White's

MXSPORT

Waterproof
Metal Detector
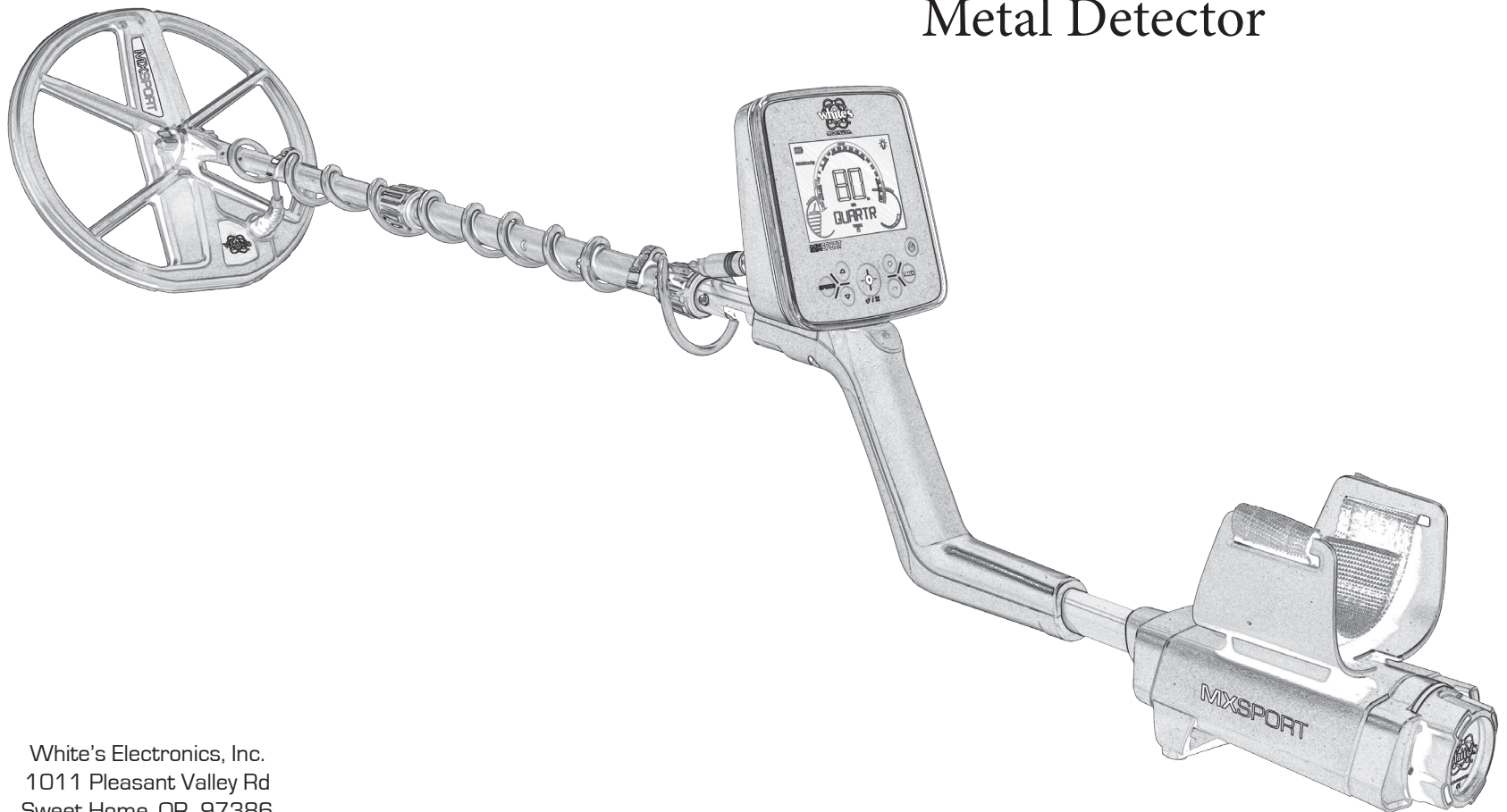
User's Guide

MX Sport Specifications

Type of Detector	All-Purpose
Weight	4 lbs.
Waterproof	Yes
Backlight	Yes
Adjustable Shaft	Yes
Assembled Length Minimum	41"
Assembled Length Maximum	50"
Rechargeable System	Not Included
Batteries	AA x 8
Headphone Jack	1/4" Adapter Included
Arm Rest	Adjustable
Arm Rest Strap	Included
Control Box Mount	Standard
Number of Frequencies	1
Frequencies	13.8kHz
Mft. Warranty	2 Year
Instruction Manual	Yes
Searchcoil Size	10"
Searchcoil Shape	Round
Searchcoil Build	Open
Searchcoil Type	DD
Interchangeable Searchcoil	Yes
Waterproof Searchcoil	Yes
Submersible Searchcoil	Yes
Optional Searchcoil	Available
Display Type	LCD
Number of Search Modes	7
All Search Modes	All Metal Coins & Jewelry Beach Relics Prospecting Hi- Trash Pinpoint
Technology	VLF Single Frequency
Discrimination	Adjustable
Threshold	Yes
Sensitivity	Adjustable
Ground Balancing (Fixed)	Yes
Ground Balancing (Automatic)	Yes
Target Identification	Yes
Programmable Target ID	Yes
Number of Target ID Segments	20
Depth Indication	Yes
Pinpoint Mode	Yes
Volume	Adjustable
Audio Tones	Yes
Number of Audio Tones	22
Low Battery Warning	Yes
Battery Life	20+ Hours

Contents

Assembly

Search Coil

Non-metallic Washers

Camlock

Camlock

Control Pod

Display

Control Buttons

Velcro Amrstrap

Fiber Rod

Center Rod

Search Coil Cable

Search Coil Connector

Handgrip

Fiber Bolt & Thumbnut

Battery Holder with Cap

1. Remove all parts from the shipping carton and check assembly diagram to ensure all parts are present.

2. Install black rubber washers on fiber lower rod; attach search coil to lower fiber rod. Use only the nonmetallic washers, fiber bolt, and fiber thumbnut provided to secure search coil loop to the lower fiber rod.

