

# WARDRAY PREMISE

Safeview CCTV  
MR6500 / 1.5T & MR6500 / 7.0T



**OPERATORS MANUAL**



## **Introduction**

Thank you for purchasing the MR6500 Safeview CCTV / 1.5T or MR6500 / 7.0T. This product is manufactured and tested to the highest standards to give artefact free scans when correctly installed.

There are two systems available one for up to and including 1.5T and the other up to and including 7T.

To ensure that you obtain maximum benefit from the MR6500 Safeview CCTV system, please take a few minutes to read the enclosed information regarding Installation, Operation and Maintenance. After reading this manual, store it in a safe place for future reference.

If you have any problems in the meantime or would like any advice about this or any other MR products from the Wardray Premise range, please contact us at the following address:-

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## Index

- Page 4 MR6500 - General Information
- Page 5 - 8 MR6500 - CCTV Installation guide for up to 1.5T
- Page 9 - 13 MR6500 - CCTV Installation guide for up to 7T
- Page 14 DRG1641 - Diagram for position of camera
- Page 15 DRG1348 - Diagram for fitting details and installation configuration
- Page 16 Aftercare
- Page 17 ADM.09/143 - Warranty Form

## **General Information for MR6500 1.5T & 7T**

### **General**

**Background Guidance Notes re Installation of Safe View CCTV - MR6500**  
**See Installation notes for the actual installation procedures.**

It needs to be remembered that the majority of these systems that are to be installed are being done in scanner systems which are already on field. Great care needs to be taken especially when taking items past the magnet. Remember that the fringe field may be very little different between a 1.5T system and a 7.0T system, but that the effect once noticed will be greater in the 7.0T system.

When drilling the hole for the filter unit in the Penetration Panel it is imperative that both the Scan room side and the Technical room side of the Penetration Panel are checked for obstructions prior to drilling the hole, and that suitable provisions are put in place to catch all swarf created by the drilling.

Wherever possible only non magnetic tools should be used. If this is not possible then great care needs to be taken with the tools that are used so as not to create risks to either yourself or to others, and also to stop any possible damage to the scanner caused by the missile effect.

## **Installation Instructions - Safeview CCTV - MR6500/1.5T**

The camera assembly has been pre-wired, tested and the field of view/focus set to approximately 2 metres.

Some final adjustment will need to be carried out once the system is installed. The lens has three adjustment's, the rear ring controls the aperture, the middle ring controls the field of view (zoom) (and should be adjusted first if needed), and the front ring adjusts the focus. The front two rings have threaded spindles and must be loosened before making an adjustment, and hand tightened afterwards.

If the desired focus cannot be achieved then the large lens mount, light in colour, can be adjusted after undoing the securing screw at the side of the camera body. This is the back focus adjustment.

### **Camera Installation:**

The camera is normally mounted on the wall at the rear of the magnet. Position the camera above the axis of the magnet such that the camera does not 'see' the opening at the opposite end of the bore.

To install the camera housing the top cover of the housing has to be removed using a 4mm or 5mm Allen key (depending on bolts fitted) and the orange or grey fibre optic cable has to be threaded through the unused cable entry and attached to the rear of the transmitter.

The thick rubber washer in the unused cable entry has been cut on one side to allow the fibre optic cable to be inserted as the plug on the end will not pass through the washer.

The fibre optic cables may be supplied with protective covers which should be discarded before assembly. Note also that the fibre optic connectors are of the bayonet type, which have a locating groove.

The picture below shows a correctly installed fibre optic cable:



## **Installation Instructions - Safeview CCTV - MR6500/1.5T**

Power cable & fibre optic cable entry – underside of camera housing:



Gland/nut/washer sequence on fibre optic cable:



The camera unit must be securely fixed to the wall using the three mounting holes on the camera enclosure.

The enclosure is normally fitted to the wall using a 400mm square MDF mounting board, (not supplied)

The camera is bolted to the board and the board is fitted to the wall using fixings that will hold the board securely.

An Allen key is needed to tighten the screw in the camera housing bracket after final positioning.

## **Installation Instructions - Safeview CCTV - MR6500/1.5T**

### **Camera power supply:**

The camera's 12v power supply should be installed in the technical room, in a suitable position.

### **Mounting the pen panel filter:**

The pen panel filter has a 60mm x 30mm footprint and requires a single 19mm diameter mounting hole.

