

so you think all **window companies** are the same... **think again!**

sternfenster

Aluminium Bifold Assembly and Installation Guide



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Thanks for choosing to buy one of our aluminium bifold doors, this step by step guide has been designed to show you how to successfully assemble (if your doors have been supplied in kit form) and install your new bifold doors.

It is vital that you follow each step carefully and carry out all the checks detailed to ensure that the doors are assembled and installed in the correct way.

If the doors are not installed square, plumb and level it will lead to operational problems with the doors which will damage the profile.

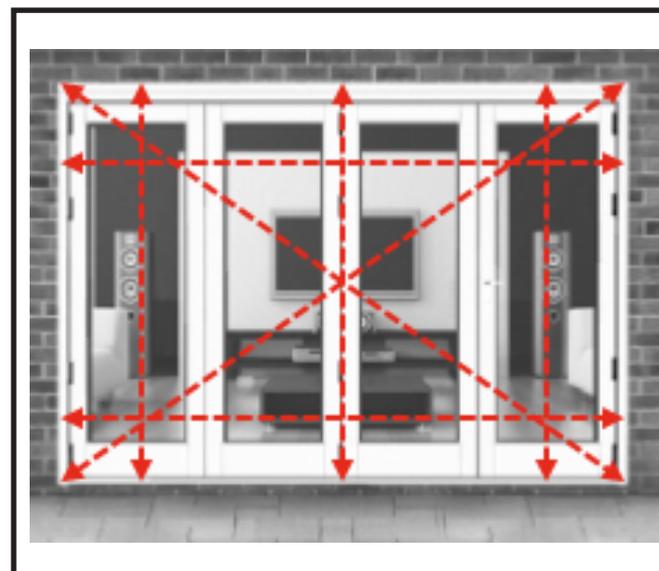
We go to great lengths to ensure products are well protected, it is important that you do the same. Please store the frames and glass in an upright position and on a suitable surface, i.e. not directly onto concrete. We would advise against leaning anything up against our products.

Equipment you will need to assemble and install the doors

- A suitable drill for securing the fixings through the frame and into the wall and a 6mm drill bit.
- Good quality frame fixings, we recommend a 7.5x102 - ZYP direct frame fixing.
- Good quality silicone to seal the perimeter edges and frame to the cill, we recommend a low modulus neutral cure silicone.
- A six foot spirit level for ensuring the doors are fitted square, plumb and level. For large bifolds we recommend the use of a laser level to ensure that the doors are installed square, plumb and level.
- A eight metre tape measure.
- A selection of plastic packers that are used for squaring the frame in the opening.
- Glazing shovel.
- Flat putty knife.
- Check off the parts list to ensure that you have everything.

Important things to check before you start assembling the doors

- Unwrap the aluminium parts and check for damage, if you find any contact your supplier before assembling and installing the doors.
- Ensure that you have a clear area in which to work.
- Check your paperwork and make sure you fit the door the correct way.
- If there is an old frame to remove ensure that you check the dimensions of the new frame before removing the existing frame.



Important – Please Read

The frame must be assembled and installed square and plumb to avoid the doors snagging when opening and closing. Check the dimension shown using your tape or a string line. Ensure that the frame is fixed on each side and using the 6 foot level ensure that the frame is level on all sides. We recommend installing a cavity drip tray below all Bifold doors.

Parts List

	Door sash parts							
Number of door sashes	1	2	3	4	5	6	7	8
Screws for fixing the hinges - M5 x 10mm*	8	16	24	32	40	48	56	64
Screws for locking the hinges - 4.8 x 25mm*	4	8	12	16	20	24	28	32
Serrated plastic packers for glazing	12	24	36	48	60	72	84	96
<i>*Some configurations may have more hinges, but sufficient screws will be provided.</i>								
	Door frame parts for standard threshold							
Outer frame sections	4							
24mm wide corner cleats (ACDV18)	4							
20mm wide corner cleats (ACDV19)	4							
Cleat blocks	16							
Metal chevrons	4							
Tube of mitre glue for joining the corners	1							
Tube of silicone for sealing the corners	1							
2.5mm allen key	1							
Drainage caps (either black or white)	2	3	4	5	6	7	8	9
	Door frame parts for low threshold							
Outer frame section	3							
Low level threshold	1							
EUD03 ramps for low level threshold	2							
24mm wide corner cleats (ACDV18)	2							
20mm wide corner cleats (ACDV19)	2							
Cleat blocks	8							
Metal chevrons	2							
Screws for the low threshold - 4.8 x 50mm	4							
Tube of mitre glue for joining the corners	1							
Tube of silicone for sealing the corners	1							
2.5mm allen key	1							
Optional extras if ordered								
Sub cill (same width as frame)	1 (loose)							
Cill end caps (either black or white)	2 (loose)							
Frame extender (same width as frame)	Supplied pre-fitted to the head of the frame Supplied loose on a flat packed frame							
Magnets (to secure doors when open)	To suit the door configuration, loose							
Head vents	5000mm ² , loose							
ACDV295 Toe & Heeler device for sashes over 900mm and up 1200mm	Base plate & adjustment screw are pre-fitted to sash Steel plate & corner packer supplied loose 1 each per sash							



24mm wide
Corner Cleats



20mm wide
Corner Cleats



Cleat Blocks



Metal
Chevrons



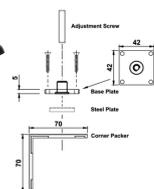
Mitre Glue



Silicone



2.5mm
Allen Key



ACDV295

Step One - Assembling the outer frame (flat pack only)

Outer frame with standard threshold

1. Lay out all parts ready. Depending on the size of the doors the head and cill section of the outer frame may have been cut and will require joining before you starting assembling the outer frame. The sections to be joined will have aluminium joining bars pre-inserted into one end, simply use the silicone seal provided to apply a bead along each length of aluminium, then slide the two outer frame sections together, see images 1,2,3. Ensuring that the profiles are lined up flip it over and using the screws provided secure the outer frame to the aluminium bar in the pre-drilled holes, finally ensure that the whole perimeter of the joint is sealed with silicone. If there is a low threshold the process is the same other than there is only one aluminium joining bar.

