

**sapa:**

**PROFRAME**

**PRODUCT  
MANUAL  
325 Window Wall**

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## Specification

### Scope

This specification details materials, construction, finish and size limitations for the Sapa 325 Window Wall, casement windows and single and double doors. These are designed to meet requirements in a wide variety of applications, and which conform to BS 4873 specification for aluminium windows. The suite of thermally broken profiles can be constructed to form side and top hung windows, single and double doors and fixed lights.

The doors and windows described and illustrated in this publication are suitable for installation into new building work or as replacement windows in existing buildings, being designed for fitting direct into masonry.

### Materials

Aluminium profiles are extruded aluminium alloy 6060 or 6063 T5 or T6 complying with the recommendations of BS 1474. Polyester powder coated finishes to BS 6496 are available in a wide variety of colours. Anodised finishes are to BS 3987 Grade AA25, etch silver and Sapa bronze as standard, with a range of special anodised finishes on application. Weather stripping is produced from either extruded Silicone, EPDM or synthetic rubber and set in undercut grooves within the extruded frame profiles.

### Construction

Outerframe members are square cut and are fixed using self tapping screws driven into screw splines extruded in the profile, with vent frame members mitre cut at 45° & corners reinforced with extruded aluminium corner cleats, and stainless steel corner ties, all securely fastened by mechanical means. Intermediate mullion and transom bars are square cut and machined back. Mullions and transoms are fixed using self tapping screws driven into screw splines extruded in the profile. All joints shall be sealed during fabrication against water entry.

### Hardware

Side and top hung casement windows are hung on concealed stainless steel variable geometry friction stays. Casement windows are locked using either die cast mazak cockspur handles or espagnolette furniture operated by either die cast aluminium locking or non-locking handles or die cast mazak (Cadenza) locking handles.

The door leaf is hung on extruded aluminium lift-off hinges with 12mm dia stainless steel pin and eccentric nylon bushes to facilitate adjustment. A three point deadlock and latch is housed within a "euro-groove" in the locking stile. Optional end bolts are also available for the door lock which must be fitted to all open in double doors. The deadlock is operated by the cylinder. The latch is operated by both handles and cylinders as required. A cast aluminium lever handle

with extruded aluminium back plate is available in three types i) Lever/lever handles (back door) ii) Split lever/lever handles (front door) iii) Lever/pad handles (front door). A sleeved and weathersealed letter plate is available with extruded aluminium flaps and nylon sleeves. A concealed shoot bolt is housed within a "euro-groove" in the top and bottom of the double door slave stile adaptor.

Visible hardware can be colour finished to co-ordinate with the windows and doors.

## Assembly and Installation

Detailed instructions are provided in this publication, which must be strictly conformed to.

## Glazing

### Windows

Glass set against extruded synthetic rubber gaskets retained in undercut grooves within the aluminium extrusion. Final retention of the glass is achieved by the application of an extruded synthetic wedge gasket between the inner face of the glass and the frame. Single thickness glass of 6mm, 11.5mm laminated or insulated glass up to 28mm can be accommodated.

### Doors

The door leaf is assembled around the glass which is then held in place with the application of an extruded synthetic wedge gasket between the inner and outer face of the glass and frame. 24mm insulating glass units can be accommodated.

Drainage in accordance with details listed in this manual meets the requirements of "Ventilated and Drained Glazing System", as specified in BS 6262.

Glass must conform to the requirements of BS 6262 for thickness and type.

Sapa's policy is one of continual system development and we reserve the right to incorporate design improvements and changes. Every effort is made to ensure that all details are correct at time of publication. However, it is the responsibility of the customer to check the accuracy of the relevant facts and information before entering into any contract or other commitment. Up to date information is freely available from the Sapa Building Systems Webshop. All Products and systems which Sapa supply are supplied subject to Sapa's standard Terms and Conditions of Sale current from time to time.

**Performance**

All product configurations listed in this manual, within the specified size limits, and when manufactured, installed and glazed strictly to the enclosed details, will achieve the following weather performance:-

	Air	Water	Wind** Resistance	Exposure Category
Fixed Lights	600Pa	600Pa	2000Pa	2000 Special
Casement Vents	600Pa	600Pa	2000Pa	2000 Special
Open in Single door	200Pa	100Pa	1200Pa	1200
Open out Single door	600Pa	300Pa	2000Pa	2000 Special
Open in Double door	200Pa	100Pa	1200Pa	1200
Open out Double door	300Pa	200Pa	2000Pa	2000

\*\* Wind Resistance based on single opening/fixed lights into punched openings. Composite units subject to mullion/transom strength used.

## Specification

### Size Limitations

Fixed Light	Max Area	5 sq.m.	
Normal Duty Casement		<b>Friction Stays</b>	
		12"	16"
Side Hung	Max Width	600mm	700mm
	Max Height	1300mm	1300mm
	Max Weight	22kg	24kg
	Min Height (multi point)	390mm	390mm
		6"	8"
Top Hung	Max Width	1200mm	1200mm
	Max Height	300mm	350mm
	Max Weight	10kg	12kg
	Min Width (multi point)	390mm	390mm
		10"	12"
	Max Width	1200mm	1200mm
	Max Height	400mm	550mm
	Max Weight	16kg	20kg
	Min Width (multi point)	390mm	390mm
		16"	20"
	Max Width	1200mm	1200mm
	Max Height	750mm	850mm
	Max Weight	21kg	24kg
	Min Width (multi point)	390mm	390mm
		24"	
	Max Width	1200mm	1200mm
	Max Height	1200mm	1200mm
	Max Weight	35kg	35kg
	Min Width (multi point)	390mm	390mm
Heavy Duty Casement		<b>Friction Stays</b>	
		10"	16"
Side Hung	Max Width	660mm	838mm
	Max Height	1524mm	1829mm
	Max Weight	38kg	47kg
	Min Height (multi point)	390mm	390mm
		10"	12"
Top Hung	Max Width	1600mm	1600mm
	Max Height	635mm	787mm
	Max Weight	37kg	45kg
	Min Width (multi point)	390mm	390mm
		16"	22"
	Max Width	1600mm	1600mm
	Max Height	1090mm	1250mm
	Max Weight	55kg	75kg
	Min Width (multi point)	390mm	390mm
Single Door	Max Width	916mm	
	Max Height	2135mm	
	Max Weight	100kg	
	Min Height	1975mm	
Double Door	Max Width	1772mm	
	Max Height	2135mm	
	Max Weight	100kg	
	Min Height	1975mm	

### Weight Limitations

#### Butt Hinges

All Casement vents excluding flush vent

20kg max vent weight per hinge.

Minimum 2 hinges per vent.

Maximum 2 hinges when used on tran/mull.

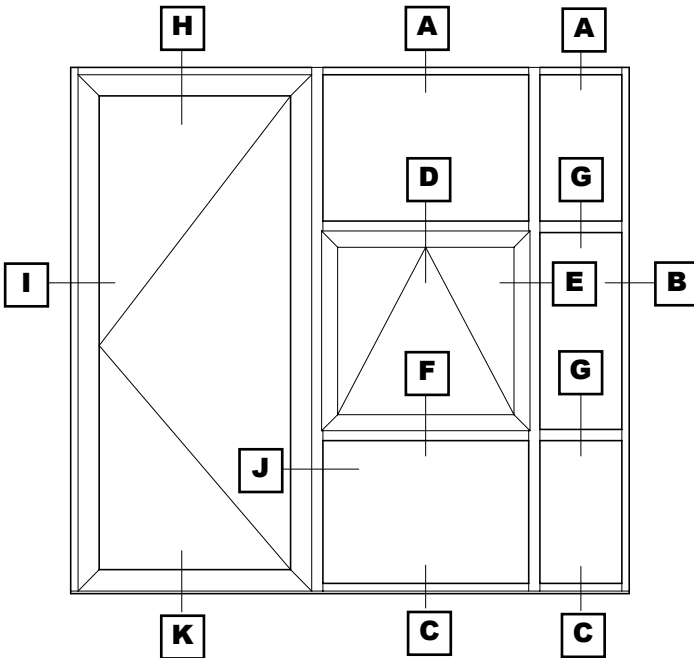
USE H/D MULLION-TRANSOM ONLY.

**Important : The maximum vertical span of a mullion is 3 metres, if spans above this are required then Sapa must be consulted.**

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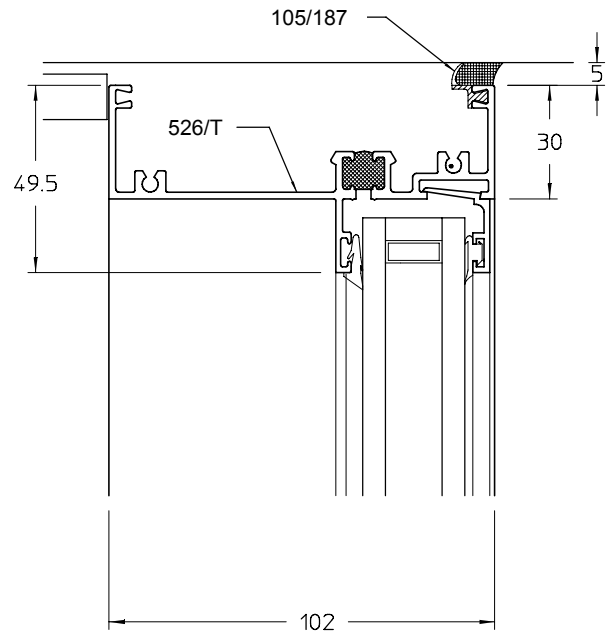
# General Arrangement

## Outside Glaze

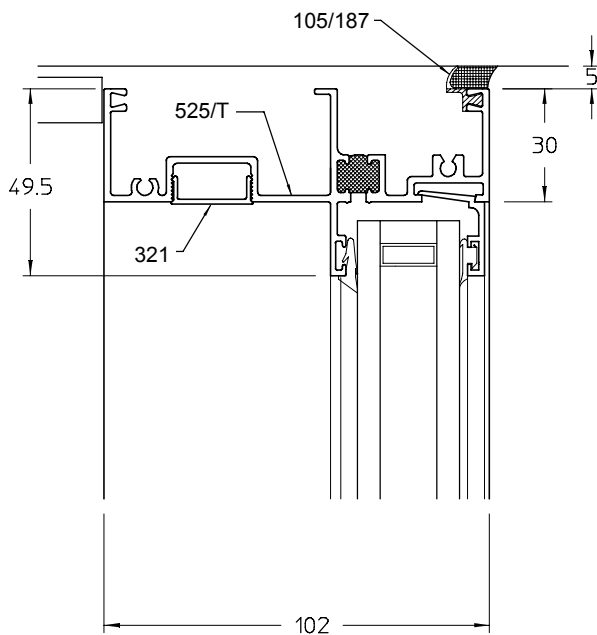


See page 2-14 for alternative 526/T frame fixing using 211/14 fixing lugs.

