The Minelab Relic Hawk Metal Detector

With VLF+ Technology For the serious relic hunter
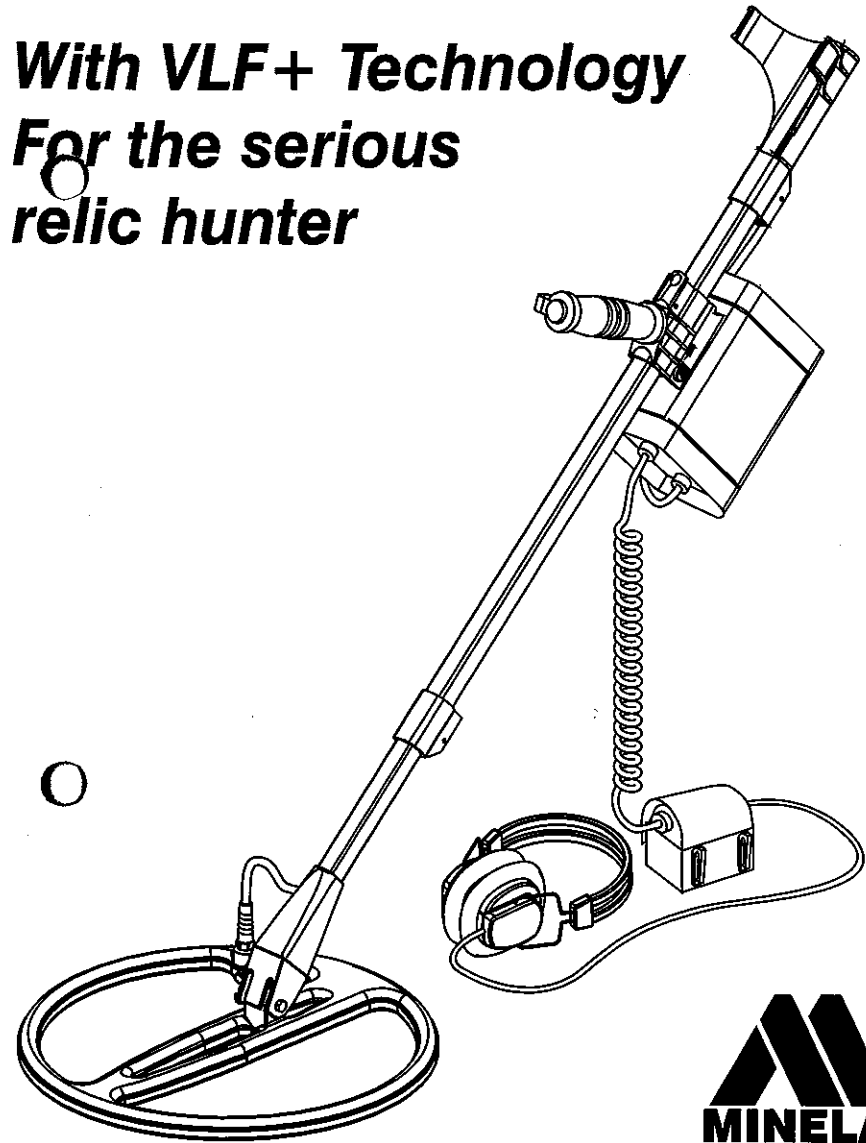
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MINELAB RELIC HAWK
INSTRUCTION MANUAL

CONTENTS

1. Introduction

Congratulations on purchasing Minelab's Relic Hawk metal detector.

The Relic Hawk has been designed for general-purpose treasure hunting and its main features include rugged, military-style construction; quick shut down between targets; simplified operational controls; and substantial depth capabilities.

Your Relic Hawk is designed to locate valuable metal objects in high trash areas — conditions commonly encountered by treasure hunters in places that have been inhabited for long periods or used by armies as camping grounds or battlefields. Its rugged mechanical features and cable fittings are derived from our successful military product range. These features help make the Relic Hawk one of the toughest detectors on the market.

You will be surprised at how the Relic Hawk's depth capabilities will challenge other units currently on the market!

The operating frequency of your Relic Hawk has been set at 5 kHz. This frequency has been chosen for its high level of sensitivity to large ferrous targets such as steel trunks or guns, as well as coins, jewelry, and other valuable non-ferrous objects, while still being able to discriminate against trash.

To be a successful treasure hunter you must completely understand your detector's features and operation, research your intended hunt area, and respect the environment while you are hunting. We at Minelab are confident that the Relic Hawk will provide you with hours of enjoyment for all types of hunting; whether it is on an old battlefield, in the country, or in a competition hunt.

If you have any questions or comments we would like to hear from you. Please contact your local Authorised Minelab Dealer or write to us direct.

We wish you every success in your treasure hunting.

4.6 Comfort Adjustments (see Figure 10)

a. Releasing the locking lever at the top end of the Upper Shaft permits up to 50 mm adjustment of the position of the armrest assembly, relative to the handle position.

b. Releasing the locking lever at the base of the Handle allows the handgrip to be repositioned along the length of the Upper Shaft.

c. Releasing the locking lever at the bottom end of the Upper Shaft enables the effective length of the Lower Shaft to be altered.

d. The hand strap can be changed from right to left handed use by slipping the loop through the retaining lock and re-inserting the strap from the other side.

e. The coil angle can be adjusted without adjusting the coil clamping nut.

CAUTION

Ensure the clamping nut is not over tightened.
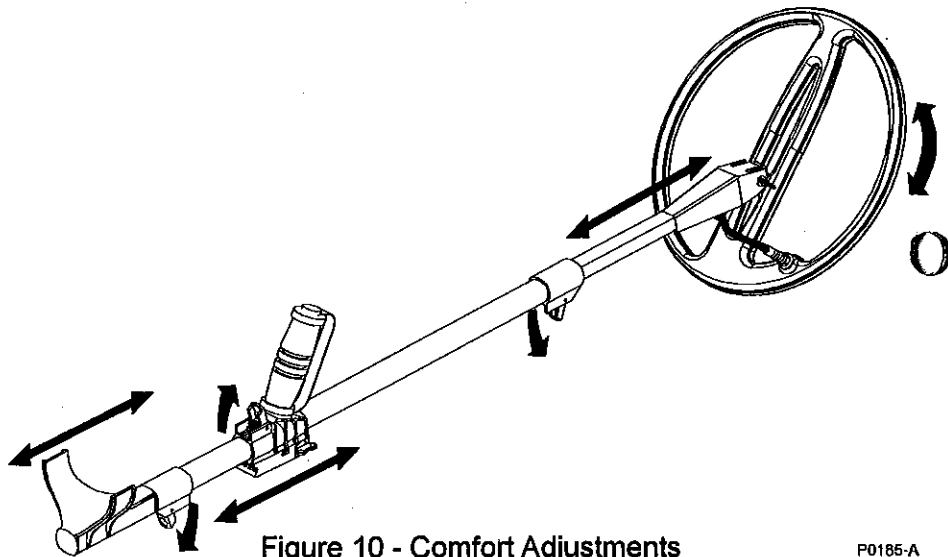
Figure 10 - Comfort Adjustments   P0185-A

9. Warranty and Service

There is a two-year parts and labour warranty for the Relic Hawk electronic Control Box. The Coil, Shafts, etc., are warranted for one year. Refer to your Warranty Card for further details. Always refer to your supplier or Minelab for service, either in or out of warranty.

