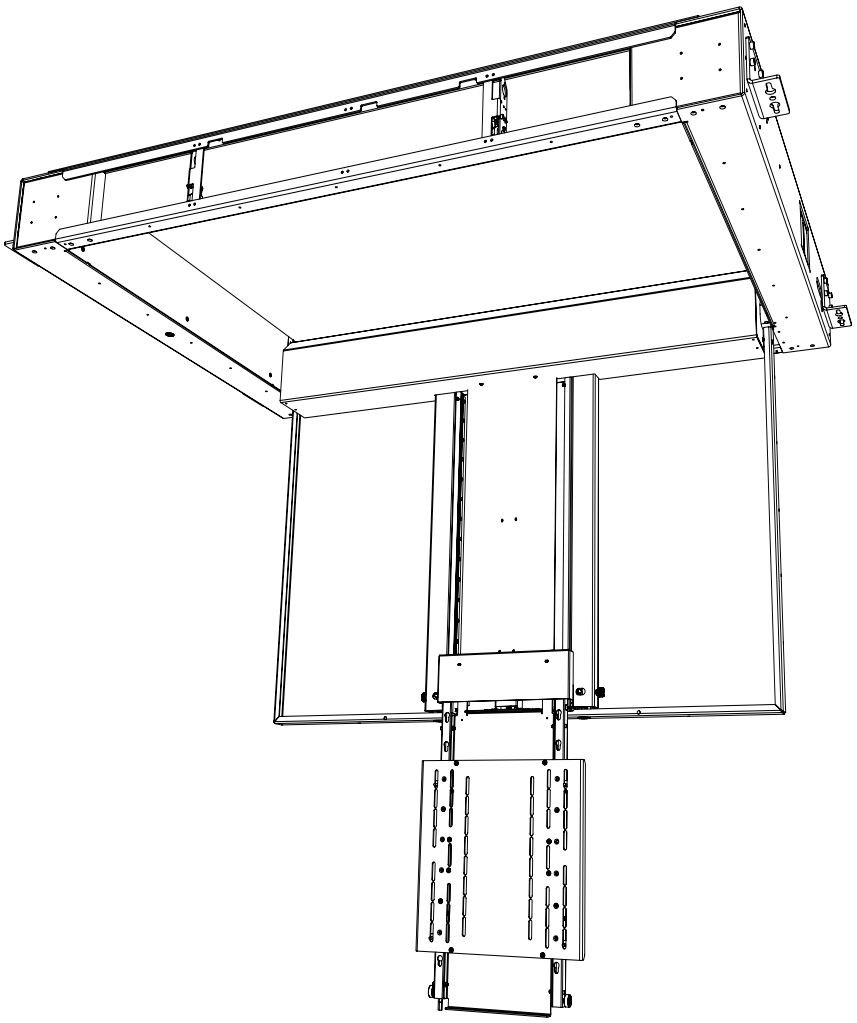
future automation

CHRT-M / MO

MARINE CEILING HINGE RANGE WITH TELESCOPE



INSTALLATION
INSTRUCTIONS

ISSUE **003**

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 equipment weights as specified in technical documentation

See specific technical document for weight limits.
Use with heavier screens/equipment may lead to instability causing tip over
or failure resulting in death or serious injury.

Mechanism Suitable for Marine use.

ADDITIONAL WARNINGS:

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 to 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 the product 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.

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.

PRODUCT WARRANTY
& RISK ASSESSMENT

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 separate Safety and Servicing Information document is provided with these instructions (additional copies can be found at www.futureautomation.co.uk/safety), and this document **MUST** be filled out by the approved Future Automation Dealer who is installing the product. This Warranty Sheet must be held by the end user for the duration of the products life and will be referred to during servicing or warranty queries.

The Safety and Servicing Information document also contains two Service History Forms that must be filled in by the approved Future Automation dealer who is performing the first required yearly service of this product.

One copy of the Service History Form must be held by the customer (along with the Warranty Sheet) and a duplicate copy must be held by the approved Future Automation dealer that performed the service. Missing and/or mismatching documents may delay or invalidate warranty claims.

Additional Service History Forms can be found on the Future Automation website for further yearly services.

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.

For full risk assessment and safety information please view our Safety and Servicing guide available at www.futureautomation.net/safety

GUIDE
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INFRARED (IR) 19
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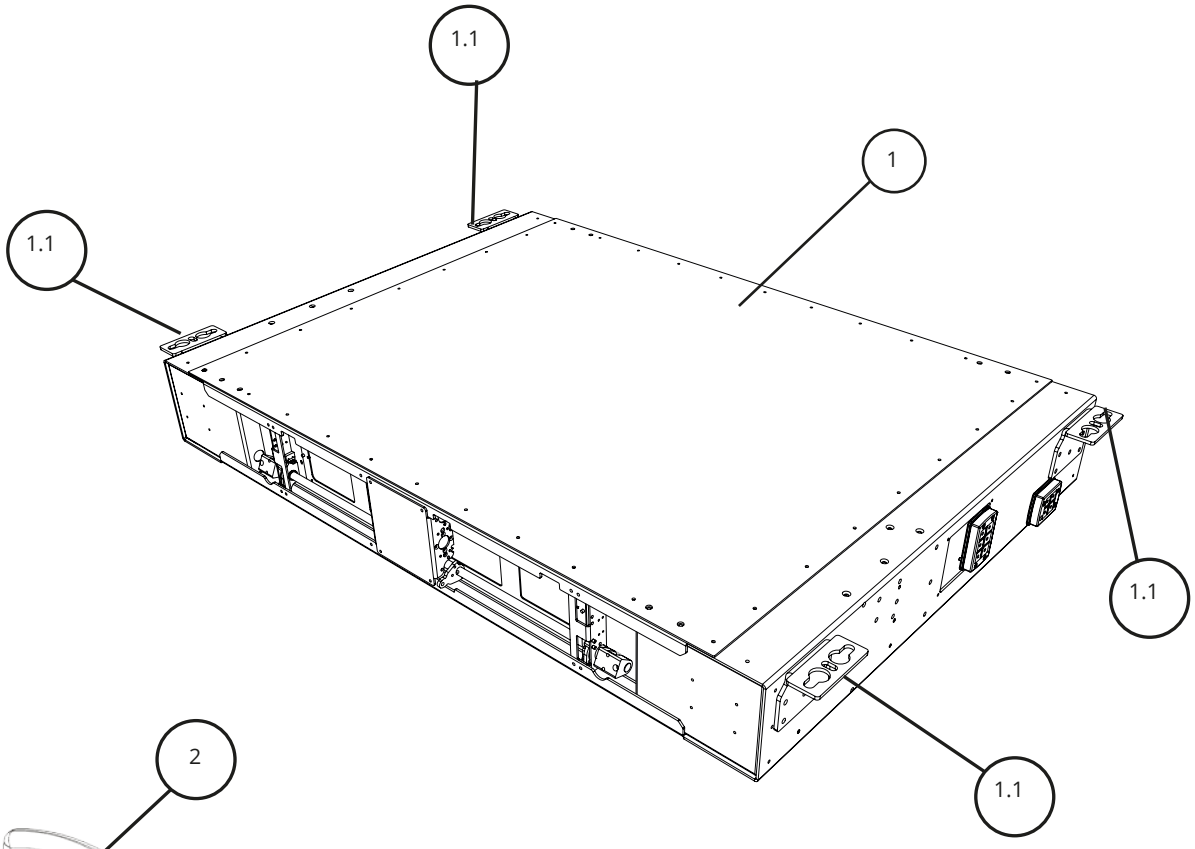
PACKAGE
CONTENTS

1 - CHR MECHANISM
1.1 - MOUNT BRACKETS

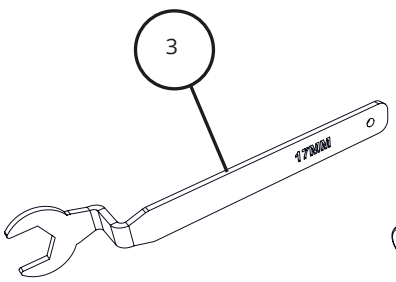
2 - INFRARED (IR) REMOTE CONTROL

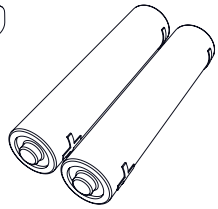
3 - CHR 17MM ADJUSTMENT SPANNER

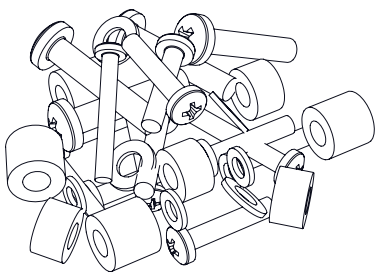
STANDARD ACCESSORIES
(CHR) ACCESSORY PACK:
- 2X AAA BATTERIES
- MAINS POWER LEAD
- INFRARED CONTROL LEAD
- CAT5 LEAD WITH RJ45 CONNECTOR
- SCREEN FIXINGS PACK (MULTI-PACK OF BOLTS, WASHERS & SPACERS)
- FELT PAD











MECHANISM
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.

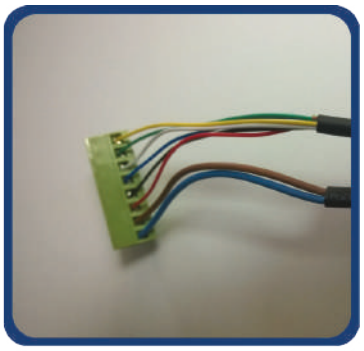


Image 2.



Image 3.



Image 4.

IMPORTANT

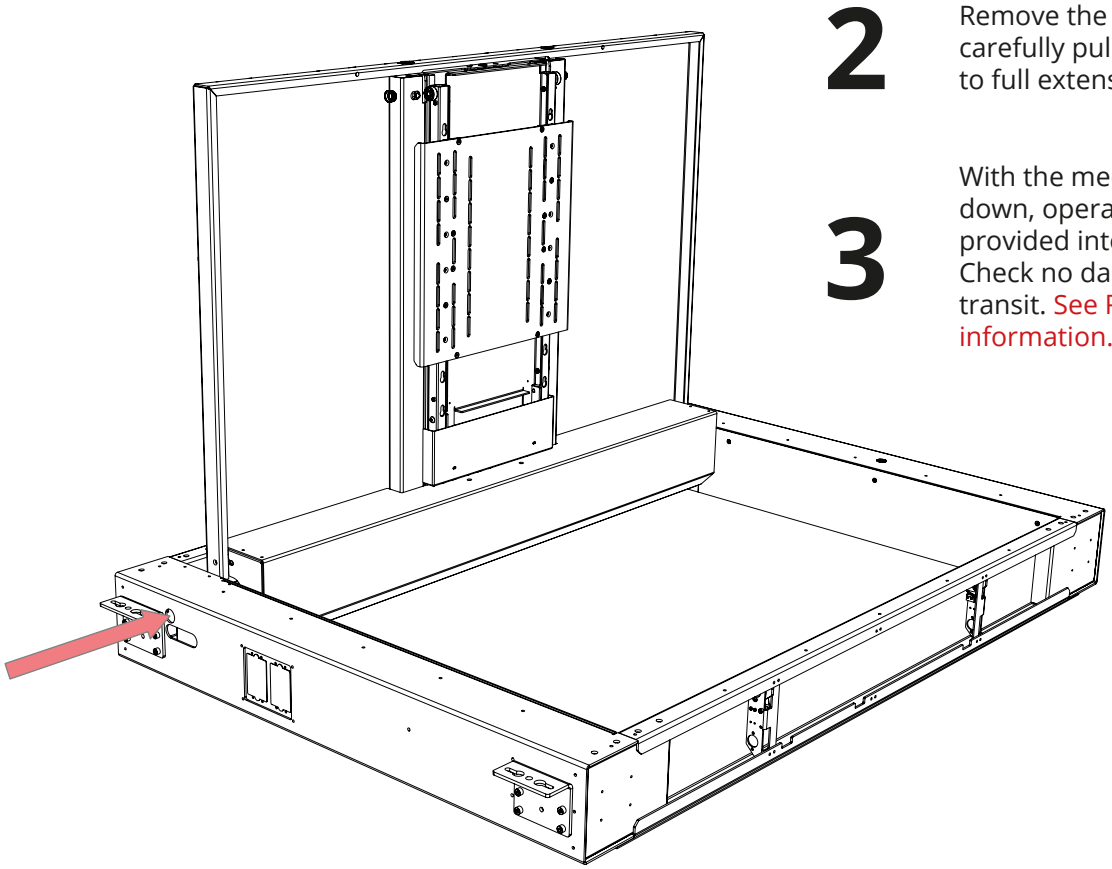
For the mechanism to operate, the green three way safety connector with the loop of wire attached, must also be plugged into the end of the control box. (Image 4 above). If this connector is not plugged in, a bright red LED will be visible inside control board and the Input Confirmation Input LED will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

INSTALLATION
PREPARATION

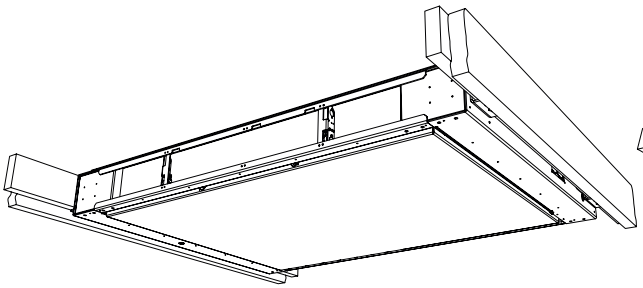
1 The power and IR receiver cables are secured for transit using a red cable tie to the right side of the mechanism.

2 Remove the red cable tie and carefully pull the power and IR cables to full extension ready for installation.

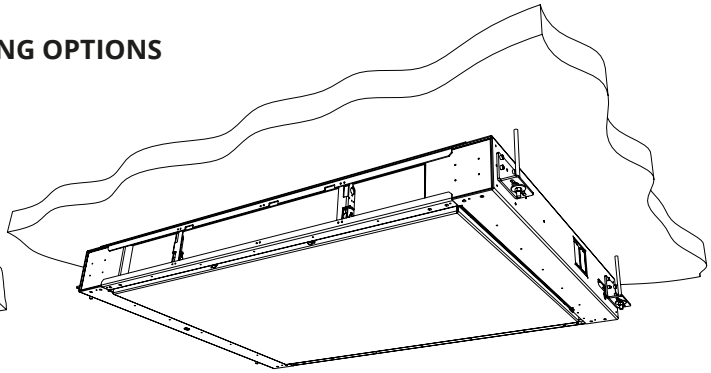
3 With the mechanism laying upside down, operate using IR Controller provided into the OUT position. Check no damage has occured during transit. See Page 19 for futher control information.