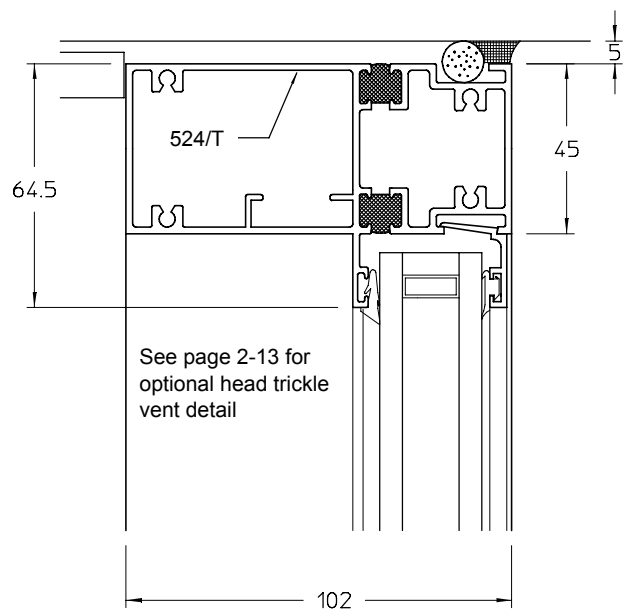
### A Fixed Head



### A Fixed Screw Channel Head

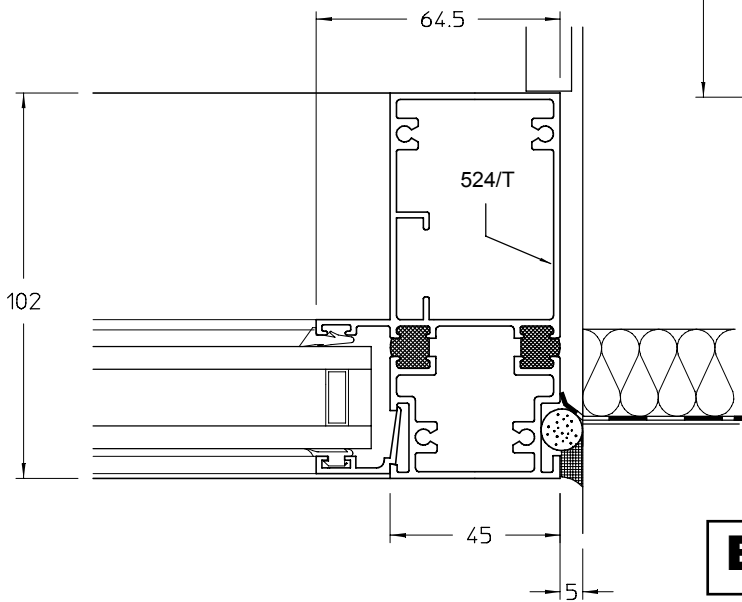


### A Fixed Box Head

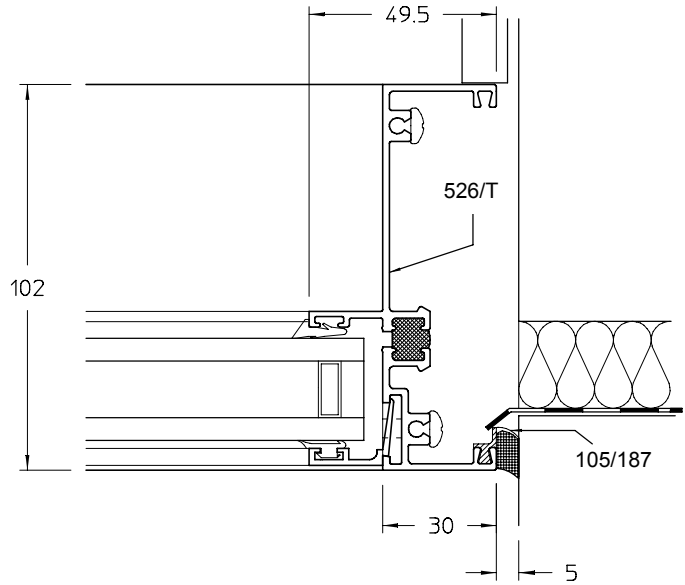


# General Arrangement

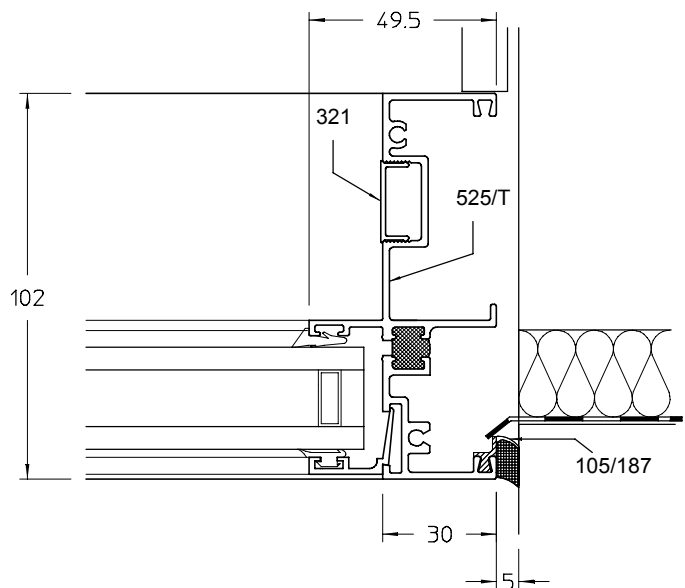
**B** Fixed Box Jamb



**B** Fixed Jamb

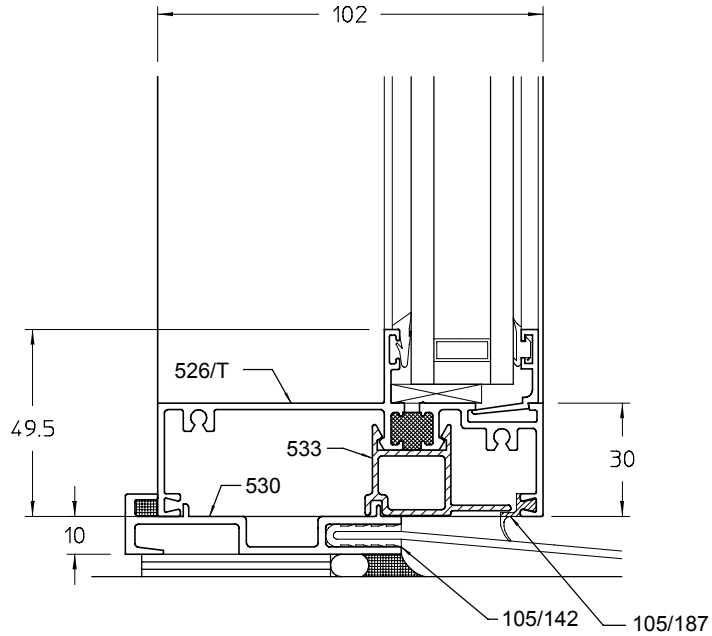


**B** Fixed Screw Channel Jamb



# General Arrangement

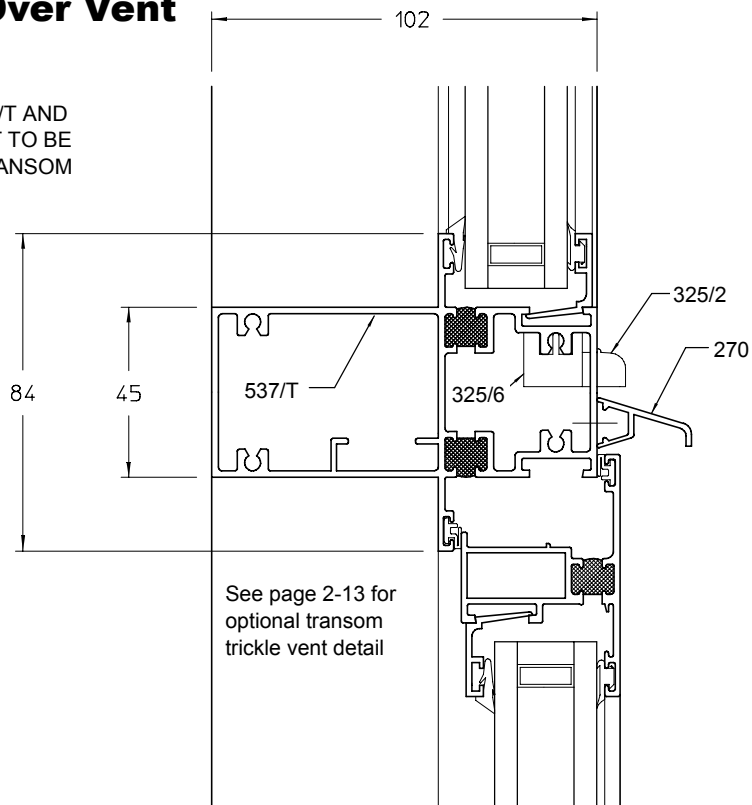
## C Fixed Cill



**Note** : Cill Pressing produced by others to suit specific site application

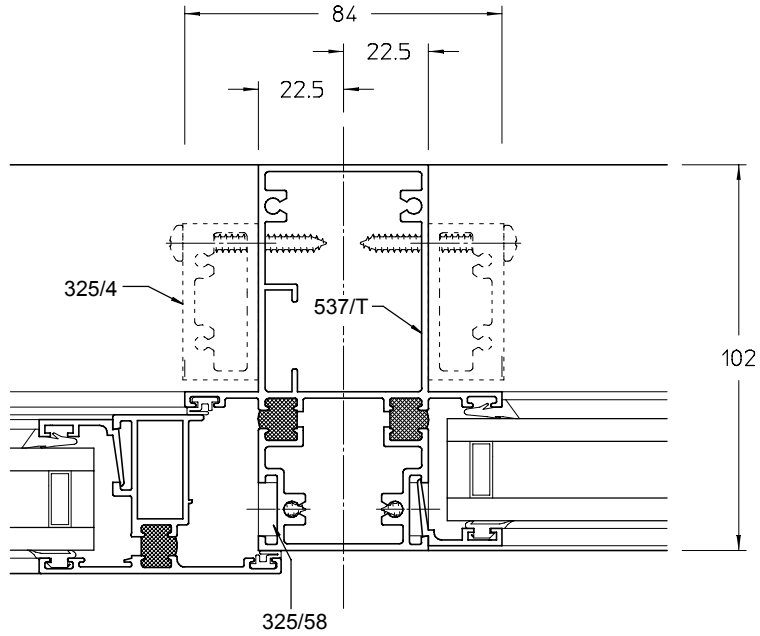
## D Transom Over Vent

PROFILES 527/T AND 528/T ARE NOT TO BE USED AS A TRANSOM

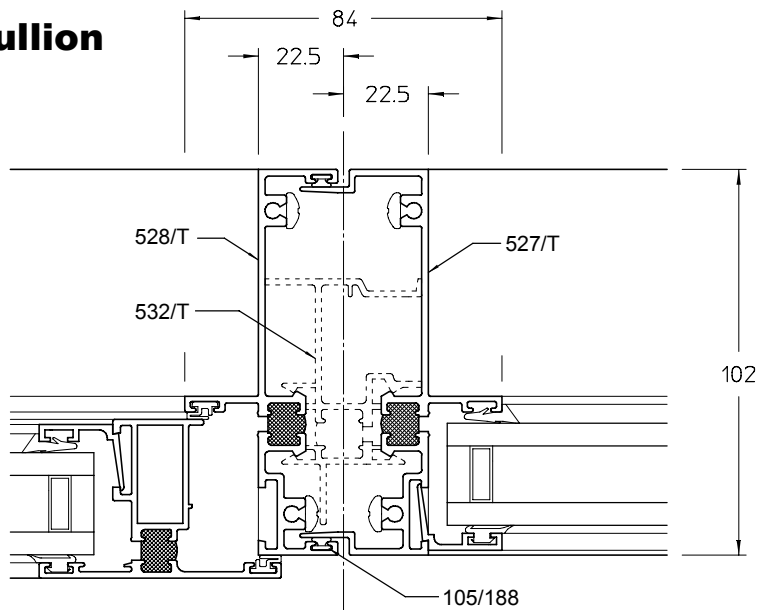


# General Arrangement

## **E** Box Mullion



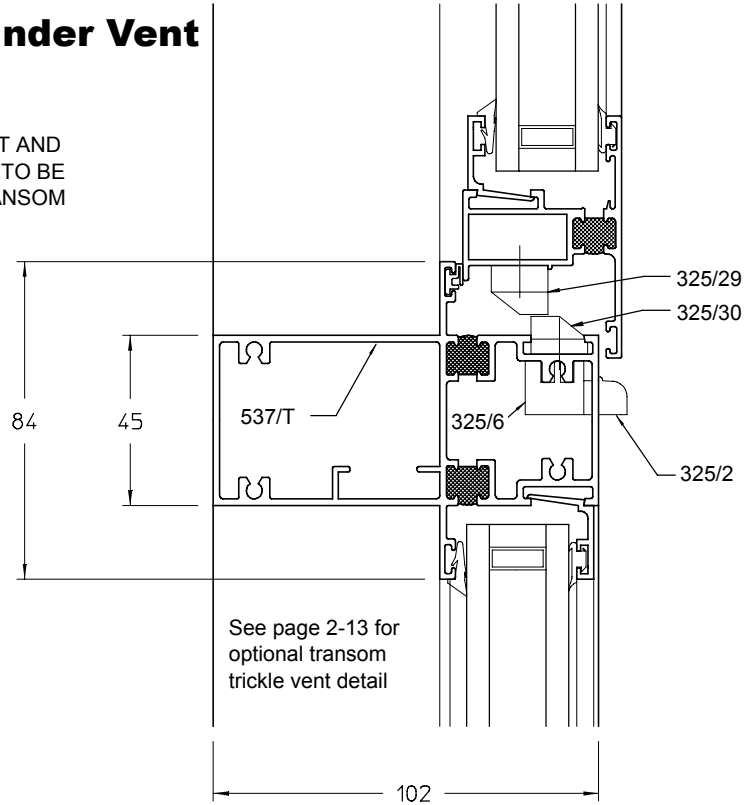
