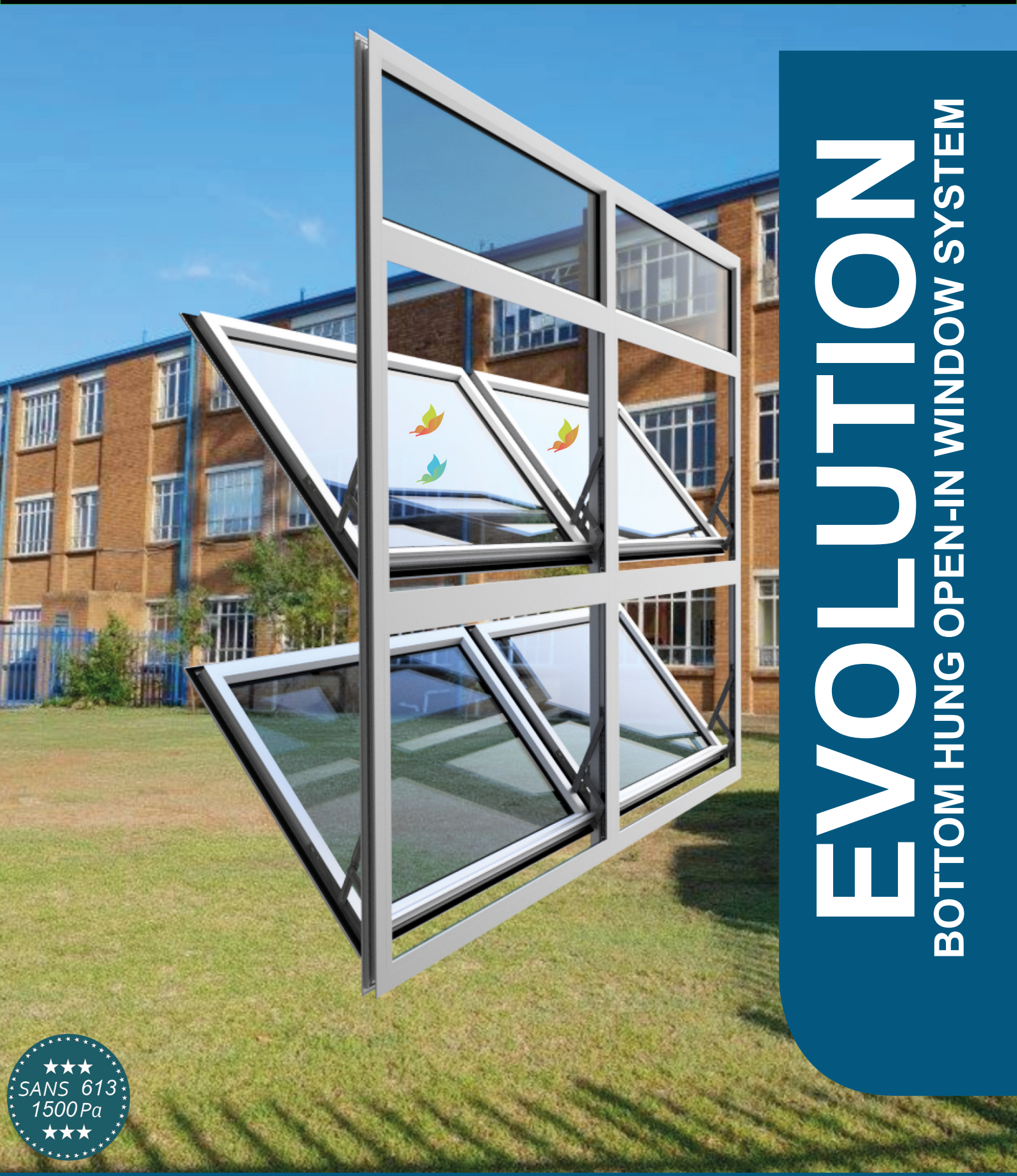
PRODUCT MANUAL

REV. 1.1
Jan. 2019



EVOLUTION

BOTTOM HUNG OPEN-IN WINDOW SYSTEM

★★★
SANS 613
1500 Pa
★★★

crealco

A product of

WISPECO Aluminium

INDEX

EVOLUTION
BOTTOM HUNG OPEN-IN
WINDOW SYSTEM

crealco

This manual must be read in conjunction with the Installation, Cleaning & Maintenance Document and the Performance Certificates for the relevant system. The manual must also be used in conjunction with the design and cutting list from the latest version of StarFront.

LEGAL DISCAIMER

EVOLUTION
BOTTOM HUNG OPEN-IN
WINDOW SYSTEM

General Documentation Disclaimer

This manual is intended as a manufacturing and installation advisory document. For correct specifications, sizing of profiles and structural information please consult the Starfront Application. If the information you require is not available through the Starfront Application, please contact your stockist before proceeding. It is advisable to have all sizing and performance criteria checked by a qualified structural engineer to ensure that the required criteria will be met.

All information, recommendations or advice contained in this documentation is given in good faith to the best of Wispeco's knowledge and is based on current procedures in effect.

Since the actual use of this documentation by the user is beyond the control of Wispeco, such use is within the exclusive responsibility of the user. Wispeco cannot be held responsible for any loss incurred through incorrect or faulty use of this documentation. Training of Wispeco systems is important for ensuring correct procuderes in the manufacturing of products.

Great care has been taken to ensure that the information provided is correct.

Ensure that you have the latest available manual. The revision number and date can be checked on the latest Starfront version.

Wispeco will accept no responsibility for any errors and/or omissions, which may have inadvertently occurred.

This Guide may be reproduced in whole or in part in any form or by any means provided the reproduction or transmission acknowledges the origin, revision number and copyright date.

Specifications concerning products and applications

This manual is based on standard configurations only. As there are many configurations not covered in this manual, contact your stockist with regards to a configuration not represented herein if required.

AutoDesk drawings (CAD Symbol Library) are available on request and can be issued with the consent of the Wispeco Technical Department.

All mechanical joints must be sealed with a **Crealco approved joint sealer**. Failure to correctly seal the joints can affect the performance of the system. Information on joint sealing can be found in the Cleaning & Mainanace Manual available for download from the Wispeco website or from Starfront.

All drawings in the Wispeco Documentation are shown NOT to scale and are used for illustative purposes only.

Wispeco will not accept responsibility for the use of standard products since Wispeco does not know where these products are being installed.

The hardware recommended in this documentation is suitable for use in most atmospheric environments. When hardware is used in severe coastal environments the manufacturer of the hardware must be consulted.

The use of non-specified hardware or incorrect mechanisal fasteners can adversly affect the mechanical and weathering performance of the system and we strongly advise against deviations. A Wispeco Consultant can advise you of any hardware issues and limitations with regard to this system.

The use of anti-magnetic stainless steel screws and aluminium pop rivets is recommended to reduce galvanic corrosion in harsh environments.

Fixing lugs on frames must be positioned as per the user manual and used in accordance to the AAAMSA specifications. When profiles are screwed together the screw centers must also be according to the user manual or as specified by an engineer.

All glass used within Wispeco products must comply with SAGGA regulations. Laminated glass must not stand in water.

By continuing to use this documentation you acknowledge that you understand and accept the legal disclaimer.

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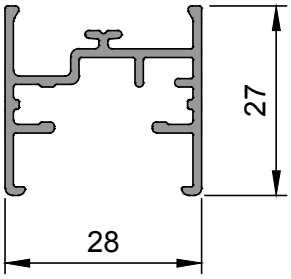
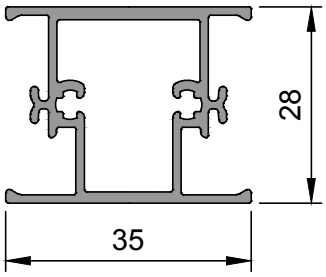
PROFILE IDENTIFICATION

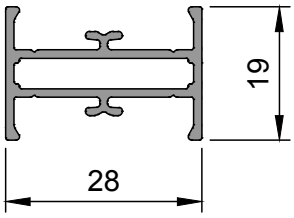
WINDOW PROFILES



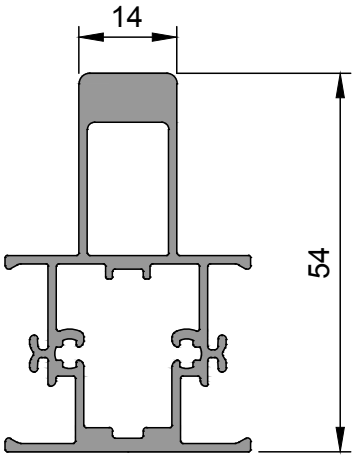
DIE No. 36276 Evolution Frame



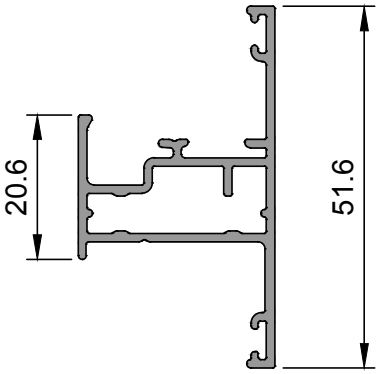
DIE No. 58086 Evolution Mullion 28 mm



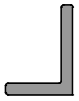
DIE No 58120 Evolution Mullion Cottage Pane



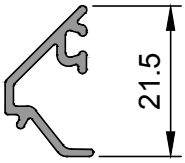
DIE No. 58362 Evolution Mullion 54 mm



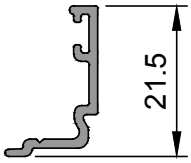
DIE No. 58087 Evolution Sash Bottom Hung Open-In



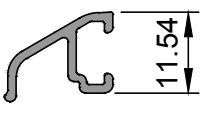
DIE No 18201 12.7 x 9.5 Angle



DIE No. 36274 Evolution Bead 13 mm Gap



DIE No. 36275 Evolution Adaptor



DIE No.36480 Evolution Drip Rail

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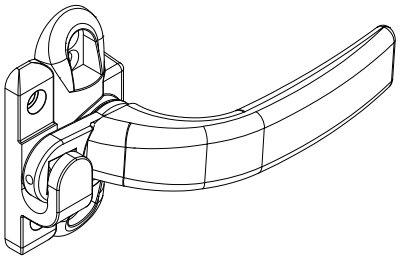
HARDWARE IDENTIFICATION

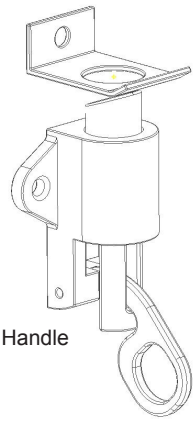
COMPONENTS

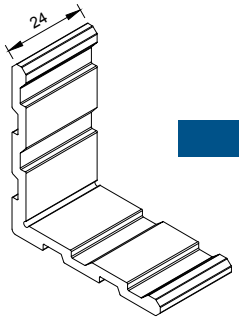
ACCESSORIES



HPT-EVOL Crealco Evolution Handle

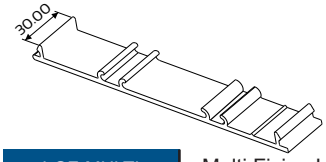
NOTE:
The PT handles are available only in black, & can be ordered either left hand or right hand.



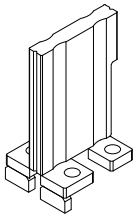


HPT- Crealco Pull Ring Handle

LGC-EVO Crealco Evolution Corner Cleat



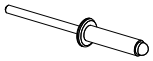
LGF-MULTI Multi Fixing Lugs



LGR-CCEVO Evolution Cross Connector

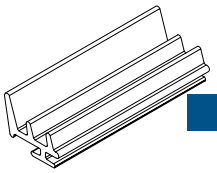
FSP-813P-SS 8x13 P/Head Screws

FSP-0830P-SS 8x30 P/Head Screws



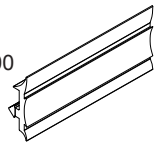
FRC-4810 Pop Rivets 4.8 x 10

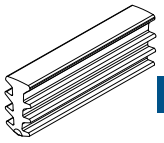
GASKETS & SETTING BLOCKS



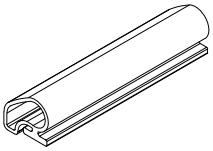
GBF-EPVC Butterfly Euro Gasket

GBF-ORG Butterfly Orange 500



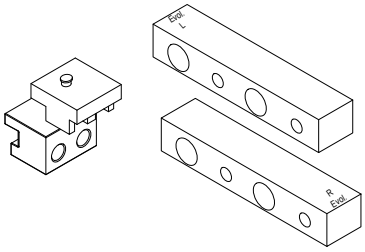


GWG-01G Wedges

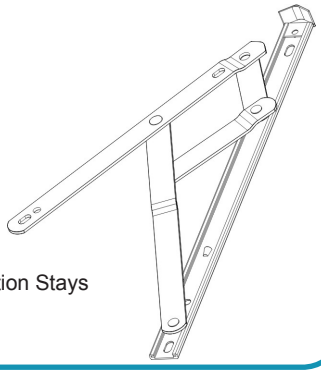


GSL-E48 Elephant Gasket

FSN-GSB Glass Setting Blocks



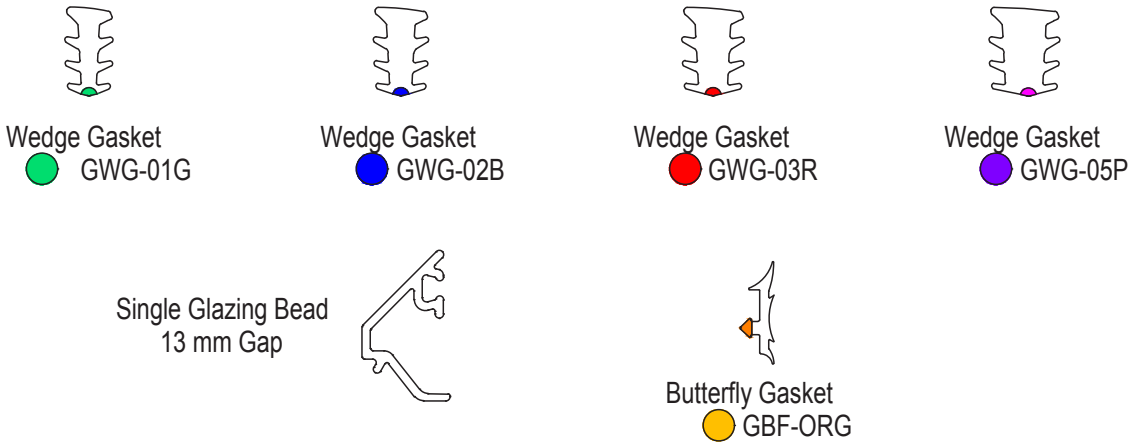
TLP-EVO Evolution Tooling & Support Block



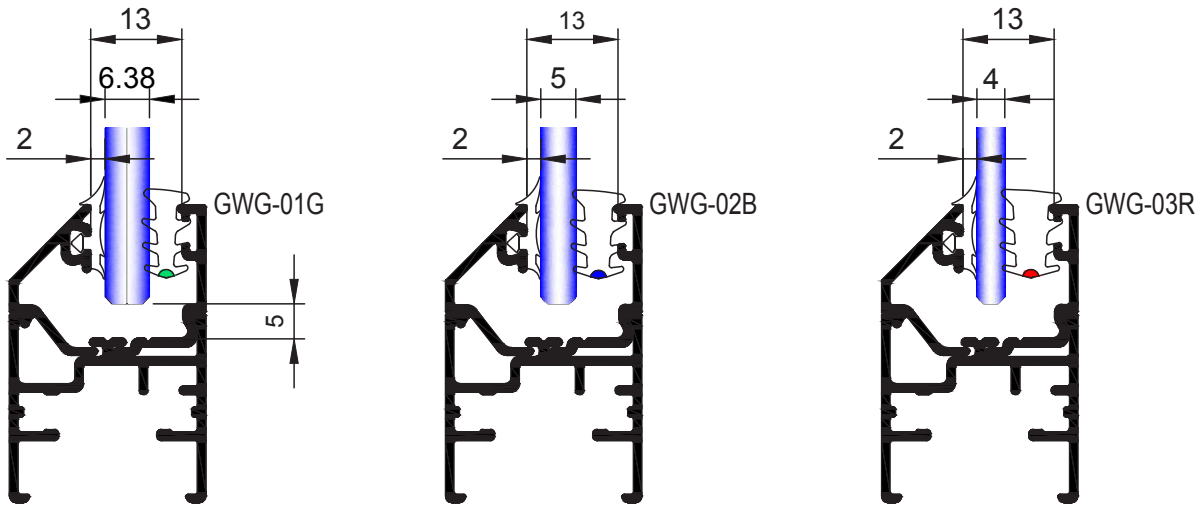
STAYS Friction Stays

BUTTERFLY GASKET & WEDGE CODES

Note: For ease of fitting the gaskets, it is recommended to apply vaseline to the gaskets before inserting into the relevant profiles.

