

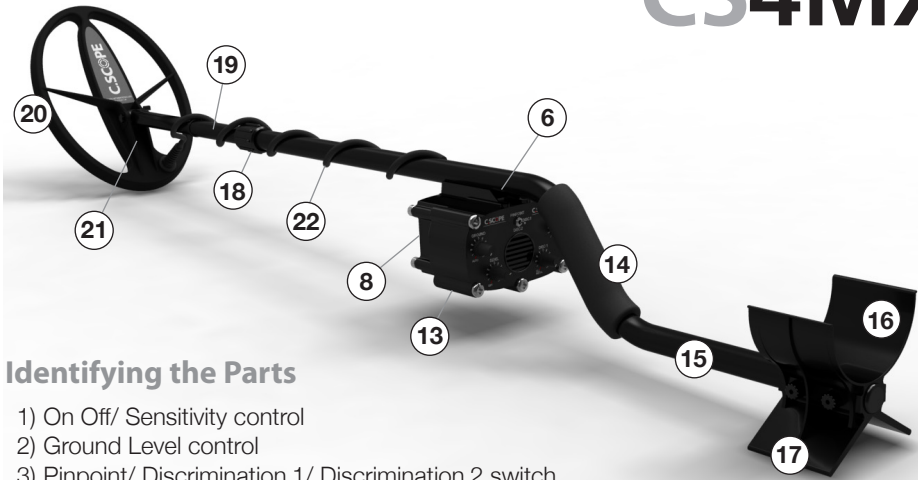


# CS4MX

Operating Instructions

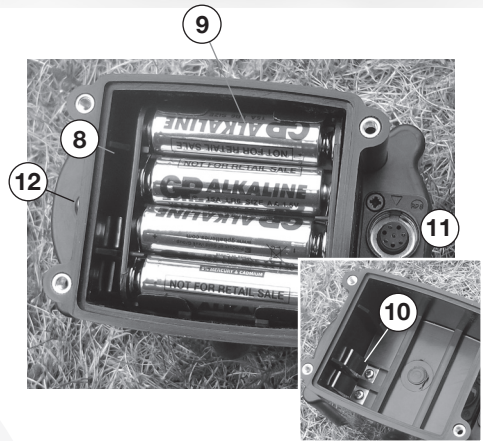
CSCOPE

# CS4MX



## Identifying the Parts

- 1) On Off/ Sensitivity control
- 2) Ground Level control
- 3) Pinpoint/ Discrimination 1/ Discrimination 2 switch
- 4) All-Metal/ Discrimination Level control 1
- 5) Discrimination Level control 2
- 6) Control box mounting clip
- 7) Loudspeaker
- 8) Battery compartment
- 9) 8 x AA battery holder
- 10) Battery contacts
- 11) Search-head socket
- 12) Headphone socket
- 13) Control box
- 14) Hand grip
- 15) Upper stem
- 16) Arm support
- 17) Detector rest
- 18) Stem lock
- 19) Lower stem
- 20) Interchangeable Search-head
- 21) Search-head fixing screw and wing-nut
- 22) Search-head lead





## CS4MX Overview

The CS4MX is a high performance metal detector operating on the 'MOTION' principle. This means that the search-head must be kept moving at a steady sweep speed to achieve optimum performance.

The CS4MX provides the option of interchangeable search-heads to optimise performance on a variety of site conditions. There are two independent discrimination controls to aid identification; a pinpoint switch to aid exact target location; and a manual / auto ground option to handle all ground conditions

The CS4MX is designed to offer extremely high performance whilst being easy to operate. We wish you good hunting and a great hobby with the excellent CS4MX!



## Rapid start

Follow these simple steps to start using the CS4MX within minutes:

- 1) Insert the lower stem into the upper stem (first press in the spring clip).
- 2) Twist the locking device so that the stem is locked at the required length.
- 3) Coil the search-head lead around the stem.
- 4) Plug the search-head lead into the socket on the control box.
- 5) Remove the battery compartment cover by loosening the four retaining screws.
- 6) Fit 8 x AA batteries to the battery holder being careful to observe polarity and good contact.
- 7) Rotate the Discrimination Level control 1 to number 4 on the scale.
- 8) Set the Ground Control to 'AUTO'.
- 9) Switch on and rotate the Sensitivity control to number 6 on the scale.
- 10) START DETECTING... metal targets give a sharp audio signal from the loudspeaker... signals from small pieces of iron rubbish are ignored... switch to pinpoint to identify the exact position of the target.