MOUNTING OPTIONS



Option 1 - Beam Mounting



Option 2 - Stud Hanging

WARNING: CHR 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.

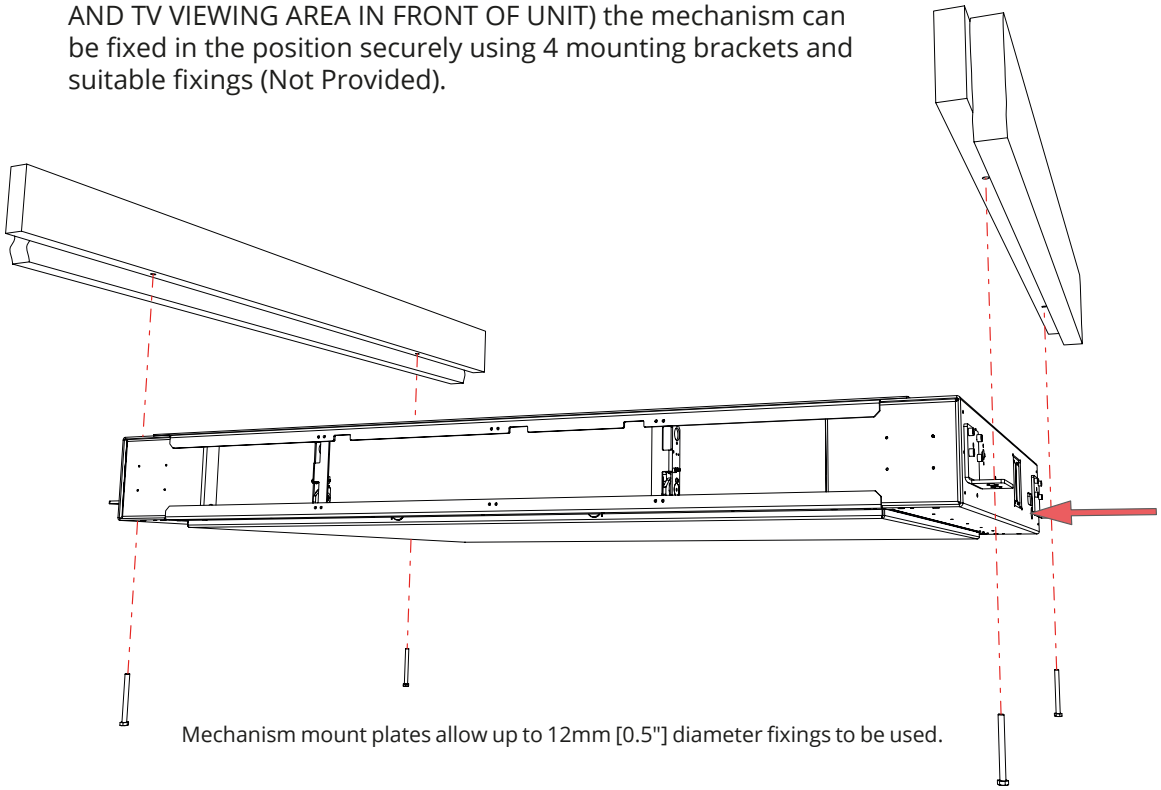
BEAM
MOUNTING

ALLOW FOR AV AND POWER CABLES TO ENTER MECHANISM IN SAME LOCATION AS POWER CORD ON BOTH SIDES.

IT MAY BE EASIER TO RUN CABLES BEFORE FINAL FIX INTO POSITION.

1

With the mechanism CLOSED and in the correct orientation (UP AND TV VIEWING AREA IN FRONT OF UNIT) the mechanism can be fixed in the position securely using 4 mounting brackets and suitable fixings (Not Provided).

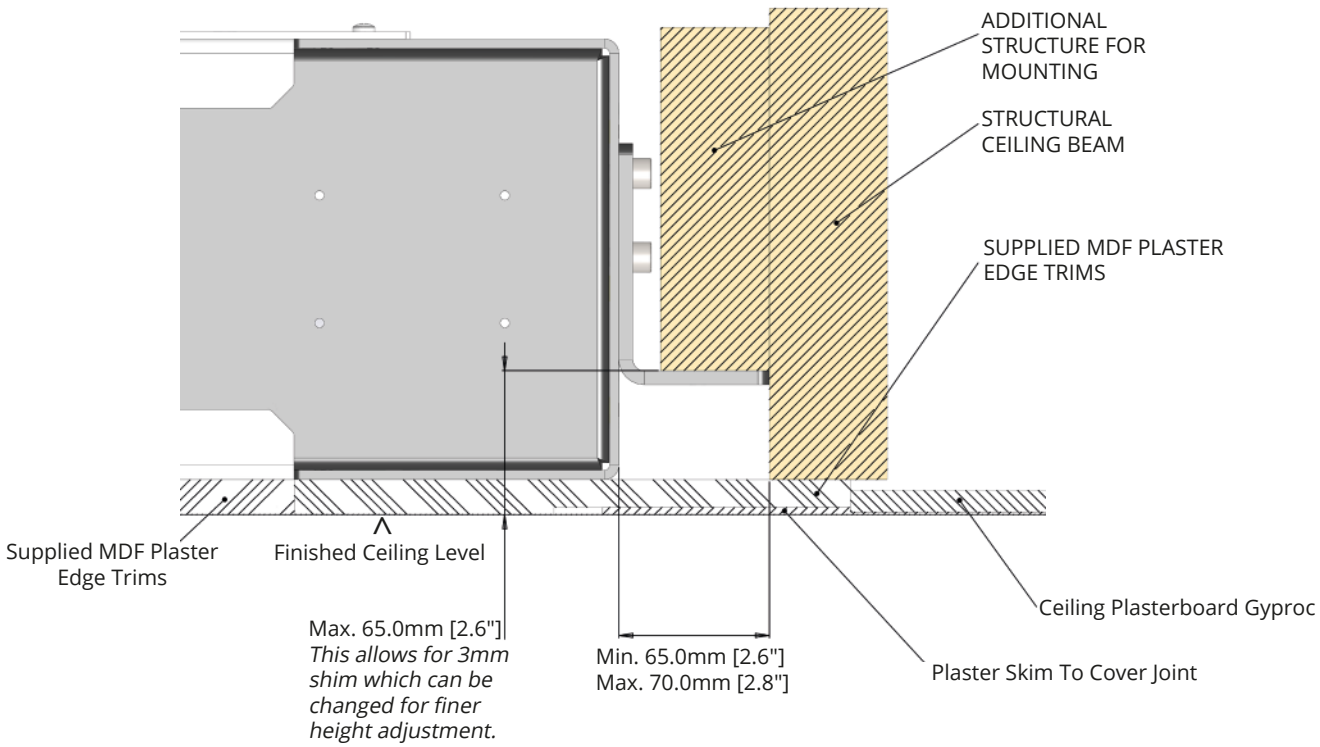


Mechanism mount plates allow up to 12mm [0.5"] diameter fixings to be used.

2

See below for critical dimensions for ceiling structure to allow for easy installation. Dimensional tolerances shown, allow for shims to be used to accurately adjust height.

NOTE: Beam width and ceiling opening dimensions can be found on the technical document for the model number mechanism specified.



STUD
MOUNTING

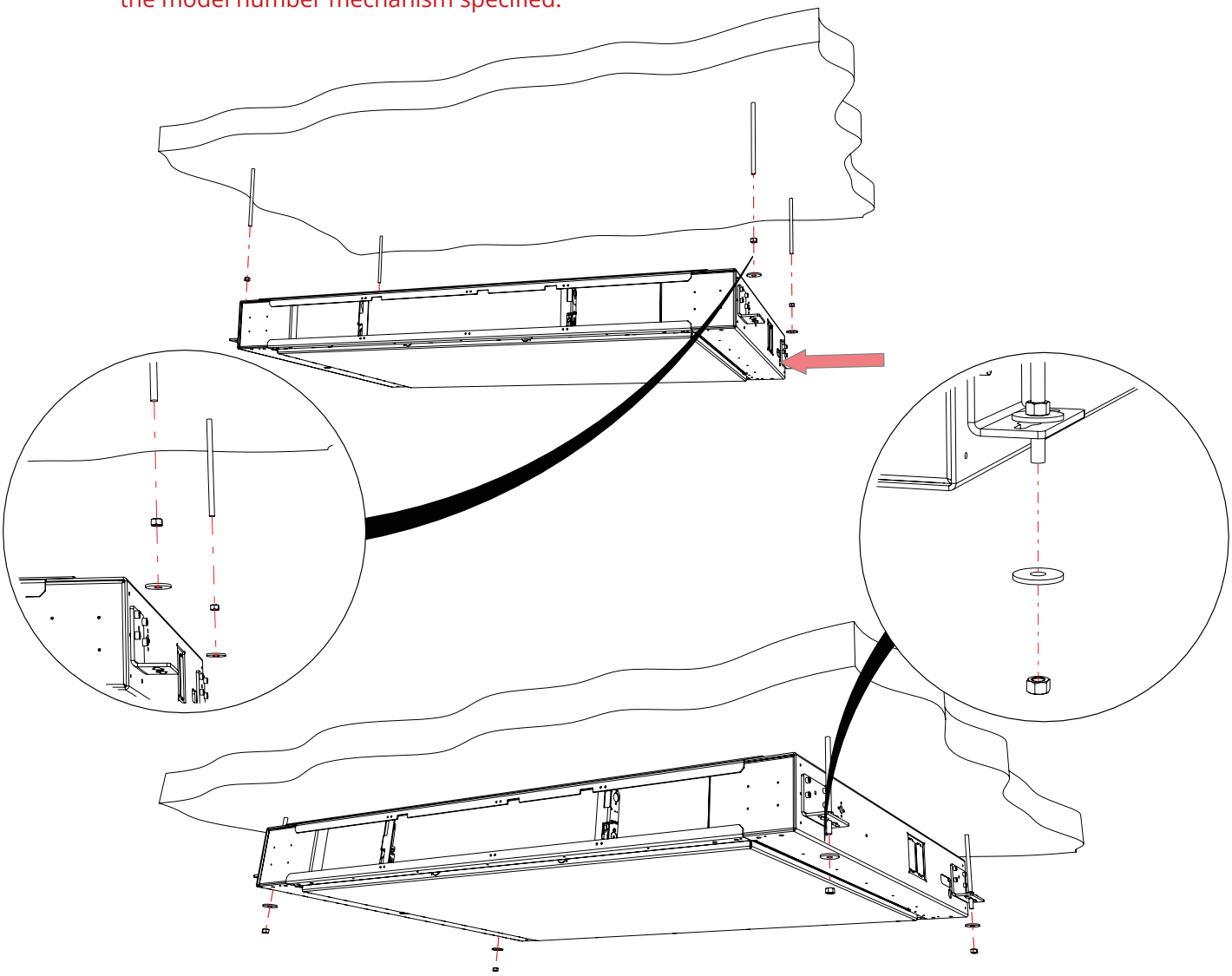
ALLOW FOR AV AND POWER CABLES TO ENTER MECHANISM IN SAME LOCATION AS POWER CORD ON BOTH SIDES.

IT MAY BE EASIER TO RUN CABLES BEFORE FINAL FIX INTO POSITION.

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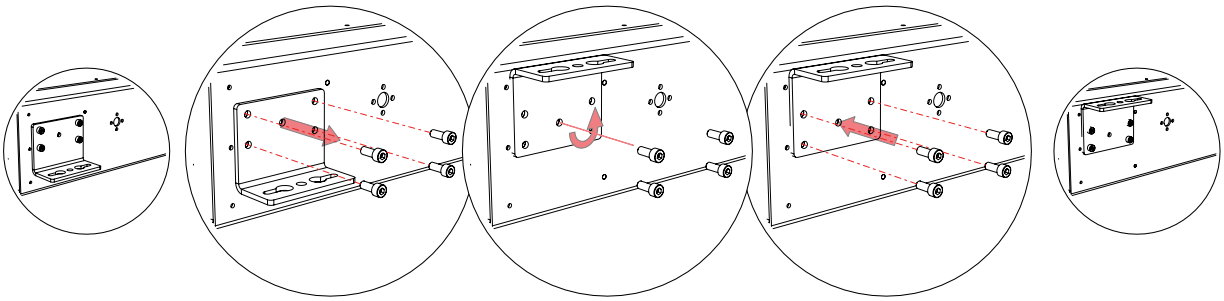
2 See below for directions for installation and ceiling structure layout to allow for easy installation.

NOTE: Stud positions and ceiling opening dimensions can be found on the technical document for the model number mechanism specified.



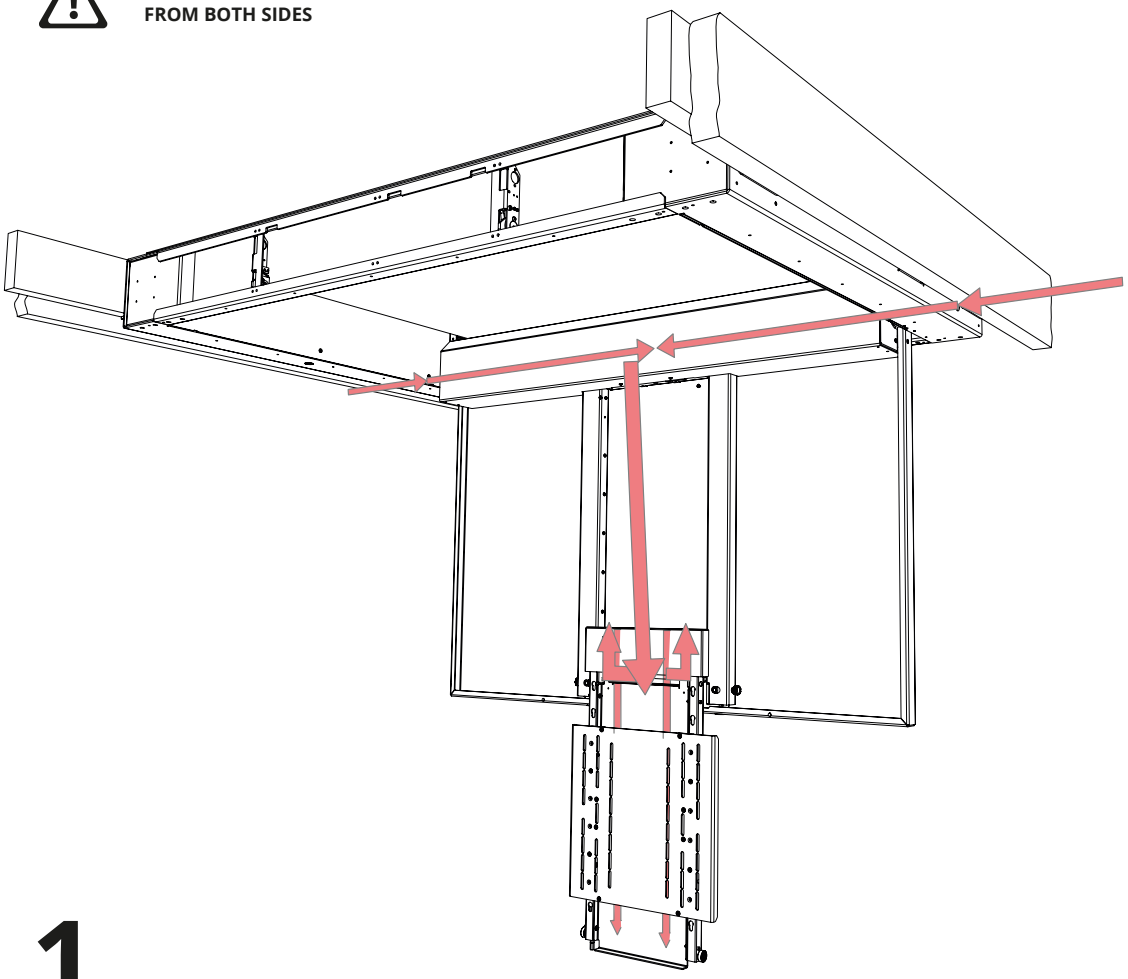
To hang mechanism on studs fixed securely to the ceiling above, suitable fixings should be used (Not Provided).

