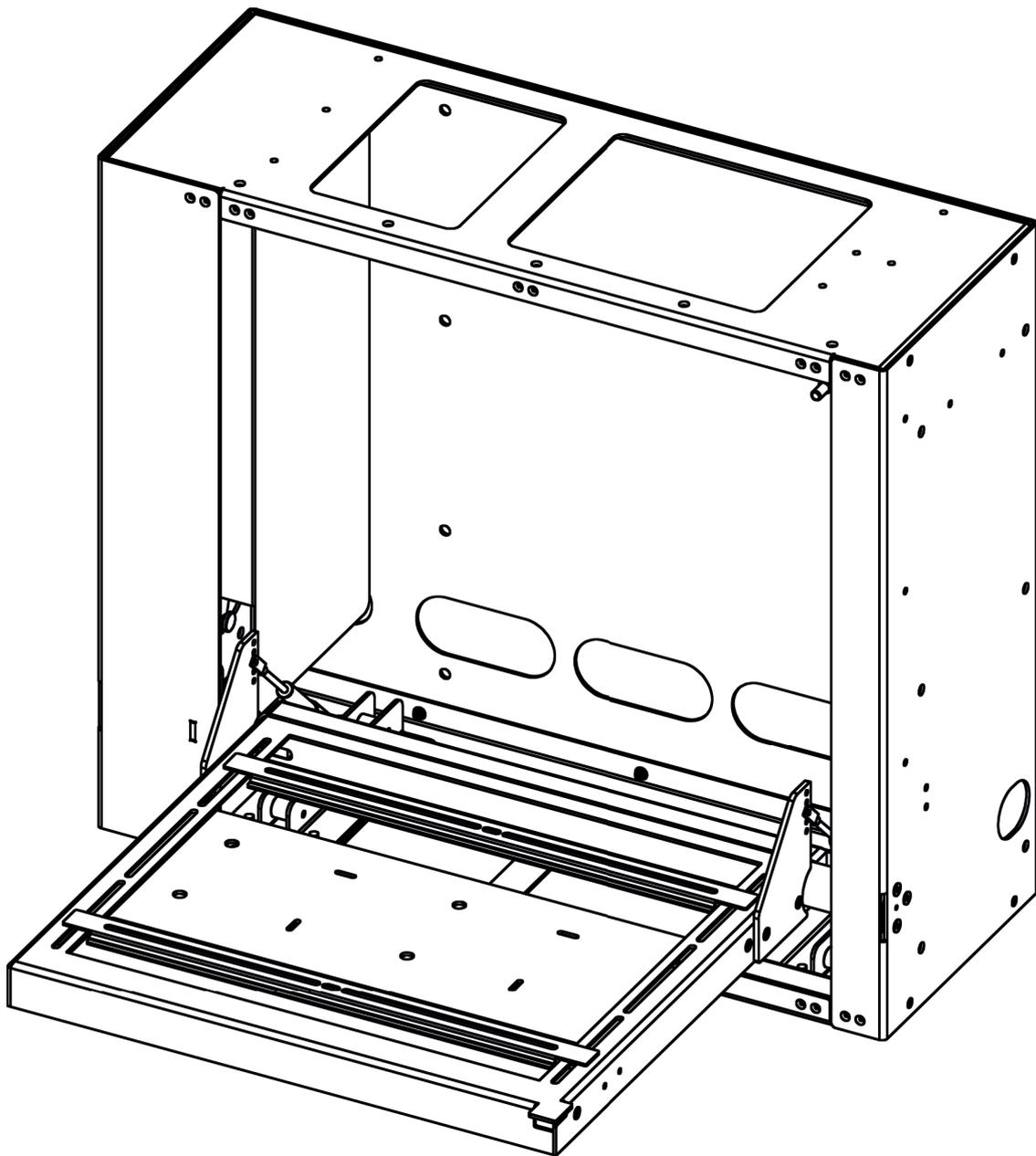


PH2

Projector Hinge

Installation Instructions



Safety Disclaimer

Manual Product Safety Disclaimer - **IMPORTANT SAFETY INSTRUCTIONS BELOW**

WARNING: Failure to provide adequate structural strengthening, prior to installation can result in serious personal injury or damage to the equipment. It is the installer's responsibility to ensure the structure to which the component is affixed can support four times the weight of the component and any additional apparatus mounted to the component.

WARNING: Do not exceed the weight capacity for this product as listed below. This can result in serious personal injury or damage to the equipment. It is the installer's responsibility to ensure that the total combined weight of all attached components does not exceed that of the maximum figure stated.

WARNING: Risk of death or serious injury may occur when children climb on audio and/or video equipment or furniture. A remote control or toys placed on the furnishing may encourage a child to climb on the furnishing and as a result the furnishing may tip over on to the child.

WARNING: Risk of death or serious injury may occur. Relocating audio and/or video equipment to furniture not specifically designed to support audio and/or video equipment may result in death or serious injury due to the furnishing collapsing or over turning onto a child or adult.



Warning - Risk of Injury!



Only for use with projectors weighing **33LBS (15KG) OR LESS**. Use with heavier projectors/ equipment may lead to instability causing tip over or failure resulting in death or serious injury.

Bracket Suitable for Residential and Commercial Use.

WARNING:

1. Keep all documentation/instructions after fitting.
2. Read all technical instructions fully before installation and use. It is the installer's responsibility to ensure that all documentation is passed on the end user and read fully before operation.
3. Do not use near water or outdoors unless the product has been specifically designed to do so.
4. Protect the any cables or cords being used near this bracket from being walked on or pinched to prevent damage and risk of injury.
5. Use this product only for its intended purpose as described in these instructions and only use attachments/accessories specified by the manufacturer.
6. Refer all servicing to qualified personnel. Servicing is required regularly on an annual basis.
7. Do not operate the product if it is damaged in any way, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Contact the original installer/manufacturer to arrange repair or return.

WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Clean only with a dry cloth and always unplug any electrical items being used in conjunction with this product before cleaning.
-

Future Sound & Vision trading as Future Automation intend to make this and all documentation as accurate as possible. However, Future Automation makes no claim that the information contained herein covers all details, conditions or variations, nor does it provide for every possible contingency in connection with the installation or use of this product. The information contained in this document is subject to change without prior notice or obligation of any kind. Future Automation makes no representation of warranty, expressed or implied, regarding the information contained herein. Future Automation assumes no responsibility for accuracy, completeness or sufficiency of the information contained in this document.

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Product Warranty

Future Automation - Product Warranty Details

Your warranty covers the cost of labour and spare parts incurred by any defects in materials and workmanship under normal use during a **two year period from date of purchase**.

Under the warranty, we aim to either solve the issue remotely (via telephone or email support) or if the mechanism requires a part, arrange a visit to your premises by a Future Automation approved engineer or send replacement items where appropriate.

Support for any problems that are not hardware or software faults are excluded from the warranty entitlement.

Warranty repairs will be carried out as rapidly as possible, but subject to parts availability.

Some things are not covered under warranty, the following is excluded from warranty service:

- Malfunctioning caused by misuse or damage, accidental or otherwise, or service modification by persons not authorised by Future Automation, or the use of any non Future Automation supplied parts;
- Any electrical, or other environmental work external to your Future Automation mechanism including power cuts, surges or lightning strikes;
- Additional items not supplied by Future Automation although they may have been supplied together by the retailer;
- Any 3rd party software products controlling your mechanism;
- Any transfer of ownership. Warranty is provided only to the initial purchaser;
- Compensation for loss of use of the product, and consequential loss of any kind.

Any part of your system that needs to be replaced during a warranty repair becomes the property of Future Automation.