NOTE:

This warranty is not transferable, nor is it valid unless the enclosed warranty registration card is returned to Minelab Electronics Pty Ltd or an authorised Minelab Electronics Pty Ltd regional distributor within 14 days of the original purchase.

The Minelab warranty does not cover damage caused by accident, misuse, neglect, alteration, modifications, or unauthorised service. For specific details of the Minelab warranty, please refer to the machine's 'Product Warranty Card'.

8.1 Trouble-shooting Guide

Fault	Solution
No Sound	Check battery and battery connections Check Headphones and their connection
Erratic Noises	Check battery charge and battery connections Ensure coil plug is tightened firmly Reduce the sensitivity by turning counter-clockwise Switch out of 'Fixed' ground balance position Check and adjust the ground balance Check Headphones and their connection Check for sand or grit between skid plate and Coil
No Target Response	Ensure unit is turned 'On' Check battery charge and battery connections Check coil connection Check Headphones and their connection

In the unfortunate circumstance that you need to return your detector to Minelab for service, please fill out a copy of the Minelab Service Repair Form on page 35 and enclose it with the detector. Please supply as much detail as possible about the fault as this will assist our service engineers to rectify the problem quickly and efficiently.

8. Care of the Relic Hawk Detector

The Relic Hawk is a high-quality electronic instrument, finely engineered and packaged in a durable housing. Proper care and maintenance will ensure long-term reliability of the detector.

Please observe the following precautions:

- **Do not leave the battery connected to the Control Box when the detector is not in use.**

- If temperatures are very high, **do not leave the detector in the sun for longer than necessary.** Covering it when not in use will help protect it. Try to avoid leaving it in a closed trunk or in a car sitting in sunlight.

- While the Control Box has been designed to be water-resistant, it is not waterproof. Avoid wetting it unnecessarily. **Never allow the box to come into contact with gasoline or other oil-based liquids.**

- **Keep the unit (especially all connectors) clean and dry,** and avoid getting sand and grit into the shafts or the locking levers. Do not use solvents to clean the detector. Use a damp cloth with mild soap detergent.

- **Batteries.** Flat or faulty batteries cause many detector problems. Ensure that you use only Minelab rechargeable 12V lead acid batteries and that they are recharged as soon as the 'Low Battery' warning signal is heard through the Headphones. **Lead acid batteries can be damaged if they are left in a discharged condition.**

- **Cables.** Ensure the coil cable is in good condition and not subject to undue stress. The coil connector at the base of the cable must be firmly tightened.

- If any part of the detector comes into contact with corrosive substances (including salt or salt water), **wash it with fresh water.**

- The 'Coil' and 'Power' connectors on the Control Box have **rubber covers** which **should be used to protect the sockets** when the cables are disconnected.

- **Repack your detector into its backpack when it is not in use** (see Figure 2 on page 6 for the recommended packing layout).

7. Environmental Concerns

Firstly, it should be pointed out that treasure hunting with a metal detector is the most environmentally friendly way to recover coins, rings, and other treasure items. However, it is important to leave an area that you have searched in the same condition as you found it.

All holes that have been dug must be properly refilled. Not only is it environmentally unacceptable to not fill in your holes, it is also very dangerous. There are special tools to enable you to recover targets easily from grassed areas without digging large holes.

Take away and properly dispose of any junk that you find or produce, such as nails and tin cans. Leaving an area 'scarred' can result in action being taken to prevent the use of metal detectors, which spoils this fascinating hobby for others as well as yourself.

6. The Coil and its Skid Plate

Over a long time the Search Coil Skid Plate could wear if the ground is scrubbed continuously while searching. Minelab agents can supply a replaceable skid plate for the Coil. This can be fitted by levering off the existing plate and pushing on the replacement skid plate (see Figure 17).
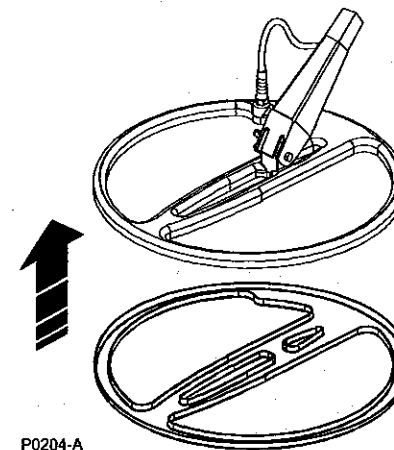

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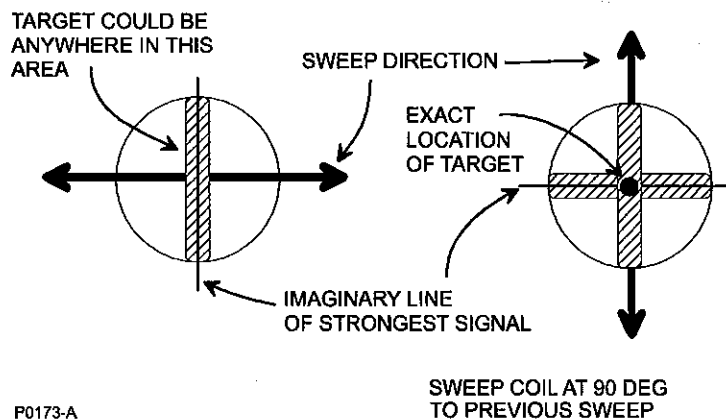Figure 17 - Use a Skid Plate to protect the Coil

5.4   Pinpointing with the Relic Hawk

When the approximate location of the target has been determined in **Discriminate** or **All Metal/Motion** mode, switch to the **All Metal Pinpoint/Non Motion** position. Hold the Coil above the ground where you believe the target is. Press and release the **Reset** switch. Then move the Coil slowly over the target. The audio will increase in volume while moving towards the target and decrease in volume as you pass it. The tone will be loudest when the Coil is directly over the target.

Quite often the detector will be producing its maximum volume for a broad area over the target. This generally indicates that the target is near the surface or is quite large.

To successfully pinpoint these targets, hold the Coil stationary over the target area at its loudest point then press and release the **Reset** switch. This will decrease the detector sensitivity to the target and therefore narrow the target area. This operation can be repeated until the target area is extremely narrow.

Once the target area has been narrowed, the open design of the 15" Coil makes it easy to mark the ground. Moving 90 degrees to the previous target sweep and again marking the ground (as shown in Figure 16) will further improve the accuracy of pinpointing. This increased accuracy in pinpointing targets allows faster target recovery and greatly reduced environmental damage.

TARGET COULD BE ANYWHERE IN THIS AREA

SWEEP DIRECTION

EXACT LOCATION OF TARGET

IMAGINARY LINE OF STRONGEST SIGNAL

SWEEP COIL AT 90 DEG TO PREVIOUS SWEEP

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Figure 16 - Pinpointing the Target with the Relic Hawk

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i.   Lift the search Coil approximately ½ - 1 inch (1 - 2.5 cm) from the ground — enough to take the weight off the Coil. Now swing the Coil from side to side, keeping it level and parallel to the ground surface throughout the swing (see Figure 15).

j.   Listen to the reaction to each target that you find, noting the depth and condition of the ground as you recover it. Carry a small notepad to take notes and review these notes at some later time to improve your knowledge of how the **Discriminate** control performs.

