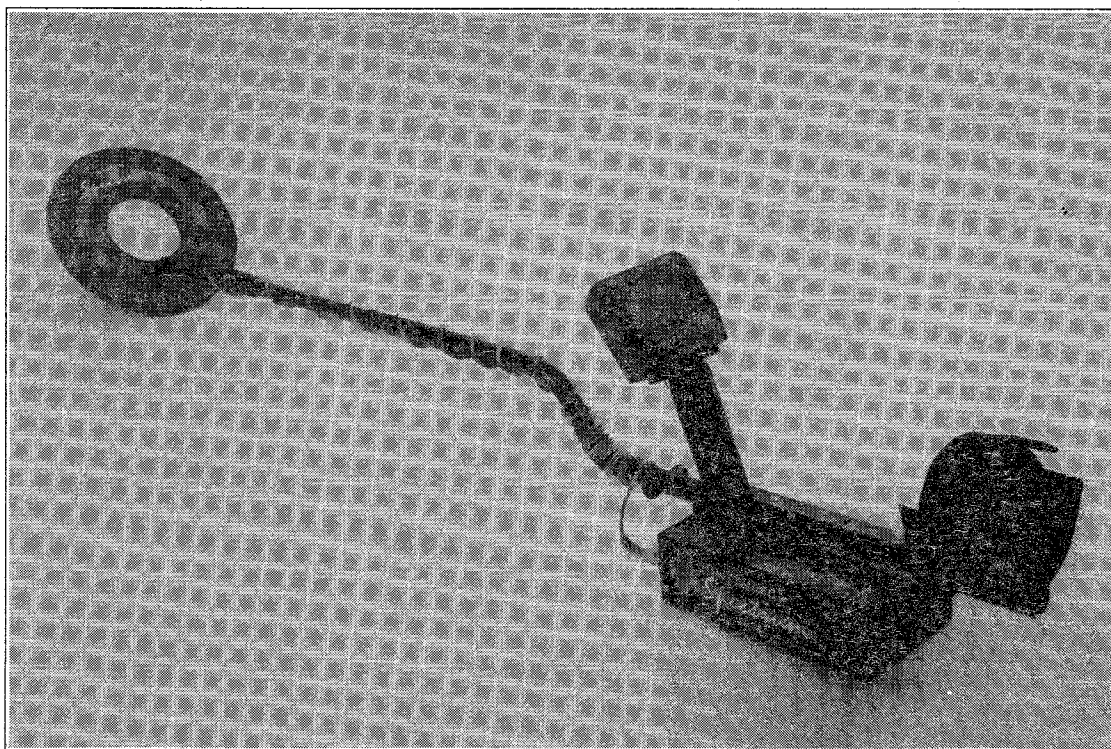
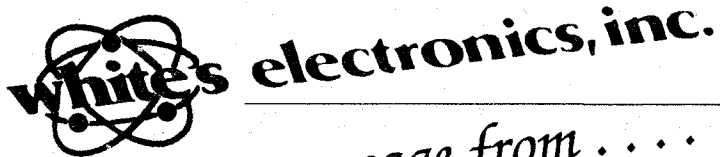




Instruction Manual





*A message from
Kenneth R. White, C.E.O.*

Congratulations, and thank you for choosing the all new *Eagle Spectrum!* And, a special thanks to all of you who have communicated your wants and needs that helped make this all new instrument a design by and for treasure hunters. Many of its features and user-friendly options came directly from our customers! We would encourage you to continue to tell us what you want and need so that future White's products will be developed for you the user. The new Spectrum has on-the-box instructions, six all new programs, on-screen instructions, and a simple menu system to make learning and using a breeze.

The new Spectrum display is the fourth part of a system that allows the operator to electronically examine every target before you dig it!

- First** - White's famous audio discriminator
- Second** - All new **three digit** V.D.I. reference numbers
- Third** - Expanded ID labels prints out, on the display, the probable target including trash
- Fourth** - The new Spectrum analyzer gives you graphic patterns that become the "signature" of the target.

We know that in a very short time, you will be using all four of these indicators to help you find more treasure. We are pleased to present these new innovations along with White's high performance and reliability.

Thank you again for choosing the all new *Eagle Spectrum*. We wish you the best of luck as this new era in metal detectors begins.

Spectrum

Table of Contents

Parts Identification and Assembly3

Batteries

Standard Batteries	4
Rechargeable Batteries	4-5
Cautions about the Batteries	5-6
Additional Battery Information	6-7
Rechargeable Battery Memory	8

Your First Time Out

Getting Started	9
Programs "Preset"	10-12
Air/Ground Balancing	12-14
Additional Ground Balance Information	14-15
Searching	15-20
Ready to Dig	20-21

Basic Adjustments

Main Menu	22-23
Volume	23-24
Threshold	24
Tone Adjust	25
Audio Disc.	25-26
Silent Search	26
Mixed Mode Audio	26-27
AC (Motion) SENS	27-28
DC (non-motion) SENS	28-29
Backlight	29-30

Pro Options

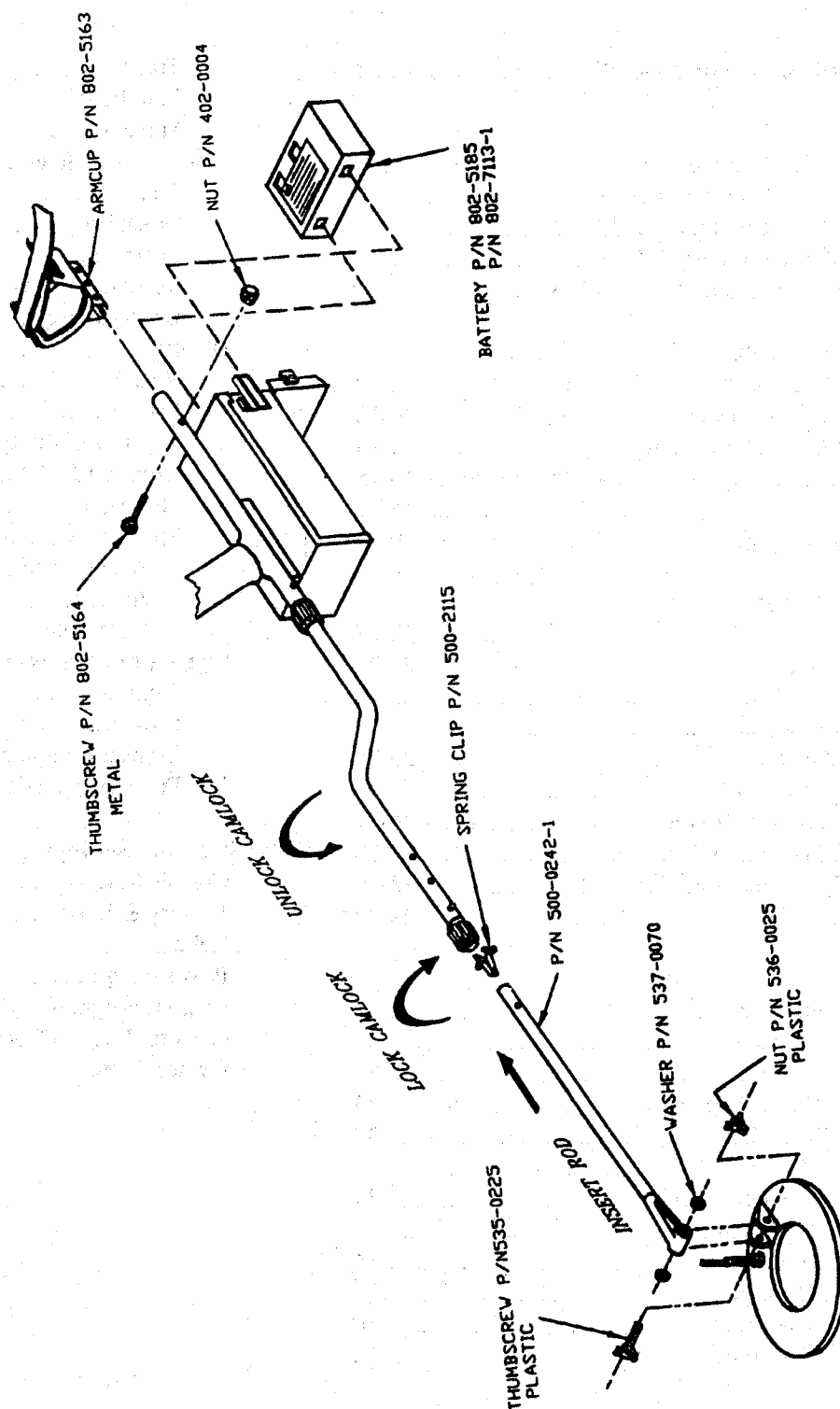
Introduction	31
Audio Menu	32
S.A.T.	32-33
S.A.T. Speed	33
Tone I.D.	33
V.C.O.	33
Absolute Value	34
Modulation	34
G.E.B./Trac	34
Autotrac	35
Trac View	36
Trac Speed	36

Trac Offset	37
Trac Inhibit	37
Manual G.E.B.	38-39
Discriminate Menu	39
Edit	39-42
Block Edit	42
Learn	42-43
Recovery Speed	44
Bottlecap Rejection	45
Display	45
Visual Disc.	46
Labels	46-47
V.D.I. Sensitivity	47
Ground I.D. (D.C. Phase)	48
Phase Chart	49
Spectrum Options	48
Accumulate	50
Average	50
Fade Rate	51
Signal (transmit, receive)	51
High (transmit power)	52
Low (transmit power)	52
Transmit frequency	53
Preamp gain (signal balance)	53-54

Preset Program Settings

Coin & Jewelry	55
Jewelry & Beach	56
Relic	57
Prospecting	58
Custom Program 1 (Preload)	59
Custom Program 2 (Preload)	60
Owners Notes	61-64

Spectrum Assembly



Spectrum Parts Identification and Assembly

1. Remove all parts from shipping carton and 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 use the fully extended position. Individuals well over 6' tall should purchase the optional *Tall Man Rod*.
4. Remove the cable twist from the loop cable and wind the cable around the clevis and rod assembly, first revolution over the top of the rod. 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 top of the curved "S" rod, to hold the loop 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, screw lock ring to secure.
6. Grip the instrument by the handle, with your arm in the elbow cup, and sweep the loop over the floor. If the instrument fit feels uncomfortable, adjust the elbow cup by removing and repositioning the bolt/thumbnut and installing in one of the optional positions. If necessary, readjust clevis/lower rod position.
7. Remove the protective paper from the black elbow cup foam pad, carefully align it in the elbow support, and press firmly into place.
8. Adjust the elbow cup strap so that it is loose enough for you to slide your arm in and out without loosening each time you want to set the detector down.
9. Install battery as described in the next section, **decals facing up**, steel contacts toward the loop.
10. It should be noted at this point, the 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.

Spectrum Batteries

Standard Batteries

The standard battery holder holds four alkaline "C" cell batteries. Alkalines are the only non-rechargeable batteries recommended for this model.

Using the standard battery

1. Remove the battery pack lid by applying gentle pressure down on the four locking tab openings so that they unlock.
2. Note the position of each cell. The flat side of each cell fits against one of the four springs.
3. Remove any dead cells and replace them with new "C" cells. If the cells are put in backwards, the detector may blow a fuse. Fuses can be replaced only by authorized service centers.
4. Line up the locking tabs on the lid with the holes in the battery holder. Snap them together.
5. Insert the battery pack into the detector so that the decal is facing up, and the steel contact points are facing towards the loop.

Rechargeable Batteries

A rechargeable nickel cadmium battery is included with your instrument. This battery can be recharged (charger provided) 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 eight hours of normal use. Battery life will vary with temperature, the number of targets found, and the exact settings used. Five hours is not unusual for extreme high performance settings, or for batteries that have been extensively used.

Charging the battery

1. Insert the charger plug into the battery pack jack.

2. Plug the charger into a standard wall outlet, 110 volts USA models.

3. The battery will be fully charged in 14 hours, and the charger will automatically switch to trickle charge. It is not necessary to disconnect the battery from the charger, or the charger from the wall, unless the system is to be left unattended for an extended period of time. The trickle charge will maintain full battery capacity until you are ready to use it.

4. It is not abnormal for the charger and the battery to get warm during recharging. If, however, either the battery or the charger gets too hot to touch, or becomes distorted in shape, discontinue use and return both items for testing.