## The CS4MX Features and what they do

### 1) On Off/Sensitivity control.

Rotary control switches the detector on/off and adjusts the sensitivity. Ground containing mineralisation and some beach situations may cause instability or false signals requiring a reduction of the sensitivity level.

### 2) Ground Level control.

Start off with this set to AUTO. Extra sensitivity can be achieved on consistent ground by adjusting this control manually in conjunction with the sensitivity control (see section 'Detecting with the CS4MX').

### 3) Pinpoint/ Discrimination 1/ Discrimination 2 switch.

The 'motion' aspect of the CS4MX is switched off whilst the pin-point mode is selected (switch in up position). In pin-point mode the search-head can be held still to determine the precise target position. Pinpoint mode operates in 'All Metal', ie. whatever level of discrimination you have chosen will be switched off while the pin-point button is depressed. This is a useful facility which allows you to trace around the edges of a signal to identify large pieces of iron. *(Note: very large pieces of iron, such as discarded agricultural machinery and iron stakes tend to give positive signals even when the detector is set to high discrimination settings)*. Once the pinpoint switch is released the detector returns to motion mode/discrimination level 1.

Disc 1 or Discrimination 1 (centre position on the switch) is the normal search mode. The detector will ignore some signals depending on the setting of the DISC 1 control. Disc 2 or Discrimination 2 (switch position held down) is a further discrimination mode. The detector will ignore some signals depending on the setting of the DISC 2 control.

### 4) All Metal/ Discrimination Level control 1 - DISC 1.

Set to 'ALL METAL' there is no discrimination, ie. all metals are detected. Set within 1-4 on the scale, signals from most small iron rubbish are ignored, ie there is no audio signal. The discrimination level can be increased to 4 -10 on the scale so that the signals from more categories of metal object are ignored.' (see 'Notes on Sensitivity, Ground Effect and Discrimination').

### 5) Discrimination Level control 2 - DISC 2.

Discrimination 2, like Discrimination 1, controls what signals are ignored. A typical setting for DISC 2 is one or two graduations above DISC 1 so the quality of a target can be assessed before digging it up.

### 6) Control box mounting clip.

For ultimate lightweight metal detecting the CS4MX control box can be removed and fitted to a belt around the body. This leaves only the search-head on the stem which reduces fatigue on the arm.

### 7) Loudspeaker (and battery condition indicator).

The presence of metal is indicated by a short tone from the loudspeaker as the search-head is passed over a target. A distinct step change in the pitch of the audio signal indicates that the batteries should be changed.

## Assembling the CS4MX

The stem lock should be slackened to allow the lower stem to enter the upper stem section. The spring clip should be pressed in to allow the lower stem to slide into the upper stem. This spring clip will pop into any of the holes in the upper stem and firmly fix the two stems together. Tighten the stem lock to stop any movement in the stems. The search-head lead may then be wound around the stem as shown in the photograph. A search-head lead which is not well secured to the stem could move about causing false signals. Cable ties or tape may be used to hold the lead in position. Align the arrows on the plug and on the socket to connect the search-head lead to the control box. Adjust the position of the search-head so that it is parallel to the ground when the user is in a normal standing position. Tighten the wing-nut on the search-head retaining screw. Do not over-tighten. Friction of the head lugs against the neoprene washers keeps the search-head in position. Excessive pressure on these parts should not be necessary. *(If some form of lubricant should ever find its way onto these washers it will be necessary to disassemble the parts, wash and dry them before careful reassembly).*

