



Installation Guide



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IMPORTANT

Before you install:

Please read the following points before servicing or installing any telemetry receiver.

Pre-installation checks - It is recommended that the unit be bench tested prior to installation on the site.

Safety during installation or servicing - Particular care should be taken to isolate the pan/tilt head in order to prevent operation while engineering work is being carried out. In addition any ladder or other means of working on the receiver **MUST NOT** rest on the pan/tilt head as it is possible for the head to move when not expected.

Safety check - Upon completion of any service or repairs to the unit, safety checks should be performed to ensure that the unit is in proper operating condition.

Coax grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded.

Adhere to safety standards - All normal safety precautions as laid down by British Standards and the Health and Safety at Work Act should be observed.

WARNING - TO PREVENT DANGER OF FIRE OR SHOCK, DO NOT EXPOSE THE INTERNAL COMPONENTS OF THIS EQUIPMENT TO RAIN OR MOISTURE.

Damage requiring service - Servicing by qualified personnel should be carried out under the following conditions:

- (a) When the power supply cord or plug is damaged;
- (b) If liquid has been spilled or objects have fallen into the unit;
- (c) If the internal electronics of the unit have been exposed to rain or water;
- (d) If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as improper adjustment of other controls may result in damage;
- (e) If the unit has been dropped or the enclosure is damaged;
- (f) If the unit exhibits a distinct change in performance. This indicates a need for service.

Replacement parts - If replacement parts are required, ensure that only replacement parts recommended by the product manufacturer are used.

SAFETY PRECAUTIONS

All normal safety precautions as laid down by British Standards and the Health and Safety at Work Act should be observed and servicing should be referred to qualified service personnel.

RX400P – Introduction

The RX400P is designed to control full function ac P/T/Z cameras in an external environment where accessories such as a wiper, washer etc are the norm.

The RX400P has up to 16 full scene presets. These may be used as a method of visually patrolling large areas of a site, and can be interlinked with detection devices in automated system designs.

The RX400P is normally supplied pre configured to suit the application for which it is intended, and this will be either to control a mains operated pan and tilt head or other equipment, or to control a 24 volt pan and tilt head. The unit is suitable for 230 volt mains operation. As a factory fitted option, the receiver can be supplied to operate from 24Vac or 110Vac. This option must be specified at time of order.

Telemetry

The RX400P can be controlled by BBV coax and 20mA twisted pair.

