



# Bi-fold Installation Guide

<b>1. Before you start</b>	p2	<b>8. Door restrictor- optional</b>	p9
<b>2. Measuring and surveying</b>	p2	<b>9. Adjustment</b>	
<b>3. Configuration details</b>	p4	<b>9.1 Sash to sash hinge adjustment</b>	p10
<b>4. Installation</b>	p5	<b>9.2 Adjustment of the bogie wheel sets</b>	p10
<b>5. Glazing</b>	p5	<b>9.3 Frame to sash hinge adjustment</b>	p11
<b>6. Glazing packer details</b>	p6	<b>10. Finishing the top and bottom track</b>	p11
<b>7. Sash retaining clips</b>	p9	<b>11. Handover and maintenance</b>	p12

## 1. Before you start

This installation guide covers the installation of Evolve bi-fold doors, from survey to handover to the end user. Please read the entire guide carefully before beginning installation.

### Check carefully

Before removing any existing doors, double check that all measurements of the new bi-fold door are correct, and that all components are present and damage free.

**IMPORTANT:** Please fully inspect this product prior to installation. Synseal will not be liable for any damage once the product has been installed.

Check damage to profile, marks on glass and hardware.

**PLEASE NOTE:** Due to the weight and size of bi-fold doors you will require a minimum of 2 people to lift.

### Care of products on site

Although the Evolve bi-fold door is robust in construction, simple measures should be taken when handling, storing and erecting the doors.

When unwrapping the door take care not to damage components with a knife.

Do not leave PVC-U components outside in freezing conditions then immediately attempt to fit them.

Do not leave brown components in their packaging whilst in direct sunlight at times of high temperatures.

### Sealing

The Synseal bi-fold door will require sealing around the perimeter the use of low modulus, neutral cure sealants is recommended.

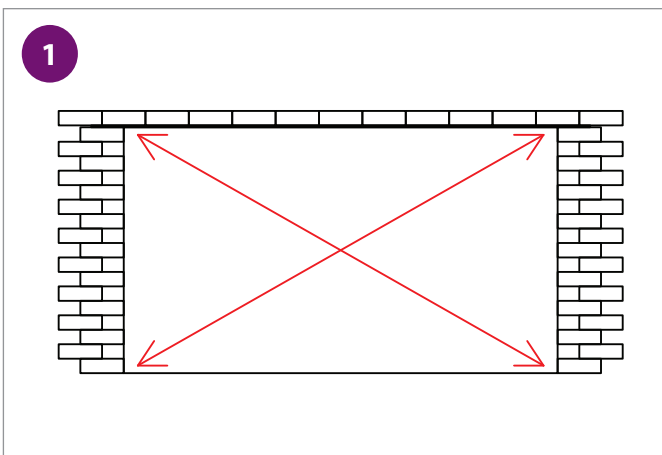
### Tools required

The following tools are necessary to install the Evolve bi-fold door:

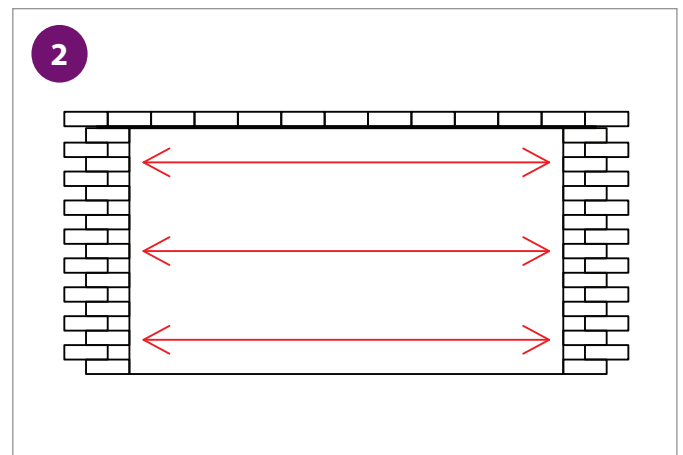
- Power drill + HSS and masonry bits
- White rubber headed mallet
- Utility knife
- Tape measure
- Sealant gun
- Spirit level
- 7mm drill bit
- 4mm Allen key
- 5mm Allen key
- 13mm spanner
- 17mm spanner
- T25 Torx bit
- (only required for open out doors)

## 2. Measuring and surveying

The following is intended as a brief guide to determining the width and height of the bi-fold door.

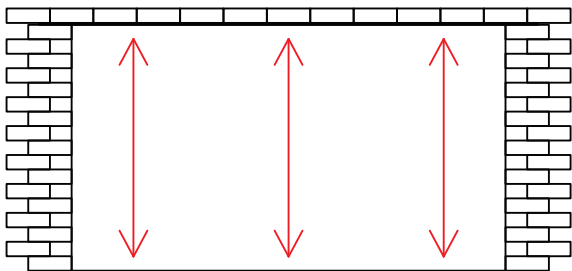


Check that your aperture is square by comparing the cross-corner dimensions.



Measure the width of your aperture in three different places. Take the smallest size and deduct 10mm to provide your width dimension.

