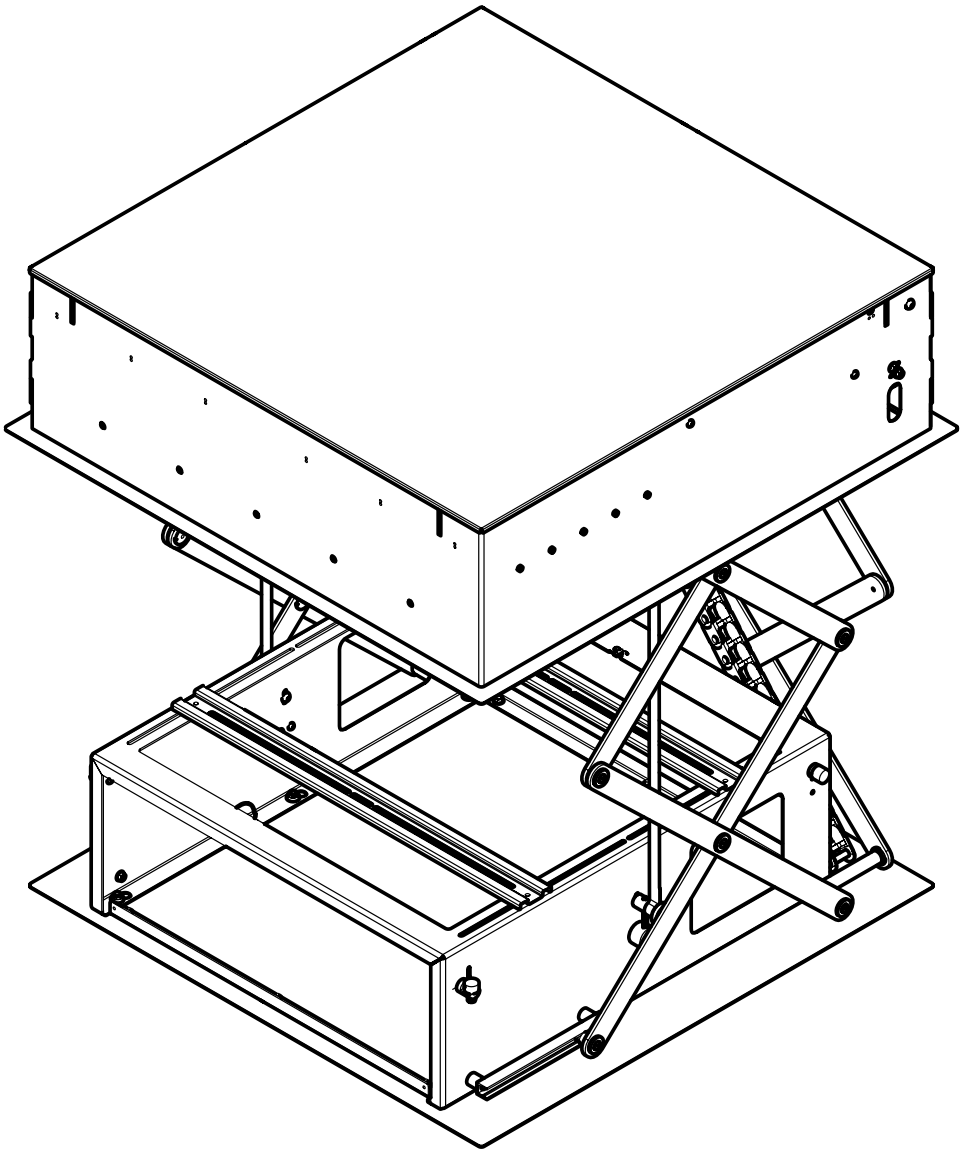
PD3.5

Projector Drop

Installation Instructions



Issue 002

futureautomation
moving audio visual solutions

Contents

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Safety and Servicing

Product Safety Disclaimer - IMPORTANT SAFETY INSTRUCTIONS BELOW

By reading this document and/or installing this mechanism you agree that you have both read and understood these conditions as they are written.

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 equipment weighing **100LBS (45KG) OR LESS**. Use with heavier projectors/equipment may lead to instability causing tip over or failure resulting in death or serious injury.

Product 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 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. 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.

Product Servicing Information

We require that all legacy, current and future products that Future Automation supply are regularly serviced by a Future Automation approved dealer at yearly intervals commencing on the installation date of a product.

Future Automation accepts no liability/responsibility for damages and/or injury incurred by products that have not been serviced on a yearly basis from the date of installation.

Future Automation accepts no liability/responsibility for damages and/or injury incurred by negligence or improper use of our products.

Future Automation accepts no liability/responsibility for damages and/or injury incurred by improper installation, including disregard for the maximum size and weight requirements specific to the installed product(s).

A warranty sheet is provided in this document that must be filled in by the approved Future Automation Dealer who is installing the product .

WARNING - Failure to fill out the included warranty sheet will invalidate the Future Automation product warranty offered.

The provided warranty sheet also contains a service history form that must be filled in by the approved Future Automation dealer who is performing the required yearly service of this product.

WARNING - Failure to fill out the included Service History Form will invalidate the Future Automation product warranty offered.

Risk Assessment and Warranty

Risk Assessment Information

It is the installer's responsibility to perform a risk assessment of installed products. Future Automation can provide guidelines to installers/dealer about what should be included in a risk assessment, but due to the individual nuances of each location/site, Future Automation cannot provide a full list of areas to risk assess.

It is the installers responsibility to perform this risk assessment, taking into account every aspect of the job/site.

Basic risk assessment guidelines are provided in this document and further risk assessment details can be found on the Future Automation website via the Safety Page.

Risk assessments should be carried out at yearly intervals from the date of installation to ensure that the installed product remains safe for end users.

The assessment should also outline any risks to **ALL** potential end users (Eg. All members of a household). A physical copy of all risk assessments performed by the installer should be supplied to the end user (along with these this document and the fill out Warranty Sheet) to ensure that they are fully aware and understand any dangers that are outlined in their risk assessment.

It is important that everyone who is to connect, install or use a Future Automation product has had the necessary information and access to the product instructions / user manual.

Future Automation products should not be operated by infirm persons or children under the age of 16 without supervision.

Warranty Information

WARNING - The warranty offered for this product shall be annulled if the product is used improperly or in a way that is in breach of our Terms of Service.

Future Automation provides warranty for the mechanism you purchased for the period of **24 months** from the date of purchase, provided that it isn't used for unintended purposes.

Under the warranty, Future Automation aims 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.

Warranty repairs will be carried out as quickly as possible, but subject to parts availability. This warranty period is respectively extended for the period of a repair.