Mechanism mount plates allow up to 12mm [0.5"] diameter fixings to be used and can be rotated 180° for shorter fixings.



MARINE OUTDOOR
CABLE ROUTING

CABLES CAN BE ROUTED FROM BOTH SIDES



1

Locate power lead on right side of mechanism secured with red cable tie and attach to wall outlet using compatible power lead (Not Included).

2

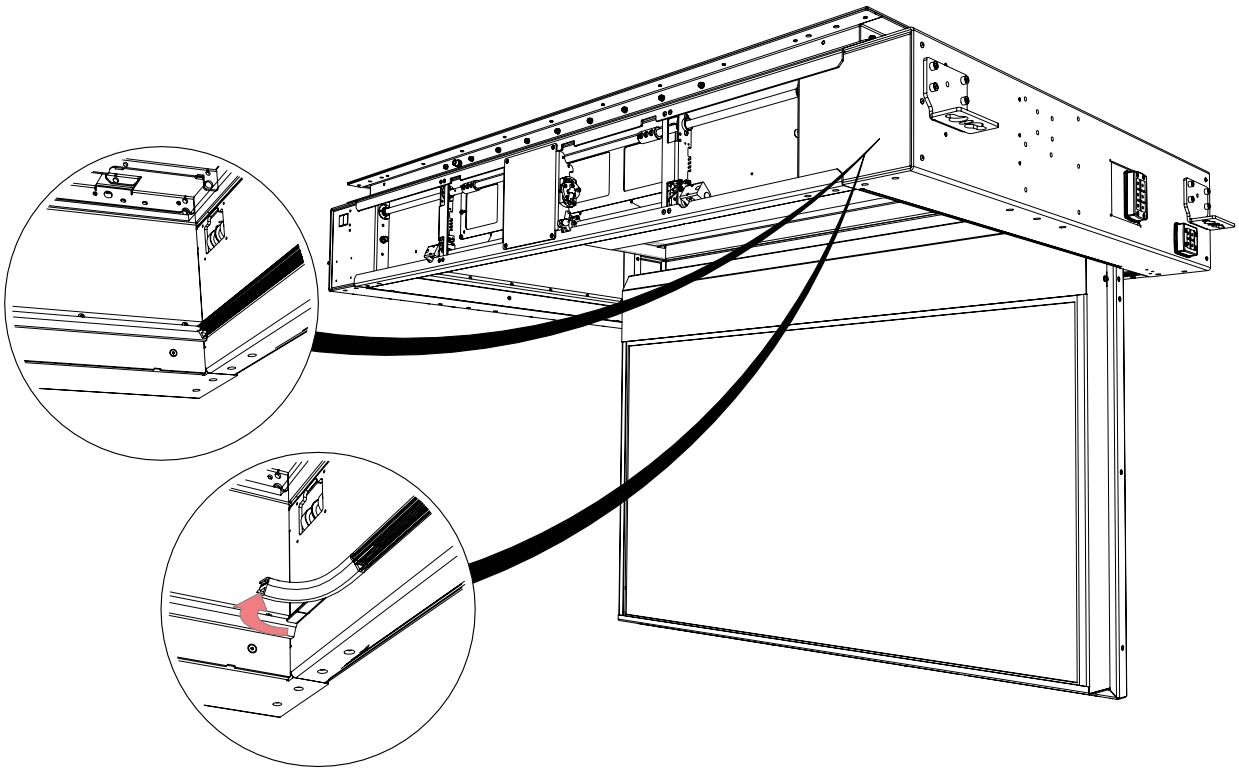
Ensuring space is clear below mechanism, operate by sending ‘OUT’ command on IR Remote Control.

3

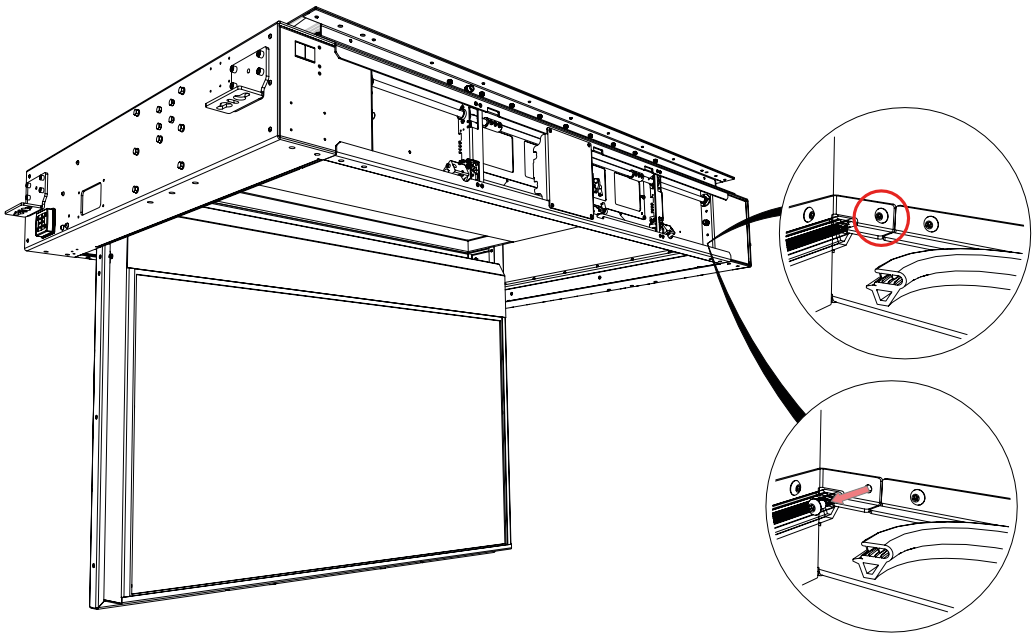
Route control cables through mechanism and test movement BEFORE installing TV.

MARINE OUTDOOR
CABLE ROUTING CONT.

4 Peel back corner of Front Seal Strip to reveal join in mount strip.

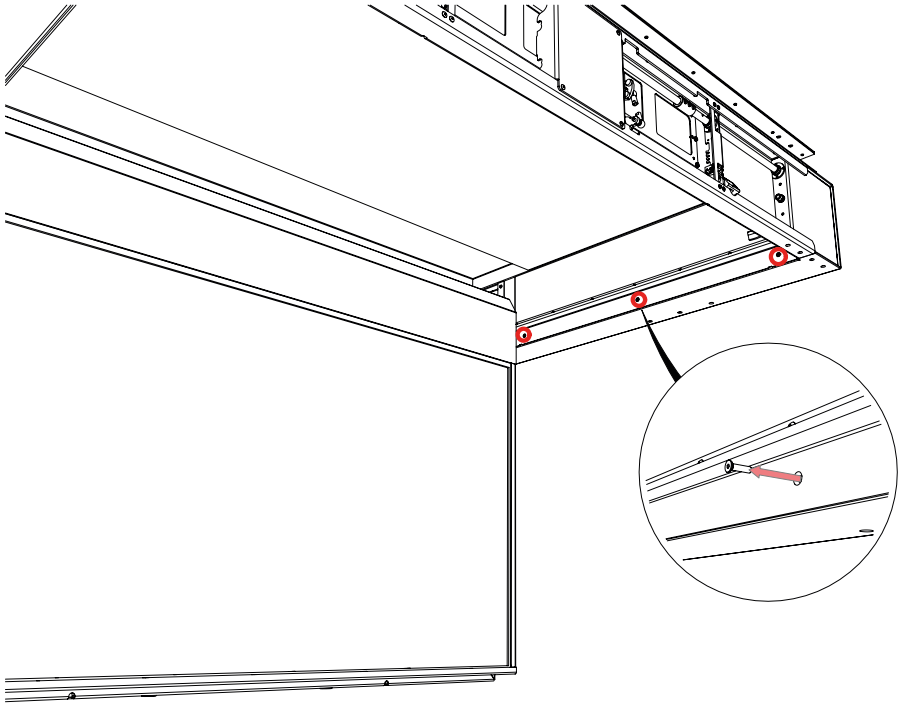


5 Peel back corner of Front Seal Strip to reveal join in mount strip.

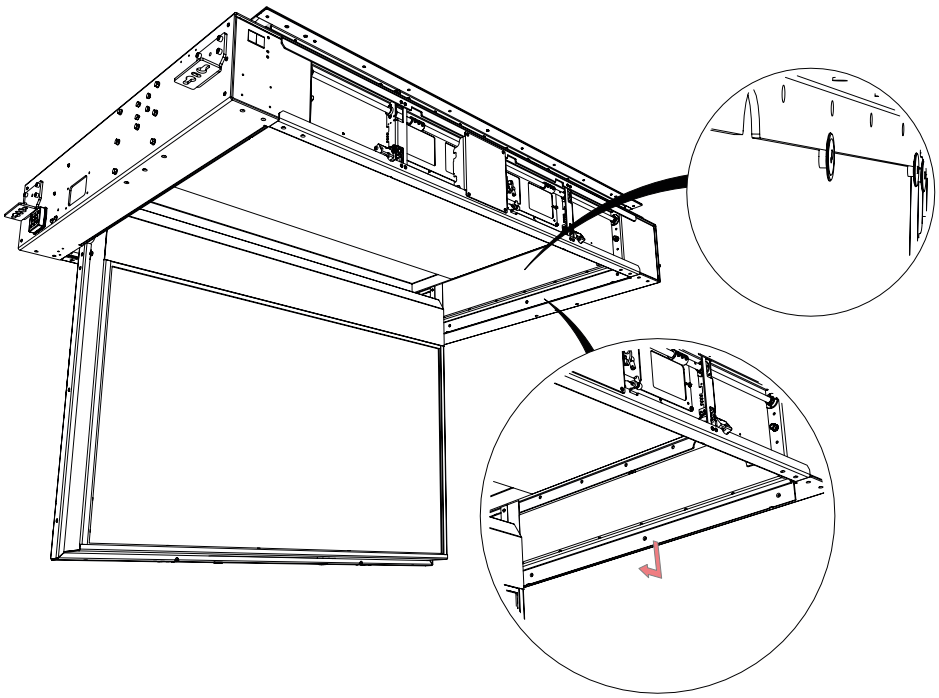


MARINE OUTDOOR
CABLE ROUTING CONT.

6 Remove 3 x M5 Countersink Bolts from lower edge of Trim Panel. (3mm Allen Key)

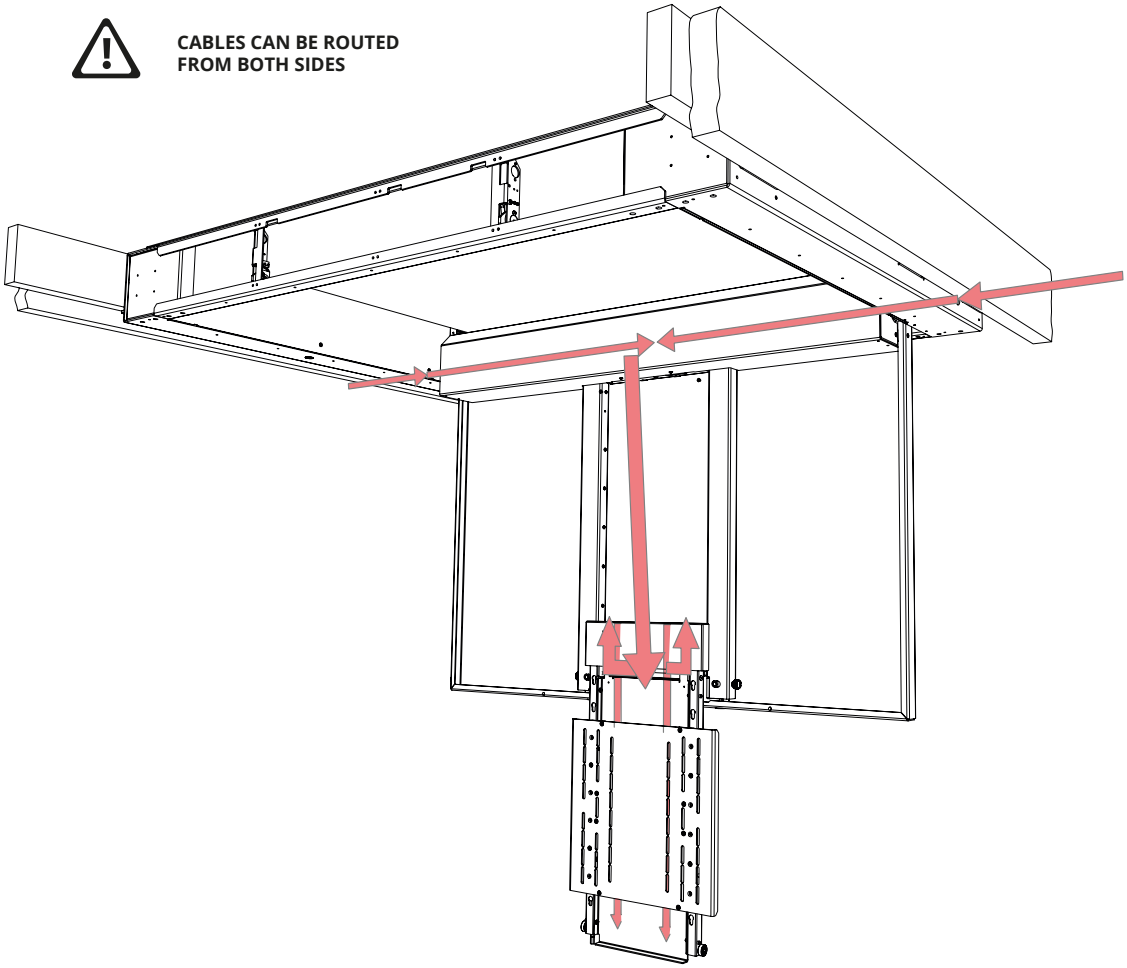


7 Trim panel can be lowered to unhook top edge and moved out of the mechanism, to gain access to the inside of the mechanism to run cables.