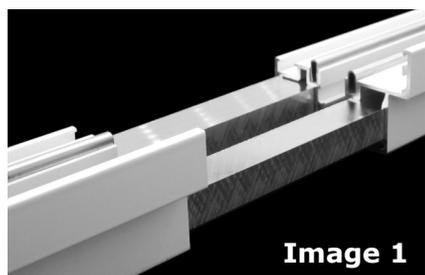


Image 1



Image 2



Image 3

2. You can now start assembling the outer frame. Apply mitre glue into the two the two chambers of the profile, see image 4 and insert the metal chevron into the end of the aluminium profile as shown in image 5 and coat the cut ends of the profile with the silicone provided.

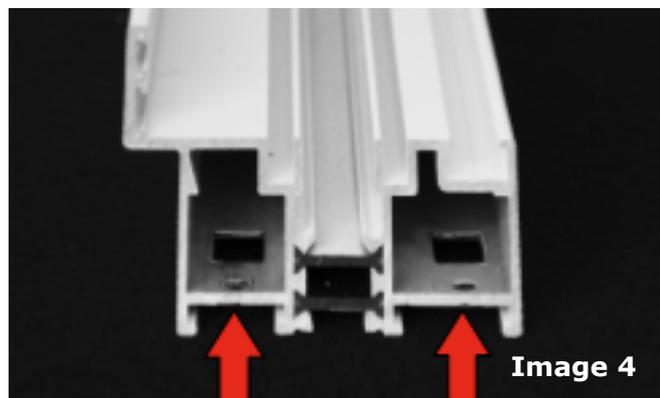


Image 4

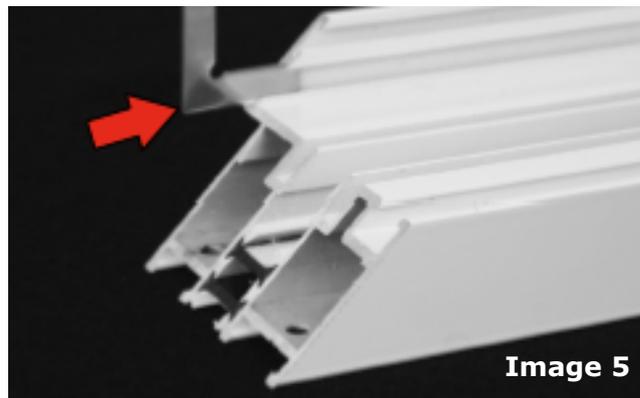


Image 5

3. Insert the metal cleats (one small and one large) into the chambers of the profile as shown in image 6 and then attach the other length of profile, see image 7

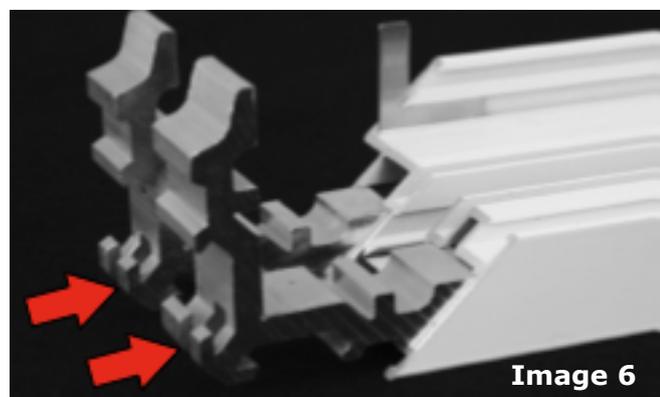


Image 6

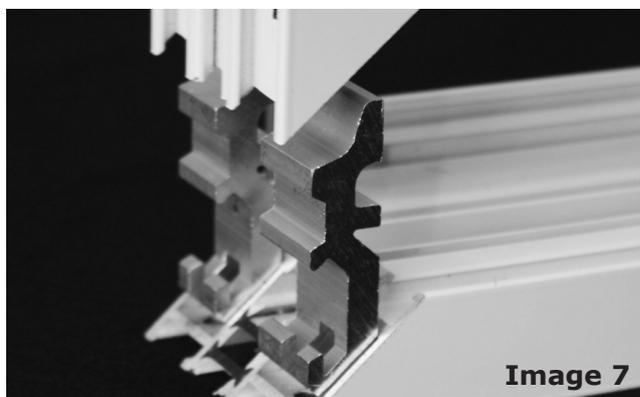


Image 7

4. Insert the cleat blocks through the pre-prepared rectangular hole, ensuring that the grub screw is facing down towards the corner of the profile, see images 8 and 9 on next page.