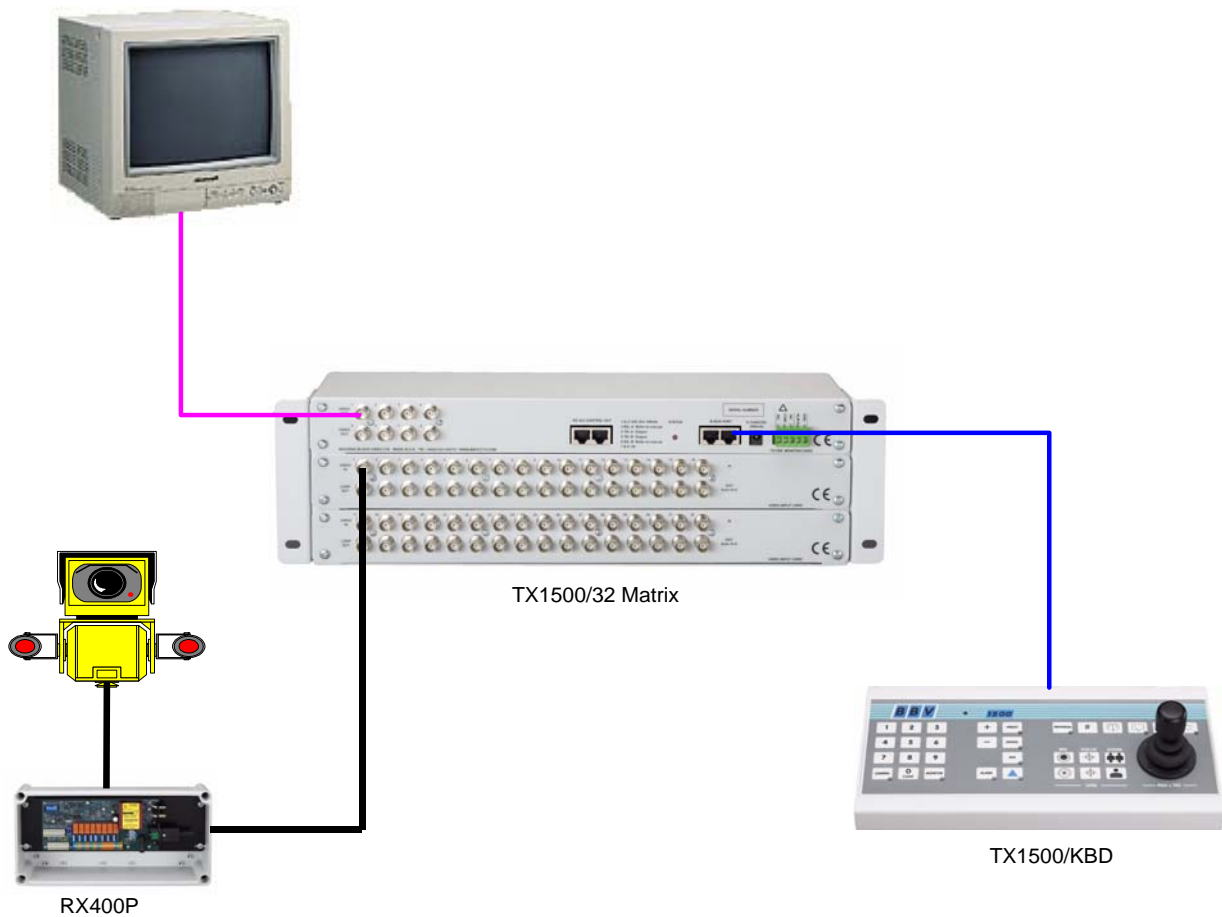


Fig 1. A simple system featuring an RX400P

UNPACKING

Inspect the packaging for signs of damage. If damage has occurred, advise the carriers and/or the suppliers immediately. Unpack the receiver carefully and check that all the items are present and correct.

Part number	Description	RX400P PCB	Weather proof box	IEC flex ended connector	Molex cable	Manual	Warranty card
RX400P	Telemetry receiver with 16 presets, 4 auxiliary outputs	X	X	X	X	X	X
RX400P/PCB	Telemetry receiver with 16 presets, 4 auxiliary outputs PCB only	X		X	X	X	X
RX400P/24	Telemetry receiver 230V ac input, 16 presets, 4 x 24V ac auxiliary outputs	X	X	X	X	X	X
RX400P/24/24	Telemetry receiver 24V ac input, 16 presets, 4 x 24V ac auxiliary outputs	X	X		X	X	X
RX400P/24/24/PCB	Telemetry receiver 24V ac input, 16 presets, 4 x 24V ac auxiliary outputs PCB only	X			X	X	X
RX400P/110/110	Telemetry receiver 110V ac input, 16 presets, 4 x 110V ac auxiliary outputs	X	X	X	X	X	X
RX400P/110/110/PCB	Telemetry receiver 110V ac input, 16 presets, 4 x 110V ac auxiliary outputs PCB only	X		X	X	X	X
RX400P/110/24	Telemetry receiver 110V ac input, 16 presets, 4 x 24V ac auxiliary outputs	X	X	X	X	X	X