3. Insert lower fiber rod into center rod so that the spring buttons line up with one of the length-adjustment holes in the center rod. Turn the camlock to eliminate any slack.

4. Insert the center extension rod into the hand-grip section. Turn the camlock to eliminate any slack.

5. Wind the search coil cable around the rods, first revolution over the top of the rod, all the way to the display pod. Plug the cable into the connector on the back of the display. When looking at the back of the display, it is the connector on the right. Tighten the retainer ring securely.

6. Thread the velcro armcup through the slots on the armcup. With your arm in position, fold the strap over onto the velcro so that the strap is loose enough to to pull your arm in and out of the armcup.

7. Grip the detector and sweep the search coil over the floor. If the fit feels uncomfortable, adjust the position of the lower fiber rod. The ideal position allows you to stand up straight and sweep the search coil over the ground without stooping over.

8. Install eight "AA" batteries in the battery holder carefully noting the **+** & **-** positions marked inside the battery holder. Insert the battery pack, lining up the contacts. Tighten the battery seal.

Tips on Batteries

- The MX-Sport operates for up to 40 hours (without backlight) using eight quality "AA" batteries.
- High-quality "AA" alkaline batteries are recommended. Rechargeable NiCad, Nickel Metal Hydride, or other similar "AA" substitutions work well. Batteries near or above 2 volts per cell and higher are not recommended.
- Battery life will change with battery type, operating temperature, and backlight use. Lowering the volume of the built in speaker or using headphones extends battery life.

Getting Started with MX Sport

1. Press the power ON button. Upon initial power up, the detector defaults to the Coin and Jewelry program.
2. Sweep the search coil from side to side, keeping it level and close to the ground. Overlap each search pass by at least 50%.
3. Once a target is detected, indicated by a consistent beep, sweep several passes over the target center and note the display identification and target depth.
4. If the target indicates dig worthy, press and hold the Pinpoint button (√/X). If tapped, the pinpoint button will lock in the Pinpoint mode. After pinpointing remember to tap the pinpoint button once more to return to Search mode.
5. When using MX Sport's DD search coil, the pinpoint spot is an imaginary line through the center of the search coil. It is important to determine where this detection line begins and ends on the coil. When using an optional concentric search coil, the pinpoint spot is in the center of the search coil
6. Sweep the target area slowly in an "x" pattern. The strongest beep and shallowest depth indicates target center.
7. Practice with a visible object above ground, moving back and forth over the target.
8. Use care in digging properly for the terrain. Fill in all holes and discard any trash found in the proper receptacle. By not leaving trash and unsightly holes behind you, open areas will continue to be available for you and others to metal detect.

Wrong   Right
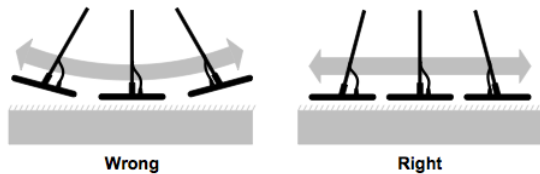
Controls

The MX Sport operates in either Search or Options mode. The detector will continue to provide audio feedback when in Options mode, but the display will be used to show options rather than target information.

Power Button: The power button turns on the MX Sport. Tapping the power button while the detector is on will turn on the backlight. Holding the power button while on will turn the MX Sport off.
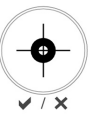
Search Mode

The MX Sport enters Search mode when turned on. In Search mode, the buttons on the keypad perform the following functions:

	Function	Details
▲	Increases Threshold volume.	When adjusting Threshold, the display will momentarily read "THRESH" and the current threshold volume is displayed on the central numbers.
▼	Decreases Threshold volume.	
+	Increases Sensitivity.	When adjusting Sensitivity, the display will read "SENS" and the current sensitivity is displayed on the central numbers. If Sensitivity is increased to 10, the display will read "BOOST" to indicate that Audio Boost is being used.
−	Decreases Sensitivity.	
✔ / ✗ (Pinpoint)	Tapping toggles Pinpoint mode on or off. Holding forces Pinpoint mode on until the Pinpoint button is released.	When Pinpoint mode is active, the display will read "PINPNT" and target depth is displayed on the central numbers. Pinpoint mode can be toggled in hunting mode with a quick press. Alternately, the button can be held to keep the detector in pinpoint until the button is released.
TRACK	Tapping locks or unlocks the ground tracking system. Holding performs a Ground Grab.	When locking the tracking system, the display will momentarily read "LOCKED" and a lock icon appears below the TRACK label. When unlocking the tracking system, the display will momentarily read "TRKING" and the lock icon will disappear. When a Ground Grab is completed, the display will read "GRABBd". In Ground Grab mode, the number displayed is the relative ground phase, and the depth meter shows ground strength.
OPTIONS	Enters Options Mode.	