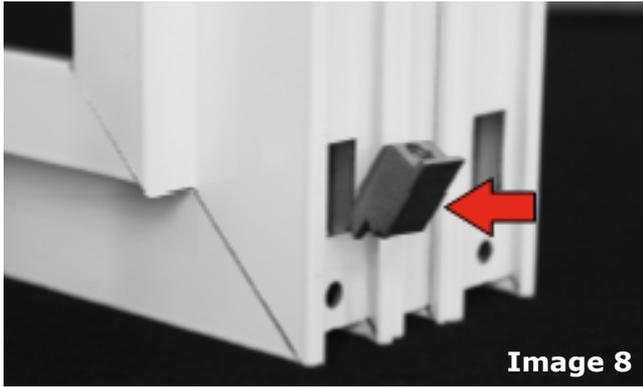


Image 8

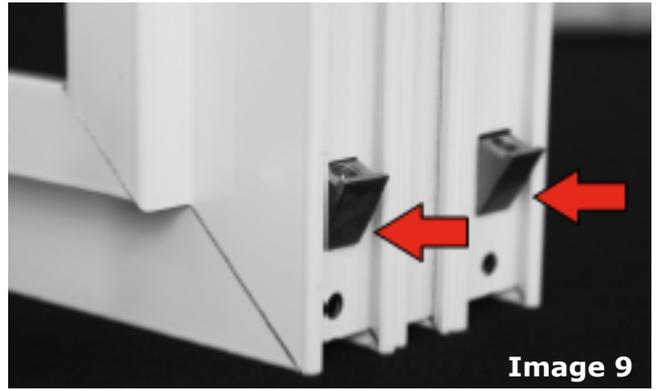


Image 9

4. Using the 2.5mm allen key provided tighten the grub screws by passing the allen key through the pre-prepared 5mm round holes beneath the cleat blocks, see image 10. Wipe off any excess glue and silicone from the surface of the aluminium after you have tightened the grubs screws. It is important to ensure that even pressure is applied to each grub screw to ensure that the profile joint is square (see image 12) and not stepped (as in image 11).



Image 10

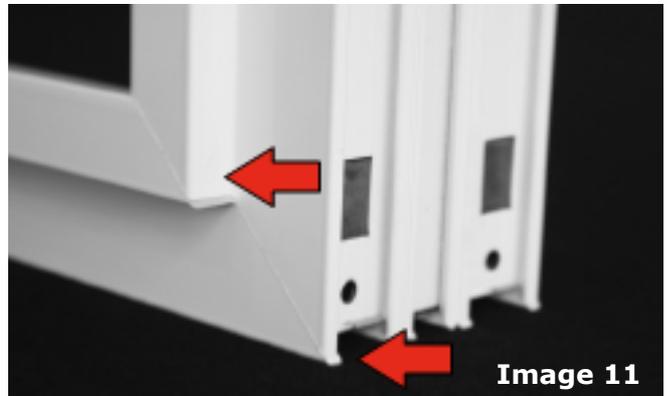


Image 11

5. Repeat the above steps until you have joined all four sections of the outer frame, once assembled check the measurements indicated below to ensure that it has been put together correctly and it is square and true.

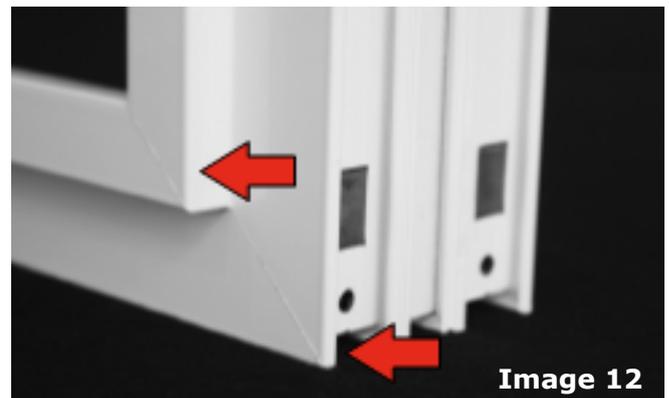
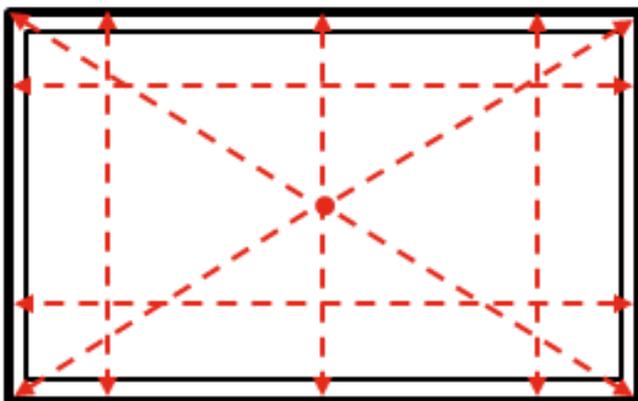


Image 12

Outer frame with low threshold

Assemble the outer frame sections as shown above and on the previous page. Follow the steps below to fix the low threshold to the jambs.

1. The low level threshold is supplied pre drained and ready for assembling. There are 2 x 5.5mm holes drilled through the square ends of each outer frame jambs which should be used to attach the low threshold to.
2. Before using the 4.8 x 50mm screws provided to fix through the outer frame into the low threshold ensure that the plastic bungs supplied are positioned between the end of the low threshold and the jambs, (see image 13). Be careful not to over tighten the screws.