MARINE INDOOR
CABLE ROUTING

CABLES CAN BE ROUTED FROM BOTH SIDES



1

Locate power lead on right side of mechanism secured with red cable tie and attach to wall outlet using compatible power lead (Not Included).

2

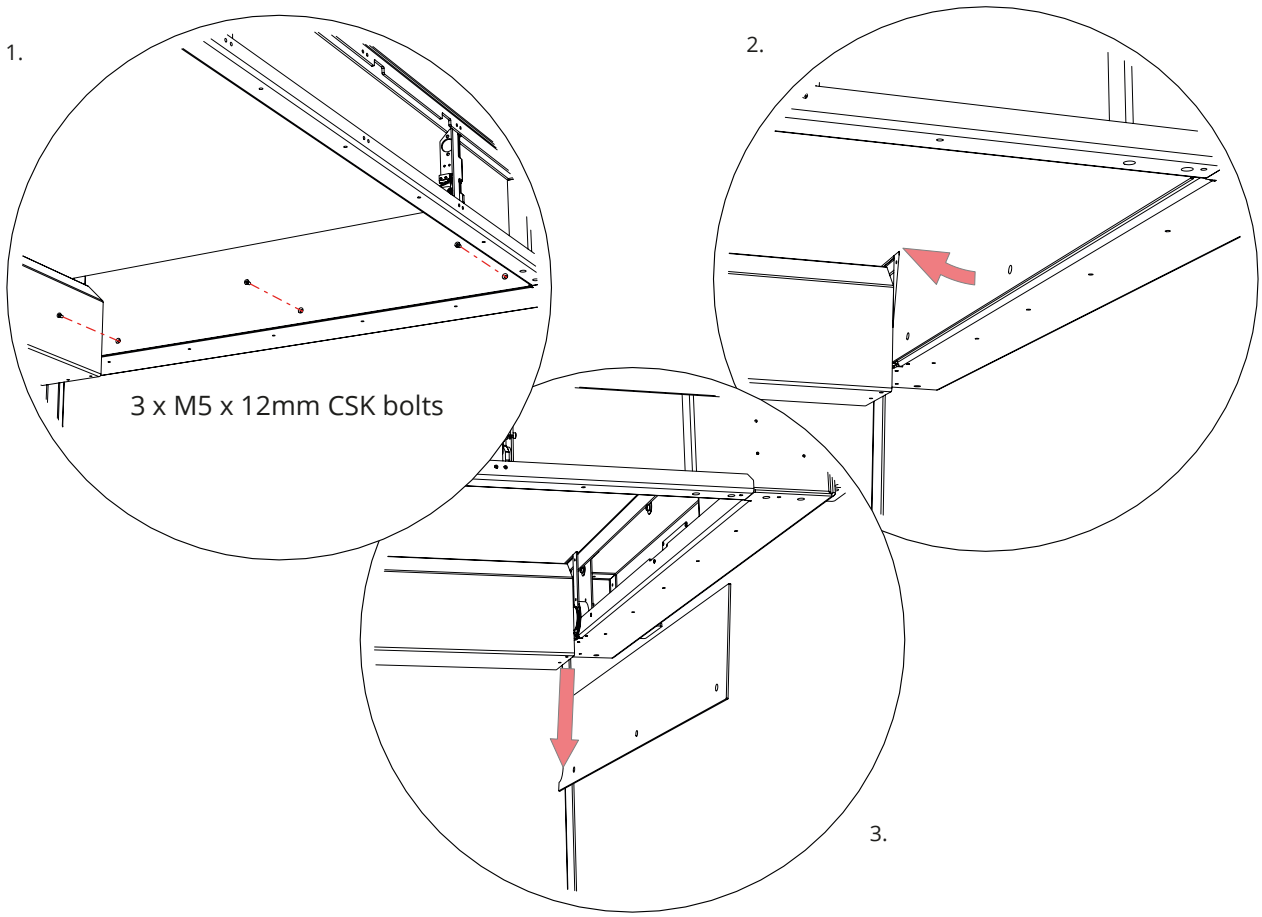
Ensuring space is clear below mechanism, operate by sending ‘OUT’ command on IR Remote Control.

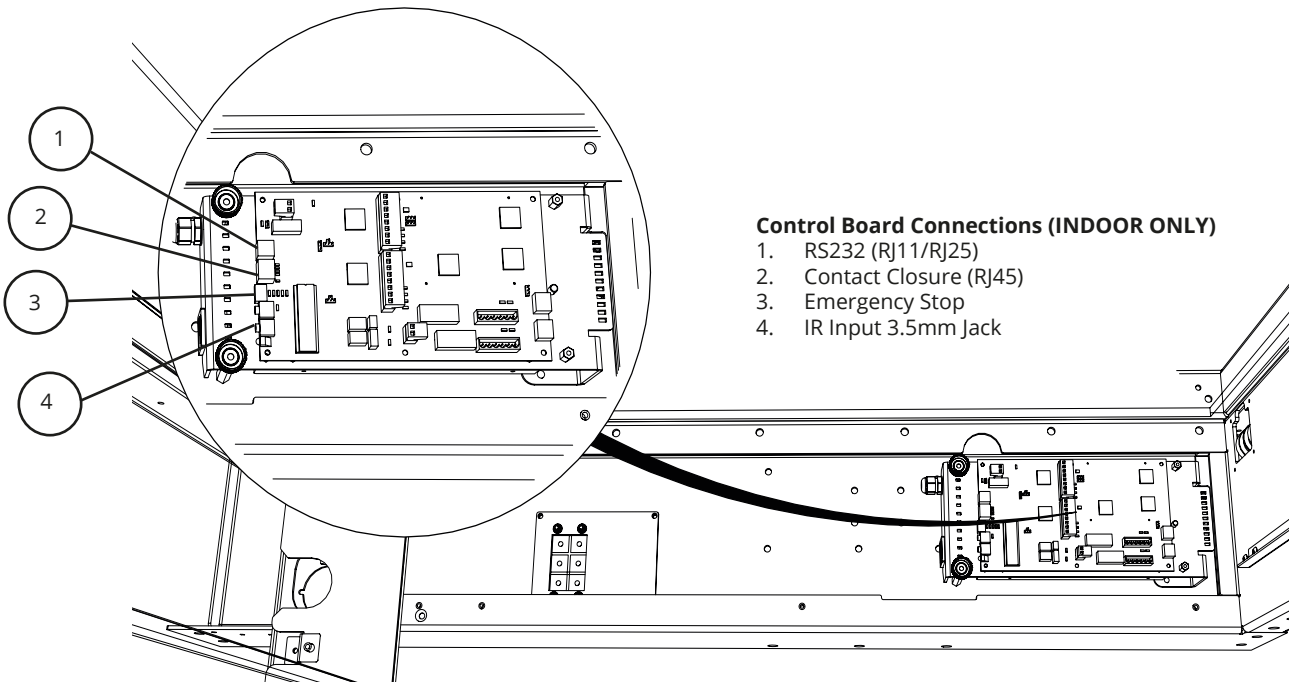
3

Route control cables through mechanism and test movement BEFORE installing TV.

MARINE INDOOR
CABLE ROUTING CONT.

4 Access control panel and wire control panel using image below.

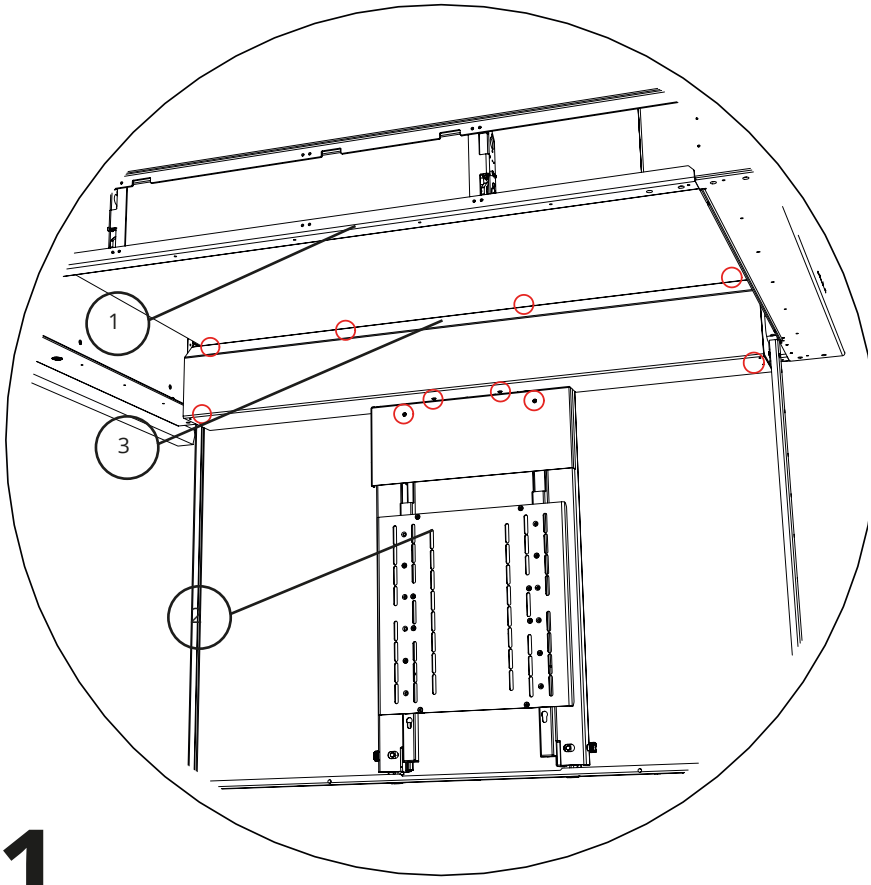




Control Board Connections (INDOOR ONLY)

1. RS232 (RJ11/RJ25)
2. Contact Closure (RJ45)
3. Emergency Stop
4. IR Input 3.5mm Jack

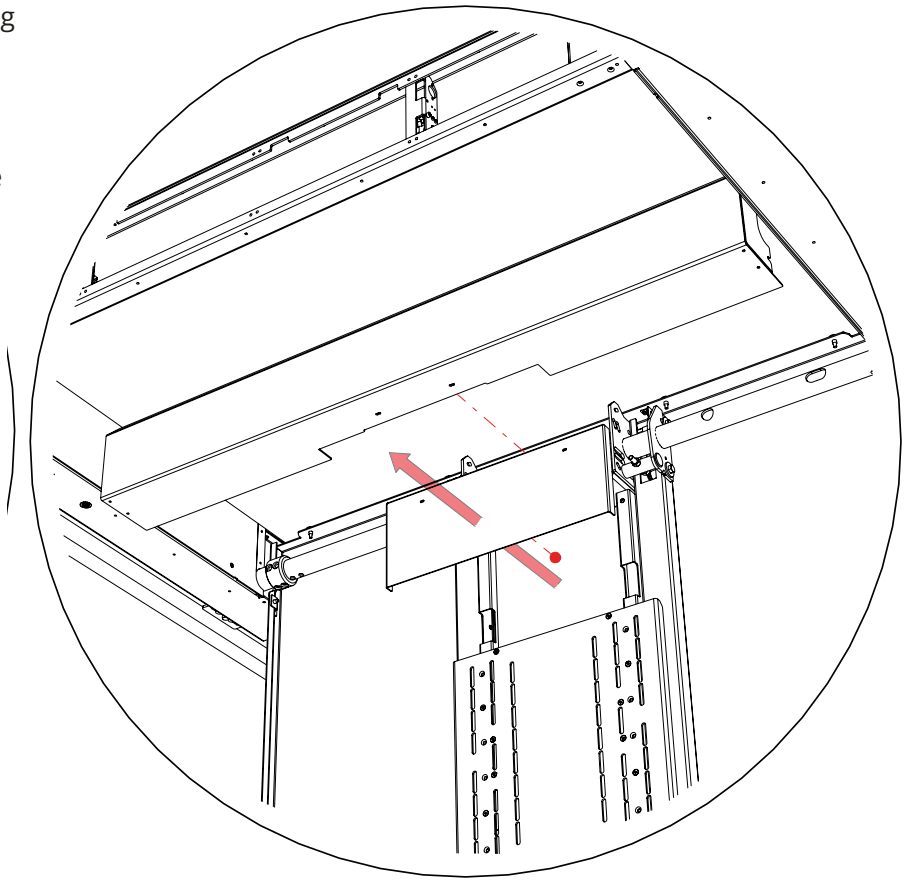
COVERS AND
TRIMS REMOVAL



1

Remove / Loosen all retaining bolts holding covers on large top cover.

- Loosen 4 x M6 Hex (10mm Spanner) along top edge.
- Remove 2 x M5 x 12mm Pozi Machine Screws.
- Loosen 1 x M6 Hex (10mm Spanner) on each side.



2

Remove lower front cover.