Find a suitable location on the pen panel and drill a 10mm pilot hole for the hole punch from the technical room side. Make arrangements to catch any swarf on the other (magnet) side.

Insert one half of the hole punch from the technical room side and get a helper to attach the other half of the hole punch from the magnet side. Using the supplied 8mm AF allen key tighten the punch to make the hole.

Mount the filter box using the Lemo connector barrel from the technical room side and get a helper to fix the single nut on the magnet side. Make the fixing secure by tightening the Lemo nut with a 20mm spanner.

The power supply should be connected to the pen panel filter using the adaptor cable and powered from the main 230/240 AC supply.

On the magnet side install the power supply cable working backwards from the camera, into the ceiling void, routing the cable around the outside wall of the room and dropping down into the pen panel area. The power cable and fibre video cable are normally put in surface mount trunking taking the cables into the ceiling void, and then around the edge of the room and dropped into the pen panel area. A XLR plug->XLR socket extension cable can be supplied on request.

## **Installation Instructions - Safeview CCTV - MR6500/1.5T**

### **Fibre Optic cable installation:**

The fibre optic cable should be routed from the camera to the monitor location via the penetration panel.

Normally there are existing fibre optic cables passing through the penetration panel. Slacken any clamps holding these existing cables, and pass through the CCTV fibre optic cable and re-assemble the clamps.

It is important to avoid tight radius bends when positioning fibre optic cables. The control room end of the fibre optic cable should be plugged into the black box fibre optic receiver unit where indicated, and the power supply DC cable plugged in to the vacant socket.

Connect the mains lead of the 12 volt power supply to a convenient mains socket.

**Please note that the 2 amp power supply issued is for the fibre optic receiver and the 5 amp version is used for the TFT display panel.**

Using the phono-phono lead supplied, connect the black box output to the TFT monitors input. The input to be selected on the TFT panel is AV1/CVBS or just AV on the Samsung models.

### **Light levels versus video noise on CCTV display:**

Due to the low light levels often encountered in magnet rooms, the lens is normally operated with the manual iris fully open. The electronic AGC within the camera will adjust the video output to get a viewable image. The camera does operate at low ambient light levels but it can only operate with the available light. If the image remains unacceptably noisy, even with the lens iris fully open then the only remaining option is to increase the ambient light levels.



## **Installation Instructions - Safeview CCTV - MR6500/7.0T**

The camera assembly/housing has been pre-wired, tested and the field of view / focus set to approximately 2 metres.

There may need to be some final adjustment after the system is installed.

The lens has three adjustments, the rear ring controls the aperture, the middle ring controls the field of view (zoom) and should be adjusted first if needed, and the third ring at the front adjusts the focus. The front two rings have threaded spindles and must be loosened before making an adjustment and hand tightened afterwards.

If the desired focus cannot be achieved then the large lens mount, light in colour, can be adjusted after undoing the securing screw at the side of the camera body. This is the back focus adjustment.

### **Camera Installation:**

Camera location - this is normally at the rear of the magnet. Locate the camera above the axis of the bore and possibly slightly off centre to allow the patients face to be seen slightly obliquely, and also so that the camera does not 'see' the aperture at the other end of the bore.

The fibre and DC power supply are the only connections to the camera and these are located at the rear of the unit. The 4 pin XLR connector uses pins 1&2 for +12 volts and pins 3&4 for 0 volts, the screen of the cable grounds the camera assembly body to the pen panel.

The camera has to be installed, all cables connected to the remote monitor & powered before the focus and field of view can be set up. Access to the focus and field of view is achieved by removing the six screws securing the lid.

The camera unit must be securely fixed to a wall using the three mounting holes on the camera enclosure.

The enclosure may be fitted to a wall directly or possibly using a 400mm mounting board (not supplied). The camera is bolted to the board and the board is fitted to the wall using fixings that will hold the board securely.

An Allen key is used to tighten the screw in the camera housing bracket after final positioning / aiming.

Having positioned and focussed the camera the final step is to replace the camera enclosure lid, replace the six screws and fit the copper tape as per the pictures below.

After installation if the camera has to be adjusted, remove the lid by cutting along the join of the tape as it easily fragments after use. Re- seal the box with further tape over the top of the old as the adhesive is conductive.