Options Keypad Functions

When the user presses the Options button while in Search mode, the MX Sport enters Options mode. As mentioned above, Options mode will only affect the display. The MX Sport will still provide audio feedback from the target system. The MX Sport will automatically leave Options mode approximately 10-15 seconds after the last time any button is pressed on the keypad. When in Options mode, the buttons on the keypad perform the following functions:

Name	Function	Detail
▲	Moves to the previous option in the menu.	The menu is circular—the Volume and Reset options are next to each other.
▼	Moves to the next option in the menu.	
+	Increases the value of the current option in the menu.	Affects all options except RESET.
−	Decreases the value of the current option in the menu.	
◉ ✔ / ✗	If the current option in the menu can be toggled (turned on or off), toggles that value.	Affects DISC, SALTRK, INCHES/METRIC, IRNGNT, VCO, and RESET options.
TRACK	No function in Options mode.	
OPTIONS	Leaves Options mode.	

Options

The following is a list of options available in the MX Sport.

Name	Description	Min	Max	Note
VOLUME	Volume	0	30	
THRESH	Threshold	0	20	
DISC	Discrimination			Using the +/- buttons will control which discrimination zone is being adjusted. Using the pinpoint button will turn the current discrimination zone on or off. If the zone selection cursor is left under a particular zone for a couple seconds, the text will change from "DISC" to a short descriptor of what kind of targets one might find in that zone, (e.g. GOLD, QUARTR, etc.) All zones to the left of the zone selection cursor can be discriminated, and all others accepted, by holding the pinpoint button for a short time. The disc mask can be quickly cleared by placing the cursor on the lowest zone and holding the pinpoint button.
TONE	Tone ID Mode	1	20	Central number displays the number of tones in the selected Tone ID mode. Available settings are 1-, 2-, 4-, 8-, and 20-tone modes. Only available in programs with Discrimination audio.
VCO ON/NO VCO	VCO All-Metal Audio			Turns All Metal VCO audio on or off. Only available in programs that use All Metal audio.
SAT	SAT Control	0	6	Controls the amount of SAT used in All Metal modes. Higher SAT values provide faster target response/recovery; lower SAT values provide better depth. Only available in programs that use All Metal audio.
PRGRAM	Program			Changes the search program for the MX-Sport. Available programs are Coin & Jewelry, All Metal, Beach, Prospecting, Hi Trash, and Relic.

Options, cont.

IRNGNT	Iron Grunt	OFF	ON	Turns on or off the Iron Grunt in an All Metal audio mode. Only available in programs that use All Metal audio.
SALTRK	Salt Track Mode	OFF	ON	Turns on or off the ability for the ground tracking system to track to soil with large salt content. Used mainly on the beach or in alkaline soils. This option is always turned on in the Beach program.
FREQ	Frequency Offset Control	-3	7	Adjusts operating frequency of the MX-Sport. Used for noise rejection, and to allow two MX-Sport units to operate in close proximity without interference.
LIGHT	Backlight Strength	0	5	Adjusts the strength of the LCD Backlight. If backlight strength is decreased to 0, the backlight is turned off. If the backlight is later turned on using the Power button, backlight strength will return to its default value of 3.
INCHES/METRIC	Depth Scale			Allows the user to select whether to show depth values in inches or centimeters.
RESET	Factory Reset			Allows the user to perform a factory reset of the MX-Sport, returning all Programs and Options to their initial factory default settings.

Search Programs

Search Programs are implemented as a method for quickly changing multiple options at the same time. Some of these options are also available in the menu (ex. Discrimination), and some are not (ex. the type of audio being used). The factory default settings for each program are intended for general use.

Adjustments made to options in the menu are saved each time the user changes programs and each time the MX Sport is turned off. Performing a factory reset as detailed following will return all Programs to their factory default settings.

	Audio	Discrimination	Details
Coin & Jewelry	Discrimination	Rejects all negative VDI numbers.	Defaults to 1-tone mode.
All Metal	All Metal	None.	
Beach	Discrimination	Rejects all negative VDI numbers.	Defaults to 4-tone mode, with Salt Tracking turned on.
Prospecting	All Metal	None.	Defaults to using the Iron Grunt.
Hi Trash	Discrimination	Rejects VDI numbers below +15.	Defaults to 4-tone mode.
Relic	Mixed (Both)	Rejects VDI numbers below -10.	Defaults to 2-tone mode for the discrimination portion of the audio.

Features (Detailed)

Navigation

During normal searching there are two live controls that add convenience for the two most common adjustments; Sensitivity and Threshold.

SENSITIVITY: During searching (in all search modes) pressing the **+** & **-** buttons adjusts the sensitivity, or responsiveness, of the MX Sport. If the sensitivity is set too high, excessive noise will make it difficult to locate targets due to the noise from either the ground or external electric interference. Too-high sensitivity is noted by false signals. Lowering the sensitivity will improve performance. Increase sensitivity for increased depth when the ground and external conditions allow. Note: Few areas will allow maximum sensitivity.