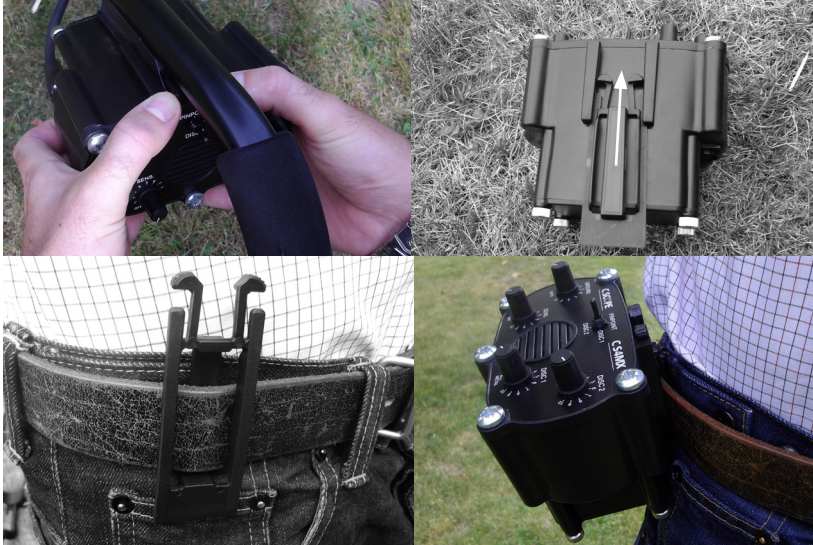


## Changing Search-heads

Each search-head is supplied complete with a lower stem to make changing easy. Unplug the connector by pulling the plug outer case. This releases the catch to allow the plug and socket to separate. Remove the lower stem assembly and refit the alternative search-head. Always take care not to get water or dirt in the plug or socket. It is for this reason that we recommend changing heads in clean conditions. Coil the search-head lead tightly around the stem and fix with cable ties or tape for best performance. Align the arrows on the plug and on the socket when connecting the search-head lead.

## Belt mounting

Squeeze the control box retaining clips together using your thumbs as shown in the photograph. The control box will now slide towards you free of the control box mounting clip. The control box can be fitted to your belt using the clip provided. In belt mounted use, be sure to wind the search-head cable up the stem at least to the length adjuster and secure it with tape or cable tie. This is because the lead will be detected like a target if it is left free to move.



Above: Slide the belt mounting clip into the fixing slots on the underside of the control box and push all the way until the retaining lugs click into position.

## Batteries

Undo the 4 battery compartment retaining screws and take out the battery holder. Fit eight good quality AA type batteries into the compartments of the battery holder. Observe polarity of the batteries (the spring contact goes against the flat, negative end of the battery). Roll the batteries in the holder to ensure good contact and replace into the battery compartment with the contacts on the holder lining up with the contacts in the compartment. Replace the battery compartment cover being careful to avoid cross threading the screws. Battery condition is monitored continuously on the CS4MX. Low battery condition is indicated by a step change in the signal tone to a higher pitch.



## Detecting with the CS4MX

On the majority of inland sites the ground control should be set to AUTO and the recommended sensitivity setting between 7-9 on the scale will give the best results. Some types of ground may give rise to false signals and the sensitivity level should be reduced to a point where operation of the detector becomes stable.

Sweep the detector head from side to side with a steady relaxed motion. Keep the search-head parallel and as close as possible to the ground right across the arc of the sweep.

Search your chosen site carefully by moving forward only the width of the search-head at each sweep. Move up and down the search area in lines so that there is plenty of overlap in the ground you have covered. Search with the sensitivity set as high as possible according to the ground conditions.

If the ground condition is suitable (constant with low contamination and mineralisation) it is possible to precisely set the ground cancellation and then increase the sensitivity beyond the medium position in AUTO ground.

Some detector users prefer to set the sensitivity control at a point where there is no background tone, sometimes called '*silent search*' (*Sensitivity control set around 8 on the scale*). With the detector set like this it is more noticeable when a target signal occurs. If the detector is set at maximum sensitivity (*Sensitivity control set at 10 on the scale*) there will be a constant audio tone in the background.

### **Setting the GROUND control.**

Experienced users can achieve higher sensitivity settings on ground with a constant effect. This ground is usually low in contamination and mineralisation. First set DISC 1 in All Metal mode and Ground in AUTO then check for an area free from metal to set the ground position.

While you are continually raising and lowering the search-head near the ground (approximately 10cm) rotate the ground control clockwise until you just get to the point where the detector does not emit a sound as you raise and lower it. Increase the sensitivity slightly and recheck the ground setting. Repeat this until false signals are obtained and then reduce the sensitivity very slightly. The detector will now be optimised for that particular site. Set the required position on DISC 1 and carry on searching. If you are unable to get stable signals return the detector to AUTO ground and reduce the sensitivity as necessary.



## **Searching.**

We recommend searching with a low level of discrimination (1-4 on DISC 1). At this setting the CS4MX will not react to small pieces of iron but will give a positive audio tone on other metal targets. Increasing the discrimination level will eliminate signals from a wider range of metal objects which are likely to be rubbish. (*See Notes on Sensitivity, Ground Effect and Discrimination*).

When the detector gives a signal, move the search-head to the approximate area where the signal was heard, hold the switch in pinpoint and move the search-head carefully around. The strongest signal will occur directly below the centre of the search-head. Dig a neat hole by cutting around the signal position with a sharp edged trowel and remove a divot of earth which might now contain the metal object. Run the detector over the area again in pinpoint mode to see if the metal object is still in the hole or in the piece of earth which you have just removed.

