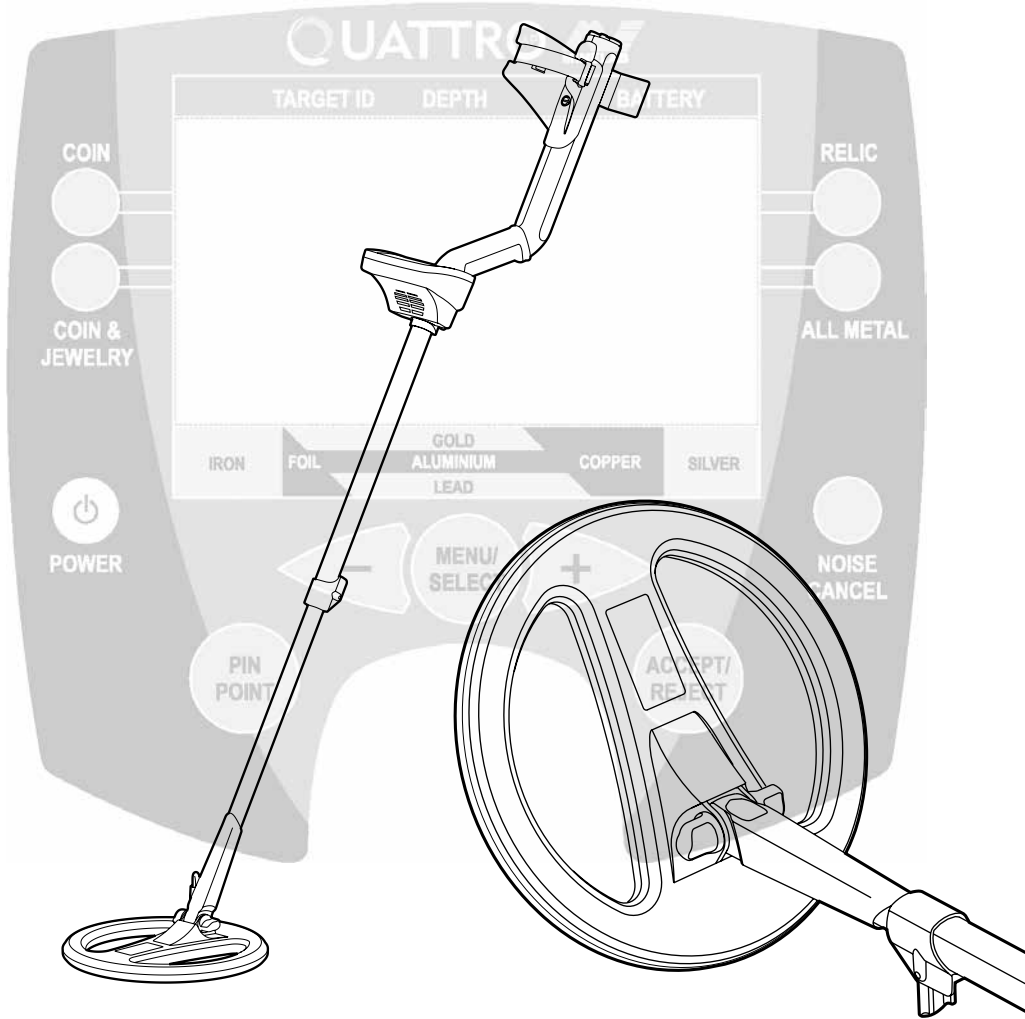




QUATTRO^{MP}



User Manual

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Disclaimer

The Minelab metal detector discussed in this operating manual has been expressly designed and manufactured as a quality hobbyist metal detector and is recommended for use in coin, treasure and general metal detection in non-hazardous environments. This metal detector has not been designed for use as a mine detector or as a live munitions detection tool.

Please read the operating manual prior to using your new detector.

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1.1. Multi-frequency-Full Band Spectrum (FBS) Technology

When developing the Quattro MP, Minelab's scientists looked at developing a truly easy to use yet extremely powerful multi-purpose metal detector. Discussions with seasoned treasure hunters from around the world identified a number of possible enhancements for operators. Features of the Quattro MP detector include:

- Remarkable detection depth
- Accurate identification of targets at great depths
- Enhanced detection of desired targets among iron "trash"
- Enhanced detection capabilities when searching salt-water beaches

Most detectors on the market operate on a single (or dual) frequency, ranging up to 70 kilohertz (kHz). Although this technology has served the industry well for years, Minelab's scientists found that a frequency that worked well in one area would often offer only marginal performance when used in another location. Ground mineralization, trash content, and target size all had an effect on how effective a detector transmitting a single or dual frequency would operate.

Full Band Spectrum technology combined with a powerful new microprocessor gives you:

1.1.1. Greater detecting depth

- Consistent sensitivity over a wide range of targets
- Circuitry that reduces interference from electromagnetic sources
- More accurate identification of target characteristics

The Full Band Spectrum (FBS) circuit automatically transmits multiple frequencies ranging from 1.5 kHz to 100 kHz simultaneously. This increased frequency range means that the signal received from the detector coil is analyzed from a wide range of responses. This information is relayed to the operator via the speaker or headphones and the control panel's display as an audio or visual target response.

Put simply, Minelab's unique FBS technology means deeper, more sensitive, and more accurate detecting.

1.1.2. Ground Compensation

The Quattro MP uses a sophisticated approach to the elimination of signals caused by ground mineralization. Unlike other forms of ground balancing that require constant readjustment, FBS technology uses advanced digital filtering to eliminate the influence of ground signals.

1.1.3. Operating Frequencies

A metal detector's electromagnetic operating frequencies are measured in kiloHertz (kHz). Low signal frequencies (e.g. 1.5 kHz) penetrate deepest, but sensitivity to smaller targets is low. On the other hand, higher frequencies (e.g. 100 kHz) have a more shallow depth of penetration but high sensitivity to small targets.

The Quattro MP's multiple-frequency operation provides the advantage of both.