THRESHOLD: The MX Sport can be efficiently used with or without a threshold hum. Threshold can be defined as a steady continuous background hum. In all search modes, the up & down arrows control the Threshold. The lowest setting of 0 is Silent Search. Use of a threshold provides more information regarding what the metal detector sees. Rejected targets or ground peculiarities often cause the threshold to fade to silent. Changing the search orientation can correct this anomaly. Searching in silence (no threshold) has the advantage of better focus on the desired target responses. Unlike older metal detectors, there is no difference in detection depth using either threshold or silent search. However, those who search with a threshold tend to find more artifacts as the threshold alerts the user to spots that have something unusual about them—perhaps two targets near each other—and thus more attention is paid checking for possible worthwhile targets.

Options- Pressing the Options button, the up and down arrows are used to select the specific option to adjust. The **+** & **-** buttons make adjustments to the selected option.

Summary:

Press Option button and use arrows to view all the options; press **+** & **-** to adjust a specific option. Go to the next option or exit to search. Exit from Options is automatic after 10–15 seconds. Simply press Option again if you desire further adjustment.

Detection (Search mode) will continue while in the Options mode. Once options have been adjusted, pressing Option button again will exit options.

Options will be slightly different depending on the search program. For example All Metal, Prospecting, and Relic have the features that are specific to All Metal-type programs. Features such as Self-Adjusting Threshold (SAT) and Voltage Controlled Oscillation (VCO) only appear when one of the All Metal modes are in use. These features have no influence over the Discrimination programs and they will not appear as options.

Display & Controls

POWER

A quick press of the button turns the MX Sport ON. Another quick press of the power button toggles the backlight on and off. Pressing and holding ON/OFF for a second turns the MX Sport OFF.

Options: Activates option selections. Up & down arrows select among available options. Pressing **+** or **-** adjusts that specific option. Select another option by pressing again or exit by waiting for the option to time out automatically (10–15 seconds).

√/X: Access Pinpoint mode. Also used for some menu sequences.

In Search mode, **+** and **-** adjust Sensitivity; in Options they select the level of adjustment.

TRACK

The MX Sport automatically self-adjusts to the ground mineralization currently being searched and tracks to changes in mineralization. Ground compensation and tracking to ground mineral changes is fully automatic. Automatic ground tracking improves performance over typical/normal ground where ground mineral changes are naturally occurring and gradual.

Spotty high ground minerals (naturally occurring or not), mixed with lower mineralization, can cause errors in ground tracking and result in instability and difficulties (as if the sensitivity was set too high for the area). If stability does not return at reasonably reduced sensitivity settings, spotty high mineralization is likely the cause. To search these difficult areas, locking the ground balance at a fixed level more often than not resolves or reduces instability.

Pressing the TRACK button can lock tracking. However, the level the ground balance is set to when locked is critical for stable operation. Holding the Track button puts the detector into Ground Grab mode, where the number displayed is the relative ground phase, and the depth meter shows ground strength.

- Option #1: In 80% of situations, tracking can be loced as soon as the detector is turned on. This will result in improved performance in difficult spotty areas. Locking the Tracking prior to searching locks the ground balance at the ferrite (high iron) level.

- Option #2: In 20% of situations, a natural or man-made spotty mineralization may still cause difficulties at the initial ferrite, locked-ground rejection level. In these areas, find a highly mineralized spot that is representative of all the spots in the area, sweep the search coil 6–12 times (or until it doesn't respond) and press the TRACK button. In this case, the user is locking the ground rejection level at the high mineral spot so that all similar spots can be ignored (no response).

If the minerals within these spots exceeds typical ground mineral levels, and are seen as metal ore, they can not be reduced by ground tracking. Reducing the sensitivity of the detector, or using the discrimination mask, is necessary to reduce metal responses. In some regions, hot rocks (iron rich stones) can exceed the metal content of a mineral and thus exceed the range of any metal detector's ground rejection. Any metal (gold silver, copper, nickel, aluminum etc) can be found in metal ore (rock) form, as well. Again, Discrimination and Sensitivity adjustments are the only way to deal with these responses.

The MX Sport captures ground mineral information in real time. Turning off the Power and turning back on will automatically unlock a locked ground balance level. This is necessary to capture new ground information. Switching in and out of the Beach mode (a different ground rejection range) will also unlock a locked ground balance. When powering ON/OFF or switching in or out of the Beach mode, remember to re-lock the ground tracking if that is required for the area.

SENSITIVITY

Used to increase or decrease responsiveness to targets, ground, and external electrical noise. Maximum depth will be achieved by using the highest setting possible for the area. Settings 1–10 are available. Increasing sensitivity to 10 activates the Audio

Display & Controls, cont.

Boost feature, which amplifies the audio responses of small signals. Audio Boost is intended to achieve maximum precision on weak signals, and is not well-suited for general searching.Reduced sensitivity is often needed to search bad ground conditions or high electrical activity areas.

When the ground is highly mineralized (typically high iron), reduced sensitivity often increases detection depth. Finding the level that provides for smooth, stable operation and easy target identification is important to maximize performance. Few areas will allow maximum sensitivity settings.

1. During normal searching, press the **+** button to increase sensitivity; press the **-** button to decrease sensitivity. The MX Sport provides quick and convenient up or down sensitivity during use without accessing Options. The current sensitivity setting shows briefly where the VDI number normally is displayed.

2. Sensitivity adjustment is not featured in Options, but only with the **+** or **-** buttons when not in the Options mode.

PROGRAMS

A program is a complete selection of options for specific or targeted metal detecting.

To select a Program:
1. Press Options and use the up & down arrows to select Program.
2. Press **+** & **-** to select the highlighted program.
3. Press Options again to return to normal searching or wait for it to time out (10–15 seconds).