As you become more experienced in using the Relic Hawk, you will notice that your trash ratio will drop, even though you may not be increasing the discrimination. This is because you have become more tuned to the target signals and know how the Relic Hawk responds.
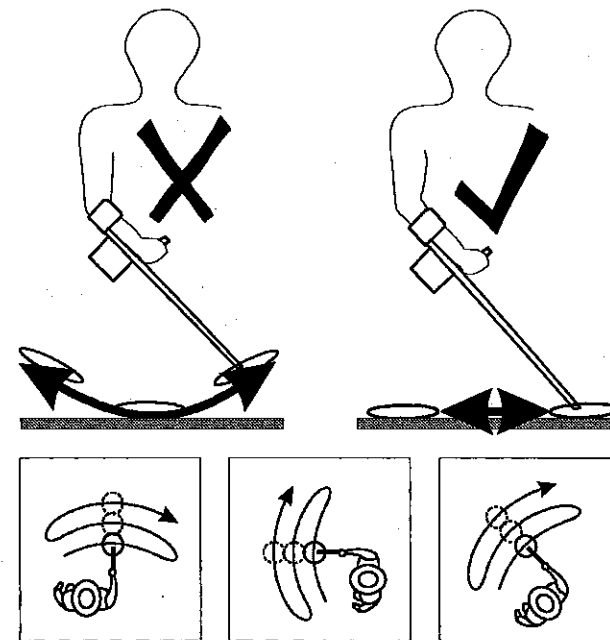
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Figure 15 - Sweeping the Coil

NOTE:

Each sweep of the Coil should overlap the last one. This will ensure good ground coverage.

5.3   Practicing the Discriminate Control

We suggest you first take some time to become familiar with how your Relic Hawk detector responds to various metal objects.

Gather a collection of different metal objects such as a rusted nail, pull-tab, brass button, aluminum foil, and some different types of relics, e.g. bullets, buckles. Take the unit outside, away from known electrical devices or metal objects, and support the Relic Hawk so that objects can be easily moved past the Coil. Then:

a. Ensure the **All Metal/Discriminate** mode switch is in **Discriminate**.

b. Turn the **Discriminate** control to '1'.

c. Turn the **Sensitivity** control to 'maximum'. If excessive interference is encountered, turn the **Sensitivity** control counter-clockwise until it disappears.

d. One at a time, pass the test objects across the Coil. Some small objects may produce short 'pops', 'clicks' or even 'beeps'. To reject these items you may need to turn the **Discriminate** control in a clockwise direction.

e. Turn the **Discriminate** control progressively clockwise in steps and pass the objects over the Coil and see when certain objects are rejected.

By experimenting with different settings of the **Discriminate** control you will see where to set the Relic Hawk to accept or reject the targets you wish to hunt for.

Now for some treasure hunting. Take the Relic Hawk to the site you wish to hunt. Then:

f. Place the Coil flat on the ground and flick the **All Metal/Discriminate** mode switch to **Discriminate**.

g. Turn your **Discriminate** control to your preferred setting. Remember this is a 'trash-to-treasure' ratio, so select it based on how much trash you are willing to dig to find your wanted targets. You can always turn it up or down during use.

h. Now turn the **Sensitivity** control to 'maximum'. Remember it is suggested that you hunt with maximum sensitivity as much as possible. This control can be altered during hunting if you encounter electrical interference or heavy mineralisation causing random signals.

5.2   Recommended Optimum Settings

The recommended optimum settings (shown below in brackets) are indicated on the Control Panel of your Relic Hawk by white text in red panels.

A brief explanation of why these functions are recommended follows:

Sensitivity: (Maximum). Ensures the greatest depth possible is achieved, unless electro-magnetic interference causes instability in the detector.

Discriminate / All Metal switch: (Discriminate). Most sensitive detecting mode, makes ground balancing easy, quieter in mineralized ground and discriminates out small ferrous junk whilst still detecting desired targets.

Discriminate Control: (Operator's personal choice). Depends on the type of targets being searched for, and how much junk you are willing to dig.

Pinpoint switch: (Non Motion). After target location in **Discriminate** mode, select **All Metal** and you are ready to pinpoint the target.

Op. Mode: (M). Ensures the widest range of target sizes and depths.

Balance Switch: (Manual). Enables the **Balance** control to be adjusted.

Balance Control: Adjust until 'just' silent (as described on page 18).

5.1   QuickStart Operating Instructions for the Relic Hawk

a)   'Discriminate' Mode (recommended)

- Connect a charged battery via the battery cable to the Control Box.
- Connect the Headphones to the Battery.
- Set the **All Metal/Discriminate** mode switch to **Discriminate**.
- Switch the **Balance** switch to **Fixed**.
- Turn the Relic Hawk 'On' by moving the **Power** switch to **On**.
- Raise and lower the Coil approximately ½ to 6 inches (1 to 15 cm) above the ground, listening carefully. If there is any noise as you move the Coil up and down the level of mineralisation in the ground is too great to operate the Relic Hawk in the **Fixed** position, so adjust the **Ground Balance** as described in detail on page 18.
- Select the level of 'discrimination' you wish to have by setting the **Discriminate** control.
- Start searching.

You are now ready to hunt.

b)   'All Metal/Motion' Mode

- Connect a charged battery via the battery cable to the Control Box.
- Connect the Headphones to the Battery.
- Set the **All Metal/Discriminate** mode switch to **All Metal**.
- Switch the **Pinpoint** switch to **Motion**.
- Switch the **Balance** switch to **Fixed**.
- Turn the Relic Hawk 'On' by moving the **Power** switch to **On**.
- Raise and lower the Coil approximately ½ to 6 inches (1 to 15 cm) above the ground, listening carefully. If there is any noise as you move the Coil up and down the level of mineralisation in the ground is too great to operate the Relic Hawk in the 'Fixed' position, so adjust the **Ground Balance** as described in detail on page 18.
- Start searching.

Audio Output

The audio output of the Relic Hawk is via a ¼" stereo headphone jack located in the top of the battery pack. The socket will accept most stereo headphones with a ¼" jack. Headphones should be of a low impedance. If they have a **Stereo/Mono** switch, set it to **Stereo**.

The headphones provided are recommended for serious treasure hunting as they are very sensitive and shield your ears from external noises that can be distracting. Independent volume controls allow the operator to select the most comfortable volume level.