3

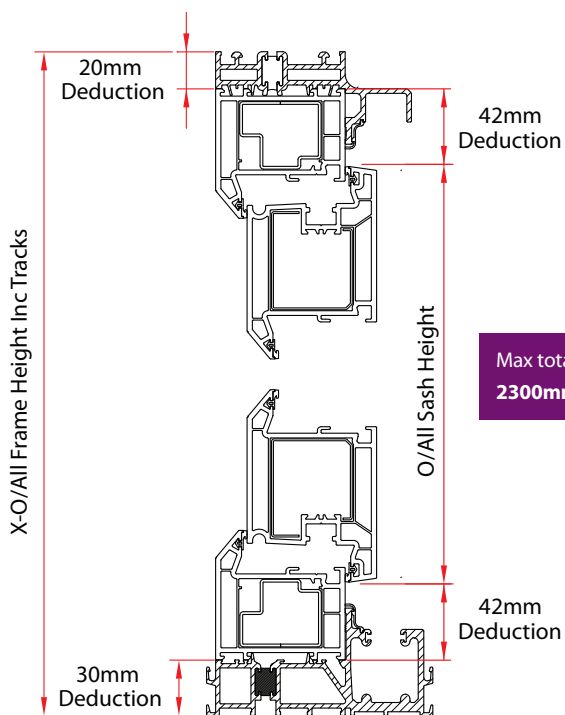


To determine the height of your door you should first decide where your finished floor level will be, including any floor covering. See diagrams below for the different deductions based on the profile used in your bi-fold door. If PVC-U sill is required this must be deducted from the height as an additional deduction.

Now you have to determine where the sill (or threshold) will sit. You can then measure the height of the door from underside of the lintel to underside of the threshold or sill. Take three measurements in different places and use the smallest dimension from which you should deduct 10mm.

### Evolve bi-fold deduction details

4



O/All Sash Height = X - 134mm  
(Does not inc weld allowance)

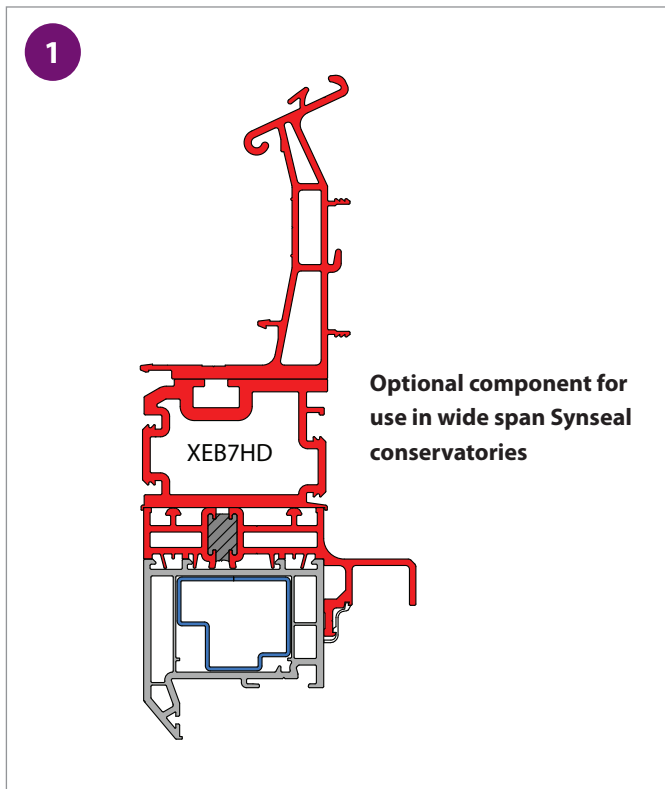
### 3. Configuration details

Use the table below to select the appropriate configuration of Evolve bi-fold door for the opening size. **It is important to note that all references to left and right handed sashes are based on viewing the door from the outside.** Decide on the style of your door and the position of any traffic door if required. On styles that provide a double traffic door you can specify which door leaf is to act as the master door. All our folding doors can be supplied to open in or out. The most popular option is opening outwards which maximises space inside the room.

Code	Scheme	Total No. of Sashes	Left Hand Sashes	Right Hand Sashes	Maximum Frame Width	Maximum Foiled Frame Width
A	2/2/0	2	2	0	1800mm	1700mm
B	3/3/0	3	3	0	2700mm	2550mm
C	3/2/1	3	2	1	2700mm	2550mm
D	4/4/0	4	4	0	3600mm	3400mm
E	4/3/1	4	3	1	3600mm	3400mm
F	5/5/0	5	5	0	4500mm	4250mm
G	5/4/1	5	4	1	4500mm	4250mm
H	5/3/2	5	3	2	4500mm	4250mm
I	6/6/0	6	6	0	5400mm	5100mm
J	6/5/1	6	5	1	5400mm	5100mm
K	6/3/3	6	3	3	5400mm	5100mm

**Maximum sash width 900mm. Maximum frame height 2300mm.**

**Maximum foiled sash width 850mm. Maximum foiled frame height 2200mm.**



If the bi-fold door is to be fitted within a Synseal conservatory then the use of the bi-fold heavy duty eaves beam (XEB7HD) may be required, which will support larger span bi-fold openings. In certain sizes portal frames may be required. Please refer to heavy duty eaves beam leaflet or contact Synseal Roof Technical.