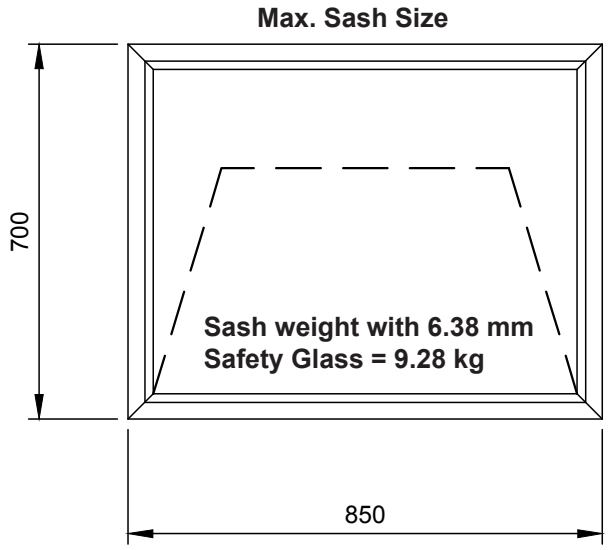


Note: Max. glass thickness is 6.38 mm



Wedge Gasket Chart

Code	Description	Wedge Gap To Fit
GWG-01G	Wedge 01 Green 6mm & 6.38mm Glass	4.10mm To 5.50mm
GWG-02B	Wedge 02 Blue 5mm Glass	5.60mm To 6.70mm
GWG-03R	Wedge 03 Red 4mm Glass	6.80mm To 7.50mm
GWG-05P	Wedge 01 Purple 20mm Double Glazing	7.60mm To 8.80mm



Crealco Stays-Top Hung Friction Stays

(13 mm Stack Height)

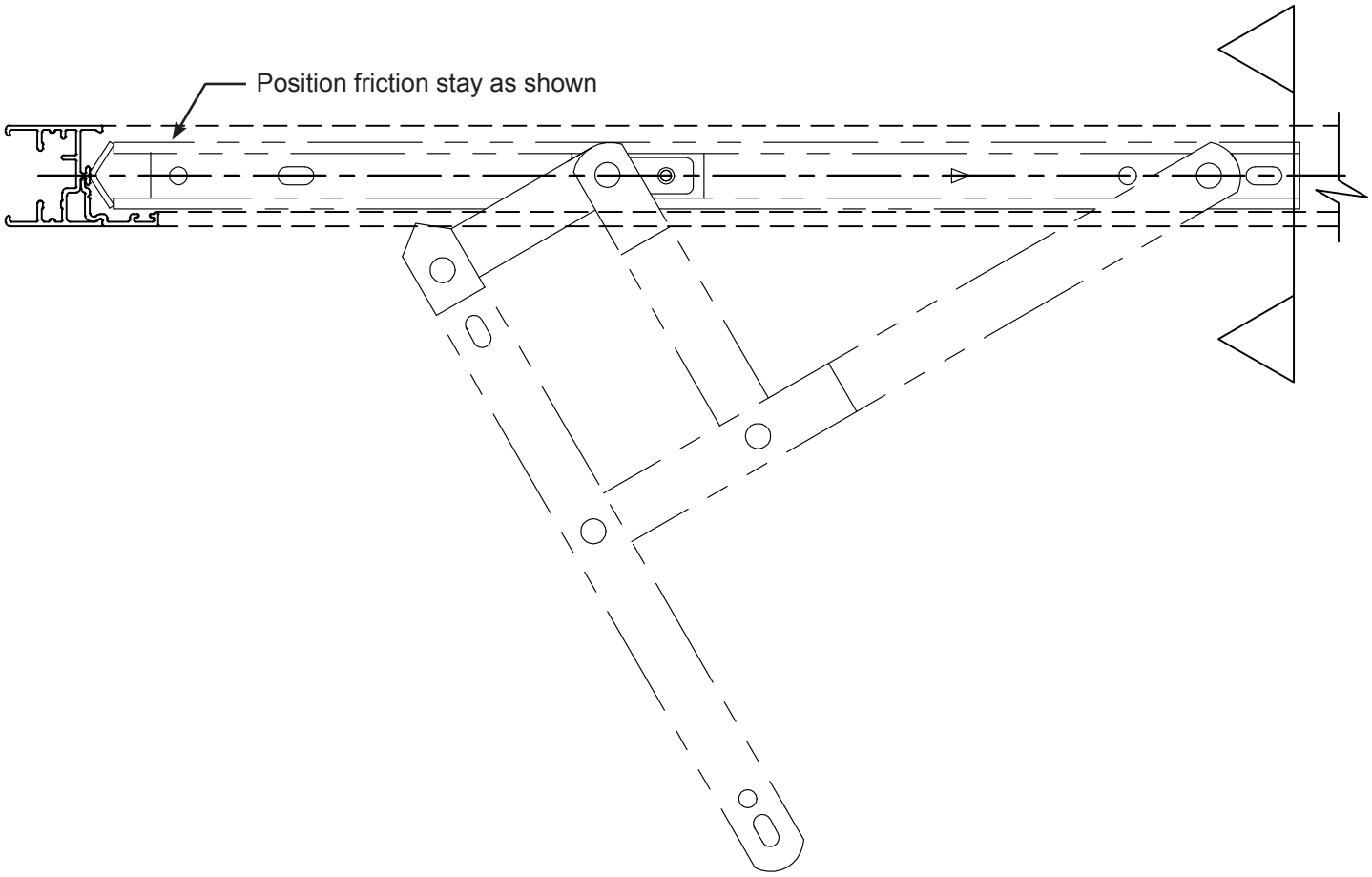
Friction Stay Code & Description	Stay Size	Maximum Vent Height	Maximum Vent Weight
STF-TH200S-304 (200x18x13 T/H 304 Sq Groove)	200 mm	300 mm	7 kg
STF-TH300R-304 (300x18x13 T/H 304 Rnd Groove)	300 mm	600 mm	11.8 kg
STF-TH300S-304 (300x18x13 T/H 304 Sq Groove)	300 mm	600 mm	18 kg
STF-TH300R-430 (300x18x13 T/H 430 Rnd Groove)	300 mm	600 mm	11.8 kg
STF-TH400S-430 (400x18x13 T/H 304 Sq Groove)	400 mm	600 mm	21 kg
STF-TH500S-304 (500x18x13 T/H 304 Sq Groove)	500 mm	700 mm	28 kg
STF-TH600S-304 (600x18x13 T/H 304 Sq Groove)	600 mm	900 mm	30 kg

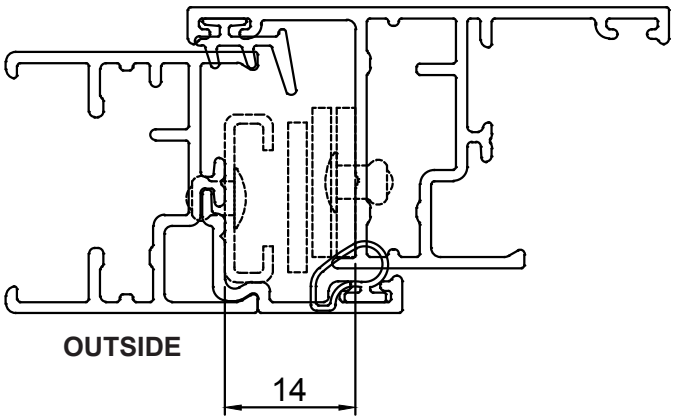
Defender Stays-Top Hung Friction Stays

(13 mm Stack Height)

Friction Stay Code & Description	Stay Size	Maximum Vent Height	Maximum Vent Weight
STF-TH300DE-304 (300 Defender Stay T/H 304)	300 mm	550 mm	20 kg
STF-TH400DE-304 (400 Defender Stay T/H 304)	400 mm	780 mm	21 kg
STF-TH500DE-304 (500 Defender Stay T/H 304)	500 mm	1100 mm	26 kg
STF-TH600DE-304 (600 Defender Stay T/H 304)	600 mm	1300 mm	40 kg

POSITIONING OF FRICTION STAYS - STANDARD SASH

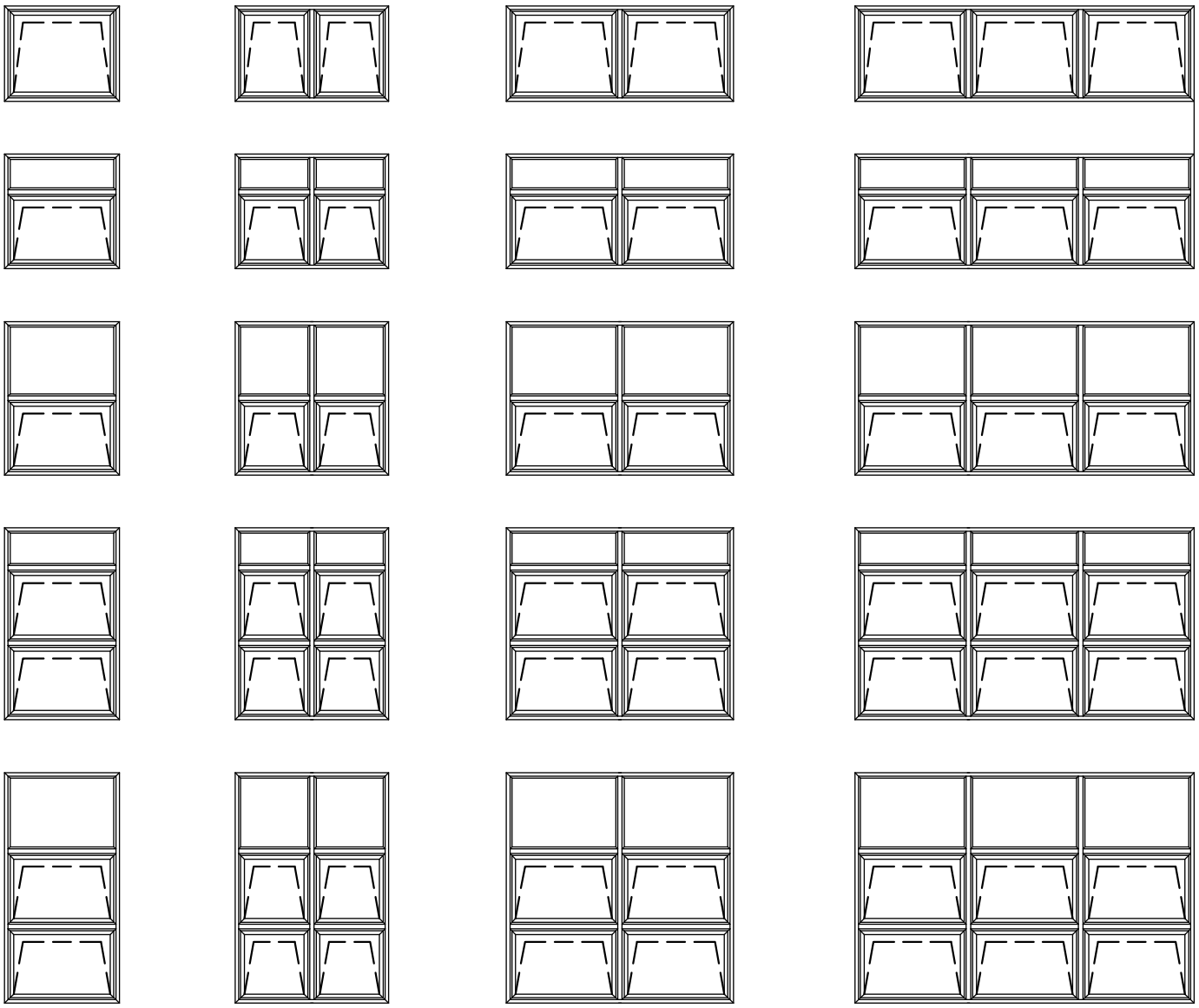




NOTE:
The adaptors are to be fitted first before the fitting of the friction stays to the frame.

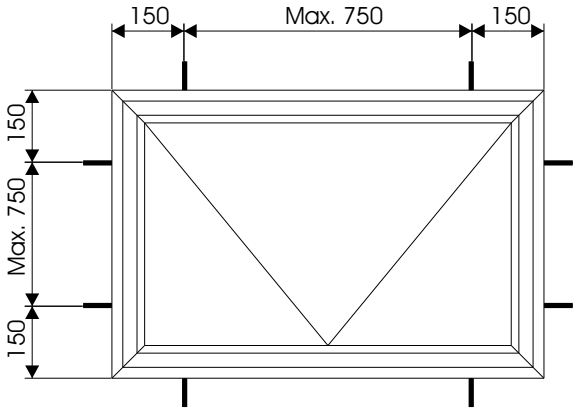
REFER TO NODDY CHARTS FOR STANDARD CONFIGURATIONS ON STARFRONT

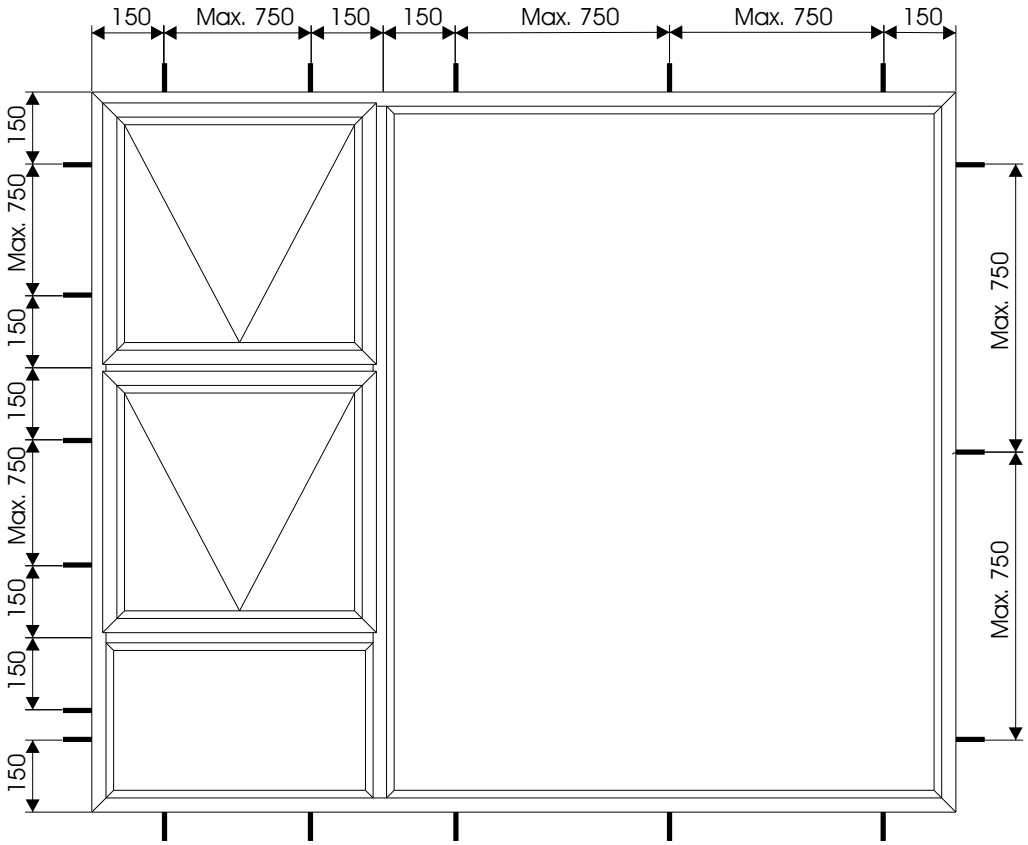
FOR BOTTOM HUNG - OPEN IN WINDOWS



NOTE:
The max. transome width allowable is 870 mm.
The heavy duty mullions are not designed to be suitable as transomes due to sash handle interferences.
Max. sash size is 850 mm wide x 700 mm high.

