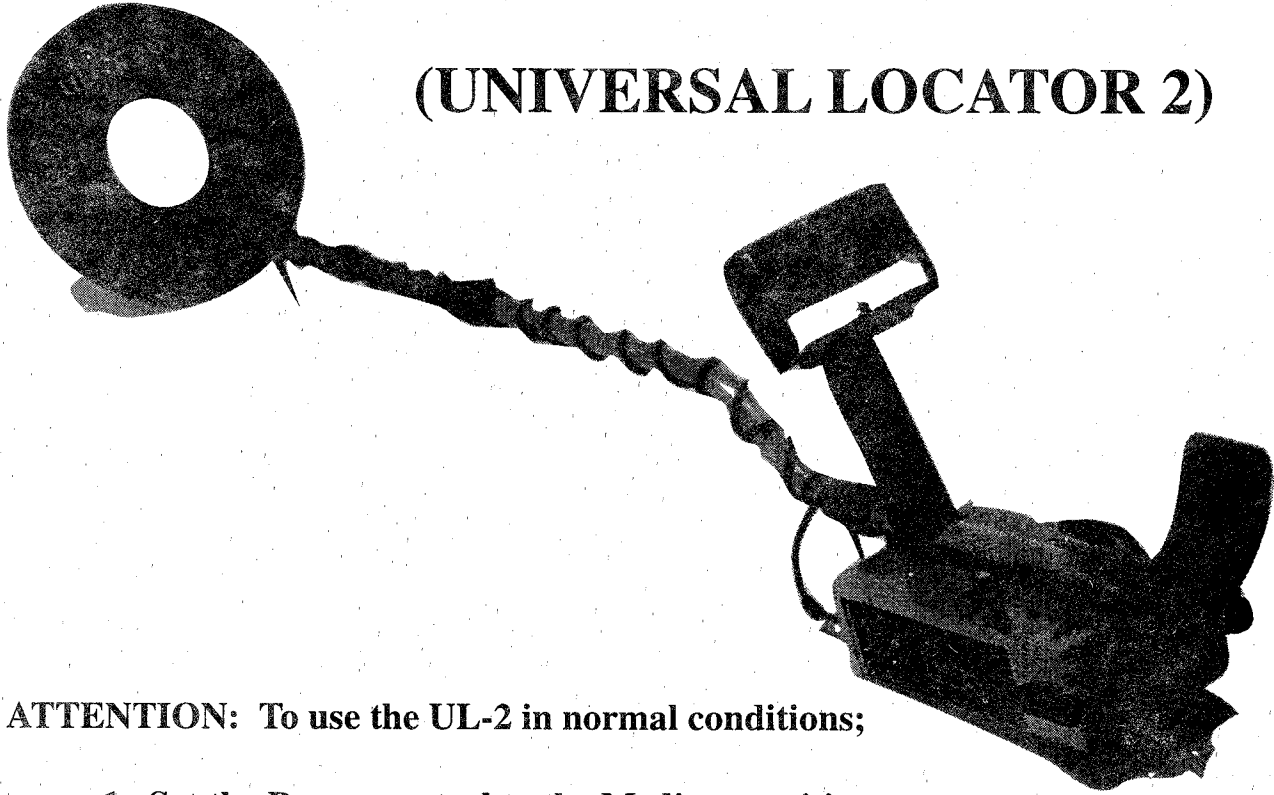


Industrial Metal Detector

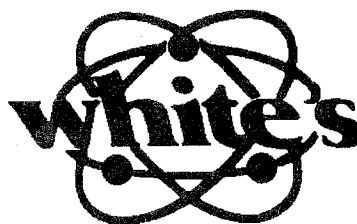
UL-2

(UNIVERSAL LOCATOR 2)



ATTENTION: To use the UL-2 in normal conditions;

1. Set the Power control to the Medium position.
2. Slowly adjusting the Threshold control for a faint hum.
3. Lower the loop to the surface to be searched for metal. The Trigger on the handle may need to be squeezed and released if a beeping sound is heard and doesn't quickly fade.
4. Sweep the loop from side to side or forward and back, always keeping it moving. The loop must be in continuous motion in order to detect metals
5. Metals cause an increase in sound "beep", and meter movement to the right. Pinpoint by slowly "X-ing" the area.
6. To check the battery condition. Squeeze and hold the Trigger on the handle.