RX400P in weatherproof box



IEC connector

TECHNICAL SPECIFICATION

Power requirements	230V 50/60Hz (options are available for 24V ac or 110V ac supply)		
Load	5A at 230V max		
Current	6VA max		
Fuse	Transformer contains a non-resetting thermal fuse in series with the primary windings. If the transformer overheats, the fuse will protect the unit by going open circuit, removing power from the transformer.		
F8: Auxiliary output fuse	Supply	Output	Fuse F2
	230	230	5A T
	230	24	315mA T
	110	110	5A T
	110	24	630mA T
	24	24	5A T
Outputs	8 single pole changeover relays (snubbed): 1. Left motor 2. Right motor 3. Up motor 4. Down motor 5. Autopan (interlocked with pan left/right) 6. Lights (1000W maximum) 7. Wash 8. Wipe		
Telemetry	Up the coax: RG59: 250m CT125: 500m Twisted pair: 20mA loop (1200,E,8,1)		
Auto iris output	Returns to original setting 15 seconds after key release Level programmable from keypad To drive override input for Cosmocar, or Seiko style lens		
Video input	1V p-p 75R terminated input via BNC socket		
Video output	1V – 4V p-p 75R impedance via BNC socket		
Facilities	Unit auto tunes to the coaxial telemetry signal Diagnostic test switch (SW8) activates each function for two seconds in turn Video launch amplifier provided with Gain and Lift controls Camera power outlet provided		
Lens Drive	Adjustable via control VR4/LENS, and ranges between 3 – 12V Inching speed adjustable control VR3/INCH between 0% and 100% of full lens voltage. One second inching built in Drives provided for Zoom, Focus and Motorised Iris Each lens drive has 2 LEDs to indicate lens drive function		
Presets	Inputs provided for preset feedback pots: 10 bit resolution, pan, tilt, zoom and focus. Up to 16 preset positions can be stored within the receiver. Each position consists of a complete view.		
Dimensions	RX400P PCB	RX400P Boxed	
Depth	100mm	190mm	
Width	230mm (without IEC inserted)	380mm	
Height	38mm	130mm	
Weight	0.5kg	2.5kg	

CONNECTORS

BBV use cage clamp terminal blocks with a simple method of attaching cables to PCBs quickly and easily. The correct method of attachment is as follows:

1. Use only cable between 0.08 and 2.5 mm²
2. Strip the cable to a length of 5 to 6 mm (0.23 in)
3. Press down the relevant terminal block lever with a screwdriver
4. Insert wire
5. Remove screwdriver

Detachment of wires is the reverse procedure of steps 3 to 5, ensuring that **power is disconnected** before starting.