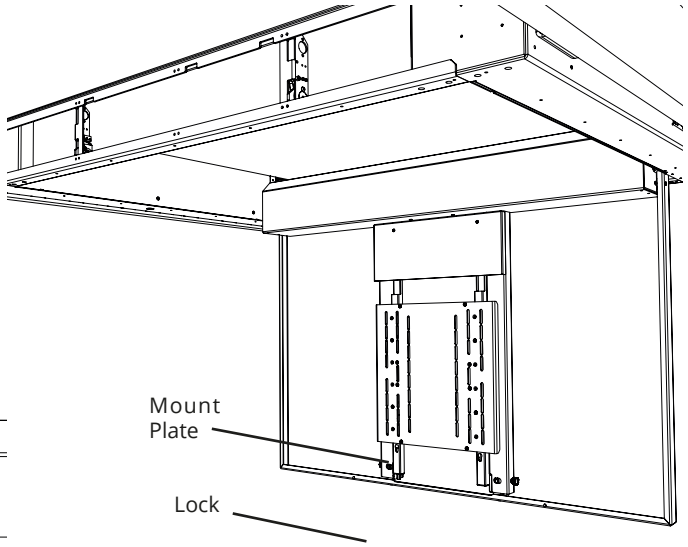
- Remove 2 x M5 x 12mm Pozi Machine Screws.

3

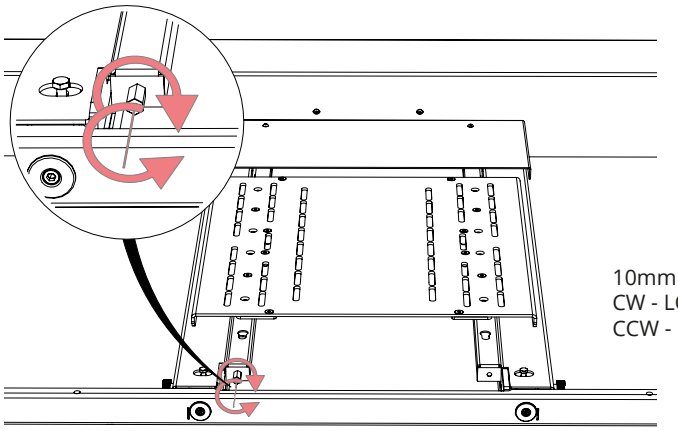
Remove telescopic unit middle cover.

- Remove 4 x 45 x 12mm Pozi Machine Screws.

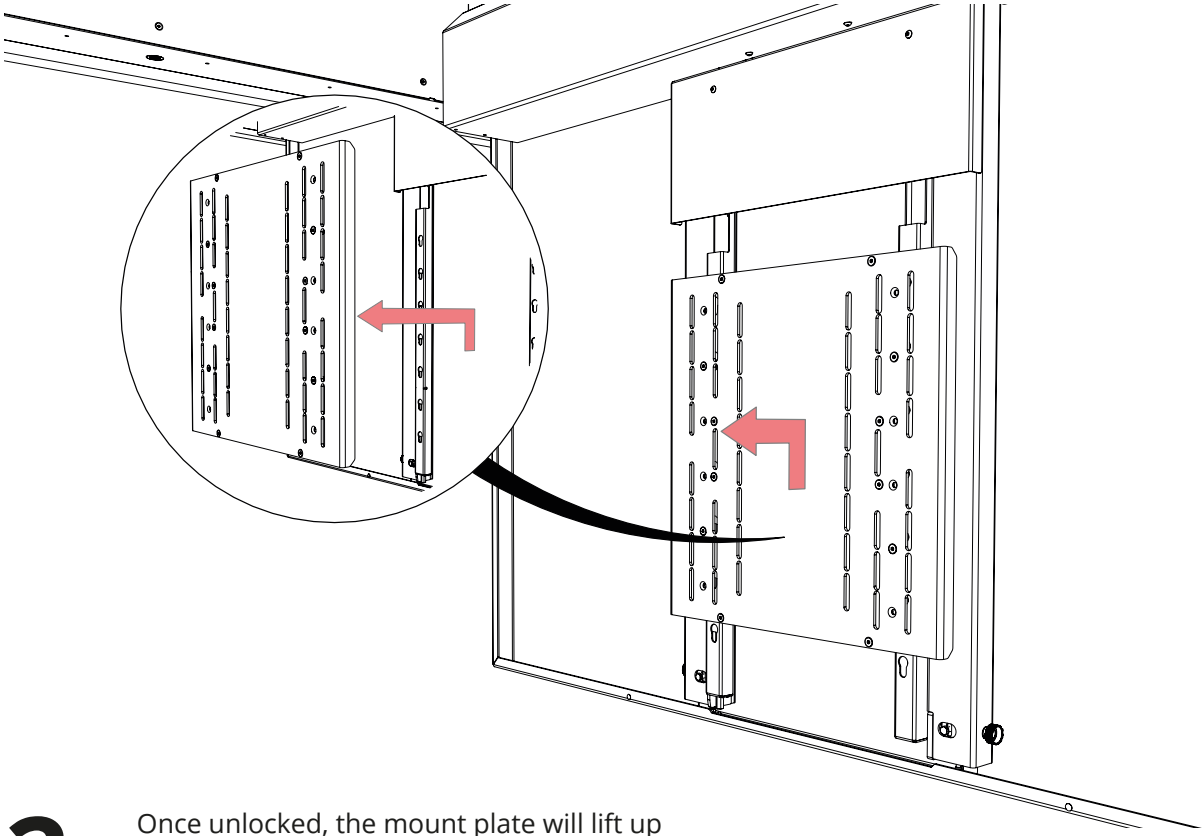
MOUNT PLATE
REMOVAL



1 Locate Mount Plate Lock and turn CCW to release lock.



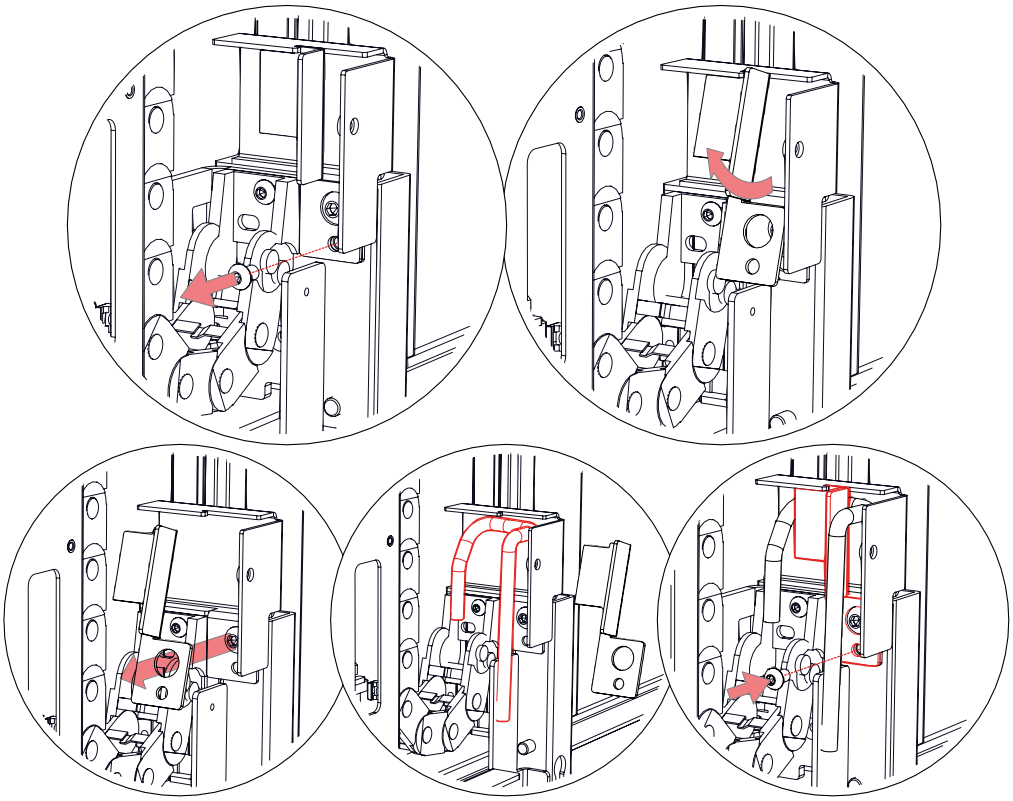
10mm Spanner/ 3mm Allen Key
CW - LOCK
CCW - UNLOCK

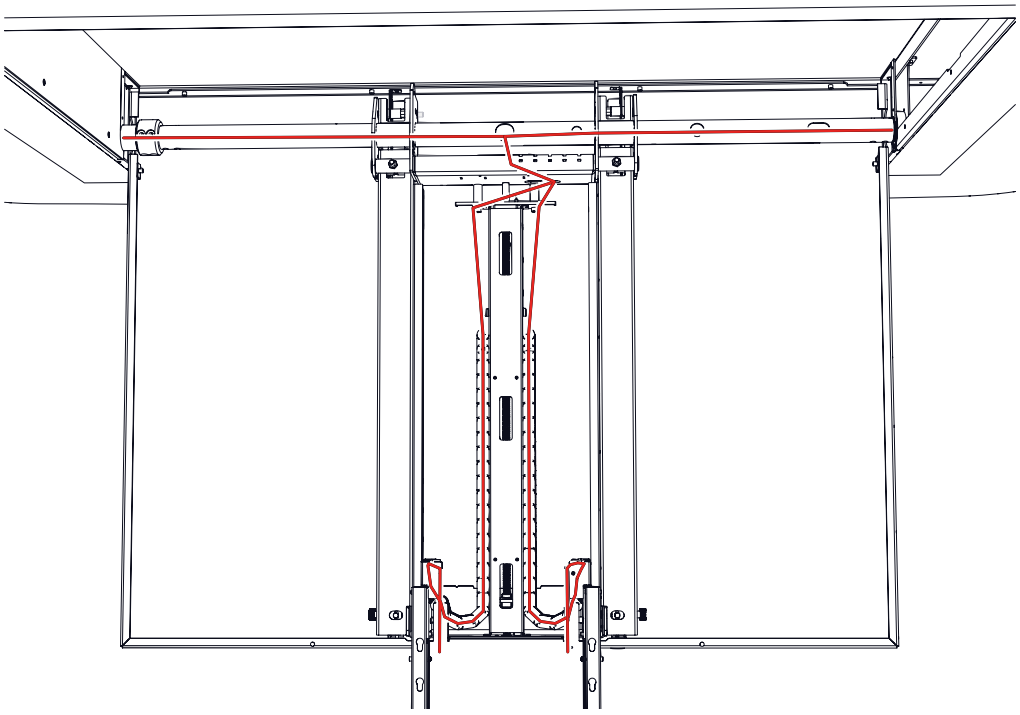


2 Once unlocked, the mount plate will lift up approximately 20mm [0.8”] and can be pulled forward away from the hinging tray.

3 Display cables can now be routed through the mechanism.

TELESCOPE UNIT
CABLE ROUTING





With all cables routed to desired areas of mechanism, panels can be replaced and secured in reverse order of removal.

SCREEN & MOUNT
PLATE INSTALLATION

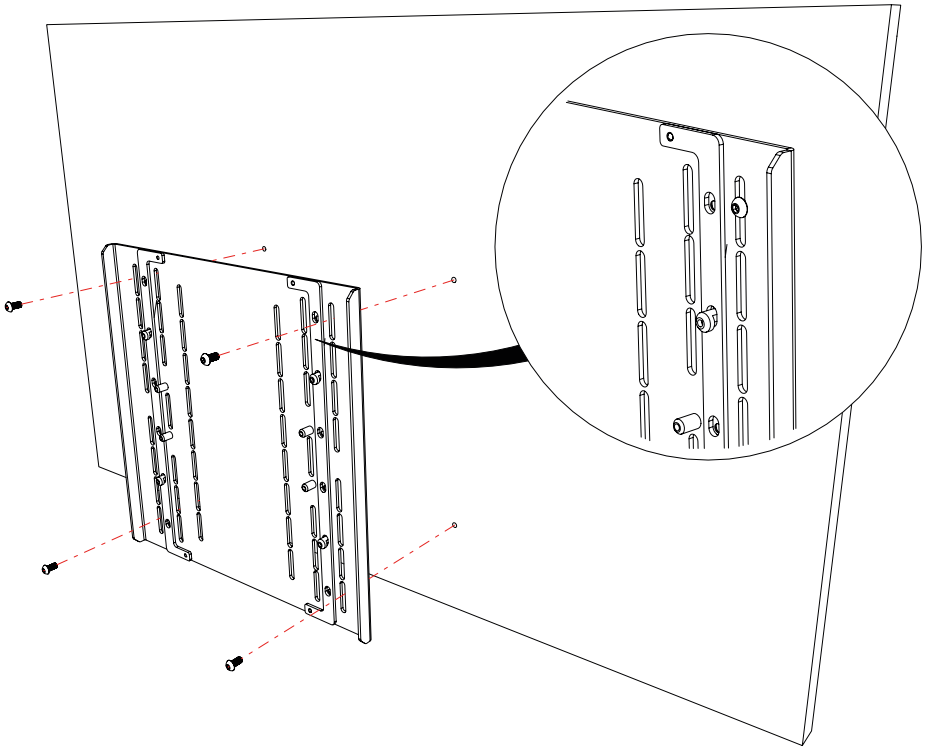
VESA 200 / VESA 300 / VESA 400 COMPATIBLE

Suitable for up to M8 Bolts

During installation, ensure TV does not overhang edge of moving tray.

TV should be no less and 20mm [0.8”] from lower edge of tray.

Adjust height of TV on mount plate to suit

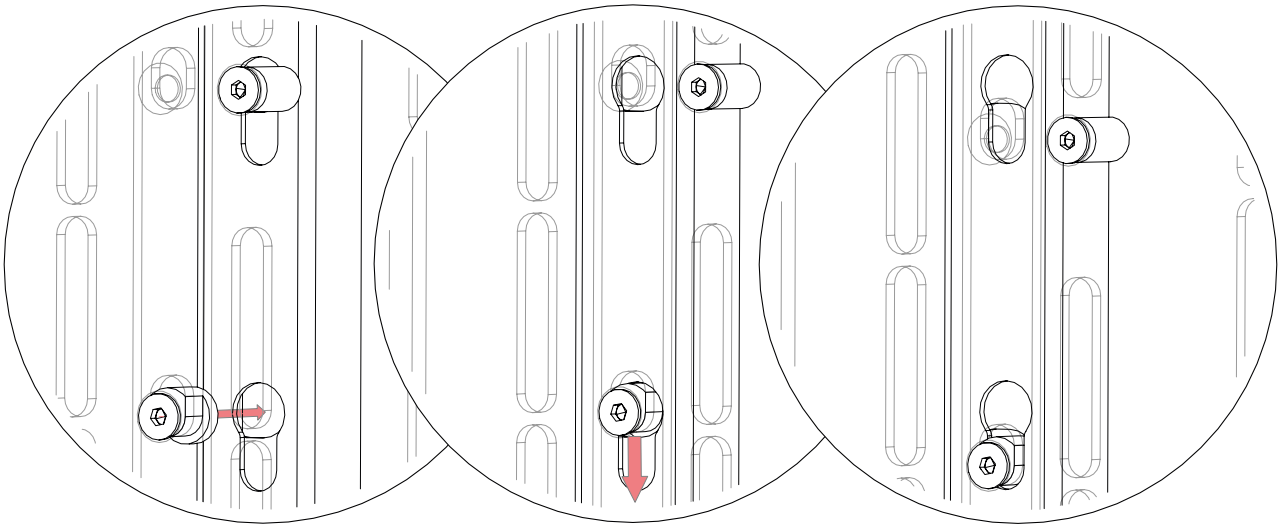


1

Hook plate on at desired height on tray.
(4 locating pins will centre plate on tray.)

