

GV Standard X-Vent

Setup, Commissioning &
Installation Guide

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Introduction

The X Vent is supplied in standalone solo and integrated formats, the setup and commissioning process is the same regardless of type. The X Vent is a safety critical product and designed to open to 140° under certain conditions. To achieve this, the mechanisms are very powerful so extreme care should be taken when working with the X-Vent. A slow and methodical approach is essential through the setup and commissioning process to avoid accidents. **At no time should hands or arms work through the mechanisms always work around them.**

Installation Checks

Points to note prior to commencing installation:

1. The X-Vent should arrive on site in undamaged packaging, which includes sterling board side protection, polyfoam glass protection and low tack tape base protection. Please inspect for damage to packaging and/or vent and advise Glazing Vision upon receipt.
2. Enclosed within the box containing this manual will be the required number of fixing woodscrews and a number of horseshoe packers. The installation kit supplied with two switches and any additional optional items selected at time of order.
3. X-Vents have a 6-core control cable and a pair of 24V dc power wires emerging from the bottom of the frame. These will have red identification labels (labels should not be removed until final installation) refer to Glazing Vision standard drawing 405-ASS-407 for details of wiring requirements.
4. The switch used to control the operation of the X-Vent is a single pole double throw (SPDT) type. This switch will allow you to operate and stop at any position between the fully open and closed positions. This switch also contains a tri-colour LED to display rooflight status to the user. The correct control switch is supplied in the installation kit and must be installed to avoid invalidating the warranty. This switch can be installed in a maintenance area if required and another switch parallel wired for regular use. Using a SPDT switch that only latches 'on-on' can seize the controller and therefore should not be used.
5. The other switch supplied in the installation kit is of double pole single throw (DPST) type. Installing this switch as per drawing 405-ASS-407 will allow (combined with disconnecting the battery backup) the X-Vent control board to be reset in the event of a fault (for more on faults see the Operation & Maintenance manual). Please note that due to the safety-critical nature of this product, a GV engineer must attend to re-initialise the controller and mechanisms. Attempts to carry out resetting of the unit can cause damage to base and/ or lid of the X-vent.
6. The kerb should already be in place for the vent. The dimensioning of the vent will have taken into consideration the external dimensions of the upstand including all weathering. A guide for the kerbs is given in standard drawing S0001. The construction of the kerb is detailed more specifically on standard drawing 405-ASS-405.
7. Before starting installation, Glazing Vision advises that the physical kerb dimensions are cross-checked with those given for the order, to ensure the rooflight will fit (refer to drawings S0009/10). The kerb will need to be within $\pm 10\text{mm}$ of the ordered size. Check that the top of the kerb is flat within the plane of the slope. The top surface of the kerb is flat (although it will be pitched to at least 3 degrees from the horizontal) without

undulations greater than +/-2mm. Check the cable exit hole has been included in the kerb. Also check the diagonals to ensure the kerb has been constructed square. The kerb must be weathered as per drawings. **Note: if using any metallic waterproofing material, this cannot be applied across the top surface of the kerb as this will cause a thermal bridge which can lead to internal condensation and invalidate the rooflight warranty.**

