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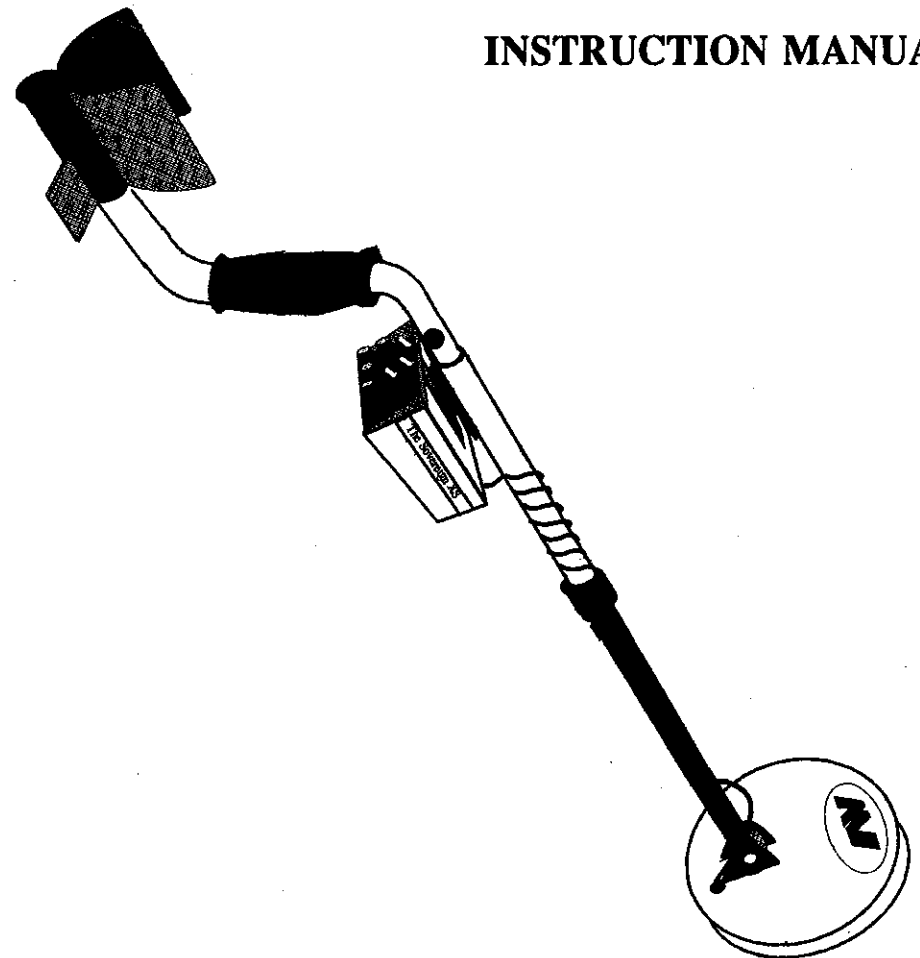
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SOVEREIGN EXTRA SENSITIVE

INSTRUCTION MANUAL



MINELAB
ELECTRONICS
PTY. LIMITED

OPERATORS MANUAL FOR THE "SOVEREIGN EXTRA SENSITIVE"

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1. INTRODUCTION

Thank you for purchasing Minelab's new Coin & Treasure hunting detector, the **"Sovereign Extra Sensitive"** known as the **"Sovereign XS"**. The staff at Minelab are confident that you will find the Sovereign XS to be the best discriminating Coin & Treasure metal detector available on the market.

"The Sovereign XS is an extremely stable and sensitive detector with the most powerful discrimination abilities available today."

The Sovereign XS is a new and improved detector in the Sovereign range, now having a volume control, inbuilt iron mask as well as far superior cable and connectors.

The Sovereign XS will give you a distinct advantage in the field being more powerful than ever before and extremely more fun to use.

The Sovereign XS utilises the most advanced technology available, known as Broad Band Spectrum or BBS.

BBS technology is unique to Minelab and enables the Sovereign XS to operate over a broad spectrum of frequencies between 1.5 kHz and 25.5 kHz.

The result is a clear and distinct signal with ground interference from mineralisation and salt being removed by the microprocessor.

Each detected target is analysed by the microprocessor to produce a range of unique tone identification signals for different metal objects. Therefore the signal for a \$1 coin will sound distinctly different to the signal for a silver ring.

2.0 THE INTERNAL OPTIONS

"The Sovereign XS" has two internally selectable options which your Minelab dealer can set for you. It is important to understand this choice so as to arrange the detector to best suit your requirements.

Option 1. Silent Search or Audible Threshold in the Discriminate Mode

While detecting in the discriminate mode (i.e. searching for coins, rings and the like), you may either wish to search with no background tone, with the detector only producing a "beep" when a target is located; or, you may prefer to have a slight continuous background tone, which will give you more information about detected targets. **Minelab recommends a slight continuous background.** The decision is a matter of personal preference and your Dealer can set this option for you.

Option 2. Audio Modes

"The Sovereign XS" has two dealer selectable audio modes:

- A. Variable Tone Target ID
- B. Fixed Tone Target ID.

A. Variable Tone Target ID

In variable tone target ID, the tone and volume of audio signals received will change to help identify the object that has been detected, ie for a ferrous object the tone will be very low, for an Aust 5c piece or a Nickel the tone will be higher, for an Aust 10c piece or a Dime the tone will be higher again and a gold sovereign will be even higher.

If the background threshold in discriminate, as described in Option 1 above is selected, then the tone will be that of the last object detected until a new object is found. The tone can be reset to a "medium" tone by switching from "DISCRIMINATE" to "ALL-METAL" and back to "DISCRIMINATE". The variable tone target ID is continuously variable from low tones of about 80Hz to high tones of about 300Hz.

B. Fixed Tone Target ID.

In fixed tone target indication, the tone of the audio signal will remain constant as the volume increases to indicate a target, regardless of the object detected.

Minelab recommends the use of Variable tone target ID as this will provide the operator with much more information on the target detected.