5. The battery will slowly lose its charge during storage. It is recommended that the battery be discharged and recharged, through normal use, at least once every three months to prevent permanent damage. Damage due to periods of long storage is a characteristic of rechargeable batteries.

6. Do not attempt to discharge the battery in devices other than your metal detector. Unnecessary discharging and/or an absolute discharge will reduce battery life, and may damage the battery. Unlike older rechargeable battery designs, the rechargeable battery provided with your detector can be recharged at any time. Regardless of whether or not it already has a partial charge, memory will not occur.

Cautions about the batteries

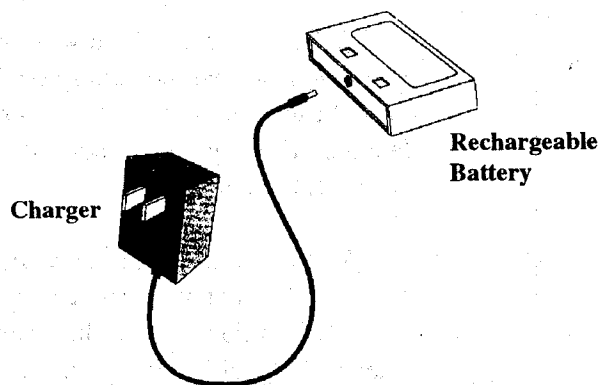
1. Do not use or leave the system connected to the wall outlet during electrical storms (thunder storms).

2. Do not dispose of the batteries in a fire.

3. Protect the battery pack from being shorted across the two contacts. Burns may result and the battery pack may be damaged.

4. The rechargeable battery system (charger & pack) have a specific charge current. Do not attempt to use other chargers or packs with this system. Batteries may explode if a charger current is too high.

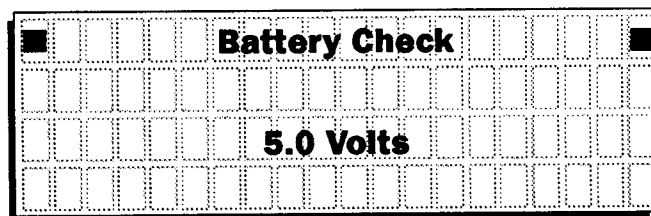
5. Non-rechargeable batteries may explode if they are recharged.
6. Store batteries in cool, dry place.
7. Avoid an absolute discharge. Eliminating all voltage within these batteries will damage them.
8. The rechargeable battery pack is a sealed unit with no customer serviceable parts. Opening it may damage the unit and will void the warranty.
9. Store rechargeable batteries with a full charge. When storing rechargeable batteries for extended periods of time, always recharge them about once every three months. Batteries stored without a charge may become defective.



■ Additional Battery Information

When the instrument is turned on, and after the opening display, the battery voltage will momentarily appear. The detector will then continue to the **Program** menu. The only way to recheck the battery voltage during operation is to turn the detector off, and then back on again. Squeezing and releasing the trigger (before any other control is pressed) will return the detector to the last program used. If you turn the detector off and back on to check the battery voltage, and remove the battery for replacement, a good battery must be reinstalled within 30 seconds to maintain the short-term (volatile) memory. *Volatile memory* is any program not yet saved in Custom Program 1 and 2.

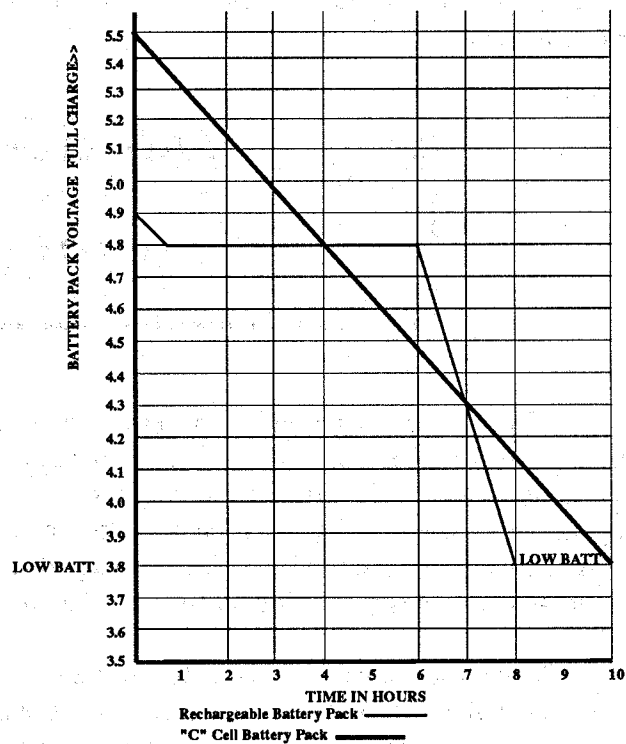
Short-term volatile memory is retained by turning the detector on then squeezing and releasing the trigger.



Use caution when standard batteries are installed. Some high quality batteries may check higher than 6.0 volts. If standard batteries check over 6 volts, they should be run down slightly in another application, such as in a flashlight, before use in your metal detector. Batteries over 6 volts may overload the voltage regulator causing operational problems. Unlike rechargeable batteries, standard batteries discharge at a steady rate, (no plateau). *See Battery Discharge Chart.*

When using a freshly charged rechargeable battery, the voltage will initially check somewhere in the 5 volts area. Unlike standard batteries, the rechargeable battery voltage, after minimal use, will drop to approximately 4.9 volts, and plateau there for most of its life. Once the battery voltage drops below this plateau, it will quickly drop below a usable voltage level, 3.8 volts, and thus require a recharge. *See Battery Discharge Chart.* *Low Battery* will automatically appear on the display when this occurs. If the battery is replaced, when *Low Battery* persists on the display, and within 30 seconds of removing the original battery, all short-term memory is retained. Long-term memory (programs saved in Custom Program 1 or 2) is automatically saved for up to ten years regardless of whether a battery is in the detector or not.

Use of maximum backlight will reduce battery life by 10%.



**Battery
Discharge
Chart**

■ Rechargeable Battery Memory

The premium battery system, provided by White's with your instrument, is the very best available.

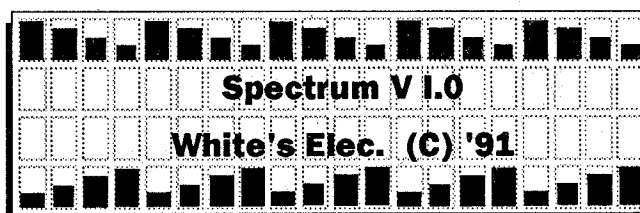
White's developed the original system in 1982. To date, it has been the most reliable and trouble-free system in the industry.

The chemicals within this rechargeable battery system have now been significantly improved. Undesirable characteristics, such as memory, have been sharply reduced. With a little care, and few precautions, these batteries will last through years of hard use, and save you money.

Your First Time Out

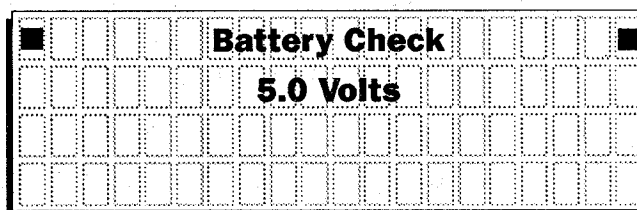
■ Getting Started

With the trigger on the handle in the center search position, push the ON/OFF control. The **Spectrum** will momentarily show an opening display which lists its software version. If the detector is left on for 15 minutes with no perceivable functions occurring, the detector will automatically shut down.



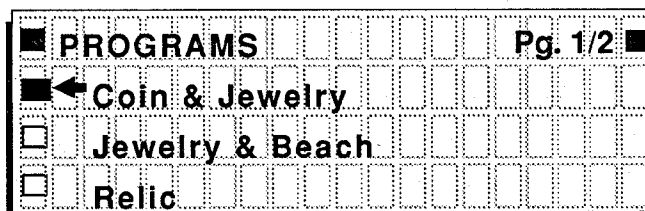
Opening
Display

The display will then show the Battery Check screen for a moment.



Battery
Check
Display

At this point, the Spectrum display will stop at the first page of the Programs menu.



Program
Display

There are two pages to the Programs menu indicated in the upper right hand side of the screen. The squares to the left of the program listings are to designate the current choice. A filled in block is the program currently selected. The Arrow controls (▼) (▲) are used to move the flashing pointer. At the end of Page 1, the arrow control scrolls to the program you desire.

■	PROGRAMS									Pg. 2/2	■
☐	← Prospecting										
☐	Custom Program 1										
☐	Custom Program 2										

■ Programs "Preset"

There are six different **Programs** to choose from. Each program selects the features desirable for its purpose.

The ***Coin & Jewelry*** program selects general purpose settings. It discriminates (rejects), most common junk items like nails, foil, pulltabs, and hot rocks; and responds to most coins, and many items of jewelry. It is a good program to become familiar with the Spectrum, and use in lawns, parks, and playgrounds, where lots of trash rejection is desired. It may, however, discriminate (reject too much) for some hunters.

The ***Jewelry & Beach*** program offers settings similar to Coin & Jewelry, however, provides far less discrimination (less trash rejection). Less discrimination is desirable because of the high degree of variance found in jewelry alloys. The ease of digging at the beach makes less discrimination desirable. The Jewelry & Beach is also a good program to use in lawns, parks, and playgrounds, if less discrimination is desired.

The ***Relic*** program offers even less discrimination than Jewelry & Beach. It responds to all metals except small iron items such as nails, and some stainless steel. Large iron items, brass, lead, aluminum, as well as copper, silver and gold will respond. This program is set up primarily for Civil War relic hunting.

The ***Prospecting*** program does not discriminate at all with the audio tone, that is to say, all metals respond with a *beep* from the speaker. However, the display will

show a VDI number only for metals that could be gold. By only digging targets that produce a VDI number, many iron targets may be avoided when prospecting.

Custom Program 1 is a place to save your own special program. When one of the standard programs is selected, and then modified, you may want to save your settings for future use by:

1. Push MENU to get the the MAIN Menu.
2. Press ENTER to enter Preset Programs.
3. Press ARROWS to select Custom Program 1.
4. Press ENTER
5. Press ARROWS to select Save.
6. Press ENTER to save your program.

You may then squeeze and release the trigger to continue hunting, or turn the detector off.

When the detector is turned back on, regardless of whether a battery pack was left in the detector or not, Custom Program 1 will have your special program ready for you to use again. Simply select Custom Program 1, press ENTER, select Load, and press Enter again.

Custom Programs can be saved for up to ten years.

If you save a program, then decide you no longer want it, and would like to replace it with a new program, use the same procedure as described above.

When a Custom Program is stored, the ground balance setting last used with that program is also stored. This has advantages particularly for those who manually manipulate the ground balance for speciality applications. To access the last ground balance setting used with a Custom Program, first select the desired Custom Program, then press the ENTER control. Do not air/ground balance as the display suggests, simply squeeze and release the trigger. The last ground balance setting will then be in use.

The last Basic Adjustment or Pro Option used is saved with your Program. Either arrow control will allow the operator to go from the search mode directly to that Basic Adjustment or Pro Option.

Custom Program 1 comes pre-loaded from the factory, with a ring enhancement program. This ring enhancement program is designed to respond to selective high-yield-ring areas of the VDI range with selective rejection of high trash. It will not detect all rings, nor will it reject all junk. It will, however, increase ring finds in high trash areas. If the ring enhancement program is erased, the ring enhancement settings are detailed in the section describing *Preset Program Settings*. You may recreate it at a later date if so desired.

Custom Program 2, like Custom Program 1, is designed to save your settings for future use. Ideally a person would save one program in Custom Program 1, such as your own coin program, and a different program in Custom Program 2, such as your own beach program.

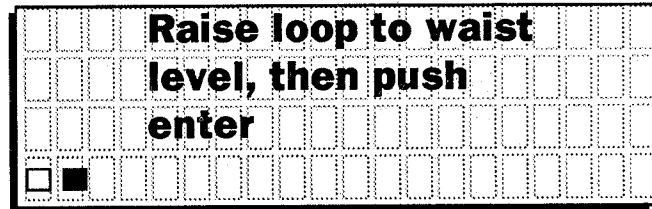
Custom Program 2 comes pre-loaded from the factory with a program designed to demonstrate some of the less obvious features available on this model.