White's Electronics Inc.
A Message from...
Kenneth R. White, C. E. O.

Congratulations, and thank you for choosing the UL-2 Industrial Metal Detector.

The following instructions are intended to familiarize you with this fine metal detector, and give you a good understanding of the basics. Obviously, there are no substitutes for field experience. Practice using your detector in the field, and study this manual carefully. Before long you may be able to teach the experts a thing or two!

Your new UL-2 Industrial Metal Detector has been hand built and carefully tested at our factory in Sweet Home, Oregon. Properly cared for, it will last for years.

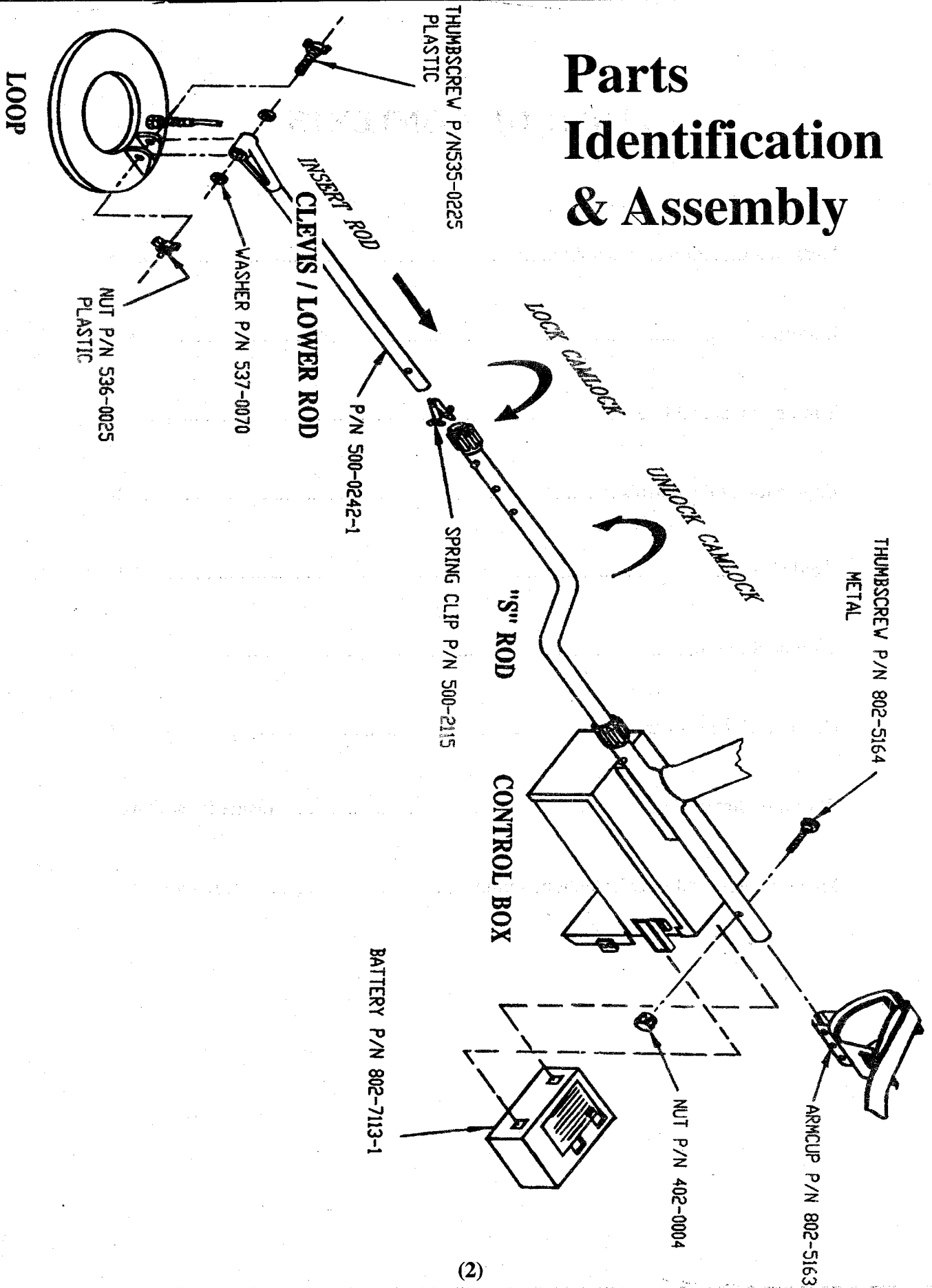
People use our metal detectors to locate metal every day. Regardless of a metal detectors performance, it is the operator who makes the critical decisions that result in accurate recoveries. A metal detector is simply a tool which greatly increases the capabilities of the user to find such metals. Knowing your detector, and using it correctly, are key elements to successful metal locating.