Coin & Jewelry: This is the primary search program used for general-purpose searching. When searching typical soil for coins, jewelry, or any other precious metals, and trash metal rejection is needed, Coin & Jewelry discriminates against (rejects) ferrous (iron) objects and light foil. Discrimination can be customized in the Coin & Jewelry mode; see Discrimination.

Beach: The Beach program has features built in to ignore conductive wet or salty soils. Use Beach anytime you are searching a salt-water beach. And because many fertilizers are conductive when wet, heavily fertilized farm fields may also require the Beach mode when they are wet. The Salt Track feature can be added to any program using the Options feature. One may need to add the Salt feature to the Relic mode in highly fertilized wet fields, and/or to the Prospecting program when searching desert alkali (salt) areas.

All Metal: Use the All Metal program to detect all metal types, including iron/steel. Finding property markers, clearing nails from a driveway, locating lost tools, relic-hunting when iron is of interest are examples of when All Metal would be used. All Metal is a superior search program compared to locking in the Pinpoint mode, which has electronic aids to help pinpoint that are not ideal for general searching. All Metal does have optional VCO audio so target size and strength influences the audio.

Relic: Optimized for searching encampments and abandoned homesteads. Very little trash metal rejection.

High Trash: Some areas (especially public areas) have high concentrations of trash. To productively search high trash areas requires a higher degree of Discrimination (trash rejection). If trash becomes an issue using one of the other programs, try High Trash.

Prospecting: For gold nugget searching. Also great for prospecting for other types of naturally occurring metals: copper, silver, nickel, etc.

Pinpoint: Once the choice has been made to dig, press the Threshold can be defined as a steady continuous background hum. √/X button accesses the Pinpoint mode. Pinpoint is different compared to an All Metal mode in that special features are activated to aid in target centering. Pinpoint can be toggled in the hunting mode with a quick press. Alternately, the button can be held to keep the detector in pinpoint until the button is released. Pinpoint mode is not recommended for general searching.

RESET
1. Restore to Factory Settings:
2. Press Option, use the up and down arrows to select RESET.
3. Press and hold Pinpoint button.
4. All options return to factory settings.

Discrimination
Each of the MX Sport programs begins with Discrimination settings pre-selected for most hunting.
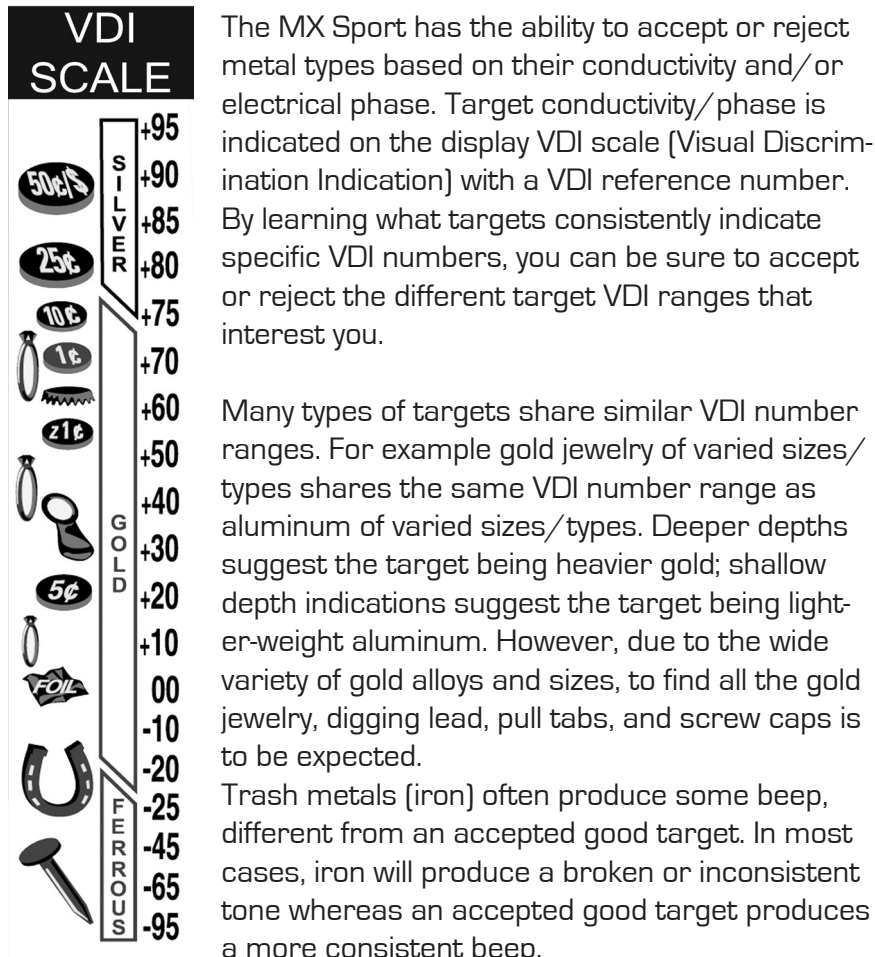
The MX Sport has the ability to accept or reject metal types based on their conductivity and/or electrical phase. Target conductivity/phase is indicated on the display VDI scale (Visual Discrimination Indication) with a VDI reference number. By learning what targets consistently indicate specific VDI numbers, you can be sure to accept or reject the different target VDI ranges that interest you.