1.2. Quattro MP Technical Specifications

Length Unextended	43 inches (1100mm)
Length Extended	55 inches (1358mm)
Shipping Weight	3 lb 7 oz (1700g) excluding batteries
Coil	10.5 inch (264mm)
Audio Output	Internal speaker or headphones
Headphone Input	1/4 inch (6.3mm) stereo jack
Transmission	Full Band Spectrum. Simultaneous multiple frequency transmission ranging from 1.5kHz –100kHz
Ground Rejection	Ground compensation – advanced digital filtering
Discrimination	Linear –10 to +40 discrimination options
Visual Display	64 x 128 pixel liquid crystal display (LCD)
Detect Modes	4 (Coin; Coin/Jewelry; Relic; All Metal)
Pinpoint	Yes - Visual and audio
Personal Modes	4 programmable/save
Automatic Noise Cancel (Scanning)	Yes
Trash Density Settings	2 (High/Low)
Target Depth Meter	Yes (0-12 or more inches)
Battery Meter	Yes (with audible low battery warning)
Batteries	1600 or 1800 mAh NiMH rechargeable battery pack (Varies by country/region) or 12V Alkaline pack. (Cells not included).
Patents	US 4890064, US 5537041, US 5506506
Optional Accessories	Alkaline or NiMH battery pack Mains charger Car charger Control Box Cover Coil Cover Carry Bag 8 inch (200mm) "Double D" waterproof Coil

2. Assembling Your Detector

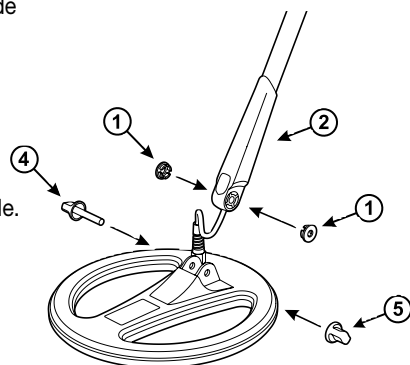
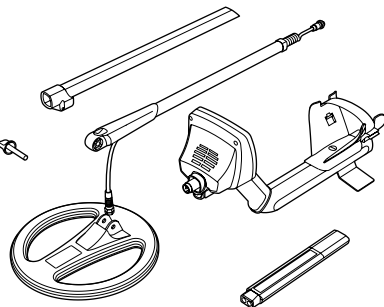
To assemble your Minelab Quattro MP, follow steps 1 to 4 below.

Step 1 - Connecting the Search Coil

To attach the search coil to the lower shaft:

1. Plug the two rubber washers (1) into the holes on either side of the coil yoke (2).
2. Place the search coil (3) on a flat surface with the front of the coil facing away from you, and check that the open side of the yoke is facing the ground.
3. Slide the yoke into the yoke bracket on top of the coil.
4. Insert plastic bolt (4) through the search coil's yoke bracket and the coil yoke. Fasten with the yoke nut (5) provided, being careful not to damage the thread of the nut by over-tightening. This may need to be loosened to adjust the coil to a comfortable detecting angle.

Caution: DO NOT attempt to disconnect the coil cable where it enters the search coil itself as this cable is direct wired into the coil and is not dismountable. Any attempt to disconnect this cable will void your coil warranty.

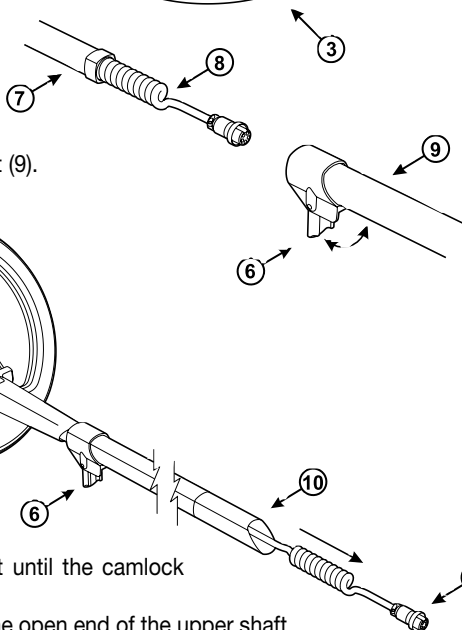


Step 2 - Shaft Assembly

1. Release the shaft camlock lever (6) before inserting the lower shaft (7).
2. Feed the coil cable (8), which is inside the lower shaft all the way through the inside of the upper shaft (9). Make sure the longer side of the bevelled shaft (10) is at the back of the control box.

Note: When exchanging the standard coil with an accessory coil like the 8", it may be easier to pull the cable through the lower shaft using a length of string or cord. Once this is completed you should be able to see approximately 4 inches (100mm) of cable between the coil yoke and the search coil. This is the slack necessary to allow adjustment to the angle of the search coil.

3. Slide the lower shaft entirely into the upper shaft until the camlock rests against the yoke.
4. Pull the coil cable's metal connector (11) through the open end of the upper shaft until it 'dangles' from the opening.



Step 3 - Connecting the Shaft Assembly

To connect the shaft assembly to the handle assembly:

5. Release the control box camlock lever (12) to the open position.

6. Push the coil cable connector into the socket (13) underneath the handle assembly control box.

Ensure the connector's threaded bracelet is firmly secured.

7. Extend the lower shaft from the upper shaft by approximately 6 inches (15cm) to prevent the coil cable 'bunching'.

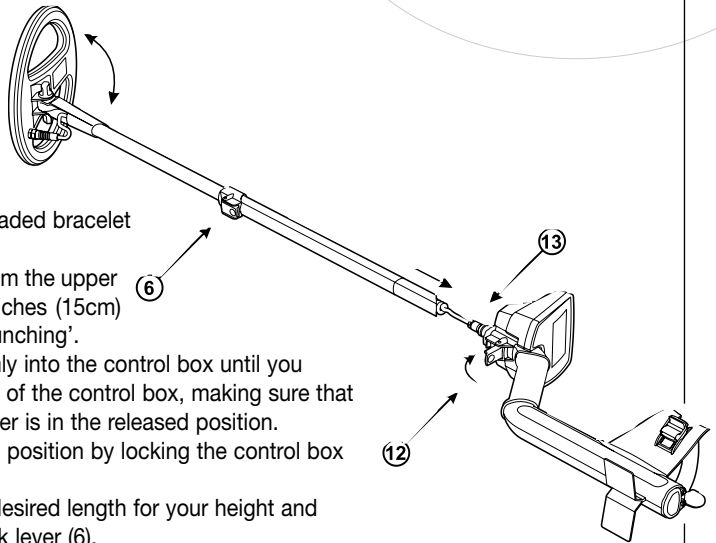
8. Push the upper shaft firmly into the control box until you feel it has reached the back of the control box, making sure that the control box camlock lever is in the released position.

9. Secure the upper shaft in position by locking the control box camlock (12).

10. Adjust the shaft to the desired length for your height and then lock with shaft camlock lever (6).

11. Tilt the search coil to the most comfortable angle, keeping in mind it will need to be parallel to the ground during detecting.

Note: To avoid difficulty securing the control box camlock lever (step 9), ensure the shaft camlock is released to allow greater shaft movement.