Customer Support - Contact Details

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Saturday & Sunday - Closed

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Dover
NH
03820

Phone: +1 (603) 742 9181

Email: info@futureautomation.net

Office Hours:

Mon - Fri 7:00 to 17:00 EST
Saturday & Sunday - Closed

Product/Installer Details - **To be Complete By Original Installer**

Installer Contact Details:

Contact Address:

Contact Phone:

Contact Email:

Original Installation Date: _____

Product Serial Number: _____

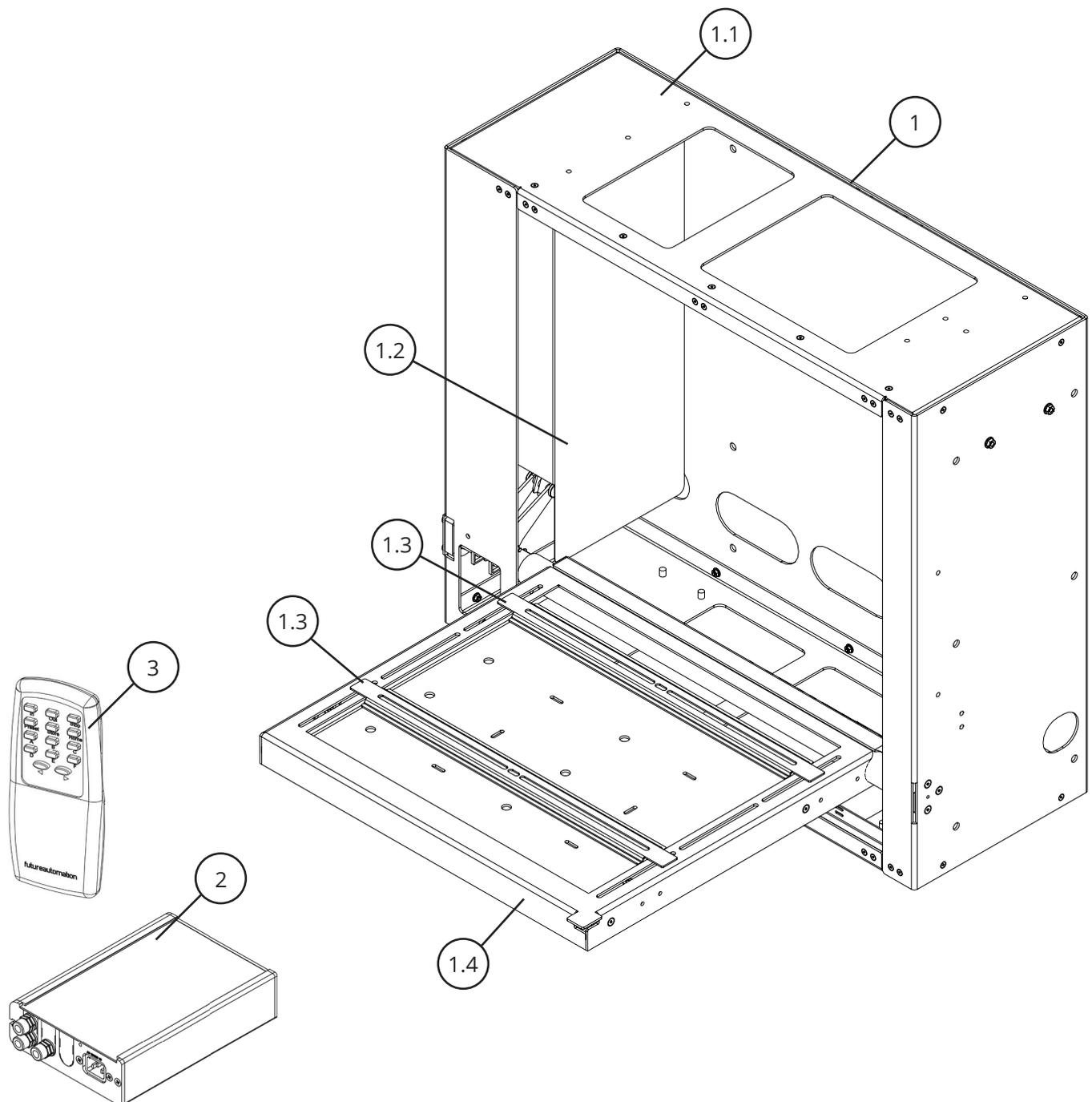
Package Contents

Package Contents:

- 1 - PH2 Mechanism
 - 1.1 - Main Carriage
 - 1.2 - Inner Covers
 - 1.3 - Projector Mount Bars
 - 1.4 - Door Panel Mount
- 2 - Control Box (Size and Style May Vary)
- 3 - Infrared (IR) Remote Control

Items Not Shown On Page:

- 4 - PH2 Accessory Pack
 - 4.1 - x2 AAA Batteries
 - 4.2 - Mains Power Lead
 - 4.3 - InfraRed Control Lead
 - 4.5 - CAT5 Lead with RJ45 Connector
 - 4.6 - Screen Fixings Pack (Multi-pack of Nuts, Bolts and Washers)



Mechanism Quick-start Guide

Quick-start Guide

Some Future Automation mechanisms may ship with the control box disconnected to prevent damage during transit. In order to operate the mechanism, the control box will need to be reconnected, then have mains power applied along with the desired control method.

Reconnecting The Control Box

To reconnect the mechanism control box, follow the below steps:

1. Make sure the power is disconnected from the control box.
2. Remove the retaining screw and washer from the end of the control box to allow removal of the control box lid. (Image 1 Below).
3. Slide off the control box lid to reveal the control board inside.
4. Locate the green connector on the end of the loom leading from the lift mechanism. This plug will have a small tag attached stating the correct connecting socket on the control board (e.g. "AC1", "DC2"...). (Image 2 Below).
5. Plug the green connector into the corresponding socket on the control board. This plug is handed and will only connect correctly one way. Do NOT force the connector into the socket, this can cause serious damage to the control board and mechanism.
6. Route the wiring loom out of the end of the control box by inserting the black plastic inserts into the slots provided. (Image 3 Below).
7. Slide the control box cover back over the control board and replace the fixing screw and washer.



Image 1.

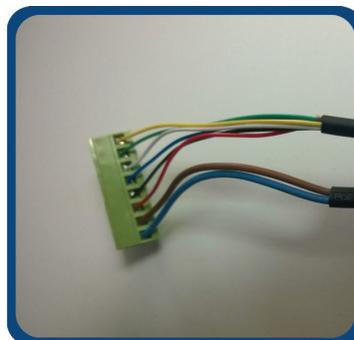


Image 2.



Image 3.



Image 4.

IMPORTANT

For the mechanism to operate, the green three way safety connector with the loop of wire attached, must also be plugged into the end of the control box. (Image 4 above). If this connector is not plugged in, a bright red LED will be visible inside control board and the Input Confirmation Input LED will be permanently illuminated.

Installation Instructions

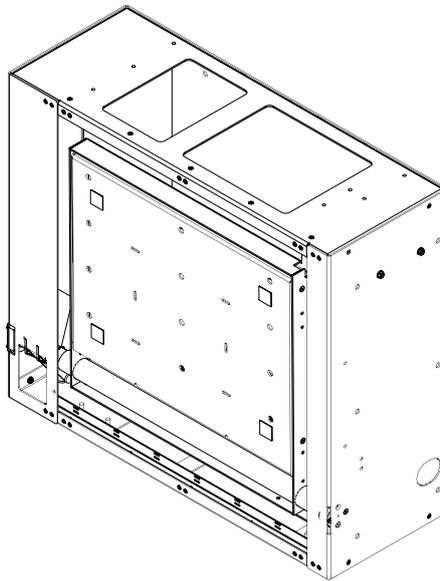
1 - Initial Testing

Before installation of the PH2 mechanism, the following should be checked;

1. There is no damage to any part of the PH2 mechanism, control board or wiring.
2. All internal and external mechanism wiring is secure.
3. The mechanism is in the fully CLOSED position.
4. The mechanism operates correctly. This can be tested by moving the mechanism between the CLOSED and OPEN positions using the IR Remote (Refer to Page 17 for Operating Instructions).