3

Ensure plate is secure and lock plate in place as shown in **Mount Plate Removal Section.**



2

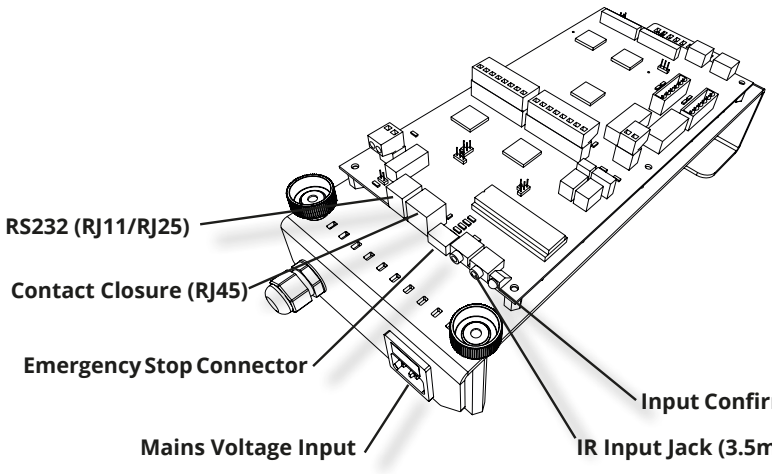
With plate located into side rails, plate will drop down into key shaped slots, apply light pressure to help engage slot.

GENERAL
CONTROL

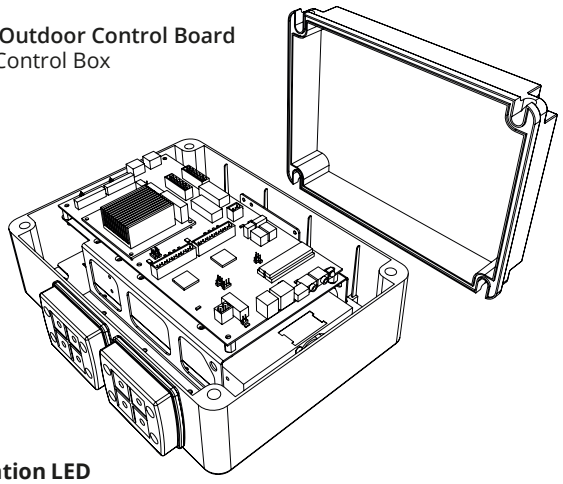
This mechanism has multiple standard control methods, each of which requires a different input method to the control box. For ease, the input sockets on the control board are labelled below.
(Control box size and style may vary to image shown)

CONTROL BOX INPUTS

Marine Indoor Control Board



Marine Outdoor Control Board
In IP66 Control Box



MECHANISM EMERGENCY STOP CONNECTOR

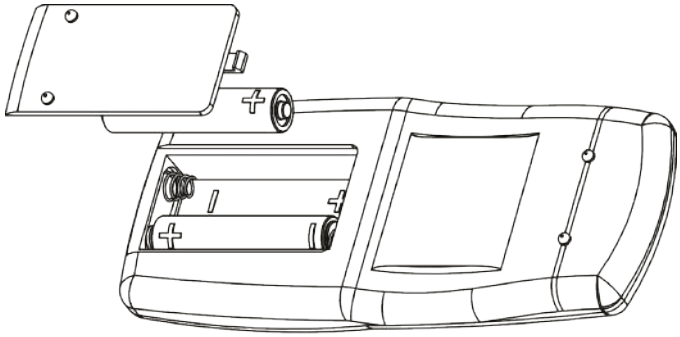
This mechanism features an Emergency Stop Connector, which MUST be plugged into the control box in the connector labelled above for the mechanism to operate. If this connector is not plugged in, the Input Confirmation LED will be permanently lit. As per the red plastic tag attached to the Emergency Stop 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.



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.

Multi-button commands beginning with STORE should be tapped sequentially within 1 second of each other

Infrared (IR) Remote Control Button Layout

IN - Brings the mechanism into the ceiling.

OUT - Brings the mechanism out of the ceiling, and extends the telescope to the maximum travel.

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

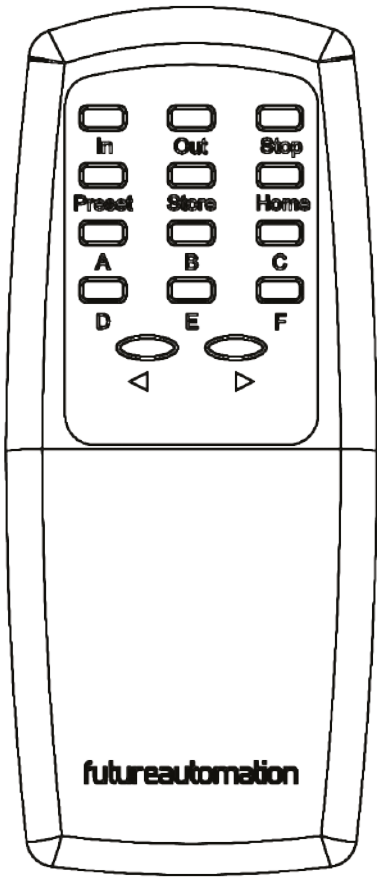
[STORE] + [A] - [F] - Stores any position. ***(6 positions available)***

To utilise this feature, press **[OUT]** and use **[<]** and **[>]** and **[IN]** buttons to position hinge, telescope and swivel and press **[STOP]** at the desired position.

Use the button combination above to store this position on the corresponding button.

To target stored position press button **[A] - [F]** that corresponds to position required.

Adjustments can be made to this position by repeating the process to reposition and then using the above button combination to relearn.



HOME - Brings the mechanism at out of the ceiling and the telescope in the retracted position.

[STORE] + [OUT] - Stores the maximum travel of the telescope, should a limit be required.

To utilise this function, press **[OUT]** and then press **[STOP]** with the telescope at the desired position.

Use the button combination above to store this position.

To clear the maximum limit to travel further or to full travel, press **[STORE], [STOP]** and then press **[OUT].**

Adjustments can now be made to this position by using **[IN]** and **[OUT]** to reposition and then repeat the above button combination to relearn.

[STORE] + [STORE] + [HOME] - This carries out a Factory Reset. **This restores control system to factory defaults, clears all learnt positions and saved limits. Ensure all limits are relearnt before normal operation is resumed.**

PRESET - Used to independently send DDP (If fitted) to OUT position.

IMPORTANT

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

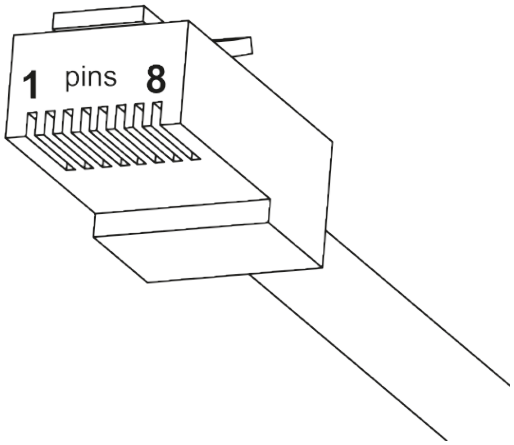
CONTACT CLOSURE

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.

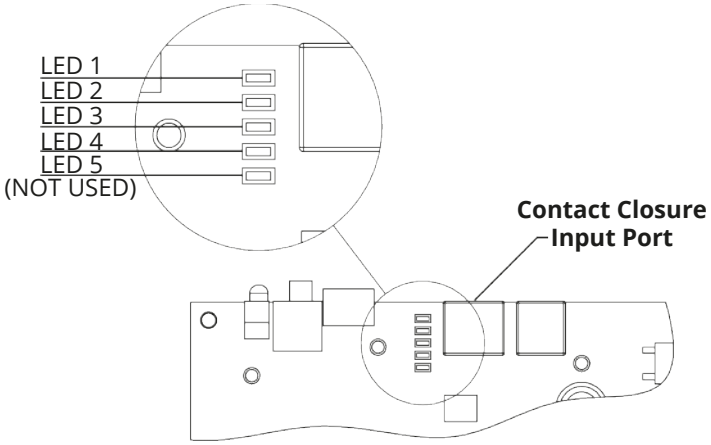
The mechanism's functions can be controlled by plugging this into the RJ45 port on the mechanism control board, then shorting pins 1-8 on this connector as shown in the Contact Closure Input Table below.

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	WIRE/CABLE TYPE 568A	WIRE/CABLE TYPE 568B	LED INDICATOR
1	12V SUPPLY	12V SUPPLY - CURRENT LIMITED	W G	W O	
2	12V LATCH	WHEN 12V ATTACHED, DEVICE WILL MOVE TO PRESET POSITION. WHEN 12V REMOVED, DEVICE WILL GO IN.	G	O	
3	GROUND	GROUND	W O	W G	
4	DEVICE LATCH (OUT)	SHORT TO GROUND (PIN 3), DEVICE WILL MOVE TO OUT POSITION, WHEN REMOVED DEVICE WILL MOVE TO IN POSITION.	B	B	LED 5
5	DEVICE LATCH (POSITION 'A')	SHORT TO GROUND (PIN 3), DEVICE WILL MOVE TO POSITION 'A', WHEN REMOVED DEVICE WILL MOVE TO IN POSITION.	W B	W B	LED 4
6	DEVICE STOP	MOMENTARY SHORT TO GROUND (PIN 3), STOPS DEVICE IN CURRENT POSITION.	O	G	LED 3
7	DEVICE OUT	MOMENTARY SHORT TO GROUND (PIN 3), DEVICE WILL MOVE TO OUT POSITION.	W BR	W BR	LED 2
8	DEVICE IN	MOMENTARY SHORT TO GROUND (PIN 3), DEVICE WILL MOVE TO IN POSITION.	BR	BR	LED 1

RS232
CONTROL

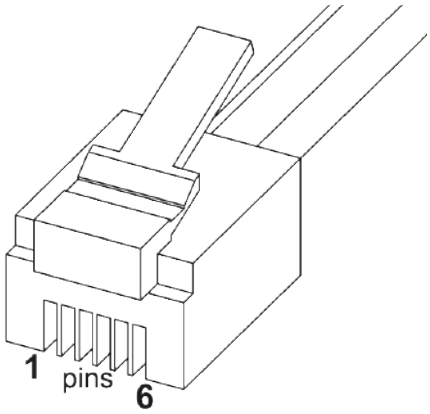
This Mechanism can be controlled via RS232, utilising a 6 Pin RJ11/RJ25 connector OR 9 Pin Serial connector attached to a length of 6 core cable.

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.

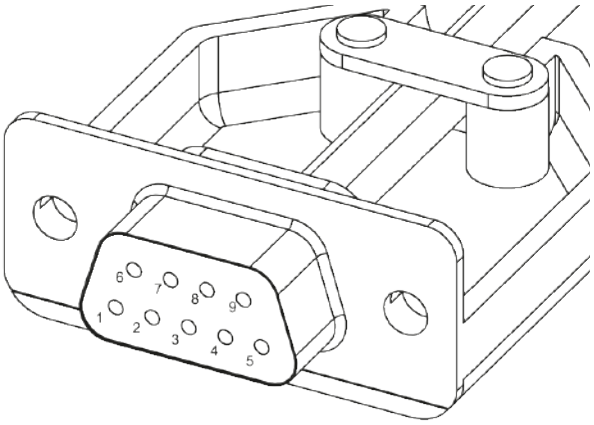
RJ11/RJ25 PIN LAYOUT

PIN 1: TX
PIN 6: RX
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	PIN 2	Blue
PIN 3	GROUND	PIN 5	Green
PIN 4	GROUND	PIN 5	Red
PIN 6	RX	PIN 3	White

RS232 INPUT TABLE

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

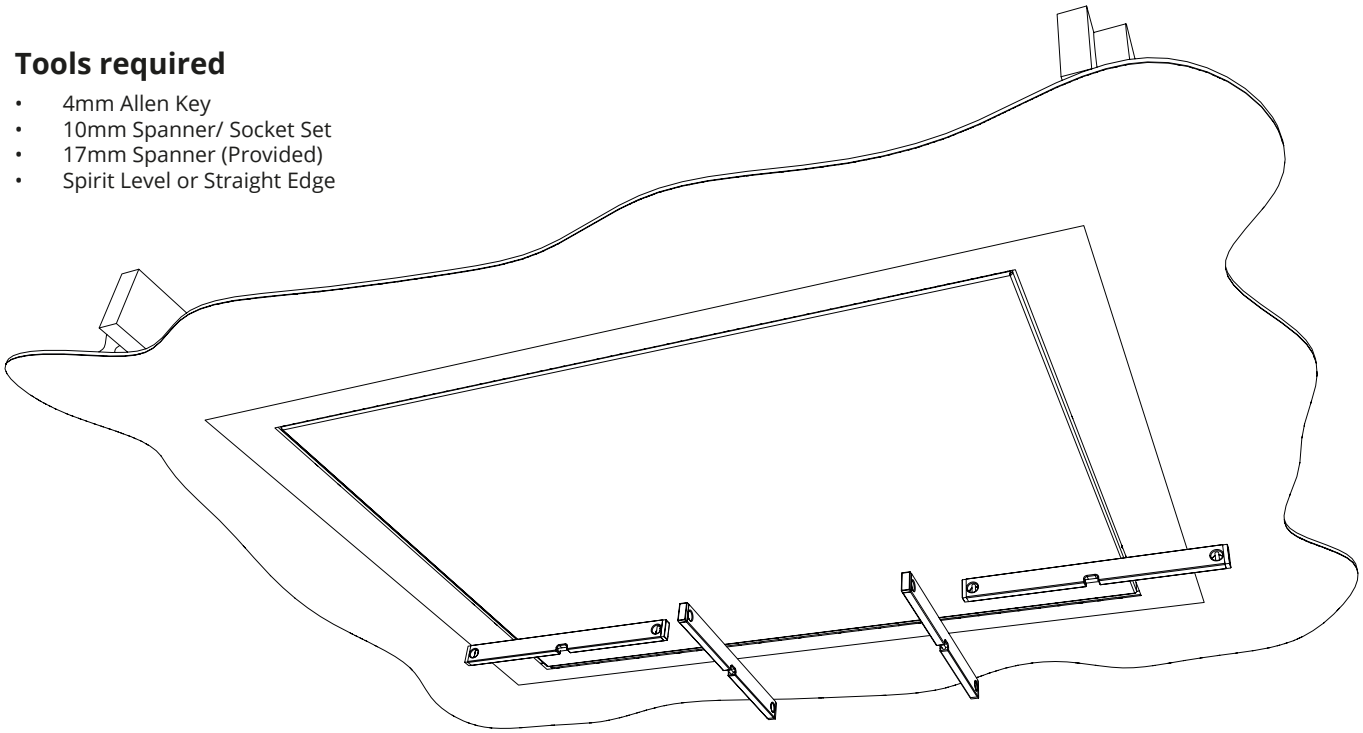
Protocol	Action
fa_in Carriage Return (Enter / ASCII 13)	Device IN
fa_out Carriage Return (Enter / ASCII 13)	Device OUT
fa_a Carriage Return (Enter / ASCII 13) - fa_f Carriage Return (Enter / ASCII 13)	Device OUT to memory position A - F respectively
fa_stop Carriage Return (Enter / ASCII 13)	Device STOP (At any position)
fa_home Carriage Return (Enter / ASCII 13)	Device to HOME (Hinge Down, Telescope Up) position