3.0 CONTENTS OF THE BOX

To unpack the contents of the box, firstly, remove the brown inner box liner. This liner will lift the entire contents out of the box so that it can be easily accessed.

Now remove the contents of your box and lay them out so that each piece can be seen and assembly can easily be carried out.

Your new Sovereign XS should have the following parts in the box. If any parts are missing then please contact your dealer.

- Control Box
- 3 Piece Shaft Assembly
- Black Armrest
- NiCad Battery Pack
- Coinsearch Coil with Skid Plate
- NiCad Battery Charger
- Blue Hipmount Bag
- Warranty Card
- Basic Field Guide

Please now complete your warranty card and mail it to Minelab. It is extremely important that we receive your warranty card as it will register your detector on our warranty file.

4.0 ASSEMBLING THE SOVEREIGN XS

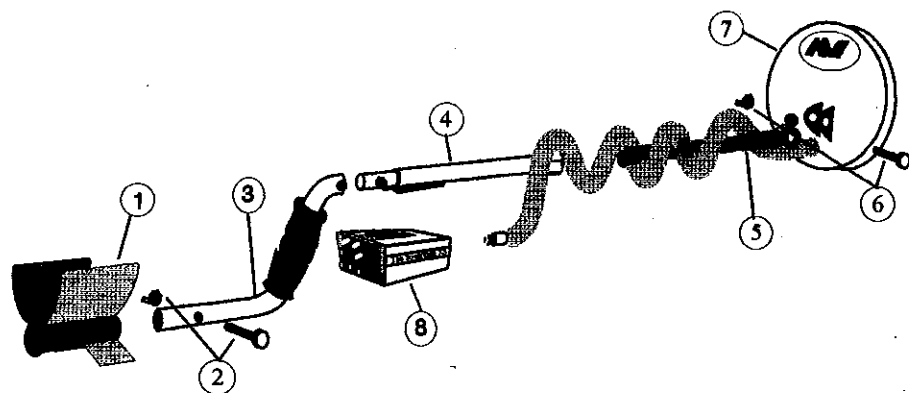


Figure 1 - Assembly of the Sovereign XS

Please follow these simple instructions to assemble your new Sovereign XS. If you have any difficulties please call your dealer for further instructions.

4.1 Armrest Assembly

- A. Remove the black nylon bolt and nut (2) from the armrest (1).
- B. Slide the armrest (1) (with the support fins pointing to the ground) onto the end of the grey upper shaft (3) furthest from the foam handgrip (as is shown in figure 1). Line up the holes at a comfortable position for the length of your arm.
- C. Push the nylon bolt (2) through the holes and tighten the wing nut by hand.

4.2 Intermediate Shaft Assembly

- A. Slide the intermediate shaft (4) into the upper shaft (3) taking note of the position of the black "V" clip (as shown in figure 1). Ensure that they click together correctly and will not easily come apart.

4.3 Lower Shaft Assembly

- A. Remove the tape on the lower fiberglass tube (5) which is holding the black teardrop washers in place. Make sure the washers do not fall out after removing the tape.
- B. Remove the white nylon nut and bolt (6) from the coil (7).
- C. Push the lower fiberglass tube (5), with the teardrop washers in place, into the bracket on the coil so that the holes line up. **Make sure that the black nylon spring clip, near the top of the fiberglass tube, is pointing toward the rear of the coil.**
- D. Push the white nylon nut and bolt (6) (as shown in figure 1) through the holes in the bracket on the coil from the cable entry side, then place the spacer and wing nut on the other end of the bolt and tighten by hand.

4.4 Completing the Shaft Assembly

- A. Slide the lower shaft assembly into the intermediate shaft (4). Note that the black plastic locking nut may need to be loosened to get the lower shaft assembly in.
- B. Set the length of the shaft by locking the black nylon spring clip into one of the holes provided and then tighten the plastic locking ring by hand.

4.5 Shaft Mount

- A. Position the control box (8) into the shaft "V" clip and push down hard towards the coil until it clicks into position and cannot be easily removed.
- B. Using the velcro tabs provided place one on the shaft 4-5 inches above the coil. Place the other on the shaft 3-4 inches below the control box (or at a comfortable position when hip mounting).
- C. Stand the detector upright so that the coil is sitting flat on the ground. Now lay the detector backwards so that the control box sits on the ground ensuring that the coil remains flat on the ground. **Pick the detector up and begin to wind the coil cable from the coil firmly around the shaft.** Wind it between 25 and 28 turns until it reaches the control box.

Leave enough slack at the bottom of the cable near the coil to allow for adjusting the coil angle without placing strain on the coil.

- D. Fasten the cable with the velcro which will ensure that it does not move at all. Any movement in the cable whilst detecting can cause false signals to occur.
- E. Plug the cable connector into the control box and tighten the locking nut by hand. Please do not use pliers to tighten this nut because it will damage the connector.

4.6 Hipmount

By hipmounting the detector you will significantly reduce the amount of weight on your arm enabling you to search for longer periods of time without becoming tired.

- A. If the control box is on the shaft then remove it. Place the control box into the blue hipmount bag provided, ensuring that the control panel is facing outwards.
- B. Then either thread the bag onto your belt or alternatively suspend it from the strap provided.
- C. Stand the detector upright so that the coil is sitting flat on the ground. Now lay the detector backwards so that the control box sits on the ground ensuring that the coil remains flat on the ground. Pick the detector up and begin to wind the coil cable from the coil. Wind the cable tightly around the shaft between 10 and 15 turns leaving enough free cable to allow movement of the shaft whilst searching.

Leave enough slack at the bottom of the cable near the coil to allow for adjusting the coil angle without placing strain on the coil.

- D. Fasten the cable to the shaft using the velcro tabs provided.