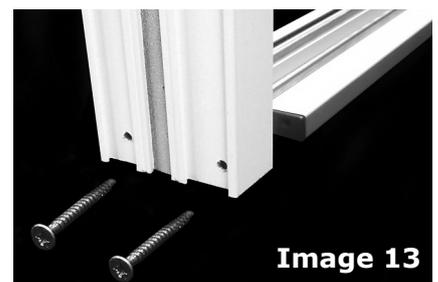
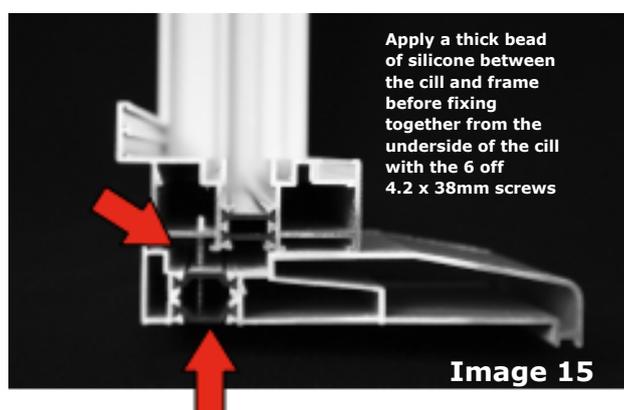
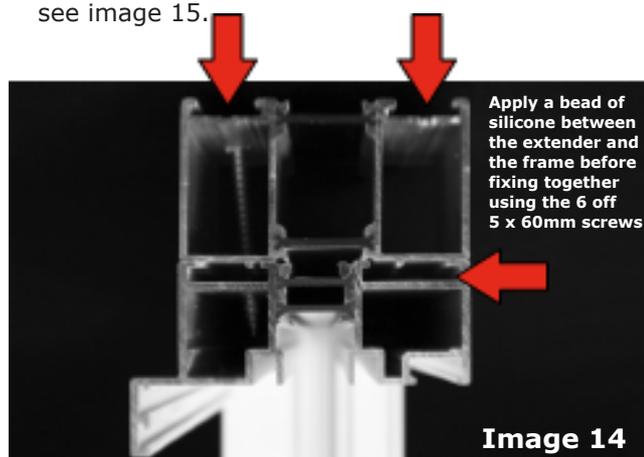


Image 13

Step Two - Installing the outer frame

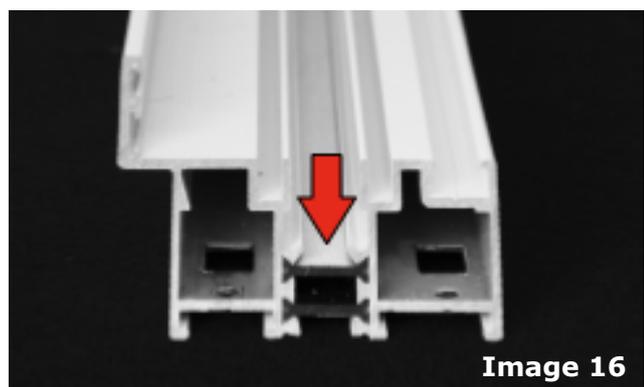
1. If you have ordered a frame extension (for head vents) or a separate sub cill then these need to be fitted to the outer frame before it is installed. If not already fitted, simply run a bead of silicone along the head of the frame before placing on the frame extender as shown in image 14, then fix every 600mm, alternating between the two chambers, see image 14, using the screws provided.
2. To fit the cill apply a bead of silicone on the back corner of the cill and then fix it every 600mm with the cill screws provided. It is vital that the end of the cill is completely filled with silicone and the end cap is fitted, failure to do this could result in water penetration. We strongly recommend that you fit cavity trays below bifolds, see image 15.



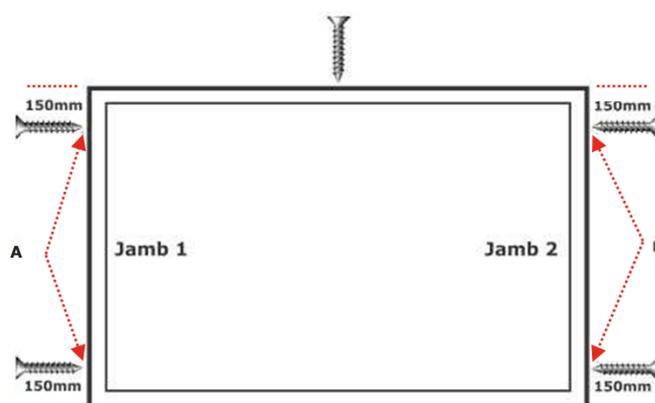
Once the outer frame has been assembled it needs to be installed.

It is vital that the outer frame is fitted true and plumb with the top and bottom absolutely parallel. Ensure that the section with the drainage holes in is installed at the bottom of the doors.

3. Offer the assembled frame up to the prepared opening, using a six foot spirit level plumb one side of the frame (Jamb 1) and place two temporary fixings 150mm from each corner, at this stage do not fully tighten the fixings, see diagram below.



You can fix the frame through the polyamide thermal break as indicated on image 16, we advise you to pilot drill first to ensure that it does not crack, care should be taken not to over-tighten the fixings which should not break through the thermal barrier.