## **E** Two Part Mullion



# General Arrangement

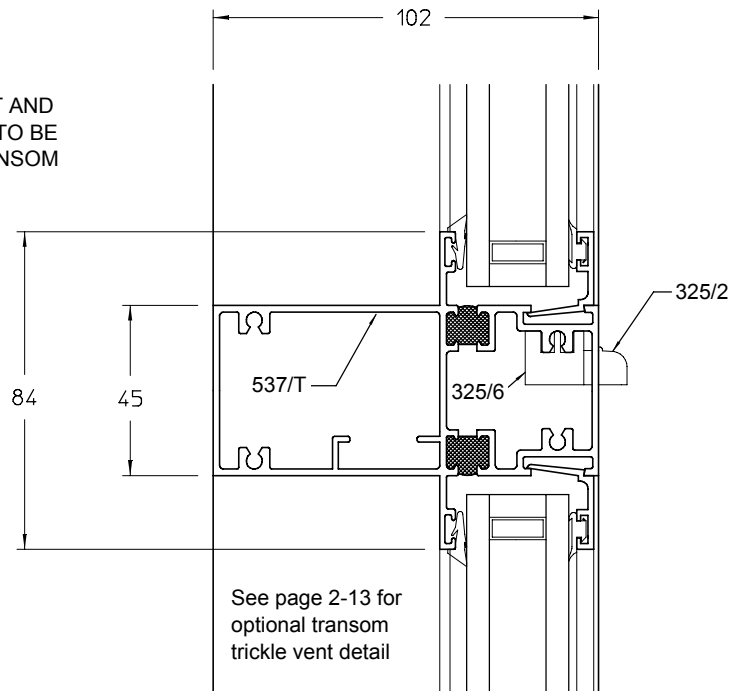
## **F** Transom Under Vent

PROFILES 527/T AND 528/T ARE NOT TO BE USED AS A TRANSOM



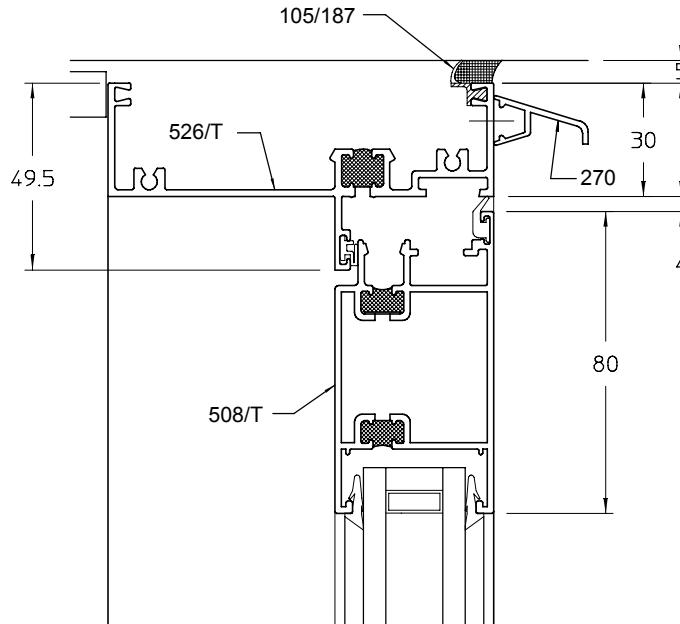
## **G** Fixed Transom

PROFILES 527/T AND 528/T ARE NOT TO BE USED AS A TRANSOM

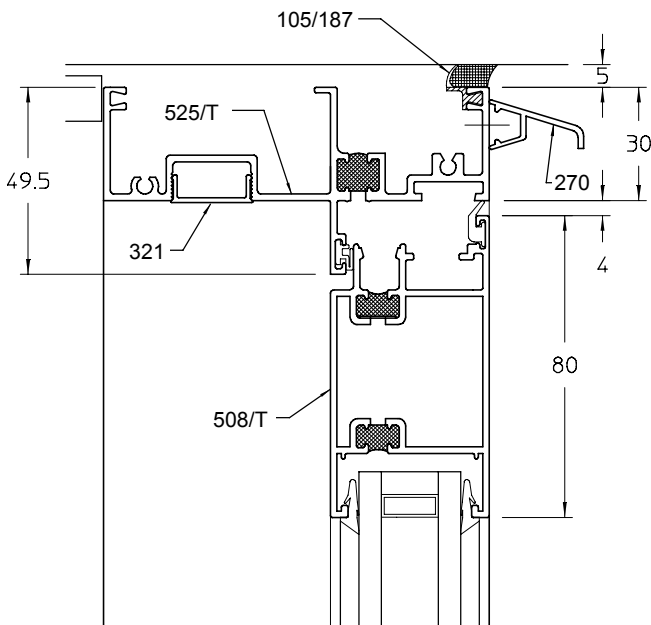


# General Arrangement - Open Out Doors

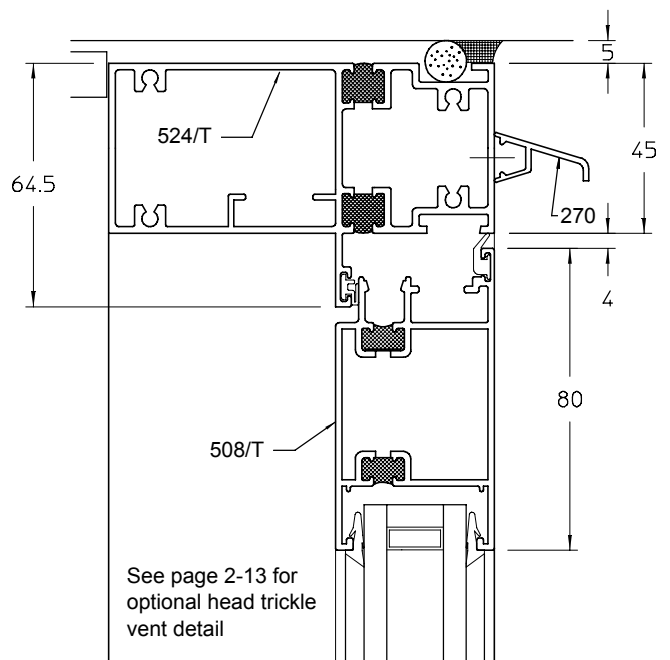
## **H** Door Head



## **H** Door Head With Screw Channel

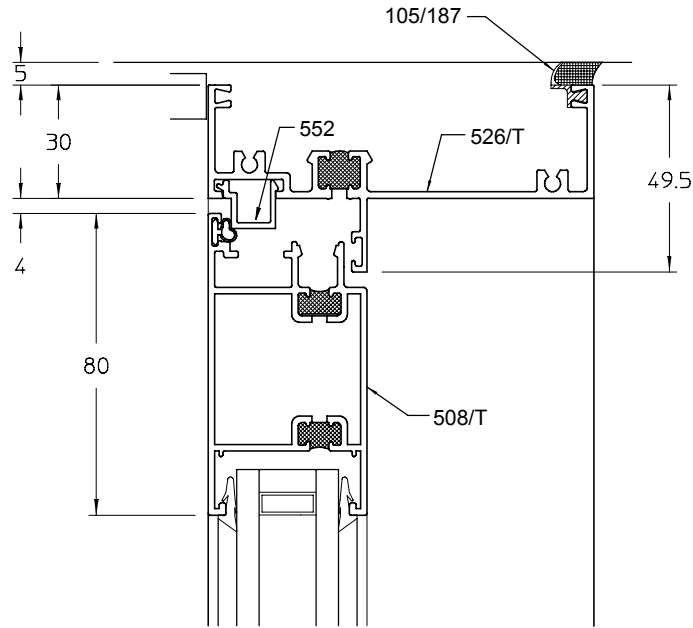


## **H** Door Box Head

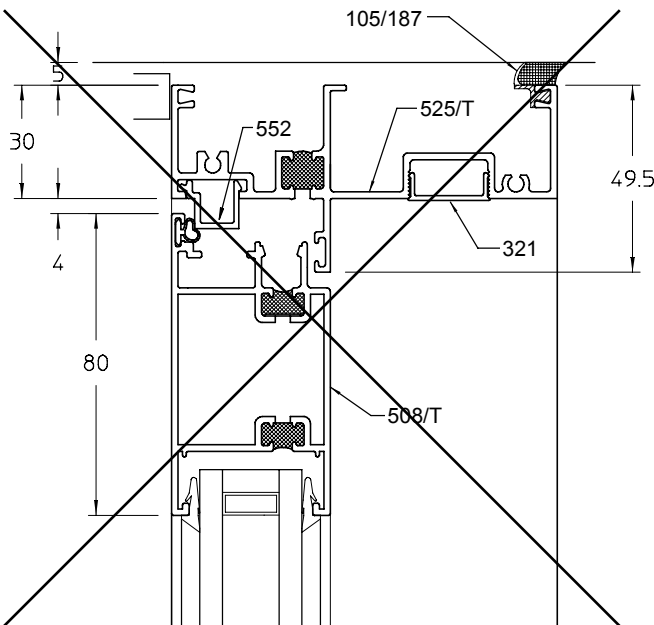


# General Arrangement - Open In Doors

## **H** Door Head

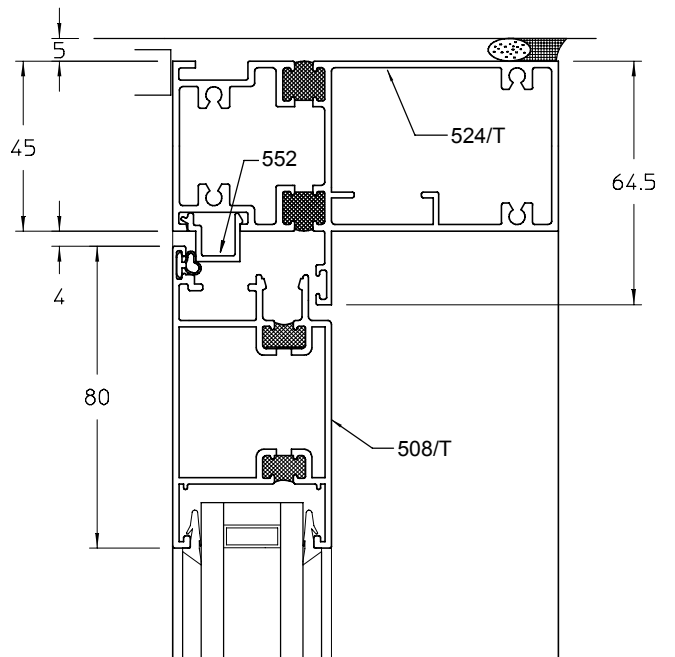


## **H** Door Head With Screw Channel



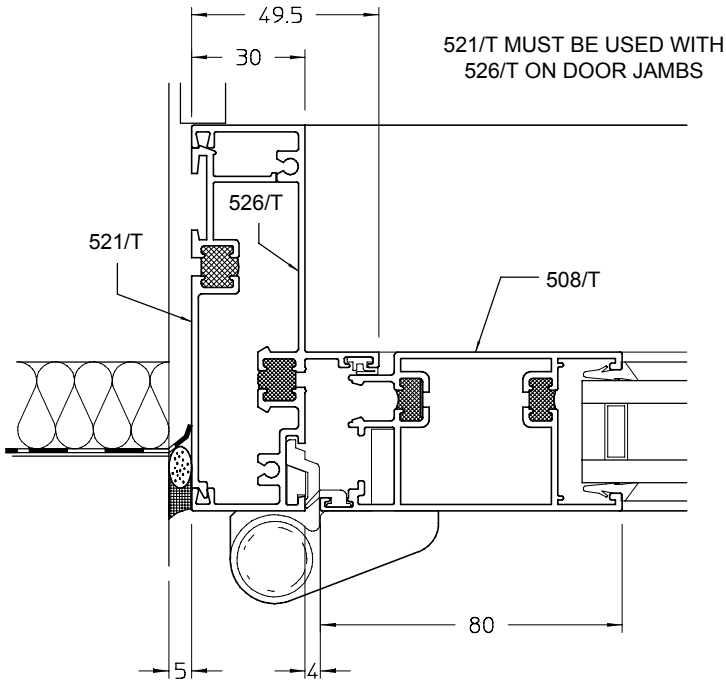