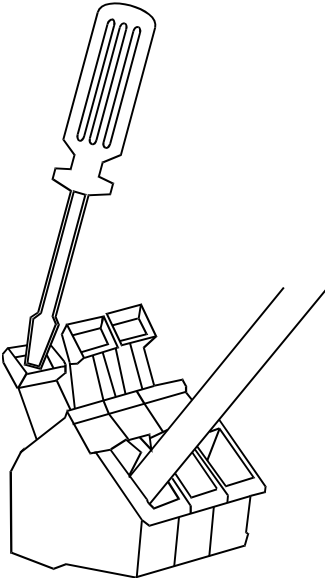


Fig 2. Connectors

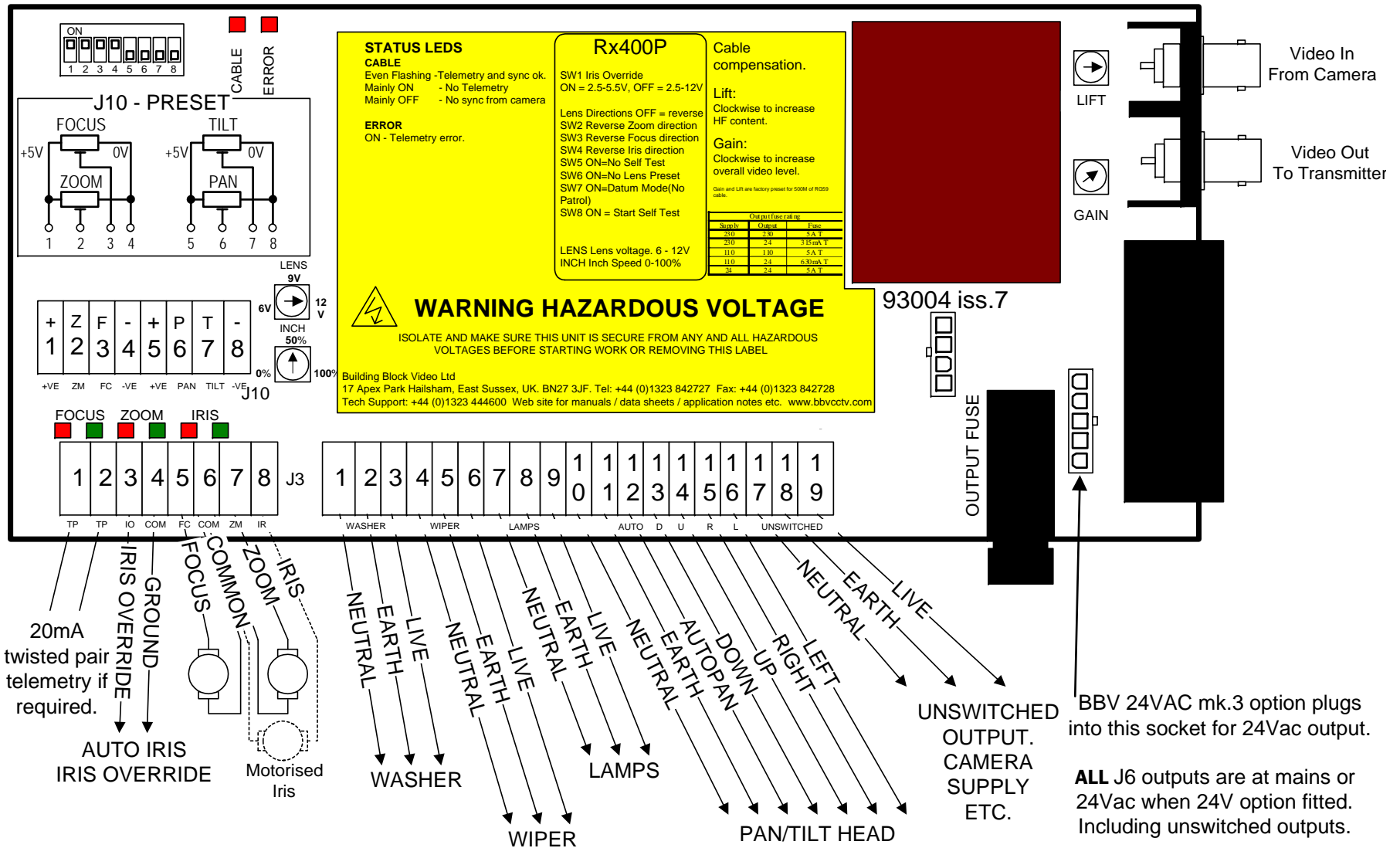


Fig 3. RX400P wiring diagram

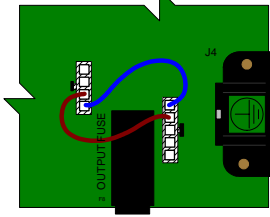
RX400P INSTALLATION INSTRUCTIONS

All connections to the PCB must be via terminal blocks or by plug and socket. These connections are: power, video in, video out, and pan or auxiliary outputs. See Table for the correct connections:

	Function	Connection
Main Cable (18-Core)		
	Camera Power Live	J6 - 19
	Camera Power Ground	J6 - 18
	Camera Power Neutral	J6 - 17
	Pan Left	J6 - 16
	Pan Right	J6 - 15
	Tilt Up	J6 - 14
	Tilt Down	J6 - 13
	Autopan	J6 - 12
	Motor Head Earth	J6 - 11
	Motor Head Return	J6 - 10
	Wipe Live	J6 - 6
	Wipe Earth	J6 - 5
	Wipe Neutral	J6 - 4
	Wash Live	J6 - 3
	Lens Drive Zoom Motor	J3 - 7
	Lens Drive Motor Return (Gnd)	J3 - 6
	Lens Drive Focus Motor	J3 - 5
	Auto Iris Override Ground	J3 - 4
	Auto Iris Override	J3 - 3*
	20 mA Twisted Pair Connection	J3 - 2
	20 mA Twisted Pair Connection	J3 - 1
Lighting Cable (Orange 3-Core)		
	Lights Live	J6 - 9
	Lights Earth	J6 - 8
	Lights Neutral	J6 - 7
Model 4P Presets Cable (8-Core)		
	Head Preset Zero Volts	J10 - 8
	Head Preset Tilt	J10 - 7
	Head Preset Pan	J10 - 6
	Head Preset +5 Volts	J10 - 5
	Lens Preset Zero Volts	J10 - 4
	Lens Preset Focus	J10 - 3
	Lens Preset Zoom	J10 - 2
	Lens Preset +5 Volts	J10 - 1

*When the fitted camera lens has a straight motorised iris, connect to J3-8, *not* J3-3.

Connecting power



For mains voltage pan and tilt heads, the **110Vac or 230Vac** supply is made via the IEC socket J4 .

When using 24Vac heads, if the receiver is operating from a 110Vac or 230Vac supply, either a 230/24Vac kit or 110/24Vac kit is used. **The jumper fitted to J5 is removed and the plug supplied with the kit is connected to J5. Fuse F2 is changed to the value shown in the table on 2.**

Fig 4. J4 socket

When operating from a 24Vac supply, power connection is by means of a screw terminal replacing the IEC socket:

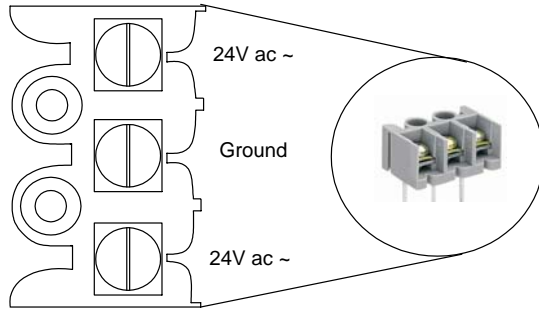


Fig 5. Screw terminal

Setting your DIL switches:

Switch	On	Off
SW1	Cosmicar lens (2.5 – 5.5V)	Seiko/Video Technical lens (2.5 – 12V)
SW2		Reverses focus motor direction
SW3		Reverses zoom motor direction
SW4		Reverses iris motor direction
SW5		Disable remote self test
SW6		Disable lens preset
SW7		Datum or self park mode
SW8		Activates self test

Status LEDs

Error and cable LEDs are mounted on the board to give simple system status information. Their functions are as follows:

Cable LED

Regular blinking - Telemetry and sync signals OK
 Blinking but mainly ON - No telemetry information from the transmitter
 Blinking but mainly OFF - No sync information from the camera

What to do if your cable LED is off:

Check that power is connected to the RX400P. If power is connected and the cable LED is still not on, please contact BBV technical support team on: 01323 444600

Error LED

On - Transmission error (e.g. framing error, parity error)

Both LEDs

Off - No power or major PCB error

Note: As all BBV equipment is designed to auto tune and compensate for any discrepancies in the transmitter signal, there are no further adjustments that need to be made

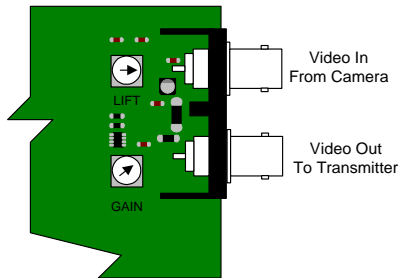
LAUNCH AMPLIFIER

There are two variable controls, Lift and Gain, situated close to the BNC connector J1. These are pre-adjusted for a cable distance of 250m, and are adjustable to compensate for video detail or signal losses if and when longer or shorter cable lengths are used to connect the monitor to the receiver.

