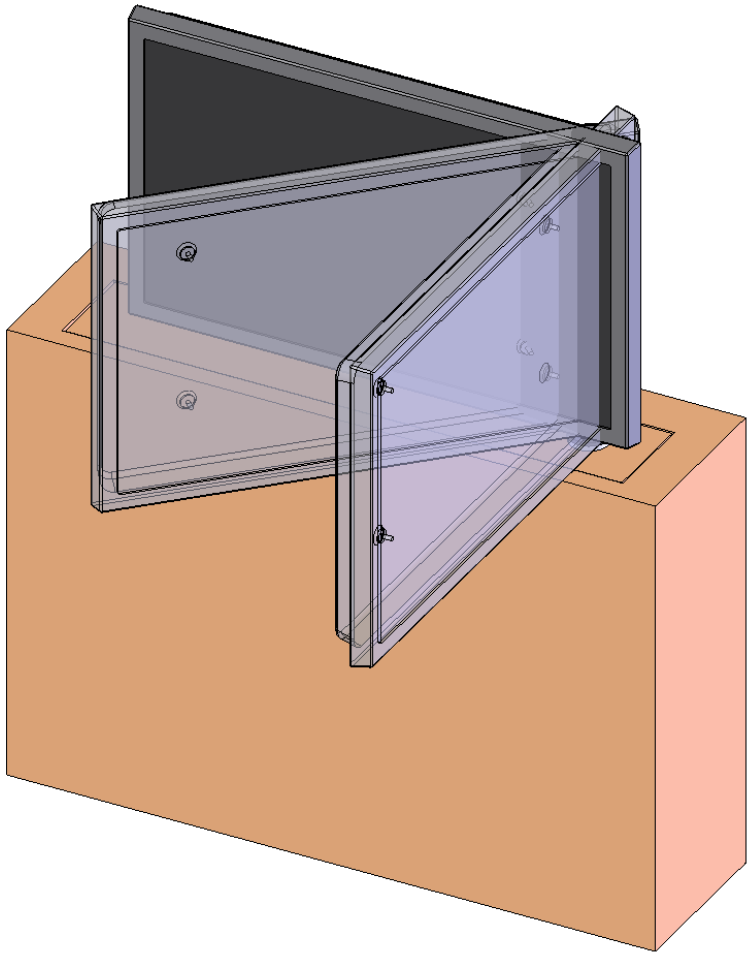
PLH Plasma Lift Hinge Mechanism
Instruction Sheet

ISSUE: 006
www.futureautomation.co.uk



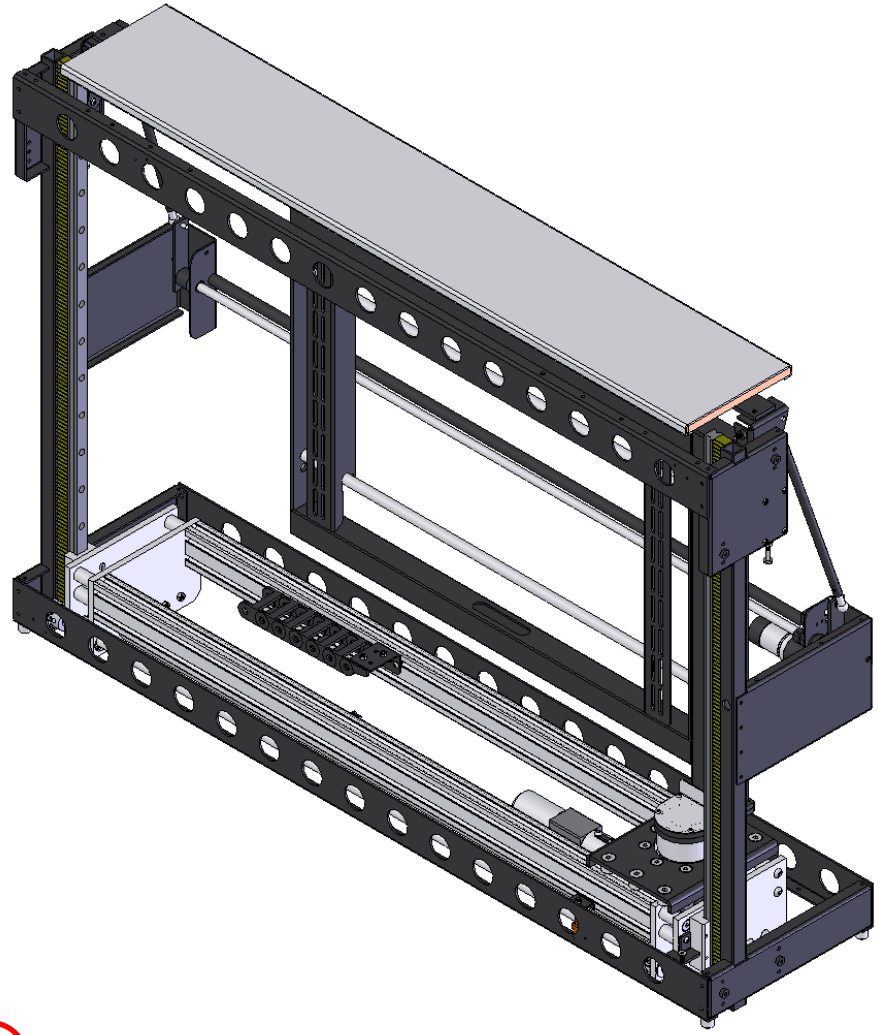
FUTUREAUTOMATION

Your Pack Should Contain

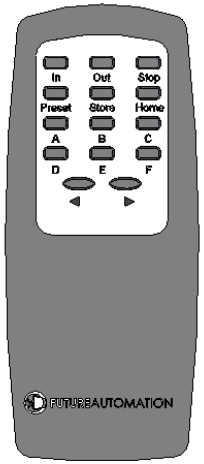
1 PLH -

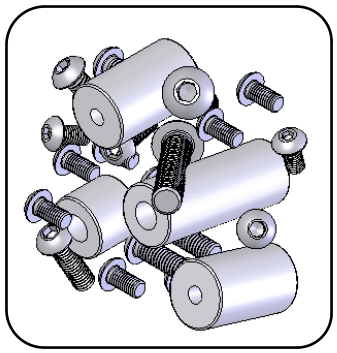
Plasma Lift Hinge Mechanism

Suitable for 26" to 50" screens



1 IR Remote Control





1 Standard PL Fixtures Pack

The contents of which can be found on Sheet 17

WARNING
It is the responsiblity of the installer to warn all potential end users of the dangers of interfering with mechanisms during operation

IMPORTANT
Mechanisms which lift or move weights need to be checked on a yearly basis for any damage which may result in an accident

FUTUREAUTOMATION

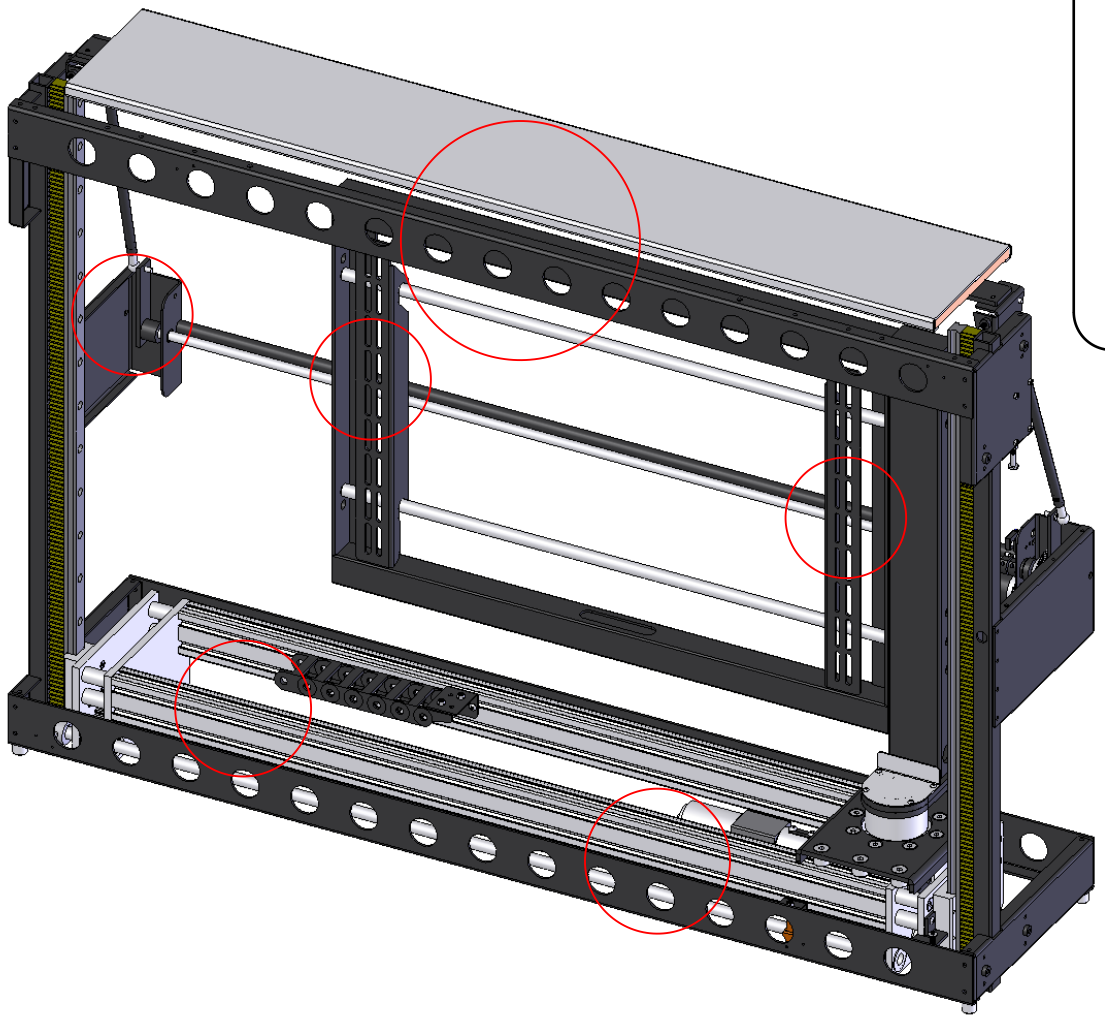
Stage 1

Check The Operation Of The Mechanism

Firstly, remove the cable ties that keep the mechanism safe and secure during transit. There are usually 6 ties in various locations.