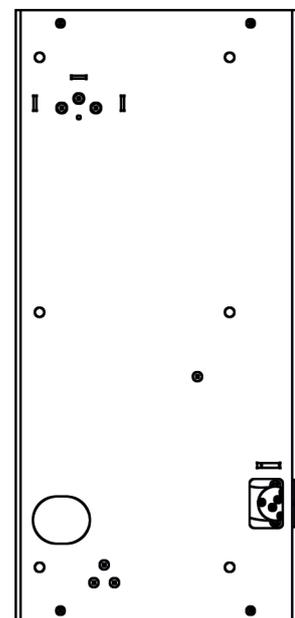
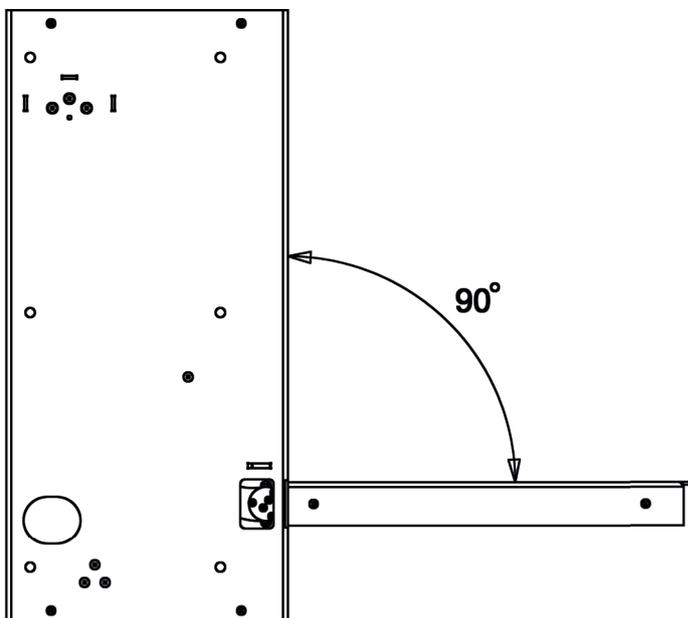


WARNING: THE PH2 MECHANISM **DOES NOT** HAVE AN ANTI-JAM CAPABILITY. THE MOTOR DRIVE SYSTEM WILL CONTINUE TO MOVE UNTIL A LIMIT SWITCH IS CONTACTED. KEEP HANDS AND ANY OBJECTS CLEAR OF MECHANISM DURING OPERATION TO REDUCE RISK OF DAMAGE OR INJURY.



Open Position

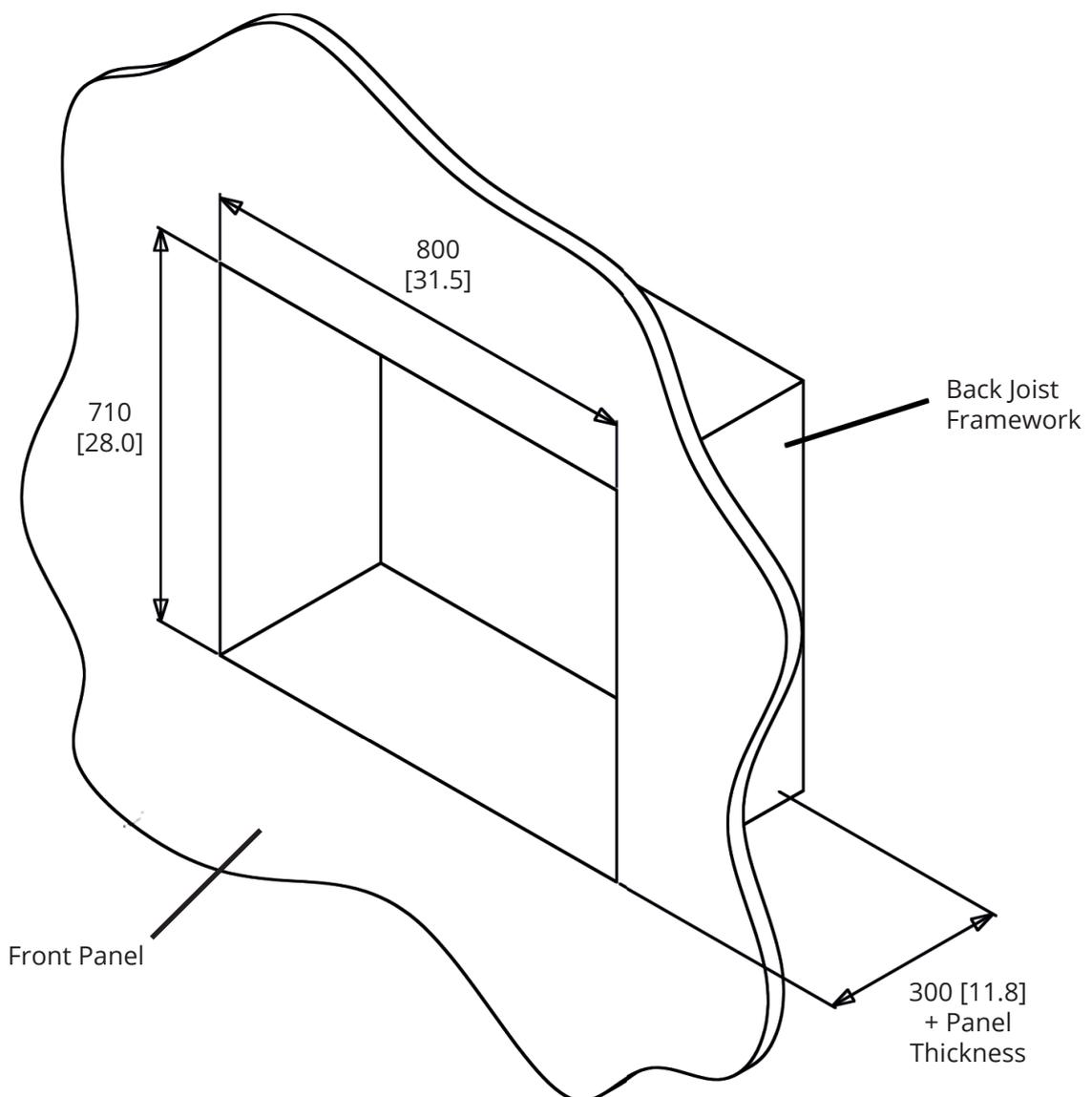
Closed Position



Installation Instructions

2 - Creating In-Wall Void

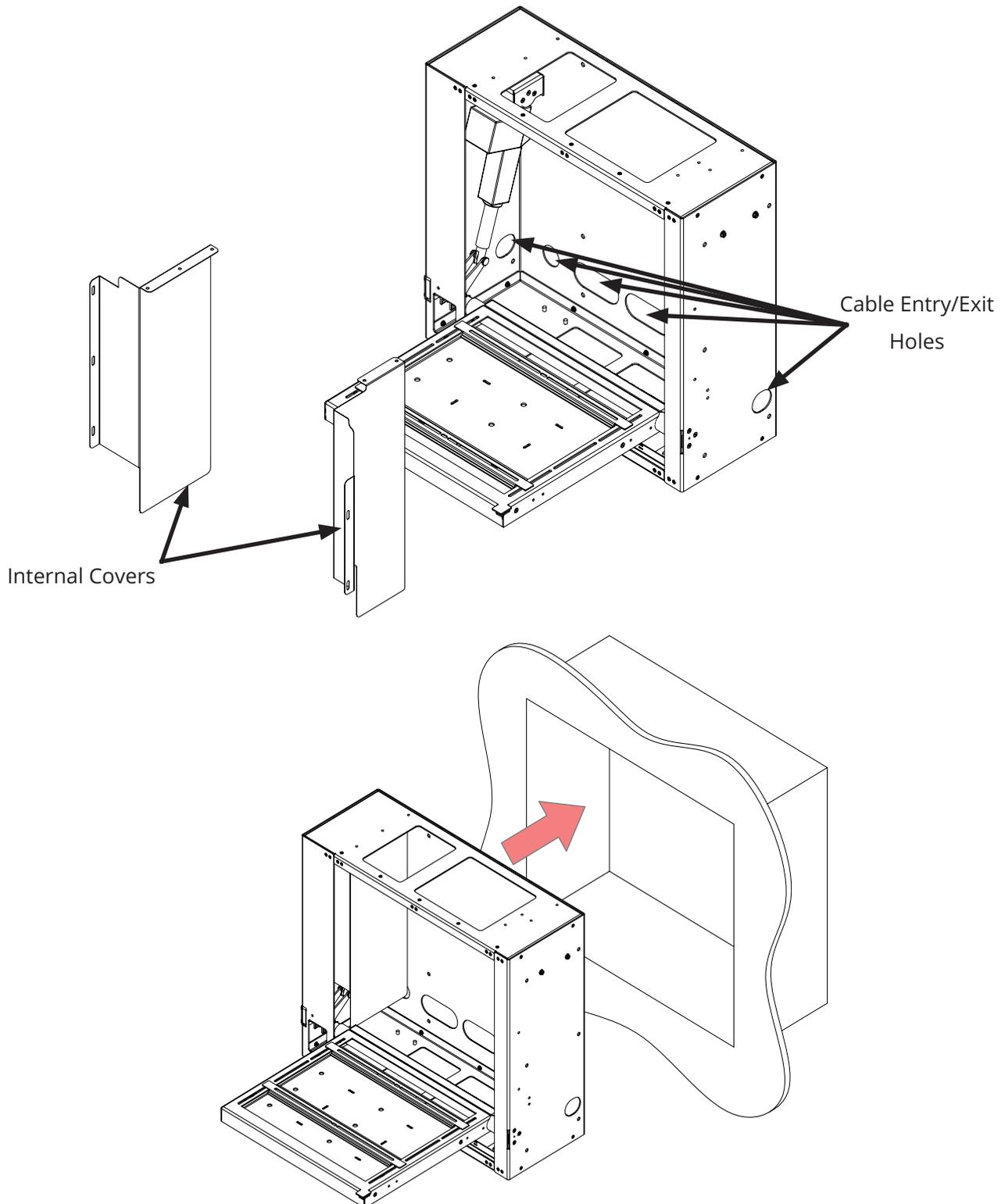
1. As the PH2 Mechanism has been design for in-wall fixing, it requires a void size of Width 800mm [31.5"] x Height 710mm [28.0"] x Depth 300mm [11.8"] + Front Panel Thickness. It is strongly recommended that a supporting structure is attached to all four faces of the Main Enclosure.
2. Power and Signal cables will need to be run to the lower portion of the wall void for entry into the PH2 Mechanism.