Again, if erased, Custom Program 2 can be recreated using the section describing Preset Program settings.

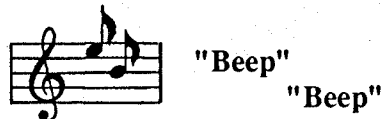
Air/Ground Balancing

Use the arrow controls to select the Program of your choice, then press the ENTER control.

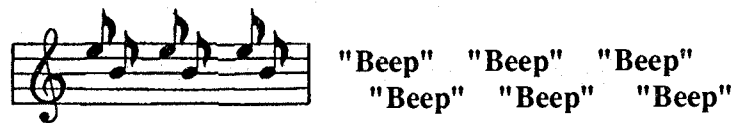
The display will then provide instructions on air balancing the detector. Air balancing prepares the detector's electronic circuits to be ground balanced. Air balancing allows for internal changes which may result from temperature, and other variables that typically effect electronic circuits.



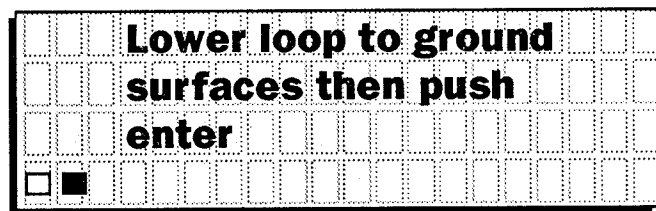
Air balance needs to be completed with the loop held in the air, away from all types of metals, and away from the ground. When air balance is successful, the instrument will produce the following sound, and the ground balance instructions will appear on the display.



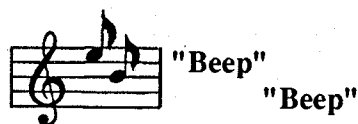
If the detector sees metal, or ground mineral, during "Air Balancing", a multi note beep will sound,



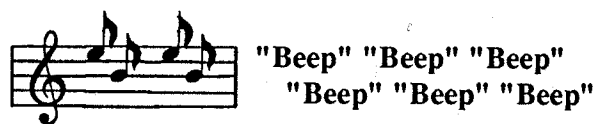
and the air balance instructions will remain on the display. This may also occur in areas of extreme electrical interference. In either case, move the loop to another position and press ENTER again. Continue until the "Ground Balance" instructions appear on the display.



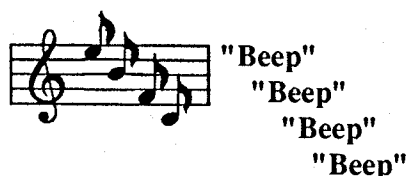
Ground balancing allows the detector to virtually ignore the ground minerals thus improve detection depth and stability. The loop needs to be lowered to the distance from the ground that is going to be used during searching, then press the ENTER control. As ground balancing is completed, the detector will make one of three different sounds, each with its own meaning:



Indicates ground balancing was successful. Start searching.



Indicates ground balancing was not successful. Press ENTER, move to a different spot on the ground, and try again.



Indicates the detector did not see significant ground minerals. If there is any doubt, regarding the minerals in the area, press ENTER and try again. If this sound persists, its okay to start searching. It should be noted that this sound is required if accurate air testing (bench tests of various metal target responses) is desired.

■ Additional Ground Balance Information

Once the initial ground balance is completed, the detector is ready to be used. The ground balance setting will automatically readjust itself as the detector senses changes in the ground, (AUTO TRAC).

Ground balance is critical to performance. It is recommended that each time you select and ENTER a Program, the *Air/Ground Balance* instructions which will appear on the display, be followed.

The ground balance settings are saved within Custom 1 and 2 Programs. However, the stored ground balancing procedure must be bypassed.

In most cases when a Program is selected and ENTER pressed, if the trigger is then squeezed and released thus bypassing the standard ground balance procedure, a minimum ground balance setting is automatically selected. Although minimum ground balance works well for air tests (bench tests) there are not many areas where it will work well in the ground.

There are times when an operator may want to save a ground balance setting. For example, when using the Coin & Jewelry Program, if the detector is turned off, the ON/OFF control can be pressed to turn the detector on, and the trigger squeezed and released to resume searching. All the original settings, **including Ground Balance**, are retained in short term memory (volatile memory) and are reactivated when the trigger is squeezed and released. This will only work if the detector is turned off, and a good battery is left in the detector; not removed for more than 30 seconds.

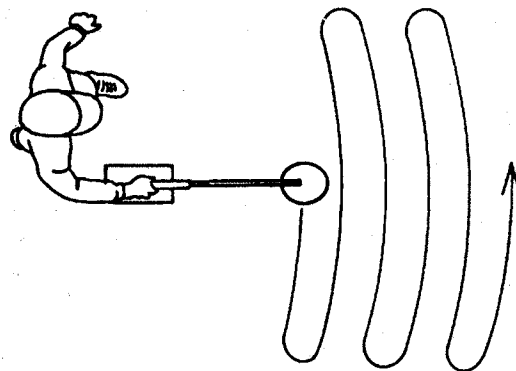
When using a Program, and the detector is not turned off, but instead the MENU control is pressed, Preset Programs selected and entered, and then a different program selected the air/ground balance procedure should then be completed again. Squeezing and releasing the trigger at this point will result in a minimum ground balance setting.

There are extensive options available regarding ground balancing which are explained thoroughly in the section describing Pro Options.

■ Searching

The detector is now ready to locate metal.

Movement of the loop over the ground is critical to performance. The loop must be in motion (sweeping from side-to-side) for this instrument to respond to metal. Practice a smooth sweep of the loop from side-to-side keeping the loop close to the ground throughout the swing. Each pass of the loop should take approximately one-half to two seconds from right to left, and one-half to two seconds to return from left to right.



Ten second pattern.

Walk forward slowly. Each step should be no greater than half the length of your foot. Make sure each pass of the loop overlaps the last by at least half the length of the loop. Do not lift the loop at the end of each swing. Keep it close to the ground at all times.

To become comfortable with sweeping the loop takes some practice. Try to loosen up, and find a comfortable grip on the handle. Premature fatigue may result from gripping the handle too tightly, improperly adjusted rod and elbow support, and limited body movement. Hold the handle loosely. Adjust the rod and elbow support for comfort and keep the elbow strap loose. Use your arm, shoulder and even your back a little to allow a smooth even sweep of the loop.

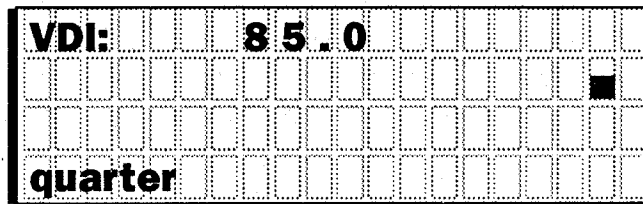
Now that you're sweeping the loop smoothly over the ground, you will notice that the detector starts making sounds (beeps). Not all sounds are good targets, some trash targets also make the detector (beep).

As the loop is swept over the ground ignore the display, and concentrate on the sounds the detector makes.

As the loop is passed over a metal that is likely trash the sound will be inconsistent. Trash targets typically produce a shorter, sputter-type sound that is often broken or double in nature. Place a steel-pop bottlecap on the ground. Pass the loop over it several times to become familiar with this sound at different loop sweep speeds. Note that an aluminum twist-off bottlecap **cannot** be used as it is a different type of target. Also note that very old rusty bottle caps may start reading as quarters, due to the elimination of the iron alloy through deterioration. Once familiar with the sound typical bottle caps produce, an operator may pass over such targets, and continue searching without consulting the display information thus saving more time for evaluating possible good targets.

As the loop passes over a metal that is likely good, a smoother more consistent sound will be heard. A good target typically produces a longer more solid sound.

Once a smooth solid sound is found or a questionable sound, sweep the loop over the target several times, and **look at the display**.



The display provides several pieces of information about the target. First of all, at the top of the display there is a VDI number. This VDI number corresponds to the chart painted on the top left-hand side of the control box. A **consistent VDI number** that is in a desirable area of the chart is a vote for digging the target.

At the bottom of the display, possible target identities will be listed which can also be referenced on the chart. A fairly consistent indication of a desirable target is another vote to dig the target.

The Spectrum graph in the middle of the display provides a final vote as to whether or not the target should be dug.

Sweep the loop over the target several times and look at the Spectrum graph. The Spectrum graph automatically clears itself so that it doesn't fill with questionable information. An operator has limited time to look at the Spectrum graph. If you want to look at the information again, sweep the loop over the target several times. The fading of the Spectrum information can be slowed or increased for operator preference. This is completed in the Pro Options under Display.

Valuable targets will show up on the positive side of the chart. The positive area of the chart is the section located to the right of the zero.

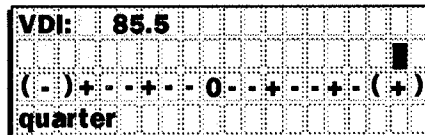
Look for consistency. In ideal conditions, coins produce only one or two bars. Trash produces several bars usually on both sides of 0.

In less than ideal conditions, coins may produce a wider pattern of bars. Trash produces a recognizably different pattern than valuable targets.

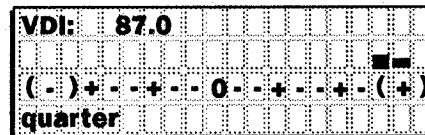
One of the most visual benefits of the Spectrum graph is the ability to show a *smear* pattern on iron targets that often fool the other methods of identification. An iron target will likely show definite bars on both the negative and positive sides of

the Spectrum graph, often *smearing* all the way across the entire chart. Valuable targets should not produce such obviously wide Spectrum patterns. In very bad ground conditions, a good target may have a few small bar segments in the negative area due to mineralization, however, the pattern will show mostly positive bars.

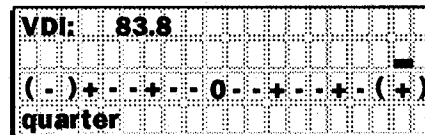
The following sample patterns are labeled. Familiarize yourself with these patterns.



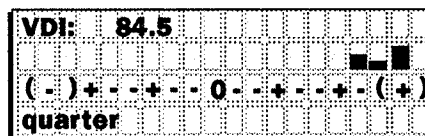
Good Target



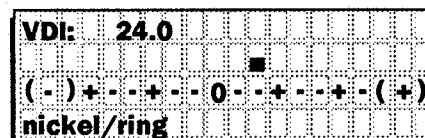
Good Target



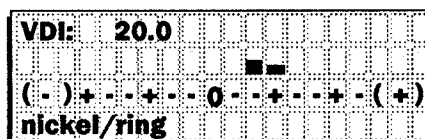
Good Target



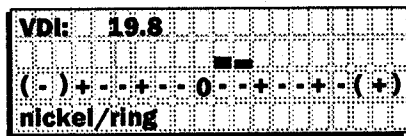
Most Likely
a Good Target



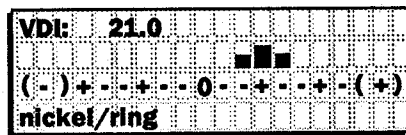
Good Target



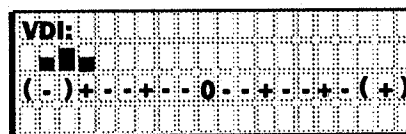
Good Target



Good Target



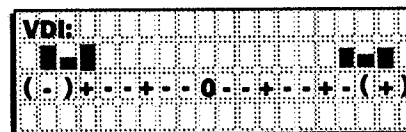
**Most Likely
a Good Target**



Iron



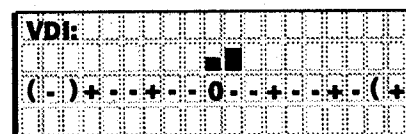
Iron



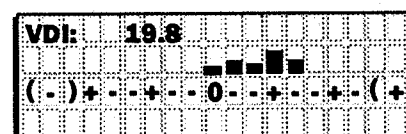
Iron Alloy



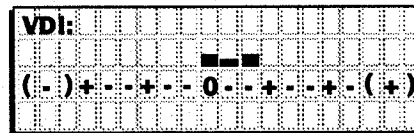
Iron Alloy



Foil



Foil



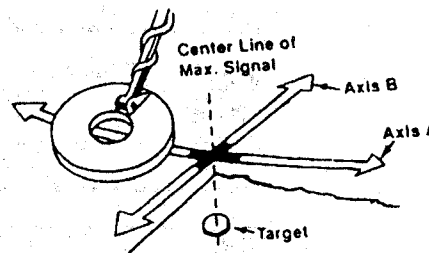
Foil



Most Likely
Foil

Ready to Dig

Once the decision has been made to dig, move the loop off to one side of the target area, squeeze and hold the trigger on the handle, and "X" the loop over the spot where you believe the target to be. Note that the trigger also has a locked forward position that accomplishes the same thing as squeezing and holding it.