However, on some models there may be more than 6 cable ties.

Once all the cable ties have been removed, then the mechanism can be powered up and tested.



CONTROLS

Connect the supplied IR remote and check that the mechanism operates correctly before continuing with the installation.

OUT: **Reveal Screen**

IN: **Hide Screen**

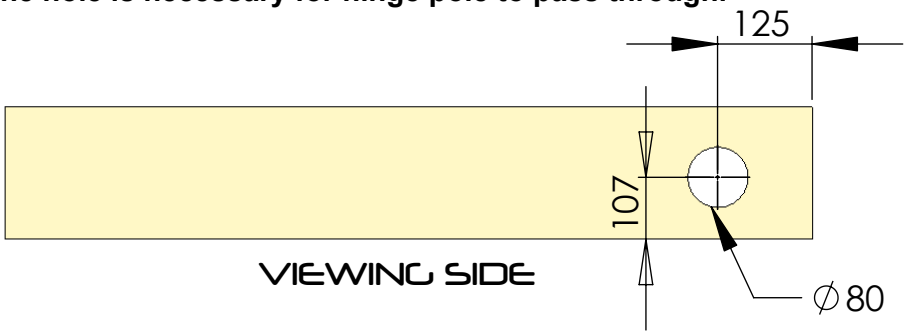
STOP: **Stops Mechanism**

See SHEET 11 for further controls

Stage 2

Fitting Flap And Base To Mechanism

The hole is necessary for hinge pole to pass through.



The 6mm flap and the base should be made as part of the cabinet.

The surface of the flap should be varnished or painted to prevent warping.

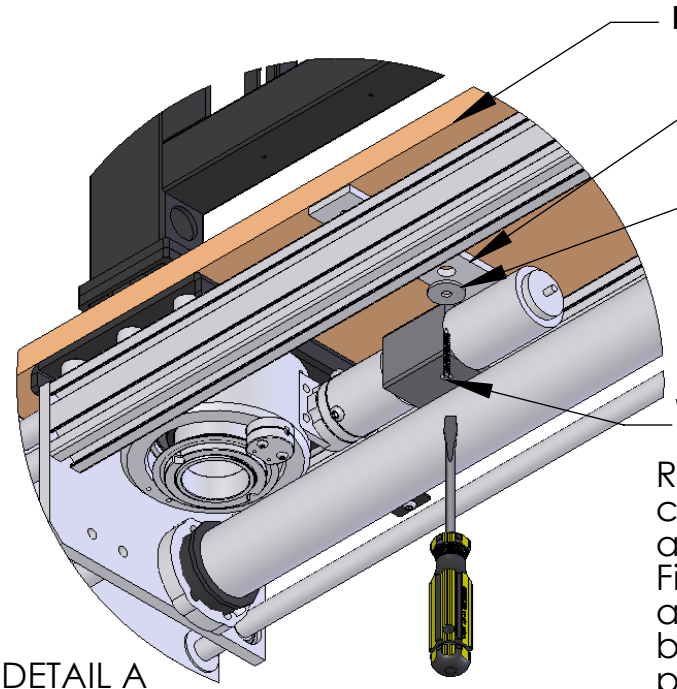
Take care when fixing the surfaces together. Place the objects on a flat surface to make sure the edges are properly aligned when they come into contact.

Try to use as many self adhesive pads as possible to get the most secure fixture.

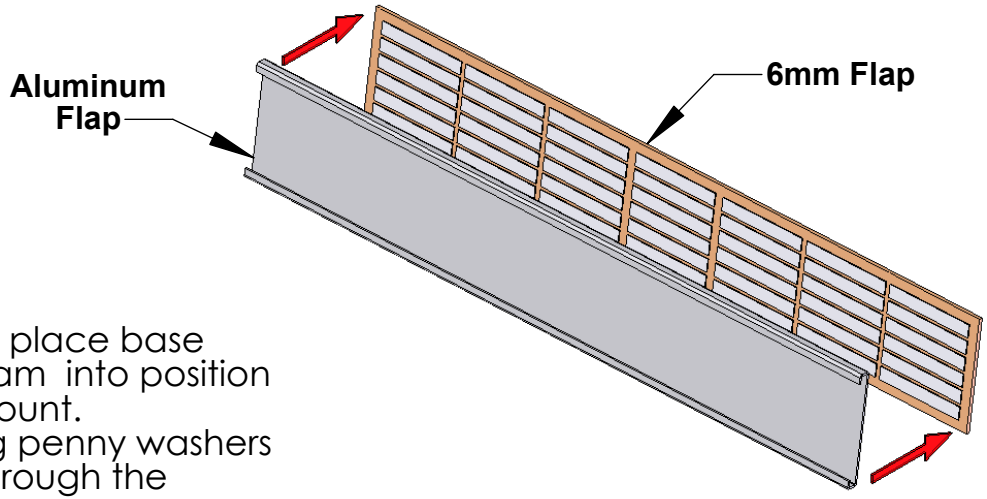
FIXING

Make sure the base panel lines up squarely, directly on top of the lifting beam.

Consult PLH TECHNICAL SHEET before fabricating any flaps or base panels.



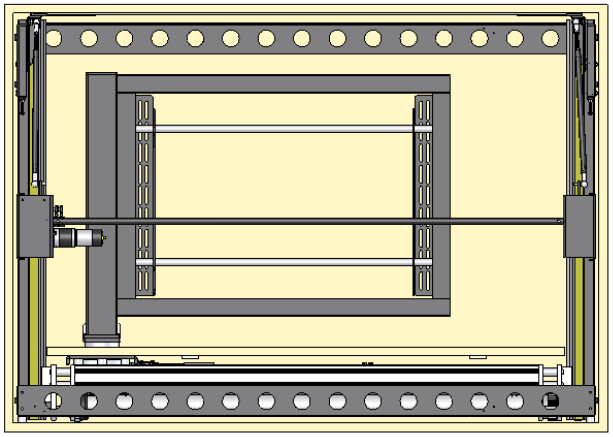
DETAIL A
SCALE 1 : 5

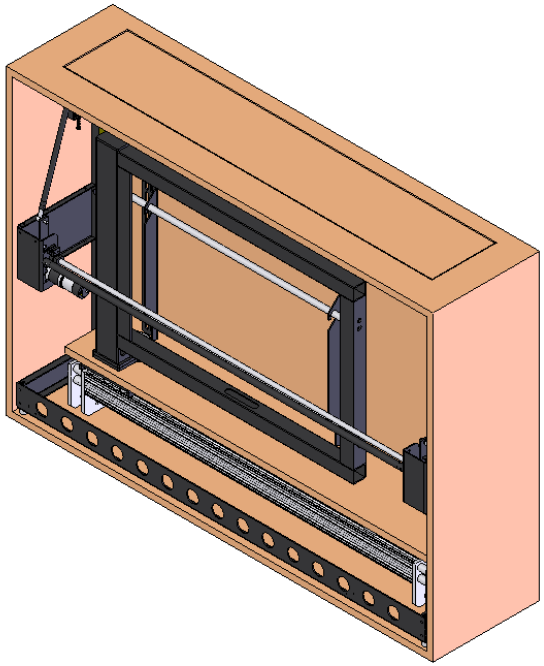


Remove mount and place base central onto the beam into position and reattach the mount.
Fix the base by using penny washers and wood screws through the base supports provided as shown in Detail A

Stage 3

Fixing The Lift In The Cabinet



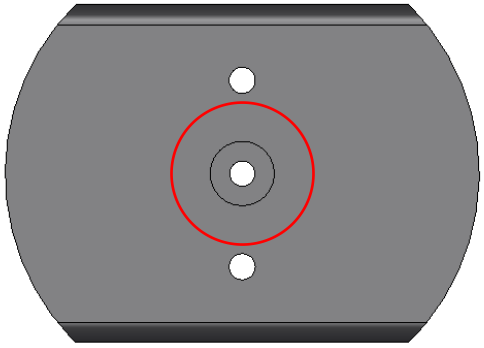


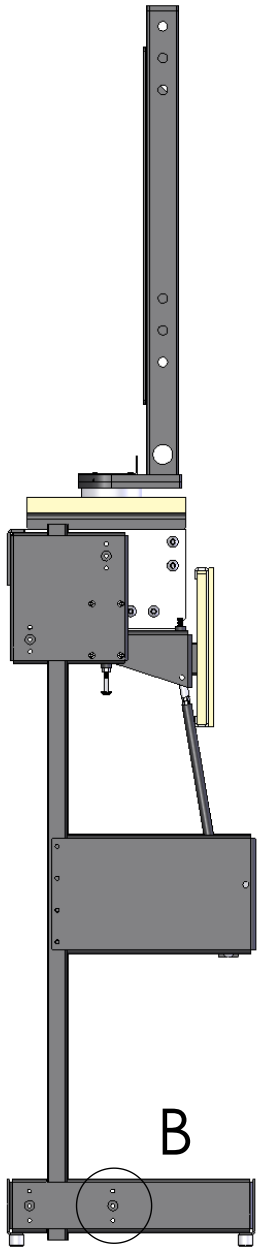
Place the mechanism within the cabinet. Raise the beam to the top and guide the base carefully through the opening in the top.