**IMPORTANT:** Note that it is good practice to view and sketch the door 'as viewed from the outside'.

#### Make sure the following points are considered:

Position of the cavity

Floor levels in relation to the height of the track and frame profile (see diagrams bottom of page 2)

Evaluate the position of the plaster line, and the need for minimal disturbance to interior furnishings

When fixing into the head, normally there will be a lintel. Please make sure that the lintel manufacturer's fixing guidelines are adhered to.

If trickle vents are required check the position within the bi-fold scheme.

Make sure there is plenty of clearance for doors to overhang inside or outside the property.

#### The following size limitations must also be considered:

- Size range
- Sash width
- Sash height
- Overall frame width determined by scheme and sash width

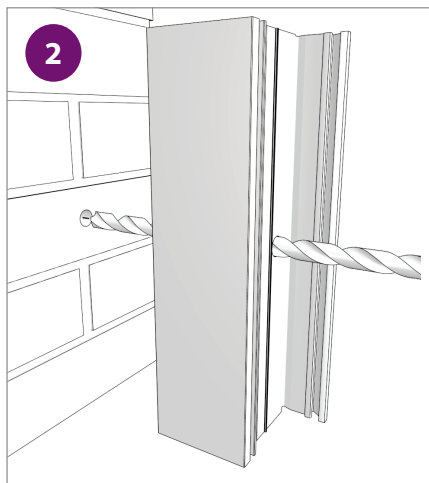
**PLEASE NOTE:** Make sure that you allow for a frame extension profile of 20mm on 220, 440, 660, 202, 404 and 606 schemes. This will allow for the bogie wheels to run. It is also important on these schemes to remove key from cylinder before folding doors fully open to prevent key from breaking in cylinder.

## 4. Installation

The following procedures must be completed to ensure a smooth installation of your new bi-fold doors:

Check when installing the doors that the frame is inserted square, plumb and level and straight. Once this has been done check the diagonals to confirm that this procedure is correct.

**1** When fixing the frame to the property, select the most suitable fixing. Nylon door frame anchor bolts, Torx drive screws or similar are the most suitable and you should mark where to pre-drill the frame avoiding any voids or mortar lines. Synseal stock a range of these fixings. Make sure a firm fixing is achieved. It is important not to drill within 150mm from each corner as this could stress the frame welds. Frame fixing centres must not exceed 600mm. When fixing to the head observe all lintel manufacturers' guidelines.



**4** Temporarily secure the outer frame into the opening and pack where necessary to make sure the outer frame is level, square and plumb. The bi-fold will not function successfully unless this procedure is carried out.

The correct sash cover is  $8\text{mm} \pm 1\text{mm}$ . It is important to line the door sashes through across the head. Adjustments can be made by adjusting the height of the bogie wheel sets individually to achieve the correct level.

**SAFETY NOTE:** It is important to make sure there is 10mm engagement of the top roller into the channel of the top track to avoid disengaging.

## 5. Glazing

Please refer to section 6 for glazing packer details.

**1** Packing the glazed sealed units is a very important process and must be carried out to achieve maximum performance. Sashes must be toe and heeled to flag hinges and to the bogie wheels across centres and locking points.

Bridge packers must be used on the bottom to aid drainage, making sure that drain holes are not obscured.

**2** Once the glazed sealed unit is packed, select an appropriate glazing mallet and feed the glazing bead into the corner. Tap the bead gently and feed into the bead channel starting from the corner at both ends. Tap the bead along its length until it is fully inserted. Check the corners for alignment of the glazing bead.

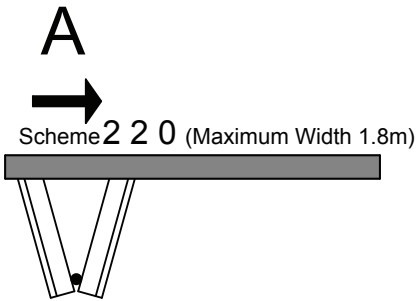
**3** Once the doors have been glazed it is important to check the operation of the doors.

Again check the level across the head of the door sashes. Also check the cover of the door sashes and the 10mm engagement of the top roller into the top track.

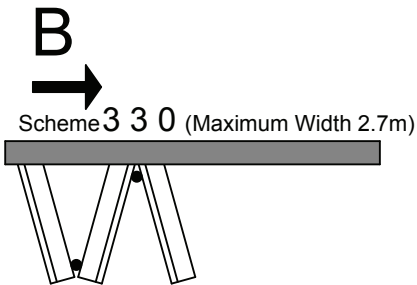
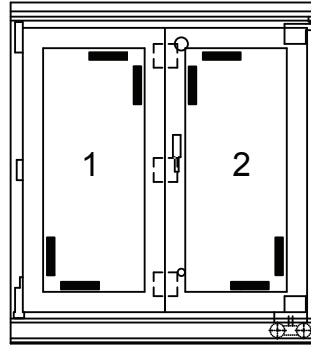
## 6. Glazing packer details

Packing the glazed sealed units is a very important process and must be carried out to achieve maximum performance. Sashes must be toe and heeled to flag hinges and to the bogie wheels across centres and locking points. Each door must be packed using the correct width packer to support the sealed unit.