Installation Instructions

3 - In-Wall Installation

1. The PH2 Mechanism will need to be in the OPEN position for in wall installation. Refer to Page 17 for Operating Instructions on how to open the mechanism.
2. Remove the Internal Covers from the PH2 Mechanism and keep them for installation later.
3. Power and Signal cables for the projector will need to be run through the mechanism's cable entry/exit hole shown below, prior to positioning the mechanism into the wall cavity.
4. Insert the PH2 Mechanism into wall cavity in the orientation shown below.

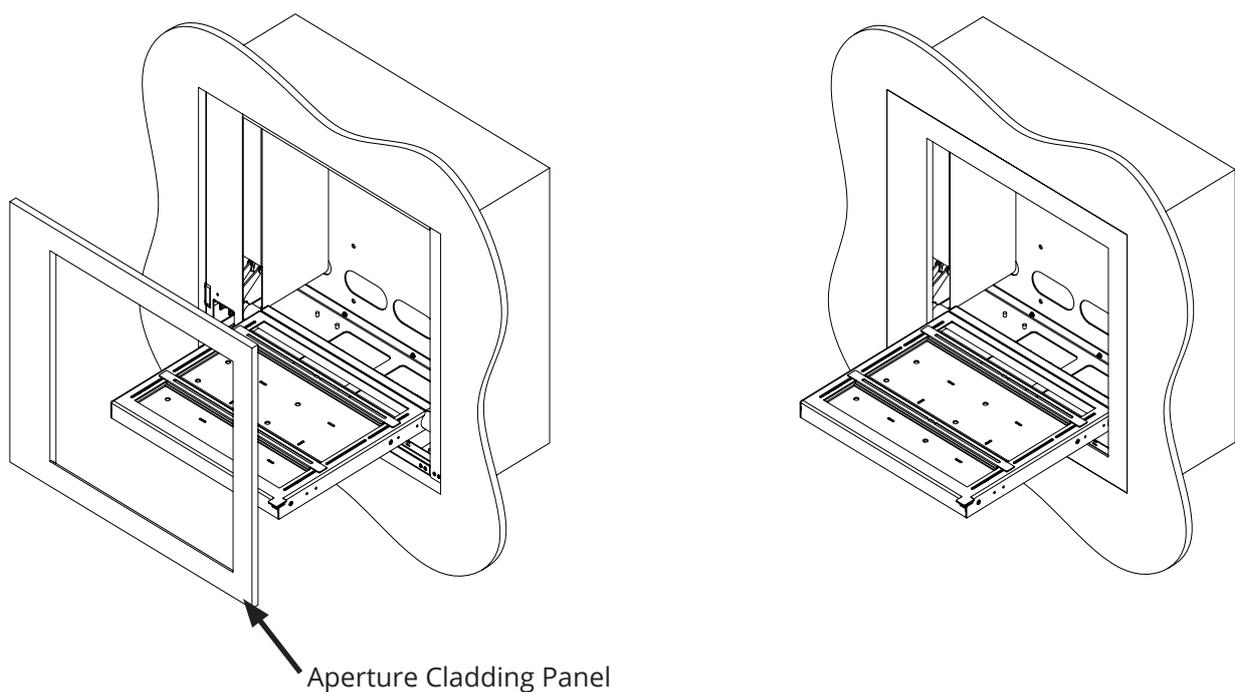
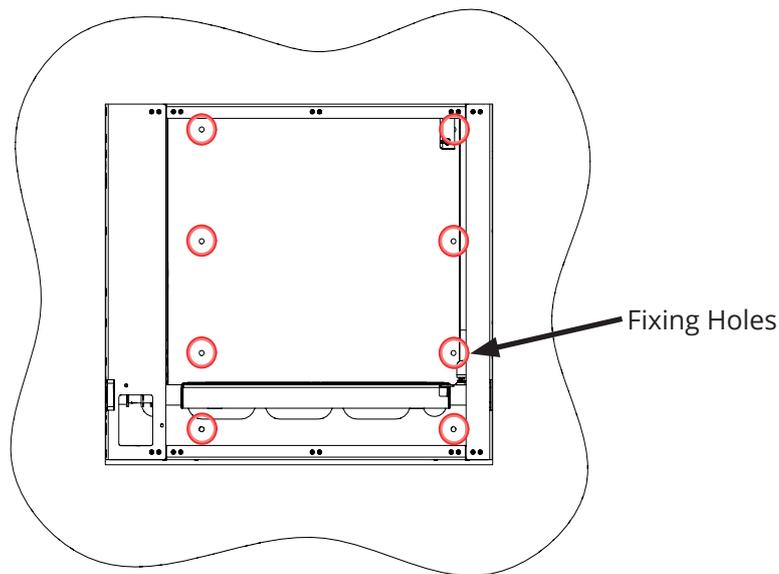


Installation Instructions

3 - In-Wall Installation

5. The PH2 Mechanism should be secured into the wall cavity using suitable wall fixings (not supplied) through the 8 fixing holes indicated below.
6. Once secured to the wall void, replace the internal covers removed in Stage 3. Ensure enough slack has been left in the projector power and signal cables for the mechanism to open and close correctly once the projector has been installed.
7. Affix the aperture cladding panel to the front of the PH2 mechanism. Dimensions for this cladding panel can be found on the PH2 Technical Specification Sheet.