Many types of targets share similar VDI number ranges. For example gold jewelry of varied sizes/types shares the same VDI number range as aluminum of varied sizes/types. Deeper depths suggest the target being heavier gold; shallow depth indications suggest the target being lighter-weight aluminum. However, due to the wide variety of gold alloys and sizes, to find all the gold jewelry, digging lead, pull tabs, and screw caps is to be expected.

Trash metals (iron) often produce some beep, different from an accepted good target. In most cases, iron will produce a broken or inconsistent tone whereas an accepted good target produces a more consistent beep.

The display can help, but an inconsistent tone is most likely a rejected target. If you have trouble recognizing these inconsistent beeps and displays, find the sweep speed that enhances the rejection sound to the point you can recognize it when compared to the sound of a good target. Accuracy is greatly increased sweeping the center of the target. Pinpoint (press √/X and "x" the area, return to Discrimination (press √/X again), then pass the search coil over target center and note the sound and display indication.

When a metal target doesn't indicate as expected, peculiarities within that metal's alloy mix (metal types) are usually to blame. As alloyed steel bottle caps age, the iron deteriorates and the better (non-iron) alloys remain and become prominent (e.g., very old bottle caps are likely to indicate as quarters). The longer they are in the ground, the more the iron dissolves and the stronger/better the non-iron looks to a metal detector. Soil conditions, corrosion factors, depth, and other variables can skew the audio and display indications and, thus, Discrimination settings. Used properly, however, Discrimination will more than double your time spent digging valued targets. The point is to reject the most common trash and accept the most common good targets. The MX Sport has 20 rejection ranges. Discrimination comes already set up for the Program you have selected.

To Customize Discrimination:
It is sometimes necessary to customize discrimination for targets you want to accept/reject. Iron will likely jump all over the scale inconsistently. You can only reject the first range for iron. For other targets that indicate consistently in a range, identify and then reject that range.
1. Press Options and use up & down arrows to select Discrimination.
2. Use the **+** or **-** buttons to select the desired range you want to change, indicated by the flashing curser. Press pinpoint button to toggle between accepting or rejecting that range. The pinpoint button changes that range from reject (solid indicator bar) to accept (blank indicator bar) or from accept (blank indicator bar) to reject (solid indicator bar).
3. Press Options to exit, or wait 10–15 seconds for the Options mode to automatically time out.

Disc Tips: In the DISC menu option, if the zone selection cursor is left under a particular zone for a couple seconds, the text will change from DISC to a short descriptor of what kind of targets one might find in that zone, (e.g. GOLD, QUARTR, etc.)

In the DISC menu option, all zones to the left of the zone selection cursor can be discriminated, and all others accepted, by holding the pinpoint button for a short time. The disc mask can be quickly cleared by placing the cursor on the lowest zone, and holding the pinpoint button.

Volume

Volume adjusts how loudly a metal target beeps. The MX Sport provides adequate volume levels for individuals with good hearing. Those with impaired hearing should use headphones.

To Adjust Volume:
1. Press Options and use the up & down arrows to select Volume.
2. Press **+** & **-** buttons to select the desired volume level.
3. Press Options to exit, or wait 10–15 seconds for the options mode to automatically time out.

Threshold

The MX Sport can be used in silent search (no sound until a target is detected), or with a Threshold (steady continuous background hum) with virtually no difference in maximum detection depths. However, searching with a continuous threshold has the advantage of providing more information regarding what the detector is seeing. The threshold fading to silence indicates either a rejected target, or a ground anomaly. By focusing more closely around that spot, often a good target can be found near trash.

To Adjust Threshold:

During searching simply press up and down arrows next to the Options button to adjust threshold.

Optionally while in the menu:
1. Press Options and use the up & down arrows to select Threshold.
2. Press **+** & **-** buttons to adjust threshold. Threshold level should be as quiet as possible while still hearing a hum.
3. Press Options to exit, or wait 10–15 seconds for the Options mode to automatically time out.

Tone Identification or Tone ID

The pitch or audio frequency produced by each target's display identification range can be highlighted with differently pitched sounds, called Tone Identification or Tone ID.
A specific audio pitch reference for each range provides quick audio ID based on the pitch of the beep it produces during searching- without looking at the display.
When Tone Identification is in single tone, all accepted metal types produce the same audio pitch during searching. If the Discrimination is set to reject a specific target range, that range may not produce a beep of any pitch. Rejected targets often do not produce any tone (silence).

To Adjust Tone Identification:
1. Press Options and use up & down arrows to select Tone ID.
2. Press **+** & **-** to select the type of Tone Identification desired.
3. Press Options to exit or wait 10–15 seconds for the options mode to automatically time out.

Tone ID Settings

1-Tone: All targets produce the same pitch beep (no tone ID).

2-Tone ID: Iron targets produce a low-pitched beep; all other targets produce a higher pitched beep.

4-Tone ID:
• Iron (lowest)
• Foil & Pull Tabs
• Nickels
• Coins (highest pitch)

8-Tone ID:
- Large Iron (lowest)
- Small Iron
- Foil/ Small Gold
- Nickels
- Pulltab
- Screwcap
- Zinc/Indian Head Penny
- Dime – Dollar (highest pitch)

20-Tone ID:
Each of the 20 Display ID segments (discrimination zones) produce their own uniquely-pitched beep, starting with iron (the lowest pitch) to Silver Dollars (highest pitched).