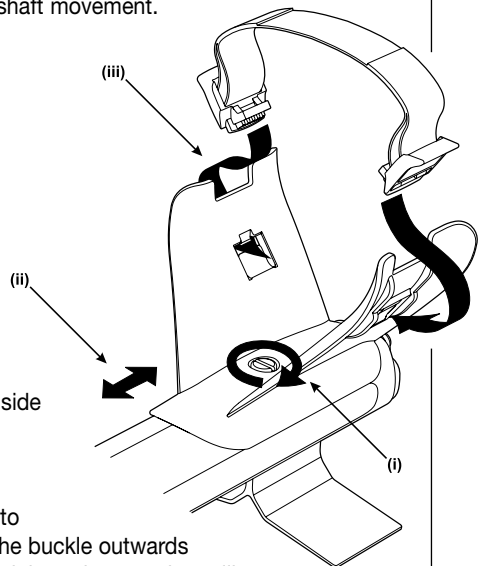
Step 4 - Armrest Assembly

To adjust the armrest assembly:

12. Loosen the screw (i) in the center of the armrest (turning counter-clockwise).

13. Place your arm into position and slide the armrest back (ii) so that it is comfortable under your elbow.

14. Tighten screw (clockwise) to lock into position.



2.1.1. Fitting the armrest strap

15. Thread the strap through the buckle openings (iii).

16. Clip both buckles into the openings at each outer side of the armrest.

17. Test by sliding your arm underneath the strap and resting your forearm on the armrest.

18. Loosen strap by tilting the edge of the buckle out to release it from the armrest. Undo the Velcro and pull the buckle outwards (towards yourself.) Clip the buckle back into place and tighten the strap by pulling up.

The next time you use your detector, all you will need to do is click the buckle back into the armrest.

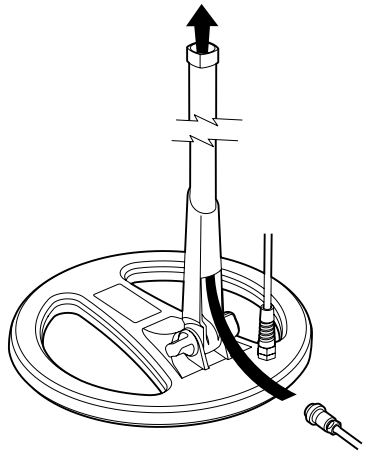
3. Search Coils

The function of the search coil is to transmit electromagnetic signals into the ground, and receive the response.

The Quattro MP is supplied with a 10.5 inch open web "Double D" search coil. Double D is the common term used to describe the two internal coil windings which overlap each other, producing a blade like search pattern. The advantages of Double D coils are very good ground cancelling abilities, and very good ground coverage, as the coil has an even detection range along its entire length. Because of this, the operator is only required to slightly overlap each sweep, to ensure all targets at maximum depth are recovered.

The 10.5" coil is excellent for general searching. There is an optional 8" coil available that provides greater sensitivity to small targets, and improved performance in high trash areas.

Both coils are epoxy filled, so they can be submersed in water, but care must be taken to ensure the control box remains dry.



To replace the search coil:

1. Undo control box camlock and disconnect the coil cable from the control box.
2. Separate the two shaft assemblies by releasing the shaft camlock and sliding the lower shaft out.
3. Loosen the plastic nut and remove the bolt from the yoke bracket.
4. Gently pull the coil cable from inside the yoke/lower shaft.
5. Carefully feed the new coil cable into the yoke and lower shaft. Continue to feed the cable into the shaft until the connector is visible at the top of the shaft.

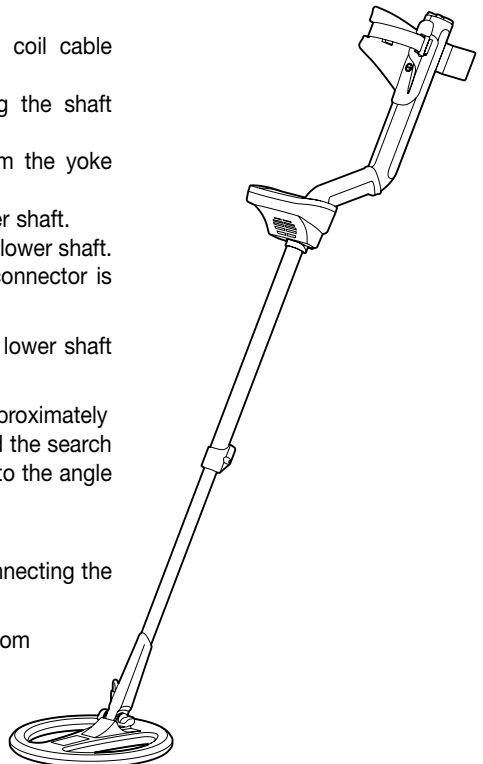
Note: It may be easier to pull the cable through the lower shaft using a length of string or cord.

Once this is completed you should be able to see approximately 4 inches (100mm) of cable between the coil yoke and the search coil. This is the slack necessary to allow adjustment to the angle of the search coil.

6. Re-attach the yoke and the search coil.
7. Reconnect cable to control box (as directed in Connecting the shaft assembly, page 7).

Caution: DO NOT attempt to remove the coil cable from the search coil. Any attempt to disconnect will void your coil warranty.

Note: For ease of changing coils, it is advised that each coil be fitted to its own lower shaft.



4. Batteries

The Minelab Quattro MP has both Alkaline and NiMH battery packs available as either standard or accessory items.

The NiMH 1600 mAh battery pack will power the detector for up to 12.5 hours of constant use and the NiMH 1800 mAh battery pack for 14 hours.

Eight good quality, fresh, 1.5V AA alkaline batteries will power the Quattro MP for up to 14 hours of constant use.

Unlike Nickel Cadmium batteries, the NiMH battery pack DOES NOT have to be discharged before recharging. Whenever the detector has been unused for a lengthy period, recharge the battery pack to ensure full performance. There is no limit to the time the battery pack can be left on charge.

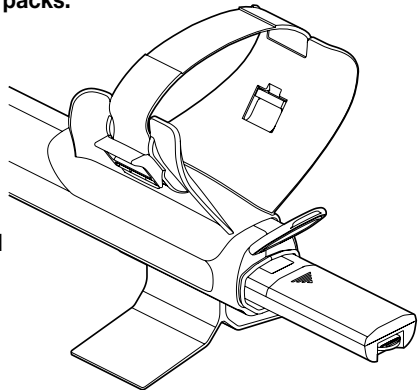
Removal instructions apply to both types of battery packs.

4.1. Removal/Replacement of Battery Pack

To Remove the Battery Pack:

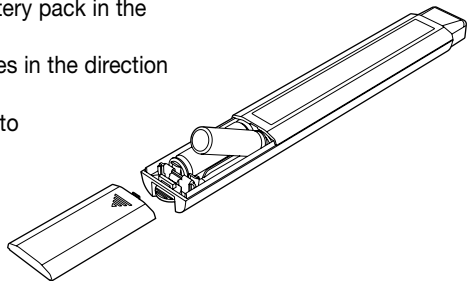
1. Turn Detector off.
2. Lift the rubber cap of the battery handle assembly.
3. Raise the yellow tab. This releases the spring-loaded battery pack.
4. Remove battery pack from handle assembly.