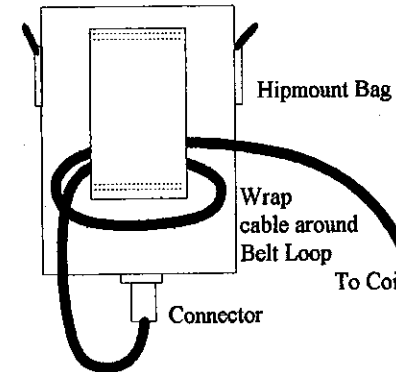


Figure 2

- E. To prevent strain being placed on the cable and connector, wrap one turn of cable through the belt strap (as seen in figure 2) and then plug the connector into the control box ensuring to **hand tighten** the locking nut.

4.7 Batteries

Your Sovereign XS comes with rechargeable NiCad batteries and charger.

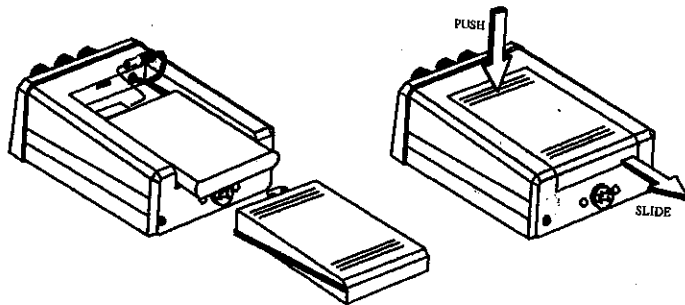


Figure 3 - Installing the battery

Before attempting to use your detector it is essential that the batteries are charged for between 10 and 12 hours.

- A. Ensure that the detector is turned off by turning the volume control knob to the full counter-clockwise position.
- B. Slide the battery lid from the detector by pushing down and sliding back (refer to figure 3).
- C. Simply place the battery pack into the compartment, with the connector going in first, and plug the connector on the battery pack into the connector in the control box.
- D. Replace the battery lid taking care not to damage the battery wires.

Once correctly assembled, your new Sovereign XS should look similar to figure 4.

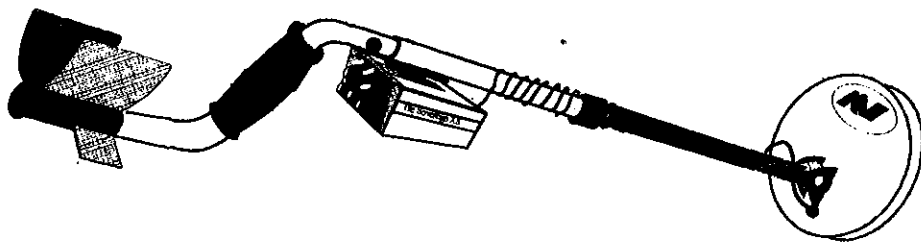


Figure 4 - The completed Sovereign XS

5.0 THE CONTROLS

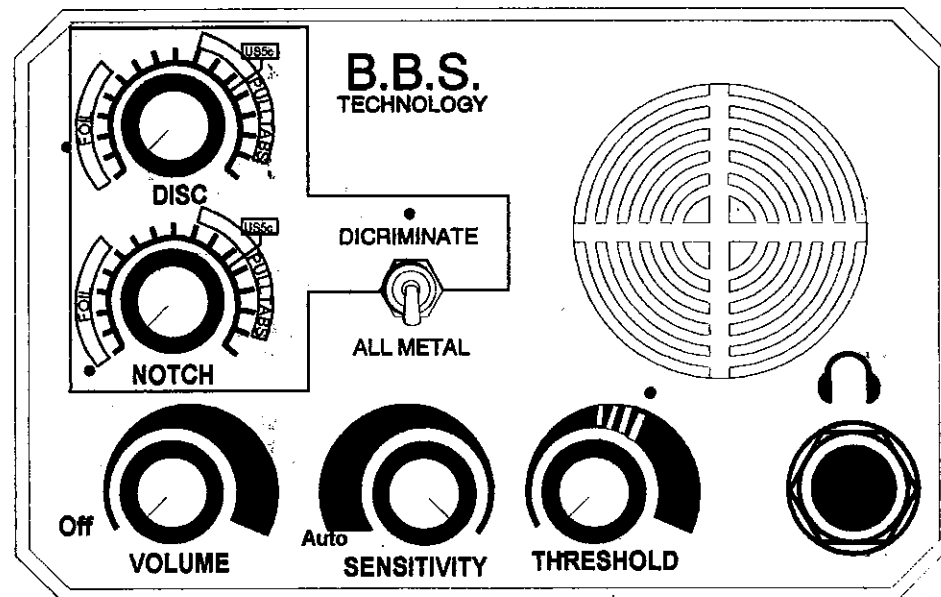


Figure 5 - The Sovereign XS Control Panel

Not all controls on the Sovereign XS work continuously. The operation of controls is as follows:

- A. The **Volume**, **Sensitivity** and **Threshold** controls operate continuously regardless of the mode.
- B. The **Notch** and **DISC** controls operate only when the detector is in the "Discriminate" mode of operation.

Iron Mask

In addition to the controls on the front panel, the Sovereign XS has an inbuilt iron mask feature. This enables it to detect a valuable non-ferrous object in very close proximity to a large ferrous object such as an iron horseshoe.

Without this feature the Sovereign XS would not detect the non-ferrous item because of the masking effect of the ferrous object.

5.1 The Volume Control

The volume control is the "On" "Off" switch. When in the fully counter-clockwise position the detector is off. To turn the Sovereign XS on you need only turn the knob clockwise until it "clicks" on.

The Volume control also enables you to control the volume level of signals received from detected objects. As you turn the knob clockwise the volume of signals increase.

5.2 The Threshold Control

The Threshold controls the level of background noise, or "hum" heard (providing you have the internal option set to audible threshold, otherwise no threshold will be heard; refer to page 3). To set the threshold firstly turn the detector on, switch to the "All Metal" mode and turn the sensitivity fully clockwise.

Slowly turn the threshold control clockwise until the background "hum" can be just heard. This is known as the audible threshold.

The threshold is now set and the sensitivity can be adjusted for optimum performance.

A small turn of the threshold knob clockwise will cause the threshold "hum" to increase in volume and a counter-clockwise turn will cause it to decrease in volume.