To Headphones

P0175-A   To Control Box
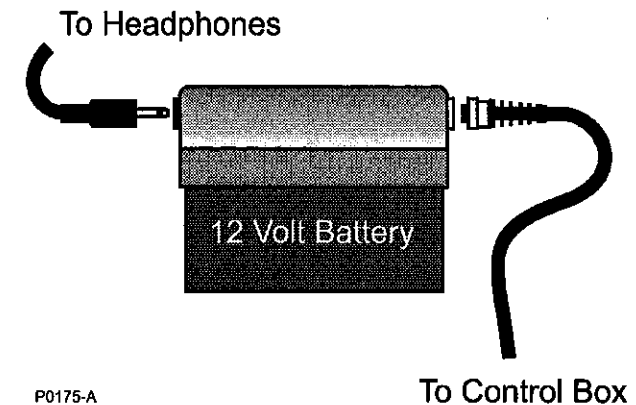
Figure 14 - Headphone Jack in Battery Pack

Reset

The **Reset** switch is located at the top center of the Control Panel. It is spring loaded and will flip back to its normal position when released. This control is only operational while the Relic Hawk is in **All Metal** mode and is used in combination with the **Pinpoint/Non Motion** position, as described below, to assist in accurate target location.

The **Reset** switch has two very useful functions:

* It is used when pinpointing to narrow the target area — when pinpointing a target in **Pinpoint/Non Motion** mode the Coil should be held over the target area and the spring-loaded **Reset** switch engaged. This will decrease the detector sensitivity to the target and therefore narrow the target area. This operation can be repeated until the target area is extremely narrow.

  This increased accuracy in pinpointing targets allows faster target recovery and greatly reduced environmental damage.

* It is used to reset the sensitivity — in **All Metal/Motion** mode the Relic Hawk's circuitry helps maintain a silent threshold by automatically adjusting the sensitivity when mineralisation is present.

  This circuitry can also consider a target as a change in mineralisation, and therefore alter the sensitivity of the detector. The detector will automatically restore its sensitivity after a period, or the **Reset** switch can be activated to immediately restore the sensitivity once the Coil has been moved away from the target. This will ensure the optimal use of this mode.

Op. Mode

This switch allows the operator to select the most suitable mode of operation, depending on the size and depth of targets that the operator wishes to find.

The 'M' position is recommended as it allows detection of a large range of unknown targets of varying size and depth.

If large, deep targets are being searched for the 'L' position is suggested.

If small, shallow targets are being search for the 'S' position is suggested.

5. The Relic Hawk Controls

This section gives detailed descriptions of the controls of the Relic Hawk detector and its functionality. Having knowledge of these controls means that you will be able to achieve the best performance from your detector. As you gain experience with your detector it may be useful to refer back to this section.
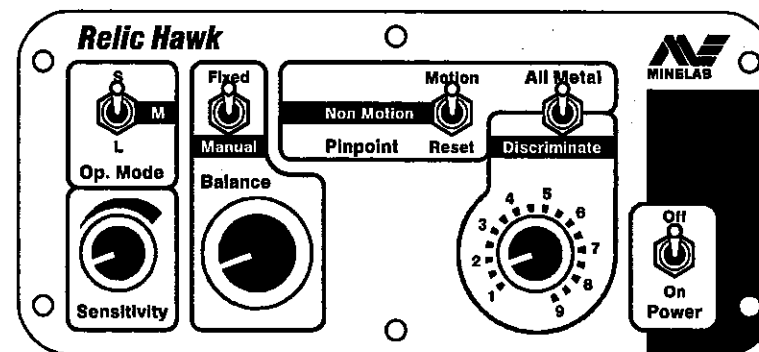
Figure 11 - The Relic Hawk Control Panel

Sensitivity Control

The **Sensitivity** control knob is located on the left-hand side of the Control Panel. This control is often thought of as a depth control, and it is to a point, but it also makes the unit more sensitive to interference caused by such things as ground chemistry 'mineralization' or electrical fields.

In most cases, set this control to its maximum, the most clockwise position.

When detecting in areas of extreme mineralization or electrical interference, popping or chattering may be heard through the Headphones. When this occurs you will need to decrease the sensitivity by turning the control counter clockwise just enough the remove the interference.

Balance Control

The **Balance** control allows the operator to adjust the ground balance of the Relic Hawk to compensate for changes in ground mineralization. When the switch is in the **Fixed** position the Manual Balance control is inactive and the unit is a fixed ground balance detector. The Relic Hawk can be operated in this mode only where the ground mineralization is minimal. If, while detecting in this mode, the level of ground mineralization becomes high, the Relic Hawk will produce 'ground noise' or false signals. To reduce ground noise it will be necessary to switch the detector from the **Fixed** position to the **Manual** position and manually adjust the 10-turn **Balance** control.

Although the ground balance can be adjusted in either the 'Discriminate' mode or the **All Metal/Motion** mode, it is much simpler to adjust in the **Discriminate** mode.

Ground Balancing in Discriminate Mode: (recommended)

Switch the **All Metal/Discriminate** switch to **Discriminate**, and turn the **Balance** control to the most clockwise position. After switching to **Manual** mode, raise and lower the Search Coil between ½ and 6 inches (1 and 15cm) above the ground whilst listening for ground noise. While continuing to raise and lower the Coil, adjust the **Balance** control counter clockwise until the ground noise is 'just' eliminated. Variations in ground mineralization while detecting may produce more ground noise which may require a further counter clockwise adjustment of the **Balance** control.
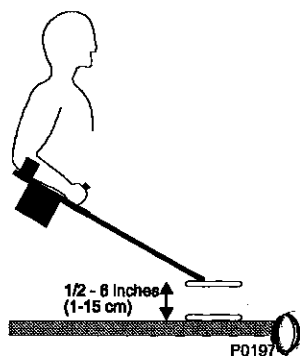
1/2 - 6 Inches
(1-15 cm)

P0197

Figure 11 - Raising and Lowering the Search Coil

Ground Balancing in All Metal/Motion Mode:

Adjust the **Balance** control as described in the **Discriminate** mode section above. As the control is turned in a counter clockwise direction the ground noise 'quietens', but on turning the control further the ground noise begins to increase again. Adjusting the control to the 'quiet' position is critical and can be difficult to achieve, especially in areas of extreme mineralization.

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NOTE:

In **All Metal/Motion** mode it may be necessary to lower the detector sensitivity to compensate for any difficulty adjusting the ground balance.

Variations in ground mineralization while detecting may produce more ground noise which may require a further adjustment of the **Balance** control. It is important to note that the more accurately you ground balance the detector, the deeper you will detect and the more objects you will find.

Discriminate / All Metal Switch

The **Discriminate/All Metal** mode switch is located at the top right of the Control Panel and is used to select either **Discriminate** or **All Metal**.

In **Discriminate** mode, the **Discriminate** control is active and can be adjusted so that the Relic Hawk will accept or ignore certain metal objects, as described in the Discriminate section. In this mode the **Pinpoint** switch is de-activated and the Relic Hawk functions as a motion detector. The Coil must be moving over the ground to detect a target. If you stop moving the Coil when over a target, the signal will 'disappear'.

In **All Metal** mode the **Motion**, **Pinpoint** and **Reset** switches become active. In this mode, the **Discriminate** control has no effect and the Relic Hawk will respond in the same way to all types of metal. All Metal/Motion mode is useful for operators when searching for small ferrous targets, to ensure that these targets are not discriminated out.

Discriminate Control

The **Discriminate** flip switch is located near the Power On/Off switch on the right of the Control Panel. Beneath the **Discriminate** switch, the **Discriminate** control is used when in **Discriminate** mode to 'discriminate' or ignore unwanted metal targets.