8. The X-Vent must be fitted so that the hinge is at the top of the fall.

Fitting Lifting Brackets

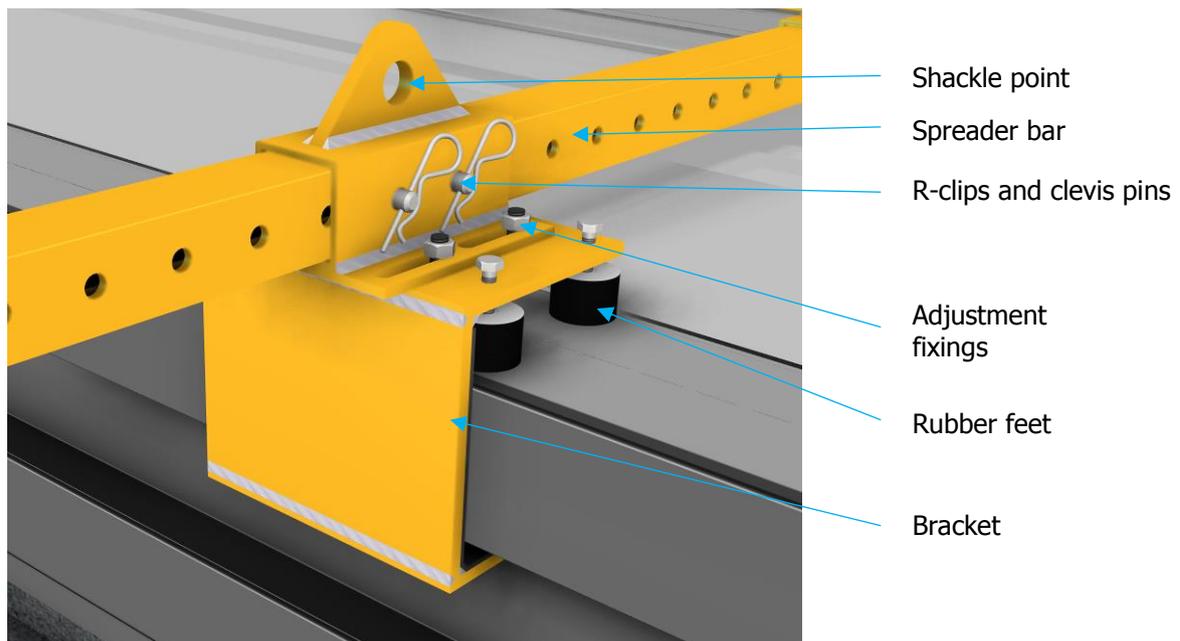


Figure 1 - Lifting bracket

1. Remove the clevis pins from the sliding brackets and move them apart until they're about 100mm beyond the span.
2. Carefully place the lifting bracket frame on top of the X-Vent. Then slide the brackets in until they stop against the base extrusion (*Figure 2*).
3. Replace the clevis pins through the closest holes in the spreader bar.
4. Loosen the adjustment fixings and slide the bracket until it is against the base extrusion.
5. Tighten the rubber feet on to the glass until the bracket is located in the base extrusion profile (*Figure 2*). Do not over tighten, the bracket only needs to locate so it does not fall off but does not need to be clamped on.