THIS OPTION IS NOT AVAILABLE AS THE FRAME FIXING SCREWS WOULD BE ON THE OUTSIDE

## **H** Door Box Head

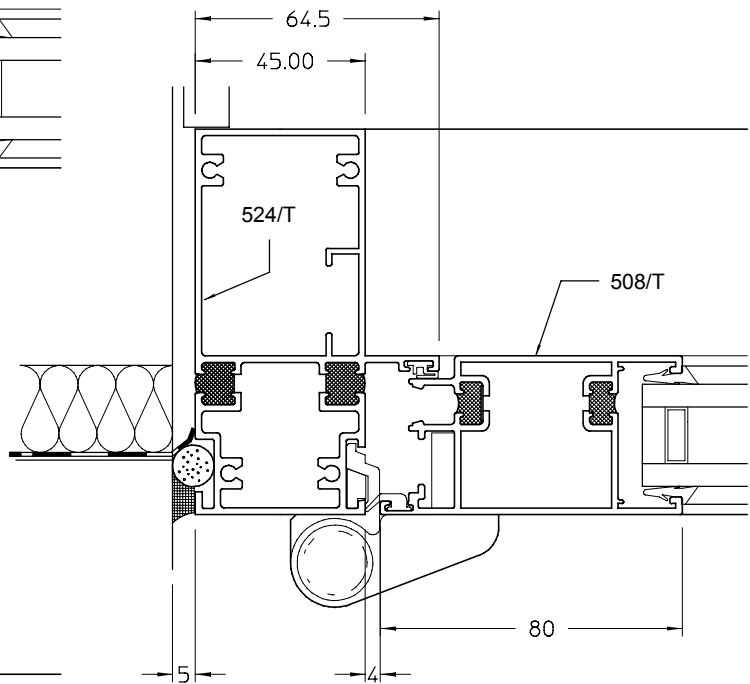


# General Arrangement - Open Out Doors

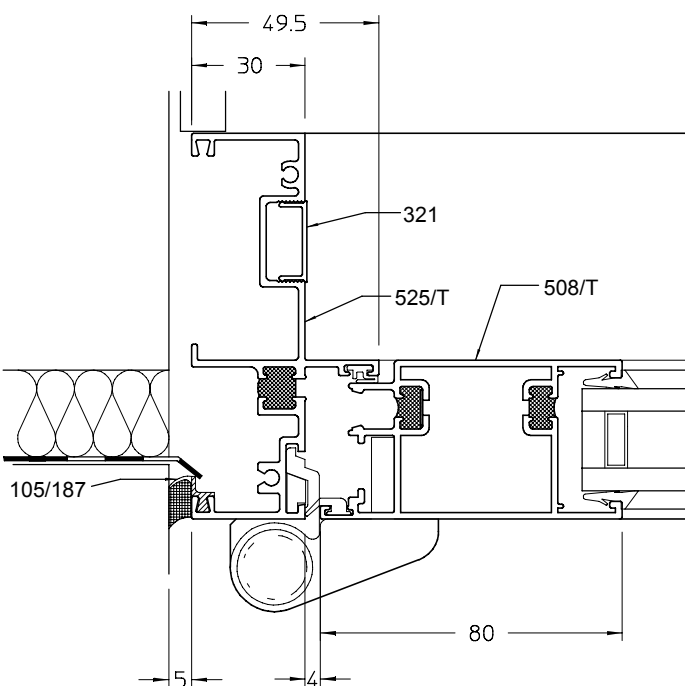
## I Door Jamb



## I Door Box Jamb

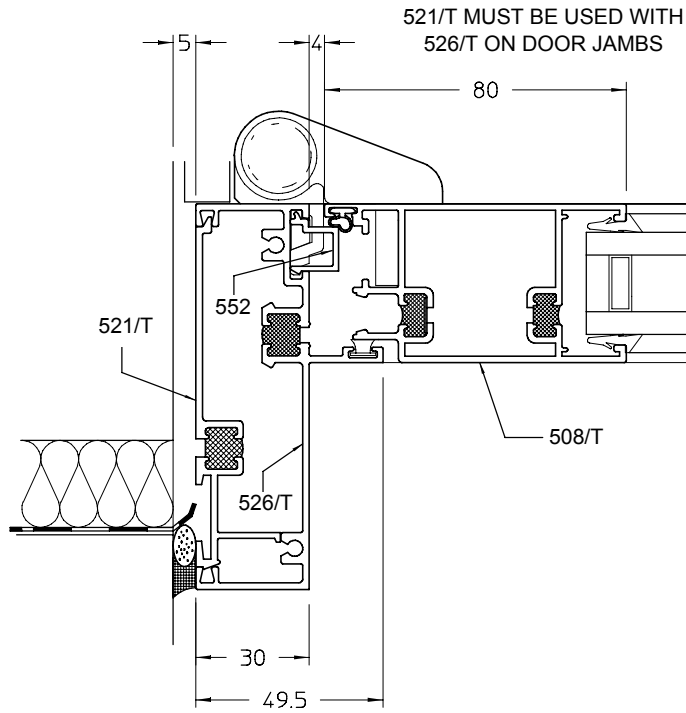


## I Door Jamb With Screw Channel

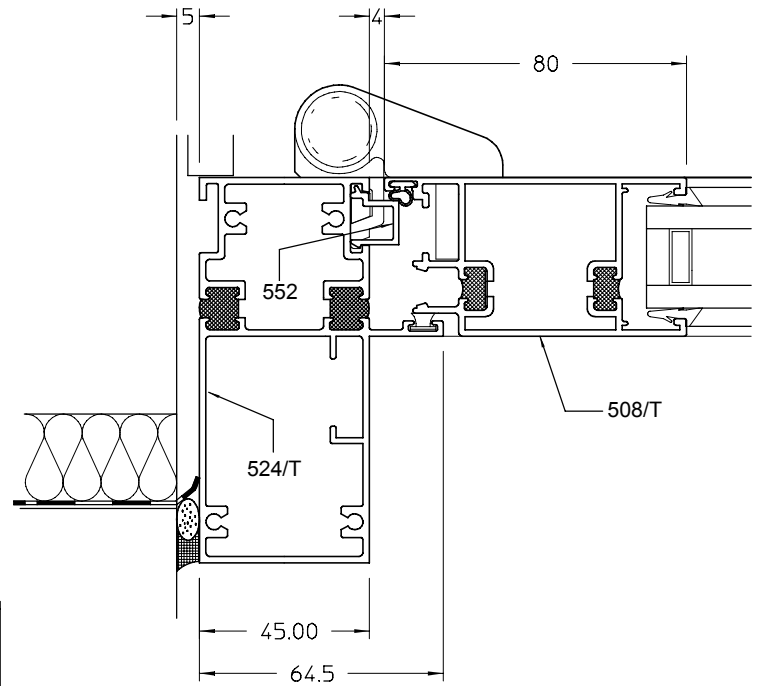


# General Arrangement - Open In Doors

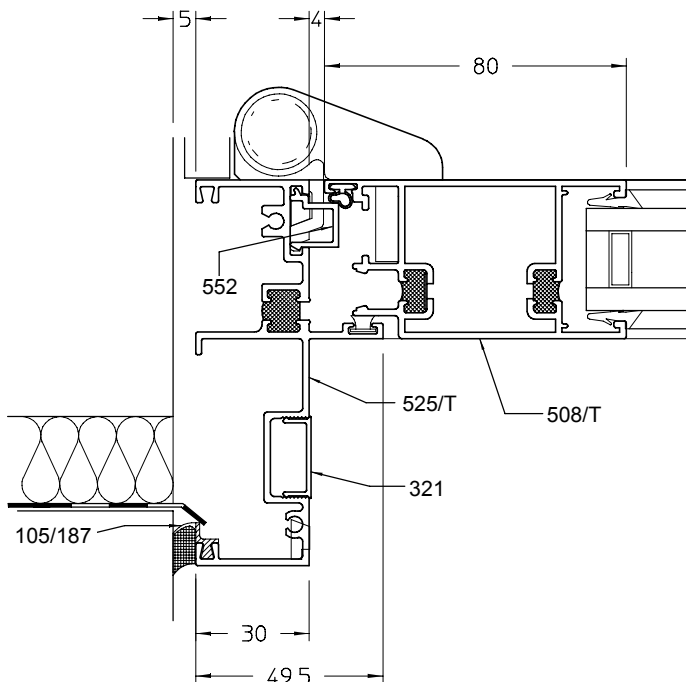
## I Door Jamb



## I Door Box Jamb

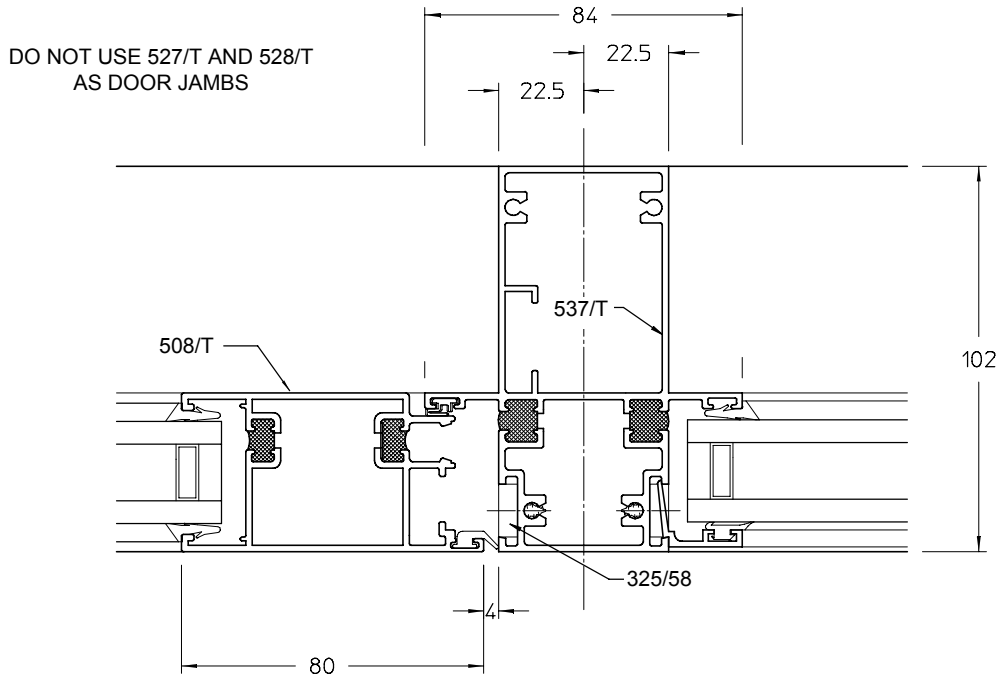


## I Door Jamb With Screw Channel



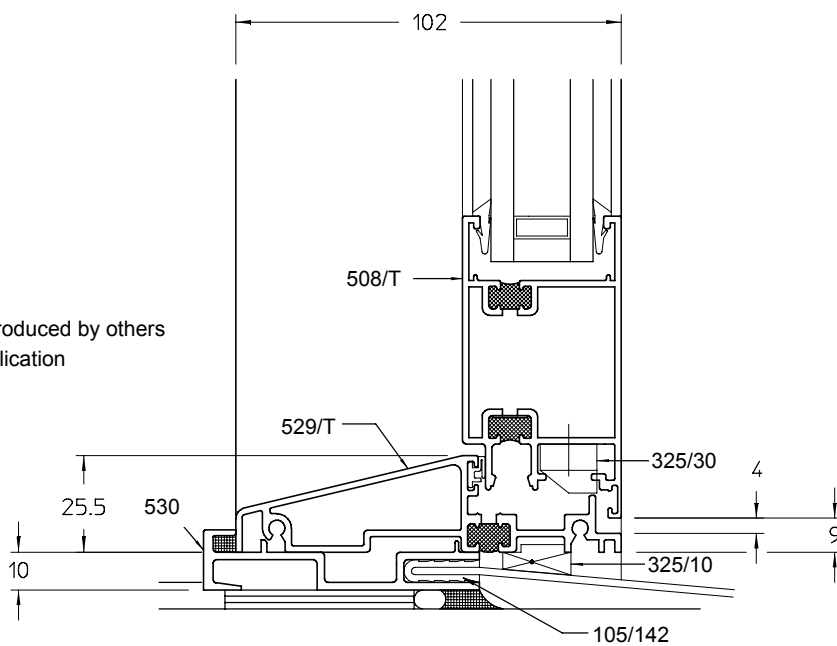
# General Arrangement - Open Out Doors

## J Door Jamb



## K Door Cill

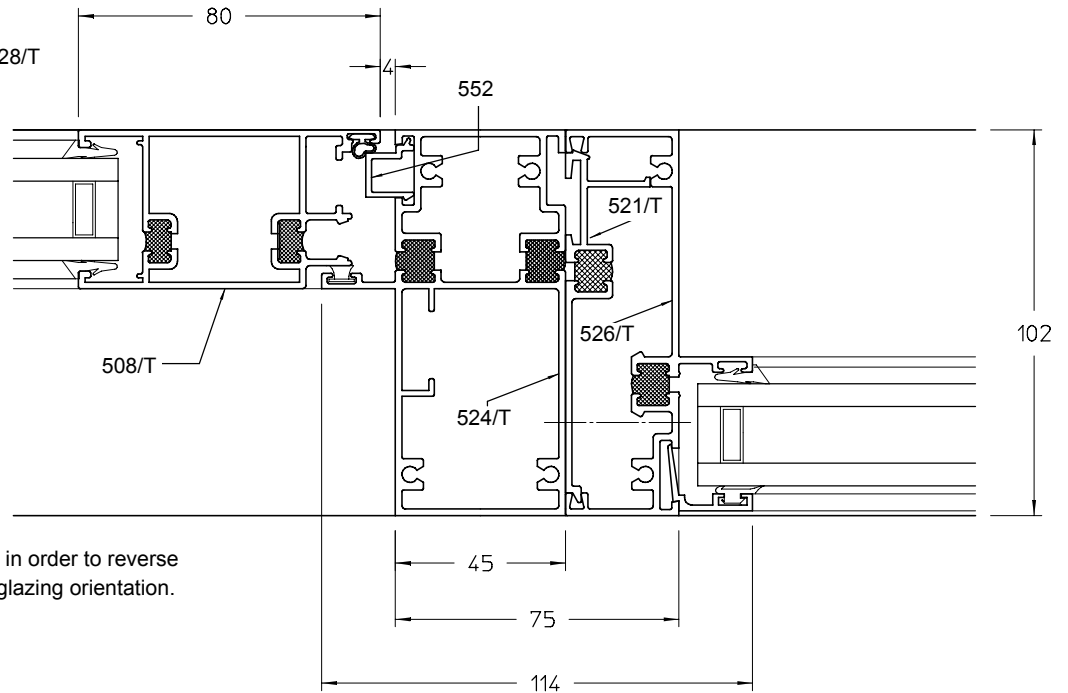