We know in a very short time you will be using your UL-2 Industrial Metal Detector to help you locate metals. We are proud to continue White's tradition of high performance and reliability with the UL-2 Industrial Metal Detector.

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Parts Identification & Assembly



Parts Identification & Assembly, Continued

1. Remove all parts from the shipping carton. Check the assembly page to make sure all parts are present.
2. Place loop washers on clevis/lower rod, one on each side, and slide clevis onto loop ears. Use fiber bolt and thumbnut to secure.
3. Insert clevis/lower rod into curved "S" rod so that stainless steel spring clip buttons line up and lock into one of the adjustment holes in the curved "S" rod. Turn camlock to secure. (The second or third adjustment holes are suitable for average size adults. Individuals 6' or taller should consider the fully extended position. Individuals well over 6' tall should purchase the optional Tall Man Rod for a more comfortable fit.)
4. Remove the cable twist from the loop cable and wind the cable around the clevis rod with first revolution over the top of the rod. Leave a small section of slack in the cable near the loop to allow for loop tilting. Wind cable all the way to the top of the curved "S" rod. Use the black cable retainers, one near the loop, and one near the curve in the "S" rod, to hold the cable in place.
5. Insert curved "S" rod so that stainless steel spring clip buttons line up, and lock into the rod on top of the control box. Turn camlock to secure. Plug loop connector into control box, turn lock ring clockwise to secure.
6. Grip the instrument by the handle, with your arm in the armcup, and sweep the loop over the floor. If the instrument fit feels uncomfortable, adjust the armcup by removing and repositioning the bolt/thumbnut and installing in one of the optional positions. If necessary, readjust clevis/lower rod position.
7. Remove protective paper from the black armcup foam pads, carefully align them on each of the inside panels of the elbow support, and press firmly into place.
8. Adjust the armcup strap so that it is loose enough to slide your arm in and out without loosening each time you want to set the detector down.
9. Install the battery pack (described in the next section) decal facing up, steel contacts facing toward the loop.

NOTE: Your detector may not work as expected indoors due to the high degree of metals used in modern construction. It is best to tune and practice out-of-doors to ensure stable, predictable results.

Batteries

Standard Batteries:

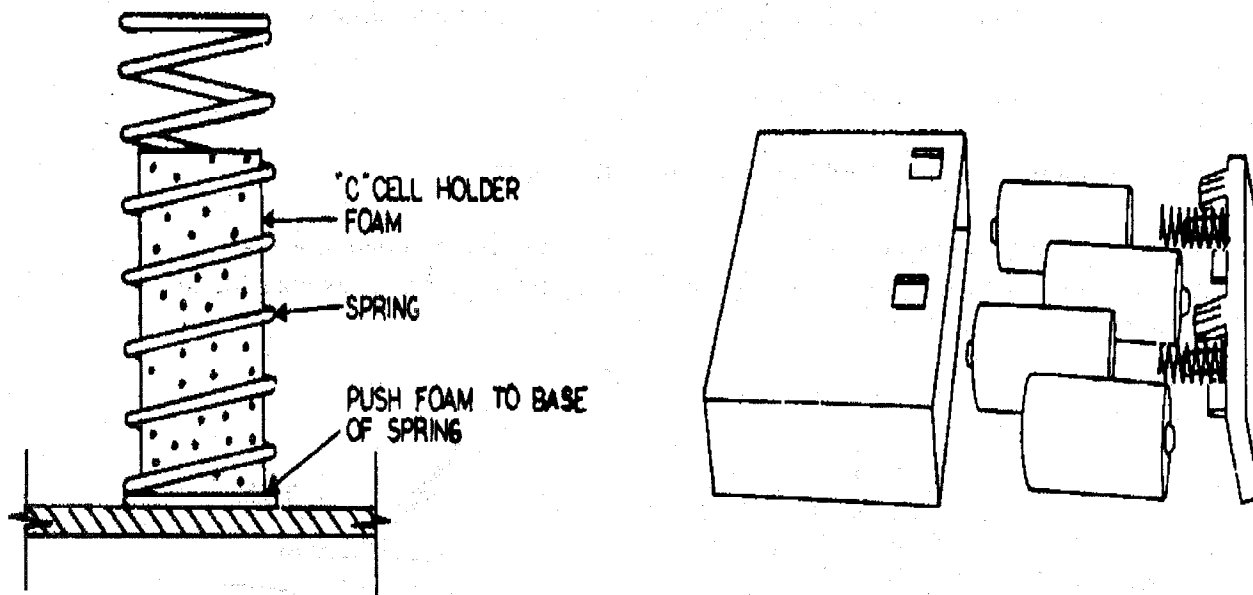
The standard battery holder supplied with your instrument holds four "C" size batteries. Alkalines are recommended as they supply more consistent power for longer time periods. Rechargeable "C" size batteries may also be used in this holder, although they will need to be removed from the holder for recharging.

To check the battery condition, squeeze and hold the Trigger on the handle and note the meter indication. Any indication in the Bat. Good area of the meter will operate the detector with no loss in performance.

Using The Standard Battery Holder:

1. Remove the battery holder lid by applying gentle pressure down on the four locking tab openings, two on each side, so that they unlock. Remove lid.
2. Note the position of each cell. The flat side of each battery cell fits against one of the four springs. There are two springs on the lid, and two in the case. The batteries fit alternating +, -, +, -.
3. Remove any weak cells and replace them with new "C" cells.
Caution: If the cells are put in backwards the detector may blow a fuse. Fuses can only be replaced by authorized service centers.
4. Line up the locking tabs on the lid with the locking tab openings on the battery holder. Snap the lid and holder together.
5. Insert the battery holder into the detector so that the decal is facing up, and the steel contacts are facing toward the insides of the detector.

Standard Batteries Continued:

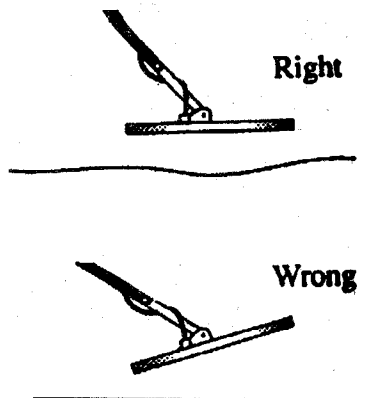
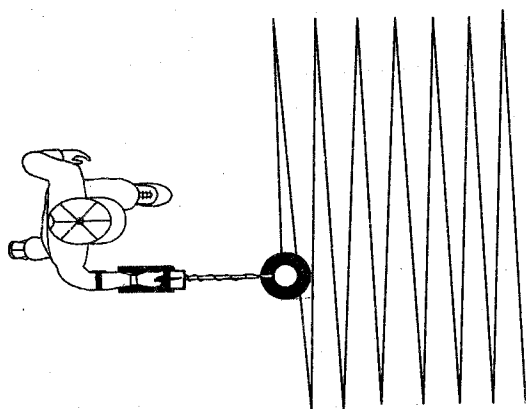