Very small objects and large, deep objects may not produce a distinct signal but rather cause a slight change in the threshold. For this reason it is extremely important that the threshold is set to a level which is just audible, especially if searching for gold.

5.3 The Sensitivity Control

The sensitivity control increases the sensitivity of the Sovereign XS to objects as it is turned in a counter-clockwise direction. This control should normally be set in the "Auto" position. When in this position the sensitivity is automatically set to the optimum level for the ground conditions present.

If in areas of high electrical interference or mineralisation, false signals may occur when in the "Auto" position. To reduce the number of these false signals turn the sensitivity knob clockwise.

For the best results the control should be as counter-clockwise as possible without causing too many false signals, with the optimum being the "Auto" position.

5.4 The All Metal Mode

The Sovereign XS measures the conductivity of objects which it detects and then either ignores or accepts them depending upon the mode of operation and discriminate control settings.

Each type of metal object has a specific level of conductivity. The Sovereign XS is able to measure this conductivity and based upon how it is set up will either ignore object by a loss in threshold tone or accept it by an audio beep.

As the name implies, when in the "All Metal" mode the Sovereign XS will detect all metals, that is both ferrous and non-ferrous.

The signal produced when in this mode is an extremely sharp, fast "Blip" rather than the typical slow long signal when in the "Discriminate" mode. This fast signal is excellent for pin pointing objects.

In the All Metal mode of operation neither the DISC nor NOTCH controls can be operated.

5.5 The Discriminate Mode

In the discriminate mode the controls DISC and NOTCH can both be operated.

When in the discriminate mode and with the DISC and Notch controls fully counter-clockwise, the Sovereign XS will ignore ferrous objects, still detect non-ferrous objects and mask out the effects of iron.

The controls DISC and Notch are then used in combination to discriminate against unwanted non-ferrous targets such as aluminium foil and pull tabs.

In the Discriminate mode the signal tones which you receive vary depending upon the object found (providing you have selected this internal option, otherwise all tones will be the same; refer to page 3). The pitch of signal depends upon conductivity, the higher the conductivity, the higher the pitch.

For example, a US quarter or \$1 coin will give a high pitch, whereas aluminium foil will produce a low pitch.

Pull tabs, rings and certain coins will produce an intermediate pitch depending on the actual object being detected; an Australian 5c piece will produce a lower pitch than a 10c piece which will be lower again than a 20c piece. Similarly, a US nickel coin will produce a lower pitch than a dime.

With some practice you will become efficient at guessing the object detected when the detector signals a "Beep". (See practicing the controls pg 18).

In addition, when the Sovereign detects a ferrous object or an unwanted non-ferrous object, the background threshold will momentarily disappear and then return again at the pitch of the ignored signal.

(12)

If, when searching in the Discriminate mode, the Sovereign XS produces a high pitched rapidly pulsed sound, this means that it is being overloaded by a substantial piece of metal close to the coil. Raise the coil 5 to 10 inches from the ground and pass it over the area again to check the target.

5.6 The DISC Control

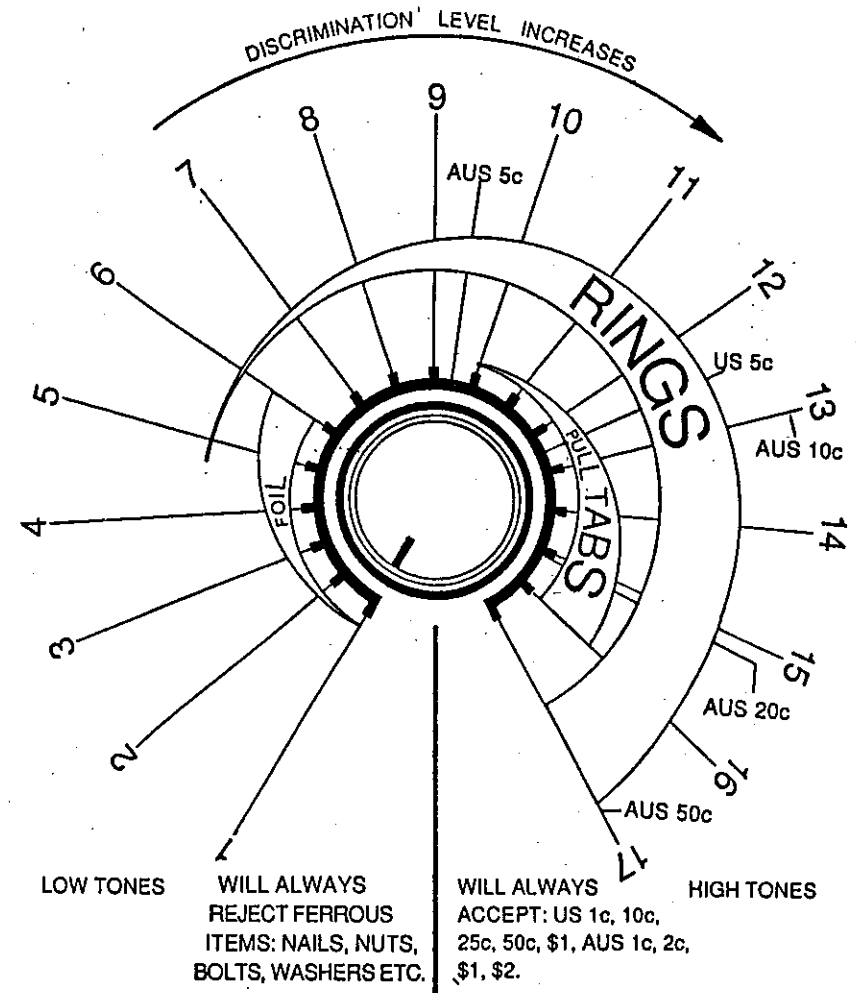


Figure 6 - The DISC control

(13)

The DISC control settings will determine which types of non-ferrous objects under a certain level of conductivity are ignored.

When the DISC and NOTCH knobs are at the fully counter-clockwise position, non-ferrous objects are accepted and ferrous objects are ignored.