To Replace the Battery Pack, slide the pack into the compartment until it 'clicks' into place.



4.2. Inserting Alkaline Batteries

1. Slide back the sliding door of the alkaline battery pack in the direction of the arrow.
2. Install 8 good quality fresh AA alkaline batteries in the direction of the arrows located inside the battery pack
3. Close the sliding battery door and re-install into battery handle compartment.



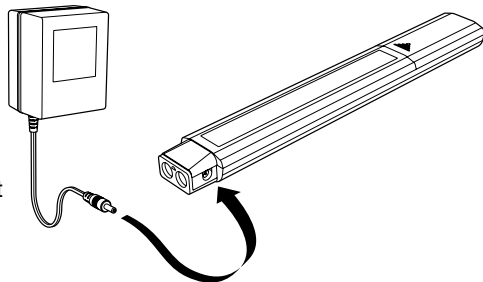
4.3. Charging the NiMH Battery Pack

To charge your battery, only use the Minelab charger designed for your NiMH battery. Using other chargers may damage your battery and will void the product warranty.

Wall/Mains Charger

The NiMH battery pack is sold in the discharged condition. It is necessary to charge it before operating the detector.

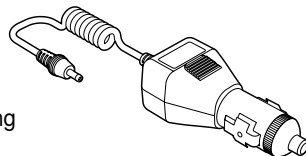
1. Plug the mains charger into the wall socket.
2. Insert the mains charger plug into the socket at the tapered end of the battery pack. Leave for about 18 hours to fully charge.
3. Remove the battery charger plug from the battery pack, ready for use.



Note: You may find that the first couple of times you charge your battery, you may not achieve the full hours of operation. The batteries will reach their full capacity after several recharge cycles.

Car Charger

4. Insert the car charger plug into the cigarette lighter socket of your vehicle.
5. Insert the car charger plug into the socket at the tapered end of the battery pack. A small light on the car charger illuminates indicating that the car charger is in operation.
6. Leave the battery to charge for about 18 hours for a complete charge. If the battery was not completely discharged, the charging time will be shorter.



The car charger is provided with a 3AG 2Amp fast fuse for short circuit protection, which can be accessed by unscrewing the tip of the cigarette lighter plug.

Note: Charging the battery beyond full capacity will not damage the NiMH battery pack, but it could gradually discharge your car battery.

Safety Tip: Do not attempt to disassemble the NiMH battery pack. If disposing of pack, do not incinerate. Contact your local authorities to enquire about disposal or recycling facilities.

4.4. Battery Indicator

A battery indicator is displayed on the Quattro MP detect screen. The battery will be fully shaded at maximum battery charge. When this shaded area decreases to the left hand side, the detector will begin to emit a low battery warning sound. When this low battery warning is heard, there will be only a few minutes of life left in the batteries.

It is recommended that the batteries be replaced or recharged as soon as possible to avoid missing any targets. When the battery symbol is completely un-shaded and flashing, the detector will sound an alarm before displaying the message 'FLAT BATTERY SHUTDOWN' and turning itself off.



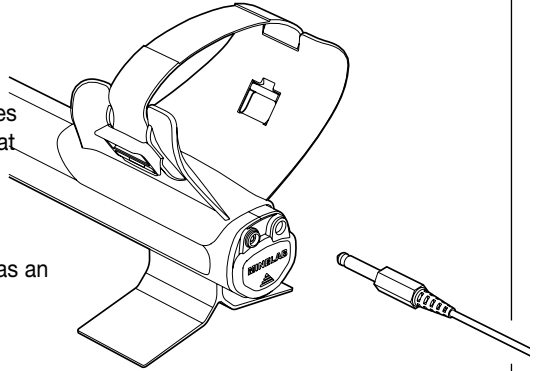
To start detecting again, remove the battery and replace with a fully charged battery.

5. Headphones

The use of headphones while treasure hunting can reduce the distraction of external noise and allow the operator to hear softer target signals. While the use of headphones is not necessary during operation, the reduced power demands of the headphones will extend battery life.

The 1/4" socket for the headphone plug is located in the top right of the rubber seal at the top of the handle assembly. The headphones may be plugged into this socket or unplugged at any stage of operation.

We would recommend a comfortable feeling headphone with a high (32+) ohm rating. Minelab's Custom Koss headphones available as an accessory are rated at 100 ohm.



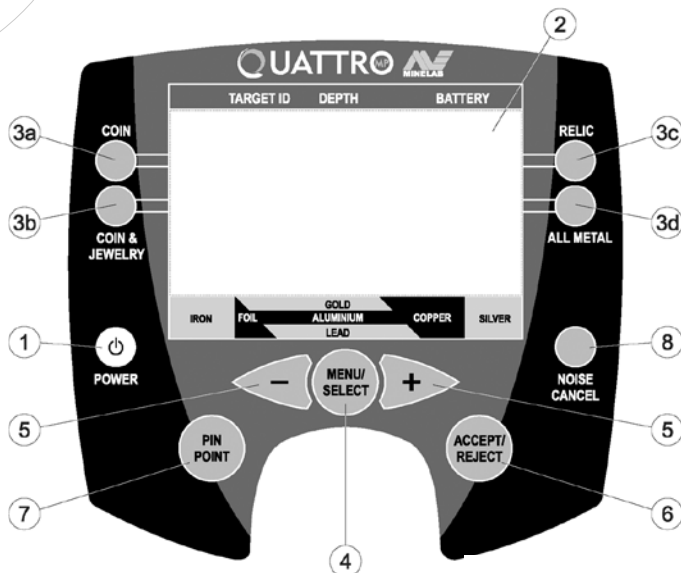
6. quick start

6. Quick Start

- Simply turn on the Quattro MP by pressing the POWER button.
- On the initial start-up, your detector will default to the factory COIN mode.
- To select a different factory pre-set Detect mode, press and release the appropriate mode button.
- The  icon next to the corresponding preset mode, indicates that a factory preset mode has been selected. The detector will apply the factory determined discrimination pattern, and audio response for that mode.
- Press the NOISE CANCEL button and wait the 20 seconds it takes to select the most stable channel.
- Once the sound sequence is completed, you can start detecting!