TYPICAL FIXING POSITIONS





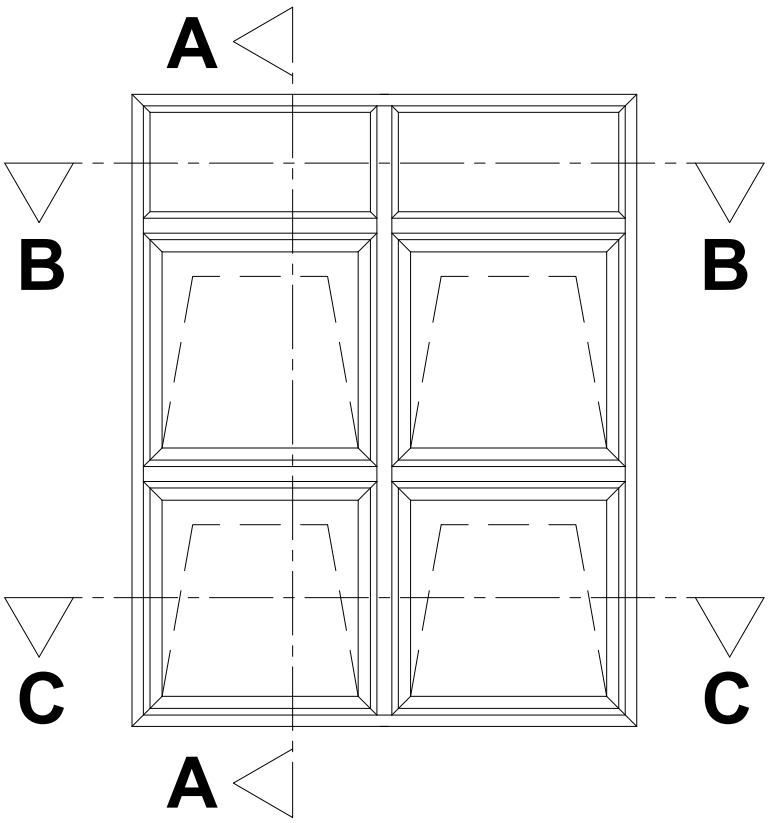
IMPORTANT: As there are many different methods of fixing the door to the structure, the illustration is a general fixation detail. The illustration defines the general method and hole fixings. Before installation or machining of the holes, please ensure that you have checked the required fixing method with the appropriated building engineer and that your chosen methods meets their specifications.

Failure to fix the door to correct building or engineer specifications will result in the door not meeting the required specifications.

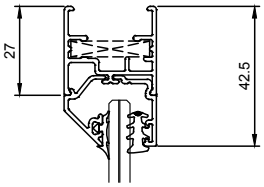
DISCLAIMER: Please note that fixation of the frame to the structure is an element which MUST be specified and certified by an appropriate engineer and is not the responsibility of Wispeco.

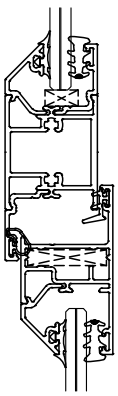
CROSS SECTIONAL DETAILS

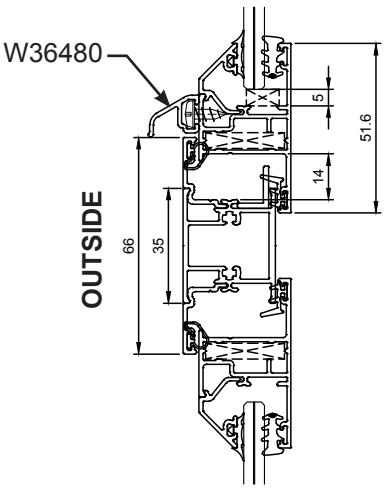
TYPICAL BOTTOM HUNG-OPEN IN

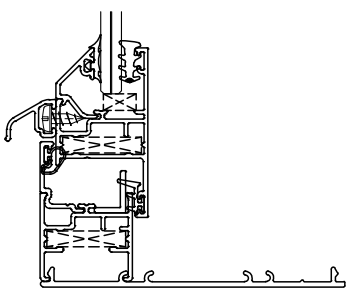


ELEVATION

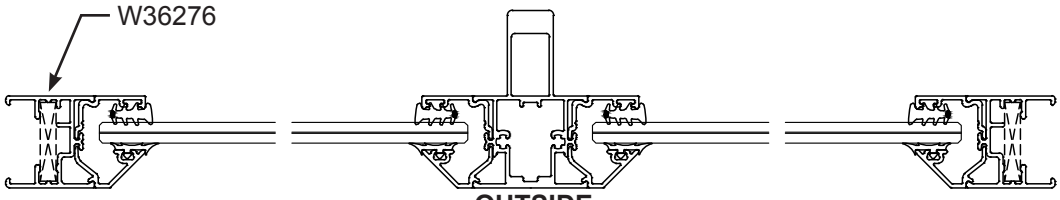




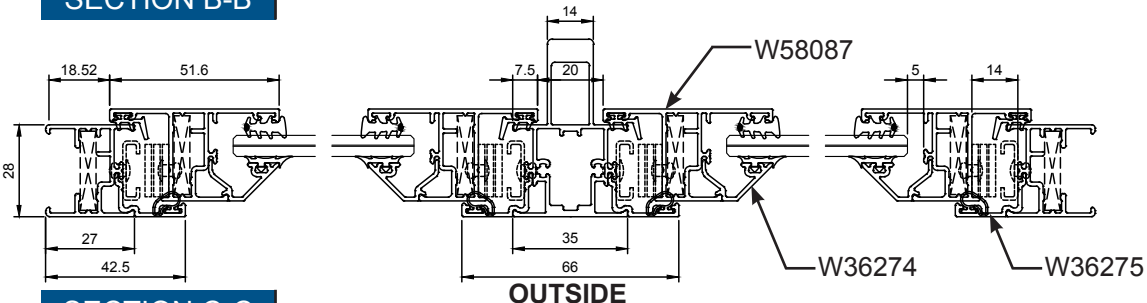




SECTION A-A



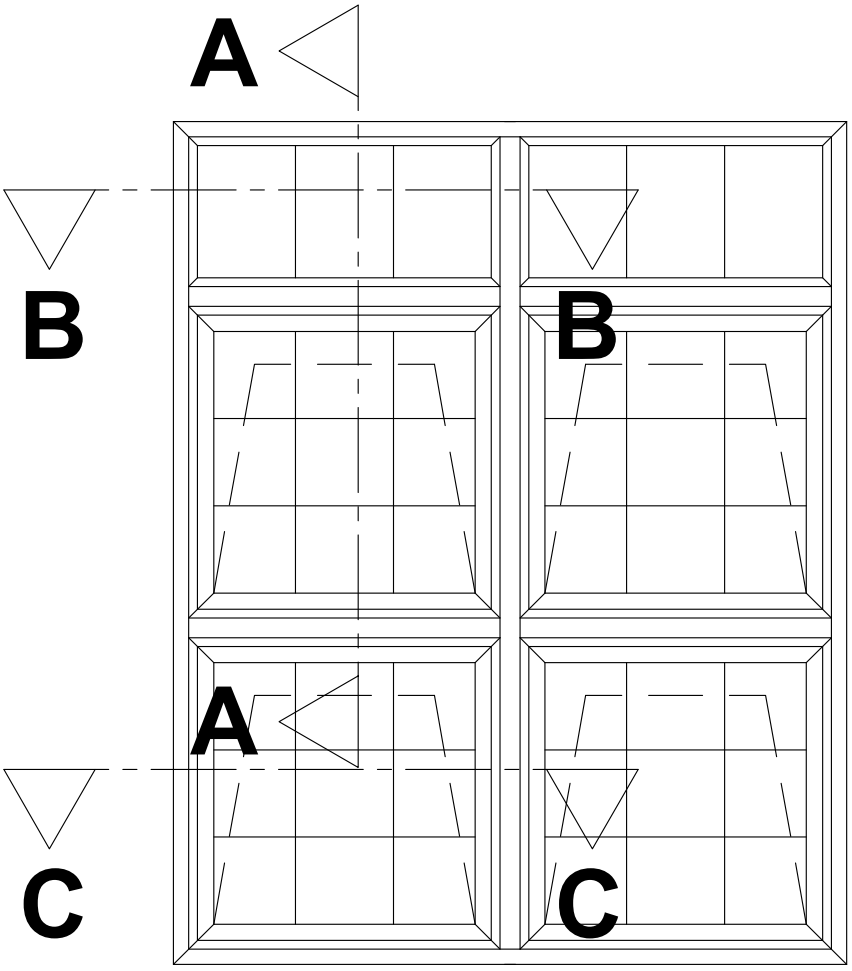
SECTION B-B



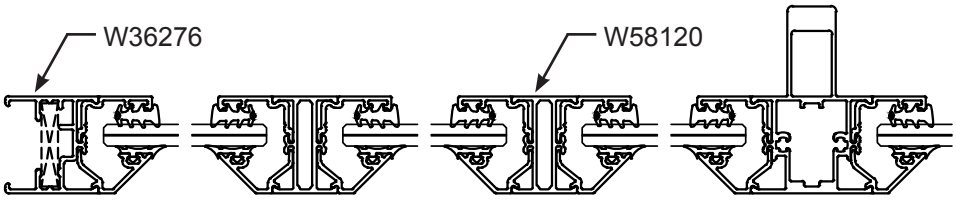
SECTION C-C

CROSS SECTIONAL DETAILS

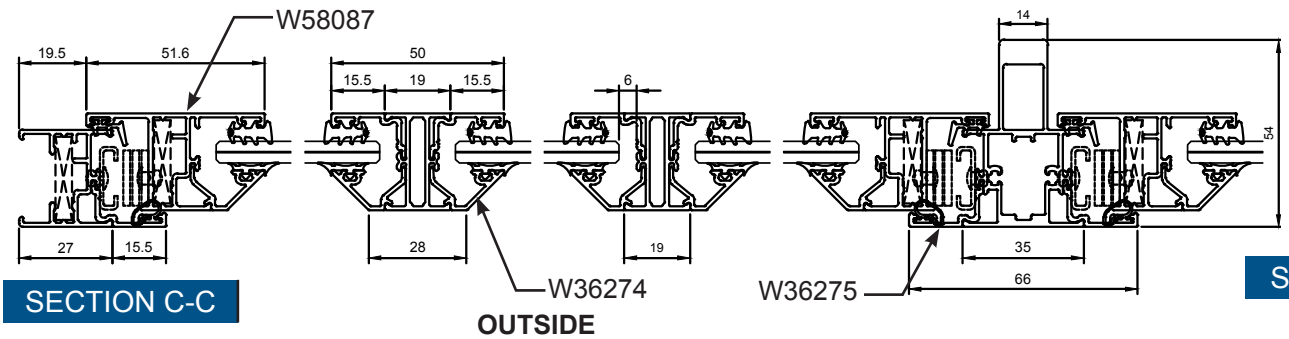
TYPICAL BOTTOM HUNG-OPEN-IN WITH COTTAGE PANE



ELEVATION



SECTION B-B



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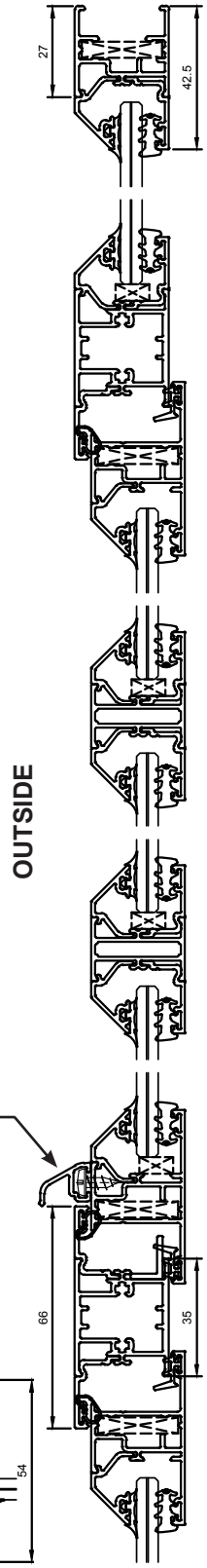


SECTION A-A

This manual must be read in conjunction with the Installation, Cleaning & Maintenance Document and the Performance Certificates for the relevant system. The manual must also be used in conjunction with the design and cutting list from the latest version of StarFront.

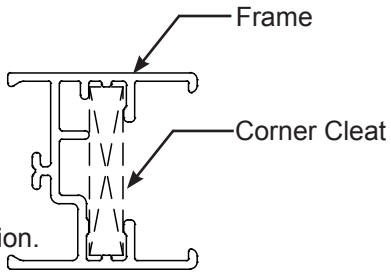
MACHINING DETAILS

OUTER FRAME

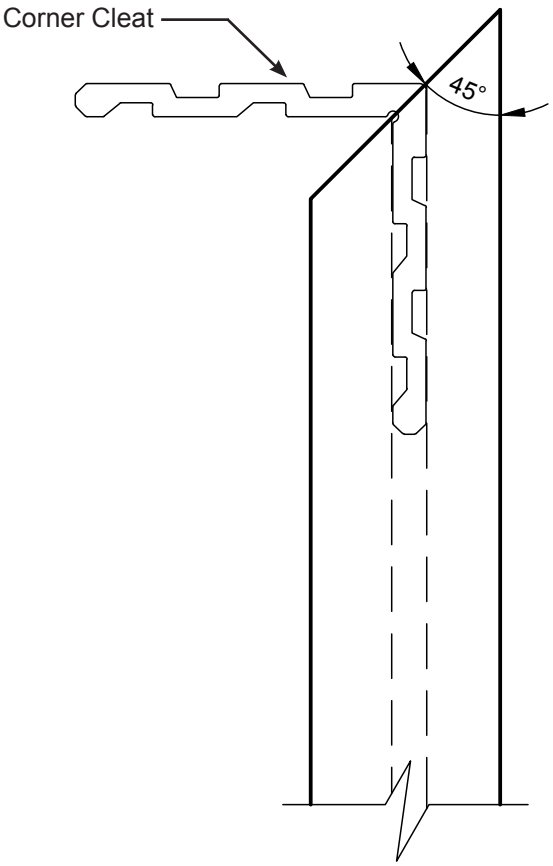
DIE No. 36276 Evolution Frame

NB: Where a sash is required, the bottom outer frame profile is to be machined for the relevant drainage holes before assembly/ crimping of all the outer frame profiles. See details further on in the manual for the position of the drainage holes.

Before crimping, double check that the profiles are all facing in the same direction.



OUTSIDE



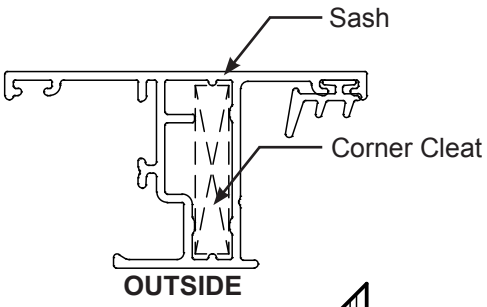
Note:
All mechanical joints to be sealed with Crealco silicone sealer.

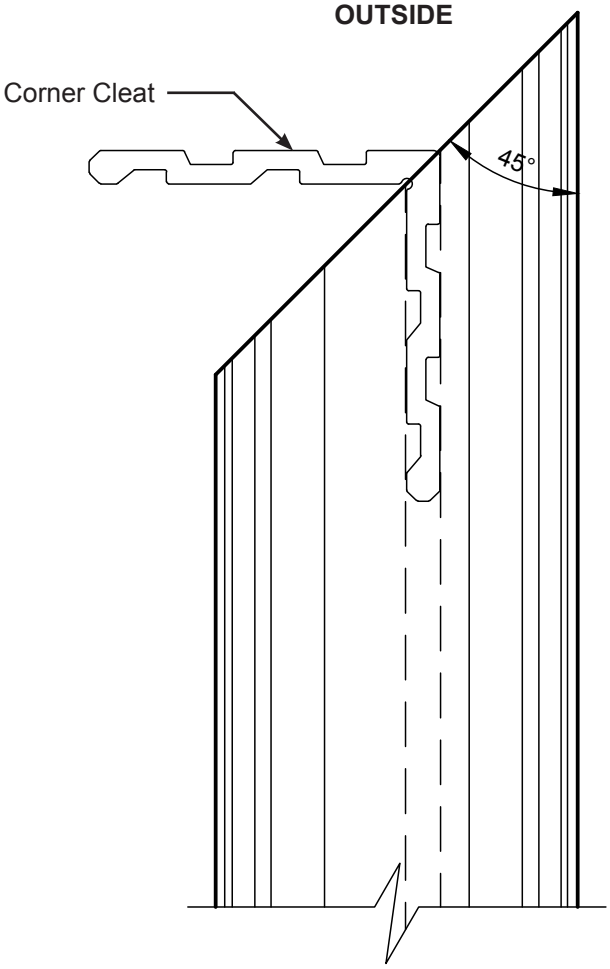
MACHINING DETAILS

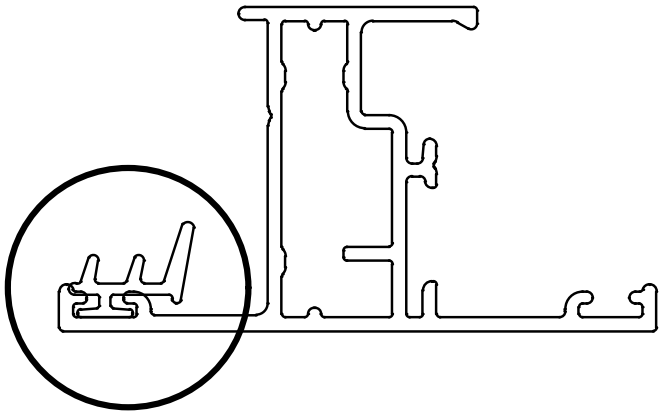
SASH

DIE No. W58087 Evolution Sash

NB: Before crimping the sash together, remember to insert the butterfly Euro gasket as shown.