Metal objects fall into two broad categories: ferrous and non-ferrous. A magnet can be used to differentiate these metals. Ferrous metals will be attracted, non-ferrous metals will not.

Typical ferrous objects encountered by treasure hunters are nails, screws, washers, bits of wire, etc. These objects are generally not considered to

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be of value, so it is a distinct advantage to be able to ignore these objects while detecting.

Objects that cause the Relic Hawk to produce a 'signal' include such items as aluminum foil, most jewelry, pull-tabs, coins, bottle tops, gold, silver, brass, etc. Not all of these targets are considered valuable. Therefore, by using the **Discriminate** control, the Relic Hawk can be adjusted to ignore less valuable objects while locating more valuable targets.

As a general rule, ferrous metals have low conductivity and non-ferrous metals have high conductivity. With the **Discriminate** control at its minimum (fully counter clockwise) setting, most low conductivity targets, i.e. small ferrous items such as bolts and nails, will be eliminated but larger ferrous targets may still be detected. If the **Discriminate** control is adjusted clockwise, ferrous and non-ferrous targets of increasing conductivity will be eliminated. With the **Discriminate** control at its maximum (fully clockwise) setting, large silver, brass, copper and lead targets (which are highly conductive) will not be discriminated out.

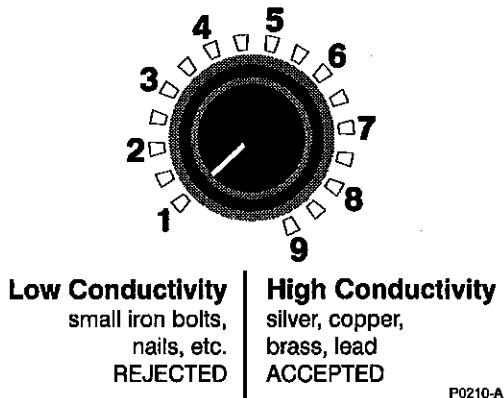| Low Conductivity	High Conductivity
small iron bolts,	silver, copper,
nails, etc.	brass, lead
REJECTED	ACCEPTED

P0210-A

Figure 13 - Discriminate control examples

Items such as gold rings cover a large area of the **Discriminate** control. The broad range of conductivity for gold targets can be attributed to various factors including purity and the size of the target. For example, fine rings are usually less conductive than heavier rings. So if you set the **Discriminate** control to ignore pull-tabs you may also ignore some rings and other jewelry.

The **Discriminate** control setting is relative to the types of objects that you wish to hunt for and the amount of trash that you are prepared to detect.

4.5 Mains Battery Charger (see Figure 9)

The Minelab 12V Lead Acid Battery pack can be recharged using the mains-powered charger:
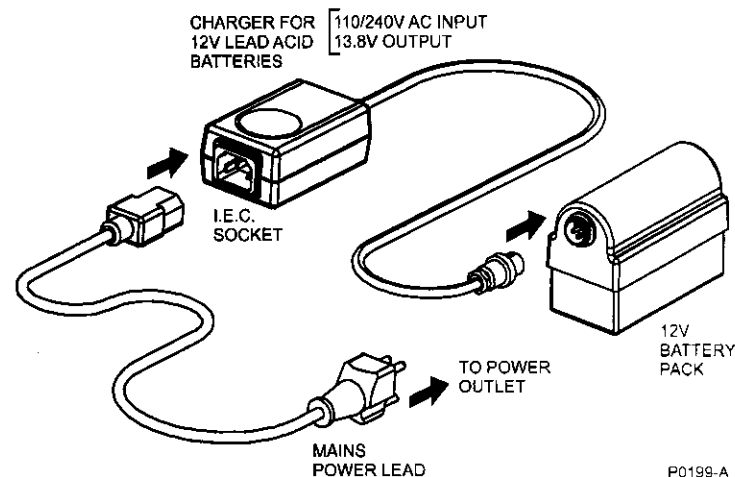

Figure 9 - Relic Hawk Mains Battery Charger Connections

To recharge the battery:

a. Disconnect the curly cable from the side of the battery cap by unscrewing the locking ring on the 5-pin plug. Then gently pull the plug out of the socket.

b. Connect the Charger's 5-pin plug to the 5-pin socket in the battery cap and tighten the locking ring to ensure good electrical contact.

c. Connect the supplied mains power lead into the battery charger's I.E.C. socket.

d. Connect the power lead to a mains power outlet and switch on. Leave the charger switched on with the battery attached for a minimum of 6 hours to fully recharge the battery.

NOTE:

Minelab advise detector owners to observe the following procedure to ensure their warranty and to extend battery life. Whenever the detector is not in use the battery should be connected to the charger with the power switched on. This procedure will not harm the battery or charger as an automatic cut-off is activated when the battery is fully charged.
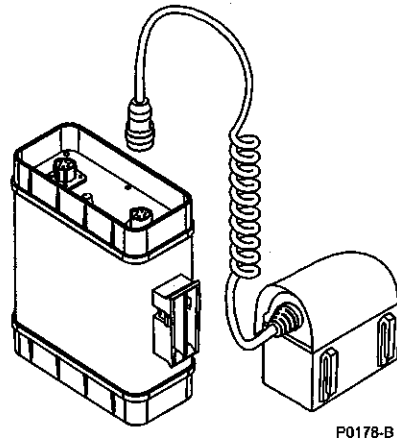
Figure 8 - Relic Hawk Battery Pack

4.4 Battery Pack (see Figure 8)

The detector can only be powered by the supplied battery pack. Before connecting or disconnecting the battery pack ensure that the unit is switched **Off** at the Control Panel.

a. To provide power to your detector from the battery pack it is necessary to connect the 5-pin plug at one end of the battery cable to the 5-pin socket in the battery cap.

b. The other end of the cable is connected to the 'Power' socket located on the base of the Control Box.

c. Place the battery into the belt mounted battery pouch and secure the flap. Attach the battery pouch to your belt using the plastic belt clips.

d. The belt clips used on the battery pack are identical to those used on the Control Bag (see Figure 5 for details of clip operation).

e. You can remove the battery from the pouch any time for recharging or to check connections without removing the pouch from your belt.

f. The detector can now be switched **On** and operations commenced.

NOTE:
The battery pack also provides the Audio output for the Detector from a headphone socket at the opposite end of the battery cap (see page 23). The 'Low Battery' alarm is an audible beep that is emitted through the headphones every 12 seconds.