While the trigger is being held, the loop doesn't need to be moving to detect the target thus the loop may be moved slowly over the area. The display will indicate depth in inches, and will also show the strongest reading to aid in pinpointing exactly where to dig. The strongest reading on the depth display, and the loudest sound coming from the speaker indicates the center of the target. Don't forget to "X" the target as pinpointing cannot be accurate unless the target is swept from at least two different directions. Once pinpointing is complete, release the trigger.

Pinpointing takes practice. The standard loop provided with the Spectrum is a high power nine and a half inch design. This loop's strongest traits are in the detection depth and ground coverage areas. When pinpointing becomes difficult, the optional six inch loop is suggested. The smaller loop has advantages in high trash areas, but will not detect as deep as the standard nine and a half inch size.

There are three important things to keep in mind when pinpointing:

1. Targets that are near the surface, because they give a wider response, are harder to pinpoint than deep targets. If the trigger is held, and the loop swept over the area you may note a shallow depth indication. Lifting the loop slightly above the ground, releasing and resqueezing the trigger, and again "X" ing the target will aid pinpointing.

2. In the Basic Adjustments, DC (non-motion) Sensitivity directly affects the pinpointing mode. Lower DC Sensitivity settings pinpoint shallow targets better.

3. In the Pro Options under Audio, the VCO, (voltage controlled oscillator), has been found to significantly aid pinpointing.

Basic Adjustments

Page One

Now that you have had some field experience, you may want to make some changes to the basic settings of your detector.

Press the Menu control. At this point, the **MAIN MENU** will appear on the display.

■	MAIN MENU					PG. 1/1	■
■	←Preset Programs						
□	Basic Adjust						
□	Pro Options						

There is only one page to this menu as indicated in the upper right corner of the display. Page 1 = PG. 1/1.

The choices are:

- 1. Preset Programs**, which will return to the six starting Programs, Coin & Jewelry, Jewelry & Beach, Relic, etc.
- 2. Basic Adjustments**, used to make all the basic alterations generally associated with most metal detectors, Volume, Threshold, Tone Adjust, etc.
- 3. Pro Options**, used to make advanced adjustments to the programs, and to the circuit board functions.

Use the arrow control to move the pointer to the Basic Adjustments, and then press the ENTER control.

There are three pages to the Basic Adjustments indicated in the upper right corner of the display. Page 1/3 = PG. 1/3.

■ BASIC ADJ.										PG. 1/3 ■										
■ ←	Volume																			
□	Threshold																			
□	Tone Adjust																			

The *pointer* to the left of the listed adjustment indicates that this is the adjustment currently selected for alteration. Use the arrow controls to select the adjustment of your choice then press the ENTER control to enter or activate that feature.

Some adjustments, when entered, show another display used to make the actual adjustment. Others simply turn the appropriate feature on or off indicated by the small square on the display to the left of the listed adjustment.

Once a Basic Adjustment is made, to return to searching squeeze and release the trigger. If, however, you want to alter more than one Basic Adjustment before returning to a search mode, you may do so. If in a secondary menu, such as Volume Adjustment, simply press MENU to return to the Basic Adjustment menu. You could then select another adjustment with the arrow controls, and enter that Adjustment. Pressing MENU a second time will return to the MAIN MENU. Again, any time you want to return to a search mode, squeeze and release the trigger.

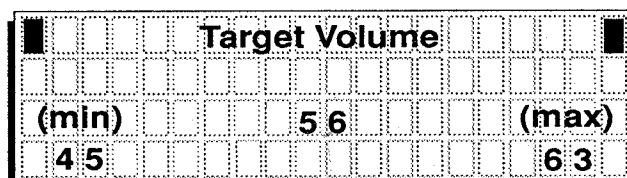
If a Basic Adjustment has been made (for example Volume) and the trigger has been squeezed and released to return to a search mode, you can then return to the volume adjustment simply by pressing either of the arrow controls. This shortcut returns to the last adjustment that was made thereby allowing an operator to switch directly from a search mode to any adjustment desired. This feature is desirable as you start using Basic Adjustments as well as Pro Options that are located further down the menu listings.

The Basic Adjustments are:

Volume - How loud a target beeps when detected.

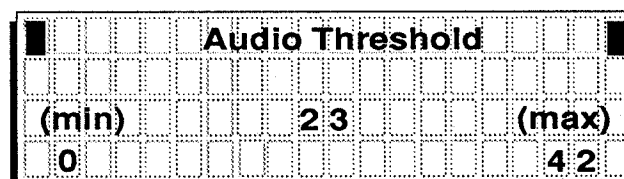
When volume is selected with the arrow controls, and the ENTER control pressed, a secondary display appears. The current volume level sounds continuously. To the left, (min) 45 indicates that the minimum volume level available is 45.

To the right, (max) 63 indicates that the maximum volume level available is 63. In the middle the current level is shown (in this example 56). Use the arrow controls to select the volume level you desire. Volume level will select the loudest possible sound a shallow target can produce. High volume levels will reduce battery life slightly.



Threshold - The slight hum or background tone which is normally heard continuously during searching.

When threshold is selected with the arrow controls and the ENTER control pressed, a secondary display will appear. Additionally, the current threshold level will sound continuously. (min) 0 to the left indicates that the threshold can be reduced to the point of nonexistence; silent search developed manually. The (max) 42 to the right indicates the maximum threshold level possible. Note that the maximum threshold level is well below the minimum volume level. Thus with the threshold at maximum, and the volume at minimum, the detector will still respond to metal. In the middle of the display, the current threshold level is shown (in this example 23). Use the arrow control to select the threshold level you desire. High threshold levels will reduce battery life slightly.



Tone Adjust - Selects the frequency or pitch the sound of the detector produces. This is different than Transmit Frequency which is described in the Pro Options under Signal (transmit, receive).

When Tone Adjust is selected with the arrow controls, and the ENTER control pressed, a secondary display will appear. (min) 1 to the left indicates the lowest audio frequency (tone) available. Low frequencies, from about 100 down, begin to *pulse*. (max) 255 indicates the highest possible audio frequency tone. The number in the middle of the display (in this case 231) is the currently selected frequency. Select an audio frequency that you can hear comfortably, and provides the best definition for your ears.

Tone Audio Frequency															
(min)															(max)
1															255

Page 2

Unique to Page 2 of the Basic Adjustments are the three available selections; Audio Disc., Silent Search, and Mixed Mode Audio. Only one selection from this page can be made. Silent Search and Mixed Mode Audio must have the Audio Disc. on to function. When either of these selections are made, Audio Disc. is on automatically whether or not the display shows a filled in square next to Audio Disc. All three of the Basic Adjustments on Page 2 are ON - OFF selections, no secondary displays.

BASIC ADJ.																PG. 2/3			
☒	← Audio Disc.																		
☐	Silent Search																		
☐	Mixed-Mode Audio																		

Audio Disc - The ability of the detector to produce different sounds for different types of targets. Trash is rejected by going silent or a broken cut short sound. Valuables are detected by a smoother more solid sound.

Silent Search - The ability of the detector to be operated without the threshold or background hum that is normally heard continuously during operation. The instrument is thus silent until a target is detected.

[illegible]

When Silent Search is selected, Audio Disc. is automatically on. When selected with the arrow controls, the ENTER control can be used to turn Silent Search on indicated by a filled in square "X" next to the pointer, or off indicated by an empty square, (no X) next to the pointer.

If you cannot search comfortably with a threshold, select Silent Search. If, however, you can search comfortably with a threshold, even a reduced level of threshold, you should do so. The Audio Threshold provides additional target and ground information which is not heard with Silent Search.

Mixed Mode Audio - A unique hybrid operating mode. It is essentially an all metal, (DC non-motion mode), functioning simultaneously with a discriminate, (AC motion mode).

BASIC ADJ.						PG. 2/3
☐ Audio Disc.						
☐ Silent Search						
☒ ← Mixed-Mode Audio						

When Mixed Mode Audio is selected, Audio Disc. is automatically on. When the arrow controls are used to select Mixed Mode Audio, the ENTER control turns this feature on indicated by a filled in square "X" next to the pointer, or off indicated by an empty square (no X) next to the pointer. When Mixed Mode Audio is on, all types of metals will produce a sound (beep). When the loop is in motion, targets accepted by the discriminate program will produce a high pitch beep. Targets rejected by the discriminate program will produce a lower pitch (beep). High pitch or low pitch beeps are directly determined by the discrimination settings. An operator can select discriminate settings through the selection of an entire Program, or by adjusting the accept and reject targets in the Pro Options under Discrimination. When the loop is not in motion, all types of targets will produce the same low pitch (beep).

■ Page 3

Each of the three Basic Adjustments on Page 3 have secondary adjustment displays.

■ BASIC ADJ.										PG. 3/3 ■									
☐	←	AC (motion) Sens																	
☐		DC (non-motion) Sens																	
☐		Backlight																	

AC (motion) SENS - Used to select the appropriate sensitivity (degree that the instrument is responsive) while being used in the discriminate, or modes which require movement of the loop.

When AC (motion) Sens is selected with the arrow controls, and the ENTER control is pressed, a secondary display will appear.

A. C. Sensitivity									
(min)					60				(max)
1									80

The (min) 1 to the left indicates that the minimum available sensitivity level is a setting of 1. The (max) 80 to the right indicates that the maximum available sensitivity level is a setting of 80. The number in the middle (in this example 60) indicates the current sensitivity level. Use the arrow controls to select the desired level of sensitivity. Remember that when the trigger is squeezed and released to go to a search mode, you can return directly back to the last basic adjustment used by pressing either arrow control.

Sensitivity levels adjust detection depth, and also have a direct effect on detector stability. AC (motion) sens levels should be selected carefully to allow stable, predictable performance. If the detector responds erratically, a lower sensitivity level should be selected.

DC (non-motion) Sens - Used to select the sensitivity (degree that the detector is responsive to receive signals) while the detector is being used in non-discriminate modes. These are modes that do not require movement of the loop to respond. The DC Sensitivity fine tunes stability and pinpointing sensitivity for the conditions being searched.

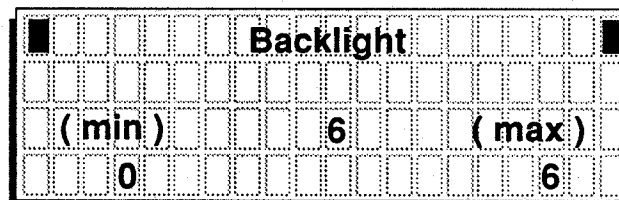
When DC (non-motion) Sens is selected using the arrow controls, and the ENTER control is pressed, a secondary display will appear.

D. C. Sensitivity									
(min)					3				(max)
1									5

The (min) 1 to the left indicates that the minimum DC sens level available is a level of 1. The (max) 5 indicates that the maximum DC sens level available is a level of 5. The number in the middle indicates the current DC sens level (in this example 3). Use the arrow controls to select the desired DC sens level. DC sens levels should be selected carefully to allow smooth, stable, predictable operations while allowing for reasonable pinpointing. Typically, lower DC sens settings pinpoint shallow targets far better than high DC sens settings. High DC sens settings will, however, produce more pinpointing depth.

AC and DC Sensitivity Adjustments are traditionally the way to alter detection depth and stability. There are other methods available in the Pro Options under Signal (transmit, receive).

Backlight - A feature used in low-light conditions to improve visibility of the display.



The (min) 0 indicated to the left of the display indicates that the backlight is turned off. The (max) 6 indicates the maximum backlight brightness available. The number in the middle (in this example 6) is the current backlight setting. Use the arrow controls to select the desired backlight setting. The maximum backlight setting will reduce battery life by 10%. Lower backlight settings will have significantly less than a 10% effect on battery life.

When the detector is first turned on, it is normal for the backlight to be on during the opening display. If the backlight is off, the backlight will turn off when the battery check display appears. If the backlight is on, it will continue until turned off manually.