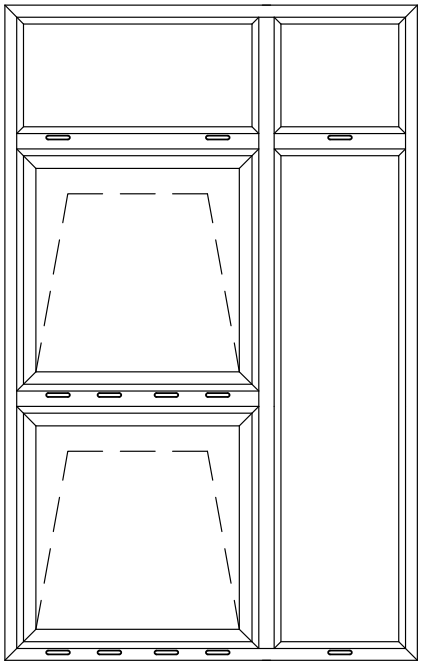


Note the position of the Euro gasket in the sash profile, gasket to be mitred on the corners.

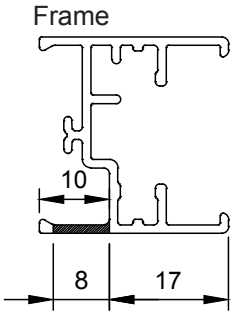
Note:
All mechanical joints to be sealed with Crealco silicone sealer.

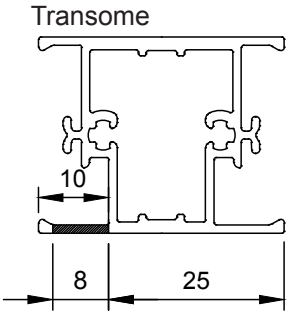
MACHINING DETAILS

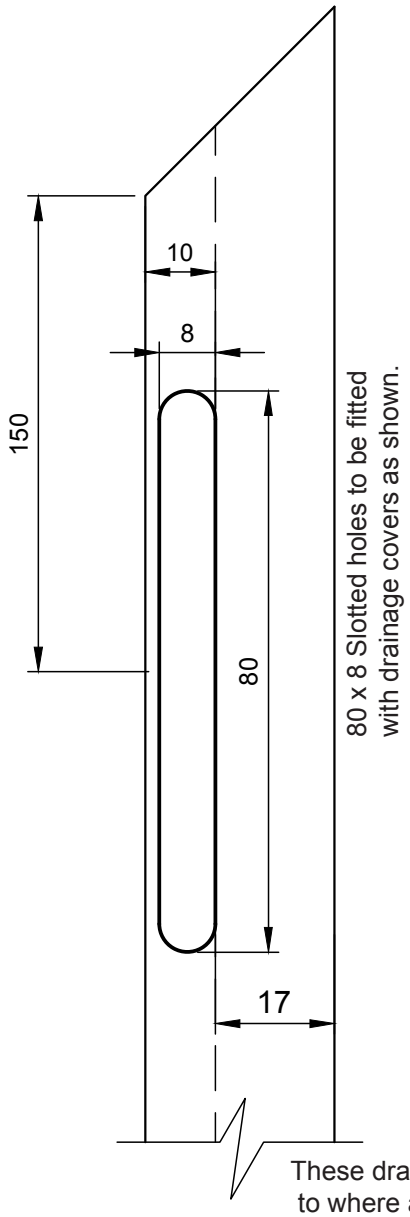
FRAME/TRANSOME DRAINAGE DETAIL

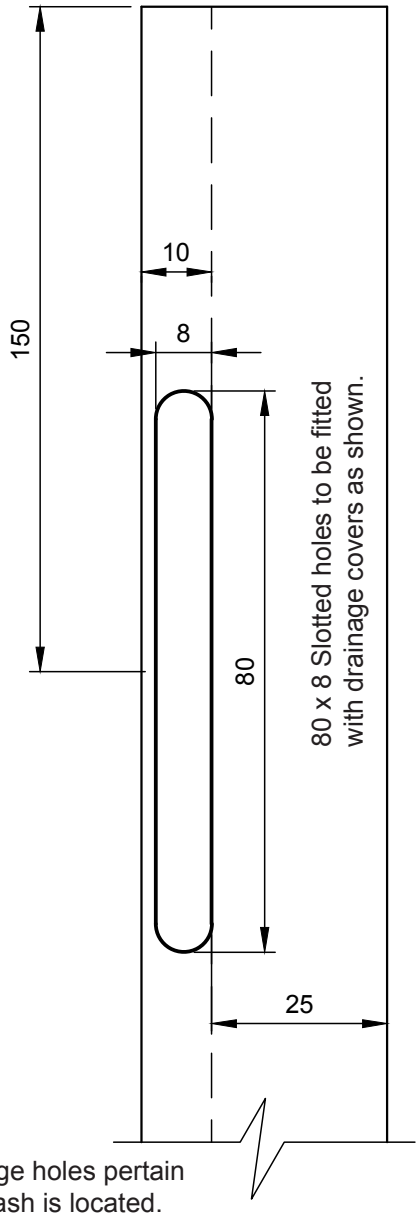


Slotted holes to be machined as shown. For windows wider than 480 mm, 3 slotted holes required, & for windows wider than 600 mm, 4 slotted holes are required.









These drainage holes pertain to where a sash is located.

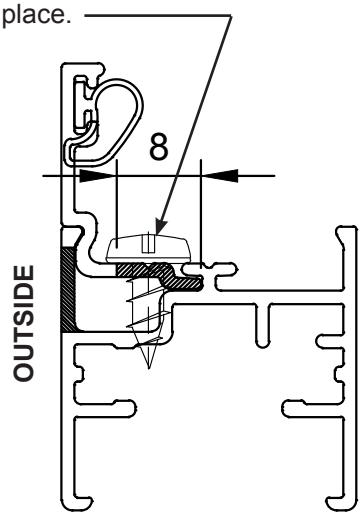
MACHINING DETAILS

SASH ADAPTOR DETAIL

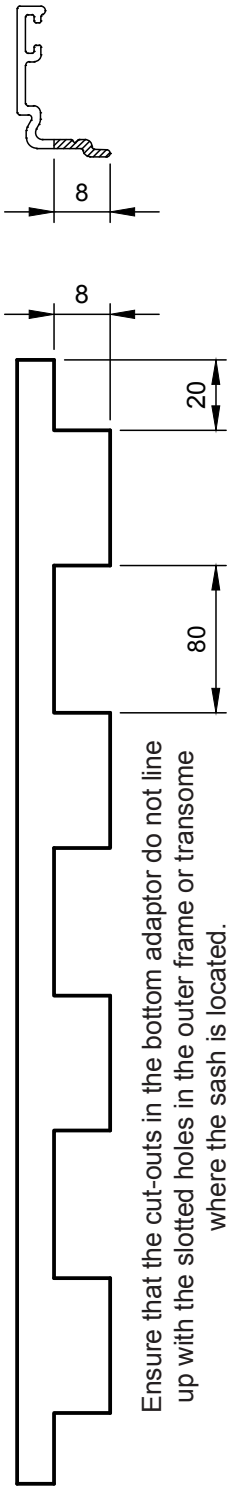
DIE No. W36275 Evolution Adaptor

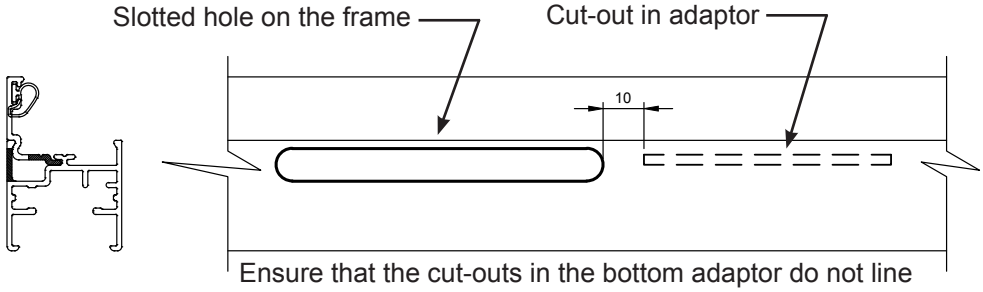
The adaptors are never mitred, only square cut. The horizontal adaptors are fitted across the full daylight opening, & the vertical adaptors are cut 31 mm shorter than the daylight opening.

Machining of the bottom adaptors are only to be done where there is a sash. Remember to fit the adaptors & the gaskets as shown before fitting the friction stays. Use No 8 x 13 Panhead screws every 650 mm to keep the bottom adaptor firmly in place. The side & top sash adaptors can be siliconed in place.

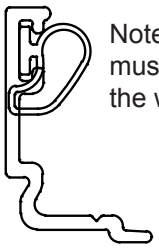


Bottom Adaptor





Ensure that the cut-outs in the bottom adaptor do not line up with the slotted holes in the outer frame or transome where the sash is located.



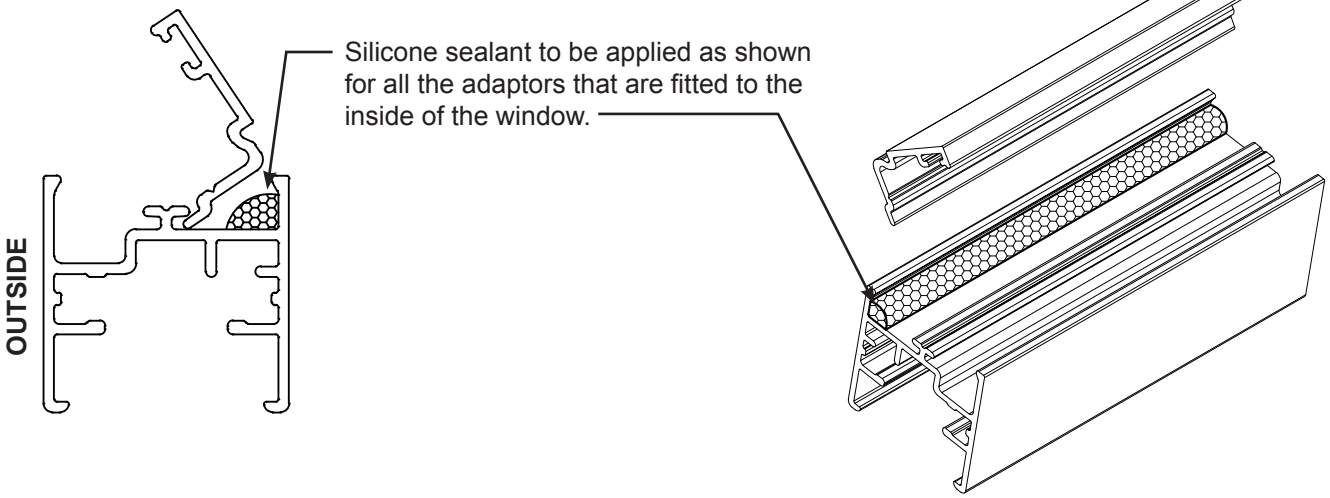
Note the position of the elephant gasket, which must be fitted before the adaptors are inserted into the window frame.

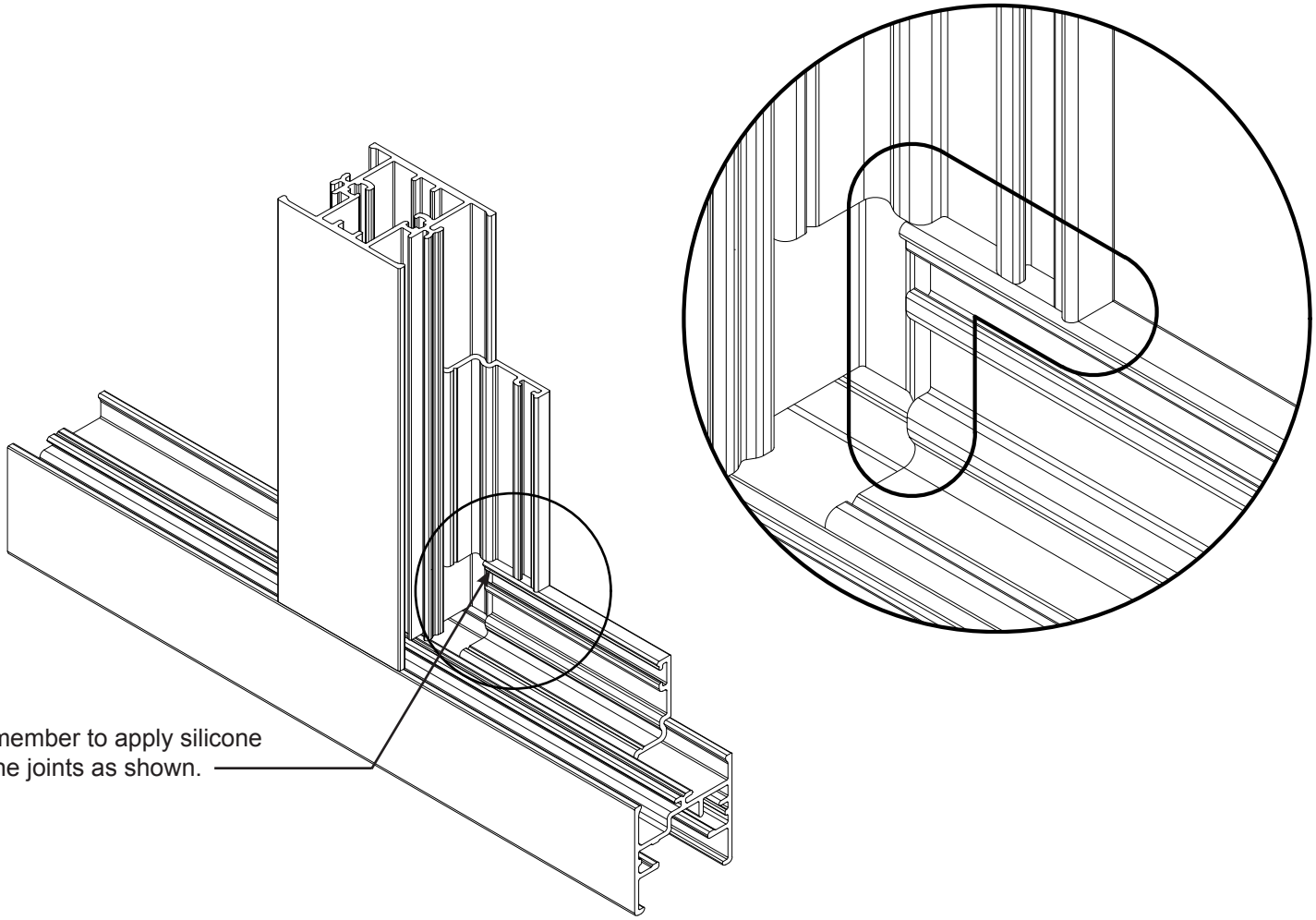
MACHINING DETAILS

FIXED ADAPTOR DETAIL

Note:

All adaptors that are fitted to the inside of the window, to be sealed with Crealco silicone sealer.