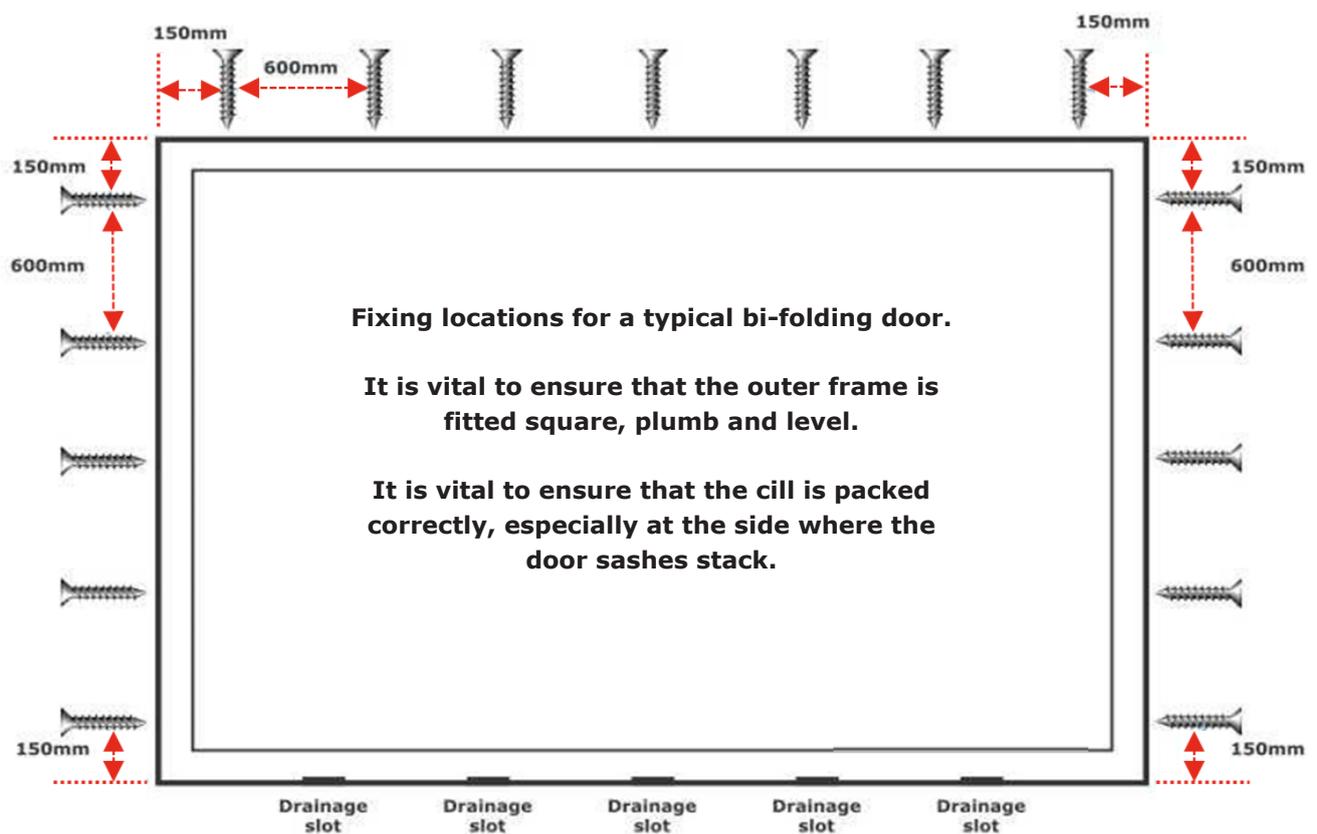
A - First step

Place two fixings at a distance of 150mm from each corner

B - Second step

Place two fixings at a distance of 150mm from each corner

4. Ensure that you use installation packers adjacent to each fixing point, these should be resistant to compression, corrosion and span the full width of the frame (70mm), once the fixings are tightened they will prevent the frame from distorting and help ensure that the outer frame is fitted square in the aperture.
5. Repeat this process on jamb 2, using a six foot spirit level to ensure that the frame is parallel and true in the opening. At this stage ensure that the cill section is also flat, with no dips or rises which will affect the operation of the doors. If necessary use installation packers under the cill to level it out. Check the diagonals to ensure that there is no twist in the frame, if there is adjust the temporary fixings and check again.
6. Once you are happy that the two sides and the cill section are level, parallel and plumb, place a fixing in the centre of the head, again using installation packers either side of the fixing point.
7. You can now continue to place the rest of the fixings at 600mm intervals around the head and jambs, not forgetting to tighten the original temporary fittings at the end.



8. If your doors were supplied flat packed you can now move onto the next stage, which is to hang the door sashes, ensure that you fit the perimeter gasket to the outer frame. Don't forget that once you have completed hanging and glazing the doors the frame will require sealing internally and externally all around the perimeter of the frame. If you have large gaps to seal we recommend that you use a silicone saver foam. Fixing foam may also be used, but this should not be used instead of proprietary frame fixings.
9. If your doors were supplied fully assembled then once installed you will need to glaze the door sashes, skip to step five.

Step Three (flat pack only) - Hanging the door sashes

Your new doors have already been factory assembled and tested prior to being flat packed so the hinges will be pre-fitted in the correct location, the following steps will detail how you go about hanging the sashes to the pre-fitted outer frame.

Example involving a 4 Pane bifold door

1. Start by fitting sash number 1 to the outer frame. The hinges are pre-fitted on the sash and the outer frame already has the hinge backing plates attached.
2. Offer sash 1 up to the outer frame and using the M5 x 10mm screws attach all four hinges to the outer frame. Ensure that the top and bottom gaps between the sash and the frame are even.
3. It is vital that once you have squared the sash in the frame you use the 4.2 x 38mm screw to lock the hinge in place to prevent any movement.
4. As you offer up the 2nd sash slightly tilt it in order to allow the wheels and top guide to slide in to place, then simply repeat the above steps for the third sash, ensuring that after every sash is fitted you check to ensure it has the same gaps top and bottom as the first sash, once you are happy you must use the 4.2 x 38mm screw to lock each hinge in place.
5. Sash 4 is fitted against the outer frame in the same way as sash 1 was, by simply offering up the sash with the hinges on and securing them to the hinge backing plates which are already located on the outer frame.
6. You can now close the sashes, from the inside pull the D handle to bring sashes 1, 2 and 3 towards the track, once they are closed turn the pendulum handle to engage the shootbolts. Use the main door handle to close and engage the locks on sash 4.