A malfunctioning product must be cleaned and placed into suitable packaging to protect against transit damage before organising delivery to a repair workshop.

All the complaints about defects must be submitted to the vendor/installer that sold this product, rather than directly to the manufacturer.

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

The warranty does not cover the following:

- Damages resulting from improper product use or maintenance.
- Repairs carried out by unauthorized persons.
- Natural wear and tear during operation.
- Damages caused by the buyer.
- Accidental damages caused by a customer or damages caused as a result of careless attitude or usage, or damages caused by natural disasters (natural phenomena).
- Any electrical, or other environmental work external to your Future Automation mechanism including power cuts, surges etc.
- 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.

A warranty sheet is provided in this document that must be filled in by the approved Future Automation Dealer who is installing the product.

WARNING - Failure to fill out the included warranty sheet will invalidate the Future Automation product warranty offered.

The provided warranty sheet also contains a service history form that must be filled in by the approved Future Automation dealer who is performing the required yearly service of this product.

WARNING - Failure to fill out the included Service History Form will invalidate the Future Automation product warranty offered.

Warranty Sheet

WARRANTY SHEET IS NOT VALID IF ANY FIELDS ARE LEFT BLANK

PRODUCT MODEL / NAME _____

PRODUCT SERIAL NUMBER _____

INSTALLER COMPANY NAME _____

DATE OF SALE (D/M/Y) _____

BUYER'S FULL NAME _____

I HAVE READ FUTURE AUTOMATION'S TERMS OF SERVICE POLICY AND HAVE PERFORMED A FULL RISK ASSESSMENT OF THE INSTALL.

_____

INSTALLER'S SIGNATURE

TERMS OF SERVICING WERE NOTED AND AGREED UPON AND THE INSTALLER OF THIS PRODUCT INFORMED ME OF ALL RISKS INVOLVED WITH THE USE OF THIS PRODUCT

_____

END USER'S SIGNATURE

THE PERIOD OF SERVICING IS ____ **MONTHS FROM THE DATE OF SALE**

SERVICING HISTORY

SERVICE FORM

SERVICE DATE (D/M/Y) _____

FAULTS OBSERVED (IF ANY) _____

_____

_____

ACTION REQUIRED (IF ANY) _____

_____

SERVICE ENGINEER NAME _____

SERVICE ENGINEER COMPANY NAME _____

CLIENT SIGNATURE

_____

SERVICE ENGINEER SIGNATURE

_____

ADDITIONAL SERVICE HISTORY FORMS CAN FOUND ON THE FUTURE AUTOMATION WEBSITE VIA THE SAFETY PAGE

Basic Risk Assessment Guidelines

The following are guidelines to installers/dealer about what should be included in a risk assessment, but due to the individual nuances of each location/site, Future Automation cannot provide a full list of areas to risk assess. **It is the installers responsibility to perform this risk assessment, taking into account every aspect of the job/site.**

Your written risk assessment is to ensure the user in informed about potential risks surrounding Future Automation products and how to avoid them during day to day usage.

Risk Assessment Objectives:

- Identify the hazards
- Decide who might be harmed and how
- Evaluate the risks and decide on precautions
- Record your significant findings
- Review your assessment and update if necessary

Guidelines for performing Risk Assessments:

Acting out various movements a user could potentially perform while manipulating their product and making an informed assessment of these movements can aid in understanding the risks associated with the product for an end user. These can include manually adjusting the swivel on a manual bracket, or changing pre-sets on the remote for an automated mount.

As the installation of our products vary drastically between locations we are unable to provide full risk assessments for every product installation scenario. However, we have included a list of points that are relevant in a majority of use cases. The information provided is a guideline and it remains the installer's responsibility to provide a detailed risk assessment. Failure to do so can result in injury or death.

Does the product include a motorised component?

If so, here are some common risks associated with the installed product.

- Tripping and falling over mechanism.
- Hitting body part on mechanism when walking past.
- User(s) falling into cavity occupied by mechanism.
- Animal climbing into mechanism during use.
- Crushing / trapping by the mechanism while operating.
- Accidentally pressing a control button on the remote or mechanism.
- Children playing with remote control, and/or mechanism.
- Electric shock from product cabling / control box wiring.
- Foreign objects or liquid ingress can result in fire.
- Remote control encountering liquid could cause short circuit.
- Risk of crushing from free standing furniture.
- Observing maximum weight limits for mechanism flaps / lids.

Is the product manually operated?

If so, here are some common risks associated with the installed product.

- Tripping and falling over product.
- Over-stretching muscles operating the device.
- Hitting body part on product when operating.
- User(s) falling into / onto cavity occupied by product.
- Animal climbing into product during use.
- Crushing / trapping by the product while operating.
- Children attempting to manipulate the product.
- Foreign objects can jam and make product unsafe to operate.
- Risk of crushing from free standing furniture.
- Observing maximum weight limits for the product.

The following example risk assessment example is for demonstrative purposes only and only covers a single scenario. It does not reflect the detail of an appropriate risk assessment that should be performed by the installer.

Example:
Product: **Motorised Articulated TV Wall Mount**
Risk Observed: **Pinching fingers or body parts inside mechanism during movement, causing bruising or crushing injury.**
Risk To Life: **Low**
Risk Likeliness: **High**
Actions Recommended: **Installation of a proximity sensor to cut mechanism power if movement is detected within a certain distance of the bracket. Demonstrate to the customer where on the device can cause this particular injury so they can avoid those areas while operating mechanism.**
Action Result: **Risk of harm occurring from catching fingers or body parts inside mechanism is greatly reduced by the addition of a proximity sensor. Customer is aware of the risk and has been given the knowledge to avoid the risk.**
Product Recommended/Installed (If Applicable): **Third Party Proximity Sensor - Dealer Supplied.**

ADDITIONAL RISK ASSESSMENT EXAMPLE AND INFORMATION CAN FOUND ON THE FUTURE AUTOMATION WEBSITE VIA THE SAFETY PAGE

Package Contents

Package Contents:

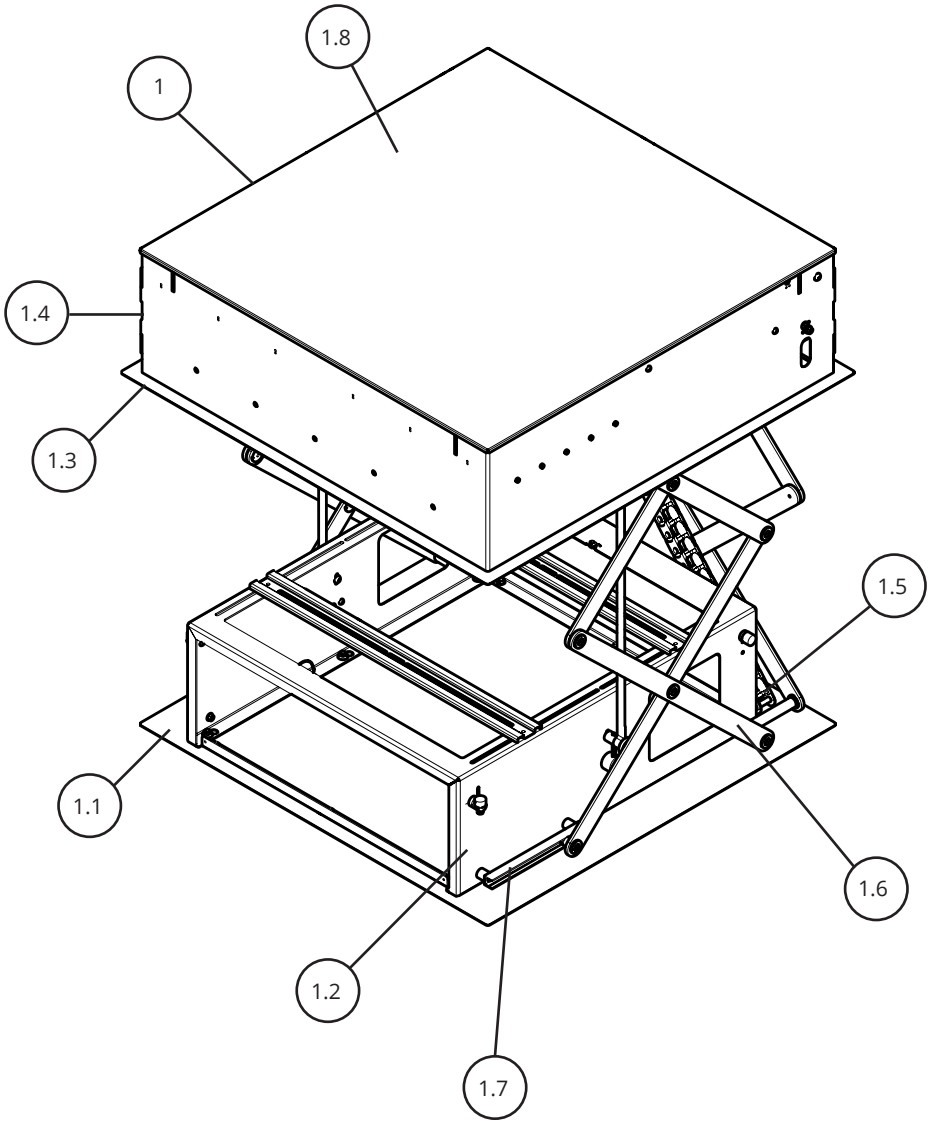
1 - PD3.5 Mechanism
- 1.1 - Base Plate
- 1.2 - Projector Carriage
- 1.3 - Main Box Ceiling Lip
- 1.4 - Main Box
- 1.5 - Cable Track
- 1.6 - Scissor Arms
- 1.7 - Slider Channel
- 1.8 - Top Cover Lid

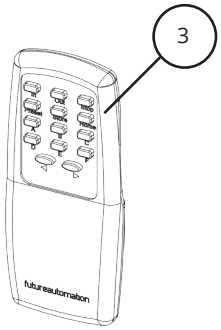
2 - Control Box (Size and Style May Vary)

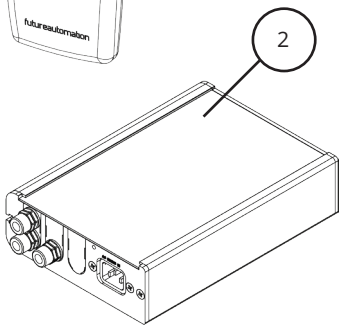
3 - Infrared (IR) Remote Control

Items Not Shown On Page:

PD3.5 Accessory Pack
- x2 AAA Batteries
- Mains Power Lead
- Infrared Control Lead
- CAT5 Lead with RJ45 Connector
- Fixings Pack (Multi-pack of Bolts, Washer and Spacers)







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 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.

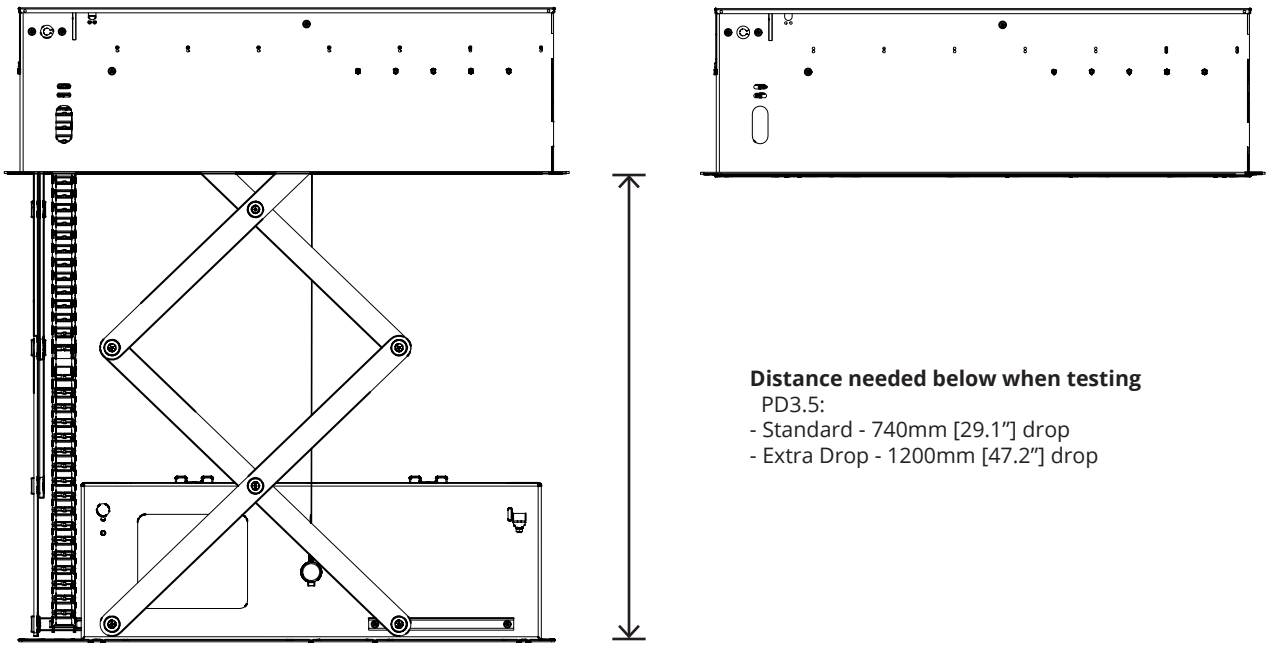
Installation Instructions

1: Pre-Testing

Before you start check the following:

- The product is in good condition
- No damage to any parts
- Wiring is all secure
- The unit is in the closed position
- Test the mechanism, requires 2 people

Do not test the unit when it is sitting on the floor!
Straps will unreel and get tangled if the projector drops
Suspend the unit so the straps can lower the projector when testing.