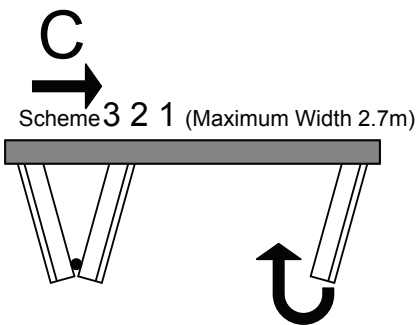
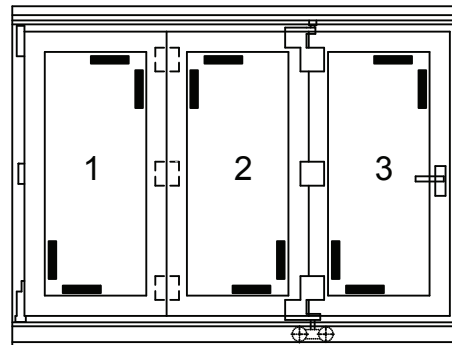
■ Indicates Pressure Point



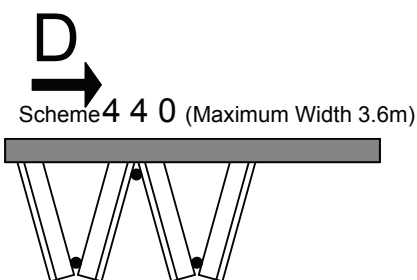
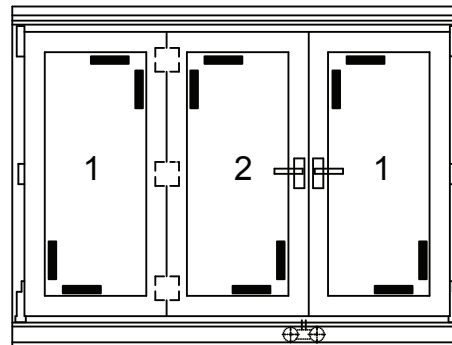
Scheme 2 2 0 (Maximum Width 1.8m)



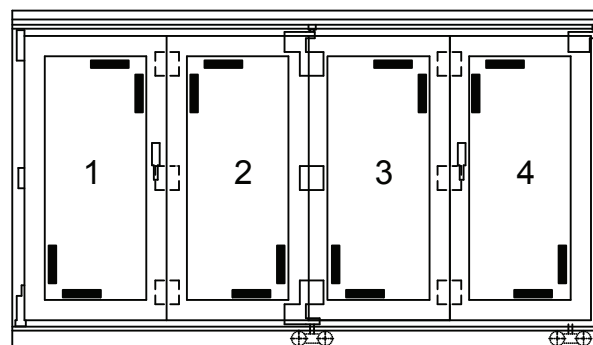
Scheme 3 3 0 (Maximum Width 2.7m)



Scheme 3 2 1 (Maximum Width 2.7m)