As the DISC knob is turned in a clockwise direction the more non-ferrous objects are ignored.

The DISC control is a 1 turn pot with 17 graduations. As it is turned clockwise objects of a certain level of conductivity and less are ignored and no signal is given.

Figure 6 shows the DISC control knob and the position of certain objects. You will notice that aluminium foil is located between the range of 1 and 6, rings from 5 to 17, the Australian 5c piece between 9 and 10, and the US 5c piece between 12 and 13.

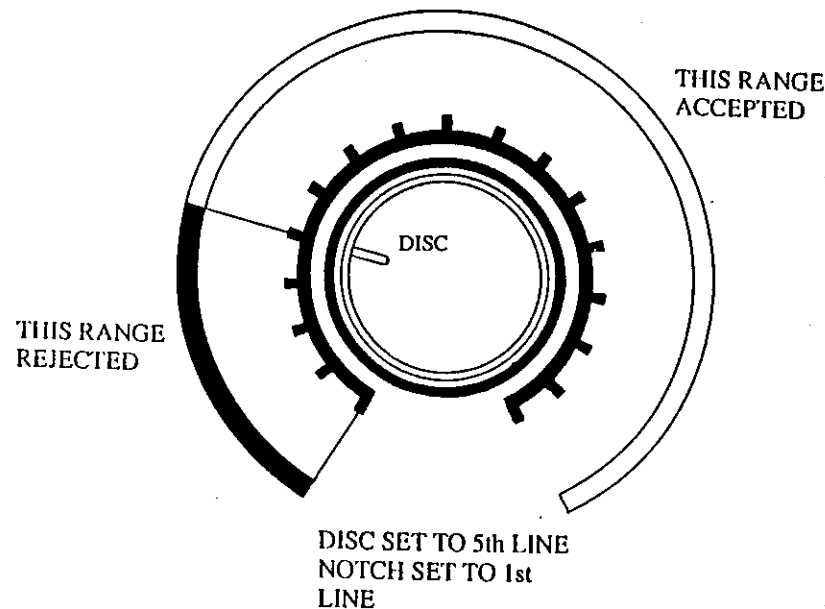


Figure 7 - Ignoring selected non-ferrous objects

The two most undesired types of non-ferrous objects are aluminium foil and pull tabs. To ignore aluminium foil and other similar small bits of metal, set the DISC knob to setting 6 (As seen in figure 7). The Sovereign XS will then ignore objects with a conductivity of less than setting 6 but accept and give a signal for objects with a conductivity greater than setting 6.

Pull tabs fall in the range of settings 10 to 16. There are a number of different types of pull tab, therefore having differing levels of conductivity.

It is essential to be aware that if you set your DISC knob to setting 16 to ignore all pull tabs, a large number of coins and rings will also be ignored.

When using your Sovereign XS, out in the field, you should have with you the Basic Field Guide which has figures 6 and 9 on it. Referring to this will help you to become accustomed to where certain objects are located on the DISC knob.

With experience, setting the DISC knob will become second nature and you will be able to set it to ignore the majority of unwanted targets.

5.7 The NOTCH Control

The NOTCH control is also used to discriminate against, or ignore, certain objects.

When the NOTCH control knob is turned to the fully counter-clockwise position (providing that the DISC control knob is also fully counter-clockwise), the Sovereign XS will ignore detected ferrous objects and accept, or produce a signal, for detected non-ferrous objects.

The NOTCH control works differently to the DISC control in what range of objects it ignores. The NOTCH control ignores only a small range of objects with a specific conductivity but accepts other non-ferrous objects.

Figure 8 shows that the NOTCH control is a 1 turn pot with 17 graduations with the position of objects being the same as on the DISC control.

Figure 8 also shows that when the NOTCH knob is set to position 13 it will ignore objects between the setting of position 12 and 13 such as pull tabs, rings and the US 5c piece.

Now providing that the DISC control knob is fully counter-clockwise, then other non-ferrous objects not within this small range will be accepted. Therefore a piece of aluminium foil will be accepted, so too will a copper coin.

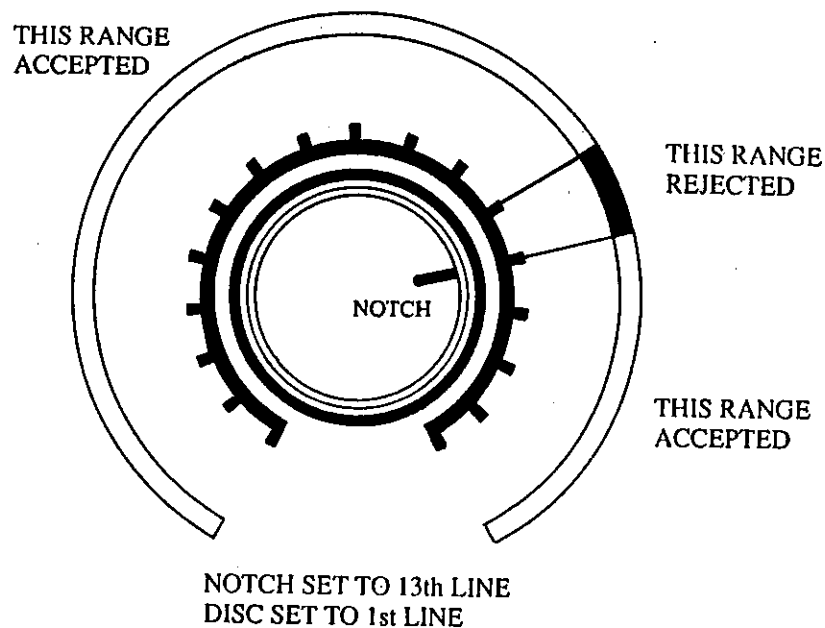


Figure 8 - The NOTCH control

(16)

The NOTCH control is excellent for ignoring the majority of unwanted objects when used in conjunction with the DISC control.

To ignore both aluminium foil as well as the majority of pull tabs set the DISC control to setting 6 and the NOTCH control to setting 14 (As seen in figure 9).