For other bifold configurations you would follow the same procedures outlined above.

Deglazing the door sashes

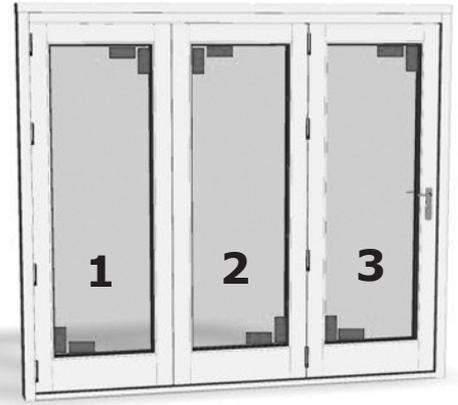
If at any time you need to remove the glass units.

We recommend the use of protective gloves and wrist gauntlets when handling glass.

1. Start by removing the internal black rubber gasket. If you are not replacing the gasket with a new one store the original in a dust free place and ensure you label which unit the gasket came from.
2. Once the wedge gasket is removed the pressure will be released and you will be able to remove the sections of bead, start with the two long lengths and then the two small ones, ensure that you mark the beads (1,2,3,4) as you remove them as each piece is individually cut to fit the sash so if you mix them up you may be left with gaps when re-glazing the sashes. Be careful not to damage the ends of the beads when they are out of the sashes.
3. As soon as you remove the beads the glass will be loose so ensure that you get assistance to avoid it falling out. Remove the glass and store in an upright position, do not store directly onto concrete floors.

Step Four - Glazing the door sashes

To glaze the sashes and “toe and heel” the units correctly please follow the steps detailed below. “Toe and heeling” the glass in the correct way will allow the doors to work smoothly and avoid problems operating the doors. To ensure that the glazing packers don’t move we recommend that you silicone them in place, it is also important to ensure that they do not obstruct any drainage holes and that the packers are wide enough to sit under both panes of glass to avoid damaging the spacer bar.



Example involving a 3 Pane bifold door

- Starting with sash 1, fit the glazing packers into the sash rebate as shown in figure 1. It is important that these are fitted in the right locations as indicated on the drawing above. Ensure that if sashes are over 900mm wide that the ACDV295 toe and heeler device has been fitted. The base plate & adjustment screw are pre-fitted in factory, the steel plate and corner packer must be used in place of standard packers in the corners where the device is fitted. The corner glazing packer will have been notched out, figure 2, to allow the bead to sit correctly on 28mm units. **(please note: when using the ACDV295 failure to install all of the parts will invalidate the guarantee and could potentially shatter the glass unit)**
- The glass units will all be the same width unless there is a Master traffic door, as in the case of a 3 pane door. The glass unit for a master traffic door is 6mm narrower than the other units so that it does not interfere with the door lock. It is vital to ensure that the narrow unit is fitted in the correct sash.
- Once you have positioned the glazing packers in the right location, (using silicone to keep the packers in place) insert the glass unit and fit the serrated glazing wedge packers between the glass and the glazing bridge packers, figure 3. The glazing wedge packers should be tight enough to hold the glass in place without the beads.
- Check to ensure that the glass is sitting square in the sash, using more or less serrated wedge packers as required. It is important to ensure that the sash is also still parallel with the outer frame, if the sash is sitting too low increase the number of serrated wedge packers at the top of the door.
- Once the unit is in square and the sash is parallel in the outer frame refit the beads in the sash. Place the short ones in first, ensuring to place them in the correct location and then the long ones, take care not to scratch the beads when you are refitting them, figure 4. If you find the bead is tight lightly file the end to remove any rough edges and then re-fit.
- Finally fit the wedge gasket, mitre one end of the gasket and using the point push it between the bead and the glass, see figure 5, to ease it in you can spray it with soapy water. **Make sure you fit the gasket the right way round** and do not over-stretch it. As the gasket is supplied long you will need to trim the end that you put in last.
- Repeat the above steps for the other sashes.
Once the installation is completed remove the protective tape within 48 hours.

The above example shows how to glaze a 3 section door, the process is the same for any other door configuration.



Fig 1



Fig 2



Fig 3



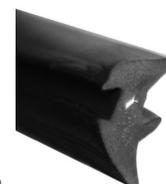
Fig 4



Fig 5

Smooth surface to the top

Fit the gasket with this side against the bead.