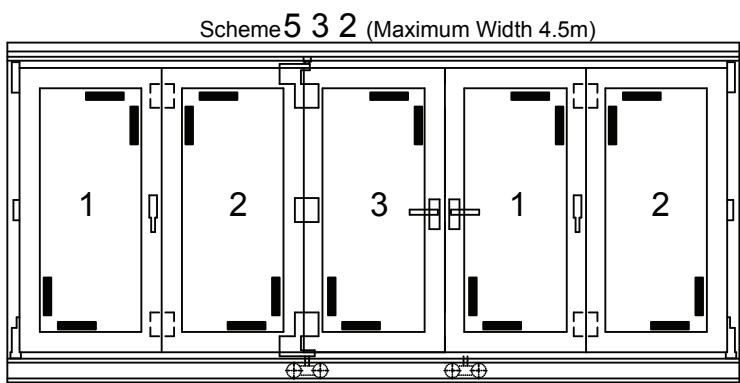
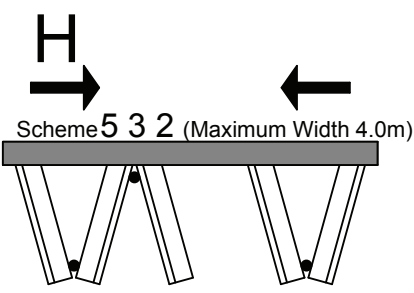
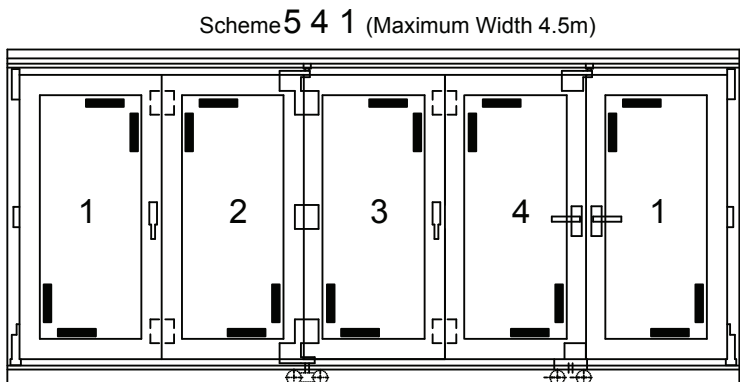
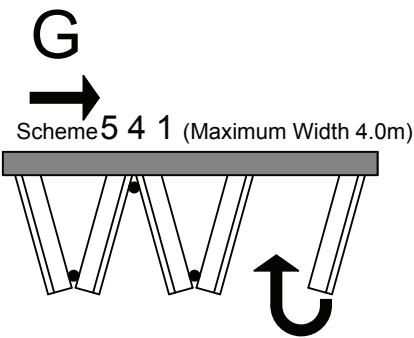
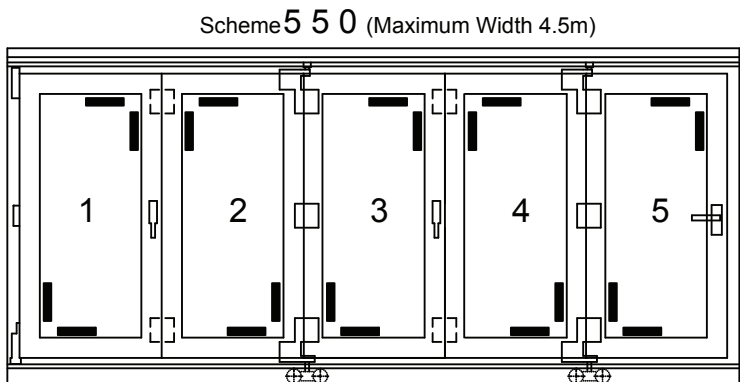
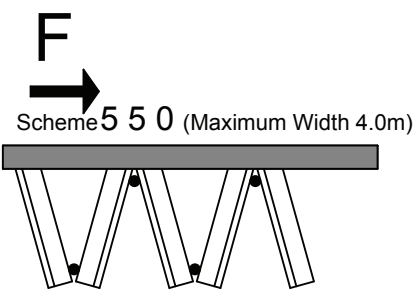
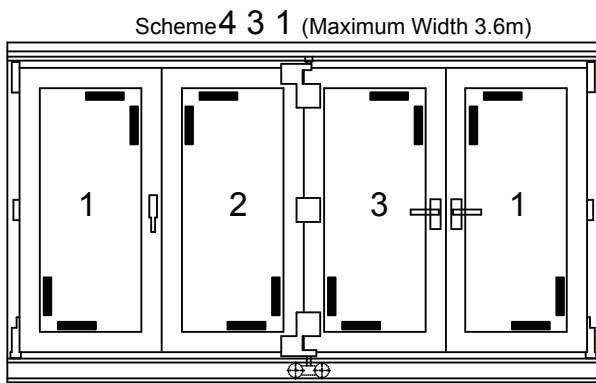
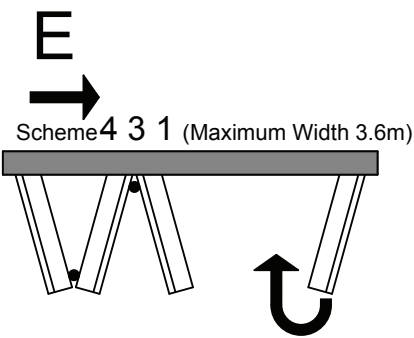


Scheme 4 4 0 (Maximum Width 3.6m)