Dig some more and sift through the earth until you find what you are looking for. Fill in the hole before moving on.

The use of headphones will increase battery life and make it easier to discern faint signals.

Follow the 'Countryside Code'. Do not trespass. Do not touch anything you suspect might be live ammunition - inform the police.

Do not take your detector on any scheduled historic site. If you find anything which looks like it could have historical significance, report it to your local museum.

Acquaint yourself with any laws relating to the use of metal detectors particularly if you want to go detecting in countries other than the UK.

## Sensitivity, ground effect & discrimination

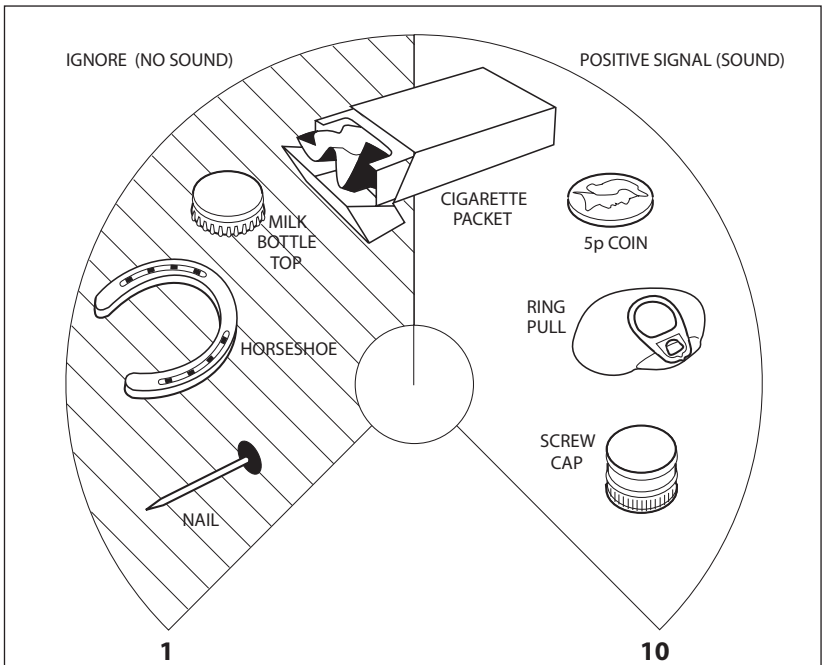
You will be able to get more performance out of your detector if you understand the relationship between three aspects of detector operation - sensitivity, ground effect and discrimination.

If you increase the power of a metal detector too much the ground itself is detected and false signals make the detector difficult to use. The 'motion' electronic system of the CS4MX will ignore many ground effect signals but some types of ground, notably waterlogged or containing salts or mineralisation require the detector to operate on reduced sensitivity.

The CS4MX can be set to ignore signals from certain categories of metal target. Small iron objects in the ground are a problem on many farmland sites. These signals can be ignored by setting the discriminate control to 2 or 3 on the discriminate scale. As the control is turned clockwise the signals from more types of metal likely to be worthless can be eliminated.

However, the discriminate control must be used with care because some objects which could be valuable have similar electrical characteristics to rubbish items as far as the detector can tell. Higher levels of discrimination also have the effect of reducing the depth of detection. For these reasons it is best to keep the discrimination setting as low as possible.

### Effect of discriminate control position



## Detector care

The CS4MX is a robust design, however the control box should be treated with similar care as any electronic product. Dry off any water splashes immediately. The search-head may be immersed in water although the connector at the other end of the lead should always be kept dry. Stem and search-head parts should be cleaned and dried at the end of a day's detecting. Do not use solvents. If the detector has been used on a beach it will be necessary to wash sand and salt residue off the stem adjustment mechanism and the search-head retaining parts using tap water. The use of a search-head cover protects the head from abrasion damage caused by friction with the ground. Remove batteries if the detector is going to be stored for any length of time. Do not open the controlbox front panel. There are no user serviceable parts inside and you may invalidate your warranty.

## Warranty & Service

Your CS4MX is guaranteed free of manufacturing defects as confirmed in our written warranty. Contact us if you have any concerns about the operation of your detector.

The C.SCOPE Customer Service Team really know about metal detectors and are always ready with good advice and rapid after-sales-service.



C.SCOPE is an ISO 9001 Accredited Quality Manufacturer. This equipment conforms to the EMC directive 89/336/EEC.

System performance may be impaired by unusually strong electromagnetic fields.

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice. (In the UK visit [www.recycle-more.co.uk](http://www.recycle-more.co.uk))



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