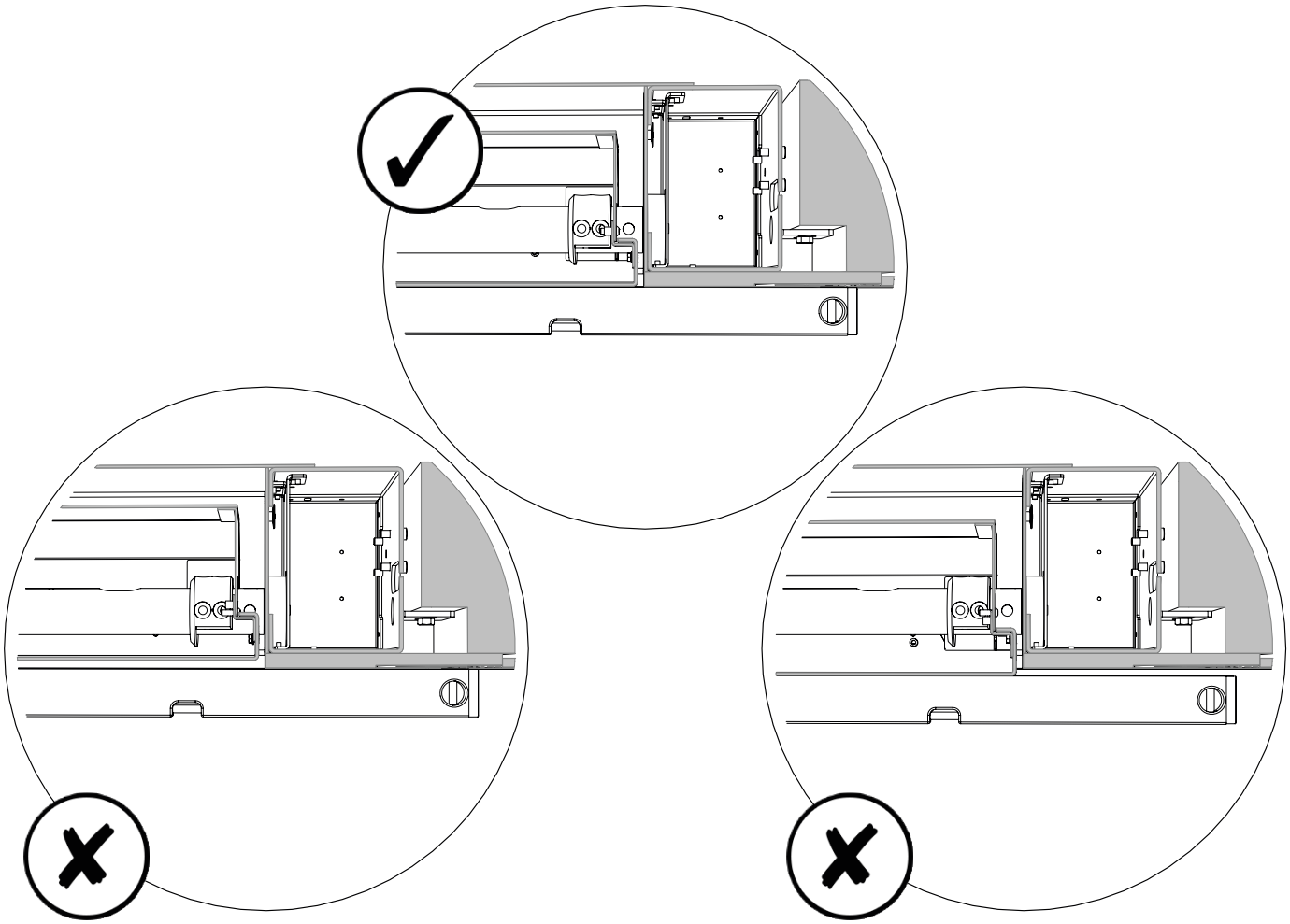
HINGING TRAY
LEVELLING

The moving tray on the mechanism is factory set and should not require any further adjustment after install, however the tray may become misaligned during transit or if removed for maintenance or painting.

Tools required

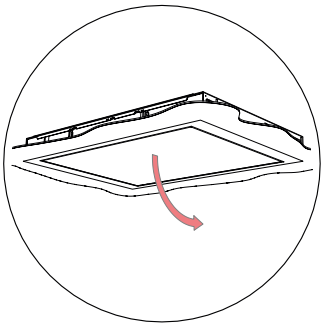
- 4mm Allen Key
- 10mm Spanner/ Socket Set
- 17mm Spanner (Provided)
- Spirit Level or Straight Edge



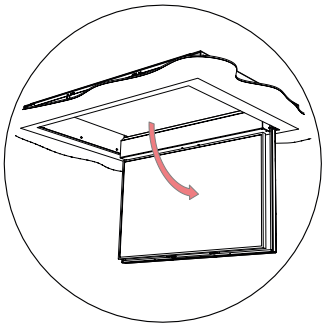


HINGE TRAY
LEVELLING CONT.

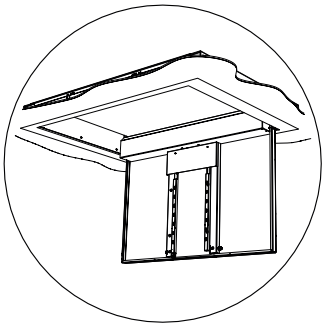
1. Open Mechanism



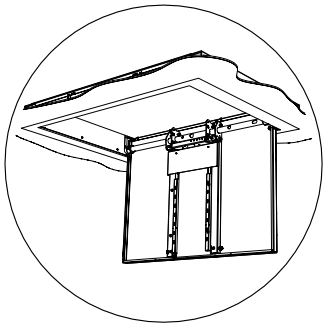
2. Remove Screen (If Installed)



3. Remove Covers (If Installed)

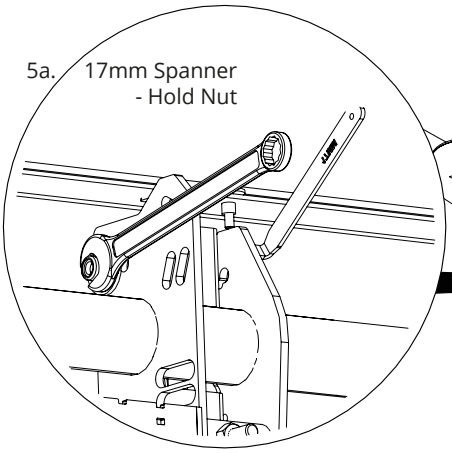


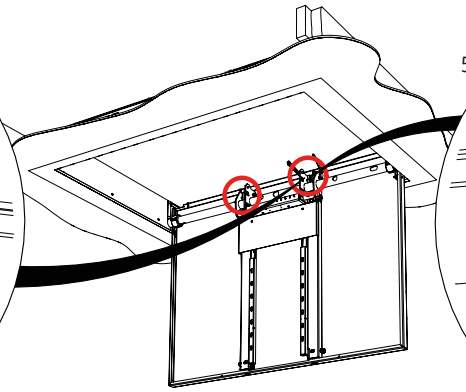
4. Prepare tools



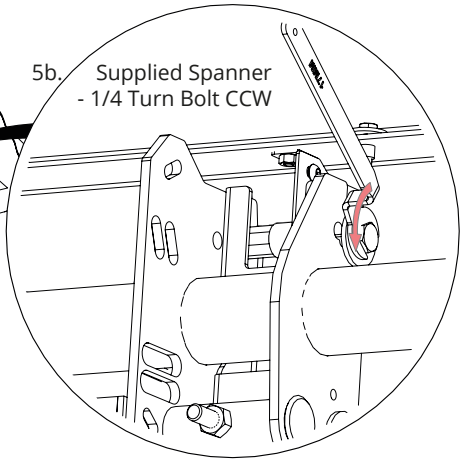
5. Loosen Clamp Bolts on both sides of tray

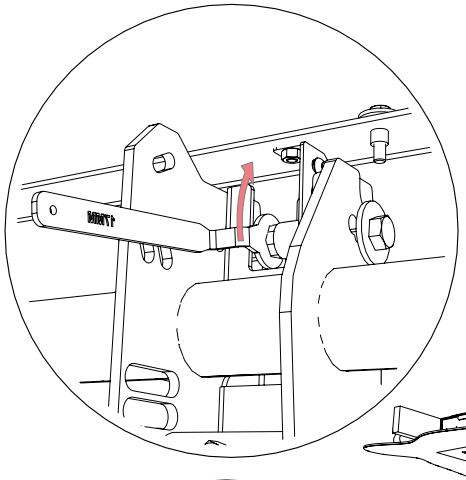
5a. 17mm Spanner
- Hold Nut

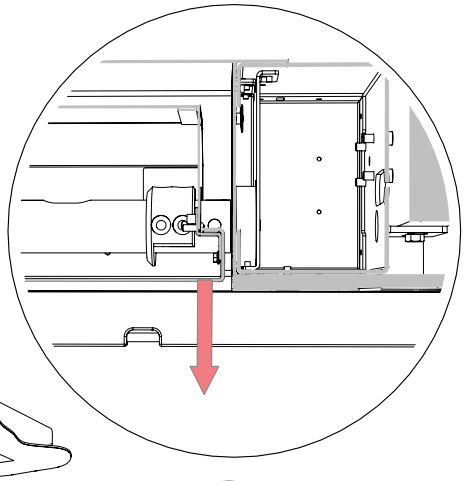


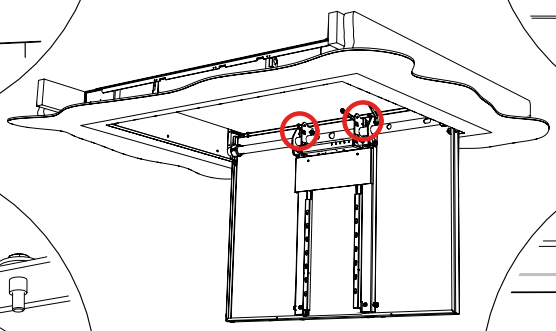


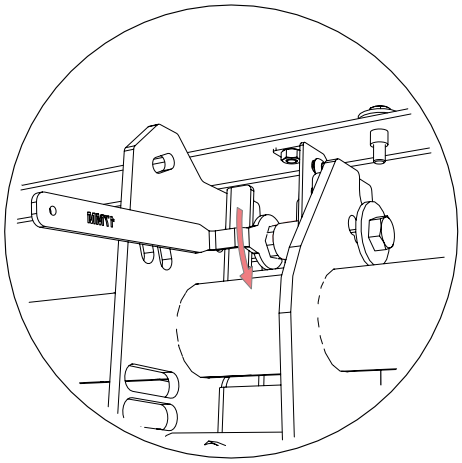
5b. Supplied Spanner
- 1/4 Turn Bolt CCW

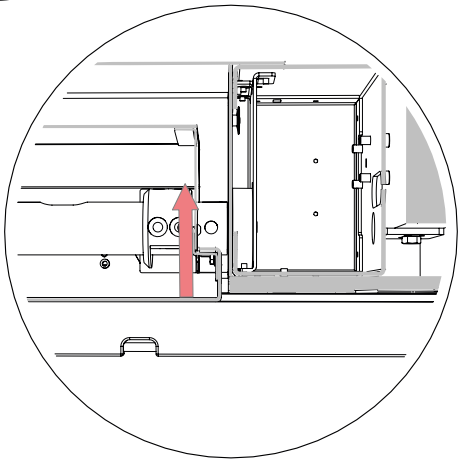






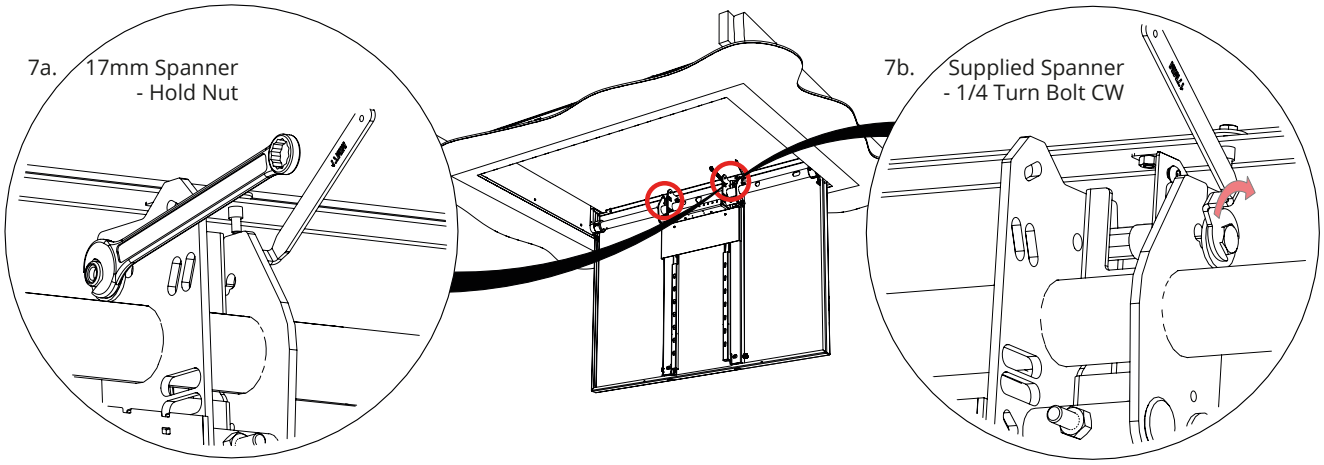




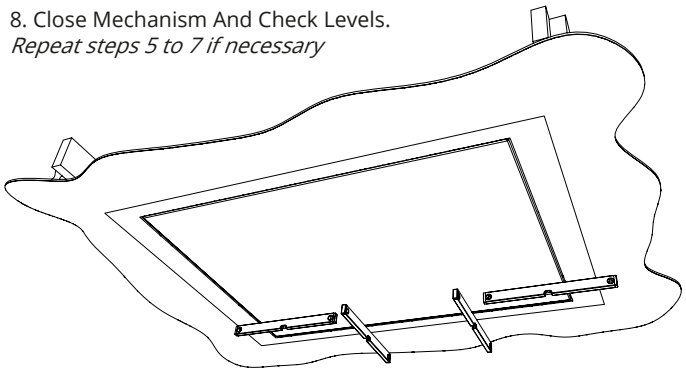


HINGE TRAY
LEVELLING CONT.