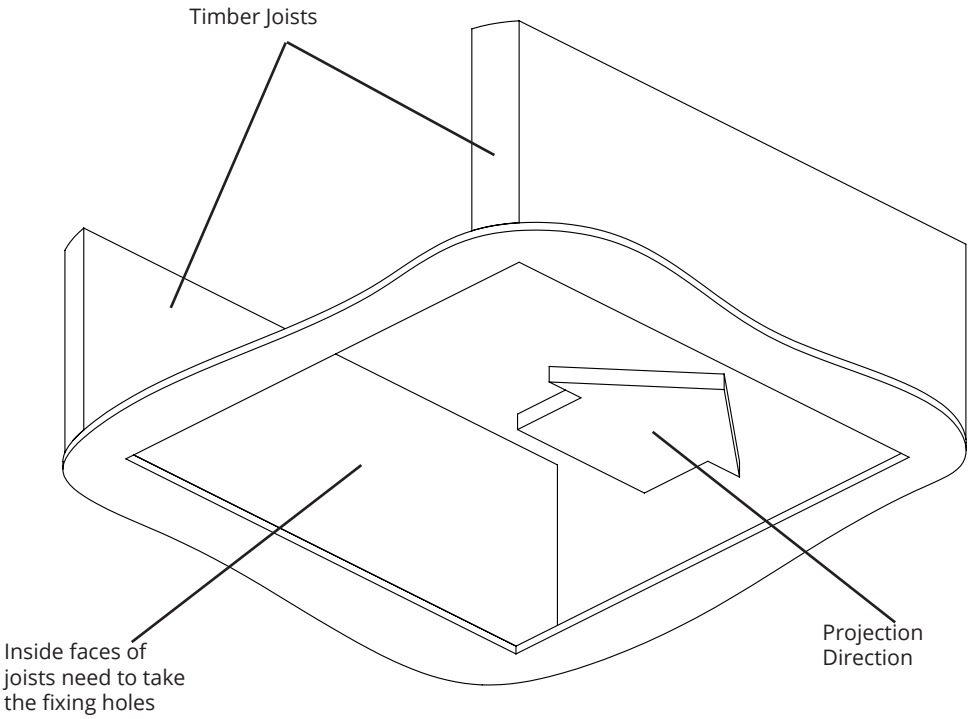
Distance needed below when testing
PD3.5:
- Standard - 740mm [29.1”] drop
- Extra Drop - 1200mm [47.2”] drop

Installation Instructions

2: Creating the void in the ceiling

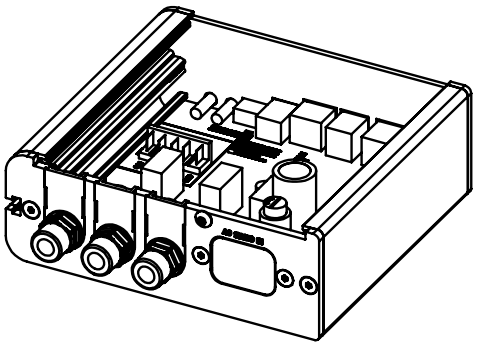
- Hole size for products: PD3.5 - 860mm [33.9"] x 860mm [33.9"]

- Clear space free from joists and other objects
- Secure timber joists in place to support the unit front and back
- ORGANISE CABLES READY TO THREAD THROUGH THE UNIT



Control box setup

- THE BOX MUST BE EASY TO ACCESS!
- Connect the control box to the mains power supply
- Connect the infrared remote sensor even if you are going to use switch control
- Cables can be easily extended
- There is no manual drop function, access is required for servicing



Installation Instructions

3: Installing the unit into the ceiling

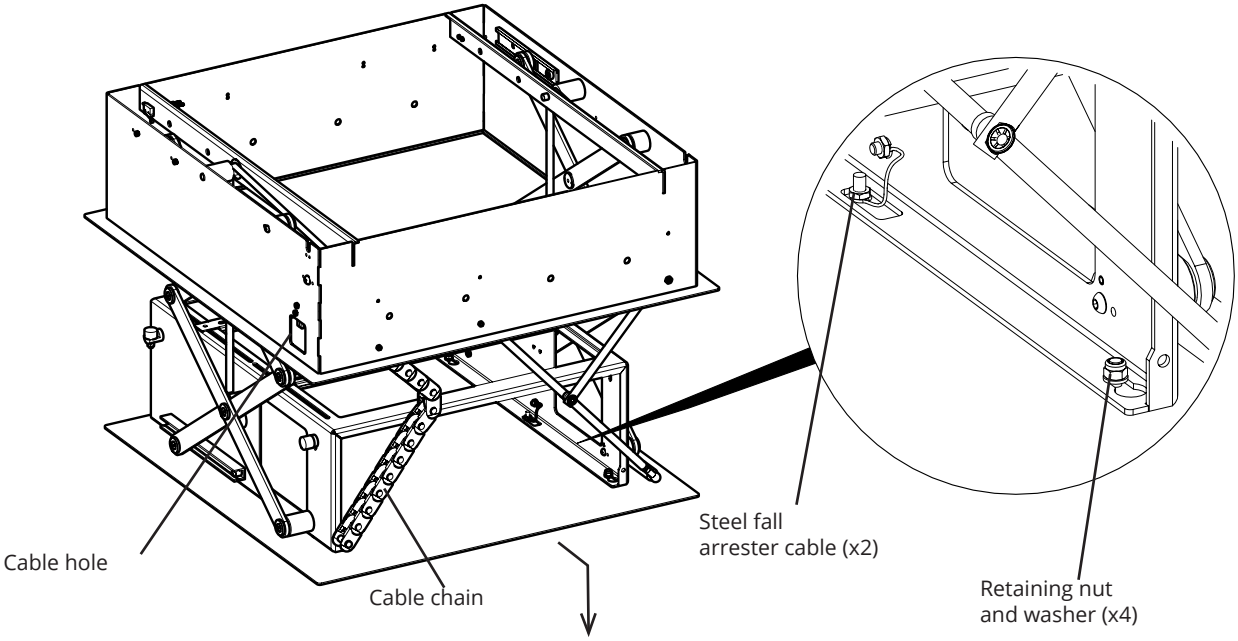
- Remove the base plate by loosening and removing the retaining nuts ,washers and steel fall arrester cables and then sliding it forward and lowering through the key hole details.