Rechargeable Batteries:

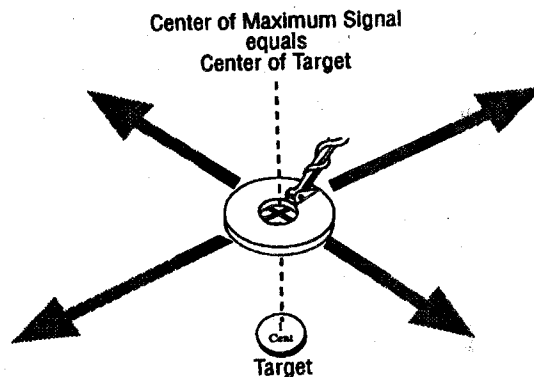
A rechargeable nickel cadmium battery is not provided as standard equipment with the UL-2. However, high quality systems are available from White's for this model. Rechargeable battery #802-5185 and charger #509-00201 are recommended. This battery can be recharged up to 1000 times as long as the battery hasn't been improperly stored for extended periods of time. A full charge will last approximately ten hours of normal use. Battery life will vary with temperature, number of metals found, and the exact settings used.

Tuning & General Use

1. Hold the loop at waist level, away from the ground or metal targets.
2. Set the Power control to Medium.
3. Slowly adjust the Threshold until a faint hum is heard.
4. Keep the loop sweeping very close to the surface to be searched, always moving. Overlap each pass by at least 50%. Keep the loop as flat as possible to the surface being searched.



5. Metal will cause an increase in sound "beep", and meter movement to the right.
6. To center the target in order to dig, sweep the loop slowly over the area in an "X" noting that the strongest sound and furthest meter movement to the right indicates the target is directly below the physical center of the loop.



Explanation Of Controls

Power Control:

The Power control turns the metal detector ON/OFF, and selects the degree of responsiveness to all signals.

1. When not in use always place the power control in the OFF position.
2. When searching is to be conducted in normal conditions select the medium setting.
3. If a greater degree of responsiveness is desired select the high setting. The high setting offers the greatest degree of responsiveness, sensitivity, and detection penetration. However, it may become unstable when near electrical sources (AC interference), or when used near strong ground mineralization (ground interference).
4. If interference is a problem at the High or Medium setting, or if searching for large shallow targets, select the Low setting. The Low setting offers the greatest resistance to interference. It will not however, detect as deeply as either the Medium or High settings.

Threshold Control:

The Threshold control is used to set the slight hum or background tone that should be heard continually during searching. This allows the greatest detection sensitivity in any given Power control setting.

1. To set the Threshold control, with the loop held away from the ground or metal, slowly adjust the Threshold control until a very slight faint hum is heard.
2. If you have difficulty hearing this slight hum watch the meter, a proper threshold setting produces a meter indication near or below ten on the meter scale.
3. If the slight threshold hum is found, and then the threshold control is turned slightly counterclockwise for silence during searching, the instrument will operate and respond to metal at a slightly reduced level of sensitivity.

Explanations Of Controls Continued...

Trigger:

The Trigger, located on the handle, is used to check the condition of the batteries.

1. To check the batteries, squeeze and hold the Trigger on the handle and note the meter indication. Any indication in the Bat. Good area of the meter will operate the detector with no loss in performance.
2. Once the batteries no longer check in the Bat. Good area of the meter they need to be replaced or recharged.
3. The locked forward position completes the same function as squeezing and holding.
4. After selecting a different POWER setting, or introducing substantial different operating conditions, the Trigger should be squeezed and released to return the Threshold hum.

Field Use

The UL-2 Industrial Metal Detector is well suited for a wide variety of metal locating tasks.

All types of conducting and/or magnetic metals can be located with excellent penetration. Some sensitivity (detection) of nonmagnetic poor conducting metals such as stainless steel can also be expected although not as detectable as standard ferrous (iron) and nonferrous types. Detection depth or penetration are primarily dictated by the type and size of the metal target, and the size of the loop being used.