Please note that these settings are approximate and can slightly vary from detector to detector.

You should, however, be aware that there are some objects such as rings and coins which have a similar conductivity to pull tabs and would therefore also be ignored.

It is recommended to use the DISC control and the NOTCH control at the fully counter-clockwise position unless you are searching in areas of high trash or unwanted objects. In this case you should set the knobs according to your requirements.

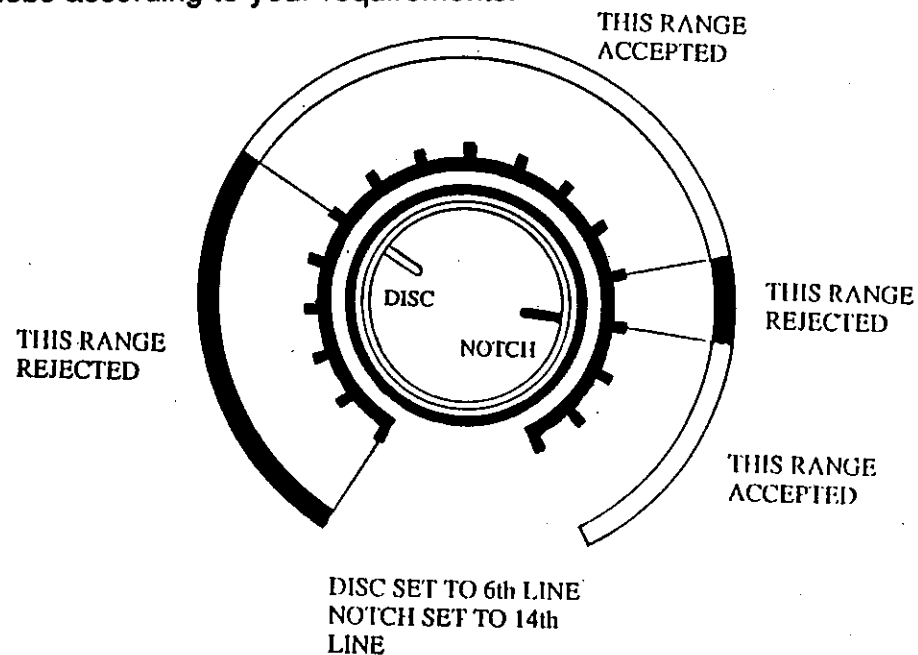


Figure 9 - Ignoring Foil and Pull Tabs

(17)

5.8 Headphone Socket

Also located on the front panel is the headphone socket. When the headphones are plugged into the socket the speaker is de-activated and all noise is then heard through the headphones.

6.0 PRACTICING THE CONTROLS

The Sovereign XS has been designed to be an easy detector to use producing powerful performance. It is advisable, however, to practice the controls before you attempt to use the detector in the field so that you become familiar with the noises which it makes and what each control does.

To carry out the practice exercise you must firstly have with you:

- Some iron nails
- A small ball of foil (from a cigarette packet or cooking foil)
- A pull tab
- A number of coins
- A silver ring
- A gold ring

Firstly place the Sovereign XS on a table with the coil at least 3 feet from all metal objects and then set the controls. This should be done as follows:

1. Turn the Volume control fully clockwise to turn the detector on.
2. Turn the sensitivity control to the "Auto" position
3. Switch to the "All Metal" mode
4. Turn the Threshold control clockwise until the threshold tone can just be heard.

5. Switch to the "Discriminate" mode
6. Set the Notch and DISC controls to the fully counter-clockwise position so that non-ferrous objects are accepted.

Basic Detection

To begin, take all jewellery off hands & wrists. Then pass each of the above objects over the coil. You will expect to receive a number of various toned signals (**unless you have chosen the fixed tone option, in which case all signals will have the same tone**) except for the nail which will give no signal at all.

DISC Control

Now turn the DISC control to the position 6 and pass all objects over the coil once again. This time you will notice that all objects will produce a different signal except for the nail and aluminium foil which should not produce a signal.

As you continue to practice turn the DISC control more clockwise and notice how some objects are ignored whilst others produce a signal.

NOTCH Control

To practice the NOTCH control firstly turn the DISC control to the position next to the red dot and pass the pull tab over the coil as you slowly turn the Notch control clockwise.

As described earlier, the NOTCH control will move a small range which can be set to ignore pull tabs whilst still accepting most rings and coins.

When the NOTCH control is positioned so that the pull tab no longer produces a signal, begin to pass a number of other objects over the coil. You will notice that these objects will still produce a signal whilst the pull tab is being ignored.

Leaving the NOTCH control in position to ignore the pull tab, move the DISC control to position 6.

Pass all the objects over the coil once again and you will notice that the nail, aluminium foil and also the pull tab are ignored. If it happens that another object you have is also ignored then this means that it must have very similar conductivity to the pull tab.

Take note of this and remember that when the NOTCH control is set in this position that this object will also be ignored.

During this practice take note of the tone produced by each object because with practice you will be able to identify the type of object detected before digging it.

All Metal Mode

Switch to the "All Metal" mode and pass various objects over the coil. Notice that the signal you receive is a very fast "Blip" of the same tone. This mode is excellent for pin pointing objects.

Continue to practice the various modes and controls passing objects at various distances over the coil. Take notice of the distance from the coil at which each object is detected and remember that when in the field you will find that the Sovereign XS will actually detect objects in the ground at a greater distance from the coil than during your practice.

7.0 GENERAL DETECTING TECHNIQUES

Now that you are somewhat familiar with the operation of your new Sovereign XS, it is essential to learn some basic detecting techniques such as sweeping, pin pointing and digging targets.

7.1 Sweeping

One of the most important detecting techniques, and perhaps one of the hardest to perfect is the sweeping of the coil across the surface of the ground.

The sweeping motion to cover the ground is shown in figure 10. It is essential that the coil sweeps are overlapped in order to ensure that all ground is searched.

Sweeping is carried out in a snaking motion along the ground to cover the area being searched.