Depth Units
The MX Sport can report target depth in inches or metric.
1. Press Options and use Up & Down arrows to select INCHES/ METRIC
2. Press **+** & **-** to select the units of measure desired.
3. Press Options to exit or wait 10–15 seconds to automatically time out.

Backlight
The MX Sport has a backlit display option for use in low-light conditions. Backlight use will reduce battery life (slightly, 10% to 20%) but may be necessary in some conditions. During use, tap the Power button momentarily to select Backlight.

Alternately, press Option, use the up & down arrows to select LIGHT, then use the **+** & **-** buttons to select the desired intensity of the backlight. Press Options again to exit, or wait 10–15 seconds to automatically time out.

Frequency Offset
When two or more metal detectors of the same frequency are used near each other, interference (cross talk) among them is likely to occur. By slightly changing the frequency of the MX

Sport, such interference can be eliminated both for the MX Sport and for the other detectors being operated nearby. Interference from another metal detector is typically obvious chatter, similar to having your sensitivity set too high for the area, only often with a more regular pattern of sound.

When it appears another metal detector is causing interference: Press Options and use the up & down arrows to select Frequency. Use **+** & **-** to select among the five available frequencies. Frequency shifting on the MX Sport is slight—not enough to result in any measurable differences in sensitivity—just enough to avoid interference from another metal detector nearby.

Salt Track
The MX Sport is a single frequency (VLF) metal detector. More expensive multi-frequency and pulse-induction metal detectors do have some advantage in wet conductive (salt) grounds. However, the MX Sport provides for excellent results in these wet conductive salt conditions. The MX Sport Beach program has a revised ground balance range to accommodate use in wet salt sand because salt (when wet) is conductive like a metal target is conductive.
Other situations where a person may need the expanded salt ground balance range added to a program other than Beach include Relic or Prospecting programs Thus, the salt option is available in the Options mode and can be added or subtracted from any program.
Relic hunting is often conducted in farm fields. These farm fields, when wet and heavily fertilized, produce conductive conditions similar to wet conductive salt. Add the Salt Track feature to the Relic program when searching heavily fertilized wet farm fields.
In desert regions alkali (salt) patches are often found in good nugget shooting areas. By adding the Salt Track feature to the Prospecting program, these alkali areas can be searched effectively for nuggets even when wet.

To add the Salt Track feature to any program:

1. Press Options and use the up & down arrows to select Salt Track.
2. Use the **+** & **-** buttons to select either 1 for salt ground balance range or 0 for normal ground balance range.

Often soft sand will gather more saltwater compared to the surrounding sand. Because these spots have a sharp increase in conductivity, the MX Sport will likely beep regardless of whether metal is present. If a reasonable beep is produced that doesn't pinpoint sharply like a typical metal object (pinpoints as a large area with a lower than normal volume beep), it is likely a salt pocket; ignore and continue searching.

Additionally, when searching at the wave line, one may hear the incoming and outgoing waves respond to some degree. It is best to search fully in the water or fully on the beach. In most cases natural sluicing (wave action gathering all heavy metals in one streak or patch) occurs either in the water or on the beach. In other words, natural sluicing often leaves targets behind the waves (on the beach), or takes it out into the water. With a tide guide and patience, you can search 100% of the beach.

You may want to turn Salt OFF (0 in the Beach mode) when searching fresh water beaches (no salt). The extended ground balance range provided by the salt feature is not recommended when searching areas that do not have wet salt (conductive ground conditions). Only when conductive ground conditions are present will the salt feature improve performance.

ALL METAL PROGRAM-ONLY FEATURES

SAT (Self-Adjusting Threshold)
SAT only influences the All Metal, Relic, and Prospecting programs and only appears in Options when one of these programs is activated.
SAT makes the All Metal programs require motion to detect metals. Stopping over any metal for any significant length of time

will reset the audio to natural, and that metal target will stop responding. Again, when using SAT, search coil sweep is required. When searching in an All Metal program, searching with a threshold hum is mandatory for maximum detection depth. In an All Metal mode (without SAT) the threshold hum will fade or increase with time as well as any slight change in the ground. Although these slight changes in conditions can be heard in the changing threshold hum, they are not significant enough to dictate any operator change in settings. SAT automatically maintains the threshold hum over time and irregular conditions by resetting the threshold at regular (timed) intervals. These timed intervals can be sped up or slowed to match how quickly the ground conditions are changing and how quickly you want to sweep the search coil.

To adjust SAT when All Metal, Relic, or Prospecting programs are in use:
Press Options and use the arrows to select SAT. Use the **+** & **-** to select levels 0 = no SAT to 6 = Hyper SAT. Use the SAT speed nearest "0" that maintains a steady continuous threshold hum. Quicker SAT speed settings, near to 6 (Hyper SAT), require quicker search coil sweep speeds due to the fact that fast SAT can tune out metal target responses if swept too slowly.
Select the slowest (lowest number) SAT speed that maintains a steady threshold and no faster. Match the speed the search coil is swept to the SAT speed. Practice with a target above the ground to assure the search coil is being swept briskly enough to respond to targets.

### VCO (Voltage Controlled Oscillator)
VCO only influences the All Metal, Relic, Prospecting, and Pinpoint programs, thus only appears in Options when one of these programs is activated. For the Pinpoint mode, lock in Pinpoint, then press options and select VCO.
VCO provides an increase in the pitch of the beep as the search coil nears a metal target. As the search coil moves away from a metal target the pitch of the beep decreases. In this way the center of the metal target is obviously the highest-pitched beep.