Typically, the larger the target the greater the depth it can be detected. Additionally, the larger the loop the greater the detection depth. The ULC 1500 offers the best depth regarding large metal items. However, larger size loops such as the ULC 1500 do not respond well to physically small size metal items (penny weight and smaller). Smaller loops, such as the ULC 600 or ULC 400 offer progressively better detection of physical small metal items.

Keeping the loop in motion (moving) at all times is required for the instrument to respond to metal. Use a test metal. Sweep the loop over the metal item, note how as the loop sweep is slowed to a stop the metal item stops responding. Note when the loop is in motion the item responds. Thus loop movement is required to detect metals.

The further the loop is swept away from a metal the less sensitive (less penetration) or less likely the instrument is going to accurately respond. In all situations the loop needs to be swept as close as possible to the surface being searched. This allows the greatest degree of penetration.

Detection occurs primarily directly under the loop. To cover larger searching surfaces several passes may be required. Three dimensional searching surfaces may need to be covered from two or more sides to assure good coverage.

Headphones promote long battery life and reduce distracting noise from an industrial environment.

The UL-2 Industrial Metal Detector can not distinguish between different types of metals. Any metal that nears the loop will respond. When searching items for the presence of metal that are near the ground, care must be taken to assure that any particular response that is noted is, or is not in the search surface. A metal item in the ground near the searching surface may cause such a response. Sweep the loop slowly. Pinpoint the area of strongest response, which indicates the metals true location.

It is generally more productive to mark all the areas where metal responses were noted on a search surface, prior to further investigation of each individuals response. An appropriate marking method for the search surface, such as spray paint on wood or golf tees for soft surfaces, is recommended.

Trouble Shooting

When trouble occurs with the use of a metal detector, often a person can avoid unnecessary inconvenience by reviewing the following tips.

1. False Signals or Instability can often be caused by situations outside of the detector. For example electrical interference from power lines, or other high power transmitting devices. Often these devices can be identified, sometimes they can not.

A. Try reducing the Power control to a lower setting.

B. Persistent false signals may require that you try searching a different area, at least several miles away. If you really want to search a high interference area, try different times of the day or week. Often such interference is only present at scheduled times.

C. If not area related, start checking the components of the detector. The battery pack should be removed from the instrument and the contacts inside the "C" cell battery holder should be scratched clean of any corrosion buildup. The springs should be stretched a little to assure a firm contact. The contacts on the outside of the battery holder should also be scratched clean of any corrosion. The battery contacts inside the instrument battery compartment should be pulled slightly outward toward the battery door so that they make a firm contact with the battery. The instrument control box should be checked with a different loop, either an accessory, or a friend's loop off a similar model. Your Dealer may also be able to assist you in checking the instrument. Loop problems are most often due to damaged cable, from snags on brush or blackberry vines, or simple cable wear. Inspect the cable for any visible signs of damage.

2. Moisture and Humidity, when extreme, can cause problems with all electrical circuits. Most electronics are only guaranteed to operate in up to 75% humidity, which is minimal humidity in some areas. Although the electrical circuitry of your instrument has been sealed with a plastic coating, wetness can still cause failure, particularly when the dampness is combined with salt, as occurs in many beach environments.

A. Damp Environment Use should always be followed by placing the detector in a warm dry place to dry out when not in use. Remove the batteries and leave the battery door open.

Trouble Shooting, Continued

B. Dampness Failure can often be cured simply by drying the instrument out in the above manner. Dampness failure can cause varied symptoms, everything from complete non-responsiveness to instability or false-targeting.

3. Repairs in the unlikely event your instrument requires servicing it should be referred to a trained professional at a Authorized White's Service Center. Today's models require specialized equipment and training to service properly. All White's Authorized Service Centers have years of experience and their work is guaranteed by the factory.

4. For The Location of White's Authorized Service Center nearest you telephone toll-free 1-800-547-6911. Please send the complete unit with an explanation of the trouble.

Caring For Your Instrument

Precautions:

1. Water can damage your instrument. The loop is waterproof and submersible. However, the loop-to-control box connector and the control box itself are not waterproof. Light rain or drizzle will not cause a problem. However, the instrument control box must be protected from heavy rain or submersion in water.