If the instrument is turned on, and then turned off prior to the introductory display fading, when the instrument is turned back on the backlight will be on.

Once the backlight is turned on, either manually or by accident, it will stay on. Turning the detector off and on again will not select the Backlight Off setting. Only by pressing MENU, selecting and entering the Basic Adjustments, selecting and ENTERing Backlight, and then turning Backlight OFF, will the Backlight revert to the OFF setting. The exception is a master reset achieved by removing the battery for more than five minutes. When the battery has been removed for more than five minutes, the Backlight will automatically revert to the OFF setting.

Backlight On cannot be saved in Custom Program 1 or Custom Program 2. However, turning the detector On and Off and back on again quickly will automatically select Backlight On.

Pro Options

■ Introduction

☒	MAIN MENU	PG. 1/1
☒	Preset Programs	
☐	Basic Adjust	
☐	← Pro Options	

The **Pro Options** are used to make the more advanced detailed adjustments available on this model.

The Pro Options work identical to the Basic Adjustments. Methods of entry, adjustment, exit and re-entry remain the same.

To enter the Pro Options, press the MENU control; the MAIN MENU will appear. Use the arrow controls to select Pro Options, and press ENTER. The Pro Options menu will appear on the display.

The arrow controls are then used to select the desired Pro Option, and the ENTER control used to enter that Option.

All the Pro Adjustments have secondary menus, as well as secondary adjustment displays. Some have a **third** menu with additional adjustment screens.

Pro Options have five separate menus. Each menu has features which are related to the others within the same menu.

From this point forward, we will assume that you know how to use the MENU control, the Arrow Controls to make a selection, ENTER control to enter or select that option, and the Arrow Controls to make further alterations. Remember, squeezing and releasing the trigger returns to a search mode. Arrow Control returns to the last menu, or adjustment display used.

Be aware that changes you made to a Program are only in effect as long as you continue using that Program, and retain short term (volatile) memory. If you want to keep the changes you made to a specific program, the entire Program must be saved in either Custom Program 1 or 2.

We will list each menu separately with a tree of the menus and displays within that menu. Pro Options are listed on the bottom of your control box for easy field reference.

■ Audio Menu

■ PRO OPTIONS										PG. 1/2 ■									
☐	←	Audio																	
☐		G.E.B./Trac																	
☐		Discrimination																	

There are two pages to the Audio Menu which are indicated in the upper right-hand side of the display. There is only one secondary display to this menu, S.A.T. Speed; all others are simply on/off selections.

S.A.T.	ON/OFF only
S.A.T. SPEED	Secondary Adjustment Display
TONE I.D.	ON/OFF only
V.C.O.	ON/OFF only
Absolute Value	ON/OFF only
Modulation	ON/OFF only

■ AUDIO MENU										PG. 1/2 ■									
■	←	S.A.T.																	
☐		S.A.T. Speed																	
☐		Tone I.D.																	

S.A.T. - Filled in square indicates on, empty square indicates off.

Self Adjusting Threshold is an option which constantly maintains a threshold. It is particularly useful when a Program is being used that doesn't discriminate. Non-discriminating modes typically are more susceptible to instability than are discriminating modes. S.A.T. when on, may require some slight loop movement to continue detecting. Even though some loop movement is required, S.A.T. doesn't change the

modes general non-motion classification. S.A.T. is generally recommended for all modes due to its ability to smooth operation, allow for higher sensitivity settings, and more user-friendly operation.

S.A.T. Speed									
(min)					4				(max)
1									10

S.A.T. Speed - Secondary adjustment display, slowest speed 1, fast speed 10.

Self Adjusting Threshold Speed controls how quickly the S.A.T. resets the threshold. Adverse ground conditions (high or inconsistent ground mineral) generally dictates a faster, (higher number setting) be selected. Lower, more consistent ground mineral conditions generally dictate a slower (lower number setting) be selected. Only enough S.A.T. speed necessary to maintain the threshold hum is recommended. Too much S.A.T. may cause back readings (responses after the loop has already passed over an object) particularly "hot rocks".

AUDIO MENU										PG. 1/2
☒	S.A.T.									
☐	S.A.T. Speed									
☒	← Tone I.D.									

Tone I.D. - Filled in square indicates on, empty square indicates off.

Tone I.D. is used in the discriminate or motion modes. When on, each V.D.I. target number has its own audio frequency, or pitch. The higher the V.D.I. number, the higher the pitch thus where a target indicates on the V.D.I. scale can be immediately recognized. The sound rejected targets produce will still be canceled or modified by the discriminate circuit.

AUDIO MENU										PG. 2/2
☐	← V.C.O.									
☐	Absolute Value									
☒	Modulation									

V.C.O. - Filled in square indicates on, empty square indicates off.

Voltage Controlled Oscillator is a feature that will only work in the nondiscriminate modes. When selected, the stronger the response the higher the pitch of the sound. An excellent aid in pinpointing, V.C.O. when activated in a discriminate mode will only function when the trigger is squeezed for pinpointing.

■	AUDIO MENU									PG. 2/2	■
☐	V.C.O.										
☐	← Absolute Value										
■	Modulation										

Absolute Value - Filled in square indicates on, empty square indicates off.

Absolute Value is included to enhance the performance of speciality loops such as the *Bigfoot*, and *Goldfoot* designs. Absolute Value increases the detection area of these loops in the nondiscriminate modes to their entire length. **Absolute Value** is not recommended for standard loop designs.

■	AUDIO MENU									PG. 2/2	■
☐	V.C.O.										
☐	Absolute Value										
■	← Modulation										

Modulation - Filled in square indicates on, empty square indicates off.

Modulation is used in the discriminate or motion modes. When on, it allows the depth of the target to dictate the volume of the response, thus deep targets are immediately recognized. If off, the discriminate or motion modes will produce the same volume of response on all detected targets regardless of depth. The use of Modulation allows for the singling out of deep targets in the standard discriminate mode. It saves time eliminating checking each target with the depth indication in the pinpoint mode.

■ G.E.B./Trac

■	PRO OPTIONS									PG. 1/2	■
☐	Audio										
☐	← G.E.B./Trac										
☐	Discrimination										

There are two pages to the G.E.B./TRAC menu. All the options in this menu are on/off except for Trac Speed and Trac Offset which have secondary adjustment displays. Manual G.E.B. has a secondary menu with two secondary adjustment displays.

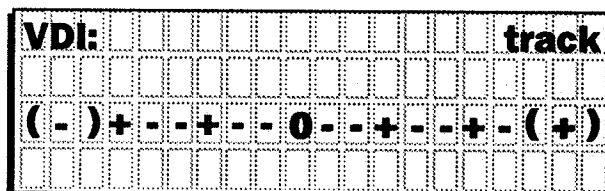
Autotrac	ON/OFF only
Trac View	ON/OFF only
Trac Speed	Secondary Adjustment Display
Trac Offset	Secondary Adjustment Display
Trac Inhibit	ON/OFF only
Manual G.E.B.	Secondary Menu
Coarse	Secondary Adjustment Display
Fine	Secondary Adjustment Display

■ G.E.B./TRAC										PG. 1/2 ■									
■ ← Autotrac																			
☐ Trac View																			
☐ Trac Speed																			

Autotrac - Filled in square indicates on, empty square indicates off.

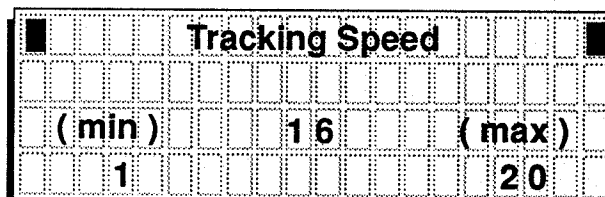
Autotrac allows the instrument to automatically readjust the ground balance setting during searching. This readjustment allows for natural occurring changes in the ground mineral of an area. By maintaining an accurate ground balance, detection depth and stability are enhanced. Autotrac is recommended for typical search conditions. If, however, a great deal of decomposed man-made iron is encountered, Autotrac off, or a reduced autotrac speed is advised.

■ G.E.B./TRAC										PG. 1/2 ■									
■ Autotrac																			
■ ← Trac View																			
☐ Trac Speed																			



Trac View - Filled in square indicates on, empty square indicates off.

Trac View offers a way to observe Autotracking. When activated, *track* will appear momentarily in the upper right-hand corner of the display while Autotrack is adjusting. This information is valuable when attempting to determine an appropriate Trac Speed. It may also be a valuable aid in determining the relative ground conditions. Reoccurring track would indicate difficult ground. Due to the way the electronics provide track information, it is not abnormal to occasionally note that only part of the word *track* appears on the display. On subsequent loop passes, the entire word will appear.



Trac Speed - Secondary adjustment display, smaller numbers equal slower speeds, larger numbers equal faster speeds.

Trac Speed allows for the adjustment of the amount of ground mineral change required to cause autotracking to occur. At slower speeds (lower numbers) it takes a significant change in the ground to cause tracking to occur. At faster speeds (higher numbers) it takes very little change in the ground mineral to cause tracking to occur. The end result, more tracking occurs at higher numbers than at lower numbers. Too much tracking can cause errors in the ground balance setting. Not enough tracking can result in the ground balance setting never catching up with changing ground. The tracking speed should allow the detector to average not more than one adjustment every third sweep of the loop. Trac View is used to see how much tracking is occurring.

Autotrac Offset									
(min)		0		(max)					
- 5								5	

Trac Offset - Secondary adjustment display, negative numbers equal negative offset, positive numbers indicate a positive offset.

Trac Offset allows the Autotrac feature to track the ground slightly more, or slightly less, than what would normally be considered perfect. Experts often prefer a ground balance setting slightly offset from perfect to enhance performance.

Recommended only for experienced operators who fully understand ground rejection.

A slightly positive offset can be used to enhance the responses of small metals in highly mineralized ground. As an example, prospecting for natural gold nuggets. Positive is indicated by a slight increase in threshold as the loop approaches the ground in the all-metal mode.

A negative offset may be used to eliminate particularly troublesome "hot rocks" in areas that are otherwise difficult to search. Negative offset is indicated by a loss or slight decrease in the threshold as the loop approaches the ground in the all-metal mode.

G.E.B./TRAC										PG. 2/2									
☐ Trac Offset																			
☒ Trac Inhibit																			
☐ Manual G.E.B.																			

Trac Inhibit - Filled in square indicates on, empty square indicates off.

Trac Inhibit prevents the Autotrac feature from altering the ground balance during the detection of metal. This prevents the possibility of tracking to the corrosion associated with most metals. Trac Inhibit is recommended for most searching modes. Some metals do not corrode (GOLD), and since tracking is extremely important in high mineral conditions, the ability to turn Trac Inhibit off is available. Trac Inhibit off is automatically selected in the Prospecting Program.

■ G.E.B./TRAC										PG. 2/2									
☐ Trac Offset																			
■ Trac Inhibit																			
☐ ← Manual G.E.B.																			

■ MANUAL G.E.B.										■									
☐ ← Coarse																			
☐ Fine																			

■ Coarse G.E.B.										■																			
(min)										1 2 8										(max)									
0																				2 5 5									

■ MANUAL G.E.B.										■									
☐ Coarse																			
☐ ← Fine																			

■ Fine G.E.B.										■																			
(min)										1 2 8										(max)									
0																				2 5 5									

Manual G.E.B. - Secondary menu, Coarse and Fine, each with its own secondary adjustment display.

Manual G.E. B. allows the operator to manually override the automatic balancing features to select a desired ground balance setting. Coarse or fine adjustments can be made.

Before attempting to manually ground balance, turn off Autotrac since Autotrac will alter any manual changes you make to the ground rejection setting. Manual ground balance will begin at the setting selected by the automatic air/ground balance sequence.

When manually adjusting the ground balance, it is necessary to make an adjustment in either Coarse or Fine, then squeeze and release the trigger. The trigger can be held in, and the loop lowered and lifted over the ground to check for any change in sound which would indicate improper ground balance. To return to the ground balance display for further adjustment, press either of the arrow controls. When perfectly ground balanced in a search mode, the trigger can be squeezed and held, and the loop lowered and lifted over the ground with very little change in the threshold hum. Fine adjustment is used to make smaller adjustments to the ground balance range on either side of the coarse setting. The Fine setting combines with the Coarse setting to determine the actual ground rejection.