**Note** : Cill Pressing produced by others to suit specific site application



# General Arrangement - Open In Doors

## J Reverse Door Jamb

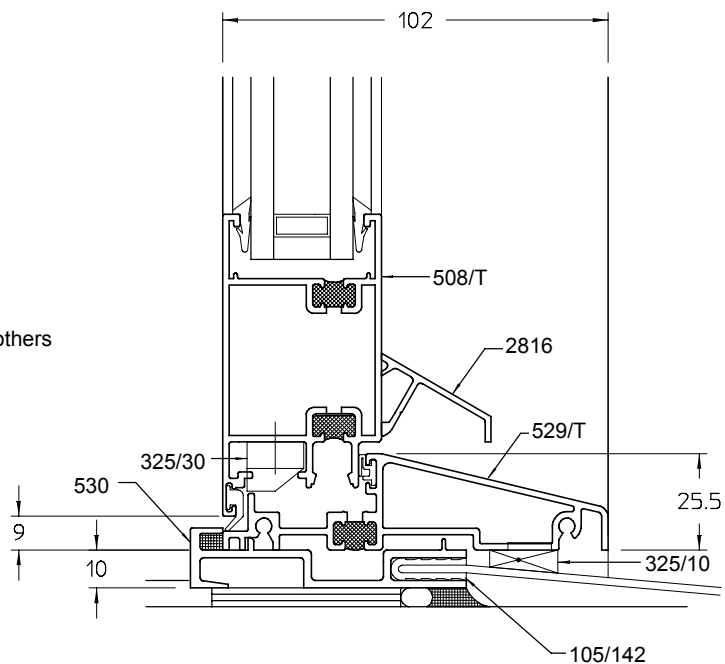
DO NOT USE 527/T AND 528/T AS DOOR JAMBS



**Note :** This detail is required in order to reverse profiles for correct fixed light glazing orientation.

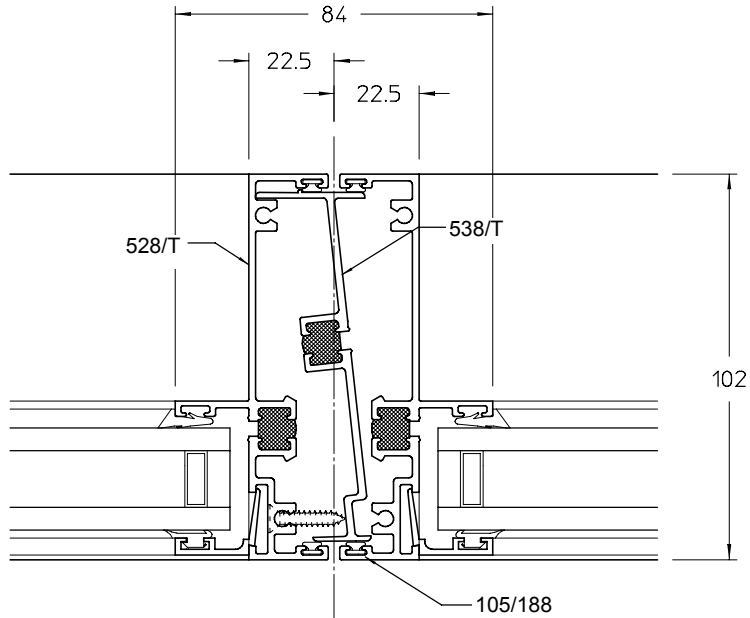
## K Door Cill

**Note :** Cill Pressing produced by others to suit specific site application

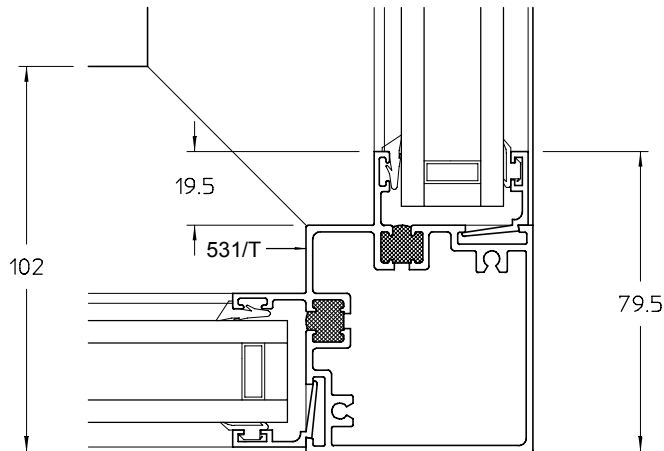


## General Arrangement - Options

### Female - Female Coupling Mullion



### External Corner Post



## General Arrangement - Options

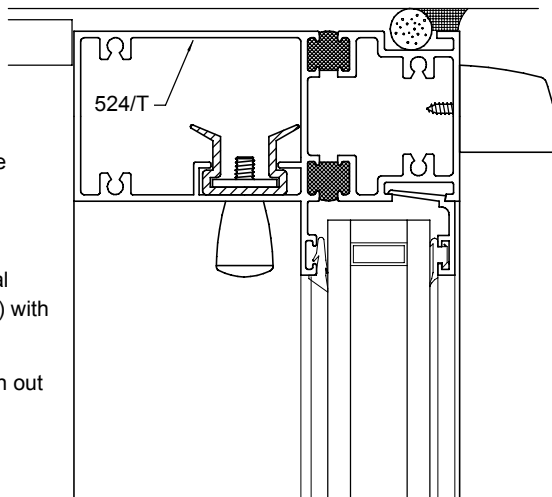
### Head Trickle Ventilator (4000mm<sup>2</sup> free air space)

This item is available as a pre-manufactured component with appropriate mullion/drainage machining and is cut to required length.