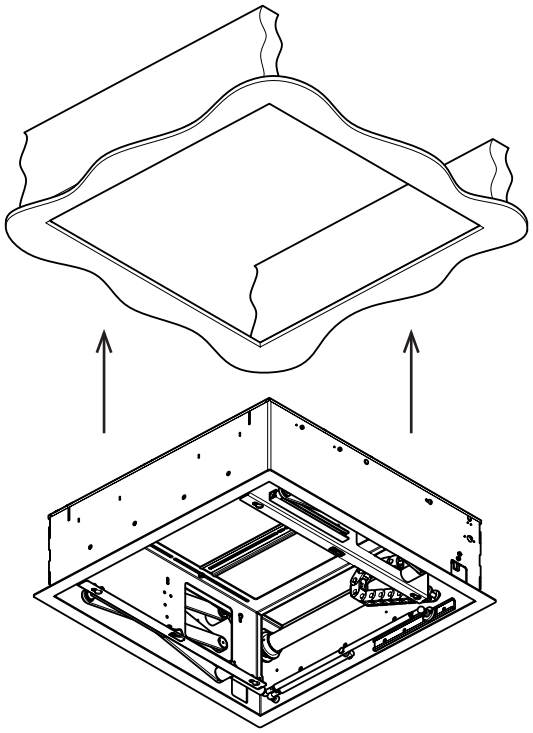
- ORGANISE THE CABLES READY TO THREAD THROUGH THE CABLE HOLES ON THE SIDE OF THE UNIT!

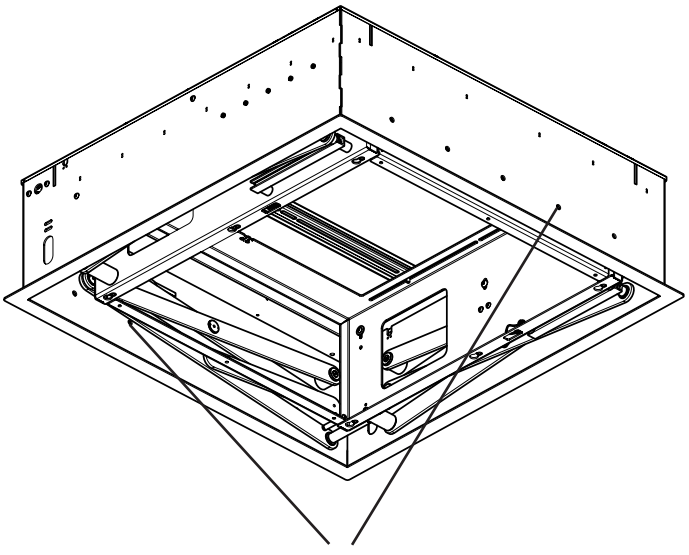
- Secure into place using screws through the fixing holes x10

- Check the mechanism and movement of the unit

- Cable management chain can be changed from one side to the other by undoing and mirroring the fixings







Installation Instructions

4: Installing Projector

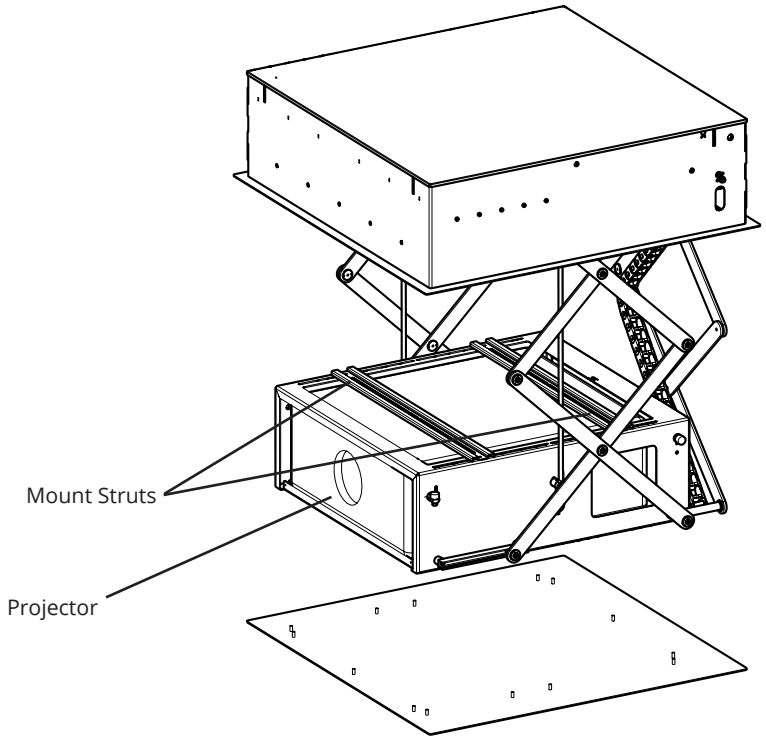
- Ensure that the projector is fastened tightly and securely to the carriage using the mount struts.

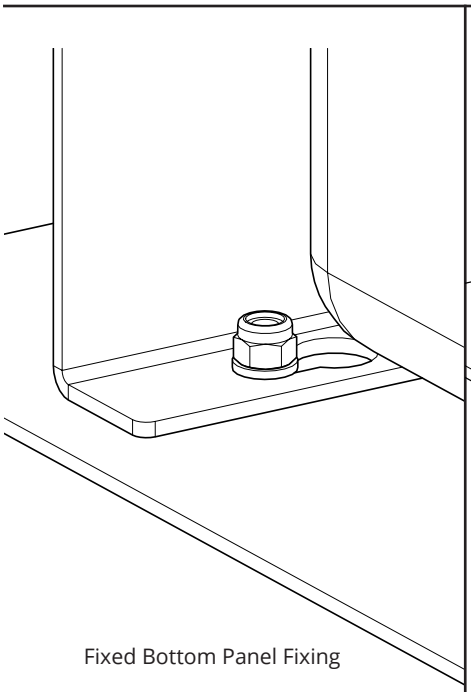
- Check that the base panel slides back into place securely through the keyhole detail on the carriage.

- Replace the nuts and washers to secure the base panel in place for a fixed bottom panel fixing.