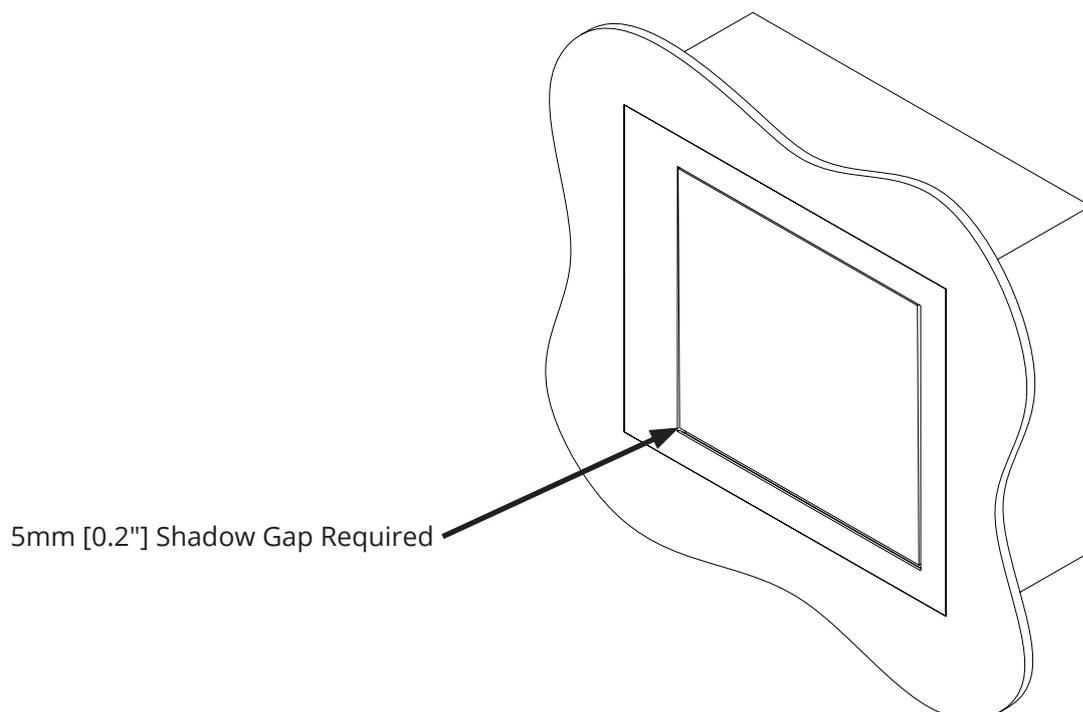
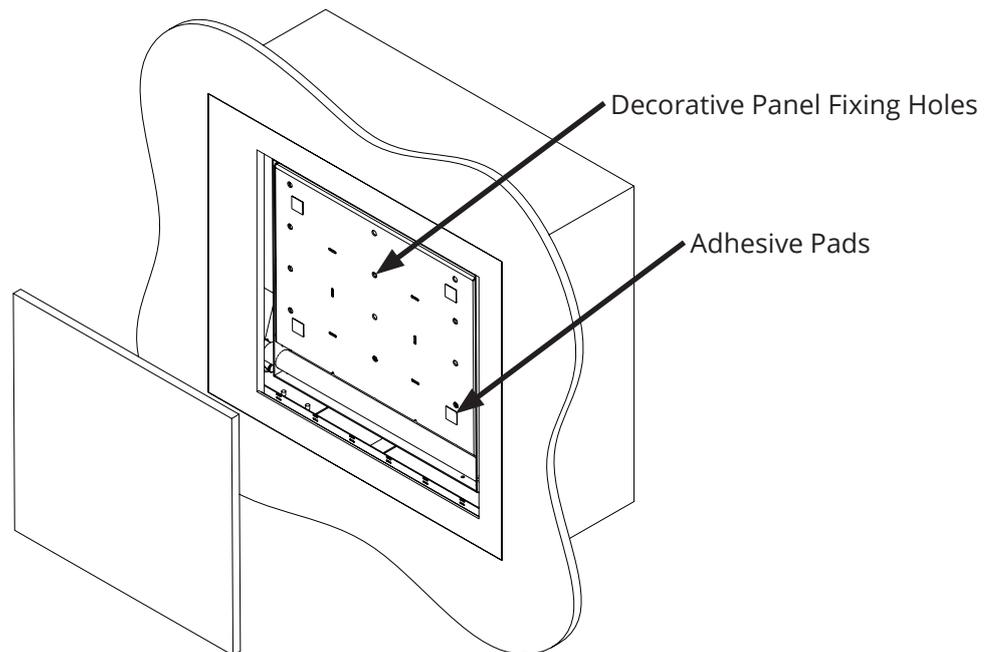
NOTE: THIS CLADDING SHOULD BE REMOVABLE TO ALLOW ACCESS TO THE MECHANISM FOR SERVICING.



Installation Instructions

4 - Front Panel Fitting

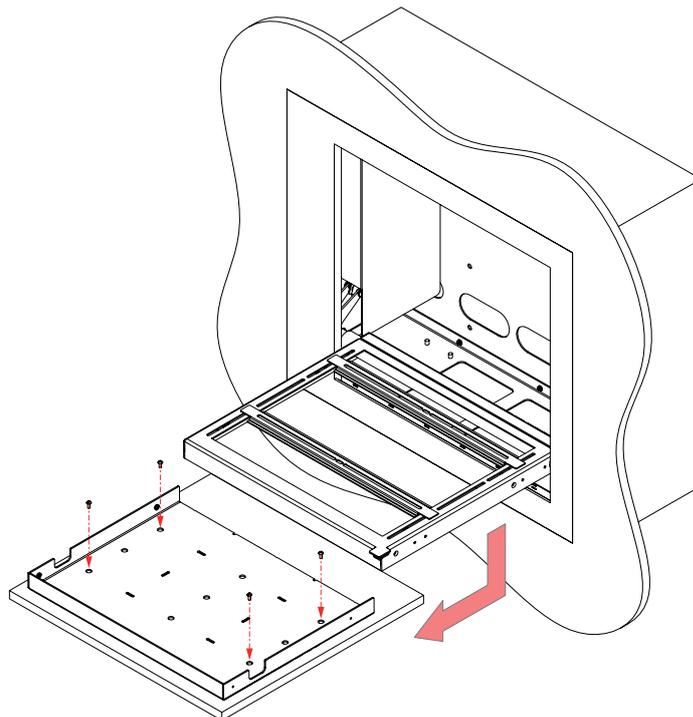
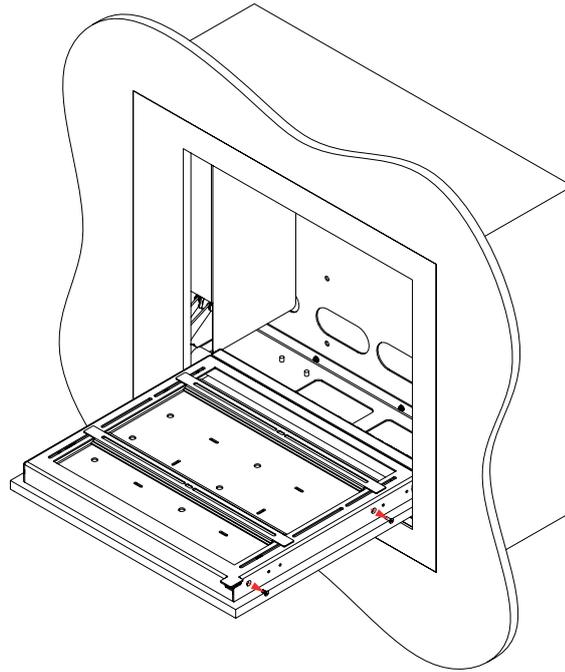
1. A decorative finishing panel can be attached to the underside of the PH2 lid to provide a clean finish when the mechanism is in the CLOSED Position. This can be mounted using the fixing holes in the PH2 Lid shown below (See Page 12), or by using double sided adhesive pads (See Below).
2. Position the decorative panel with a consistent 5mm [0.2"] gap all around to allow for enough clearance when operating the mechanism,