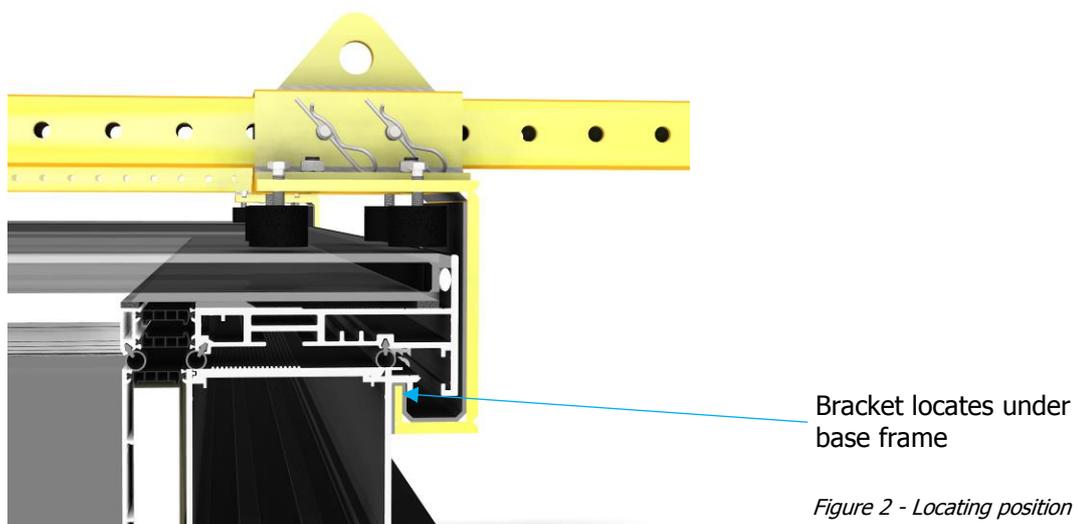


Figure 2 - Locating position

Installation procedure

1. Check that all fixings on the lifting frame are present and secure. Careful with the rubber feet on the glass, these should just be making contact and not tightened to apply force to the glass.
2. Apply two large runs of silicone (supplied in installation kit) approximately 50mm in from the inner and outer faces of the kerb as shown below (*Figure 3*).

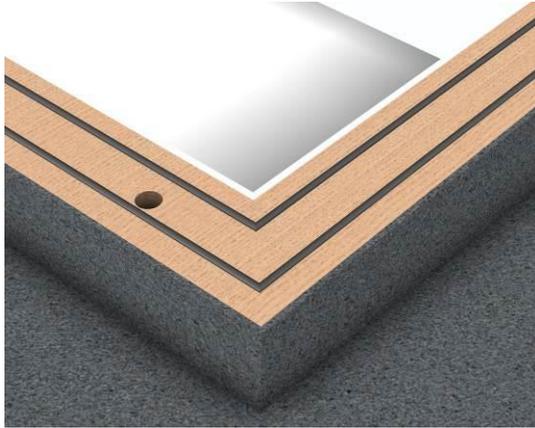


Figure 3 - Silicone placement

3. Attach hooks to shackle points on lifting frame.
4. Lift rooflight to the roof.
5. Lower unit to kerb leaving head room to access all areas of the rooflight (*Figure 4*).