Part No 325/339/LENGTH

Please note that the specified length is actual component length ('B' dim between mullions) with a minimum size of 630mm.

This vent can be fitted above a window, open out door or fixed light (as shown).



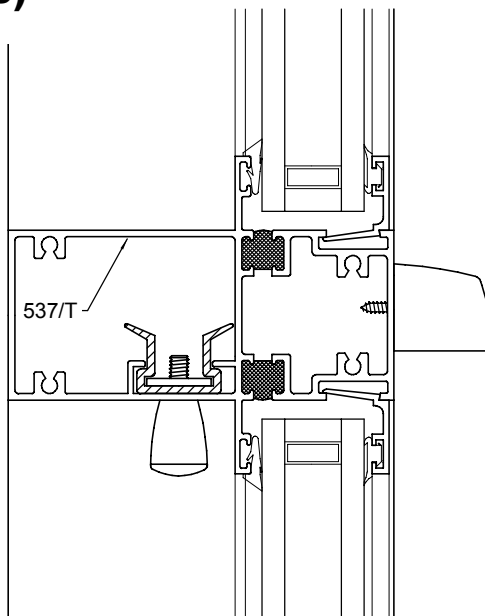
### Transom Trickle Ventilator (4000mm<sup>2</sup> free air space)

This item is available as a pre-manufactured component with appropriate mullion/drainage machining and is cut to required length.

Part No 325/338/LENGTH

Please note that the specified length is actual component length ('B' dim between mullions) with a minimum size of 630mm.

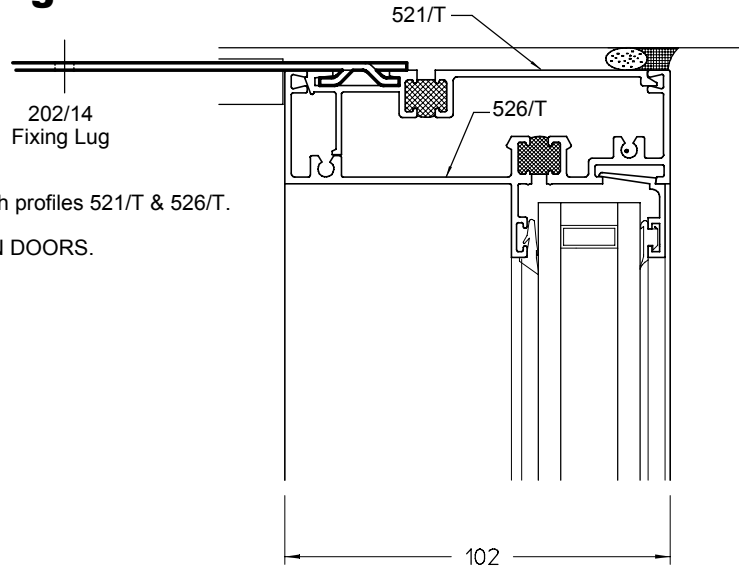
This vent can be fitted above or below a window, fixed light (as shown) or above an open out door.