The purpose of each control is:

Lift: boosts the high frequency signal

Gain: adjusts the gain of the video signal



Default Position. For shorter cable lengths, turn the relevant control anti-clockwise until the required picture quality is obtained. For longer cable lengths, turn the relevant control clockwise until the required picture clarity is obtained.

ATTENTION: Ensure that the cable is terminated at the monitor end **ONLY**

Fig 6. Lift and gain control

PRESETS ON THE RX400P

Ensure correct connection of the feedback pots, and that power is not connected across one end of the pot and the wiper, as damage to the feedback pot may ensue.

Before using presets you must use the self test function (see below). During the course of the self test the receiver senses the feedback pot connections. If the cabling/travel is reversed then the unit will reset the relevant direction bits within the receiver. Subsequent searches to preset should now function correctly.

DO NOT PROGRAM PRESETS CLOSE TO PHYSICAL ENDSTOPS

SELF TEST

The diagnostic system and status check is activated either locally on the PCB, or remotely from a BBV keypad.

To activate the system locally:

Ensure the Cable LED is on; ie flashing or continuously. (If the Cable LED is not on, please see the Status LED section of this manual on page 10)

Turn SW8 on momentarily. This activates each camera function for 2 seconds in turn.

The Error LED flashes at a two-second rate during self-test. If the Cable LED fails to extinguish, then the unit is unable to self-tune and should be returned for repair.

Order of function test:

Camera moves left
Camera moves right
Camera moves up
Camera moves down
Autopan
Lights and auxiliary output J9-2 "on"
Wiper assembly
Washer assembly
Lens zoom in
Lens zoom out
Lens focus near
Lens focus far
Auto-iris open
Auto-iris close
Iris motor drive open
Iris motor drive close
Diagnostic check complete, unit resets and continues normal operation.

INSTALLATION INSTRUCTIONS FOR PCB BASED RECEIVERS

WARNING: THIS EQUIPMENT MUST BE EARTHED.

1. When mounting BBV receivers on metalwork, it is essential to maintain correct earthing
2. **CORRECT CLEARANCE.** Metal spacers M3 x 10mm long should be used to mount the PCB on the metalwork. These should be earthed to ensure optimum performance. Spacers of the correct length will ensure that minimum air gaps are exceeded.
3. Use all of the mounting points to ensure adequate support with minimum flexing when connections are made to the unit. *See diagram.*
4. In case of queries, technical assistance is available on +44 (0)1323 444600.