With the base properly located, use the 8 pointed screws supplied, 4 on each side, to pin the mechanism in place, fixing its position left and right. These 8 screws should be screwed through the middle hole of each of the clusters of 3, shown below right.

With the lift fixed in position, use 8 wood screws on each side to secure the lift to the cabinet.

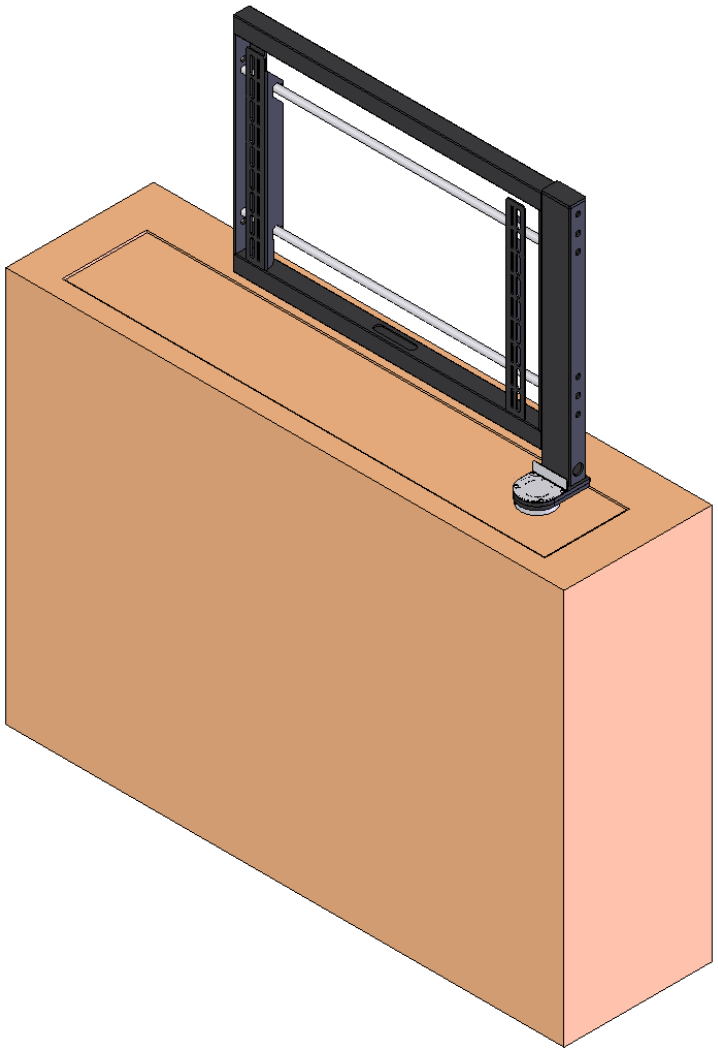
DETAIL B
SCALE 2 : 3



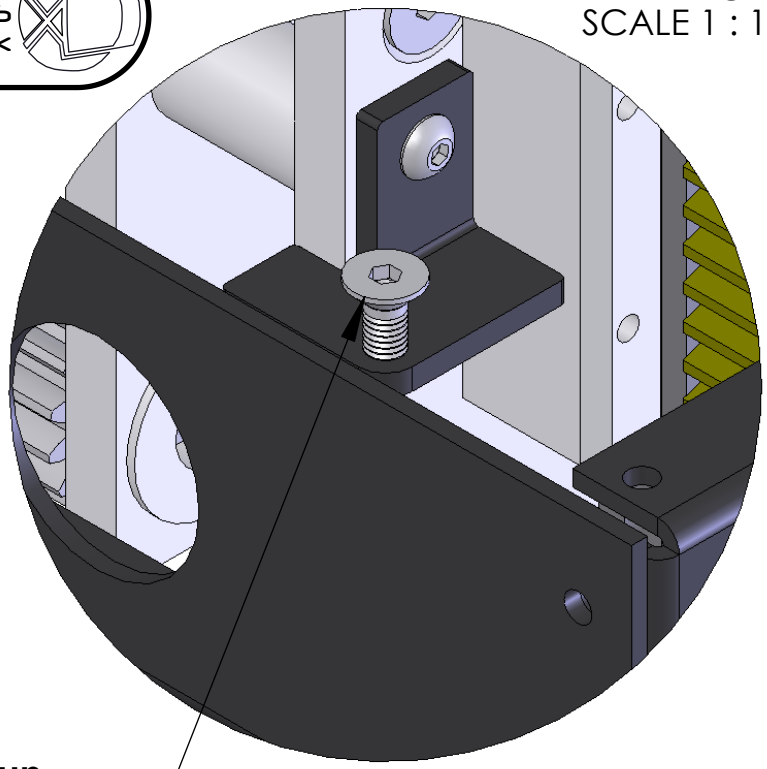


Stage 4

Adjusting Base Panel Height



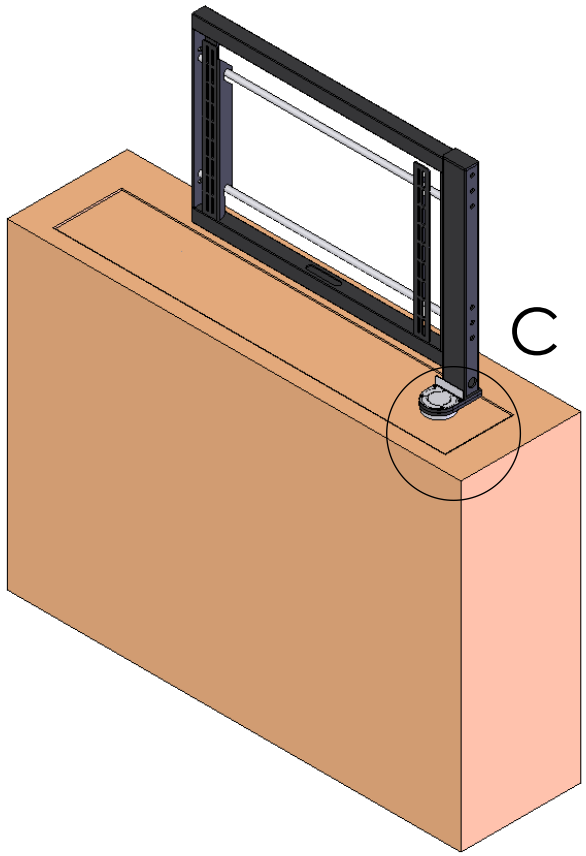
DETAIL C
SCALE 1 : 1



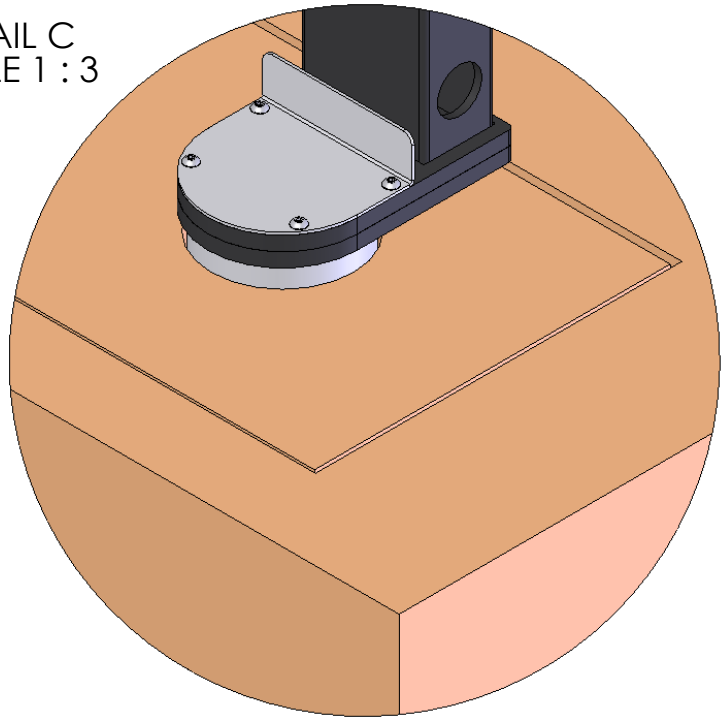
By adjusting the screw up and down, you can adjust the stop height of the beam, and also the base panel.