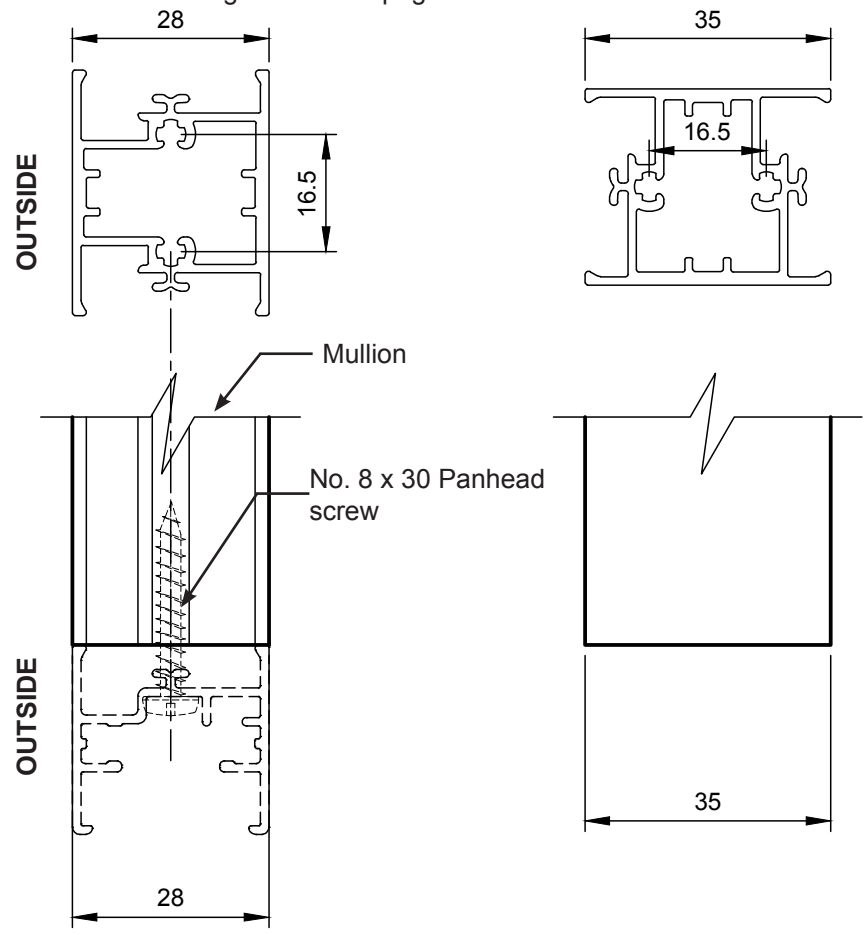


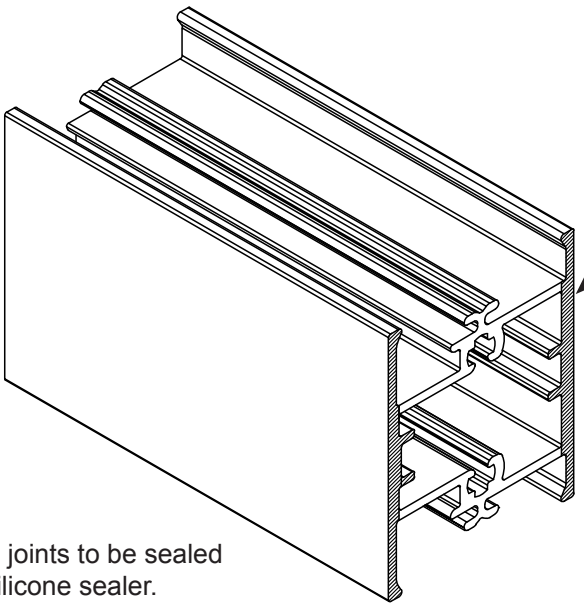
MACHINING DETAILS

MULLION/TRANSOME TO OUTER FRAME - OPTION 1

DIE No. W58086 Evolution Mullion 28 mm

NB: Where there are sashs located in relation to the transome, the transome needs to be machined for the relevant drainage slots as well. See drainage details on page 13.





To allow water to flow from the transome down the mullion, silicone is be applied only onto the surface areas as shown.

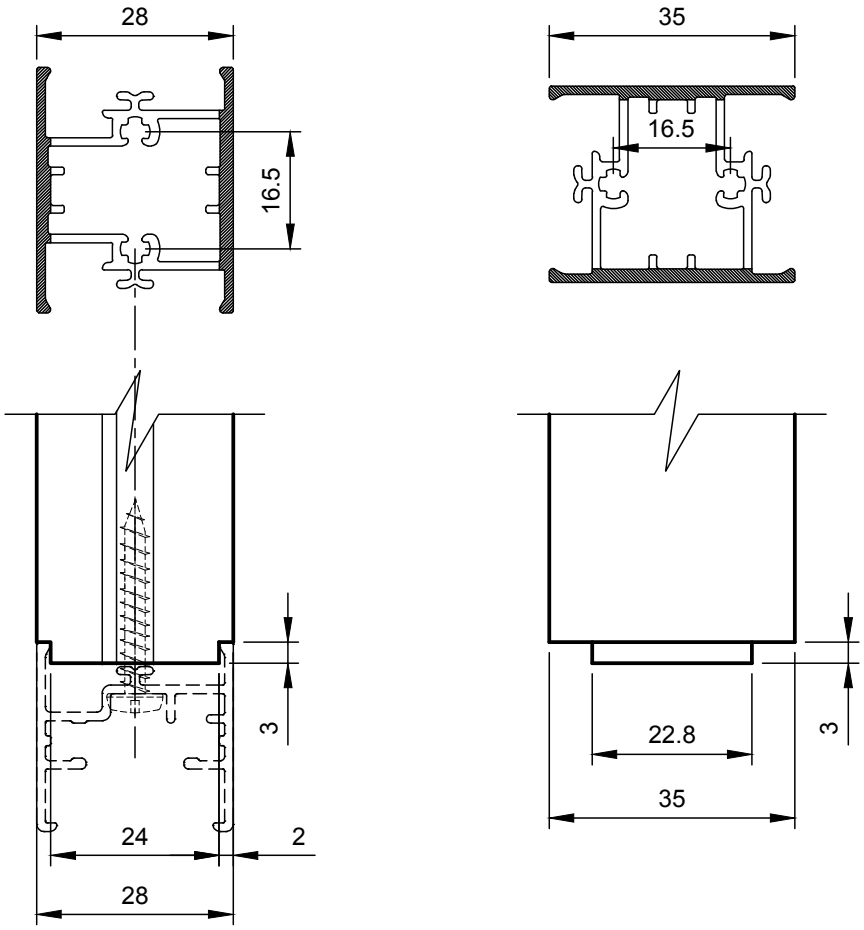
Note:
All mechanical joints to be sealed with Crealco silicone sealer.

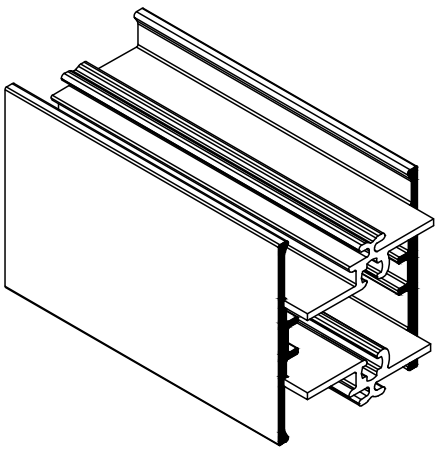
MACHINING DETAILS

MULLION/TRANSOME TO OUTER FRAME - OPTION 2

DIE No. W58086 Evolution Mullion 28 mm

NB: Where there are sashs located in relation to the transome, the transome needs to be machined for the relevant drainage slots as well. See drainage details on page 13.



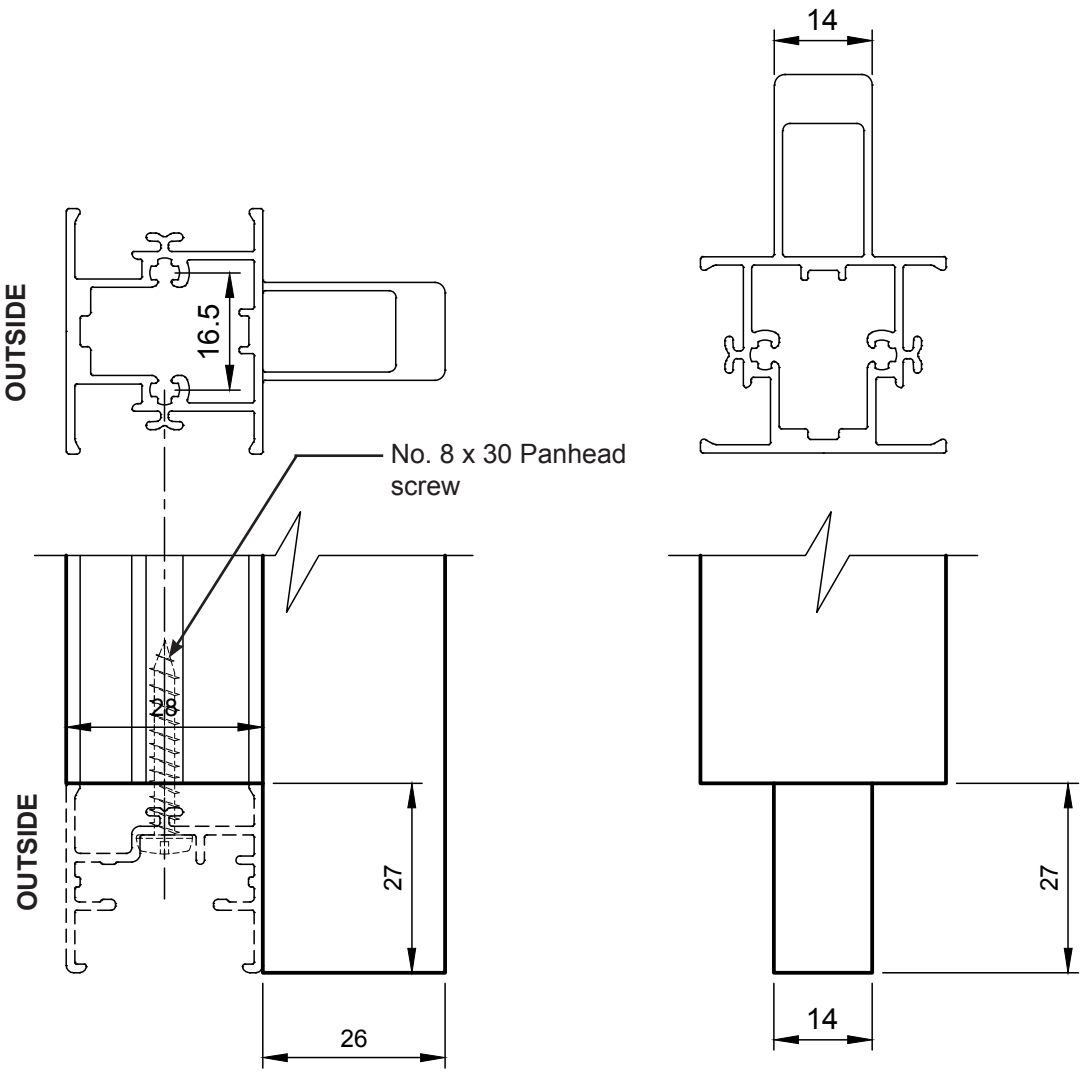


This manual must be read in conjunction with the Installation, Cleaning & Maintenance Document and the Performance Certificates for the relevant system. The manual must also be used in conjunction with the design and cutting list from the latest version of StarFront.

MACHINING DETAILS

54 MM MULLION TO FRAME - OPTION 1

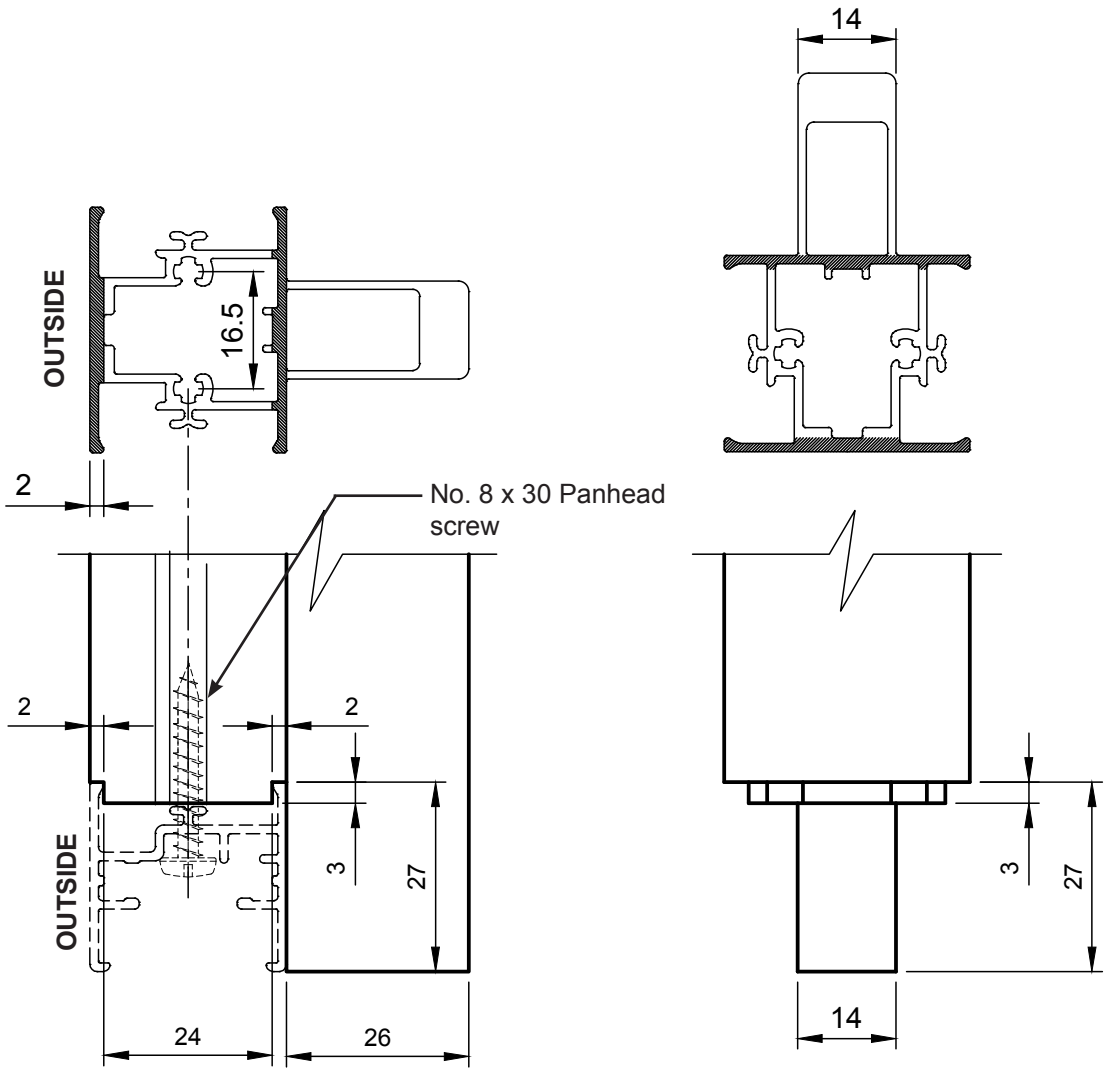
DIE No. W58362 Evolution Mullion 54 mm



MACHINING DETAILS

54 MM MULLION TO FRAME - OPTION 2

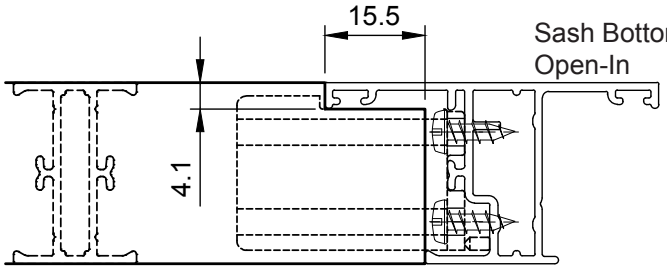
DIE No. W58362 Evolution Mullion 54 mm



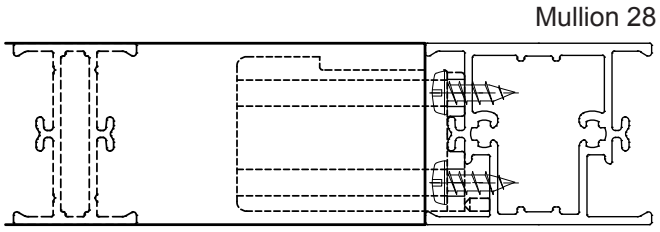
ASSEMBLY DETAILS

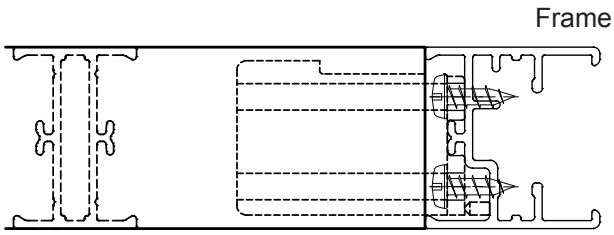
COTTAGE PANE MULLION/TRANSOME

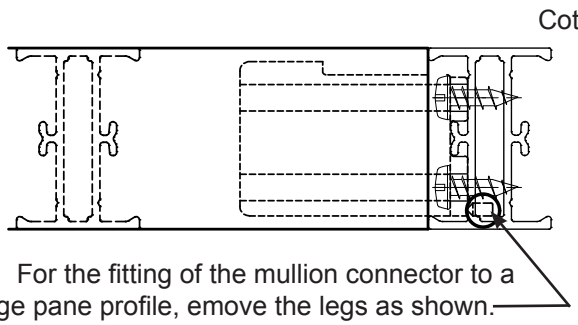
DIE No. W58120 Evolution Mullion Cottage Pane



NB !! For Sash Bottom Hung Open-In profiles, the cottage pane mullion requires machining as shown.