Manual ground balance will rarely be used for perfect balancing. It is generally used to offset ground balance for the same reasons Autotrac Offset is used.

In the Coarse or Fine adjustment menus, lower numbers indicate a ground balance setting toward the negative side of the V.D.I. scale (iron). Larger numbers indicate a ground balance setting toward the positive side of the V.D.I. chart (salt). Refer to the Phase Chart on page 49. A coarse setting of 255 would equal 0 on the Phase Chart whereas a coarse setting of 0 equals -95 on the Phase Chart.

Discrimination Menu

PRO OPTIONS										PG. 1/2										
☐	Audio																			
☐	G.E.B./Trac																			
☐	← Discrimination																			

No other option will have a greater effect on how the instrument operates than Discriminate features.

There are two pages to the Discriminate Menu indicated in the upper right-hand side of the display. All items within the Discriminate Menu have secondary adjustment displays.

Edit	Secondary Adjustment Display
Block Edit	Secondary Adjustment Display
Learn	Secondary Adjustment Display
Recovery Speed	Secondary Adjustment Display
Bottlecap Rejection	Secondary Adjustment Display

DISC. MENU										PG. 1/2										
☐	← Edit																			
☐	Block Edit																			
☐	Learn																			

Edit - Secondary Adjustment Display, accept or reject status shown for each V.D.I. number available.

EDIT allows for changing which targets are accepted (detected), or rejected, (discriminated out) within the current Program you are using.

Use the arrow controls to view the V.D.I. numbers. Negative numbers will appear with a "-" to the left.

```

Disc. Edit
- 1 - > reject
ENTER: change status

```

Disc.	Edit		
1 - >	reject		
ENTER:	change status		

```

Disc. Edit
10 - > accept
ENTER:      change status

```

```

Disc. Edit
- 10 - > reject
ENTER: change status

```

Use the ENTER control to change any desired V.D.I. number to accept or reject status.

If you do not save the entire Program in Custom Program 1 or 2, the changes you make in EDIT are only in effect as long as you continue to use that program. The only exception being the temporary short-term memory as previously described. This allows the detector to be turned off. When turned on, and the trigger squeezed and released, it will return to the last Program in use. If you make EDIT changes in Coin & Jewelry for example, and then switch to the Relic Program, you lose all editing you completed in the Coin & Jewelry Program. Each time a new Program is ENTERED, all the Preset Programs go to their factory recommended settings. Only Custom Program 1 and 2 will save your custom settings.

Accepting certain V.D.I. numbers will have an effect on detection depth particularly very deep targets that are difficult for the display to identify. Positive +95 is one of these V.D.I. numbers. Most Preset Programs are set so that positive +95 V.D.I. number is rejected. The display uses positive +95 for many different types of targets it cannot readily identify. Therefore, if positive +95 is accepted, questionable targets may be dug that indicate this number, and can produce some interesting recoveries. *A good tip regarding positive +95: If a target indicates 95, and the depth display indicates it as being fairly deep; dig it. If the depth display indicates it as being fairly shallow, it is more likely to be trash or a hot rock.*

The first 30 to 40 negative numbers also have some effect on detection depth. Most iron indicates further into the negative numbers. Thus the first 30 - 40 negative numbers can often be accepted without digging much iron. Accepting from the positive numbers down as low as 30 - 40 has the largest impact on the lower end of the positive numbers. Sensitivity to small jewelry is increased, however, sensitivity to foil is also increased. On a beach or in a park that has lots of small foil, accepting down to negative 30 - 40 may not be practical. A reduced sensitivity setting may help reduce some of these small bits of unwanted foil while accepting negative numbers.

Accepting all V.D.I. numbers will produce the best overall detection sensitivity, however with the amount of trash in most areas, searching with no rejection is seldom practical. The idea of discrimination is to accept V.D.I. numbers most likely to be valuables, and to reject the V.D.I. numbers most likely to be trash. Digging ease, and acceptability in an area will also effect the amount of accepted V.D.I. numbers desired. No metal detector can reject all trash while accepting all valuables.

The detector sees metals electronically thus some valuable and non-valuable targets may look identical to the detector. To select accept and reject V.D.I. numbers, is to gamble that the areas you select for **acceptance** will be good targets, and the area you select for **reject** will be trash targets. A factory program which uses the law of averages usually produces more good targets than trash. The EDIT feature allows you to fine tune the accept and reject settings to further improve these odds.

```

Block Edit
- 30 - > reject
ENTER:      change status

```

Block Edit - Secondary adjustment display, accept or reject large sections of the V.D.I. scale.

Allows the EDIT process to be completed in bulk, EDIT is fine, BLOCK EDIT is coarse.

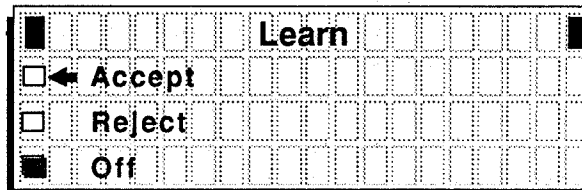
When Block Edit is selected and the ENTER control pressed, a secondary adjustment display will appear. The ENTER control can be used to select either accept or reject. The arrow controls can then be used to change a block of V.D.I. numbers to the accept or reject status. In other words if reject is selected and the arrow control used to view the entire V.D.I. range from -95 to positive +95, than all targets will be rejected. The desired accept targets could then be added through one of the other methods of editing. Block Edit saves time if large sections of the V.D.I. target numbers are to be changed.

■ DISC. MENU										PG. 1/2										■									
□ Edit																													
□ Block Edit																													
□ ← Learn																													

Learn - Learn has a secondary menu where one of three available selections can be made.

Learn allows specific metal samples to show or teach the discriminator what metal targets you desire accepted or rejected.

When Learn has been selected and the ENTER control pressed, the arrow controls may then be used to make one of three available selections. The current selection is indicated by the filled in square to the left of the listing.



Once a selection has been made, either accept or reject:

1. The trigger must be squeezed and released.
2. The metal sample or samples shown to the instrument by sweeping them one at a time in front of the loop until the desired accept or reject sound is heard.
3. The arrow control pressed to return to the Learn adjustment selection display.
4. The arrow controls used again to select Learn Off, and the ENTER control pressed.
5. The trigger squeezed and released to return to a searching mode.

CAUTION: If you do not return to the Learn adjustment screen and turn Learn off, the detector will continue to learn (accept or reject) every metal target it encounters. Returning to Learn Off, after you have learned a target is extremely important.

Iron alloys, such as steel bottlecaps or nails, should never be used during this learn method of programming. Because of their inconsistent nature, iron alloys tend to scatter or otherwise confuse the discriminate accept or reject status. If this occurs, it is best to turn the detector off, back on, and re-enter the desired Program to return to the original factory discriminate settings.

■ DISC. MENU										PG. 2/2 ■									
☐ ← Recovery Speed																			
☐ Bottlecap Reject																			

Recovery Speed - Secondary adjustment display, 1 equals slowest recovery, 40 equals the quickest recovery.

When a metal is detected, it takes a fraction of a second for the detector to process the signal before it can respond to another metal target. The time it takes to process the first metal target signal so that the second metal target signal can respond, is called Recovery Speed.

When Recovery Speed is selected, and the ENTER control pressed, a secondary adjustment display will appear.

■ Recovery Speed										■																			
(min)										20										(max)									
1																				40									

The arrow controls can be pressed to select the desired recovery speed. Minimum speed of 1 indicates that it is the slowest recovery speed (slowest recovery between targets). Maximum speed of 40 indicates it is the fastest recovery speed available (fastest recovery between targets).

There are advantages and disadvantages to fast and slow recovery speeds. Faster recovery speeds work well in high trash areas, however, have some difficulties with very deep targets as well as double responses on shallow targets. Slower recovery speeds do not work very well in high trash areas, however, do better on very deep targets. A custom setting needs to be found that suits the preferences of the individual, and the conditions in the area. As a general rule, the closer together the metal targets are in an area, the faster the recovery speed should be. The more spacing between targets the slower the speed should be. Don't use the fast speed if you don't need to.

■ DISC. MENU										PG. 2/2 ■									
☐ Recovery Speed																			
☐ ← Bottlecap Reject																			

Bottlecap Rejection - Secondary adjustment display, 1 equals less rejection, 20 equals maximum rejection.

Bottlecap Rejection allows the operator to adjust how strongly the instrument rejects iron.

When Bottlecap Rejection is selected with the arrow control and the ENTER control pressed, a secondary adjustment display will appear.

■										Bottlecap Reject										■									
(min)										1										(max)									
1																				20									

All starting programs use the 1 minimum setting. As larger numbers are selected, more *bias rejection* against iron occurs. The advantage of higher Bottlecap Rejection settings is that in high iron areas more decisive iron rejection occurs. The disadvantage of a high Bottlecap Rejection setting is if an iron target is close to a good metal, the high degree of *bias* against iron may cause the detector to cancel both responses. The operator needs to fine tune Bottlecap Rejection according to their preferences and the conditions being searched.

■ Display

■ PRO OPTIONS										PG. 2/2 ■									
☐ ← Display																			
☐ Signal (transmt,																			
receive)																			

Display - There are two pages to the Display menu which is indicated in the upper right-hand side of the display. There is a secondary menu under Spectrum Options.

Visual Disc.	ON/OFF Only
Labels	ON/OFF Only
V.D.I Sensitivity	Secondary Adjustment Display
Ground I.D. (DC Phase)	ON/OFF Only
Spectrum Options >	
Accumulate	ON/OFF Only
Average	ON/OFF Only
Fade rate	Secondary Adjustment Display

☒	DISPLAY	☐	☐	☐	☐	☐	☐	☐	☐	PG. 1/2	☒
☒	← Visual Disc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☒	Labels	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	V.D.I. Sens.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Visual Discrimination - Filled in square on, empty square off.

Visual Discrimination eliminates both the V.D.I. number **and** the label, "IRON, FOIL, PULLTAB, etc", of **rejected** targets from indicating on the display. In other words if Visual Discrimination is on, and a specific target is rejected (for example 0-IRON) then 0-IRON will not appear on the display. If Visual Discrimination is off, all the display indications will appear regardless of whether or not the specific V.D.I. number is rejected.

Visual Discrimination is based on the current discriminate program.

Visual Discrimination has the advantage of eliminating a large number of **rejected** V.D.I. numbers from appearing on the display. The disadvantage is that much of the visual display information will not appear for you to interpret questionable target responses.

☒	DISPLAY	☐	☐	☐	☐	☐	☐	☐	☐	PG. 1/2	☒
☒	Visual Disc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☒	← Labels	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	V.D.I. Sens.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Labels - Filled in square indicates on, empty square indicates off.

Labels are the IRON, FOIL, NICKEL, PULLTAB, PENNY, etc, display indications.

These indications are designed for average use inside the USA. If searching in other countries, or in areas where such common types of targets are not expected, these labels may be distracting. In such cases, this option allows labels to be turned off.

■ DISPLAY		PG. 1/2
☒	Visual Disc.	
☒	Labels	
☐	← V.D.I. Sens.	

VDI Sensitivity		
(min)	8 5	(max)
1		99

VDI Sensitivity - Secondary adjustment display, smaller numbers indicate less V.D.I. Sensitivity, larger numbers indicate greater V.D.I. Sensitivity.

V.D.I. Sensitivity controls the intensity (strength) of the target signal required to activate the display indications. A low V.D.I. Sensitivity setting would require a stronger target response to trigger the display indications. A higher V.D.I. Sensitivity setting would require very little signal strength to trigger the display indications.

As with all sensitivity levels, if set too high for the area, the detector will become unstable, and the display indications unreliable.

Low ground mineralization is typically a good indication that high V.D.I. sensitivity settings are appropriate. Heavy mineralization or electrical interference, are areas where a lower V.D.I. Sensitivity setting is appropriate.

This feature is designed to allow adjustment of the display stability. However, because the instrument's display and audio tone are closely associated in many of the audio modes, the V.D.I. Sensitivity may increase or decrease overall audio sensitivity.

■ DISPLAY		PG. 2/2
☒	← Ground I.D.	
	(D.C. Phase)	
☐	Spectrum Options	

Depth:		9 3 . 0
1 2 - - 9 - - 7 - - 5 - - 3 - - 1 - 0		

Ground I.D. (D.C. Phase) - Filled in square indicates on, empty square indicates off.