Stage 5

Positioning The Base Panel



DETAIL C
SCALE 1 : 3



There should be a gap of about 3mm around the edges of the base panel to the cabinet.

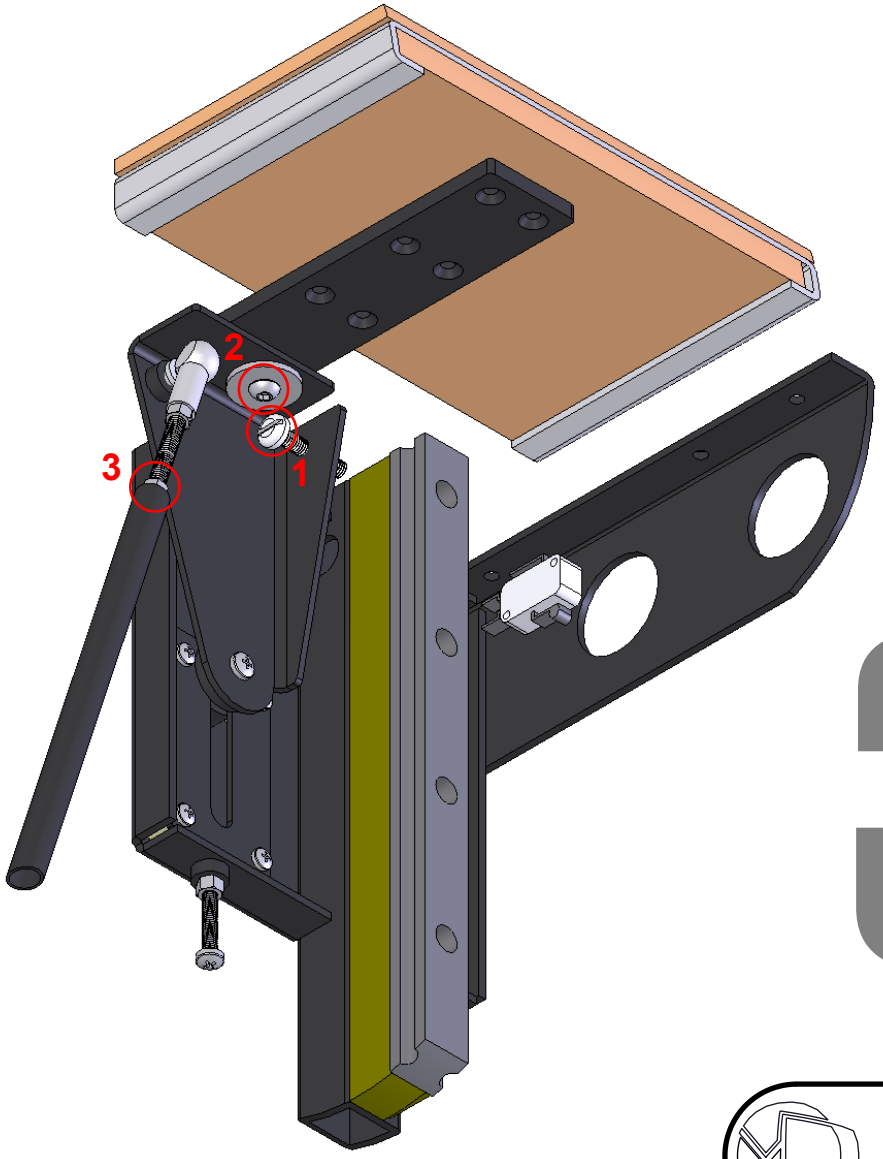
See Stage 2 for instructions on fixing the base.

CABLES

The cables for the screen should pass up through the pole up to behind the plasma screen.

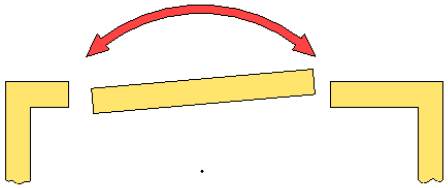
Stage 6

Adjusting The Flap-Up Position



1

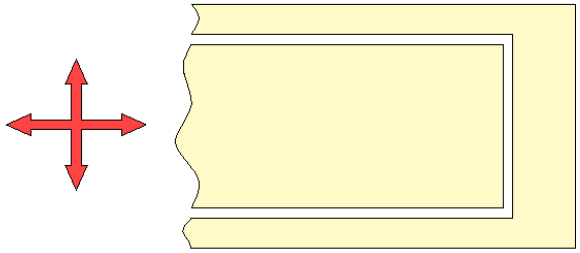
CABINET TOP - SIDE VIEW



By adjusting the white screw, at each side of the lift, you can adjust the tilt of the flap.

2

CABINET TOP - PLAN VIEW



By loosening the M6 bolts on each side under the flap, you can adjust the position of the flap in the hole in the cabinet top. Aim for a 3mm gap all round.

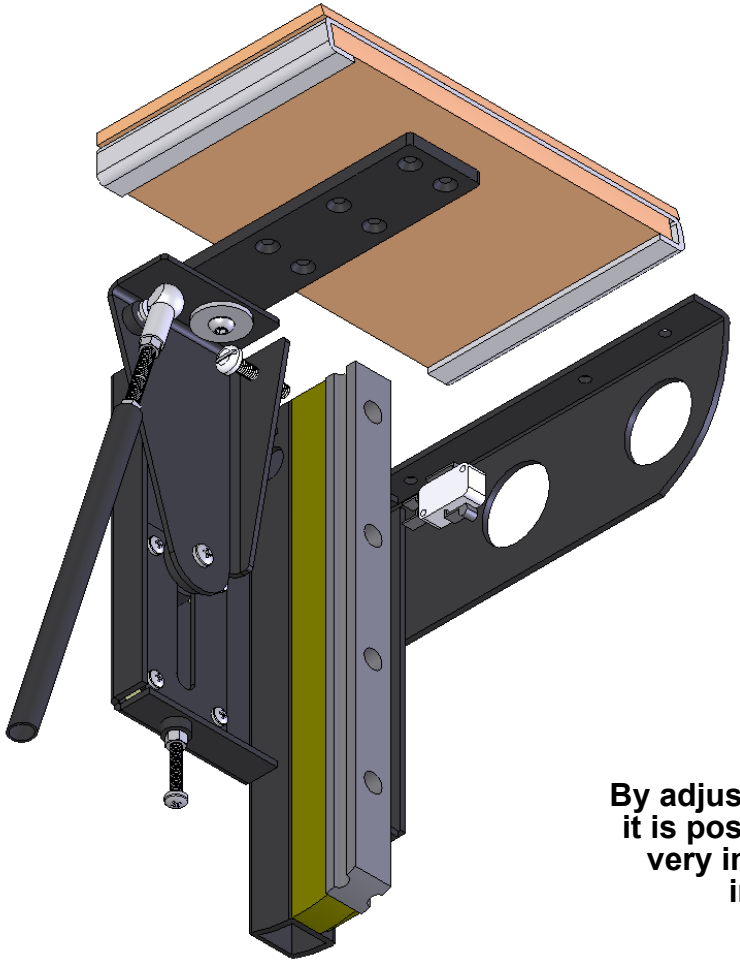
3

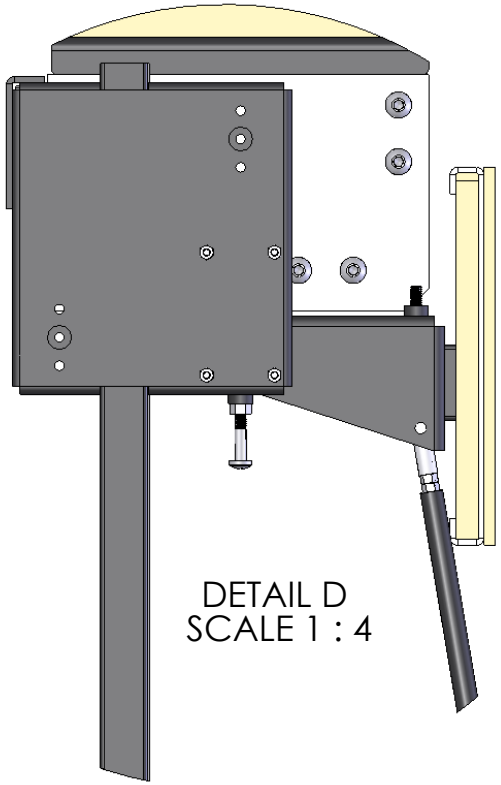
CABINET TOP - SIDE VIEW

By winding the push rods on each side, you can adjust the height of the flap in order to get it level with the cabinet top. Be sure to lock the nut securely once adjusted. Make sure the black plate does not touch the inside of the cabinet. This can cause strain on the motor, leading to failure.