Fit the gasket with this side against the glass

Ridged surface to the bottom

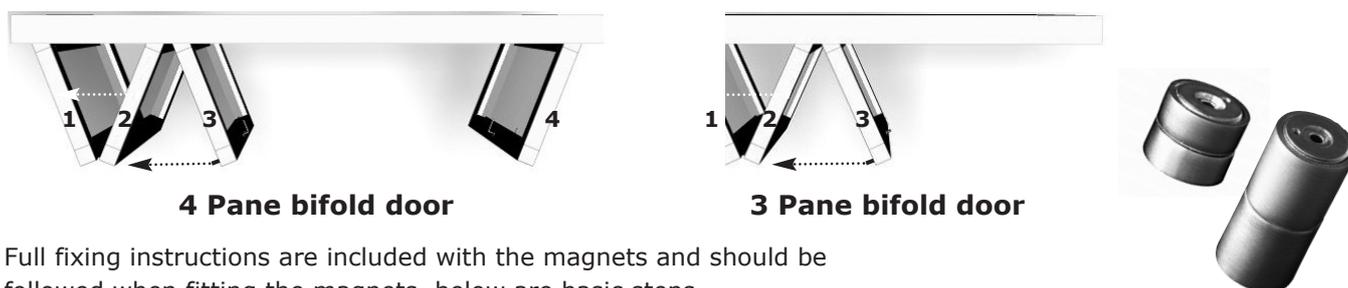
Step Five – Optional extras

Fitting door magnets

In order to hold the door sashes together when they are all open, magnets can be provided, which you will need to fix to the sashes after installing the doors.

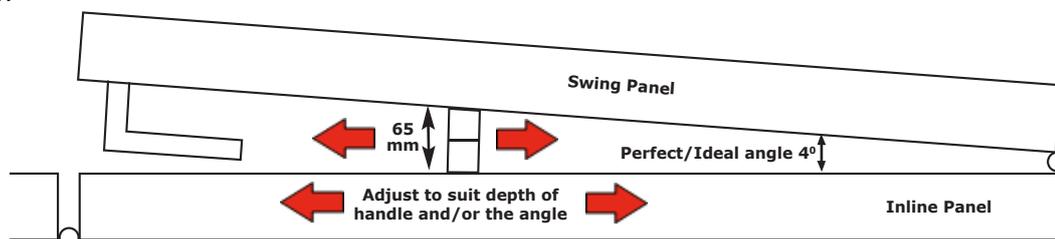
3 Pane door - Use a large magnet externally fitted to hold sashes 2 and 3 together, use a small magnet internally fitted to hold sashes 1 & 2 together, as shown below.

4 Pane door - Use a small magnet externally fitted to hold sashes 3 and 2 together, use a small magnet internally fitted to hold sashes 1 & 2 together, as shown below.



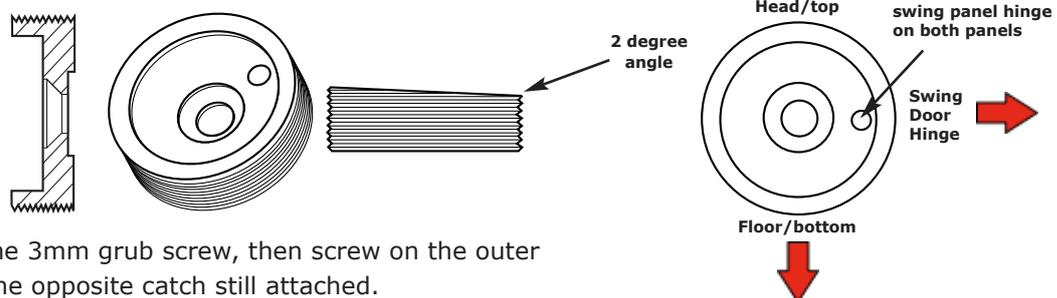
Full fixing instructions are included with the magnets and should be followed when fitting the magnets, below are basic steps.

1. Position the swing door at the point you wish to stop, allowing for the lever/lever handle plus a bit of tolerance, as per below.



2. Offer up the fully assembled magnet (Large one) and mark the position on only one of the sashes.

3. Unscrew one back plate and fix with the choice of fixings provided in line with the position marked. Ensure that the anti-rotation screw is nearest the main traffic door hinge.



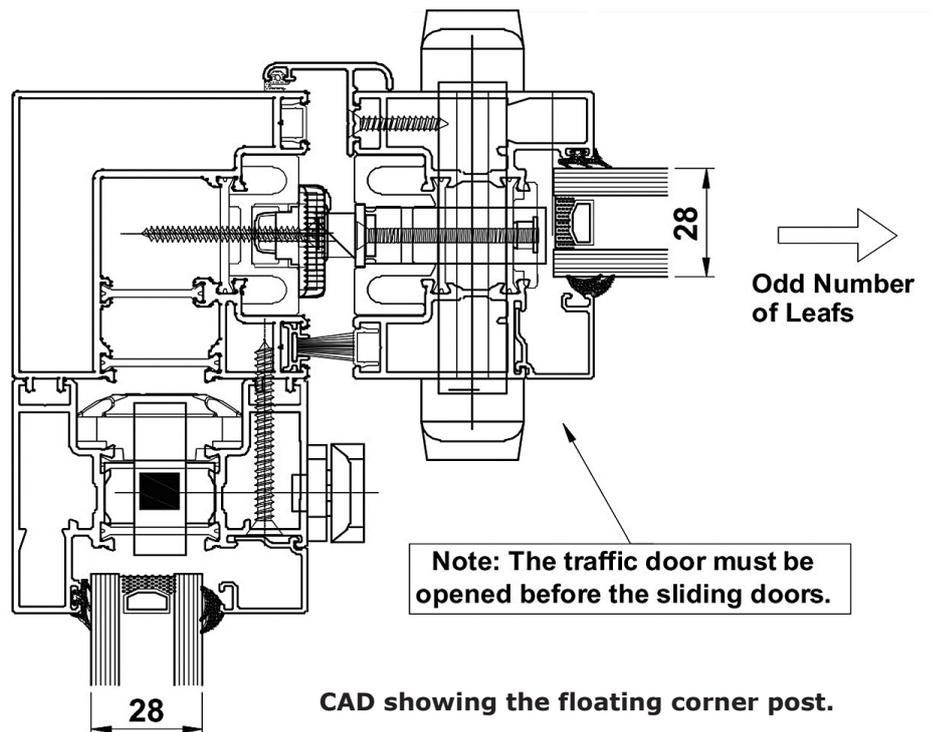
4. Screw in and tighten the 3mm grub screw, then screw on the outer sleeve complete with the opposite catch still attached.
5. Carefully position the opposite panel up to the catch and mark accordingly.
6. Repeat steps 3 and 4 above, before screwing on the outer sleeve.
7. Show the end user how to correctly open and close the doors, explaining that the door is not designed for hard impact or fixed retention.



