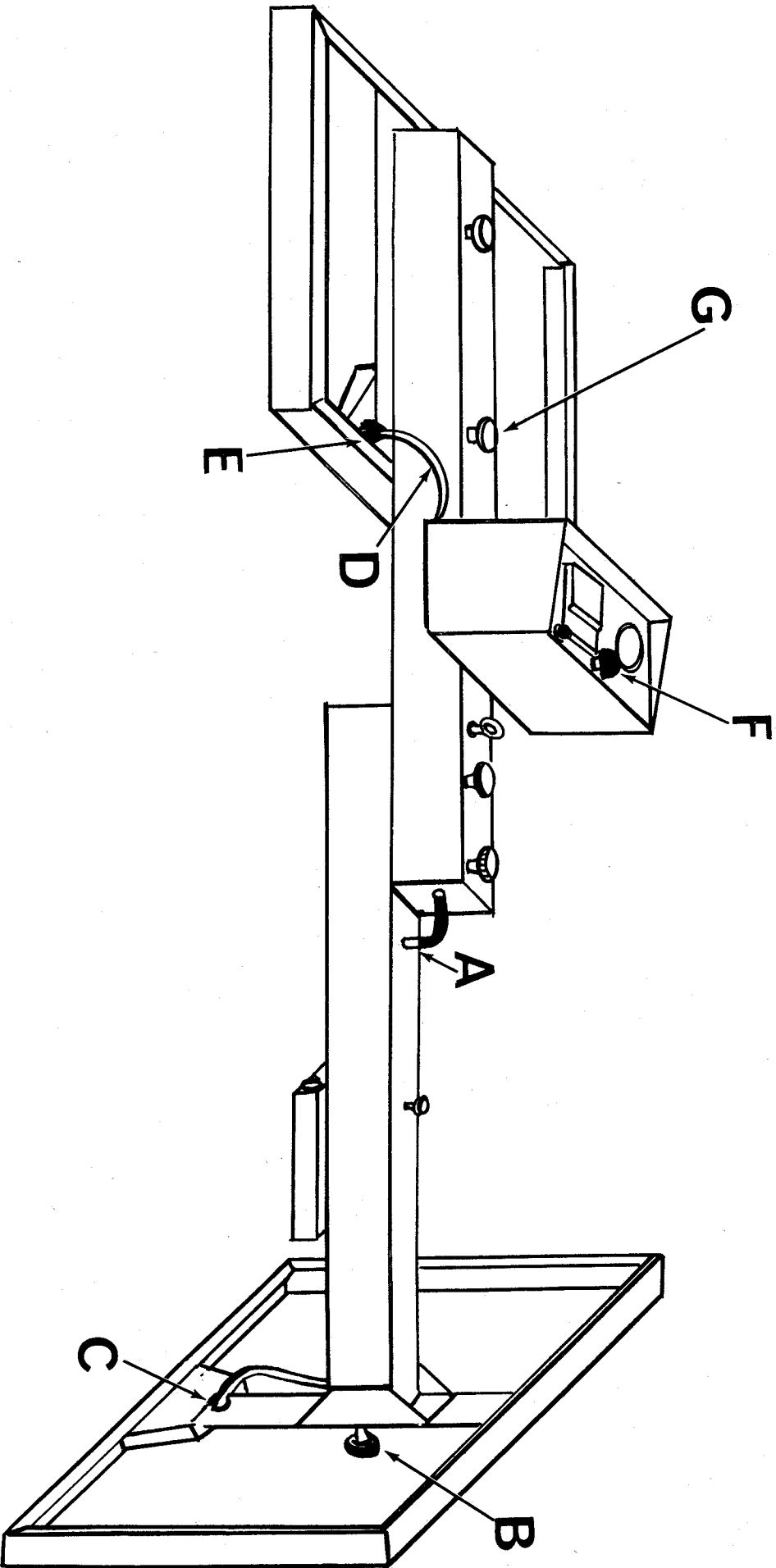
When the instrument is being used, walk slowly along carrying it as level as possible. Avoid bouncing it up and down even slightly. It is not easy to do this, but the operator will improve with experience. Some slight bouncing is impossible to avoid, however, and if the instrument gives a signal with each step, the tuning adjustment should be backed off a little bit more. Remember, when the instrument is being tuned, it is adjusted so that it is on the verge of giving a signal, on the "clockwise" side of null. This is the point of greatest sensitivity.

IMPORTANT: Old batteries often carry a falsely high reading for one or two minutes. Therefore, batteries should always be checked with the instrument turned on and after it has been on about two minutes, for the most accurate battery readings. DO NOT STORE THE INSTRUMENT WITH LOW OR DEAD BATTERIES AS ACID MAY LEAK CAUSING DAMAGE.

If, after changing the batteries, the instrument does not operate properly, it may need service at the factory. Since few radio stores are equipped to tune or adjust highly specialized circuits such as those used in metal detectors, it is best to pack the instrument carefully and return it by INSURED PARCEL POST to the factory. If factory service is necessary, be sure to put a note with the instrument authorizing repairs. However, repairs will be done free of charge for a period of up to one year after purchase or, in the case of loops, tuning adjustment, or other parts manufactured by us, for the lifetime of the instrument. Batteries are not, however, covered by the guarantee unless there is some obvious defect in the battery itself, nor is any defect which is due to rough handling by the owner covered.

We have done everything we can to make the best possible metal detector available for your use. We are anxious that you receive the best possible satisfaction from your new instrument. If there is any part of the operating instructions you do not understand, or if you have some special detecting problems, we will be very happy to answer your questions. We will also be happy to receive any suggestions regarding service or improvements.

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