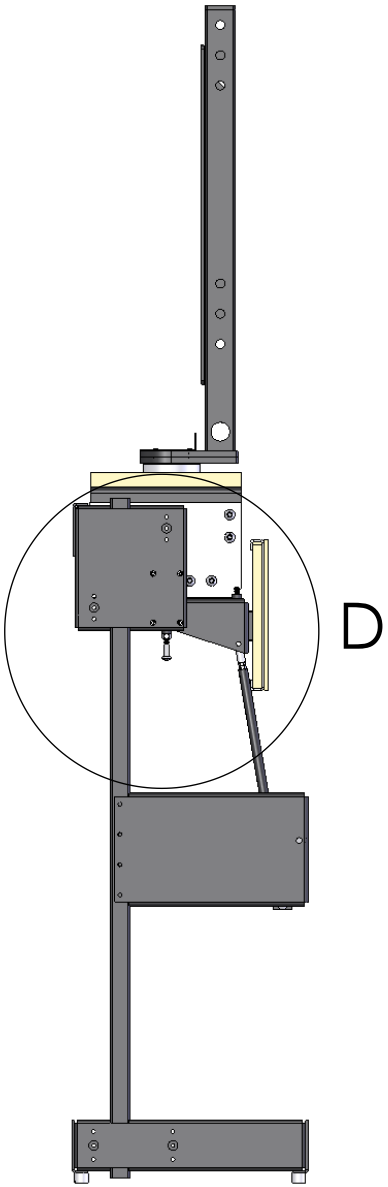
Stage 7

Checking Flap Down Position





DETAIL D
SCALE 1 : 4

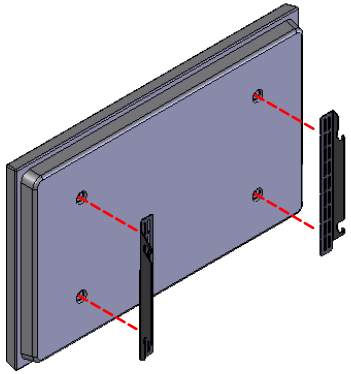


By adjusting the bolts under each flap arm as circled, it is possible to alter the angle the flap opens to. It is very important that when the flap is open, it rests in a vertical position, as shown above.

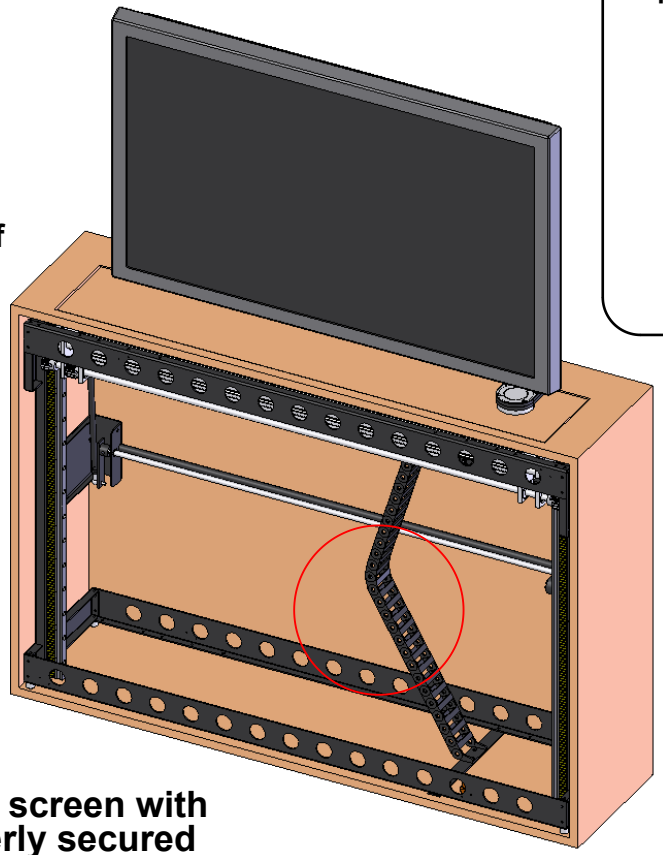
Stage 8

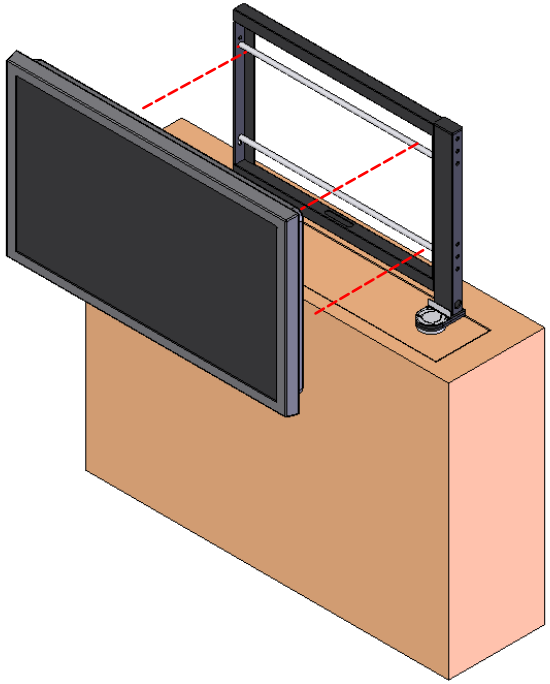
Fixing the screen to the lift

Simply mount the screen on to the mount supplied with your mechanism. The example below shows a Group A framework.



Place screen down carefully onto a flat surface, remove uprights from the mount and bolt onto the back of the screen.





Carefully hook the screen with the uprights properly secured back onto the mounting frame and position.

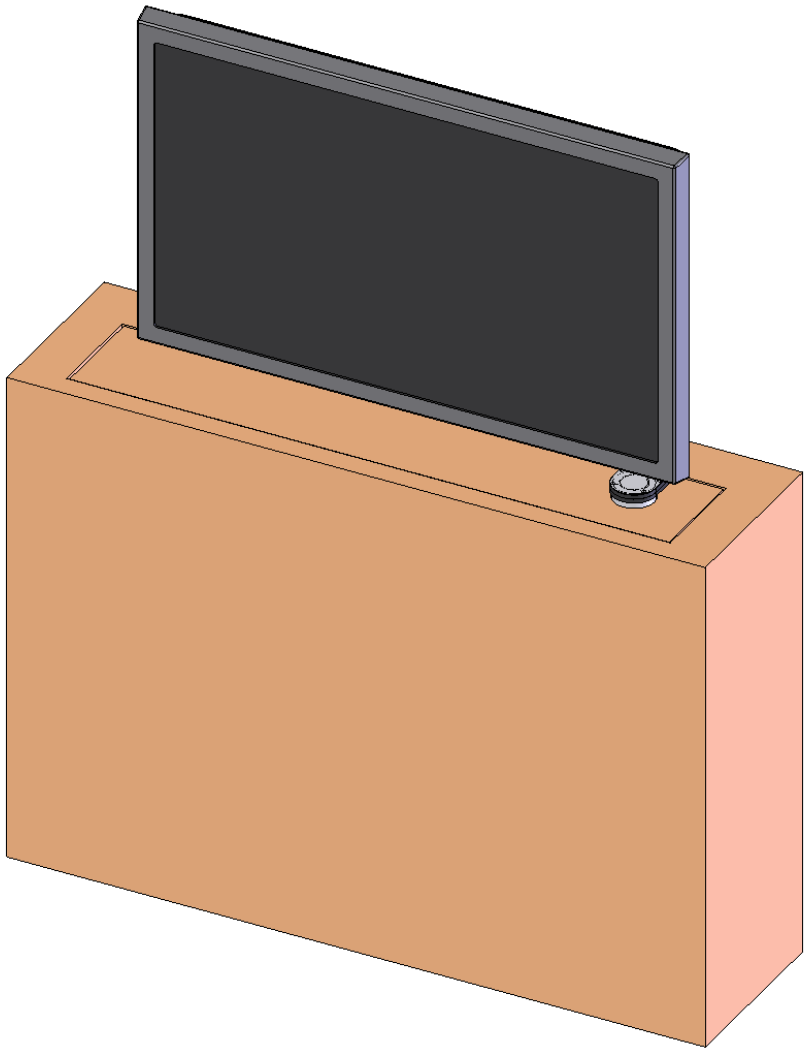
CABLES

When the screen is in the home position, pass the cables through into the cabinet.