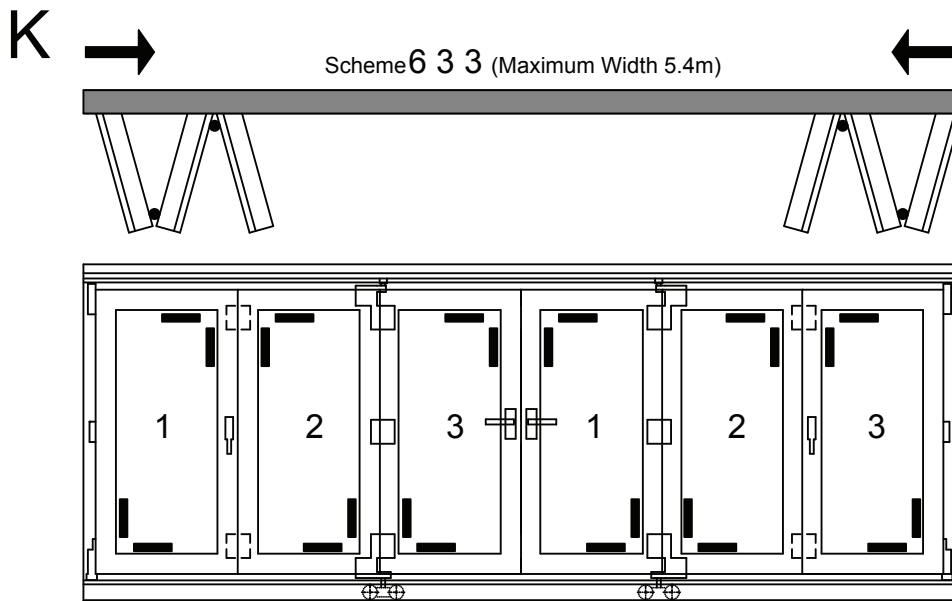
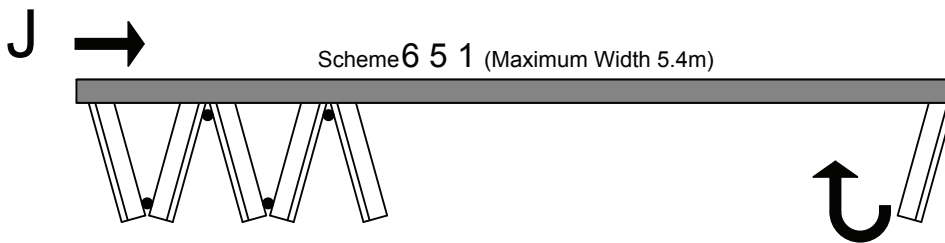
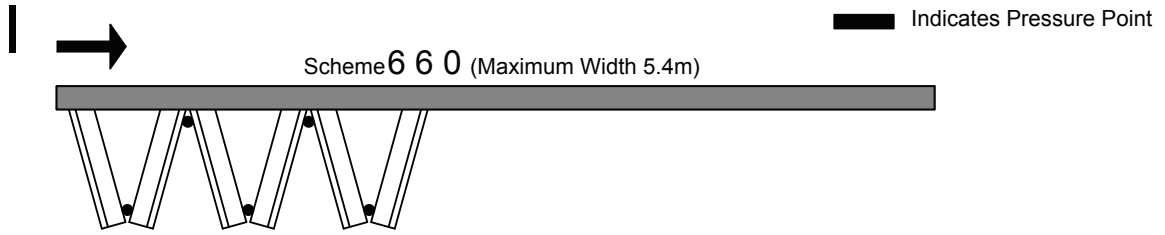
NOTE : All schemes are available as opposite hand to version shown

Indicates Pressure Point



NOTE : All schemes are available as opposite hand to version shown

PLEASE NOTE: Woodgrain doors are subject to a different maximum width. Please see section 3. for details.

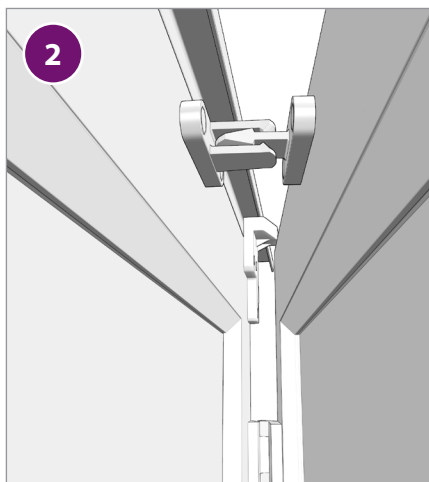


NOTE : All schemes are available as opposite hand to version shown

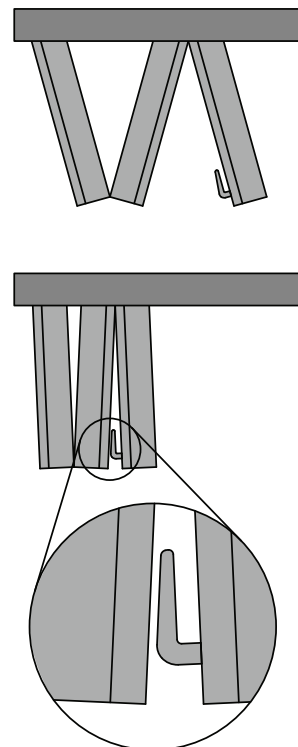


## 7. Sash retaining clips

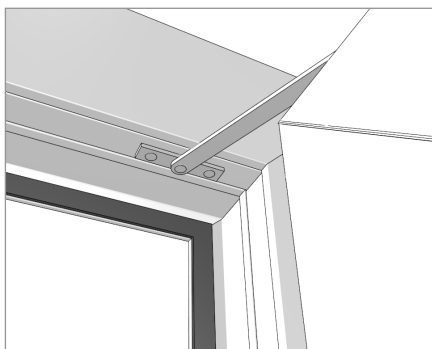
Fit any door sash retaining clips to hold doors back in the open position.



Find a suitable position for the sash retaining clip on the top of the door sash that allows the handle to be just clear of the adjacent door sash when the doors are folded fully open.



## 8. Optional: ML183 door restrictor



The ML183 door restrictor is available as an option. This is fitted to the master door to avoid the door being swung back past 90° and causing damage to the door leaf or property.

The aluminium extruded channel is located into the Eurogroove on the top of the door 100mm from the corner. Open the door to 90° and position the fixing plate to the rebate of the frame, making sure it is securely fastened into the steel reinforcement.

## 9.1. Sash to sash hinge adjustment

The Evolve bi-fold doors allow a high degree of adjustment to ensure a perfect installation.