- If the base panel needs to be removable for servicing then the plastic retainers can be used instead of the nuts and washers

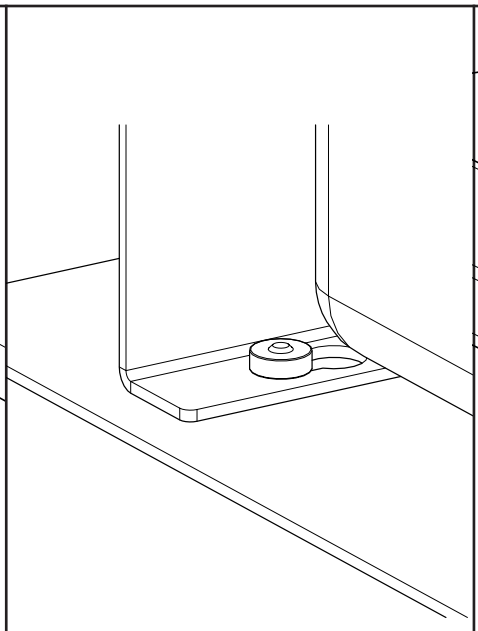
- In either scenario the fall arrest cable **MUST** be secured to both the projector carriage and base panel as shown below.





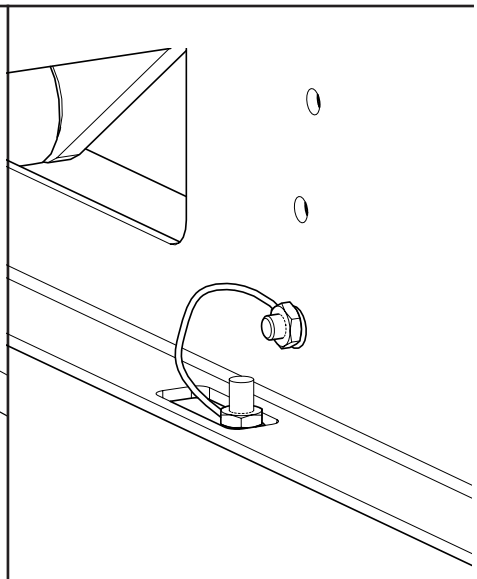
Fixed Bottom Panel Fixing

Ensure these are tighten once bottom panel is fitted



Serviceable Bottom Panel Fixing

Ensure these are tighten once bottom panel is fitted



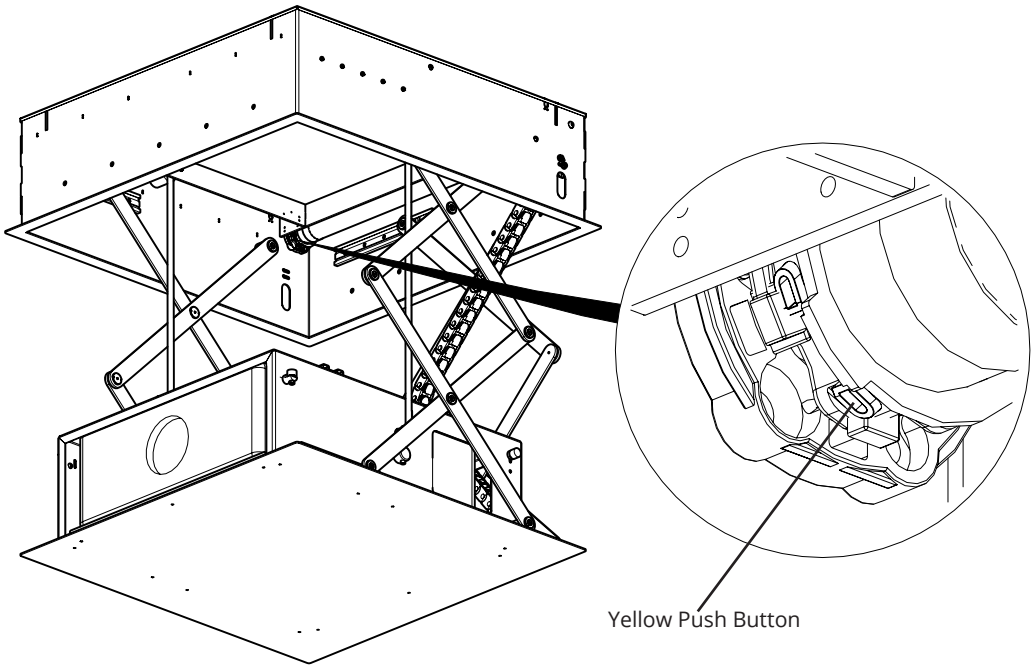
Fall Arrest Cable Fastening

Installation Instructions

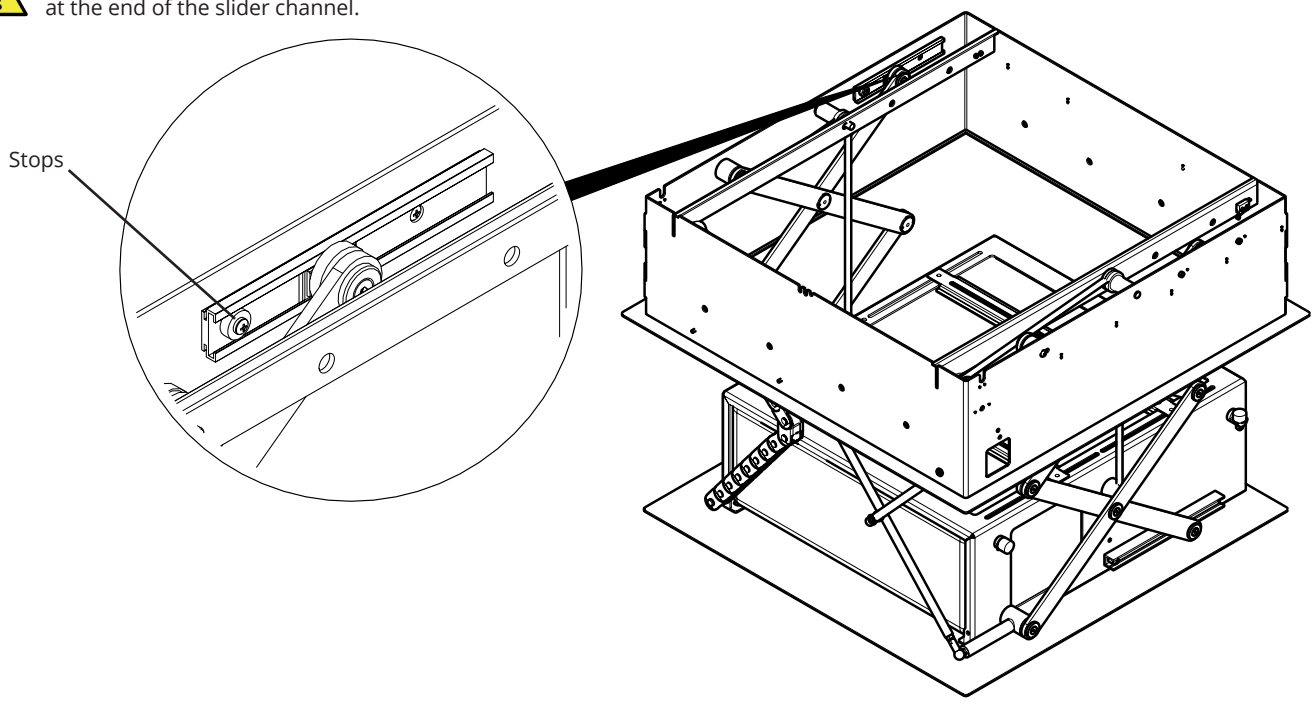
5: Adjustment Details

Altering Drop Distance