## Installation Instructions - Safeview CCTV - MR6500/7.0T

Rear view:



Internal view from top:



## **Installation Instructions - Safeview CCTV - MR6500/7.0T**

View after replacing lid and fitting copper tape around sides of enclosure



View after folding down copper tape



## **Installation Instructions - Safeview CCTV - MR6500/7T.0**

### **Camera power supply:**

The camera 12v power supply should be installed in the technical room.

### **Mounting the pen panel filter:**

A pen panel fitting kit including a 10mm drill and 19mm punch + allen key is supplied.

The pen panel filter has a 60mm x 30mm footprint and requires a single 19mm diameter mounting hole.

Locate a suitable location on the pen panel and drill a 10mm pilot hole for the hole punch from the technical room side. Make arrangements to catch any swarf from the other (magnet) side.

Insert one half of the hole punch from the technical room side and get a helper to attach the other half of the hole punch from the magnet side. Using the supplied 8mm AF allen key tighten the punch to make the hole.

Mount the filter box using the Lemo connector barrel from the technical room side and get a helper to fix the single nut on the magnet room side. Make the fixing secure by tightening the Lemo nut with a 20mm spanner.

The 12volt power supply should be connected to the pen panel filter using via the XLR 4 pin female line socket and powered from the main 230/240 AC supply.

On the magnet side install the power supply cable working backwards from the camera, usually into the ceiling void, routing the cable around the outside wall of the room and dropping down into the pen panel area. The power cable and fibre video cable are usually placed in surface mount trunking taking the cables into the ceiling void, around the periphery of the room and dropped into the pen panel area. A XLR plug->XLR socket extension cable can be supplied on request. Do not coil any excess power cable rather loop backwards and forwards and ty-rap if necessary.

## **Installation Instructions - Safeview CCTV - MR6500/7T.0**

### **Fibre Optic cable installation:**

The fibre cable should be routed from the camera to the monitor location via an open wave guide on the pen panel.

Usually there are existing fibre cables passing through the pen panel. Slacken any clamps (if used) holding the existing fibres and pass through the CCTV fibre and re-assemble the clamps.

It is important to avoid tight radius bends when positioning the fibre cable. The control room end of the fibre cable should be plugged into the black box fibre receiver unit (after removing the connector covers) where indicated and the power supply DC cable plugged in to the vacant socket.

Connect the mains lead of the 12 volt power supply to a convenient socket.

Please note that the 2 amp power supply issued is for the fibre optic receiver and the 5 amp version is used for the TFT display panel.

Finally connect the fibre optic receiver's (black box) video output to the LCD monitor using the BNC-BNC lead supplied. The input to be selected on the TFT panel is AV on the Samsung models.

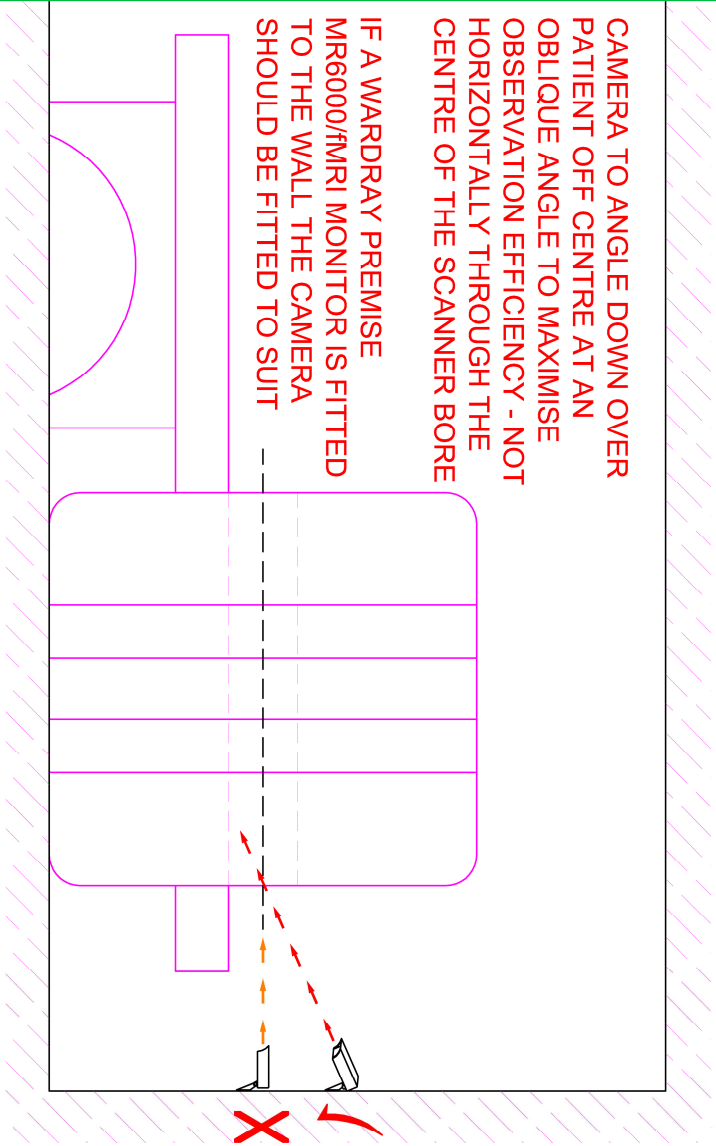
### **Light levels versus video noise on CCTV display:**