Ground I.D. Phase allows for measurement of either the ground mineralization, or the phase (V.D.I. reference number) of a specific metal target during normal searching.

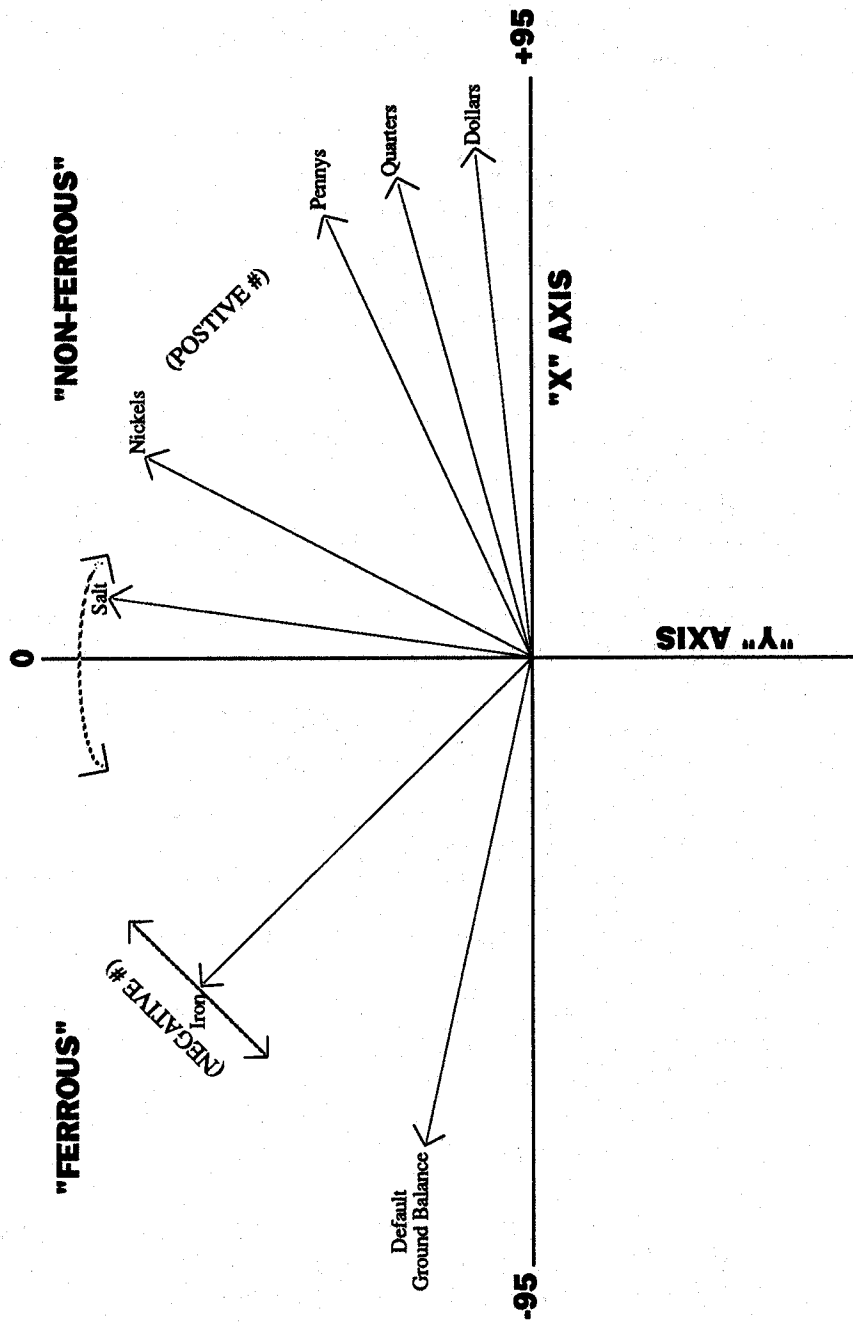
When Ground I.D. (D.C. Phase) is on, and the trigger squeezed and released, normal searching begins. When a target is located, or when the operator wants to measure any target or the ground, the trigger is squeezed and held as if to pinpoint. The loop is then held stationary over the target or ground. The exact D.C. Phase is shown on the display (trigger squeezed and held). The depth display can be used to help center the loop over a target for more accurate indications. The audio tone will also assist in centering the loop over the target.

In extreme conditions, the ground D.C. Phase may override a target that you are attempting to measure. Such an occurrence would be noted by a high negative reading on a non-ferrous (not of iron) target. To correct the indication, move the loop off to one side (being sure to hold the loop directly on top of the ground mineral) release and resqueeze the trigger, and then move the loop back over the target. This should allow a proper D.C. Phase reading.

The D.C. Phase of the ground has a relationship to the proper ground balance setting. This is of particular interest to those who use the optional manual ground balance. Manual ground balance has a range that covers all negative V.D.I numbers. A manual ground balance coarse setting of 0 equals a D.C. Phase of negative -95. A coarse setting of 255 equals a D.C. Phase of zero. **See page 49 for Phase Chart.**

[illegible]

Spectrum Options: Secondary Menu, Accumulate, Average, and Fade. Accumulate and Average are simply on/off selections. Fade has a secondary adjustment display.



PHASE CHART

The Spectrum graph, which appears on the display during normal searching has several options, and combination of options that effect how the information is displayed.

SPECTRUM OPTIONS									
☒	← Accumulate								
☐	Average								
☐	Fade rate								

Accumulate - Filled in square indicates on, empty square indicates off.

Accumulate allows the Spectrum graph to continually gather information. This gathering of information continues from one sweep of the loop to the next. Eventually, if only Accumulate is selected, the Spectrum graph will completely fill, and only squeezing and releasing the trigger will clear it so that further information may be viewed. The Fade option is suggested to be used in combination with Accumulate so that excessive triggering is not required. Fade will gradually reset the graph to zero indication thereby eliminating older information.

SPECTRUM OPTIONS									
☐	Accumulate								
☒	← Average								
☐	Fade rate								

Average - Filled in square indicates on, empty square indicates off.

Average does not continue to gather all information. It averages the information received, and shows the information on the Spectrum graph. Averaging can be used in combination with Accumulate thereby combining the average Spectrum graph information. Fade is suggested to clear the display of old information rather than excessive triggering.

If neither Accumulate or Average are selected, a mode known as *single sweep* is in effect. Single sweep displays only the Spectrum graph information received in that specific sweep of the loop. The next sweep of the loop will clear all information from the Spectrum graph, and list the information received within that sweep. Fade is not needed in the single sweep mode.

SPECTRUM OPTIONS									
☐	Accumulate								
☐	Average								
☒	← Fade rate								

Fade - Secondary adjustment display.

Fade allows past information to automatically fade from the Spectrum graph. Without Fade, the Spectrum graph will fill with information that is no longer valid as you sweep through a search area.

When Fade is selected, and the ENTER control pressed, a secondary adjustment display will appear.

Fade Rate									
(min)					7	(max)			
0						15			

A minimum setting of 0 equals no fade at all. The Spectrum information will continue to appear until the trigger is squeezed and released. A maximum setting of 15 selects a very quick fade rate. The Spectrum information will automatically clear from the graph quickly. Ideally, a Fade Rate should be selected that allows time to adequately view the Spectrum information yet still clears the graph in a timely manner.

Signal (transmit, receive)

PRO OPTIONS										PG. 2/2		
☐	Display											
☒	← Signal (transmit,											
receive)												

There are two pages to the Signal (transmit, receive) menu as is indicated in the upper right-hand side of the display. The first two, High or Low (transmit power), require a selection of either the High transmit power or the Low transmit power. The second two, Transmit frequency and Preamp gain, have secondary adjustment displays.

■ SIGNAL MENU										PG. 1/2 ■									
■		←		High		(transmit													
□				Low		power)													
□				Transmit		freq.													

High (transmit power) - Filled in square indicates on, empty square indicates off.

Programs are set to high transmit power. Allowing the maximum amount of power to be transmitted from the loop into the ground.

High transmit power should be used in most search conditions.

■ SIGNAL MENU										PG. 1/2 ■									
□				High		(transmit													
■		←		Low		power)													
□				Transmit		freq.													

Low (transmit power) - Filled in square indicates on, empty square indicates off.

Low transmit power should be selected when OVERLOAD regularly appears on the bottom of the display. When *overload* appears on the display either there is a very large, strong metal target response, or the ground mineralization is such that the detector cannot properly operate. Sweeping the loop higher above the specific overload response will identify a target. When overload appears on the display constantly during operation, selection of the Low transmit power setting will improve depth and stability.

VDI:																			
--				--		--		--											
(-)		+ - -		+ - -		0 - -		+ - -		+ - -		(+)							
Overload																			

When overload occurs, the detector is not capable of responding to metal targets. The Low transmit power setting in most cases will resolve such difficulties and provide detection capabilities in extreme conditions.

When Low transmit power setting is selected, the Preamp gain (signal balance) should be readjusted for maximum usable depth.

Anytime the transmit power is altered, the detector needs to be ground balanced. Once in an operate mode, to ground balance, simply press the ENTER control.

■ SIGNAL MENU										PG. 1/2 ■									
☐ High (transmit																			
☐ Low power)																			
■ ← Transmit freq.																			

■ Transmit Frequency										■									
(min)										4 (max)									
1										7									

Transmit frequency - Secondary adjustment display, 4 equals the normal 6.59 KHz operating frequency. Lower numbers equal lower frequencies, 3 = 6.4 KHz, 2 = 6.2 KHz, 1 = 6.0 KHz. Higher numbers equal higher operating frequencies, 5 = 6.8 KHz, 6 = 7.0 KHz, 7 = 7.2 KHz.

Operating frequency is the frequency the detectors transmit and receives its signal.

Other metal detectors operating at the same frequency will cause interference. By shifting to a different frequency such interference can be avoided from detectors operating nearby.

The best performance will be achieved at the standard number 4 setting. If, however, you cannot search due to interference from other detectors, use an alternate frequency.

Remember that once the trigger is squeezed and released to return to a search mode, the last option used can be accessed by pressing either of the arrow controls.

■ SIGNAL MENU										PG. 2/2 ■									
☐ ← Preamp gain																			
(Signal Balance)																			

■ Preamp Gain										■									
(min)										1 (max)									
1										15									

Preamp gain (signal balance) - Secondary adjustment display, lower numbers equal less gain, higher numbers equal greater gain.

Preamp gain (previously called signal balance) can be used to promote stability and performance.

Like a sensitivity control, too much Preamp gain will result in unstable operation and reliable indications.

Unlike a sensitivity control, Preamp gain will have a substantial effect on OVERLOAD.

For maximum detection depth, fine tune the Preamp gain to the highest number setting without causing OVERLOAD, and unstable operation.

If the Low transmit power setting has been selected, it is advisable to fine tune Preamp gain.

Any time Preamp gain is altered, the detector needs to be ground balanced. Once in an operating mode, simply press ENTER to ground balance.