7. Control Panel

1. Power (On/Off)
2. Display Meter
3. Detect Modes
 - a. Coin Mode
 - b. Coin & Jewelry Mode
 - c. Relic Mode
 - d. All Metal Mode
4. Menu/Select
5. -/+ (Minus / Plus)
6. Accept/Reject
7. Pinpoint
8. Noise Cancel



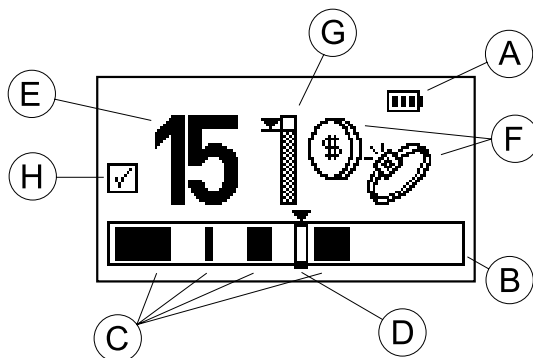
7.1. Power (On/Off)

Press and release the POWER button (1) to turn your detector on/off. On first time start-up, your detector will default to the COIN mode and you can begin detecting. When you turn your detector on following your first time use, the detector will start with the previous setting, from when the detector was last used.

To start the detector in the 'Factory Preset' mode, (recommended in your first few outings) press and hold the POWER button (approximately 5 seconds), until the Factory Preset message is displayed on the screen..

7.2. Display Meter

- A. Battery Power Icon
- B. Graphic Identification Bar
- C. Discrimination Pattern
- D. Target Cursor
- E. Target ID Number
- F. Target Icons
- G. Depth Gauge
- H. Mode Indicator



7.2.1. Battery Power icon

At the top right-hand corner of the screen is an icon of a battery (A). This shows the level of stored power in your battery. A fully charged battery shows the icon as fully shaded. As the power in the battery is used the shaded area depletes until a fully discharged battery is un-shaded.

7.2.2. Graphic Identification Bar

Located across the base of the screen is a horizontal bar graph (B) and serves a number of purposes. It shows the operator the discrimination pattern (C), which has been set.

> **Dark bars** (C) show the areas of rejection. This means certain unwanted target types will be rejected (or ignored) by the detector.

> **The Light bars** show areas of acceptance. This means the detector will recognize and signal the user, when certain desirable targets are found.

> When a target is detected, a triangular cursor (D) will flash three times above a hollow bar, the location of which corresponds to the ID number (E) (see below) shown in the meter.

7.2.3. ID Number

When a target is detected while searching, a number (E) appears on the left side of the meter identifying the characteristics of the target.

ID numbers range from -10 through to +40 and are the detectors numerical identification of the type of target that has been located. Different target types will bring up different numbers.

Tip: You can practice getting familiar with your Quattro MP by selecting different coins and jewelry and passing each one over the coil a number of times and noting the different numbers each type will produce.

Note: These same ID numbers can be used by the operator to make alterations to the discrimination pattern (see 9.1.2) and will also be useful in recognizing common targets.

7.2.4. Target Icons

Similar to the ID numbers, the Quattro MP will also indicate the likely target type located, using a select number of generic icons (F). At times the meter may display two icons at once, indicating that the characteristics of the target located is similar to that of a number of targets.

Note: Target icons only appear in the COIN and COIN/JEWELRY modes.

7.2.5. Depth Reading

Located in the center of the meter is a vertical bar (G), which predicts the likely depth of the target. On shallow targets, the cursor is very high or close to the top, and the bar becomes almost fully shaded, whereas for deep targets the cursor is quite close to the bottom, and the bar is only partially filled.

Default
State



Shallow
Object



Deep
Object



The full depth of the bar is equal to 12" plus, meaning that the target will be greater than 12" deep. If the bar is only half shaded, the depth of the target is likely to be about 6" deep.

Information on the target's depth is very useful if detecting in sensitive areas like sports grounds or parks. By using the depth meter you can concentrate on a specific depth of the soil, which can improve your success rate.

7.2.6. Overload

If the target is too big or too close to the coil to be classified, the word OVERLOAD will appear on the display screen. This is accompanied by a rapid continuous buzzing sound. Detect the target again by lifting the coil slightly higher and you will often get an accurate response.

7.3. Detect Modes

There are four factory pre-set 'Detect' modes and four save modes available for searching. Each mode is customized with the optimum settings, to allow you to find the types of objects described by the detect mode name. The four detect modes are:

- Coin (3a)
- Coin/Jewelry (3b)
- Relic (3c)
- All Metal (3d)

In some locations, there may be a specific pattern to the type of targets found in the area. For example, an old house or building site may have certain areas where a certain junk type has been concentrated, or other areas where it is more likely coins have been lost. On the beach, foil and modern coins are more plentiful on the dry sand, whereas less junk and more gold jewelry are located on the wet sand.

Due to the different types of targets you may expect in certain areas, you will often prefer a different discrimination pattern for each area. With the Minelab Quattro MP, you have the choice to search in one of the factory pre-set discrimination patterns, or you can create and save your own patterns to suit the different areas you commonly search.

Start – Up

On the initial start-up, your detector will default to the factory COIN Mode.

To select a different factory pre-set Detect mode, press and release the appropriate mode button.

The  icon (H) next to the corresponding preset mode, indicates that a factory preset mode has been selected. The detector will apply the factory determined discrimination pattern, and audio response for that mode.

QUICK START: Simply turn on the Quattro MP by pressing the POWER button (1), select one of the four preset modes (3a; b; c; or d), press the NOISE CANCEL (8) and you can commence detecting straight away.

7.3.1. Coin Mode

This mode has an "accept/reject" or "discrimination" pattern that is best for ignoring a variety of junk targets, while still being able to detect most coins. One of the features of the Quattro MP is its ability to vary the tone on the target signal. In COIN mode the Audio signal/tone will vary according to the level of conductivity of the detected metal. Eg: Highly conductive metals like silver, gold and brass will produce a high pitch signal. Lower conductive items like foil, nickel, and low carat jewelry will produce a lower tone. (see Section 10 : Detector Sounds).

The reject settings for this mode are (-10 to +2) and (+6 to +8).

Use: This mode is best used in high trash areas such as modern parks, sporting grounds, playgrounds, busy beaches etc. and, will ignore a large percentage of foil and ferrous trash.

Note: Some modern coins are produced with nickel or steel cores and should be considered in certain regional applications. These coins may not be detected in COIN Mode.

7.3.2. Coin/Jewelry

This mode has a slightly reduced level of "rejection" or "discrimination" to enable you to locate non-ferrous (iron) coins, as well as gold jewelry. It allows some coins with a high ferrous content or low carat jewelry, that may have been discriminated in COIN mode to be detected, however aluminium foil will also be detected. The audio signal response will vary depending on conductivity in the same fashion as the COIN mode.

The pre-set reject settings for this mode are (-10 to -1)

Tip: **Low tone = Low Conductivity content. High tone = High Conductivity content.**

Use: The most common use for this mode is for those who are prepared to dig some foil and pull tabs to find all gold jewelry, ideal for beaches, old parks, abandoned house sites, camps etc.

7.3.3. Relic

The RELIC mode has an even lower level of "rejection" or "discrimination," as many rare and valuable relics can have very low conductivity and/or ferrous content. The Audio response in RELIC mode is different to the COIN, and COIN/JEWELRY modes in that it uses the ferrous (iron) content to determine the pitch of signal.