Due to the low light levels normally encountered in magnet rooms the lens is normally operated with the manual iris fully open. The electronic a.g.c. within the camera will adjust the video output to get a viewable image. The camera does operate at low ambient light levels but in can only operate with the available light. If the image remains unacceptably noisy, even with the lens iris fully open then the only remaining option is to raise the ambient light levels.

DIAGRAM SHOWING CORRECT  
CAMERA POSITIONING

CAMERA TO ANGLE DOWN OVER  
PATIENT OFF CENTRE AT AN  
OBLIQUE ANGLE TO MAXIMISE  
OBSERVATION EFFICIENCY - NOT  
HORIZONTALLY THROUGH THE  
CENTRE OF THE SCANNER BORE

IF A WARDRAY PREMISE  
MR6000/FMRI MONITOR IS FITTED  
TO THE WALL THE CAMERA  
SHOULD BE FITTED TO SUIT



**CORRECT**

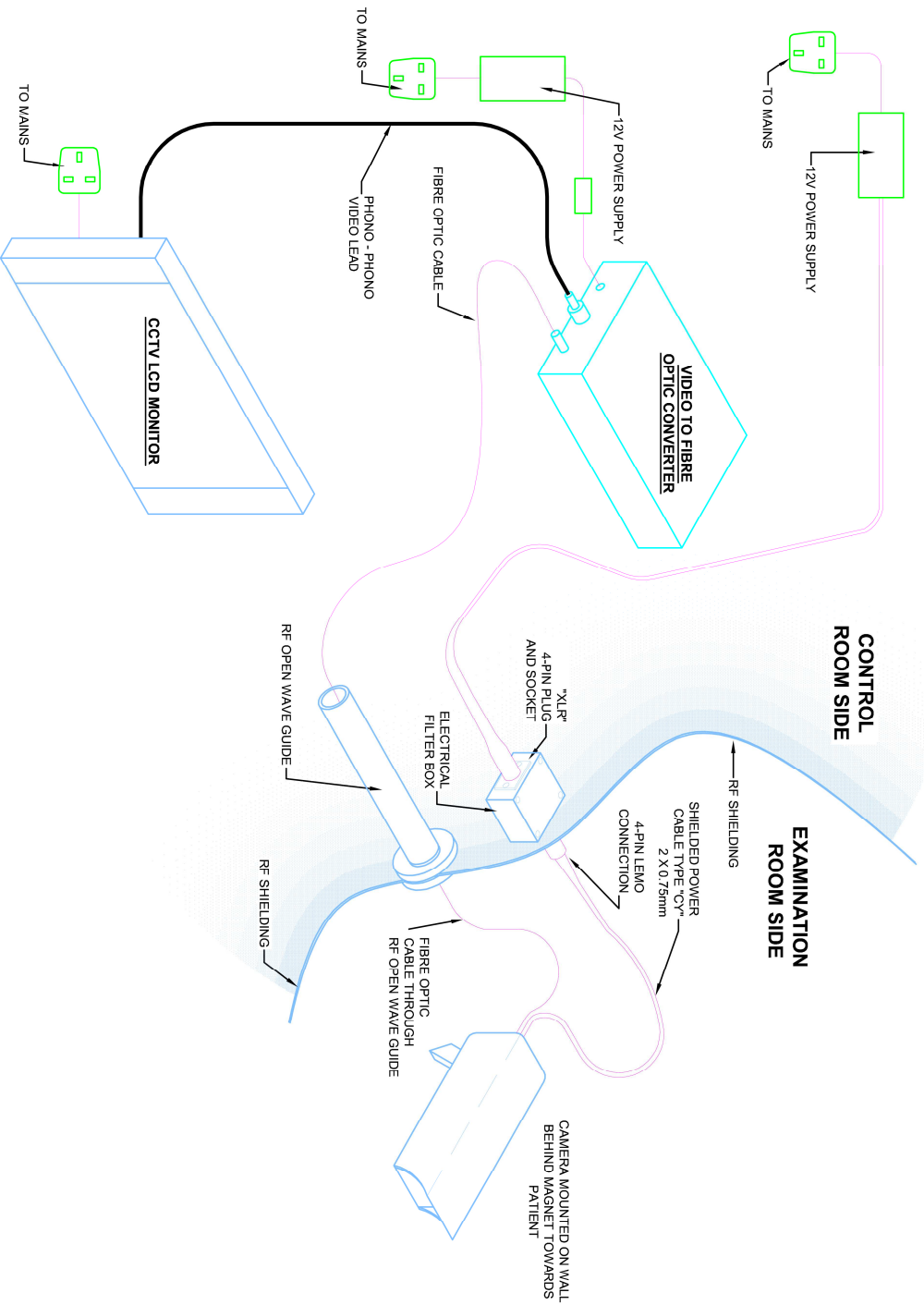
**WRONG!**

NOTES

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<div>Wardray Premise Limited Business Development Barnby C17 1 2UK Telephone: +44(0)1202 8588 8001</div>			
Project: <b>WARDRAY PREMISE</b>			
Fitting Details MRI CCTV OBSERVATION CAMERA			
Title: CORRECT CAMERA POSITION			
Scale: NTS@A	Date: 28/3/2010	Drawn by: M CHULKEV	
Job Number: 1641	Drawing Number	Revised	

MR 6500



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NOTES

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Project: FITTING DETAILS INSTALLATION CONFIGURATION			
Title: MRI CCTV - SAFEBVIEW™ MONITORING SYSTEM MR 6500			
Scale: 1/15 @A4	Date: 02/2007	Drawn by: M. CHADLEY	
Job Number: 1348	Drawing Number:	Revision:	