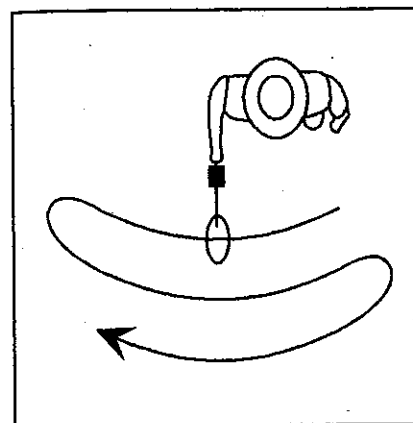


Figure 10

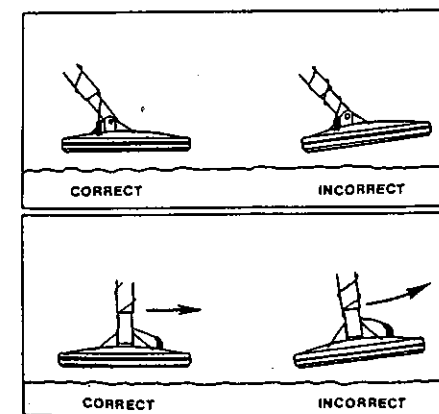


Figure 11

To gain the maximum depth penetration it is essential to keep the coil parallel and as close to the ground as possible. Figure 11 shows the correct sweeping technique.

It is important to remember to keep the coil parallel at all times and be aware that there is a tendency for the coil to be raised at the end of each sweep across the body.

Each sweep from one side of the body to the other should take between 2 and 4 seconds to complete. This speed will depend upon the soil conditions and area which you are in.

The Sovereign XS is a "Motion" detector which means that in order to detect an object the coil must be moving.

7.2 Pin Pointing The Target

After an object has been detected it is necessary to accurately determine its position to enable it to be recovered in the shortest possible time and causing the least amount of damage to the environment.

The Sovereign XS has an 8" Double D coil which is sensitive across its complete length enabling a large amount of ground to be searched with each sweep of the coil.

DOUBLED COIL AND APPROXIMATE DETECTION PATTERN



CONCENTRIC COIL AND APPROXIMATE DETECTION PATTERN

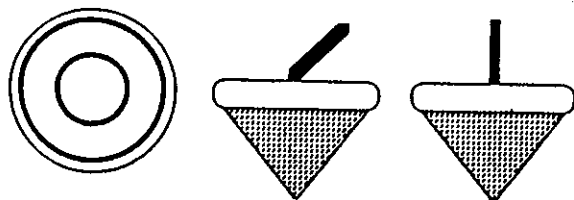


Figure 12 - DD Versus Concentric

Figure 12 shows the actual detection pattern of the 8" Double D coil of the Sovereign XS, compared to that of an 8" concentric coil used in some coils.

To pin point the actual location of the object detected, sweep the coil over the general area taking note of where the strongest signal is received as the coil is moved over the object. By decreasing the length of the sweep it should be possible to draw an imaginary line in the ground where the strongest signal is located (as can be seen in figure 13).

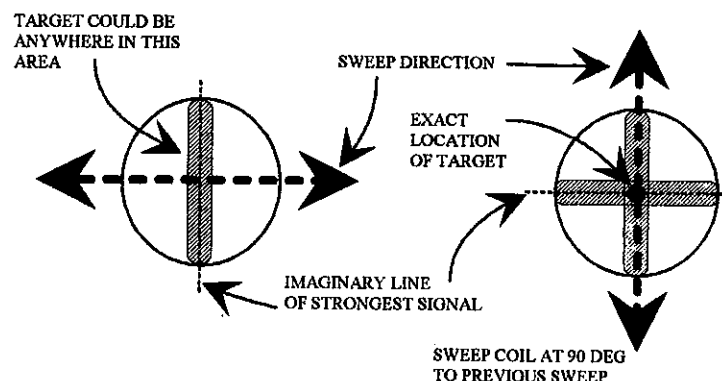


Figure 13 - Pin Pointing

The object could be anywhere across the length of the coil so in order to pin point its exact location it will be necessary for you to turn at a 90 degree angle and repeat the sweep across the target.

Again take note of the point where the strongest signal is and draw another imaginary line in the ground. Where the two imaginary lines cross is where the object is located.

7.3 Digging The Target

Once you have established the exact location of the target it is necessary to dig a small hole to recover it.

In order to preserve the environment it is essential to make the hole as small as possible and always replace the soil or grass which is removed and fill in the hole.

It is a good idea to have some sought of digging tool when searching, the best tools are:

- A. A sand scoop if on the beach
- B. A small knife for grassy areas
- c. A small digging shovel like those used for gardening

Firstly clear the surface material and check if the signal is still there. If there is no signal then the target must be amongst the surface material.

If the signal is still there then dig down a few inches. If the target is not visible sweep the coil over the hole. The signal should become louder so continue to dig. If the signal has gone then the target should be in the pile you have just dug.

Take care how you dig as a swift blow to an object can deface a valuable coin or brake a piece of jewellery.

If the object is not clearly visible you may need to scan the soil which has been dug up so be sure to pile the soil carefully whilst digging. The object can be located in this soil by two methods.

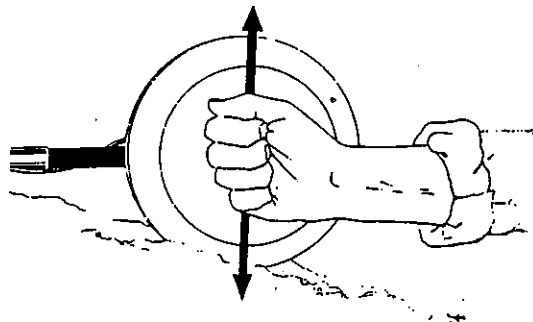


Figure 14 - Locating a target

(24)

1. Sweep the coil over the pile of soil to locate the object. (Be sure that there are no objects buried under the soil directly below the pile).
2. Lay the coil on its side near the hole. Pick up a handful of soil from the pile and pass it across the coil (as shown in figure 14). If there is no signal then place the soil in a second pile away from the first and grab another handful from the pile. Continue this process until the object is in your hand. Sift through the soil in your hand until you find the object.