Note: Depending on which mode you select, a beep and icon will appear briefly which will indicate which mode the audio response is in. This is shown as:



or



In this RELIC mode, a target with a high ferrous content will produce a low tone and objects with a low ferrous content give a high tone.

The pre-set "reject" or "discrimination" settings for this mode are (-10 to -3). Because of this, **beach hunters** who specifically target gold jewelry may also prefer to use the RELIC mode.

The other difference with the RELIC mode is that the pictorial on-screen **icons are not shown**, as operators using this mode are more likely to interpret signals using the ID numbers and audio response only.

7.3.4. All Metal

ALL METAL mode is similar to the RELIC mode, the difference being that no discrimination is used.

continued page 16

The ALL METAL mode's audio response also uses the object's ferrous characteristics for interpreting the signal tones like in the RELIC Mode.

Use: This is the best mode to use when a maximum target recovery rate is important, like in some competition hunts or when the user is looking for any and all metals.

7.4. Menu/Select +/-

The MENU/SELECT button (4) and arrow buttons (5) are the main controls you will use to navigate the menu and make changes.

Refer to Chapter 8 – Menu Setting

7.5. Accept/Reject

The ACCEPT/REJECT button (6) allows the operator to adjust the discrimination pattern to accept or reject any of 51 segments shown on the detect screen. This allows you to build a custom discrimination pattern that will ignore signals from unwanted targets and still accept signals from desirable targets.

7.6. Pinpoint

The PINPOINT button (7) is used to accurately locate the true position of the target prior to digging.



To pinpoint a target:

When the PINPOINT button is pressed, the target icons on the detect screen will be replaced by a locator bar graph as shown left: In PINPOINT mode, your detector will produce a clear 'beep' as the search coil passes directly over the target. The locator bar graph in

the Main screen will also fill out on the screen as the coil passes directly over the target.

There is not a lot of difference between the signal produced by shallow targets and those by deeper targets, so it is important to note the approximate depth from the depth indicator, before switching to PINPOINT. To accurately determine where to dig, mark a line in the ground where the center of your coil is when the beep occurs and the **majority of the bars are shaded**. Pass over the target a few times for accuracy.

Repeat this process at 90 degrees to create a cross-hair point on the ground.

The PINPOINT button must be pressed again to return to normal detect mode.

Points to remember:

- When in PINPOINT the Quattro MP does not discriminate between metal targets.
- Always press the PINPOINT button again when returning to search (do not search in PINPOINT mode)
- After pinpointing, and laying the detector down to dig the target, it is common for the detector to give an intermittent signal. Switching out of pinpoint when digging, then returning to PINPOINT again if the location of the target needs to be confirmed can overcome this.
- Do not press the PINPOINT button when directly over a target as this may cause a constant signal.

7.7. Noise Cancel

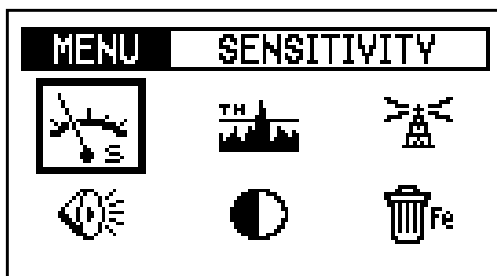
NOISE CANCEL is the automatic function on the Quattro MP where the most stable search channel is found for the environment you are searching in. It is important to always engage the NOISE CANCEL prior to making changes to other menu selections.

8. Menu settings

The Quattro MP has the following **user** adjustable settings:

- Discrimination pattern
- Sensitivity
- Threshold
- Noise Cancel
- Target Volume
- Contrast
- Trash Density

All the settings above, (except the discrimination pattern), are adjusted via the Menu screen by following these steps:



(a) Press the MENU/SELECT button (4) to access the Menu screen shown above

(b) To adjust one of these settings, use the – or + arrow buttons (5) until the desired selection is highlighted. To avoid pressing the -/+ buttons numerous times, you can press and hold in the button and the selection will move smoothly, then release the button when you've reached your desired selection.

(c) Press the MENU/SELECT button again, to activate the highlighted selection. This will take you to a screen specific to that setting.

(d) Use the – or + arrow buttons to adjust the setting to the desired value.

(e) Press the MENU/SELECT button again to apply the setting, and return to the Menu screen to select another control.

Note: When you have made the changes to the menu functions [this may be just one or all six], just press the Mode button to return to the normal Detect screen and start detecting.



8.1. Sensitivity

The SENSITIVITY control is adjustable to set the best level of sensitivity for the environment being detected. The factory pre-set setting is in Auto, and this will self adjust to suit the conditions you are detecting in. You can also lock the sensitivity to suit a particular area by manually selecting a level between 0 and 20.

A manual sensitivity setting can be used in areas with blanket/constant soil mineralization, such as beaches, modern parks etc. However, Auto sensitivity is the preferred setting when detecting areas with changing soil conditions.



8.2. Volume

The VOLUME feature is used to adjust the maximum volume of **the target signal** - not the overall volume of the Quattro MP. The range of volume available is from 0 to 20 and the preset level is 20.

This is used to prevent signals from large and shallow items producing very loud signals that are uncomfortable to one's ears. This should be adjusted to suit your individual hearing.

Note: The volume control sets the target volume only and does not effect the detectors sensitivity or power.



8.3. Threshold

The THRESHOLD feature controls the audible level of sound during detecting, or the "background hum". Most operators find that detecting with a very low but still audible threshold is preferred. A lower level may mask responses to smaller targets and the higher levels will make targets difficult to hear. The level preset by Minelab is 12, as it will emit responses to most large and small targets.

The range of Threshold is from 0 to 40.

The use of headphones will normally allow the threshold to be reduced.





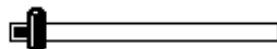
8.4. Noise Cancel

In many of the locations you will be detecting in, there will be electrical interference which may cause your detector to become unstable. NOISE CANCEL is an automatic function on the Quattro MP where the most stable search channel is found for the environment you are searching in. It is important that you **select Noise Cancel BEFORE making adjustments to Sensitivity or Threshold**, as an instable environment will lead you to make unnecessary changes to these other functions. For this reason a shortcut NOISE CANCEL button (8) is provided on the main control panel.

You may find that the source of electrical interference may change during the course of your detecting session, so if your detector becomes unstable, press the NOISE CANCEL button again to cancel the interference.

Important: While performing a NOISE CANCEL, it is important to keep the detector coil motionless, and also ensure that no metallic objects are moved in close proximity to the search coil.

NOISE CANCEL
10 %



8.5. Contrast

The contrast of the main screen can be adjusted using the CONTRAST Control to suit the user, as well as weather conditions.