Ventilators with 8000mm<sup>2</sup> free air can be produced by fitting two trickle vents into one rail. The minimum rail length available for this detail is 1260mm. This item is only available as a special, contact Sapa for further information.

## General Arrangement - Options

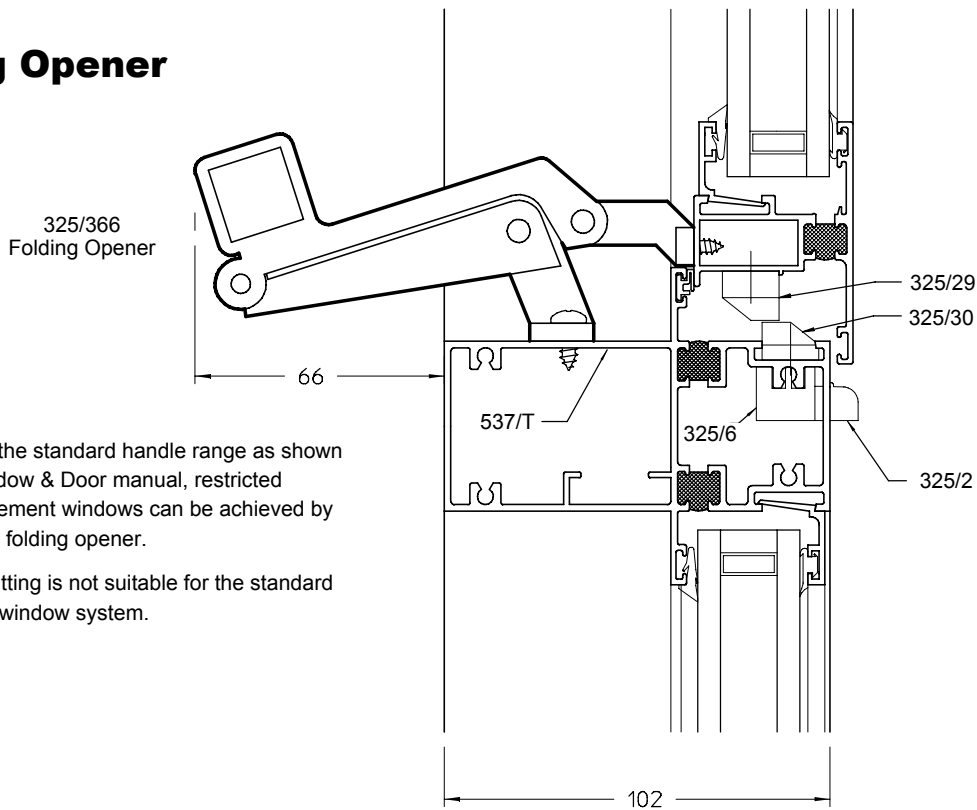
### Fixing Lug Fixing



Lug fixing can only be used with profiles 521/T & 526/T.

DO NOT USE LUG FIXING ON DOORS.

### Folding Opener



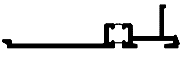


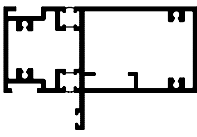


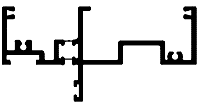


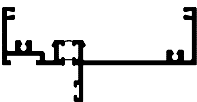


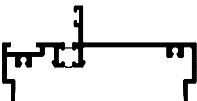


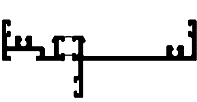


Additionally to the standard handle range as shown in the 325 Window & Door manual, restricted opening in casement windows can be achieved by use of 325/366 folding opener.

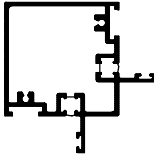


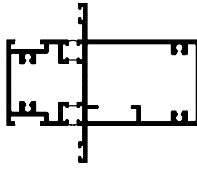











Note that this fitting is not suitable for the standard 325 casement window system.

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



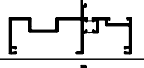
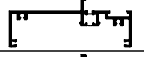
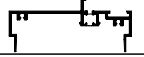
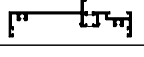









## Profile Inertia

This page gives the inertia values of the integral mullions, transoms and coupling mullions. It should be used to establish which member is required.

Profile	Inertia
521/T 	 185,135mm <sup>4</sup>  6,183mm <sup>4</sup>
524/T 	 932,152mm <sup>4</sup>  283,437mm <sup>4</sup>
525/T 	 589,187mm <sup>4</sup>  54,548mm <sup>4</sup>
526/T 	 584,465mm <sup>4</sup>  45,553mm <sup>4</sup>
527/T 	 549,058mm <sup>4</sup>  40,169mm <sup>4</sup>
528/T 	 473,626mm <sup>4</sup>  21,841mm <sup>4</sup>






Profile	Inertia
531/T 	 340,529mm <sup>4</sup>  340,529mm <sup>4</sup>
537/T 	 927,934mm <sup>4</sup>  331,543mm <sup>4</sup>
538/T 	 255,354mm <sup>4</sup>  6,477mm <sup>4</sup>
	 
	 
	 

**Parts List****Profiles**





















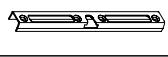



Illustration	Part No.	Description
	270	Weatherbar
	321	Clip Cover
	521/T	Clip in Plain Plate
	524/T	Box Outer Frame
	525/T	Door Jamb
	526/T	Outer Frame
	527/T	Male Coupler
	528/T	Female Coupler
	529/T	Door Threshold
	530	Subcill
	531/T	Corner Post
	532/T	Coupling Spacer
	533	Cill Packer
	537/T	Mullion / Transom
	538/T	Female To Female Coupling
	552	Rebate Adaptor
	16053	Folding Opener Tandem Bar

Note profiles with the suffix /T are thermally broken.

**Components**






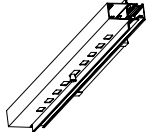
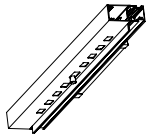
Illustration	Part No.	Description
	211/14	Fixing Lug
	304/18	Subcill End Plug
	316/68	Folding Opener End Cap & screws
	320/81	Glazing Packer
	325/2	Drainage Outlet Cover

**Components - Continued**

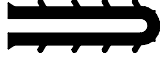


Illustration	Part No.	Description
	325/6/1&2	Drainage Moulding
	325/7	Jamb Plug
	325/9	Open In Threshold Packer
	325/10	Open Out Threshold Packer
	325/11	Vent Cowl Plug
	325/26	Jamb Fixing Plug
	325/29	Riser Block
	325/30	Riser Block
	325/33	Head & Cill Mitre Bracket
	325/42	Rail Bracket
	325/58	Cruciform Bracket
	325/59	Double Door Flush Bolt Keep (Cill only)
	325/62	Solid Mullion Front Plug
	325/63	Solid Mullion Rear Plug
	325/64	Coupling Spacer
	325/70	Two Part Mullion Male Plug
	325/71	Two Part Mullion Female Plug
	325/265	End Keep
	325/266	Centre Keep
	325/268/1&2	End Keep Cover
	325/269	Centre Keep Cover
	325/336	Rail Support Bracket
	325/340	Corner Brace
	325/366	Folding Opener

# Parts List

## Trickle Vent Items

Illustration	Part No.	Description
	F42	M5 Aluminium Riv-nut
	MM530SCTLGS	M5 x 30 Grub Screw
	325/334	Trickle Vent Slide
	325/335	Control Knob
	325/337	Trickle Vent Cowl
	325/338/Size	Fully Assembled And Machined Head Trickle Vent (537/T) Size = Overall Length (Length = 'B' dim between mullions) (4000mm <sup>2</sup> free air)
	325/339/Size	Fully Assembled And Machined Head Trickle Vent (524/T) Size = Overall Length (Length = 'B' dim between mullions) (4000mm <sup>2</sup> free air)

## Gaskets

	105/142	'U' Gasket For Cill Pressing
	105/187	Seal Backer
	105/188	Two Part Mullion Seal