Metalwork Drilling Details

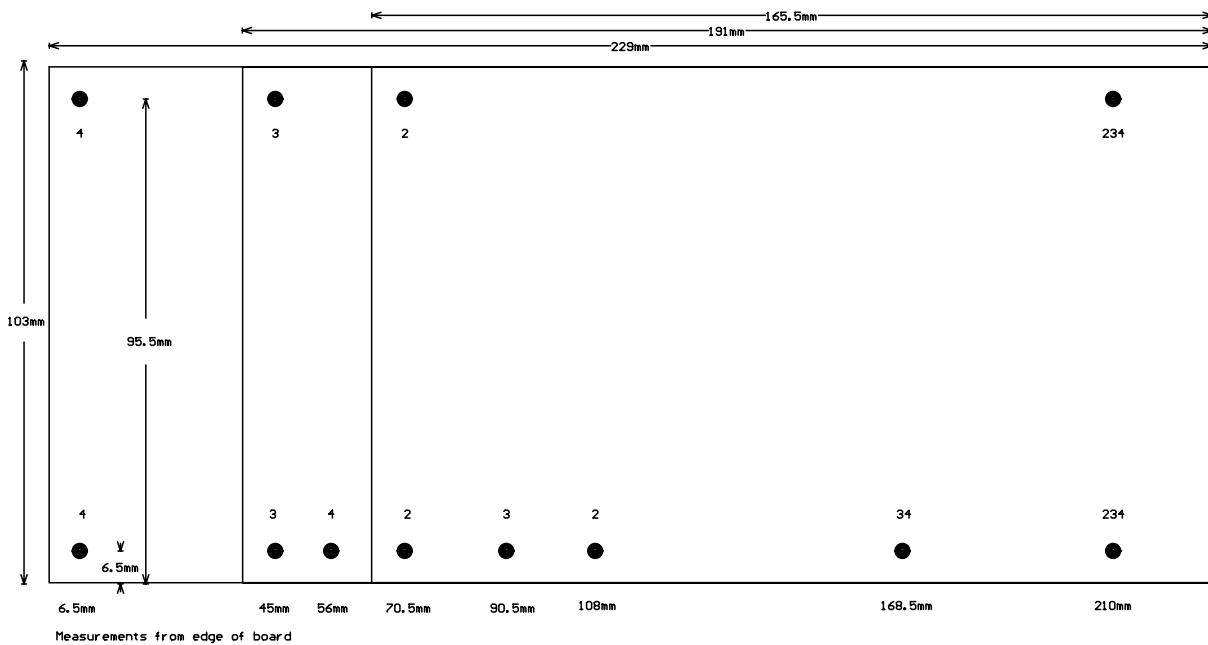


Fig 3. Metalwork drilling details (please note, this is not a template)

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Extend your BBV Warranty from 12 months to 3 years

As of the 1st September 2008 BBV have offered our customers the opportunity to extend the standard 12 month warranty to 3 years.


You must register for the extended warranty within 12 months of the date of manufacture.

How to register for the 3 year warranty

Registering for the new, longer 3 year warranty term is quick and easy.

Either:

Complete the warranty application card that comes in the box with your BBV product, and return it FREEPOST to BBV:

	
BBV 3 Year Warranty	
If this card is returned with the serial number of the product and the Installation company details BBV will extend the warranty period from 12 Months to 36 Months.	
<input type="checkbox"/> Number of Units, _____	<input type="checkbox"/> Start Serial No. _____
<input type="checkbox"/> Final Serial No. _____	
Contact Name _____	
Company Name _____	
Phone Number _____	
Site Name _____	
Address 1 _____	
Address 2 _____	
Address 3 _____	
Post Code _____	
e-mail address _____	
Do you read   PSI MAGAZINE SC	
<input type="checkbox"/> I do not require any other further product information.	<input type="checkbox"/> Pick A Point
Please refer to WWW.BBVCCTV.COM for terms, conditions & exclusions	
<small>VAT Reg. No. 621756439 Registered in England No. 2829221 Registered office: 17 Apex Park, Diplocks Way, Hailsham East Sussex UK BN27 3JU</small>	