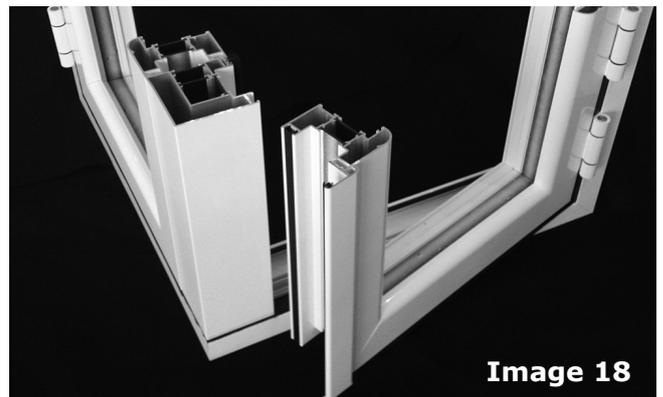
Installing bifolds with a floating corner post

If a floating corner post has been specified you will need to assemble and hang sashes as shown in the steps, on the previous pages.

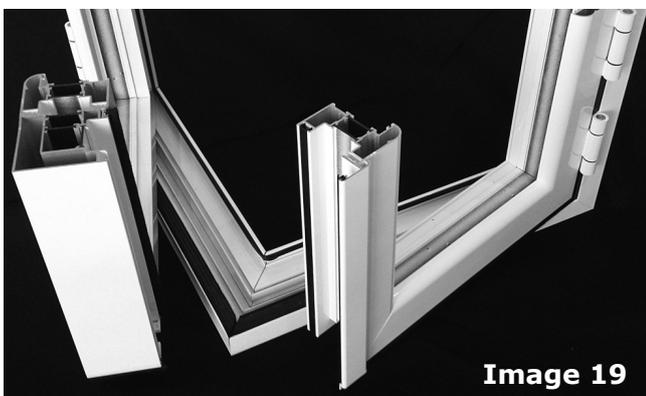
The floating corner post will have already been pre-fitted in the factory to the end of the leading door sash so once the sashes are assembled and hung the doors will close as shown in the pictures below.



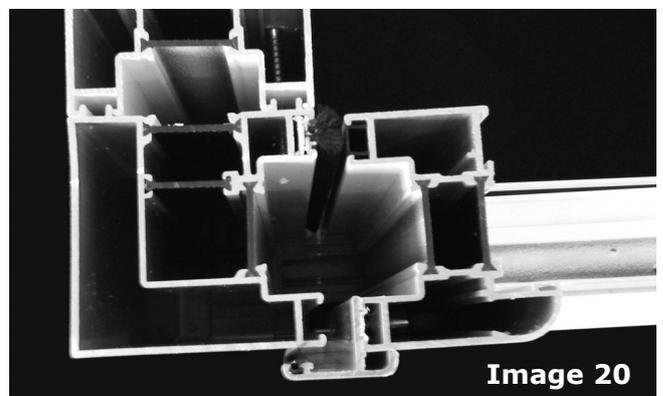
Floating corner post in closed position with rebated door on the right.



Rebated door must open first.



Once the rebated door is open, the door with the floating corner post can be opened.



Cross section showing the floating corner post and rebated door.

Post installation

Providing that you have followed the instructions detailed in this booklet your doors will operate without any problems, if you find that the sashes are catching at all go through the list below and check to ensure that you have assembled and fitted the Bifold doors correctly.

- Check that the outer frame has been installed plumb, true and parallel.
- Check the diagonal measurements from corner to corner, these should be the same.
- Check to ensure that the head of the frame has the correct fixings and is not bowing down.
- Check to ensure that the cill is flat and does not have any rise and falls.
- Check to ensure that the sashes have been correctly toe and heeled.
- Check to ensure that the locking screws have been fitted in the hinges.
Check to ensure that the track is free from debris and dust, spray the track and the wheels with silicone spray.
- Ensure that any excessive sealant is cleaned off immediately, this is especially important with plaster and cement as the chemicals are harmful to the paint finish so should be rinsed off immediately.

General use

It is important that you look after your doors and you should follow the guidance below to prolong the life of your new doors.

- Use the internal "D handles" to pull the doors closed, do not use the pendulum handles which should only be used for engaging the shootbolts.
- **Remember to remove any keys from the locks prior to opening the sashes, failure to do so will result in damage to the profile and key.**
- **Remember to lubricate all moving parts at least twice a year.**
- Regularly clean the aluminium with a mild detergent and a soft cloth, using abrasive materials will cause damage to the paint finish.
- Providing that the doors have been assembled and installed correctly there will be no need to adjust or move any hinges or moving parts.

sternfenster
window systems

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For technical reasons associated with colour reproduction, the colours shown give only an indication of shade, no guarantee can be given that they will exactly match the actual product finish.