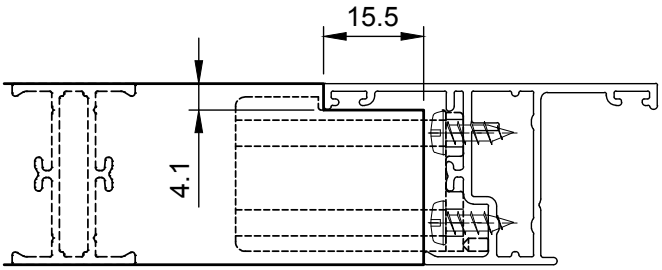


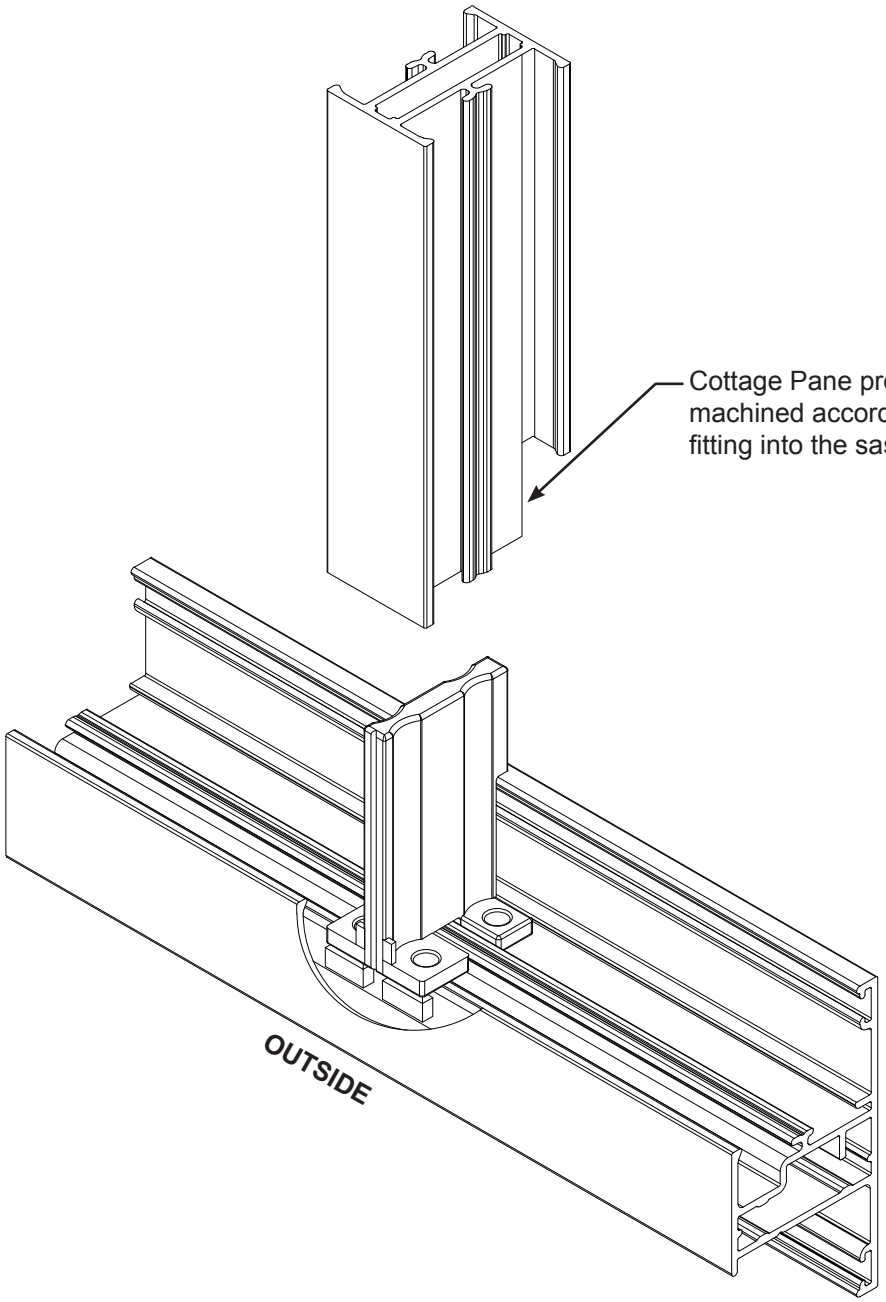


NB !! For the fitting of the mullion connector to a cottage pane profile, emove the legs as shown.

ASSEMBLY DETAILS

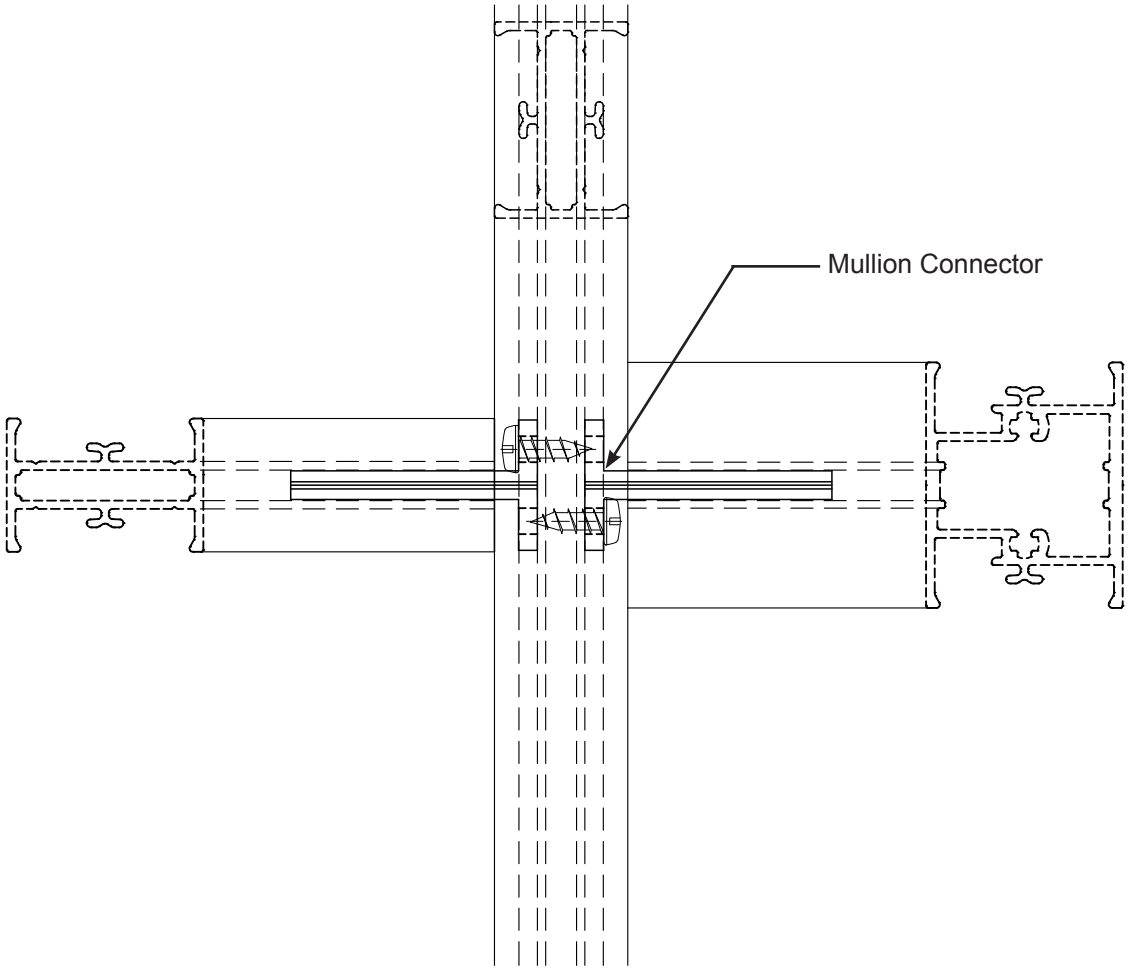
COTTAGE PANE MULLION/TRANSOME

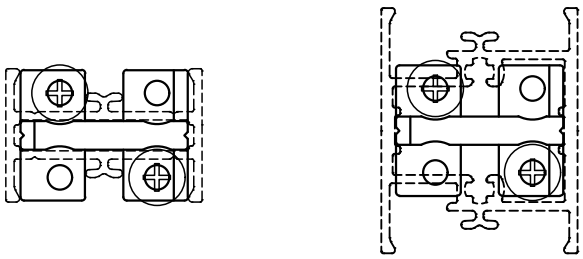




ASSEMBLY DETAILS

COTTAGE PANE MULLION/TRANSOME

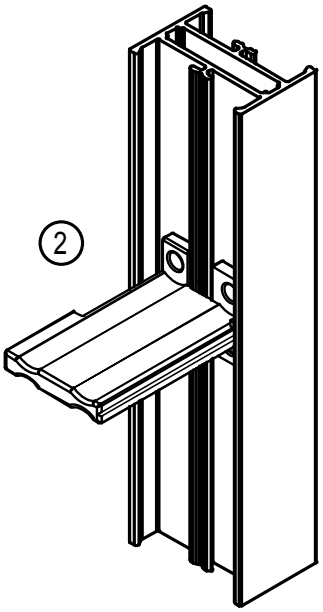


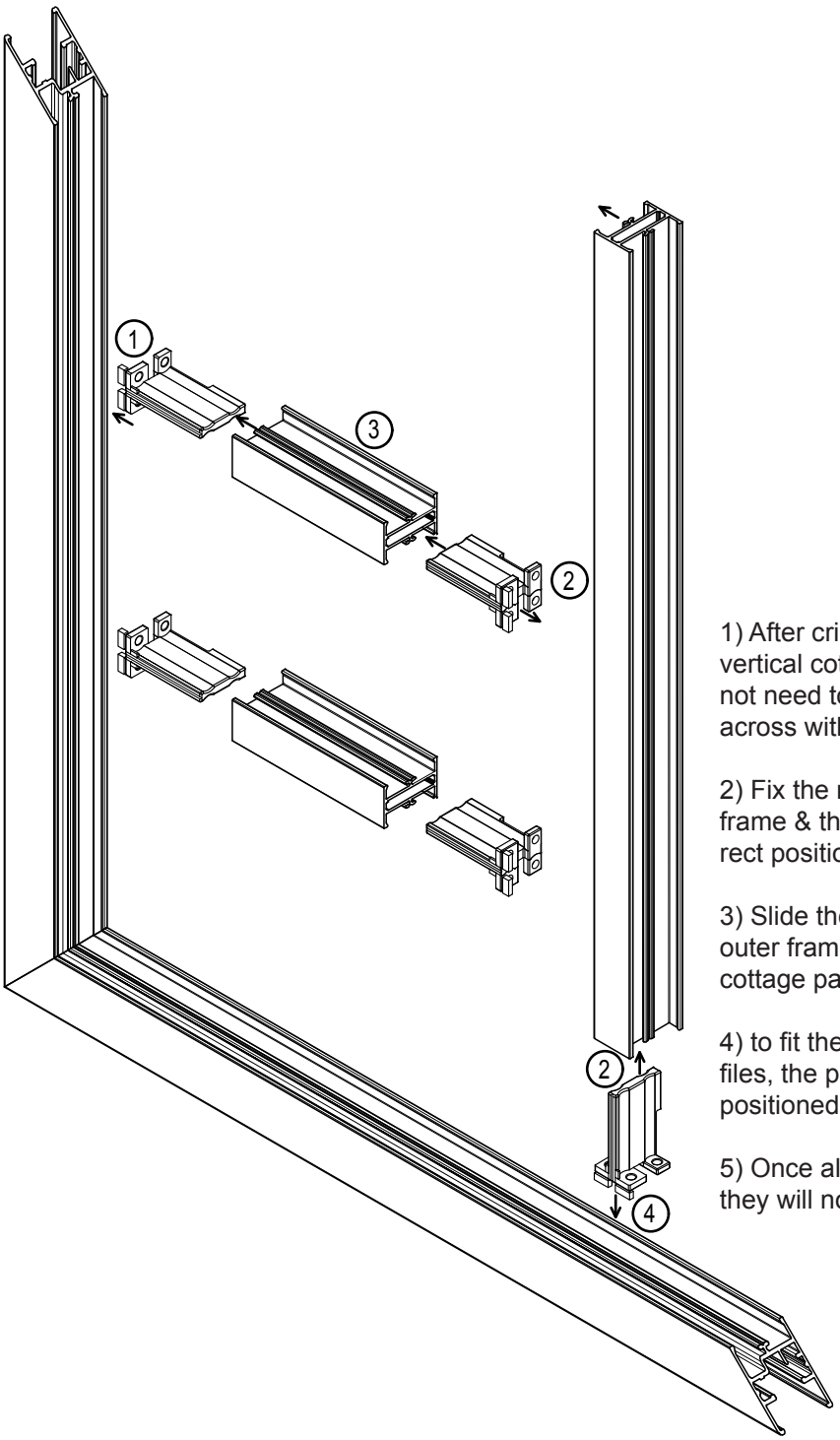


Position of Mullion connector with a cottage pane & mullion profile.

ASSEMBLY DETAILS

PROCEDURE FOR FITTING OF COTTAGE PANE PROFILES





1) After crimping all 4 corners together with the vertical cottage pane profiles inserted, the profiles do not need to be screw fixed, but the profiles can slide across within the frame.

2) Fix the relevant cross connectors to the outer frame & the vertical cottage pane profiles in the correct positions.

3) Slide the horizontal cottage pane profiles over the outer frame cross connectors, then slide the vertical cottage pane profiles into position.

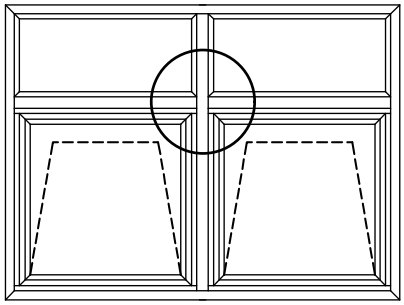
4) to fit the last row of horizontal cottage pane profiles, the profiles must be held at an angle & then positioned into place.

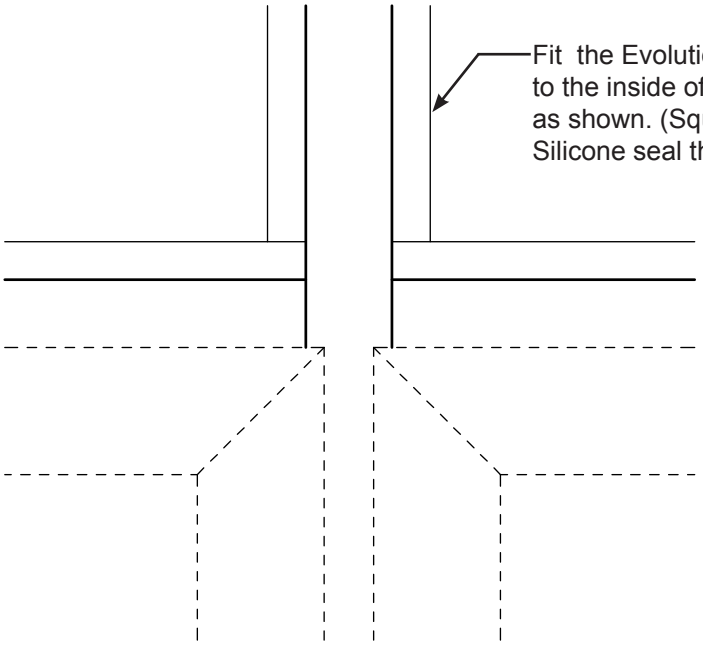
5) Once all the cottage pane profiles are in position, they will not be able to slide or move.