4.3 Armrest (see Figure 7)

a. Insert the pointed end of the retaining strap through one of the slots at the base of the Armrest, then through the slots at the top of the wings of the Armrest. When the operator's arm is in the Armrest, the protruding part of the 'Velcro™' strap should be fixed to make a firm fit.

b. Decide whether the Control Box is to be attached to the shaft assembly or housed in the Control Bag, as this will determine what length of coil cable should protrude from the Upper Shaft above the Handle.

c. If the Control Box is to be attached to the shaft, position the cable grommet (G2) (closest to the plug end of the coil cable) into the keyway beneath the locking lever at the top end of the Upper Shaft (surplus coil cable is stored inside the hollow Upper Shaft).

d. Alternatively, if the Control Box is to be carried in its Control Bag, position the grommet (G1) (located between the two curled sections of the coil cable) into the keyway beneath the locking lever at the top end of the Upper Shaft.

e. When the appropriate grommet is positioned in the keyway, push the end of the armrest assembly into the camlock on the top end of the Upper Shaft and clamp using the locking lever.
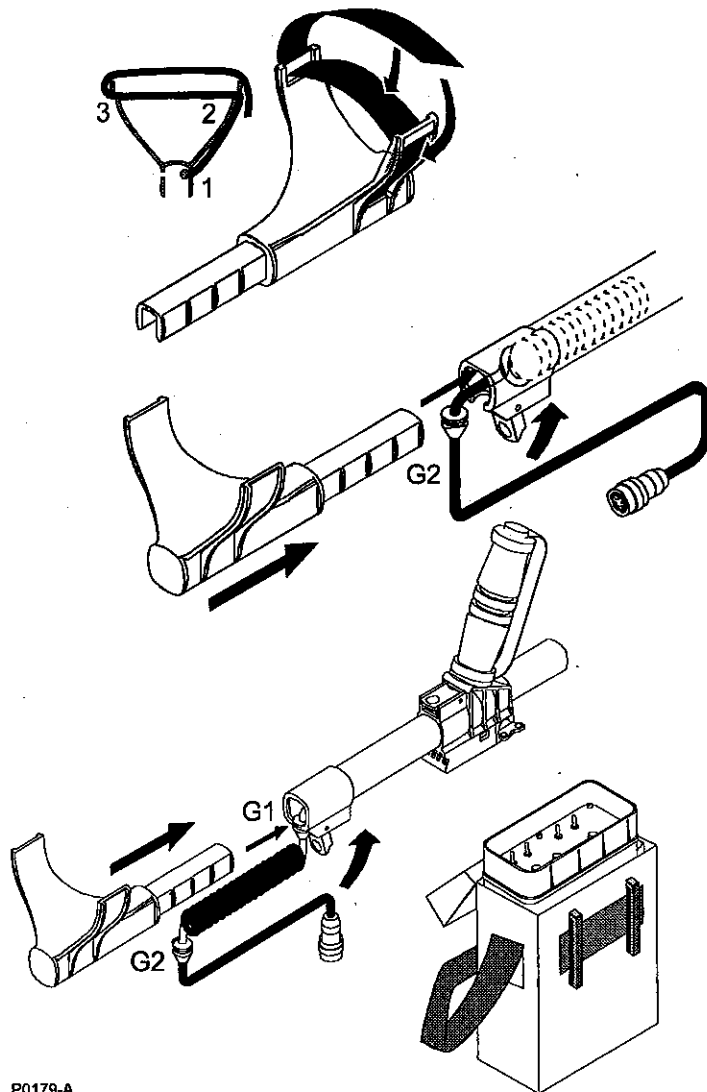
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Figure 7 - Armrest and Cable Length Configurations

4.2 Control Box

Position the Control Box in one of the following locations (see Figure 4):

- It can be placed in its Control Bag which is attached to the operator's waist via two belt clips (see Figure 5),
- When the webbing strap is used, the Control Bag can hang around the operator's neck, or be worn over the shoulder, or
- It can be attached to the Upper Shaft via a locking bracket located beneath the handle.

a. If the Control Bag is to be used to carry the Control Box (either worn on the belt or as a shoulder pack), position the grommet (G1) (located between the two curled sections of the coil cable) into the keyway beneath the locking lever at the top end of the Upper Shaft. The plug end of the coil cable is then connected to the socket marked 'Coil' on the Control Box (see the diagrams in section 4.3 for more details on the positioning of the coil cable).

Place the Control Box into the bag with the main Control Panel facing upward and toward you. The 'Coil' and 'Power' sockets should face the bottom of the bag. Once the box is in the bag you can attach the Coil and Power cables to the sockets through cutouts in the underside of the bag. The plug end of the coil cable is connected to the 'Coil' socket, and the Military plug on the end of the battery cable is connected to the 'Power' socket.

b. If the Control Box is to be mounted on the Upper Shaft, the mounting block on the Control Box is pushed into the locking bracket immediately beneath the Handle (see Step (1) then (2) on Figure 6). Rectangular lugs on the mounting block snap into rectangular holes on the sides of the locking bracket to hold the Control Box loosely in position. To lock the bracket, turn the locking pin at the front end of the bracket clockwise until it stops (Step (3)). The plug end of the coil cable is then connected to the 'Coil' socket on the Control Box and the Military plug on the end of the battery cable is connected to the 'Power' socket.

c. To remove the Control Box when it is attached to the underside of the shaft it is necessary to release the locking pin and disengage the mounting block on the Control Box from the locking bracket beneath the shaft.
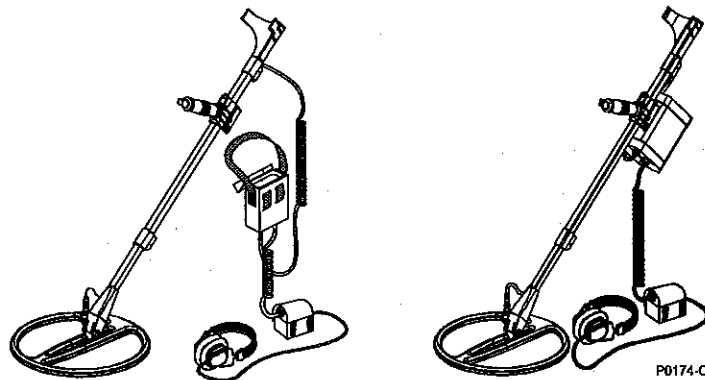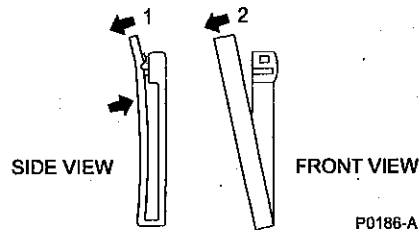
Figure 4 - Control Box Configurations
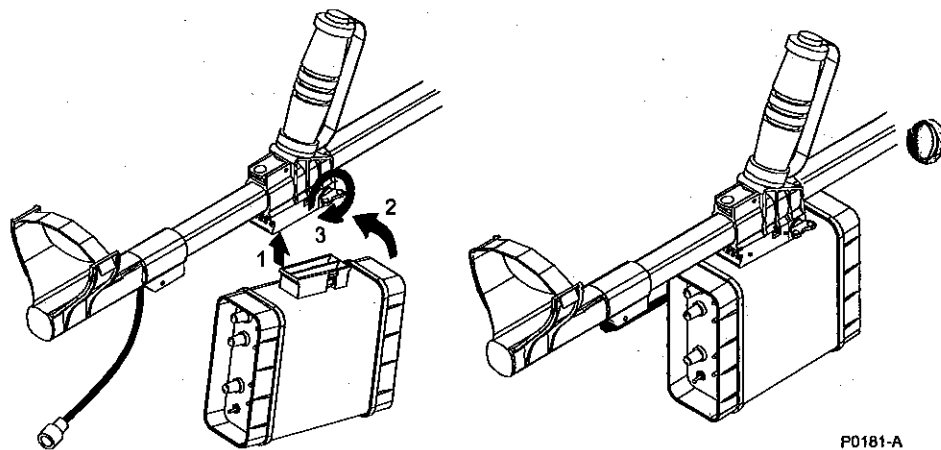

Figure 5 - Relic Hawk belt clips

Figure 6 - Mounting the Control Box on the Shaft

4.   Unpacking and Assembly

a.   Open the Backpack and check all components (as listed in section 3) are present and undamaged.

b.   Remove the components and assemble the Detector in the following sequence.