Once inside locate the cable management system as circled in the drawing. The cables can be pushed inside to keep them neat within the cabinet

Stage 9

Run The Mechanism



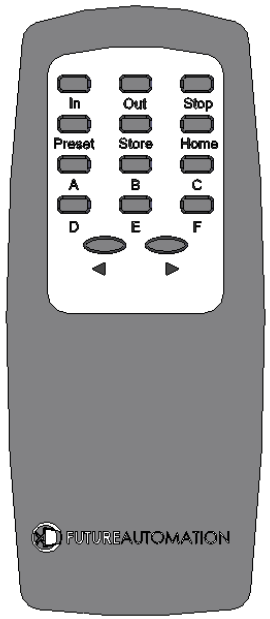
RUNNING THE MECHANISM

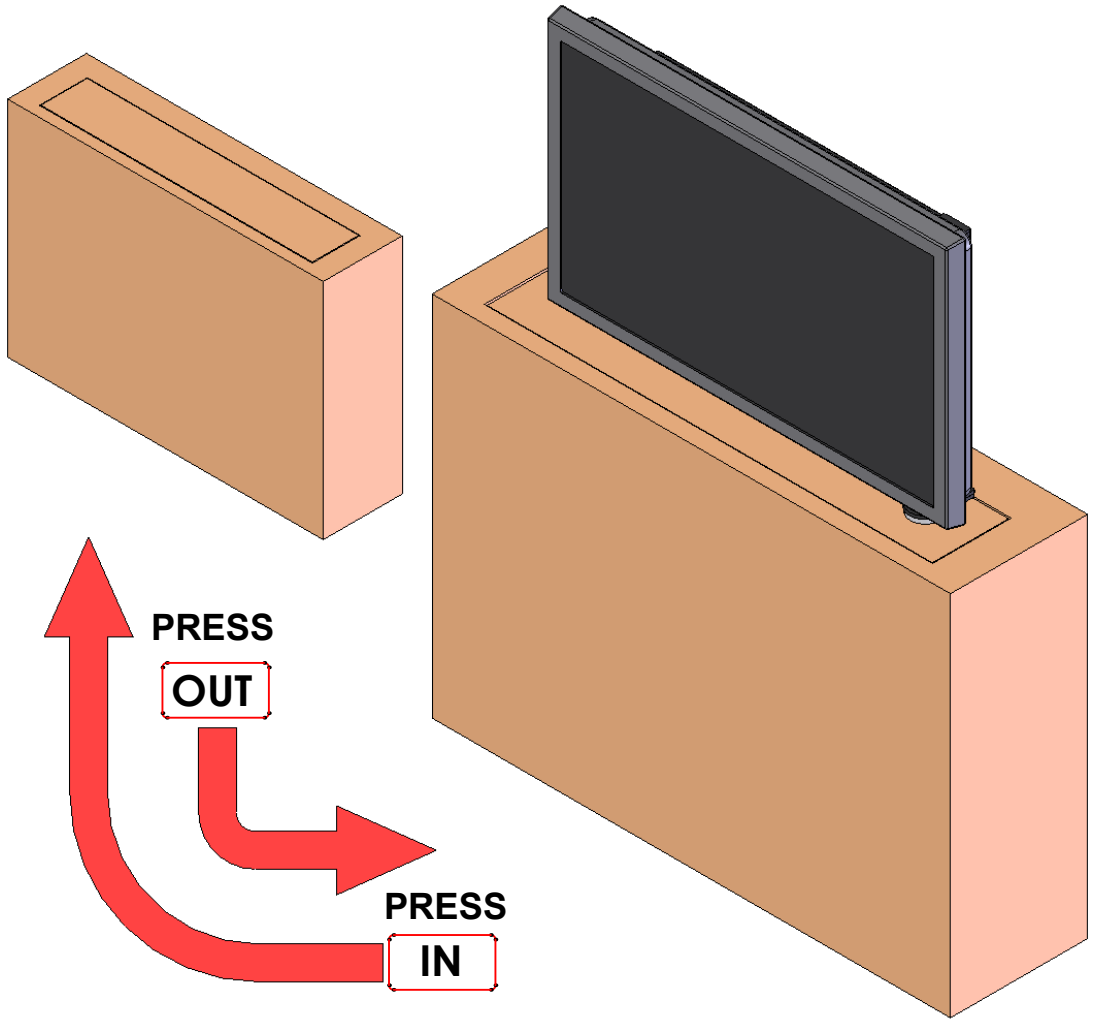
It is very important that once the mechanism is set up, the lift is run up and down a number of times and that grease is applied to the racks.

It may then be nessary to re-adjust the height of the lifting beam, as first dicussed in Stage 4 of these instructions.

Stage 10

PLH mechanisms are all factory set to rotate 45°





REMOTE CONTROLS

IN
Takes the screen inside the cabinet.

OUT
Takes the screen out of the cabinet and rotates 90°

STOP
Stops mechanism at any time

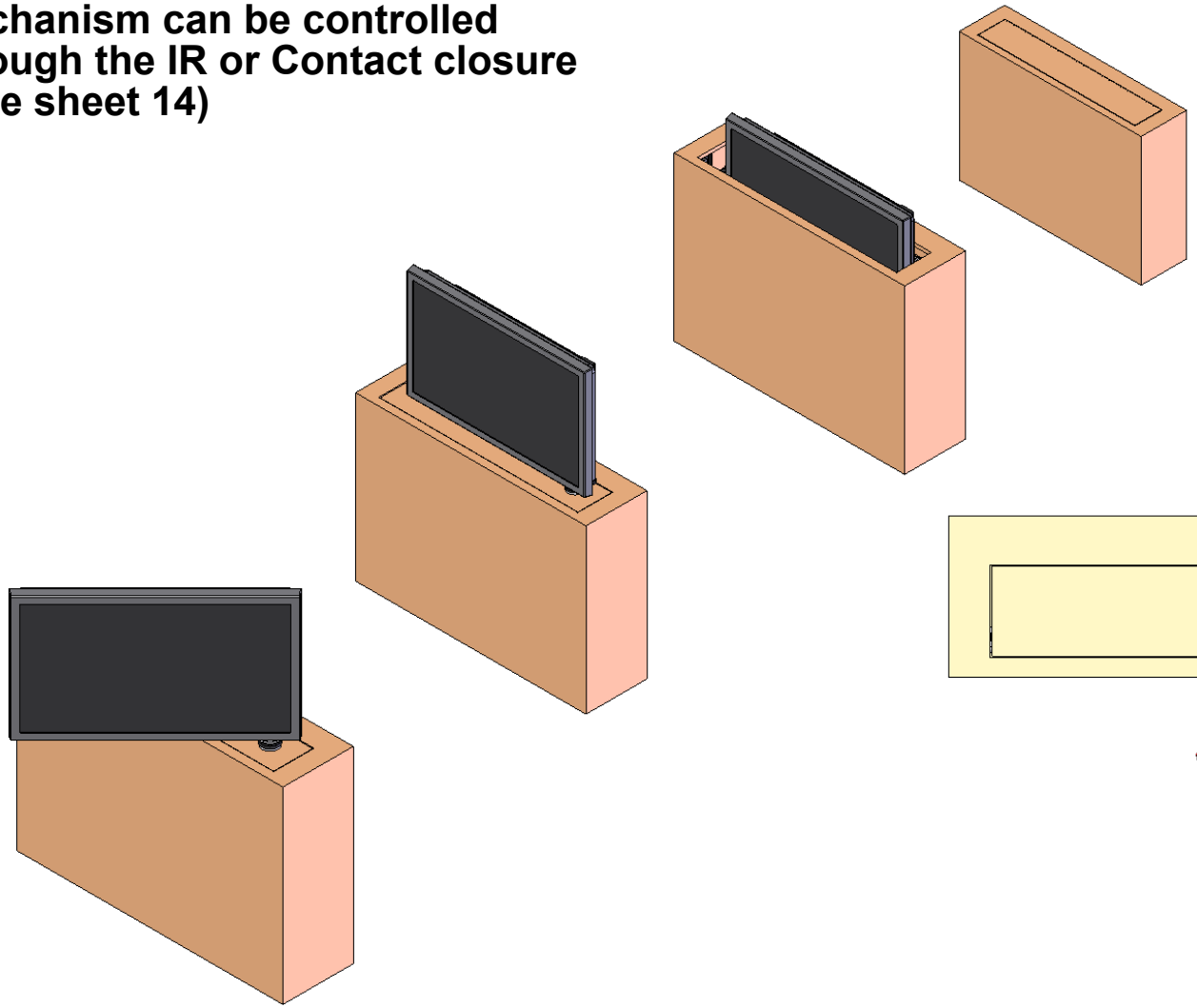
PRESET
Screen goes to learnt position.

STORE
Programs current screen position to learnt position.

HOME
Takes screen to forward facing position when screen is already in an angled position.

Controlling The Mechanism

Mechanism can be controlled through the IR or Contact closure (see sheet 14)

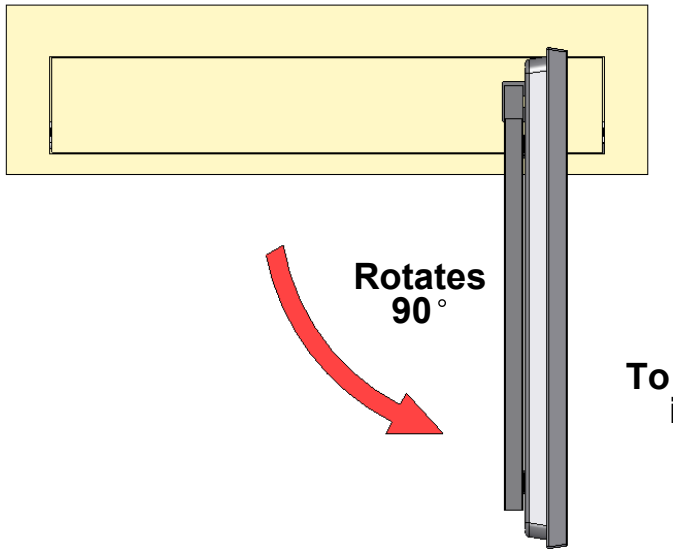


PRESS
OUT

Position Options

When the **OUT** button is pressed on the remote the screen will appear from the cabinet and automatically rotate 90° when it reaches the top.