Installation Instructions

4 - Front Panel Fitting

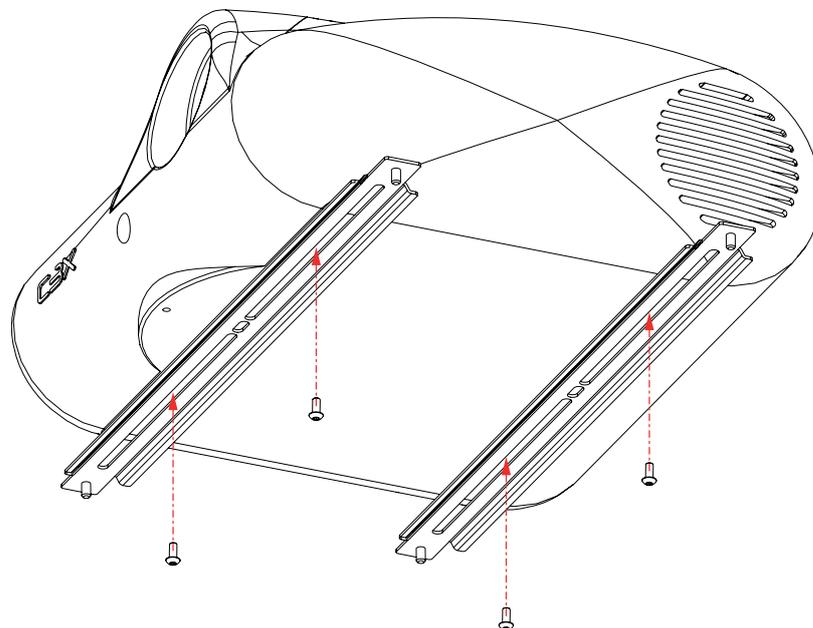
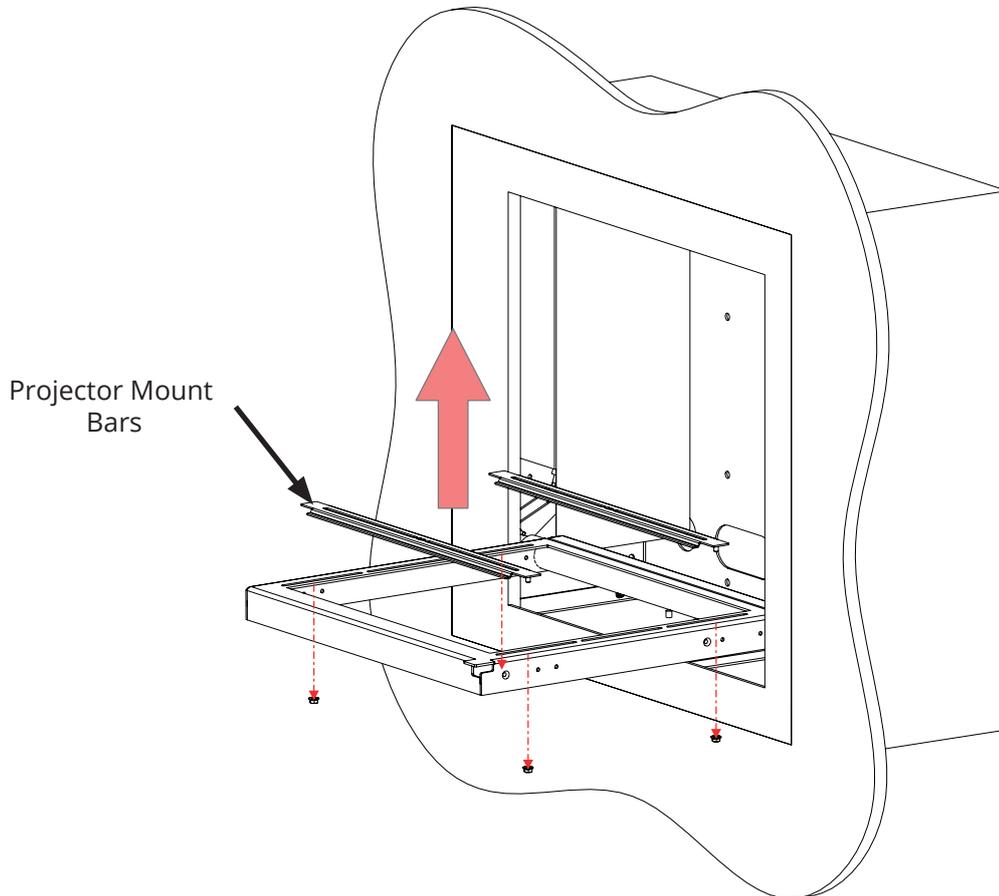
3. To Fix the decorative panel using the fixing holes, the mechanism will need to be in the OPEN position (Refer to Page 17 for Operating Instructions). The internal fixing panel can be detached by removing the 4 x Side Locking Bolts shown below.
4. Once removed, screw through the series of holes and slots in fixing panel to secure decorative panel. Do not reattached the fixing panel yet.



Installation Instructions

5 - Mounting The Projector

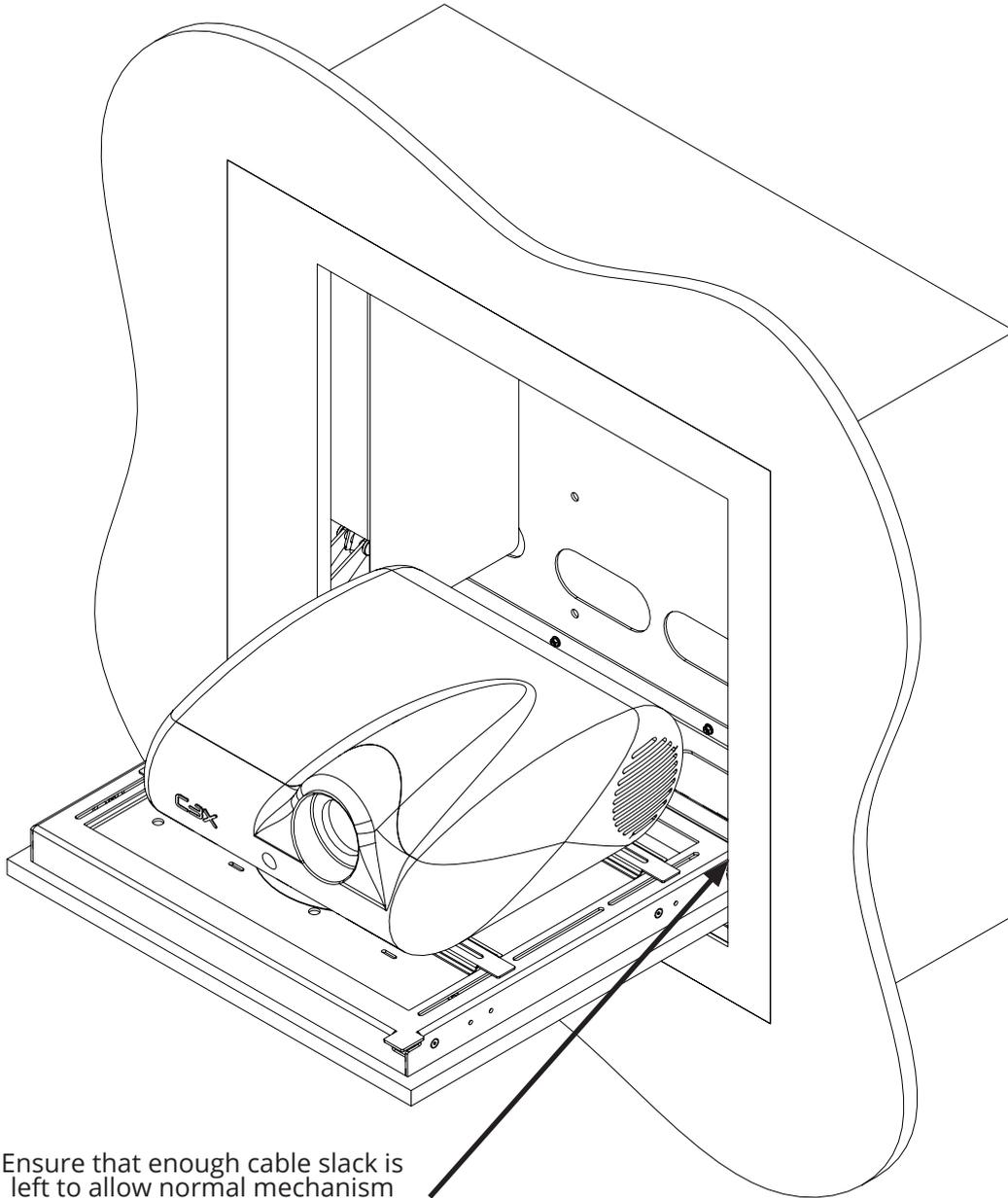
1. Remove the projector mount bars from the PH2 Mechanism by releasing the 4 x M5 Nuts from underneath as shown below.
2. The projector mount bars are slotted to allow for the fitting of most common projectors. Offer the projector mount bars up to the projector and use suitable fixings to secure together.



Installation Instructions

5 - Mounting The Projector

3. Place the projector mounting bars (with projector attached) back into the PH2 mechanism.
4. Make final adjustments to the projector's position before securing its fixing bolts and reattaching the 4 x M5 nuts removed previously.
5. Reattach the fixing panel and decorative panel to the PH2 Lid and replace the side locking bolts.