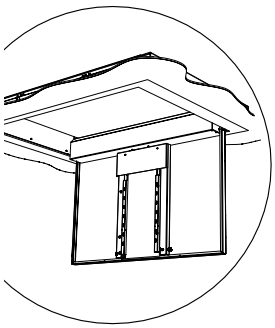
7. Tighten Clamp Bolts on both sides



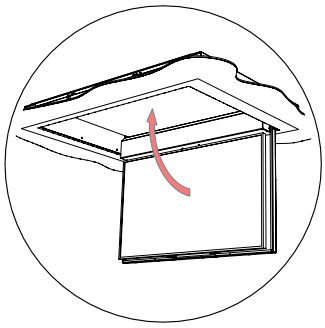
8. Close Mechanism And Check Levels.
Repeat steps 5 to 7 if necessary



9. Reinstall Covers (If Removed)



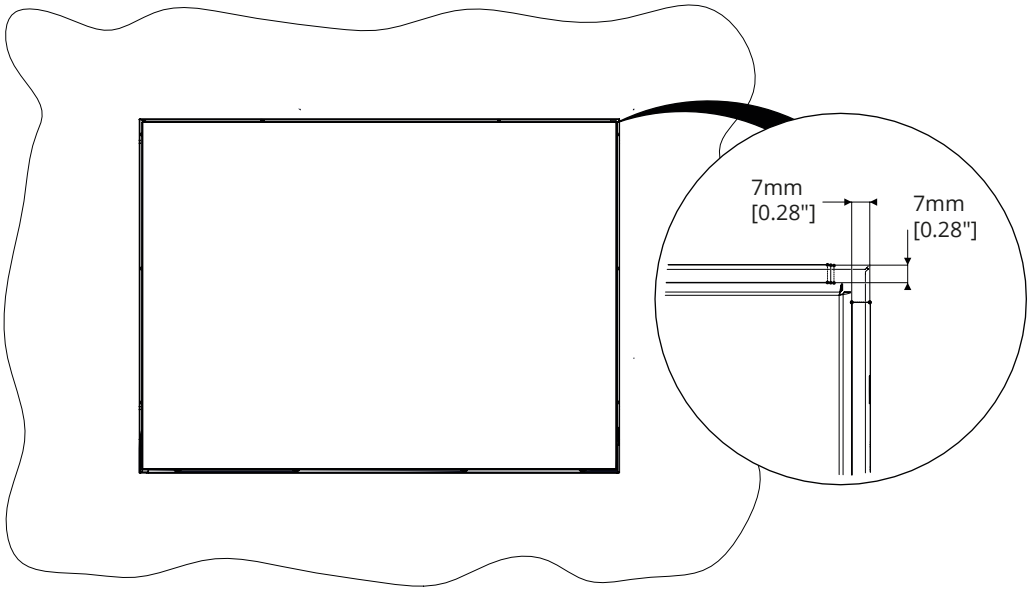
10. Reinstall TV (If Removed)



Hinging Tray Positioning

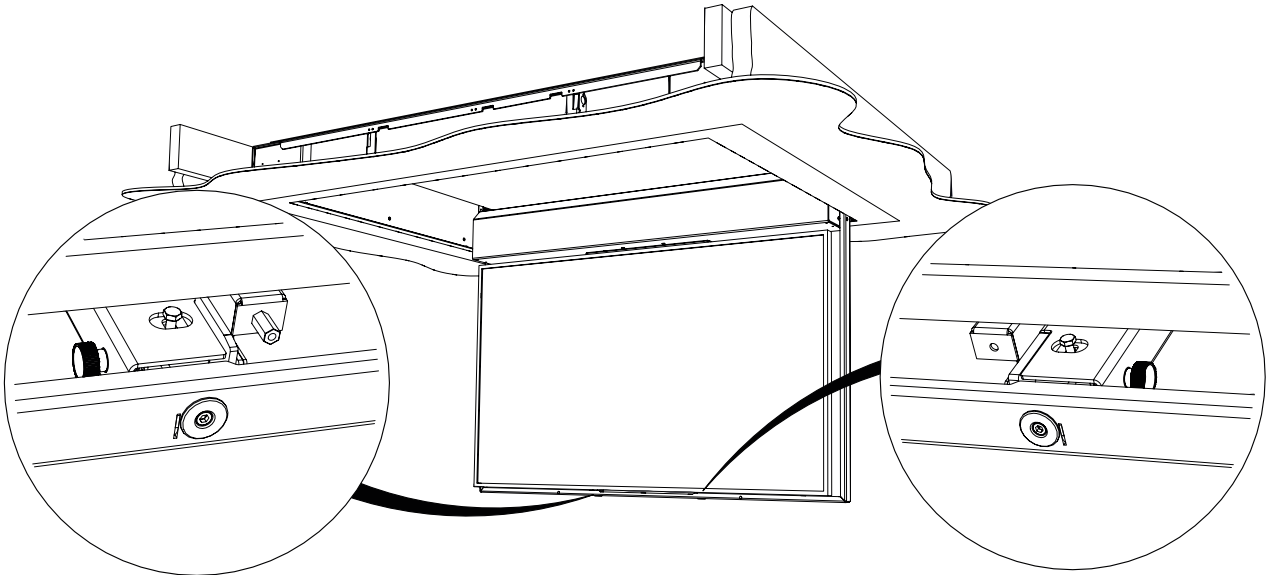
Adjustments can be made to the tray position within the ceiling.

The CHR is designed to have a 7mm [0.28"] shadow gap at the Front, Left and Right and a 10mm [0.4"] gap at the back.

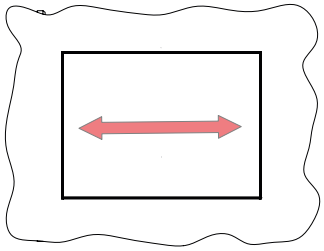


HINGE TRAY
LEVELLING CONT.

Adjustments to tray position can be carried out with Screen in place as shown below



Left to Right



Tools required

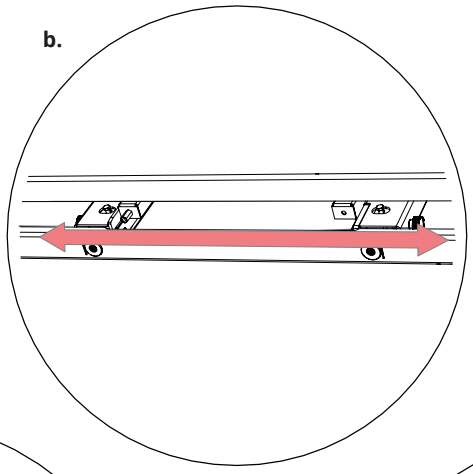
(10mm Socket / Spanner)

a. Loosen 2 M6 Hex Bolts - 1 turn

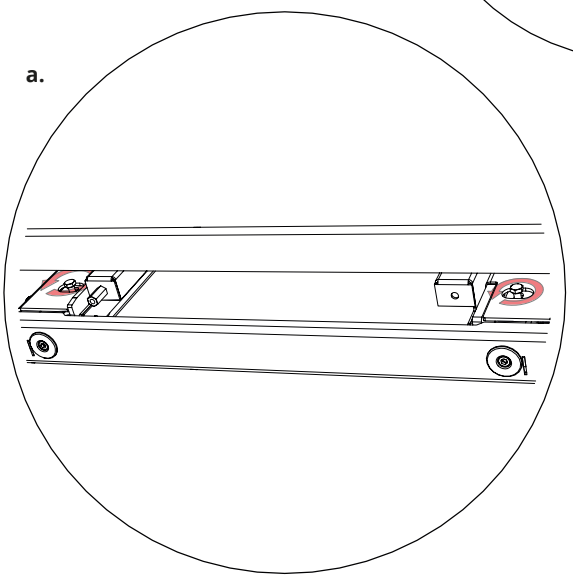
b. Move tray as needed

c .Tighten 2 M6 Hex Bolts - 1 turn

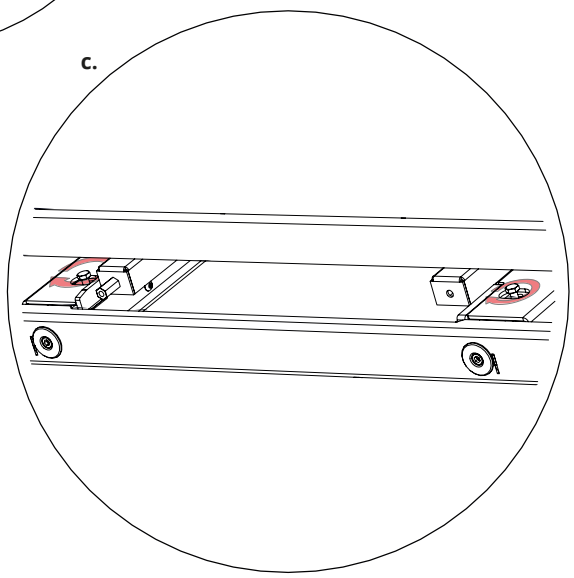
b.



a.

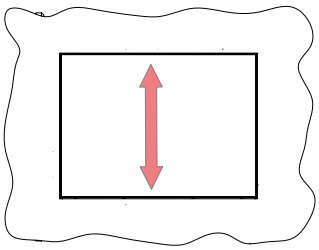


c.



MOVING TRAY
POSITIONING

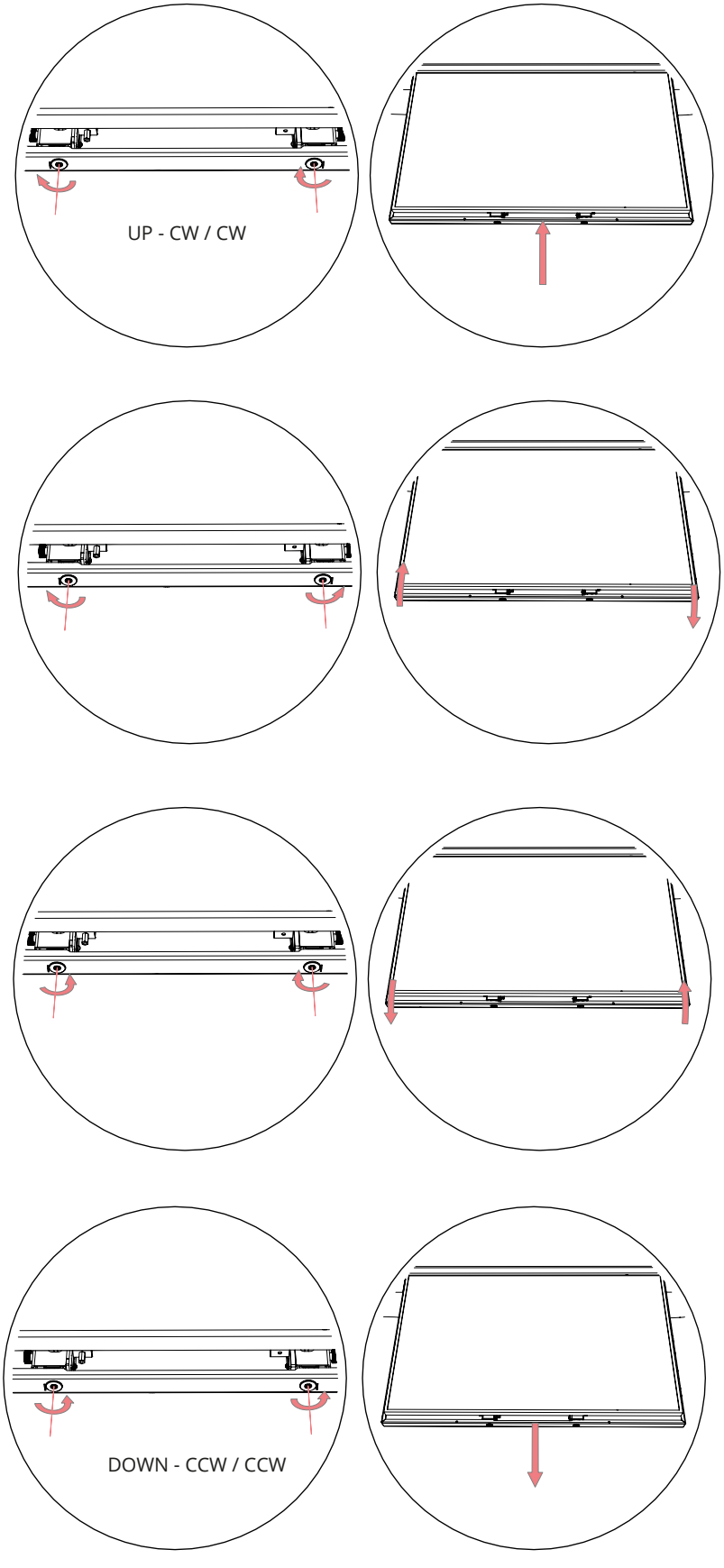
Front to Back



Tools required
(4mm Allen Wrench / Key)

Rotate socket on each side as needed.

1 CW Turn = 1mm Up
1 CCW Turn = 1mm Down



NOTES:

NOTES:



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Saturday & Sunday - Closed