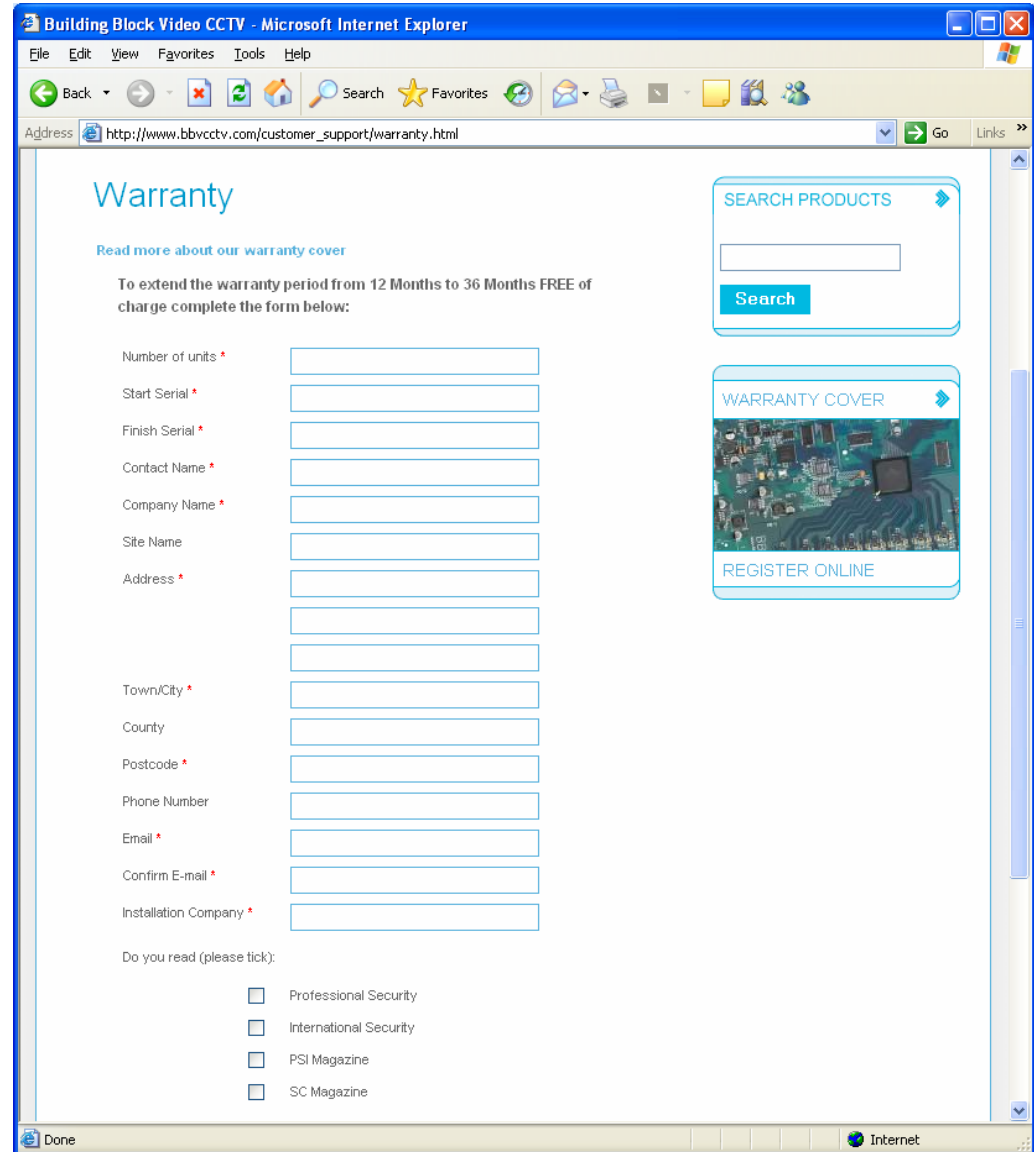
Or alternatively:

Register online at: www.bbvctv.com
Simply enter your details on the 'Warranty Cover' page.



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The screenshot shows a web browser window titled "Building Block Video CCTV - Microsoft Internet Explorer". The address bar shows the URL "http://www.bbvctv.com/customer_support/warranty.html". The page content includes a "Warranty" heading, a "SEARCH PRODUCTS" box, and a "WARRANTY COVER" box with a "REGISTER ONLINE" button. The main form area contains the following fields:

- Number of units *
- Start Serial *
- Finish Serial *
- Contact Name *
- Company Name *
- Site Name
- Address *
- Town/City *
- County
- Postcode *
- Phone Number
- Email *
- Confirm E-mail *
- Installation Company *

At the bottom, there is a section for "Do you read (please tick):" with four options:

- Professional Security
- International Security
- PSI Magazine
- SC Magazine