CONTRAST
10



8.6. Trash Density

The TRASH DENSITY function will enable the user to optimize the detector for areas that have a LOW or HIGH ferrous trash content.



TRASH DENSITY



Use : LOW is the factory preset setting, and will provide the best performance in most areas. LOW provides the operator with the most precise target ID and allows the operator to create a discrimination pattern for a specific target that is quite narrow. It also has a slightly better depth capability in most soil conditions.

Use: HIGH is a specialty setting, suitable for areas with unusually high amounts of ferrous (Iron) trash, and also areas with highly variable ground mineralization. HIGH setting detects targets at a faster rate but with less precision, so in areas with a lot of trash, particularly if close together, HIGH setting is more likely to detect the presence of a "good" target in amongst a number of rejected targets. In HIGH setting, a greater number of target ID numbers need to be used to reject a specific target.

Similarly, HIGH is the preferred setting when detecting in heavily mineralized or variable ground.

HIGH setting can be used with a slightly faster sweep speed, so is suitable for use during competition hunts, or in areas where speed of ground coverage is important.

The performance characteristics of the two modes is summarized below:

Setting		ACCEPT/REJECT Functionality	Detection in average soils, & low trash sites	Detection in mineralized grounds, sites with ferrous junk
Trash Density	LOW	Very good	Very good	Average – may miss detection of non-ferrous objects
	HIGH	Average	Very good	Good

In HIGH setting the Quattro MP signal response works faster to pick out good targets in between all the trash but requires a wider discrimination pattern. This is easily demonstrated by attempting to use the ACCEPT/REJECT function in HIGH setting:

- Sweep a junk object that you would like to eliminate over the coil, and attempt to reject it by pressing ACCEPT/REJECT.
- Now pass the target over the coil again and repeat the process
- The Quattro MP will continue to find different materials in the target and it will show different ID's.
- It may require you to reject a number of ID numbers before a specific target is fully rejected.

For this reason, accurate discrimination is best when operating in LOW setting.

TIP: When detecting do not wear steel-toed boots or shoes with metal eyelets. These can send conflicting signals to your detector.

9. Discrimination

9.1. Discrimination (Accept/Reject) Scale

When a target is detected, an ID number appears on the left hand side of the screen, an icon appears on the right hand side of the screen, and a bar and cursor appearing in the Discrimination scale along the bottom of the screen in the Graphic Identification Bar.



The location of the target cursor corresponds to the discrimination rating or ID number of the object.

When an object is detected, the target cursor will momentarily flash.

On the Graphic Identification Bar the shaded area represents rejected target IDs and the clear area represents accepted target IDs.

9.1.1. Interpreting target responses

The Target ID Range have 51 numbers from (-10 to +40).

Ferrous (Iron) objects will have IDs in (-10 to -1) range.

Non-ferrous (non-iron) objects will have IDs in the (0 to +40) range.

Objects with higher conductivity will have greater IDs.

9.1.2. To modify the Discrimination Pattern

The discrimination pattern of a factory pre-set mode can be modified and saved as a personal setting, so that your own preferred discrimination pattern is ready for use any time you wish.

The  icon will be displayed on the screen to indicate that a mode has been temporarily modified.

There are three methods of modifying the discrimination pattern.

Method 1 – To reject a specific target/object:

- Wave the coil over the object. The detector will move the cursor to indicate the object's position on the scale, and the targets ID number will appear on the screen.
- Press the ACCEPT/REJECT button to reject the object's ID.
- Wave the coil over the target and check that it is being rejected. If it still produces a response, reject its new ID by pressing ACCEPT/REJECT a second time.

Method 2 - To reject a specific Target ID number:

- In the Detect screen use + and – buttons to select the ID you want to modify. The cursor and the Target ID numbers will indicate the selected ID.
- Press the ACCEPT/REJECT button to either accept or reject that ID. You will notice the band on the discrimination scale will become shaded if rejected or clear if accepted. The ACCEPT/REJECT button will toggle between accepting and rejecting targets.

Method 3 - To accept or reject a large range of target IDs:

- Start from either the first or last number of the ID band you wish to select.
- Push and hold both the Accept/Reject button, and the – or + button until the selected area is achieved. You will note that the cursor box on the Graphic Identification bar will be shaded when the ACCEPT/REJECT button is in REJECT mode and clear when in the ACCEPT mode.

Tip: Due to the processing methods used by the Quattro MP, the ACCEPT/REJECT button is far more effective when in the LOW TRASH DENSITY setting. The HIGH setting enhances the detectors ability to pick out good targets in high concentrations of Iron, and as a result the ACCEPT/REJECT function is not as accurate. (See section 8.6 for more on TRASH DENSITY)

Once the discrimination pattern has been modified, the  icon will appear next to the detect button to show that the detect mode has been modified. These changes to discrimination pattern will be lost if you select a different detect mode. The modified discrimination pattern can be saved as a user detect mode by following the steps below.

To create and save a user mode:

The  icon will appear next to the mode button when the changes are saved as a personal setting.

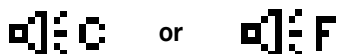
- Select the factory pre-set detect mode you want to alter.
- Modify the discrimination pattern as per 9.1.2.
- Press and hold (approx. 3 seconds), the appropriate mode button until the SAVED message is displayed on the screen as shown below:



- When the mode is saved, the  icon will appear next to the mode button that was pressed. You can save your personal pre-set mode in any of the four pre-set locations.

Once a user mode is saved, simply press the mode button to revert to the factory pre-set mode , or press it again to return to your personal saved mode. This allows you to easily toggle between the two, to compare responses on various targets.

Note: Any time a different mode button is selected, a small sound (loudspeaker) icon is displayed next to the battery level icon. It will stay on for ten seconds and will show if the mode is using Conductive or Ferrous sounds. This is shown as:



10. Detector Sounds

Start –up music. When you first turn the detector on, there is a short tune during the detectors ‘start-up’ sequence. Wait until this tune has finished before pressing other buttons or starting to detect.

Threshold. This is the slight background ‘hum’ which is there during detecting.

Target Signal. This is the signal given by the detector when a metal target is located and not discriminated out.

Conductivity Tones. When searching in the COIN or COIN/JEWELRY mode, the target signal will vary depending on the conductivity of the metal the target is made from. If the target is made from a highly conductive metal, the tone of the signal will be higher pitch, if the target is low conductive, the tone of the signal will be of a low tone.

Ferrous Tones. If searching in RELIC or ALL METAL modes the target signal will vary depending on the ferrous content of the target. If the target has a high ferrous content like pure iron, the tone of the signal will be a low pitch, if the target has a low ferrous content, the tone of the signal will be of a higher tone.

Null. If you pass across a target which is discriminated out, you will notice that the threshold will momentarily go quiet and return again once you have passed the target.

Pinpoint. Passing across a target in pinpoint, the target signal is quite short and ‘clipped’ in its response.