**1** Please see Figure A below for hinge adjustments. The 5 x 45mm screws which are fitted to the slotted holes need to be tightened and turned anti-clockwise one full turn to allow the hinge to be adjusted (on open out doors you will need to use a T25 Torx bit to fit the hinges). A 4mm Allen key inserted into the cap head screw to the side of the hinge will adjust the hinge  $\pm 2.5\text{mm}$  side to side. Once the final position of the sashes has been adjusted the screws in the fixed holes need to be fully tightened. Leave the screws in the slotted hole slack so any further adjustments can be made.

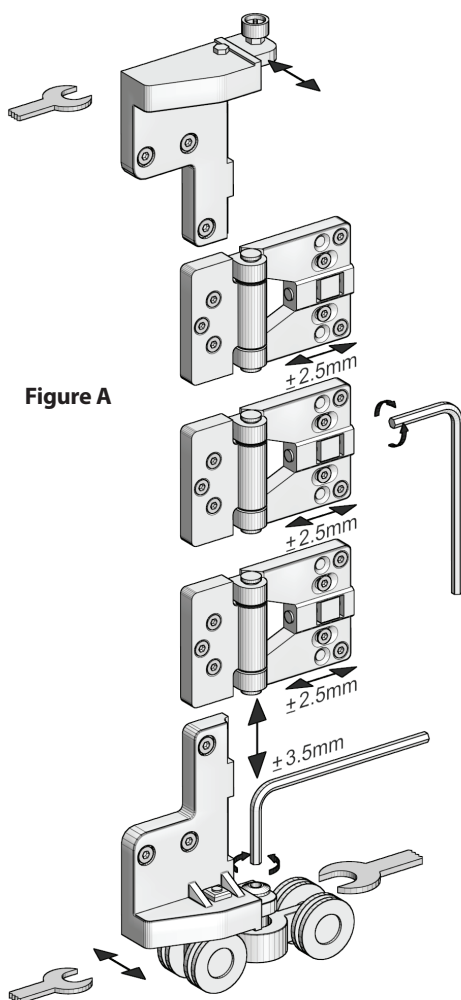
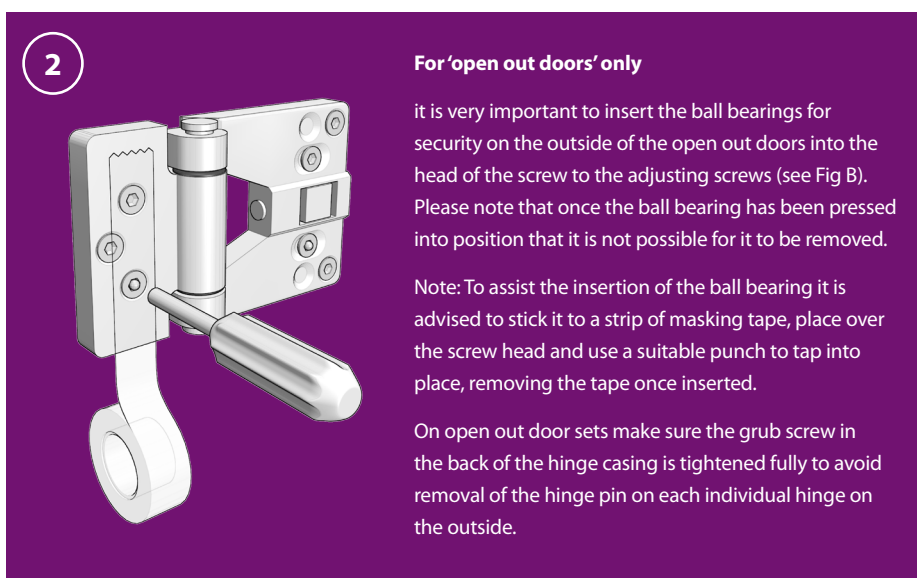


Figure A



### For 'open out doors' only

it is very important to insert the ball bearings for security on the outside of the open out doors into the head of the screw to the adjusting screws (see Fig B). Please note that once the ball bearing has been pressed into position that it is not possible for it to be removed.

Note: To assist the insertion of the ball bearing it is advised to stick it to a strip of masking tape, place over the screw head and use a suitable punch to tap into place, removing the tape once inserted.

On open out door sets make sure the grub screw in the back of the hinge casing is tightened fully to avoid removal of the hinge pin on each individual hinge on the outside.

## 9.2. Adjustment of the bogie wheel sets

Check to make sure the door sets are level and plumb. If the door sets need rising they can be adjusted individually. This is done by the use of a 5mm Allen key and a 17mm spanner. Slacken off the locking nut and wind the Allen screw up and down to suit. This allows a  $\pm 3.5\text{mm}$  adjustment. Check with a spirit level once both sets have been adjusted to make sure the door set is level. When all adjustments have been completed tighten the lock nut using the 17mm spanner to avoid the door sets from dropping. (see Fig A)

To adjust the compression of the door at the bottom, slacken of the lock nut on the underside of the hinge plate with a 13mm spanner, clamp the door into the frame (being careful not to mark the profile) and adjust.

Tighten up the nut using a 13mm spanner and test the door.