## **Aftercare**

This CCTV system only requires regular dusting with a dry cloth to optimise a clear image.

There are no user serviceable parts but if the systems requires a service this should only be serviced by a Wardray Premise trained engineer, as they will carry the correct spares to guarantee the continued safety and compatibility of this product. Failure to comply with this will invalidate your warranty and could compromise its MR compatibility and safety of this product.

**Should you have any concerns with this product, please contact your Wardray Premise service provider.**



# WARRANTY REGISTRATION FORM



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Summer Road  
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Name.....  
Title.....  
Company.....  
Address.....  
.....  
Telephone.....  
Fax.....  
E.mail.....

**To receive full warranty cover on your equipment, please complete and return this form at your earliest convenience.**

Product serial number

Please enter date product received

**PLEASE INDICATE BELOW ANY OTHER WARDRAY PREMISE PRODUCTS YOU CURRENTLY HAVE IN YOUR DEPARTMENT, AS WE WOULD BE HAPPY TO OFFER YOU AN ALL INCLUSIVE SERVICE PACKAGE.**

MR WHEELCHAIR

☐

MR OXYGEN MONITOR

☐

MR ADJUSTABLE HEIGHT TROLLEY

☐

MEDI MATTRESS

☐

PULSE OXIMETER – TESLA OXYSAT

☐

NOMAG INCUBATOR

☐

RELAX & VIEW VIDEO / DVD  
RELAXATION SYSTEM

☐

MR PORTERING CHAIR

☐

MR PATIENT MONITOR – TESLA  
GUARD

☐

MR PORTERING CHAIR

☐

MR FIXED HEIGHT TROLLEY

☐

RELAX & VIEW IMAGE COLLECTION

☐

TESLA NIBP / TESLA ETC02

☐

PURESOUND AUDIO RELAXATION  
SYSTEM

☐