Preparation for Water Hunting

The MX Sport is waterproof to a depth of 10 feet with proper preparation. Before submerging the detector, doublecheck the following.

1. The loop cable should be firmly tightened.
2. The headphone cable, headphone adapter, or headphone connect cap should be firmly tightened.
3. The battery compartment cap should be firmly tightened. The hash marks on the battery cap and the battery compartment will line up when the seal is properly tightened.
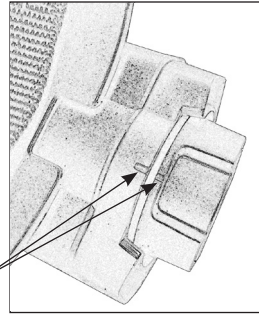
Proper Care

As tough as your White's metal detector is, it is a sophisticated electronic device that requires reasonable common sense care similar to all electronic devices.

- Store in a warm, dry area with batteries removed
- Avoid harsh impacts
- Do not store in your car's trunk during winter and/or summer extremes
- Do not store in direct sunlight

Searching

Sweep the search coil smoothly and evenly from side to side, as if mopping a floor, about 2 seconds per pass, overlapping each pass 50%. Keep the search coil as near to the ground as possible, throughout every sweep. By placing junk and good targets on top of the ground and sweeping the search coil past them, you can see the ideal sweep speed that enhances target detection and identification. If the search coil is swept too slowly, detection doesn't happen or discrimination isn't clearly recognizable. With the correct sweep speed, both detection and discrimination accuracy are optimized.

Fundamental to detecting success is choosing great places to use your MX Sport. These can be researched by word of mouth, at the library, in the newspaper, in books, or on the Internet. The longer an area has seen use, and the more activities and people who may have used it, the more interesting the targets.

Remember that you must have permission from the property owner to search private property unless it is your own. Many publicly owned lands are open to metal detecting. However, some have permit systems and digging tool restrictions. Always check with your local parks department for necessary forms, permission, and/or limitations.

Digging

Different terrains require different types of digging tools and digging techniques.

- For sandy beaches any simple strainer type scoop works fast and easily to recover targets.

- In grass or turf, a trowel or knife-like tool works best. It can be combined with the hinged door digging method where the turf is cut on three sides and the flap turned over. By leaving the hinged part of the turf attached, the flap is less likely to get displaced by a lawn mower.
- When digging additional dirt from a hole, place it on a drop cloth. Once digging is completed, you can quickly dump the dirt back in the hole with little spreading or effort.

In all cases care must be taken to minimize damage caused by digging. Practice in your own yard first. With a little practice and the correct tool, it should be difficult to tell where you have dug. Not only does this aid you in getting permission to hunt, it also places all metal detector users in a favorable light. In addition:

- Remove all trash you encounter and discard in the proper receptacle.
- Aid law enforcement whenever possible.

Accessories

- **Headphones**: Greatly increase the ability to hear the MX-Sport in high noise environments, increase battery life, and provide for increased privacy. Any stereo headphone between 8 and 150 ohms will work. A cable adapter is available so that the MX Sport will accept any ¼-inch headphone. Optional waterproof Sport headphones plug directly into the MX-Sport
- **Carry Cases:** White's offers backpacks and gun-style cases to fit the MX Sport. These padded cases offer convenience for storage and protection for travel.
- **Search Coils:** The standard search coil is the best for all-around use. While larger search coils detect deeper, they are less sensitive to small targets and are harder to pinpoint. Smaller search coils pinpoint and detect small metals better, and detect good targets in high-trash public areas better than larger search coils, but do not detect as deep.
- **Digging Tools:** It is important to have appropriate digging tools for the areas you search. Care must always be used to leave the area as you found it or better.

FCC Compliance

Per FCC 15.19(a)(3) and (a)(4) This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Per FCC 15.21, the user that makes changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Product Note

This product uses the FreeRTOS.org real time kernel. The FreeRTOS.org source code can be obtained by visiting www.FreeRTOS.org

Service

In the unlikely event that you have trouble with your White's metal detector that your retailer can not satisfactory help you with, White's has warranty service centers in the USA, and most regions outside the USA.

For our service centers nearest you, please see our website: www.whiteselectronics.com

Warranty

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

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

This is a transferable manufacturer warranty that covers the metal detector for two years from the original date of purchase, regardless of the current owner.

Items excluded from the warranty are non-rechargeable batteries, accessories that are not standard equipment, shipping and handling costs outside the continental USA, special delivery costs (Air Freight, Next Day Air, 2nd Day Air, packaging service, etc.) and all shipping and handling costs inside the continental USA 90 days after purchase.

White's registers your purchase only if the Sales Registration Card is filled out and returned to the factory address soon after original purchase for the purpose of keeping you up to date regarding your metal detector and White's ongoing product development.

This warranty does not cover damage caused by accident, misuse, neglect, alterations, modifications, unauthorized service, or prolonged exposure to corrosive compounds including salt. Duration of any implied warranty (e.g., merchantability and fitness for a particular purpose) shall not be longer than the stated warranty. Neither the manufacturer nor the retailer shall be liable for any incidental or consequential damages.

Some states do not allow limitations on the length of implied warranties or the exclusion of incidental or consequential damages. Therefore, the above limitations may not apply to you. In addition, the stated warranty provides specific