To adjust the compression at the top of the door, follow the same procedure as the bottom of the door.

Adjusting the compression around the perimeter of the door sets is carried out by adjusting the acentric cam on the gearing. It is important to adjust each cam by the same amount for even compression.



## 9.3. Frame to sash hinge adjustment

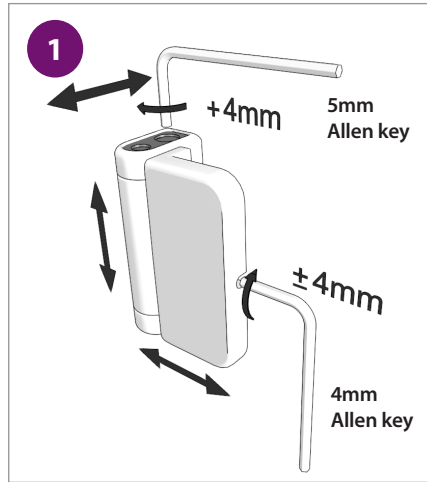
1

To adjust the doors you can adjust the hinge in 3 directions: to either side, vertically and compression.

Once you have finally adjusted the hinge make sure the security grub screw in the base of the hinge is inserted and screwed up tight to avoid removal of the hinge pin (this must be locked tight to prevent it working loose). Also check to make sure all fixing screws are tightened satisfactorily.

See Figure A opposite for adjustment details.

Make sure the grub screw in the frame member of the hinge is inserted and securely tightened once final adjustments are made.

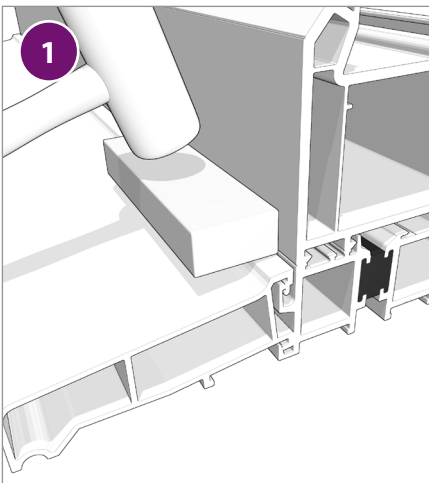


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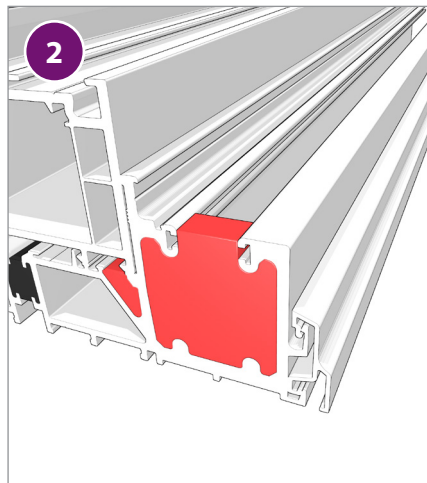
## 10. Finishing the top and bottom track

1

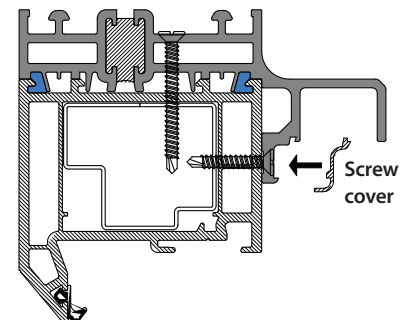


To assist with the attachment of the sill nose it is recommended to use an off-cut of timber or similar and a non-metallic mallet. Insert the tabs of the sill nose into the receivers on the bi-fold track. Working from one end tap the timber section from above until located in position. Repeat along the entire width of the door until secured into position.

2

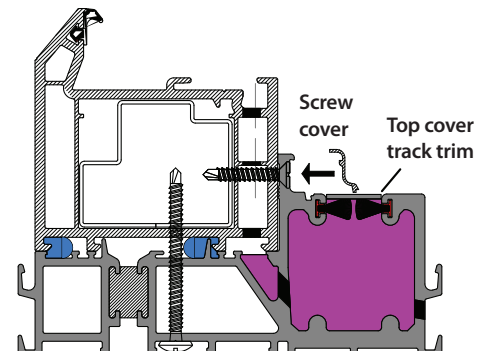


On open out doors ensure foam bungs are silicone sealed into place to prevent water draining from ends of threshold track.



3

Fit screw covers and track trim as appropriate to cover routed pocket at end of track.





## 11. Handover and maintenance

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Remove all protective tape and clean the bi-fold doors. Do not use solvents as this can damage gasket seals and foiled products. Clean soapy water is recommended.

Demonstrate the function and benefits of the bi-fold doors to the customer.

**IMPORTANT:** Do not mishandle the gearing when operating. make sure all doors are fully closed before fully locking.

**Clean PVC-U components regularly with soapy water.**

**Ensure door locking mechanisms are kept clean and lubricated with light oil.**

**Ensure top and bottom track are kept clean and clear of obstacles.**

**Do not use any solvent cleaning material on any foiled products whatsoever.**