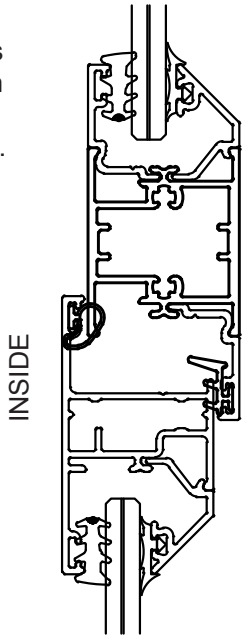
ASSEMBLY DETAILS

FITTING OF ADAPTORS

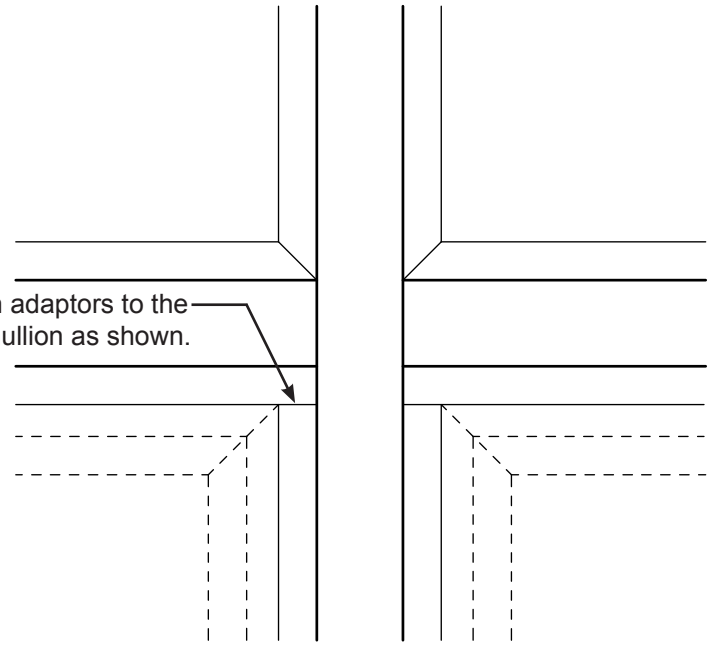
ELEVATION AS VIEWED FROM THE OUTSIDE

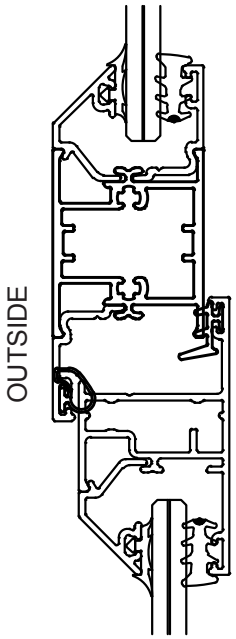






VIEW FROM INSIDE



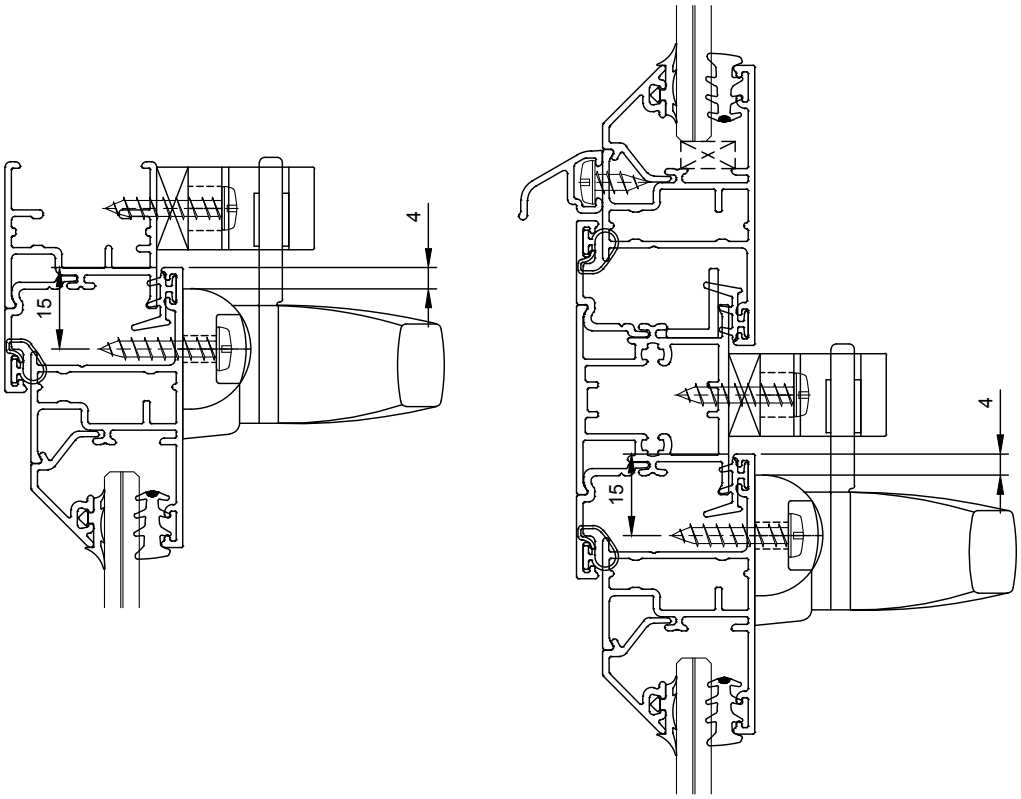


VIEW FROM OUTSIDE

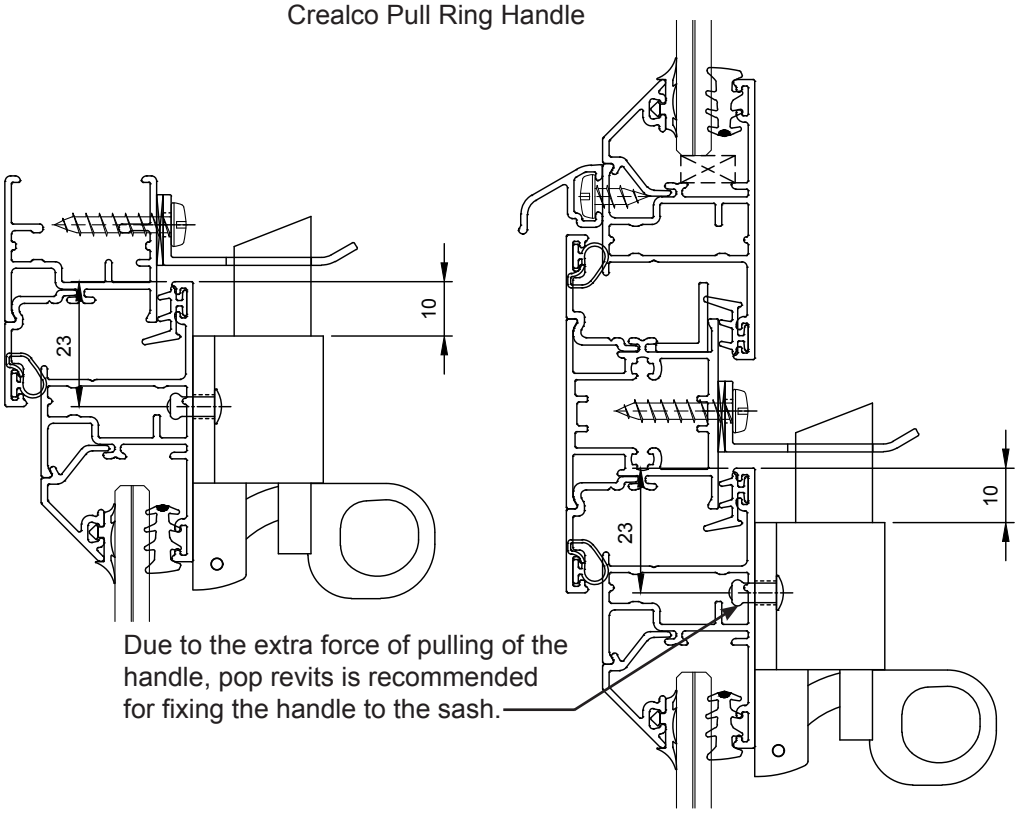
ASSEMBLY DETAILS

FITTING OF HANDLES

Crealco Handle



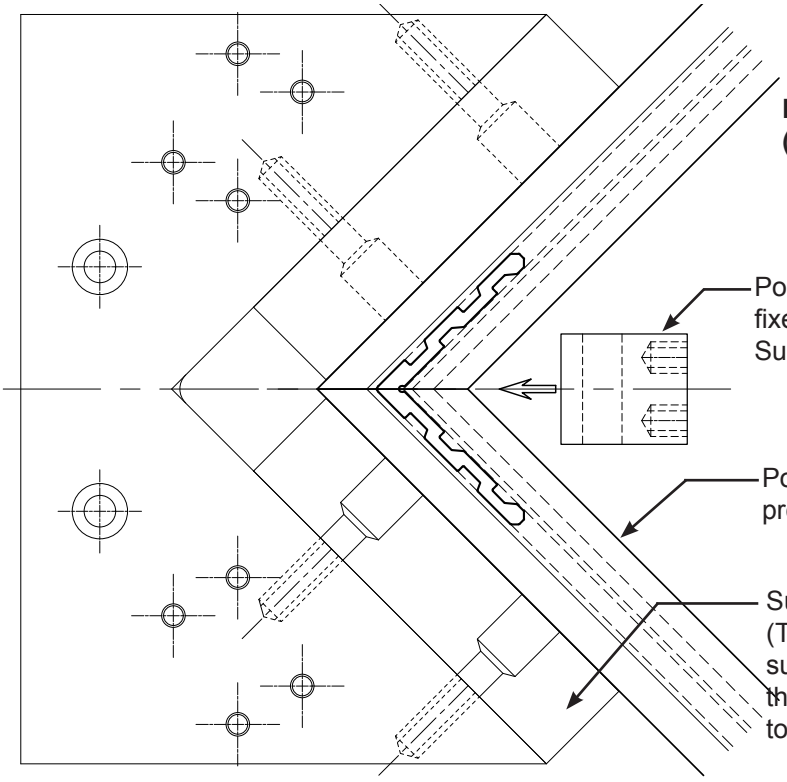
Crealco Pull Ring Handle



Due to the extra force of pulling of the handle, pop revits is recommended for fixing the handle to the sash.

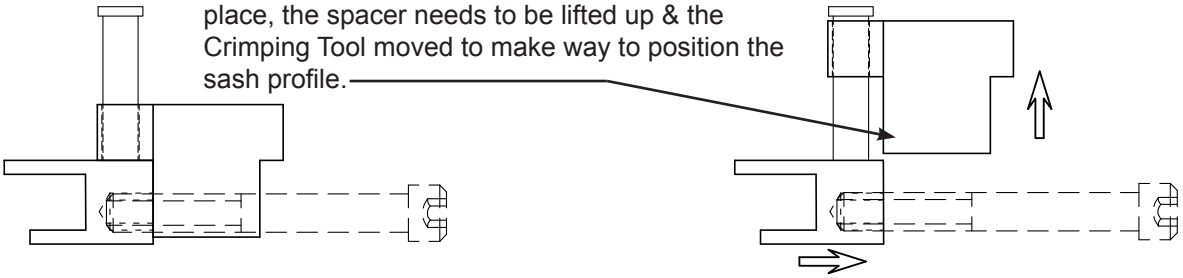
ASSEMBLY DETAILS

FITTING OF CRIMPER SUPPORT BLOCKS

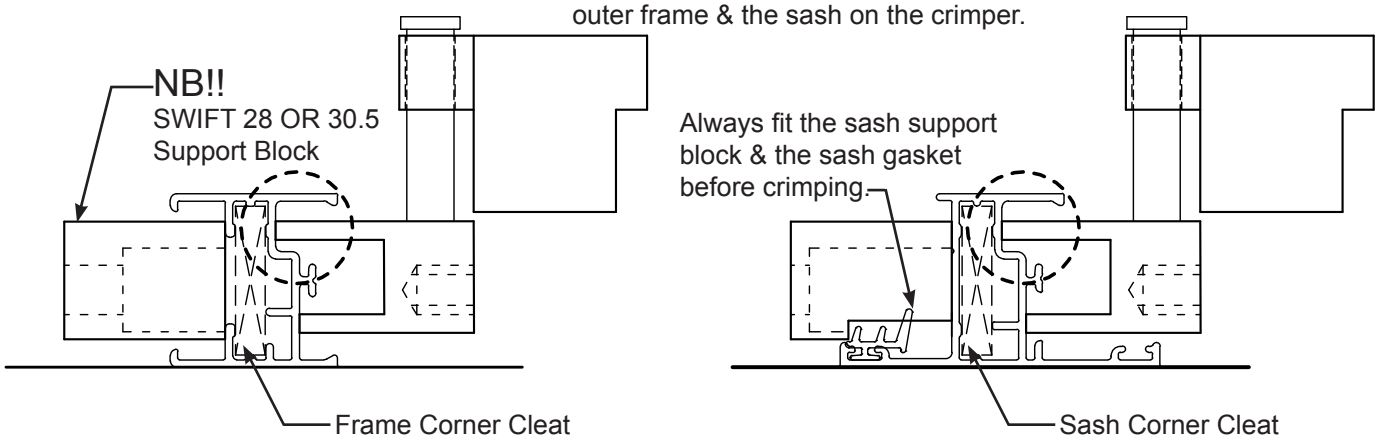


NB !! The Crimper Tooling comes as 1 set.
(Evolution Tooling & Support Block Code: TLP-EVO)

Note the Crimping Tool has a spacer which moves up & down. When placing the sash profiles into place, the spacer needs to be lifted up & the Crimping Tool moved to make way to position the sash profile.

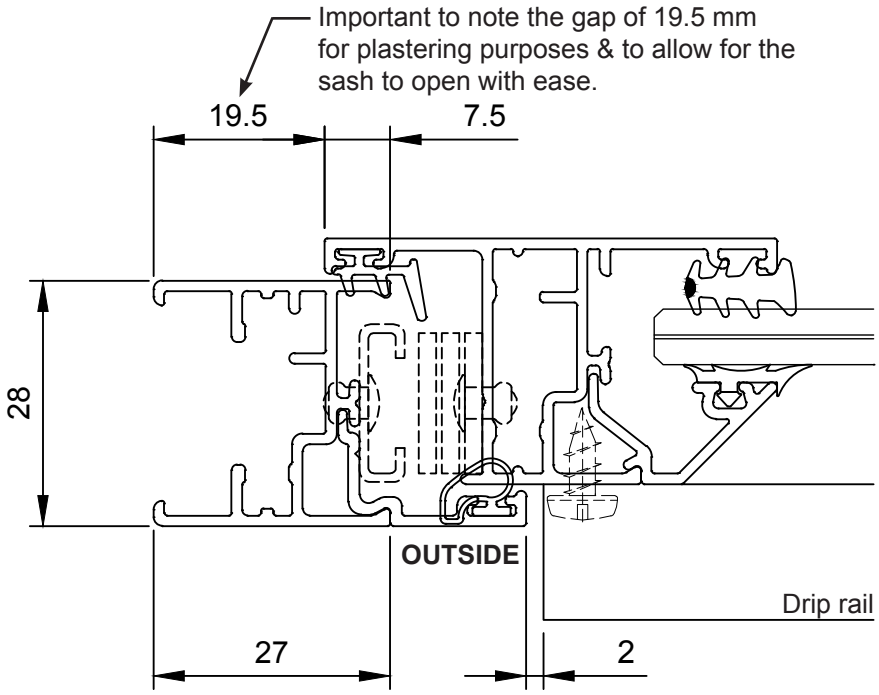


Important to note the position of the outer frame & the sash on the crimper.



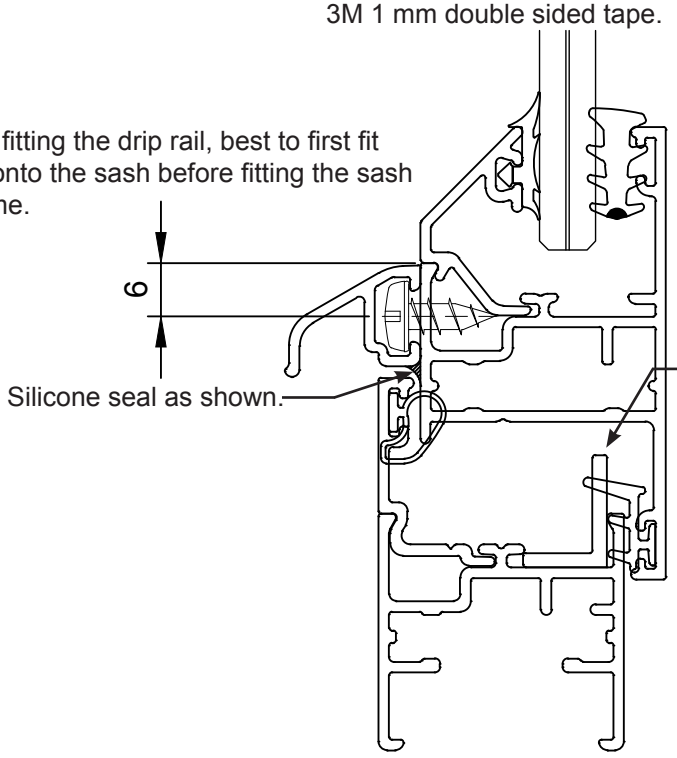
ASSEMBLY DETAILS

PLASTERING GAP ON FRAME



The drip rail can also be fitted with
3M 1 mm double sided tape.