- To change the distance the projector will drop from the ceiling you need to push the yellow button IN to cancel the preset position. Then using the remote IN, OUT and STOP buttons, stop the PD at the desired height. Push the yellow button again so it's in the OUT position, the PD drop is now set.

By default the mechanism is sent out pre-set to the max drop



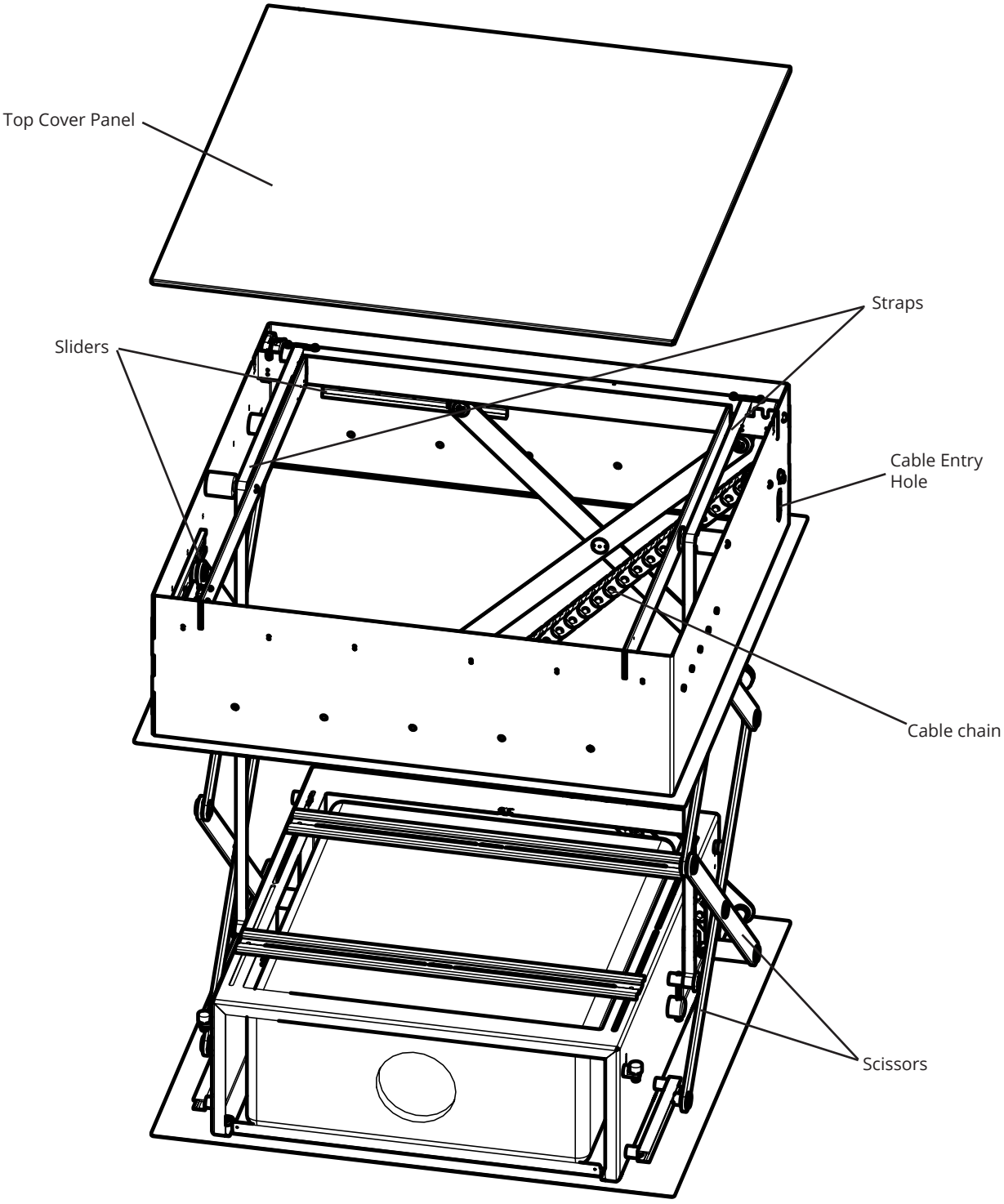
Important - When adjusting the drop of the mechanism make sure the sliders in the top of the main box do not reach the stops at the end of the slider channel.



Installation Instructions

6: Final and Periodic Service Checks

- Check mechanism is operating correctly
- Check projector is secure during operation
- Check straps and scissors are free from obstruction
- Check cable routing and sufficient slack
- Check scissor joints are secure
- Check sliders operate smoothly