Once the object has been recovered it is a good idea to run the detector over the hole again to make sure that there are no other objects to be found (it would not be unusual that objects are located under each other).

When you have recovered all objects from the hole it is advisable to search the surrounding area carefully as there is a high chance that more objects will be close by.

7.4 Tips For Where To Search

There are a large number of areas which you can search for old coins and treasures. The best idea is to research as to where people have been in the past and what type of objects they may have had with them.

Alternatively you can go to areas which people still go to such as the beach or park and look for lost jewellery and coins.

The following is a list of excellent places to search, but be sure to get permission before going onto any private property.

(25)

- Your own house
- At the beach
- Showgrounds
- School yards and ovals
- Picnic areas
- Old abandoned buildings
- Camping ground
- Swimming pool areas
- Your backyard
- Parks and playgrounds
- Ghost Towns
- Drive-In theatres
- Old abandoned homes
- Old Gold Mining sites
- Sporting grounds

In addition to having permission to go onto private property it is important to check local regulations and always fill in all holes, especially in parks.

8.0 GENERAL MAINTENANCE AND SERVICING

In order to keep your new Sovereign XS working to its peak performance it is important to ensure that it is well looked after, here are a few tips.

1. **Always** clean your detector after using it. When out in the field it gathers a lot of dirt and sand which can be harmful to its switches and internal electronics, so it is important to brush it off after each use.
2. **Always** have a skid plate on the bottom of the coil as it protects the coil casing from damage and will preserve your coil. Skid plates can be purchased at any Minelab dealer or direct from the factory and are priced at less than \$20.
3. **Never**, ever under any circumstances leave your detector laying in the hot sun or on the back seat of your car in the direct sunlight. The heat may cause permanent damage to its electronics.

4. If detecting in or around water it is essential to keep the electronics 100% dry. **If any water leaks into the control box it could cause permanent damage and should be returned to Minelab immediately for service.** If detecting down at the beach it may be a good idea to place the control box in a plastic bag to reduce salt damage.
5. **Always** treat your detector with the respect which it deserves, do not throw it around or drop it on the ground. Your detector has very delicate components inside and any mishandling can cause damage.

9.0 Trouble Shooting Guide

Due to the unique nature of the Sovereign XS, unless you have used either a Sovereign or Excalibur, then some signals and general operation may be confusing.

If you are having difficulty with your Sovereign XS Minelab recommends that you read this section or phone your dealer for advice. Please do not send your detector back for repair unless you have checked this guide and contacted your dealer or Minelab directly.

Common Problems Encountered

1. **Noisy when swinging the detector**
 May be a loose connector or cable not tightly wound around the shaft. Tighten the cable on the shaft and also connector.
2. **Starts with a loud noise when first turned on and then fades away to nothing.**
 May be a flat battery. Check that the battery is charged and is connected in the battery compartment.

Please note that batteries are flat when shipped from the factory and must be charged for approximately 12 hours before use.

3. Constant false signals.

May be a loose connector or being caused by a large amount of electrical interference or high mineralisation in the soil. Tighten the connector and turn the sensitivity down until the number of false signals reduces.

4. Detector will not switch on.

Check that the battery is charged and is connected correctly.

5. Control box falls off the shaft.

The control box has not being pushed onto the shaft correctly. Place the control box into the "V" clip and push down hard until it "Clicks" into position.

6. Broad signal when pin pointing.

May still be in the "Discriminate" mode. Switch to "All Metal" mode and try again.

7. Ignores a Gold Ring.

Check the positioning of both the DISC control and also the Notch control. Readjust accordingly.

10.0 WARRANTY

Your new Sovereign has a specified warranty. The most important points relating to the product warranty for the detector and its parts are contained in the following paragraph. For the complete warranty details please consult your warranty card.

Minelab Electronics Pty Ltd warrants the control box for a period of two years (parts and labour) and the coil for a period of one year (parts and labour).

11.0 SPECIFICATIONS AND PATENTS

These are subject to modification without notice.

Options	Silent / Background threshold in discriminate. Fixed Tone or Tone ID in Discriminate.	
Uses	Coins, Treasure, Archaeological, Forensic and Military; ideal inland or beach. A genuine "all-rounder".	
Length	Extended	1400mm (55")
	Un-assembled	840mm (33")
Weight	Complete (excluding batteries)	1621g
	Control Box (excluding batteries)	550g
	Shaft and Search Coil	935g
Mounting	Shaft or Hip.	
Transmission	Broad Band Spectrum; multiple simultaneous frequency transmission 1.5, 3, 4.5, 6,.....25.5 kHz.	
Search Modes		
	All-Metal:	Mineralisation Cancel which is used for pin pointing.

Discriminate: Ferrous reject, Notch and Disc.
with 2 switched levels of ferrous/
non-ferrous rejection.

Control Knobs Disc: Variable from all non-ferrous to
highly conductive metal.
Notch: Variable from all non-ferrous to
highly conductive metal.
Sensitivity: Auto or manually selectable.
Threshold: Sets threshold and
Volume: Turns power on and off whilst
controlling signal volume.

Search Coil Type 8" (203mm) Double-D.
Weight 562g
Cable length 2.4m (7'9")

Audio Output Built in loudspeaker and 1/4" headphone
socket. Sound pitch continuously variable and
indicate nature of detected object in disc. mode,
and modulated in all-metal mode to enhance
perception.

Overload Staccato sound alert in discriminate.

Batteries NiCad 12V, 600mAHr or more
Duration 10-15 hrs.
Battery Low Alert High pitched beep every
30 sec. when becoming flat.

Warranty Control Box - 2 Years parts and labour.
Search Coil - 1 Year parts and labour.
NiCad Battery Recharger - 3 Months parts &
labour

Patents US4942360, AUS593139, US4890064,
US4894618, AUS595835, CAN1260146 and
several pending.