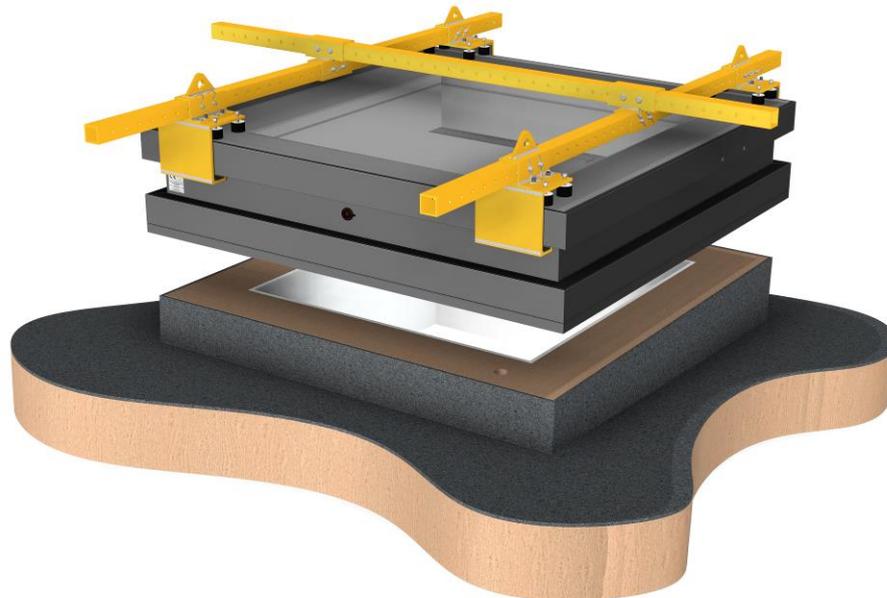


Figure 4 - Lifting arrangement

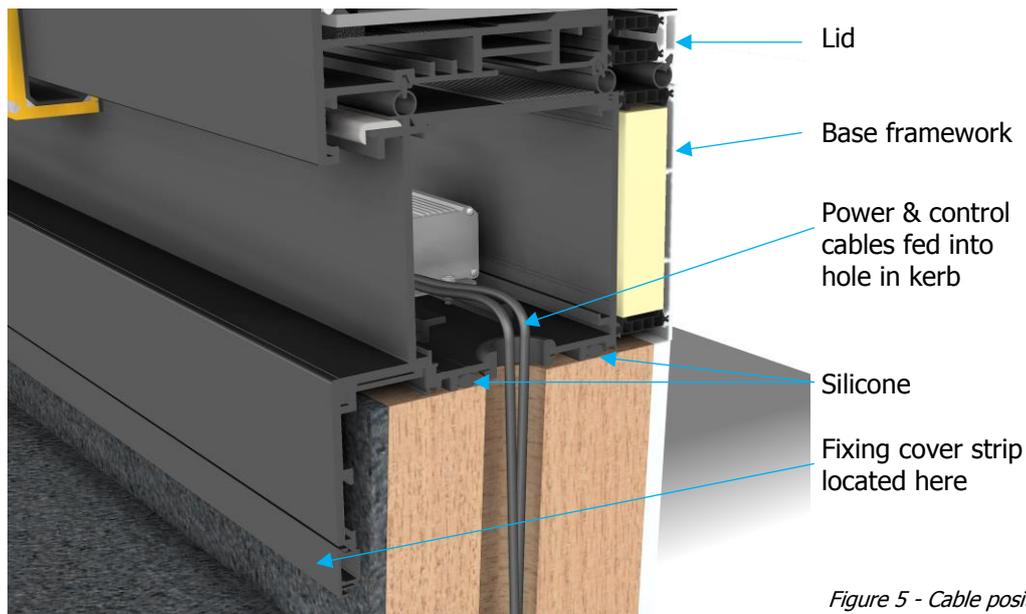


Figure 5 - Cable positions

6. Feed the power and control cables from the base framework into the hole in kerb (*Figure 5*). If BMS integration option was purchased, there will be a third cable.
7. Gently lower the rooflight to the kerb ensuring the cables are not kinked or snagged under framework.
8. With the base framework in contact with the kerb top and majority of the weight still supported, adjust the position of the rooflight on the kerb so that the internal framework is equally spaced and aligned with the internal finishes.
9. Carefully release the weight of the rooflight.
10. Release the lifting hooks from the shackle points and remove the crane.
11. Gently prise the kerb fixing cover clip off framework drip leg (*Figure 6*).

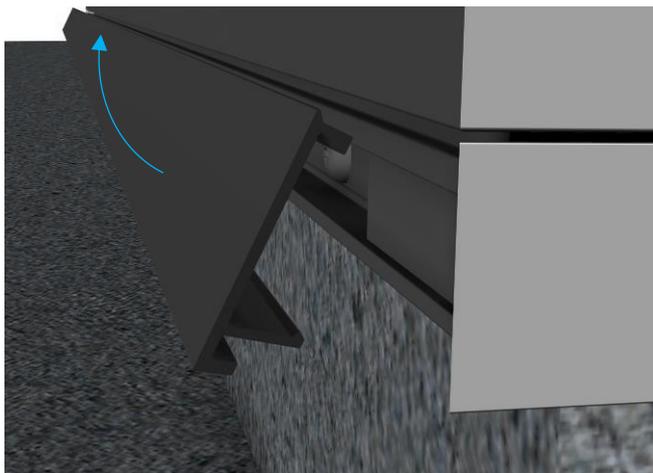


Figure 6 - Clip on cover

12. Pre-drill 2.5mm into the kerb through the holes in the drip leg. Secure the base frame to the kerb using the woodscrews and packers provided in the hardware kit. The packers must fill the gap between the kerb and rooflight base frame for each woodscrew (*Figure 7*).