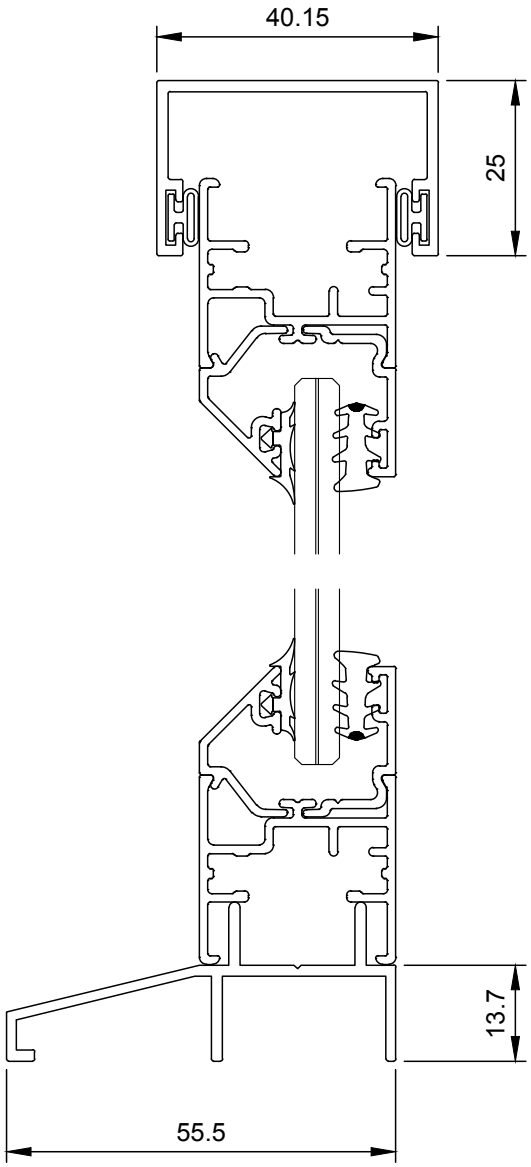
For ease of fitting the drip rail, best to first fit
the dril rail onto the sash before fitting the sash
into the frame.



To prevent water spilling over
to the inside, a 12.7 x 9.5 angle
to be fitted (silicone sealed)
as shown on the bottom profile
where there is a sash. The angle
is cut to fit between the mullions.

ASSEMBLY DETAILS

COMPENSATING CHANNEL & SILL RAIL



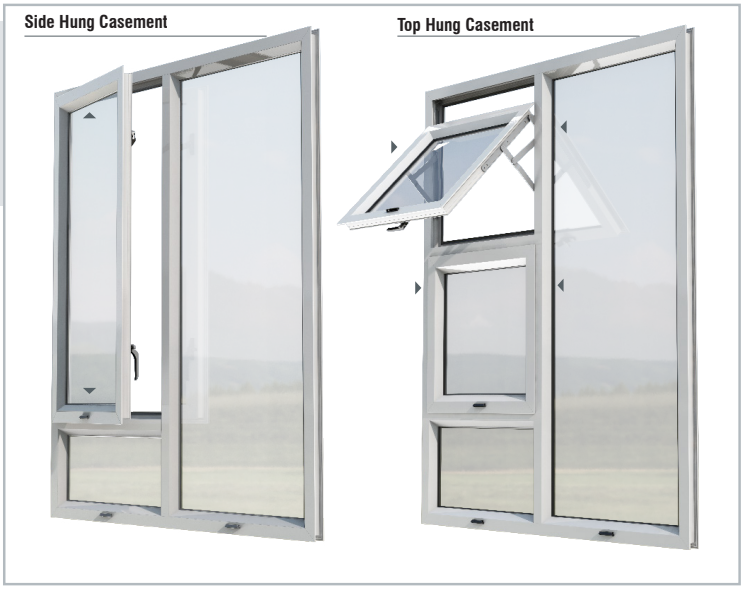
Compensating Channel
W32204
Non-Stock Profile

Sill Rail
W32205
Non-Stock Profile

MAINTENANCE

FRICTION STAY MAINTENANCE

With a minimal amount of care and maintenance your CREALCO CASEMENT windows will stay looking good and performing superbly for many years to come - a valuable, long lasting asset giving continued satisfaction and pride.



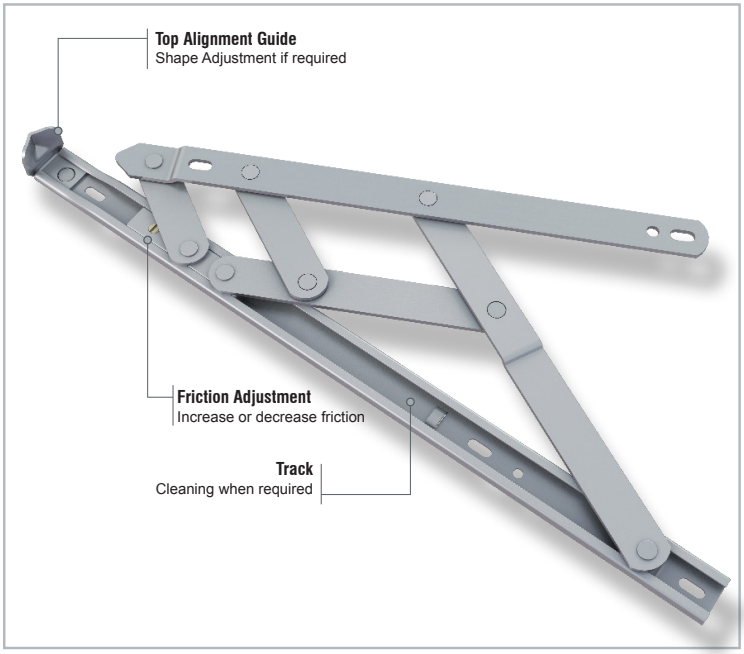
Basics of a Friction Stay

A friction stay is a type of hinge that controls the opening of the window so that it will stay open at the width you decide to open it to, not closing under its own weight or being too difficult to open and close.

Friction Stay Maintenance

As the name implies, a friction stay needs a level of friction to operate correctly. Too much friction and the friction stay arms can be bent in operation and the window will be stiff and difficult to open. Too little friction and the window will not stay at its required level.

Key to the correct sealing of the casement sash is the top alignment guide which maintains the friction stay in the closed and sealed position. If the shape of the guide is altered or flared it can result in poor sealing of the sash as well as incorrect alignment of the friction stay.



Track Maintenance

Ensure that the track is free from dirt and debris which can alter the friction of the hinge. It is best not to add lubricants as this can alter the friction as well as collect more debris which can cause wear within the track.

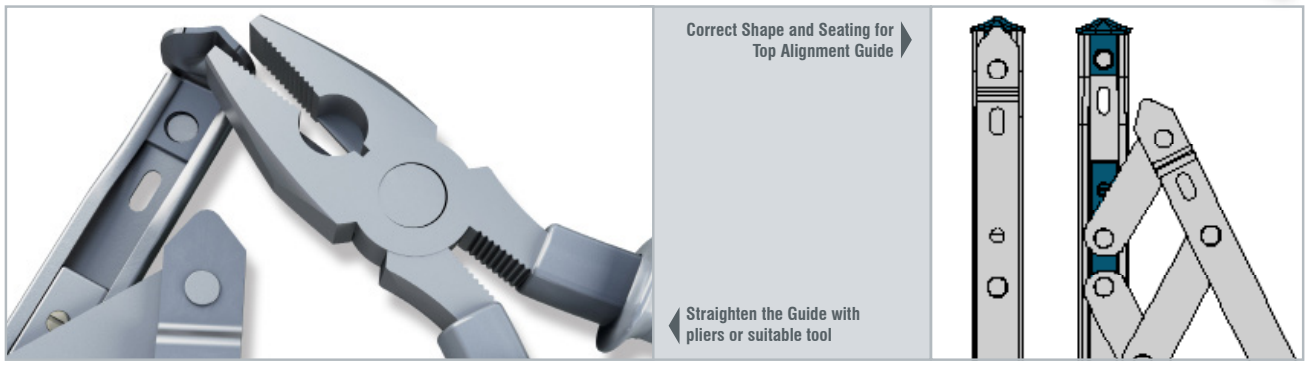
Friction Adjustment

The hinge is factory set and may after continued use become loose. Should this occur using a small flat bladed screwdriver turn the screw on the friction hinge clockwise to increase the amount of friction.

The same adjustment should be made to both the hinges on the window. Also should the window be stiff in operation turn the screw anti-clockwise until the desired result is achieved.

Top Alignment Guide

The Top alignment guide can flare or distort due to a number of issues. For correct operation it is important to bend the alignment guide back into position.



This document must be read in conjunction with the Crealco Cleaning & Maintenance Manual.

GLAZING PROCEDURES

GASKET INSTALLATION

Note:

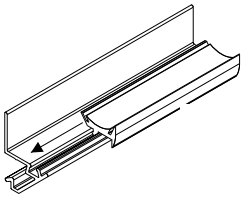
Insert the pull-in vinyl gasket into the glazing bead by sliding or pressing it into the groove (1). Before cutting the gasket, ensure that it has not been stretched & cut 6 mm longer so that the corners are in compression at all times.

Position the bottom glazing bead in the glazing bead rebate of the relevant profile (2).

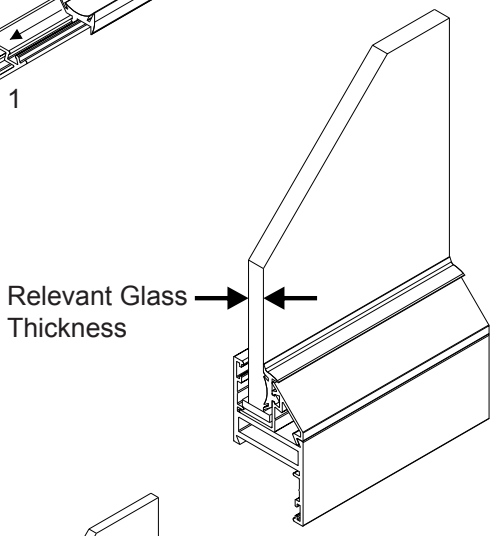
Place the glass onto the crealco glass setting blocks (3).

Insert the top then the side glazing beads ensuring that they are correctly positioned into place.

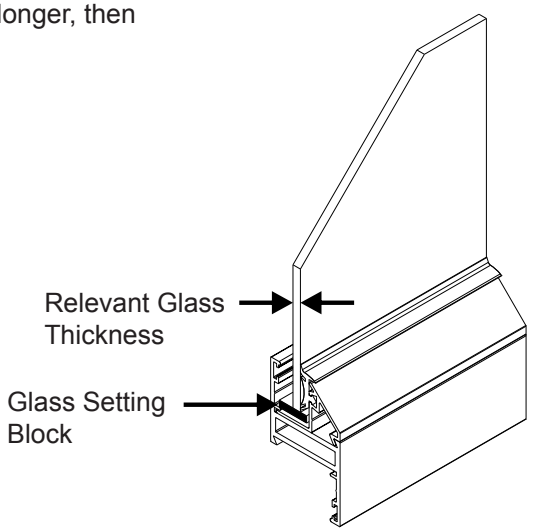
Starting from the top centre, insert the wedge gasket (4) without stretching it. Stop 150mm from the corner & partly cut the wedge gasket 6 mm longer than the vertical bead. Insert the gasket into the corner & then roll in remaining 150 mm (5). Repeat this on the other sides. Where the gasket end meets, cut the gasket 6 mm longer, then insert.



1

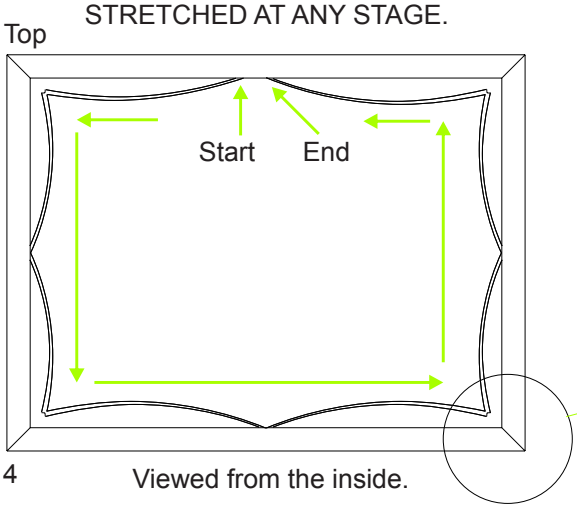


2

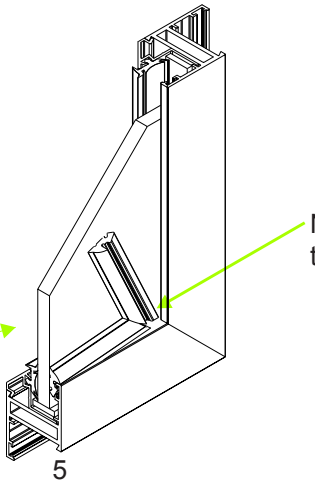


3

ENSURE GASKETS ARE NOT STRETCHED AT ANY STAGE.



4 Viewed from the inside.

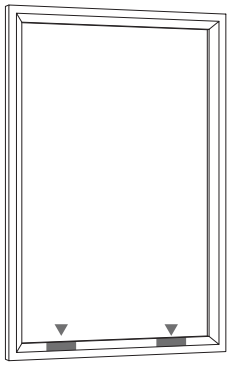


5

GLAZING PROCEDURES

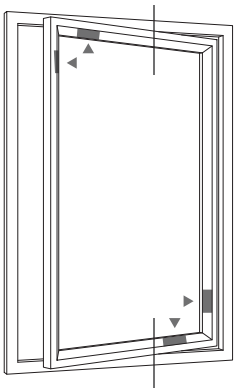
POSITIONING OF SETTING BLOCKS

FIXED

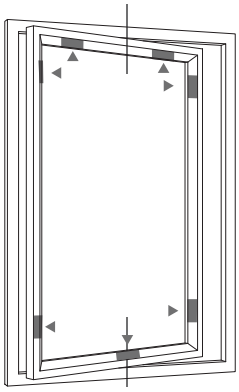


Fixed Light

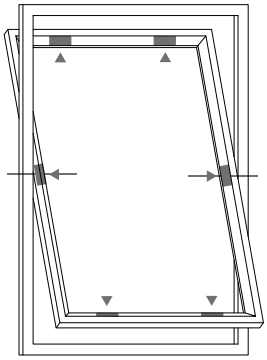
PIVOTING



Vertical Pivot
(hung off-centre)

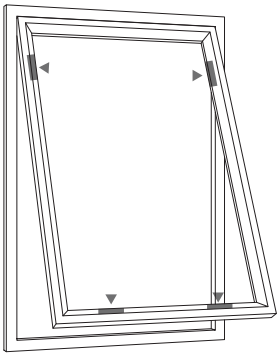


Vertical Pivot
(hung centrally)

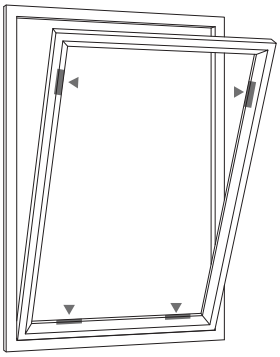


Horizontal Pivot
and reversible

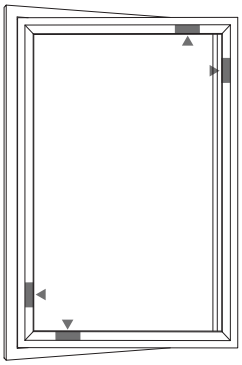
CASEMENT



Top Hung

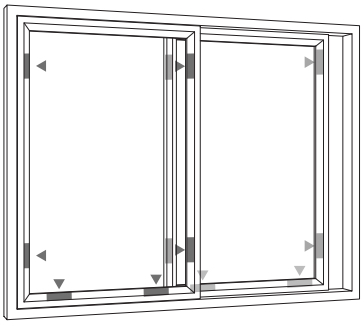


Bottom Hung

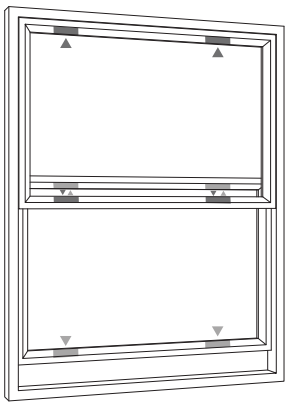


Side Hung

SLIDING



Horizontally sliding
6 setting blocks per pane



Vertically sliding
6 setting blocks per pane

GLAZING

1. Selection of glazing methods.

1.1 Glass Setting Blocks.

Glass to metal contact must be avoided at all times by using approved crealco setting blocks which have a shore hardness of 50 to 90 shore hardness.

Use only setting blocks made of Neoprene, EPDM, Silicone or other elastomeric materials.

Setting blocks are to have a minimum thickness of 3 mm & must be at least 27 mm in length per square metre of glass area.