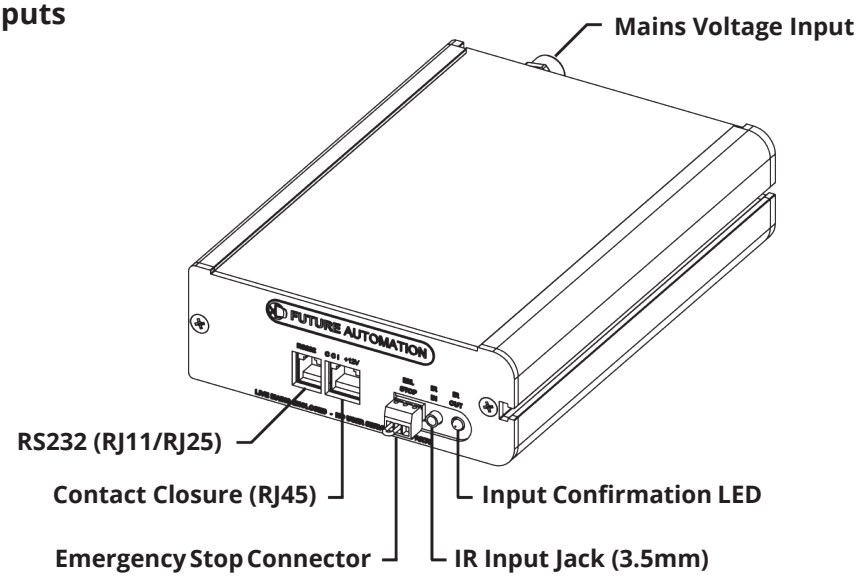


Mechanism Control

General 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

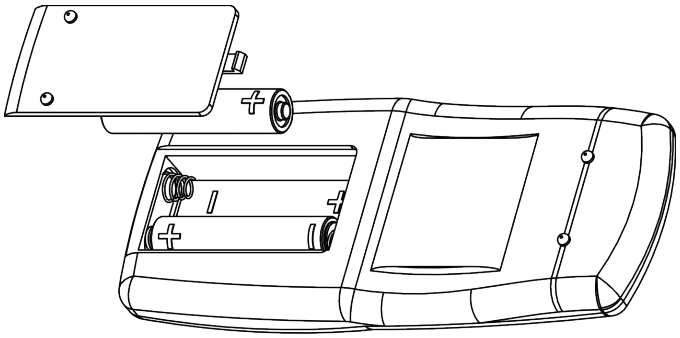


Mechanism Emergency Stop Connector

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)
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.

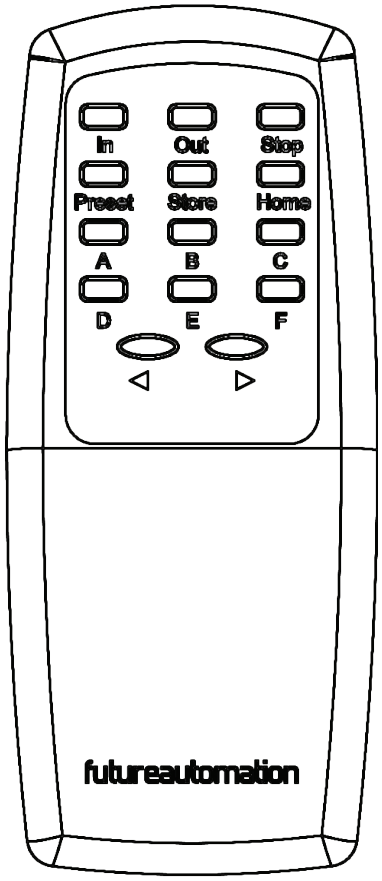
As Infrared (IR) control works over line of sight, the Infrared (IR) sensor must be directly viewable from what ever location the remote control is being used from.

Infrared (IR) Remote Control Button Layout

IN - Brings the mechanism into the ceiling.

OUT - Brings the mechanism out of the ceiling.

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

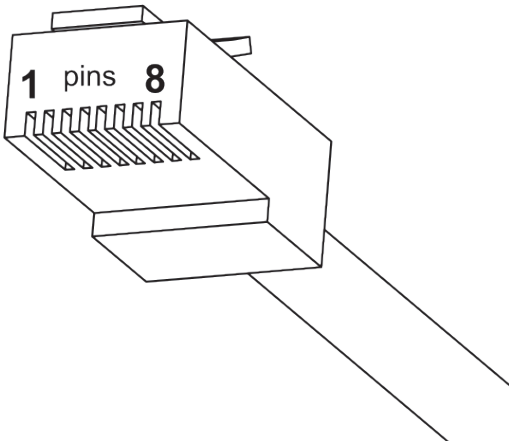
Contact Closure

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.

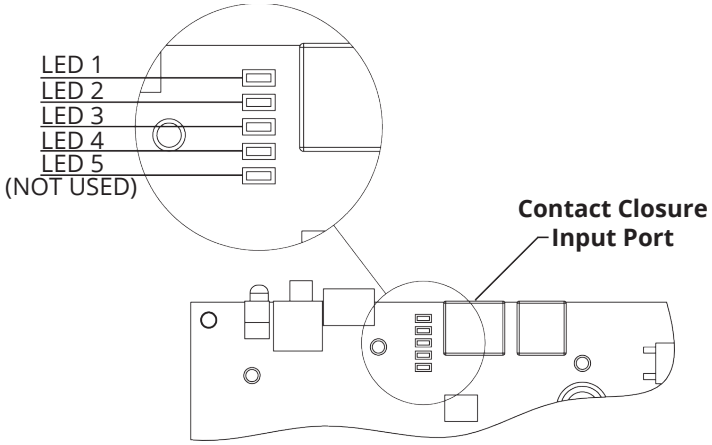
The mechanism's functions can be controlled by plugging this into the RJ45 port on the mechanism control board, then shorting pins 1-8 on this connector as shown in the Contact Closure Input Table below.

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

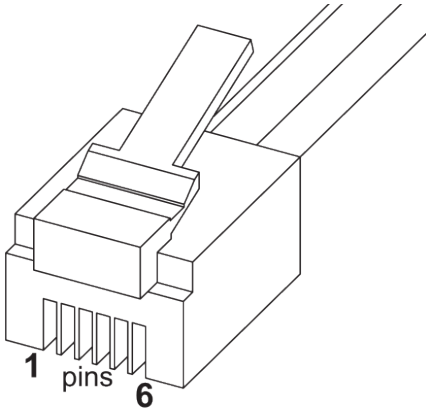
This Mechanism can be controlled via RS232, utilising a 6 Pin RJ11/RJ25 connector OR 9 Pin Serial connector attached to a length of 6 core cable.

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.

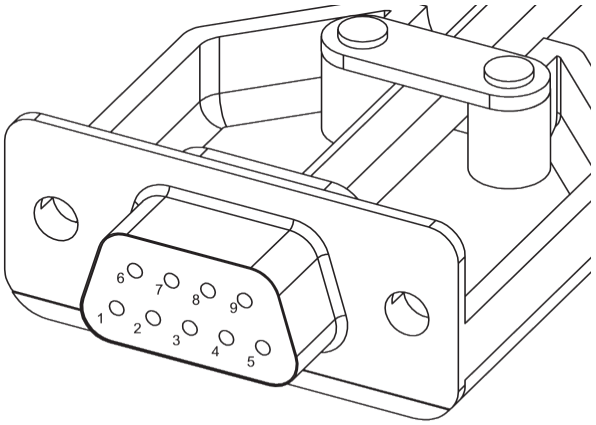
RJ11/RJ25 Pin Layout

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)

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