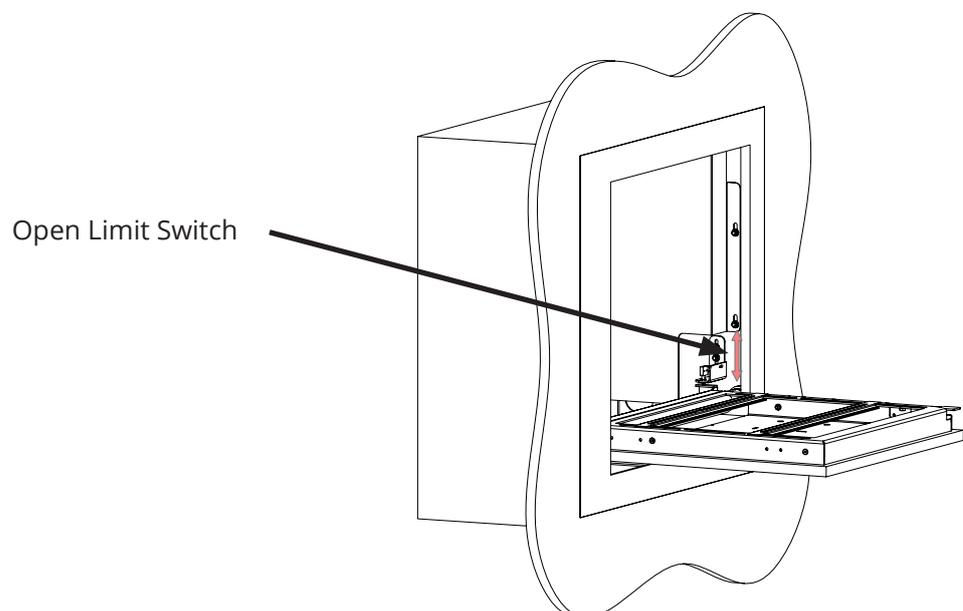
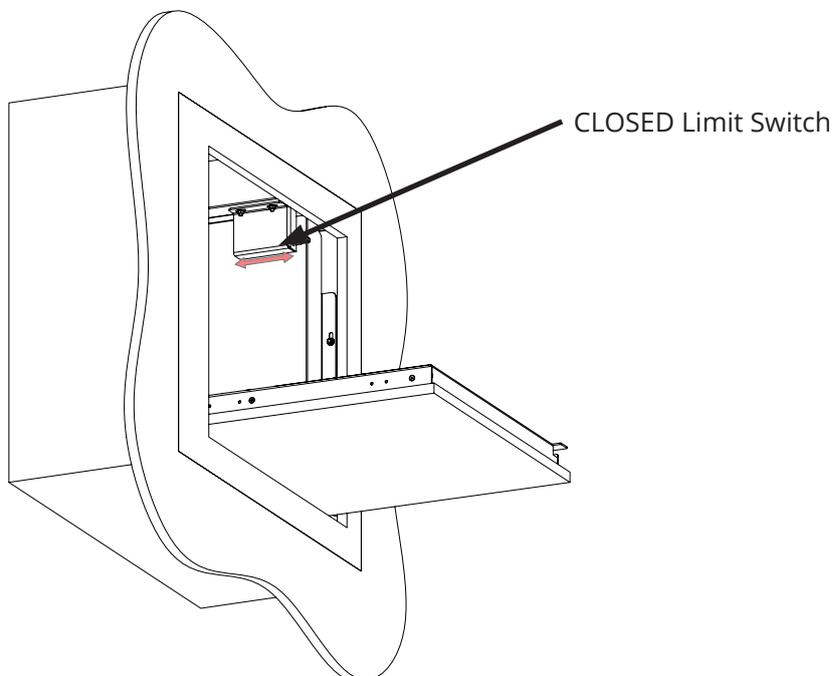
Ensure that enough cable slack is left to allow normal mechanism operation without risk of tugging or damage to cables.

Installation Instructions

6 - Adjusting Mechanism Limits

1. The PH2 Mechanism will be supplied with the CLOSED position factory set at 0°. If this needs adjusting, the CLOSED limit switch is located at the top of the mechanism as shown below. To Adjust, loosen the 2 x M6 nuts to release switch bracket and slide the switch assembly towards, or away from the back of the PH2 mechanism.
2. The PH2 Mechanism will be supplied with the OPEN position factory set at 90°. If this needs adjusting, the OPEN limit switch is located at the bottom of the mechanism as shown below. To Adjust, loosen the 2 x M6 nuts to release switch bracket and slide the switch assembly towards, or away from the top of the PH2 mechanism.

WARNING: ENSURE THE MECHANISM HAS STOPPED MOVING AND THE POWER IS REMOVED BEFORE ADJUSTING LIMIT SWITCHES. FAILURE TO DO CAN RESULT IN INJURY AND/OR DAMAGE TO THE MECHANISM.



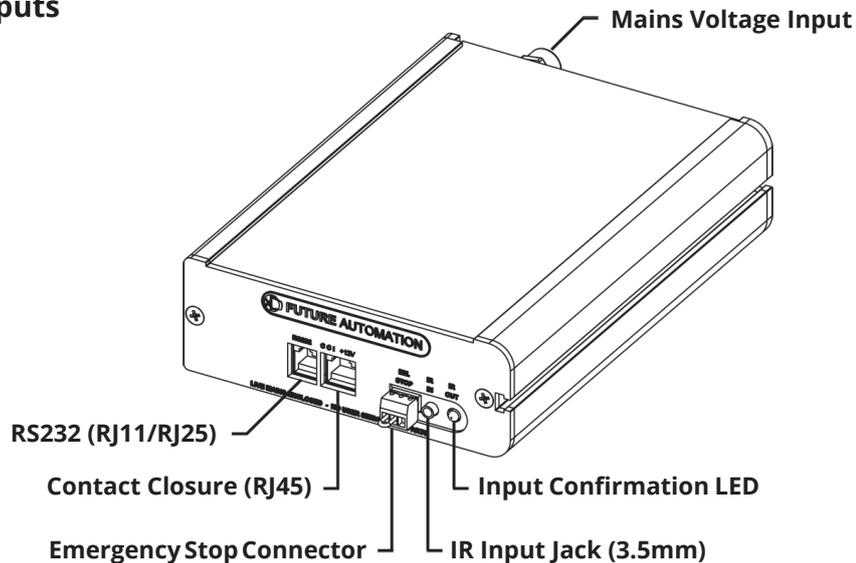
Mechanism Control - General

Mechanism Control

This mechanism has multiple standard control methods, each of which requires a different input method to the control box. For ease, the input sockets on the control board are labelled below.

(Control box size and style may vary to image shown)

Control Box Inputs



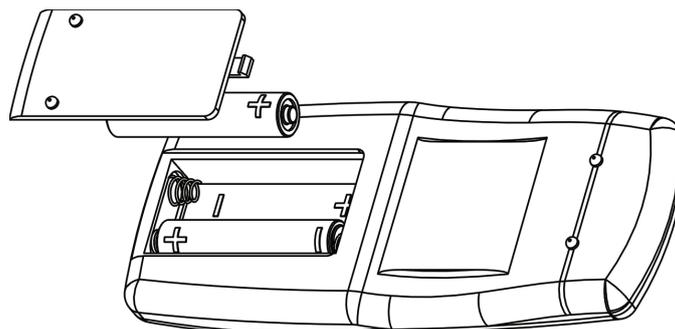
Mechanism Emergency Stop Connector

This mechanism features an Emergency Stop Connector, which **MUST** be plugged into the control box in the connector labelled above for the mechanism to operate. If this connector is not plugged in, the Input Confirmation LED will be permanently lit. As per the red plastic tag attached to the Emergency Stop Connector (and shown below), the small loop of wire in this connector is designed to be replaced by a third party safety mechanism.



Replacing Mechanism Batteries

The standard Future Automation Infrared (IR) remote control required x2 AAA batteries to operate. These are provided with the mechanism in the Accessories Pack. These batteries can be replaced as the per the image below.



Mechanism Control - InfraRed (IR)

Infrared (IR) Operation

This Mechanism can be controlled via the supplied 14 button Infrared (IR) Remote Control, pair with the supplied Infrared (IR) lead and sensor.

The mechanism's functions can be controlled by plugging the Infrared (IR) lead and sensor into the 3.5mm IR Input Jack shown on the General Mechanism Control page.