■ Preset Program Settings

"Coin & Jewelry"

Basic Adjustments:

Volume-----56
Threshold-----23
Tone Adjust-----231
Audio Disc-----ON
Silent Search-----OFF
Mixed-Mode Audio---OFF
AC (motion) Sens.-----60
DC (non-mot.) Sens-----3
Backlight-----Optional

PRO OPTIONS

Audio-----S.A.T.-----ON
S.A.T Speed-----4
Tone I.D.-----OFF
V.C.O.-----OFF
Absolute Value---OFF
Modulation-----ON
G.E.B. / Trac---Autotrac-----ON
Tracview-----OFF
Trac Speed-----16
Trac Offset-----0
Trac Inhibit-----ON
Manual G.E.B.---Automatic
Discrimination--Edit-----reject--(- 95 to + 09)
accept-(+10 to + 27)
reject--(+ 28 to + 49)
accept-(+ 50 to + 94)
reject--(+ 95)
Block Edit-----same as edit
Learn-----OFF
Recovery Speed---20
Bottlecap Reject-1
Display-----Visual disc.-----ON
Labels-----ON
V.D.I. Sens.-----85
Ground I.D.-----OFF
Spectrum ----Accumulate-ON
Options Average-----ON
 Fade rate-----7
Signal (transmit, receive)
High transmit power-----ON
Low transmit power-----OFF
Transmit freq.-----4
Preamp gain-----1

Preset Program Settings

"Jewelry/Beach"

Basic Adjustments:

Volume-----56

Threshold-----23

Tone Adjust-----231

Audio Disc-----ON

Silent Search-----OFF

Mixed-Mode Audio---OFF

AC (motion) Sens.-----60

DC (non-mot.) Sens-----3

Backlight-----Optional

PRO OPTIONS

Audio-----S.A.T.-----ON
 S.A.T Speed-----10
 Tone I.D.-----OFF
 V.C.O.-----OFF
 Absolute Value---OFF
 Modulation-----ON

G.E.B. / Trac---Autotrac-----ON
 Tracview-----OFF
 Trac Speed-----16
 Trac Offset-----0
 Trac Inhibit-----ON
 Manual G.E.B.---Automatic

Discrimination--Edit-----reject--(- 95 to - 31)
 accept--(-30 to - 1)
 reject--(0 to + 7)
 accept--(+ 8 to + 94)
 reject--(+ 95)
 Block Edit-----same as Edit
 Learn-----OFF
 Recovery Speed---20
 Bottlecap Reject-1

Display-----Visual disc.-----ON
 Labels-----ON
 V.D.I. Sens.-----85
 Ground I.D.-----OFF
 Spectrum ----Accumulate-ON
 Options Average-----ON
 Fade rate-----7

Signal (transmit, receive)
 High transmit power-----ON
 Low transmit power-----OFF
 Transmit freq.-----4
 Preamp gain-----1

■ Preset Program Settings

"Relic"

Basic Adjustments:

Volume-----56
 Threshold-----23
 Tone Adjust-----226
 Audio Disc-----ON
 Silent Search-----OFF
 Mixed-Mode Audio----OFF
 AC (motion) Sens.-----60
 DC (non-mot.) Sens---- 3
 Backlight-----Optional

PRO OPTIONS

Audio-----S.A.T.-----ON
 S.A.T Speed-----7
 Tone I.D.-----OFF
 V.C.O.-----OFF
 Absolute Value---OFF
 Modulation-----ON

 G.E.B. / Trac---Autotrac-----ON
 Tracview-----OFF
 Trac Speed-----16
 Trac Offset-----1
 Trac Inhibit-----OFF
 Manual G.E.B.----Automatic

 Discrimination--Edit-----reject--(- 95 to - 31)
 accept--(- 30 to + 95)
 Block Edit-----same as Edit
 Learn-----OFF
 Recovery Speed---20
 Bottlecap Reject-1

 Display-----Visual disc.-----ON
 Labels-----OFF
 V.D.I. Sens.-----85
 Ground I.D.-----OFF
 Spectrum ----Accumulate-ON
 Options Average-----ON
 Fade rate-----7

 Signal (transmit, receive)
 High transmit power-----ON
 Low transmit power-----OFF
 Transmit freq-----4
 Preamp gain-----1

■ Preset Program Settings

"Prospecting"

Basic Adjustments:

Volume-----56
 Threshold-----23
 Tone Adjust-----221
 Audio Disc-----OFF
 Silent Search-----OFF
 Mixed-Mode Audio----OFF
 AC (motion) Sens.-----60
 DC (non-mot.) Sens-----4
 Backlight-----Optional

PRO OPTIONS

Audio-----S.A.T.-----ON
 S.A.T Speed-----10
 Tone I.D.-----OFF
 V.C.O.-----OFF
 Absolute Value---OFF
 Modulation-----ON

G.E.B. / Trac---Autotrac-----ON
 Tracview-----ON
 Trac Speed-----20
 Trac Offset-----0
 Trac Inhibit-----OFF
 Manual G.E.B.----Automatic

Discrimination--Edit-----reject--(- 95 to - 20)
 accept-(-19 to + 94)
 reject-(+ 95)
 Block Edit-----same as Edit
 Learn-----OFF
 Recovery Speed---20
 Bottlecap Reject-1

Display-----Visual disc.-----ON
 Labels-----OFF
 V.D.I. Sens.-----85
 Ground I.D.-----OFF
 Spectrum ----Accumulate-ON
 Options Average-----ON
 Fade rate-----7

Signal (transmit, receive)
 High transmit power-----ON
 Low transmit power-----OFF
 Transmit freq.-----4
 Preamp gain-----1

Preset Program Settings

"Custom Program 1" (Preload)

Basic Adjustments:

Volume-----56
 Threshold-----23
 Tone Adjust-----221
 Audio Disc-----ON
 Silent Search-----OFF
 Mixed-Mode Audio----OFF
 AC (motion) Sens.-----60
 DC (non-mot.) Sens----- 3
 Backlight-----Optional

PRO OPTIONS

Audio-----S.A.T.-----ON
 S.A.T Speed-----4
 Tone I.D.-----OFF
 V.C.O.-----OFF
 Absolute Value---OFF
 Modulation-----ON
 G.E.B. / Trac---Autotrac-----ON
 Tracview-----OFF
 Trac Speed-----16
 Trac Offset-----0
 Trac Inhibit-----ON
 Manual G.E.B.----Automatic
 Discrimination--Edit----- reject--(- 95 to - 21)
 accept--(- 20 to + 1)
 reject--(+ 2 to + 3)
 accept--(+ 4 to + 34)
 reject--(+ 35 to + 37)
 accept--(+ 38 to + 48)
 reject--(+ 49 to + 55)
 accept--(+ 56 to + 60)
 reject--(+ 61 to + 63)
 accept--(+ 64 to + 74)
 reject--(+ 75 to + 79)
 accept--(+ 80 to + 94)
 reject--(+ 95)
 Block Edit-----same as Edit
 Learn-----OFF
 Recovery Speed---20
 Bottlecap Reject-1
 Display-----Visual disc.-----ON
 Labels-----ON
 V.D.I. Sens.-----85
 Ground I.D.-----OFF
 Spectrum ----Accumulate-ON
 Options Average-----ON
 Fade rate-----7
 Signal (transmit, receive)
 High transmit power-----ON
 Low transmit power-----OFF
 Transmit freq.-----4
 Preamp gain-----1

■ Preset Program Settings

"Custom Program 2" (Preload)

Basic Adjustments:

Volume-----56

Threshold-----23

Tone Adjust-----221

Audio Disc-----Mixed Mode

Silent Search-----OFF

Mixed-Mode Audio----ON

AC (motion) Sens.-----65

DC (non-mot.) Sens----2

Backlight----- Optional

PRO OPTIONS

Audio-----S.A.T.-----ON
S.A.T Speed-----6
Tone I.D.-----OFF
V.C.O.-----ON
Absolute Value---OFF
Modulation-----ON

G.E.B. / Trac---Autotrac-----ON
Tracview-----ON
Trac Speed-----18
Trac Offset----- -1
Trac Inhibit-----ON
Manual G.E.B.---Automatic

Discrimination--Edit-----reject--(- 95 to - 1)
accept-(0 to + 94)
reject--(+ 95)
Block Edit-----same as Edit
Learn-----OFF
Recovery Speed---30
Bottlecap Reject-15

Display-----Visual disc.-----OFF
Labels-----ON
V.D.I. Sens.-----90
Ground I.D.-----ON
Spectrum ----Accumulate-ON
Options Average-----ON
Fade rate-----13

Signal (transmit, receive)
High transmit power-----ON
Low transmit power-----OFF
Transmit freq.-----4
Preamp gain-----3

Preset Program Settings

"Owner Notes"

Basic Adjustments:

Volume-----

Threshold-----

Tone Adjust-----

Audio Disc-----

Silent Search-----

Mixed-Mode Audio----

AC (motion) Sens.-----

DC (non-mot.) Sens-----

Backlight-----

PRO OPTIONS

Audio-----S.A.T.-----

S.A.T Speed-----

Tone I.D.-----

V.C.O.-----

Absolute Value---

Modulation-----

G.E.B. / Trac---Autotrac-----

Tracview-----

Trac Speed-----

Trac Offset-----

Trac Inhibit-----

Manual G.E.B.----

Discrimination- Edit-----reject--

accept-

reject--

accept-

reject--

Block Edit-----

Learn-----

Recovery Speed---

Bottlecap Reject-

Display-----Visual disc.-----

Labels-----

V.D.I. Sens.-----

Ground I.D.-----

Spectrum ----Accumulate-

Options Average-----

Fade rate-----

Signal (transmit, receive)

High transmit power-----

Low transmit power-----

Transmit freq.-----

Preamp gain-----

Preset Program Settings

"Owner Notes"

Basic Adjustments:

Volume-----

Threshold-----

Tone Adjust-----

Audio Disc-----

Silent Search-----

Mixed-Mode Audio----

AC (motion) Sens.-----

DC (non-mot.) Sens----

Backlight-----

PRO OPTIONS

Audio-----S.A.T.-----
 S.A.T Speed-----
 Tone I.D.-----
 V.C.O.-----
 Absolute Value---
 Modulation-----

G.E.B. / Trac---Autotrac-----
 Tracview-----
 Trac Speed-----
 Trac Offset-----
 Trac Inhibit-----
 Manual G.E.B.----

Discrimination--Edit-----reject--
 accept--
 reject--
 accept--
 reject--
 Block Edit-----
 Learn-----
 Recovery Speed---
 Bottlecap Reject-

Display-----Visual disc.-----
 Labels-----
 V.D.I. Sens.-----
 Ground I.D.-----
 Spectrum ----Accumulate-
 Options Average-----
 Fade rate-----

Signal (transmit, receive)
 High transmit power-----
 Low transmit power-----
 Transmit freq.-----
 Preamp gain-----

■ Owner Information

Serial Number: _____ (6 digits on inside of battery compartment door)

Date Code: _____
(4 digits on inside of battery compartment door, smaller tag than the serial number)

Purchase Date: _____ (The date on the sales receipt)

Dealer Name: _____

Address: _____

Telephone #: _____

Payment method: _____

Personal markings: _____

■ Video Cassette

White's Electronics has produced a video cassette detailing the proper use of the Spectrum.

In this video White's Distributors, James (Jimmy Sierra) Normandi, Keith Zorger, and Randy Smith, explain how to use the Spectrum in the field as well as explaining the many varied options.

Sixty minutes in length, this video is intended for English speaking persons, and is recorded on VHS format.

Available from your Dealer, the Spectrum video cassette sells for a *suggested retail of \$24.95*.

White's recommends the Spectrum video cassette as a valuable learning aid for both beginners, and experienced metal detector users.

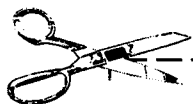
For more information, please contact your Dealer, or telephone Toll-Free **1-800-547-6911**.

■ Warranty Information

Should for any reason you sell your Spectrum prior to the warranty described on the following page expiring, the remaining warranty is transferable. **This transfer is authorized by calling 1-800-547-6911, and getting an Authorization Number.**

Simply fill out the following information, including the Authorization Number, seal it in a stamped envelope, and send it to **White's Electronics, 1011 Pleasant Valley Road, Sweet Home, Oregon 97386**. The remaining warranty period will then be available to the new owner.

The Warranty statement on the following page applies to both the original owner as well as the second owner.



Warranty Transfer

Original Owner:

Name: _____

Address (Which appears on the original warranty card):

Instrument Serial Number: _____

Date Code: _____

New Owner:

Name: _____

Address: _____

Comments: _____

Distributor Authorization Code: _____



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 Electronics 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 this warranty are non-rechargeable batteries, and other accessories.

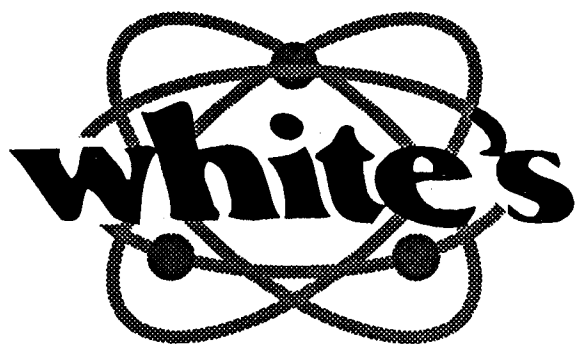
The warranty is not registered unless the Warranty Registration Card is returned to the factory address soon after original purchase for the purpose of recording that date.

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

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

In addition, the stated warranty gives you specific legal rights, and you may also 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, is without White's authority involvement and consent, and will not be honored by White's.



White's Electronics, Inc.
1011 Pleasant Valley Road
Sweet Home, OR 97386
Distribution: 1-800-547-6911
Factory: 1-541-367-6121
FAX: 1-541-367-2968
E-Mail: whites@halcyon.com