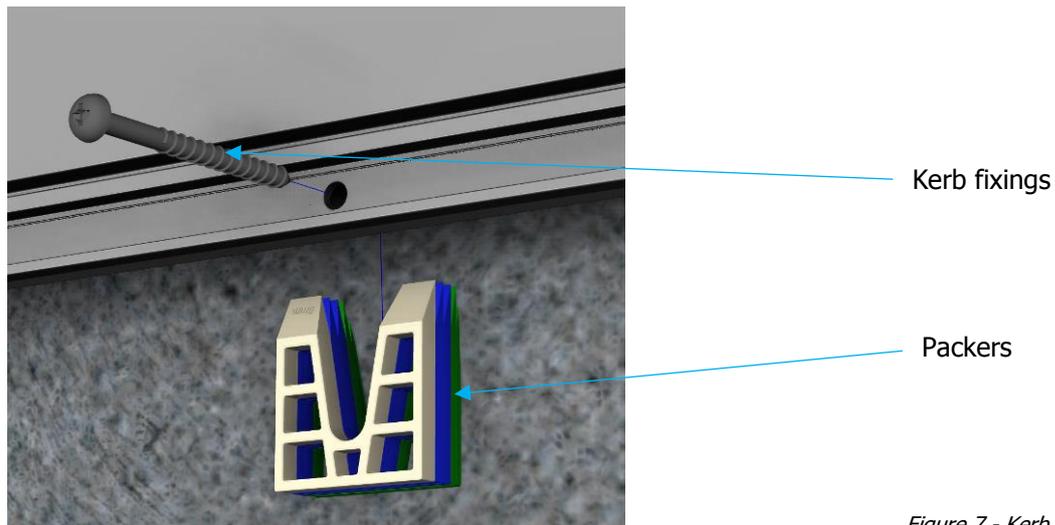


Figure 7 - Kerb fixings

13. Slacken the adjustment fixings on the shackle point bracket (*Figure 1*). Keep the rubber feet in their position to prevent contact between lifting frame and rooflight frame or glass.
14. Slide the brackets to release them from the lid. The R-clips and clevis pins can be removed to allow more adjustment where required. Lift the frame with brackets away from rooflight.
15. Terminate cables and apply power (Ref 405-MAN-407).
16. Follow the Site QC document.

Preparation

Prior to any work being carried out on the X-Vent the lid should be disconnected from the opening mechanisms. Disconnecting the lid ensures no damage will be caused to the unit when the initialisation procedure is carried out along with providing a safer working environment for the engineer. The below image identifies the screws that should be removed to disconnect the lid from the mechanisms. The same 2 screws should be removed from the mechanism on the other side of the vent.

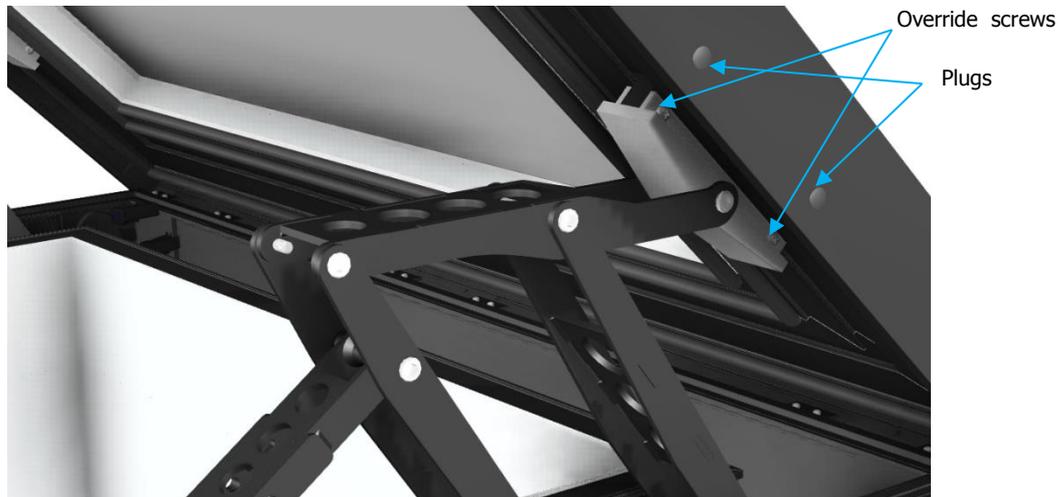


Figure 2 – Override detail

If the X-Vent is in the closed position and will not open electrically the override screws can be accessed externally. Remove the plugs on the outer lid extrusion and unscrew the bolts using pin torx driver.