4.1 Shaft Assembly (see Figure 3)

a.   Remove the Upper Shaft (including the Handle) and Lower Shaft (including the Coil) from their restraints in the Backpack.

b.   The two shaft assemblies are connected by the coil cable that runs through the inside of these hollow components.

c.   Release the locking lever (A) on the bottom end of the Upper Shaft, position the small end of the Lower Shaft inside the Upper Shaft and clamp these components together using the locking lever (A).

d.   Before attaching the Armrest, decide how the Control Box is to be positioned (see the diagrams in section 4.3 for more details on the correct positioning of the coil cable). Release the locking lever (B) at the top end of the Upper Shaft (the locking lever is part of an assembly known as a 'camlock'). Position the selected grommet (G) on the coil cable through the keyway in the upper locking lever, place the end of the armrest inside the Upper Shaft and clamp these two components together with the locking lever.

NOTE:
It is not necessary to remove the cable from the shafts during normal use and storage. However, if the cable is removed from the shafts, twisting the coiled section of the cable to 'tighten' the coil will make reinsertion easier. This technique simplifies shaft reassembly.

To repack the Detector in its Backpack, replace the components in the following sequence:
- Coil, attached to the Lower Shaft
- Upper Shaft, with Handle attached
- Armrest (slides over the two shafts), and
- Control Box.
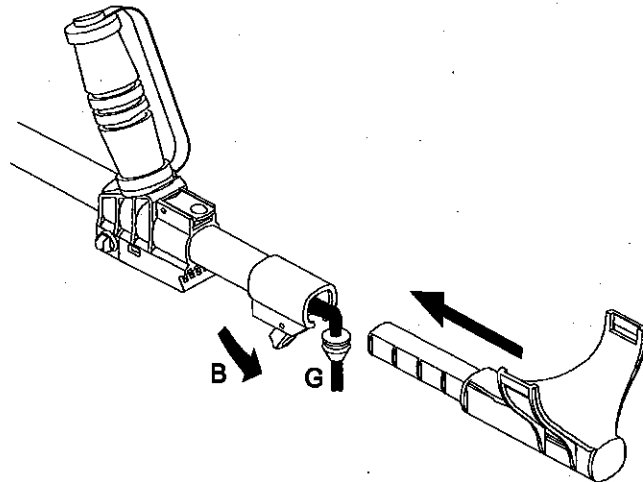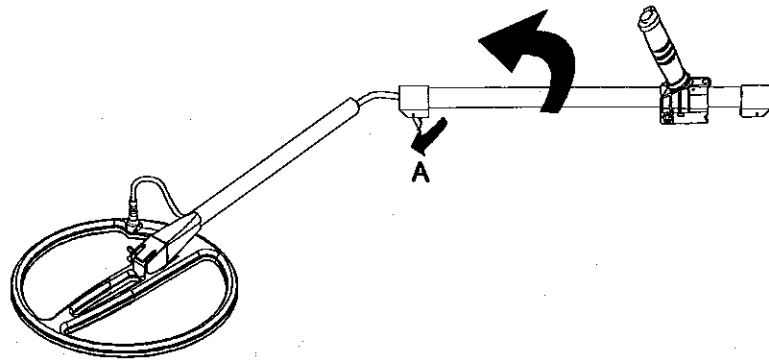
P0183-A

Figure 3 - The Relic Hawk Shaft Assembly

3. Parts List

The box in which your Relic Hawk detector is shipped should contain the following items. When you first receive your detector, please check that all of these items are in the box:

Item No.   Description

1.   15" Coil with Lower Shaft attached
2.   Rechargeable Lead Acid Battery (in Belt Pouch)
3.   Mains Lead for Battery Charger
4.   Battery Cable
5.   Armrest
6.   Upper Shaft with Handle Attached
7.   Control Box (in Control Bag)
8.   Headphones
9.   Battery Charger
10.   Instruction Manual
11.   Field Guide
12.   Backpack

NOTE:
A spare strap is attached to the base of the Backpack to secure a battery cable, spare battery or other accessory.
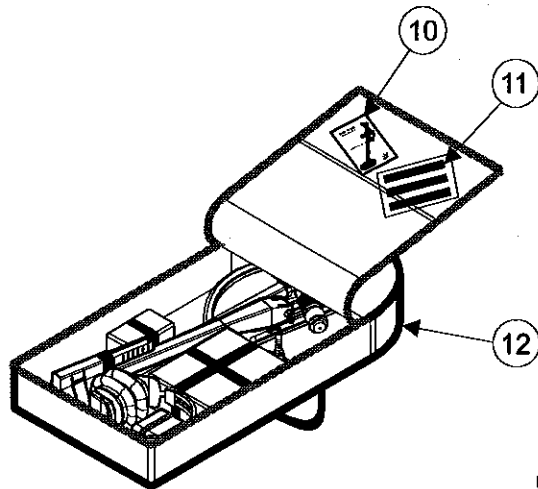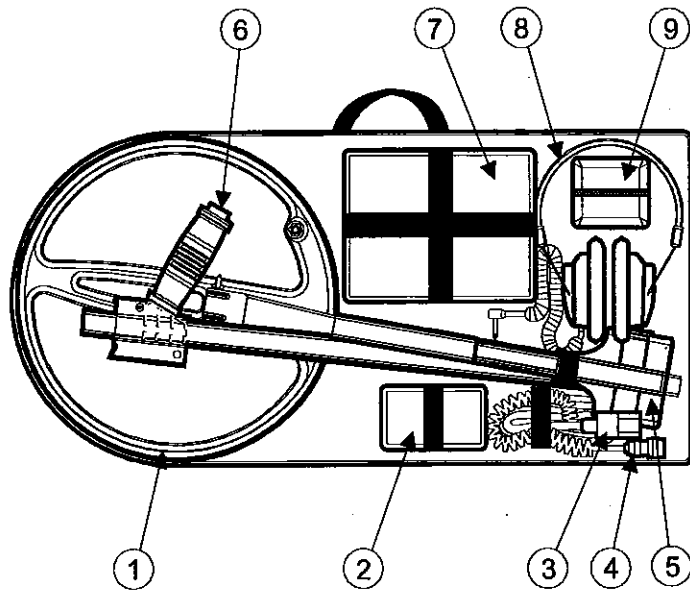
Figure 2 – Relic Hawk Backpack (incl. packing layout)

P0184-B

2. Specifications

These specifications are subject to change without notice.