The rotation of the screen can be stopped and a position can be stored in the memory so when the **PRESET** button is pushed the screen will go to that position.



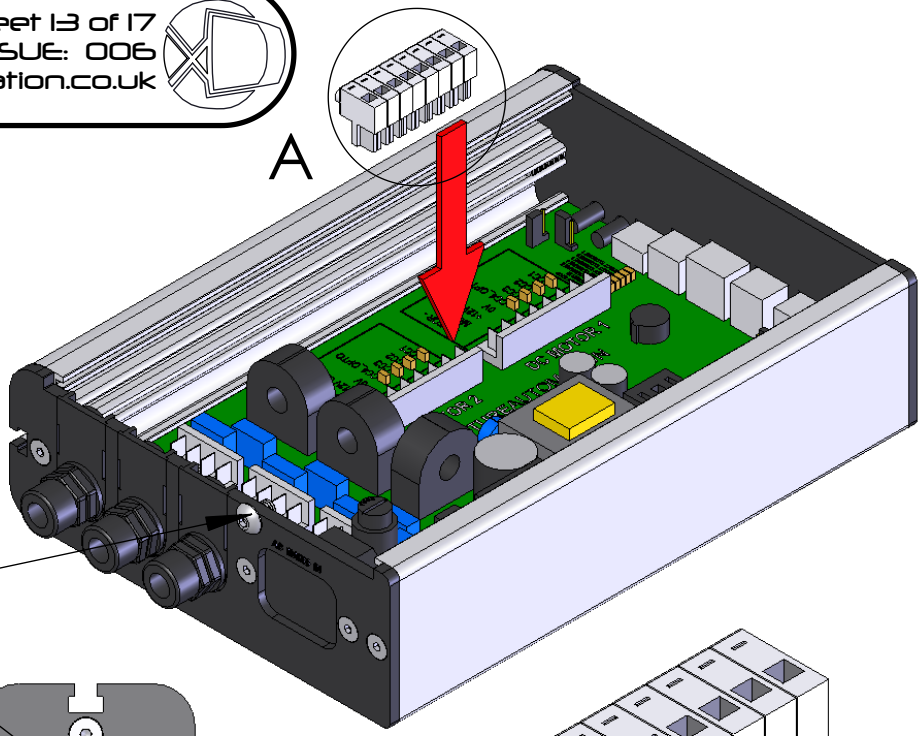
Rotates 90°

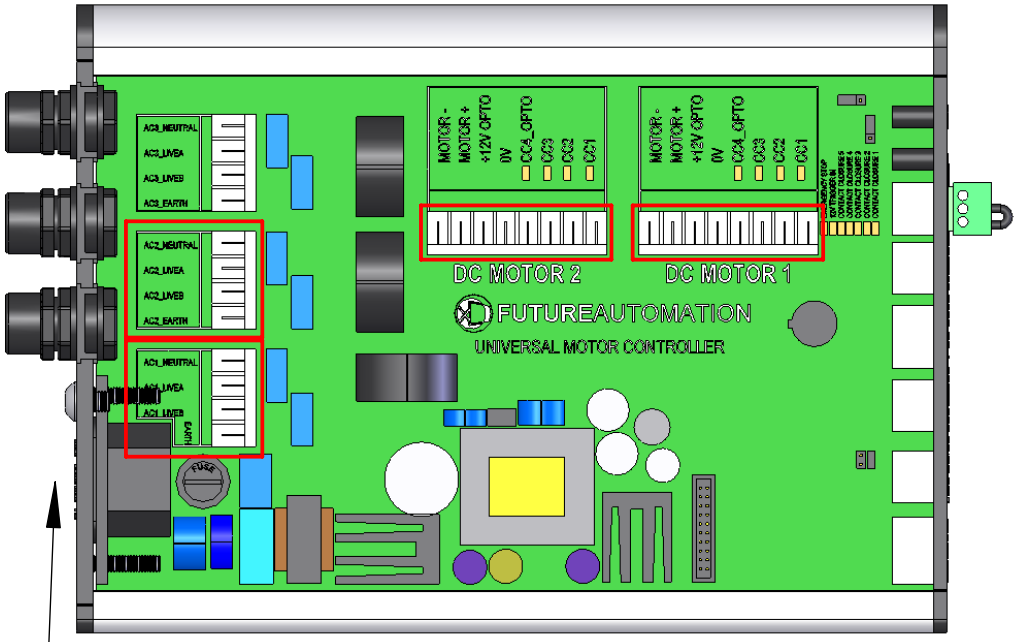
PRESS
STORE

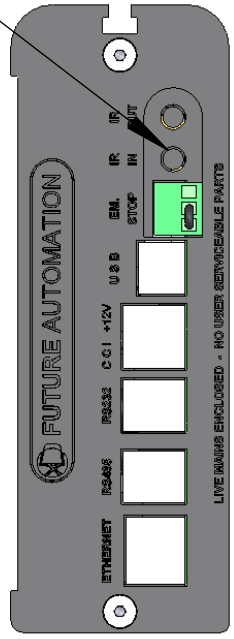
To store a position in the memory

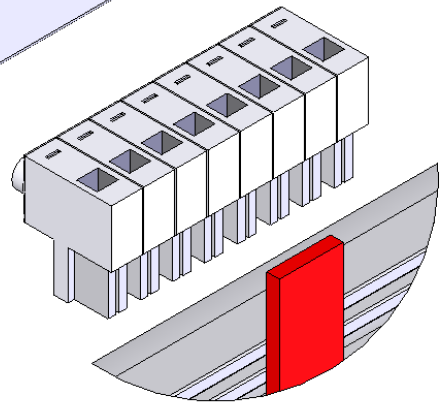
Electrical Connections

The PLH mechanism must be connected to the AC1, AC2, DC1 and DC2 blocks of connections.







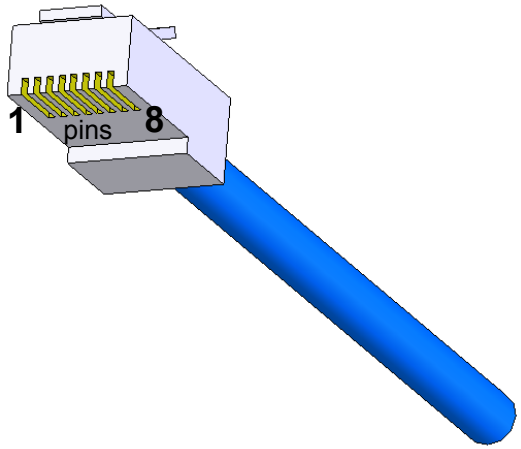


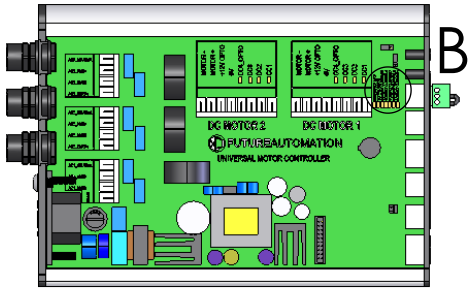
DETAIL A
SCALE 1.2 : 1

It is VERY important that when all of the electrical connections are made, the connector blocks are connected in the way shown above, with all the wires coming directly out the top of the connector blocks.

Contact Closure

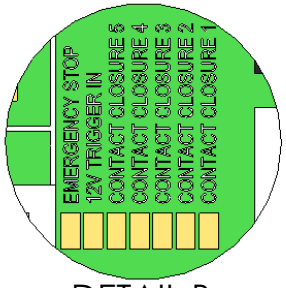
Use an RJ45 connector in the CC1 socket on the control box to operate via contact closure.





There are a number of LEDs which will light up when the corresponding contact closure connections are shorted together.

A red LED will light up when the emergency stop link is removed.



DETAIL B
SCALE 1.5 : 1

PIN	568 A	568 B	DESCRIPTION	ACTION	
1	W/G	W/O	12V SUPPLY CURRENT LIMITED		
2	G	O	12V TRIGGER	When 12V is attached, device will go OUT. When 12V is removed, device will go IN.	
3	W/O	W/G	GROUND		
4	BL	BL	DEVICE TOGGLE	Momentary short to ground will switch the device between states of IN / OUT.	CC5
5	W/BL	W/BL	DEVICE IN LATCHED	Momentary short to ground, will make screen go UP and HINGE.	CC4
6	O	G	DEVICE STOP	When shorted to ground, stops device in current position.	CC3
7	W/BR	W/BR	DEVICE OUT	Momentary short to ground will make screen go UP but NOT HINGE.	CC2
8	BR	BR	DEVICE IN	Momentary short to ground will make device go IN.	CC1