Overload. If passing across a large or shallow target, the detector will give a continuous buzzing sound indication the target signal is too strong to interpret.

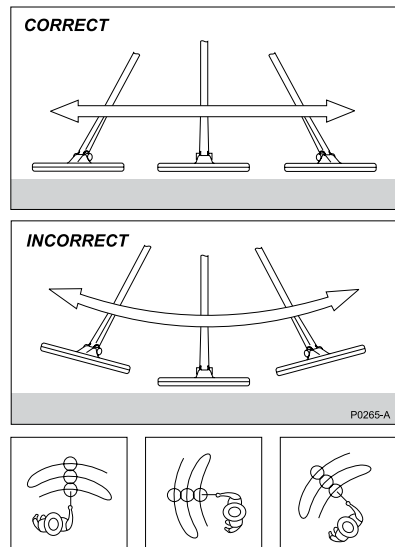
Low Battery Signal. When the battery power is exhausted, there will be a short tune and shortly after a longer tune will announce the detector is switching off.

11. Using Your Quattro MP

Sweeping the Coil

The Minelab Quattro MP will perform at its best when the coil is kept close to the ground. This will increase detection depth and response to small objects. Becoming practised at sweeping the coil is very important, as a variation in coil height at the end of each swing can cause confusing sounds and reduce detection depth. Each sweep of the coil should slightly overlap the last one. This will ensure thorough ground coverage.

When an object is detected, the Minelab Quattro MP emits an audio response and visually displays a target classification on the LCD.



Fault	Solution
Detector does not start at all	– Check the state of the batteries and battery connections. – Ensure battery pack lid is completely closed. – If using alkaline batteries, check whether they have been loaded in the right polarity and correct if necessary.
Detector starts, but it switches off by itself	– Check the state of the batteries. If necessary, try starting with batteries known to be in good condition. – Detector may be too hot. Allow detector to cool down in a shaded area. – Try starting the detector with search coil disconnected. If the detector starts normally, check the state of the coil cable. If it is damaged, replace the coil. Otherwise return detector for repairs.
No sound	– Unplug the headphones. If there is sound from the speaker but not in the headphones, check the headphones and their connection. – Check the Audio menu's Max Limit (a setting of 0 is silent or Audio OFF). – If there is no sound from the speaker or the headphones but the detector appears to work normally otherwise, return the detector for repairs.
Erratic Noises	– Press the NOISE CANCEL shortcut button. – Reduce the SENSITIVITY. – Change the orientation of the coil to the vertical plane and rotate to see if there is a position where the noise is reduced. If this is the case, it means that there is a source of interference nearby which must be avoided. – Check battery charge and battery connections. – Ensure coil connector is tightened firmly. – Check headphones and their connection. – Check for sand or grit between coil cover and coil.
No Target Response	– Ensure the detector is turned on. – Check headphones and their connection. – Check coil connection. – Check discrimination level. No signal will be given if the target is within black area of screen.

13. glossary of terms

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QUATTRO[®]

Camlock	Lever that releases or locks detector's assembly components.
Conductivity	A measure of the ability of a target to allow eddy currents induced by the transmitter.
Control box	Encloses the electronic components necessary to generate and interpret signals and provide user access to functions via the control panel.
Control buttons	Buttons on the control panel that offer quick access to the functions and settings most likely to be used during detector operation e.g. PINPOINT and ACCEPT/REJECT.
Control panel	Houses the display screen and provides press-button access to all of the detector's operating functions.
Discrimination	The ability of a metal detector to identify the user's desired target and eliminate signals from undesirable material.
Ferrous	Composed of or containing iron. Ferrous objects (e.g. nails) are usually not desired by the detectorist.
Full Band Spectrum (FBS)	Simultaneous transmission ranging from 1.5kHz to 100 kHz. This range in frequencies means that the signal received from the detector coil is analyzed from a wide range of responses.
Ground compensation	The ability of the detector to compensate for the effects of ground mineralization.
Handle assembly	Part of the detector made up of the control box, handle and armrest.
Mineralized ground	Ground containing certain minerals, which can cause false signals to be given.
Nickel Metal Hydride (NiMH)	NiMH batteries have a longer life span and are not affected by memory to the same degree as some other rechargeable batteries.
Non-ferrous	Not containing iron. Non-ferrous objects or non-magnetic metals (such as silver or copper coins, gold jewelry, etc).
Pinpoint	Function allowing an object to be precisely located. PINPOINT overrides the automatic motion detection and discrimination settings of the Quattro MP.
Response	The signal or audible indication of a target.
Search coil	The search coil is the circular plate swept across the ground surface during detecting. It transmits signals into the ground and receives the response.
Sensitivity	The detector's level of response to a target in the presence of ground noise and/or electromagnetic disturbance.
Shaft assembly	An adjustable assembly made up of the upper and lower shaft connected by camlocks. The shaft assembly connects the search coil to the handle assembly.
Threshold (hum)	The audible level of sound emitted when no target is detected is the THRESHOLD. This threshold hum is the background sound made as the Quattro MP operates. THRESHOLD can be set anywhere between no sound (silent) and loud.



14. Pre-set Settings

Menu Settings

Sensitivity	Preset - Auto
Target Volume	Preset 20
Threshold	Preset 12
Noise Cancel	Automatic
Contrast	Preset 10
Trash Density	Preset Low

Discrimination Settings

Coin Mode	(-10 to +2) and (+6 to +8)
Coin Jewelry Mode	(-10 to -1)
Relic Mode	(-10 to -3)
All Metal Mode	(open)

Working for a Cleaner, Greener Future



For Consumers within the European Union: Do not dispose of this equipment in general household waste.

The crossed out wheeled bin indicated on this equipment is an indicator that this unit should not be disposed of in general household waste, but recycled in compliance with local government regulations or environmental requirements.

Please dispose of this equipment via a recycling service or centre, or by returning the unit to the respective Minelab or Halcro outlet as appropriate for your unit. This will enable the equipment to be disposed of in an environmentally safe manner.

Disposal of unwanted electronic equipment in landfilled waste may contribute to adverse long term environmental effect due to the leaching of contaminating and toxic substances contained within some electronic equipment.

Disclaimer:

The Minelab metal detector discussed in this operating manual has been expressly designed and manufactured as a quality hobbyist metal detector and is recommended for use in coin, treasure and general metal detection in non-hazardous environments. This metal detector has not been designed for use as a mine detector or as a live munitions detection tool.

Please note:

Since there may be a variety of options available for this detector, equipment may vary according to the Model or items ordered with your detector. Certain descriptions and illustrations may also differ (in this manual) from the exact Model that you purchased. In addition, Minelab reserves the right to respond to ongoing technical progress by introducing changes in design, equipment and technical features at any time.



THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Item Number: 4901-0050
Revision: 1.4



QUATTRO

notes

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