A. The loop can be cleaned with a mild soap and water. A damp cloth can be used to wipe clean the control box. The control box can be polished with automotive or furniture wax. Use only cotton cloth to clean and wax. The instrument should be cleaned after heavy use in or around a saltwater beach. Salt is very corrosive. (The warranty does not cover cosmetic imperfections due to wear, or exposure to sun and salt.)

B. When searching with the loop in the water or wading, be careful. The rod will fill with water, and if lifted above the height of the control box, will run into the rod on top of the control box. Although sealed, some seepage can occur into and on top of the circuitry, causing malfunction. Again, drying the detector in a warm area with battery removed and compartment open will most often cure any malfunction. If for any reason the control box is dunked in saltwater, flush the entire instrument with fresh water immediately prior to letting the detector dry out.

2. Loop Cover, a protective plastic shield for the loop bottom, are highly advised accessories when searching sand or rocky terrain on a regular basis. They are available from Dealers and have no effect on detection depth. Loop covers should be removed periodically to remove any sand which can affect detector performance.

3. Heat and Cold can have an adverse effect on your detector. When not searching, rest your detector in the shade. Do not expose your detector to summer/winter extremes of a car trunk. Extreme subzero temperatures can also cause problems. Store your detector indoors in a heated area during the winter months, with the batteries removed from the instrument and from the battery holder.

4. Common Sense should be used. Avoid impacts, stacking heavy objects on top, and unnecessary roughhousing. When not in use, the detector should be treated like any other sophisticated electronic device.

White's Electronics, Inc.

Limited Warranty

If within two years (24 months) from the original date of purchase, your White's detector fails due to defects in either material or workmanship, White's will repair or replace at its option, all necessary parts without charge for parts or labor.

Simply return the complete detector to the Dealer where you purchased it, or to your nearest Authorized Service Center. The unit must be accompanied by a detailed explanation of the symptoms of the failure. You must provide proof of date-of-purchase before the unit is serviced.

Items excluded from the warranty are non-rechargeable batteries, accessories that are not standard equipment, shipping/handling costs outside the continental USA, and shipping/handling costs inside the continental USA 90 days after purchase.

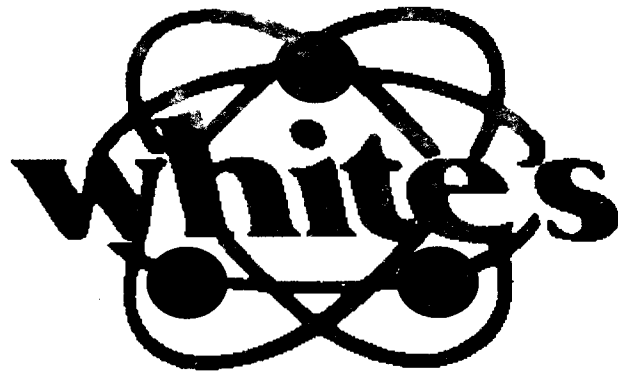
The warranty is not registered unless the Warranty Registration Card is filled out and returned to the factory address soon after original purchase for the purpose of recording this information.

The warranty does not cover damage caused by accident, misuse, neglect, alterations, modifications, unauthorized service, or prolonged exposure to corrosive compounds, including salt.

Duration of any implied warranty (e.g., merchantability and fitness for a particular purpose) shall not be longer than the stated warranty. Neither the manufacturer or the retailer shall be liable for any incidental or consequential damages. Some states however, do not allow the limitation on the length of implied warranties, or the exclusion of incidental or consequential damages. Therefore, the above limitations may not apply to you.

In addition, the stated warranty gives you specific legal rights, and you may have other rights which vary from state-to-state.

The foregoing is the only warranty provided by White's as the manufacturer of your metal detector. Any "extended warranty" period beyond two years, which may be provided by a Dealer or other third party on your detector, may be without White's authority involvement and consent, and might not be honored by White's.



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