RS232

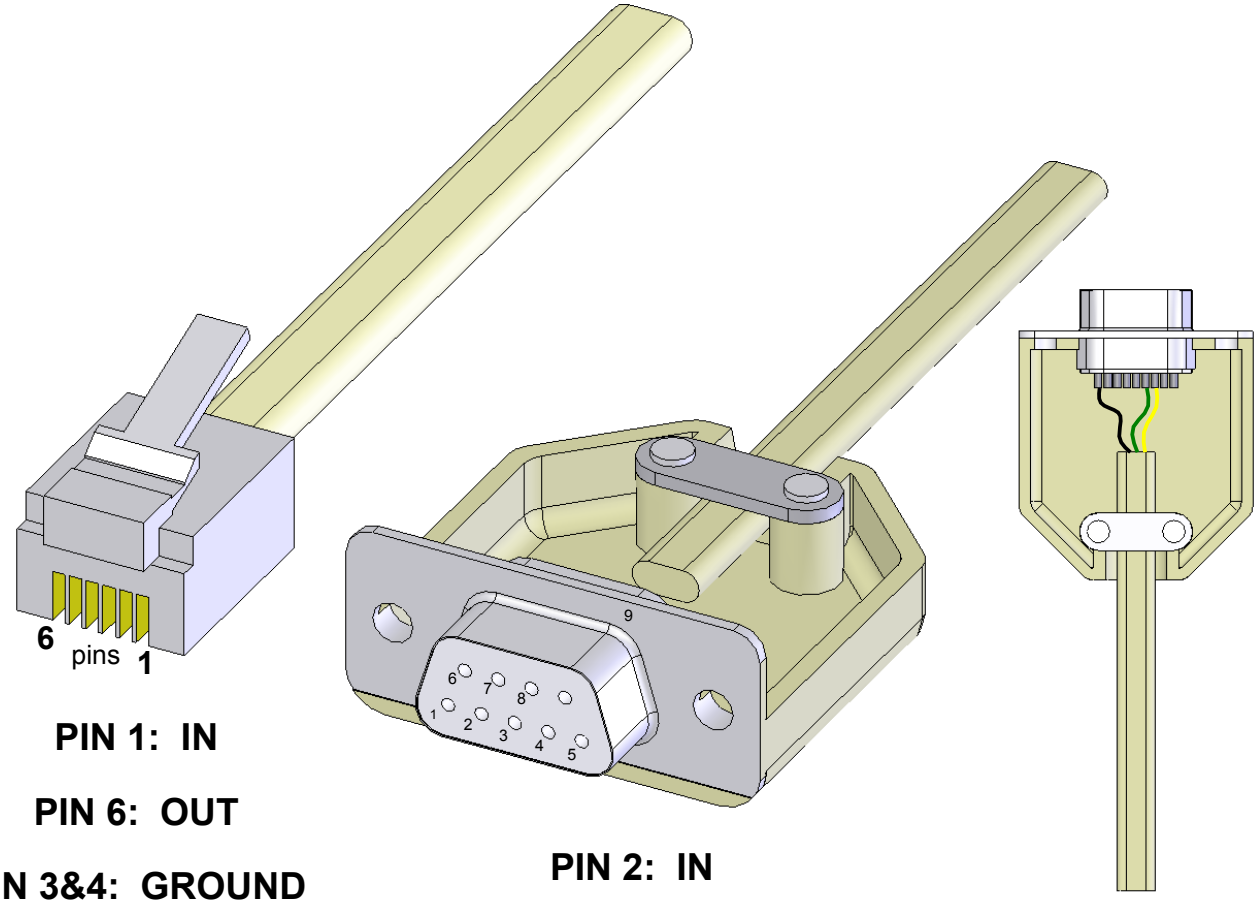
Use an RJ11 connector in the socket marked RS232 on the control box to operate using RS232.

DETAILS

Band rate: 9600
Stop bit: 1
Parity: None
Databits: 8

PROTOCOL

ASCI
fa in, = Device IN
fa out, = Device UP and HOME
fa home, = Device UP back to HOME
fa stop, = Device STOP
fa preset, = Device UP and to MEMORY
fa left, = Device UP and to the LEFT
fa right, = Device UP and to the Right



PIN 1: IN

PIN 6: OUT

PIN 3&4: GROUND

PIN 2: IN

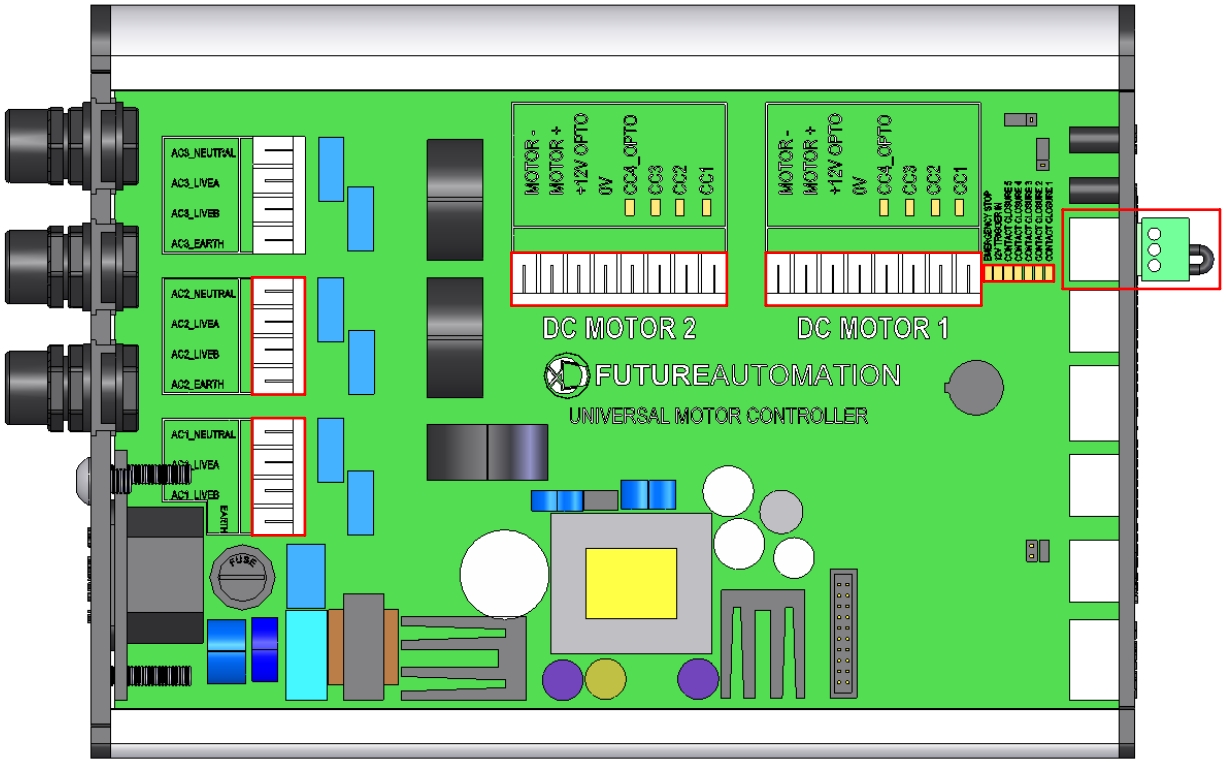
PIN 3: OUT

PIN 5: GROUND

Operation Details

DC2
A low voltage connection for the switches in the mechanism.
The LEDs indicate the state the mechanism is in.
CC1 Not Lit: Hinge is IN
CC2 Flashes: Hinge is OUT
CC1 & CC2 Lit: Home position

DC1
A low voltage connection for the switches in the mechanism.
The four LEDs indicate the state the mechanism is in.
CC1 Not Lit: Flap is OPEN
CC2 Not Lit: Flap is CLOSED
CC3 Not Lit: Beam is DOWN
CC4 Not Lit: Beam is UP



Contact Closure LEDs
To show the contact closure operation is working correctly. LEDs are on when connections are shorted together.

EMERGENCY STOP
This connection will stop all functions of the mechanism once broken / removed. Red LED will also be on.

DC2
Gives an ouput to control the Plasma Hinge motor.

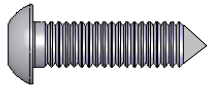
AC1
Gives an ouput of 240V(or 110V) to control the Plasma Lift motor.

Outputs stay live for 60 seconds after the OUT or IN functions are selected.

Supplied Fixings

**The fixings immediately below are the standard PL fixings supplied with every PL product.
There will be one other pack of fixings supplied, containing fixings that are specific
to the particular screen being mounted on the PL product.**

**M6 x 25mm
Pointed x 8**



GROUP A		VESA	GROUP C	
M4 x 16mm x8	M5 Washers x8	M4 x 16mm x6	M4 x 16mm x4	M8 Washers x6
M5 x 12mm x8	M6 Washers x6	M4 x 20mm x6	M5 x 16mm x4	
M6 x 16mm x6		M5 x 20mm x4	M5 x 20mm x4	M8 Rawl Bolts x6
M8 x 16mm x6	Spacers 18 OD 8 ID 10mm x8	M5 x 30mm x4	M5 x 30mm x4	
M8 x 25mm x4	Spacers 18 OD 8 ID 15mm x4	M5 x 35mm x4	M5 x 50mm x4	Spacers 15 OD 6 ID 15mm x4
M8 x 30mm x4	Spacers 18 OD 8 ID 45mm x4	M6 x 20mm x4	M6 x 16mm x4	Spacers 15 OD 6 ID 30mm x4
M8 x 50mm x4			M8 x 60mm x6	Spacers 20 OD 6 ID 3mm x4
M8 x 60mm x4		Spacers 20 OD 6 ID 3mm x8		
M8 x 80mm x4				