| Length	Packed length		810 mm
	Operating length	(min.)	1200 mm
		(max.)	1450 mm
Weight	Control Box		760 g
	Complete unit (excluding battery)		2.6 kg
Batteries	Rechargeable Lead Acid		
	Battery Pack		12V,1.2Ah/20hr ≈
Coil	Relic Hawk 15" – 'Double D' Widescan (Waterproof) with Skid Plate		
Headphones	Impedance		8 Ω
	Jack - Stereo / Mono		¼"
Frequency	Transmission, sine		5 kHz
Ground Balance	Fixed and Manual Balance Adjust		
Search Modes	Discriminate, All Metal/Motion, Pinpoint/Non Motion		
Controls	Power (On / Off)		Switch 2 Pos.
	Discriminate		Control 1 turn
	All Metal / Discriminate		Switch 2 Pos.
	Balance (Fixed / Manual)		Switch 2 Pos.
	Balance (Manual Balance Adjust)		Control 10 turns
	Sensitivity		Control 1 turn
	Op. Mode (S/M/L)		Switch 3 Pos.
	Pinpoint		Switch 3 Pos.
Charger	110/240V Mains charger for rechargeable battery		
Warranty	Control Box		2 years
	Coil		1 year
Patents	Patents apply		
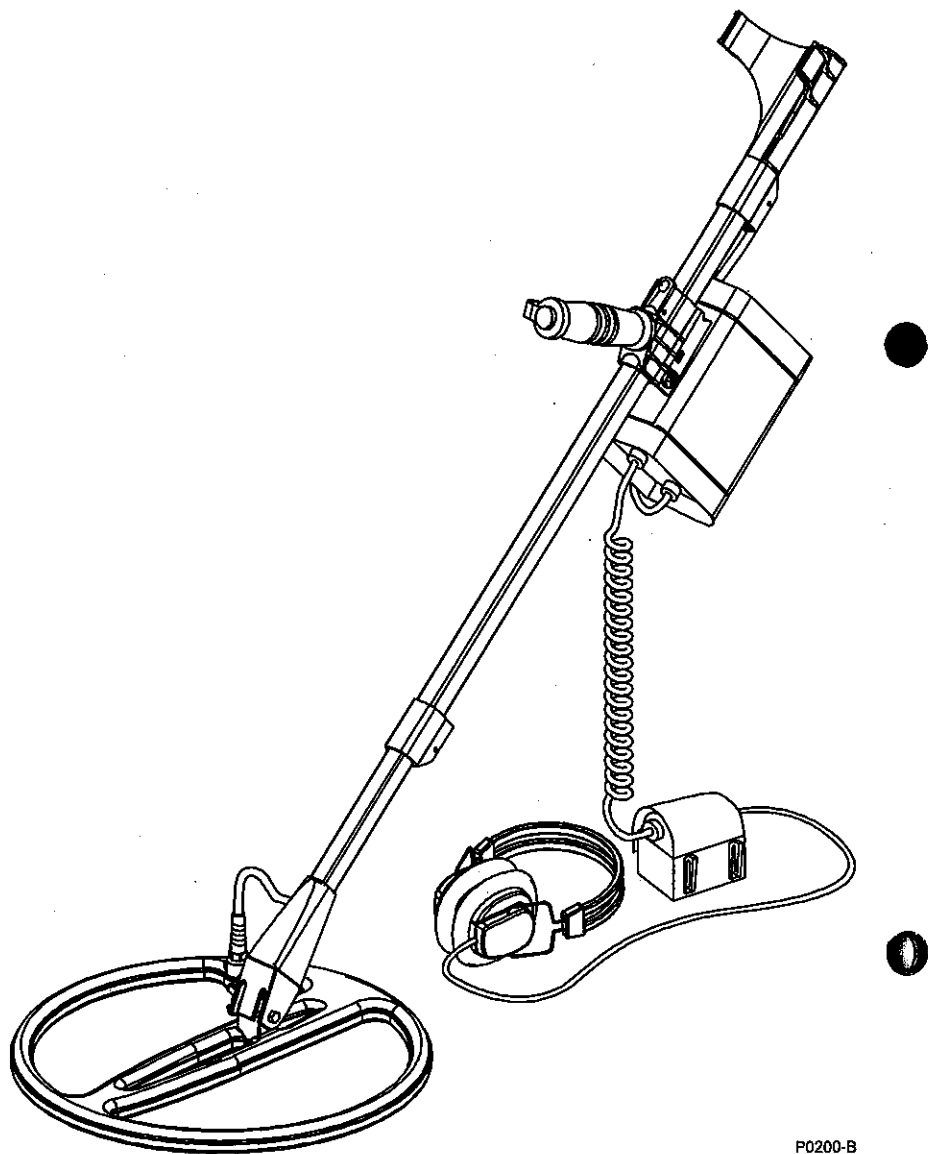
Figure 1 – The Relic Hawk Detector

P0200-B

4

For example, if you are hunting for fine gold rings you may decide to accept pull tabs but eliminate iron, steel and foil.

If you do not want to dig old bottle caps but dig brass buttons or copper coins, the **Discriminate** control is set higher, but most fine gold rings will also be ignored.

How much trash are you willing to dig up to get a chosen target? If your preference is none, then turn your **Discriminate** control to the fully clockwise position and your trash ratio will be very low, but you will also not find most gold rings and nickels. You will, however, find silver and larger gold coins. Always remember that another person detecting behind you who is willing to dig a little more trash will find these items that you have passed over.

All Metal/Motion

P0211-A
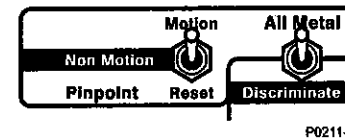
When the Relic Hawk is set to **All Metal** mode, the Motion/Non Motion switch can be used. The **Non Motion** setting allows a signal to be heard whenthe coil is held, motionless over a target (see the next section for an explanation of Motion/Non Motion).

When the Relic Hawk is set to **Discriminate mode**, the Motion/Non Motion switch has no effect. The Relic Hawk will always behave as a motion detector (i.e. as if the Motion/Non-motion switch were set to **Motion**).

Pinpoint/Non Motion

The **Pinpoint/Non Motion** feature works only while the Relic Hawk is in All Metal mode. In this mode the **Discriminate** control has no effect and the Relic Hawk will respond in the same way to all types of metal.

In **Pinpoint/Non Motion** mode the Coil need not be moving to maintain a target sound. If the Coil is held stationary over a target, the sound will remain. This is ideal for target pinpointing.

The advantage of this feature is that it enables you to more accurately pinpoint the location of a target before digging the hole. This will save you time in recovering the target and is also very 'environmentally friendly'.

When used in conjunction with the **Reset** control the accuracy of pinpointing can be increased dramatically.

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FCC Compliance

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

EC Conformity

NOTE:

This product complies with the essential requirements
of EMC Directive 89/336/EEC

Minelab Service Repair Form

Today's Date: ....

Detector Model: .... Serial No.: ....

Purchased From: ....

Purchase Date: ....

Faulty Part(s): ....

....

Description of Fault: ....

....

....

....

....

Owner's Name: ....

Address: ....

....

Phone: Day ( ) .... Home ( ) ....

Fax: ( ) .... Email: ....

NOTES