Confirmation of Infrared (IR) input will be shown by a single flash of the large green LED located on the end of the control box.

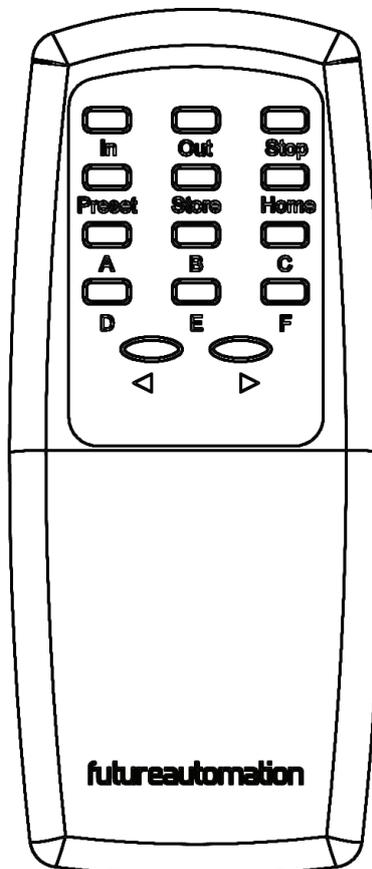
As Infrared (IR) control works over line of site, the Infrared (IR) sensor must be directly viewable from what ever location the remote control is being used from.

Infrared (IR) Remote Control Button Layout

IN - Brings the mechanism into the cabinet.

OUT - Brings the mechanism out of the cabinet, without swivelling.

STOP - Will stop the operation of the mechanism at ANY position.



IMPORTANT

Only buttons indicated above are functional with the product. Any other button press will STOP the mechanism.

Mechanism Control - Contact Closure

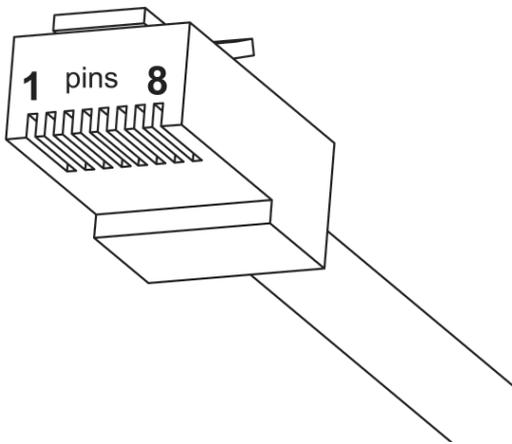
Contact Closure Operation

This Mechanism can be controlled via Contact Closure, utilising an 8 Pin RJ45 Connector attached to a length of CAT5 (Type 568A or 568B) cable.

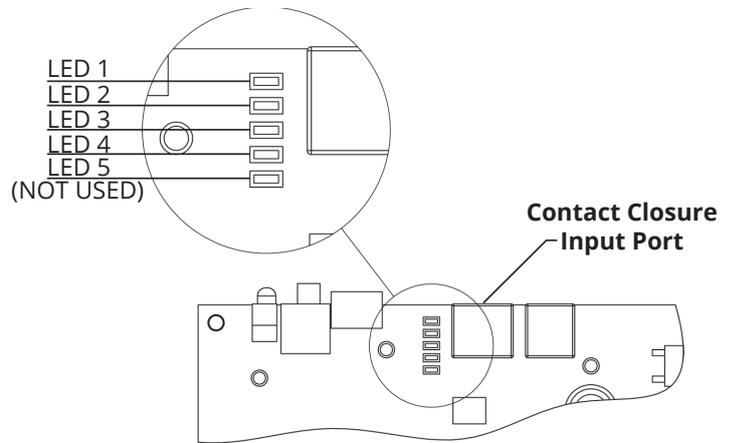
The mechanism's functions can be controlled by plugging this into the RJ45 port on the mechanism control board, then shorting pins 1-8 on this connector as shown in the Contact Closure Input Table below.

Confirmation of Contact Closure input will be shown by a single flash of the large green LED located on the end of the control box, as well as illumination of the corresponding Contact Closure LED on the printed circuit board as shown below.

RJ45 Pin Layout



Contact Closure LED Layout



Contact Closure Input Table

PIN	DESCRIPTION	ACTION
1	12V SUPPLY	12V SUPPLY - CURRENT LIMITED
2	12V LATCH	WHEN 12V ATTACHED, DEVICE WILL GO OUT TO PRESET POSITION. WHEN 12V REMOVED, DEVICE WILL GO IN.
3	GROUND	GROUND
4		
5	DEVICE LATCH	SHORT TO GROUND (PIN 3), DEVICE WILL GO OUT TO PRESET POSITION, REMOVE SHORT DEVICE WILL GO IN.
6	DEVICE STOP	MOMENTARY SHORT TO GROUND (PIN 3), STOPS DEVICE IN CURRENT POSITION.
7	DEVICE OUT	MOMENTARY SHORT TO GROUND (PIN 3), MAKES DEVICE GO OUT.
8	DEVICE IN	MOMENTARY SHORT TO GROUND (PIN 3), MAKES DEVICE GO IN.

WIRE/CABLE TYPE		LED INDICATOR
568A	568B	
W G	W O	
G	O	
W O	W G	
B	B	
W B	W B	LED 4
O	G	LED 3
W BR	W BR	LED 2
BR	BR	LED 1

Mechanism Control - RS232

RS232 Operation

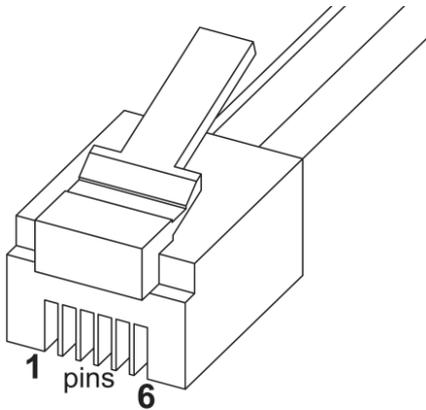
This Mechanism can be controlled via RS232, utilising a 6 Pin RJ11/RJ25 connector OR 9 Pin Serial connector attached to a length of 6 core cable.

The mechanism's functions can be controlled by plugging this into the RJ11/RJ25 port on the mechanism control box, then inputting the RS232 commands shown in the RS232 Input Table below.

Confirmation of Contact Closure input will be shown by a single flash of the large green LED located on the end of the control box.

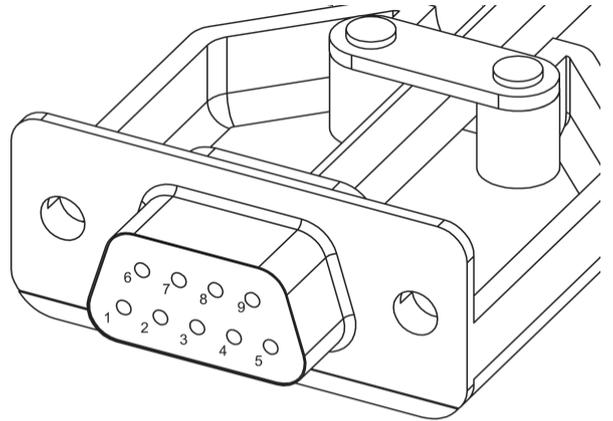
RJ11/RJ25 Pin Layout

- PIN 1: RX**
- PIN 6: TX**
- PIN 3 & 4: GROUND**



Serial Pin Layout

- PIN 2: RX**
- PIN 3: TX**
- PIN 5: GROUND**



RS232 Programming Details

Baud Rate: 9600

Stop Bit: 1

Parity: None

Databits: 8

RJ11/RJ25	Func.	9 PIN Serial	Colour
PIN 1	TX-RX	PIN 2	Blue
PIN 3	GROUND	PIN 5	Green
PIN 4	GROUND	PIN 5	Red
PIN 6	RX-TX	PIN 3	White

RS232 Input Table

IMPORTANT - Ensure all protocols are entered exactly as written below, including Carriage Return (ENTER / ASCII 13)

Protocol	Action
fa_in Carriage Return (Enter / ASCII 13)	Device IN
fa_out Carriage Return (Enter / ASCII 13)	Device OUT
fa_stop Carriage Return (Enter / ASCII 13)	Device STOP (At any position)

Contact Information



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