With the override screws removed support legs should now be fitted to hold the lid in the open position to allow the X-Vent to be safely worked on:



Figure 3 – Support leg

Support legs should be fitted both sides to ensure adequate support, it is very important the height adjustment and clamp bolts are sufficiently tightened to avoid the legs slipping.

Electrical Installation Checks

With the lid disconnected and secured in the open position some checks are required to proceed. First check the unit is receiving the correct power from the power supply. Use a multi-meter to check the supply voltage by disconnecting the connection to the batteries and placing the meter probes across them. You should get a reading of 27.2Vdc. If the reading is higher or lower than this figure the output from the power supply should be adjusted accordingly. The power supply is external to the X-Vent and can be mounted some way from the vent possibly subject to a slight volt drop. This is a common reason for a slightly lower voltage at the battery terminals which requires adjusting. 27.2Vdc must be the reading at the X-Vent to ensure the batteries are given sufficient charge. Ensure the batteries are re-connected.

After confirming the power supply is correct the fire alarm connection should be tested. Ensure the X-Vent has been connected to the clients fire switch (panel, break glass etc) which will provide a normally closed safety circuit. To test the connection split the 3-pin plug and socket that comes from the X-Vent control enclosure to the fire system. Again use a multi-meter but this time set to continuity test. Place the probes across pins 1 & 2 of the plug connecting to their fire system:

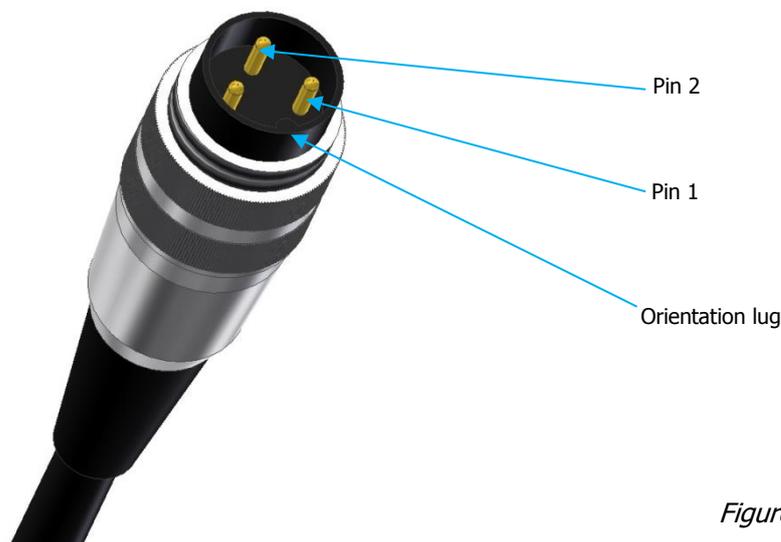


Figure 4 – Fire alarm connection

If continuity is detected the plug and socket can be re-connected. If the circuit is still open the connections to the fire system must be checked (by others).

During assembly of the X-Vent a jumper to disable the fire connection is placed on the PCB. After successful completion of the above tests the fire disable jumper (HL1) can be removed from the PCB, safety disable jumper (HL2) should be left in place:

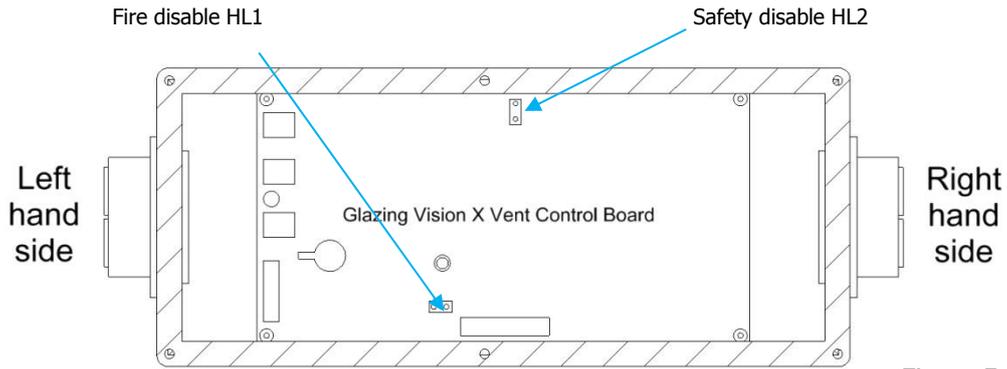


Figure 5 – PCB

The Initialisation Procedure

Ensure the mechanism sliders are rotated to a horizontal position with the black slider facing upwards:

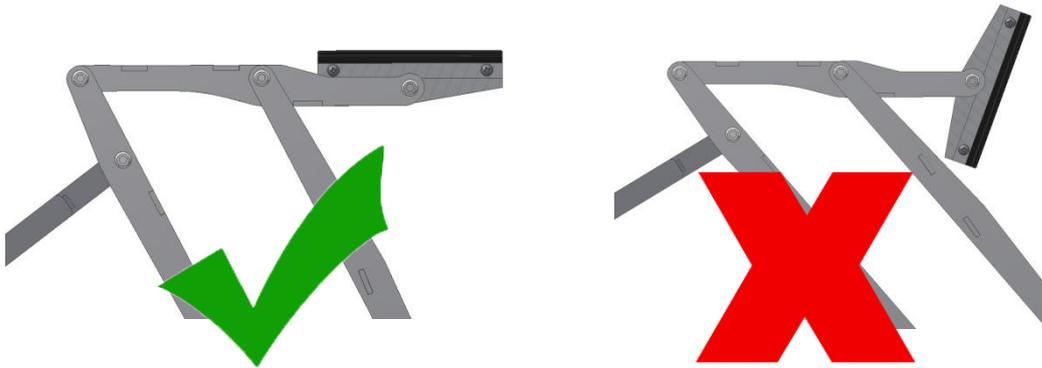


Figure 6 – Mechanism position

WARNING: If the X-Vent is initialised without adjusting the slider position the mechanism can close on itself and cause major damage.

Next connect the engineer's configuration tool (ECT) to the X-Vents programming port:



Figure 7 – Programming port

Check the mechanisms are disconnected from the lid and the sliders are rotated as per above instructions. Follow the configuration tool screens to carry out the initialisation procedure:

Press any button on the ECT and following screen will appear:

ECT
Hello.....

Followed by this screen after a few seconds:

ECT -ESC to exit
vFirmware Rev X

Use the down key to scroll through the screens:

Window Type >
v Window Size >

Until you reach the initialise option:

Sleep Mode >
v Initialise >

Use the right arrow to enter the initialisation option:

YES/NO
<LEFT RIGHT> ENT

Press left to highlight 'YES' then press the enter key to begin initialisation:

INITIALISING !

After selecting yes the rooflight will begin initialising. One mechanism will close fully, followed by the second mechanism.

When initialised the ECT will automatically return to the menu screen:

ECT -ESC to exit
vFirmware Rev X

Press the escape key on the ECT to exit the menu:

ECT
Good Bye.....

Next press open on the wall control switch to open the mechanisms to 45°. A green LED should be displayed while the mechanisms are moving. When open the mechanisms should be closed using the control switch, again check for a green LED. After closing press the open switch again to open the mechanisms to 45°. This cycle is to ensure everything is OK prior to connecting the mechanisms.

After running the above cycle the mechanisms can be re-connected ensuring the screws are sufficiently tightened. The X-Vent is now fully setup and can be tested to ensure correct operation:

1. Open X-Vent via control switch to 45°
2. Close X-Vent from 45° via control switch
3. Open X-Vent to 140° fire position using fire panel
4. Close X-Vent from 140° using control switch
5. If optional remote control is supplied test operation performs as per control switch.