## Screws

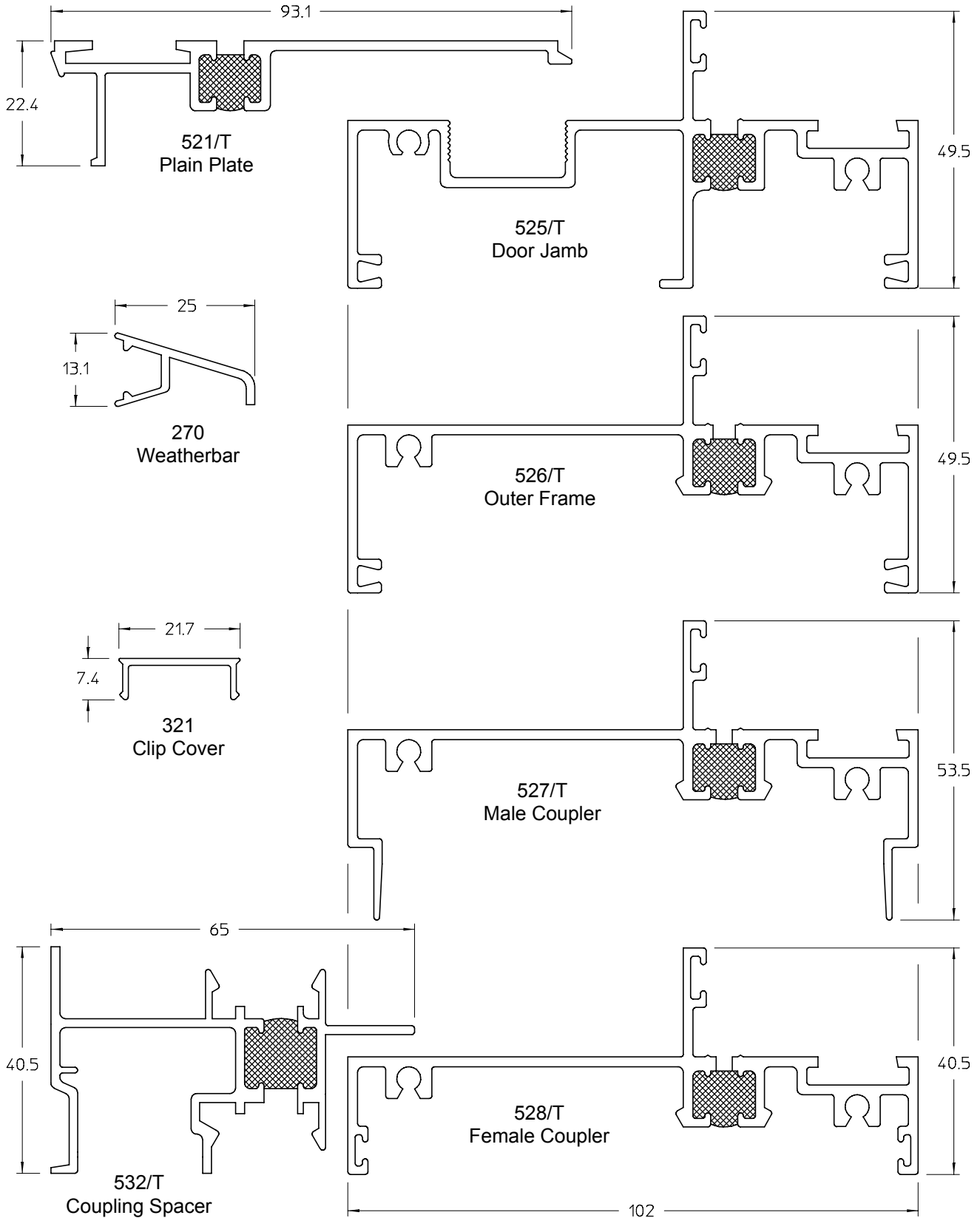
Part No.	Head	Description
ST612CPSS	Csk	Riser Block Fixing
ST812CPSS	Csk	Drainage Moulding, Cruciform Bracket, Folding Opener
ST834CPSS	Csk	Female / Female Coupler Screw
ST81CPSS	Csk	Cruciform Bracket Fixings
ST1012CPSS	Csk	Corner Bracket Fixings
ST1012PPSS	Pan	Folding Opener To Outerframe
ST10112PPSS	Pan	Rail Support Bracket
MM523SCGS		T Joint Head & Cill Fixing
NUTM5SS		T Joint Head & Cill Fixing
RC47PALU	Profile Head	Weather Bar Rivet

## Tooling

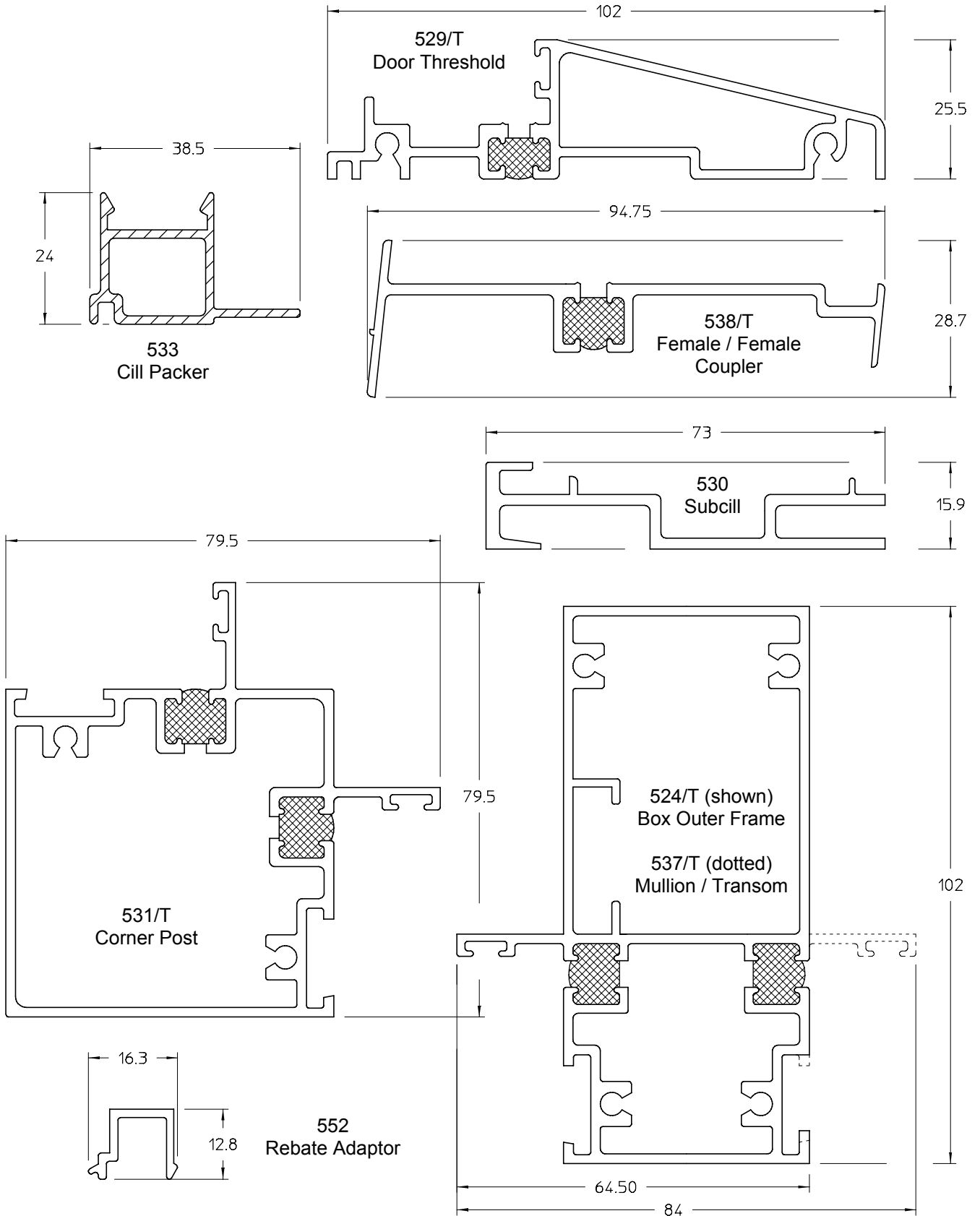
Drill for jig/prep	Part No.	Description
3.5 drill	325/153	Espagnolette bar and keeps drill jig
3.5/4.2/5.2 drill	325/172	Rail fixing drill jig
3.5/4.2/4.5 5.2/5.5 drill	325/173	Drainage moulding, Head & cill fixing drill jig
3.5 drill	325/174	Frame fixing for normal duty side & top hung stays drill jig
3.5 drill	325/175	Frame fixing for heavy duty side & top hung stays drill jig
3.5 drill	325/176	Female coupler drill jig
5.0 dia cutter	325/178	Router plate for drainage, riser block & trickle vent prep
3.5 & 4.2 drill	325/179	Folding opener handle drill jig.
3.0 drill	N/A	Trickle vent cowl fixing
3.2 drill	N/A	Riser Blocks fixing
4.2 drill	N/A	Sub cill 90° corner preparation

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### Full size profiles



### Full size profiles



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## Preparation For Fabrication

### Establishing Dimensions

It is essential that work sizes are based on correct site dimensions and with the clearances recommended by Sapa as indicated on page 6-1.

### Preliminaries

Ensure that the window design is within the parameters given in the specification.

Ascertain the vertical and horizontal work sizes for each individual window unit, remember to allow for subcill.

Ascertain the type of outer frame which is needed so that the appropriate profile can be used.

### Metal & Glass Cutting

Refer to the data and diagrams alongside and on the following pages to determine all bar lengths and glass sizes.

When calculating bar lengths requirements, an allowance of 37mm at each end of the bar must be made for any profile which has a powder coat or anodised finish to allow for jig/contact marks. These marks must be removed individually or as part of the first and last cut, whether square or mitred.

Details of the actual end preparation required (mitred, square cut or shouldered) are fully detailed for individual profiles on the following pages.

Also detailed are the position and size of any holes.

### Tolerances

Metal must be cut within a tolerance of plus 0mm, minus 0.5mm. Glass units must be within a tolerance of plus 0mm, minus 3mm.

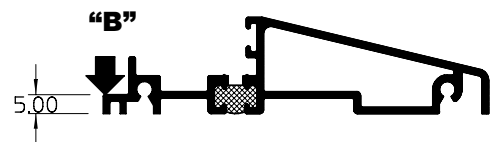
### Cutting Calculations

To allow for all possible combinations and to simplify calculations the listed formulae are related to a basic dimension "B" which is arrived at by taking away the allowances detailed alongside from the overall window unit or from the size of the mullion transom centre line.

**Note that 10mm must be taken off of the height of the overall window prior to using these "B" sizes to allow for the continuous subcill that must be fitted under the entire screen.**

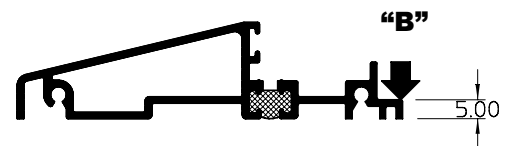
#### 529/T Open In

Allowance Minus 5mm



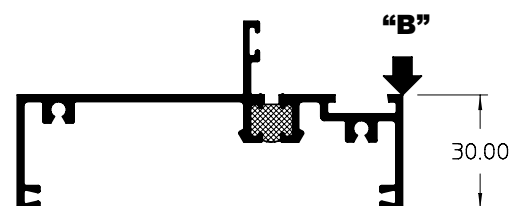
#### 529/T Open Out

Allowance Minus 5mm



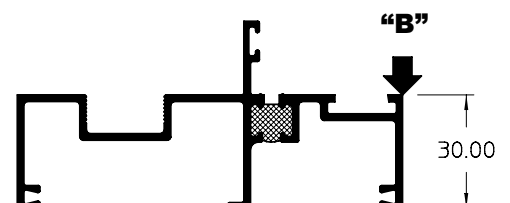
#### 526/T Head/Cill/Jamb

Allowance Minus 30mm



#### 525/T Head/Cill/Jamb

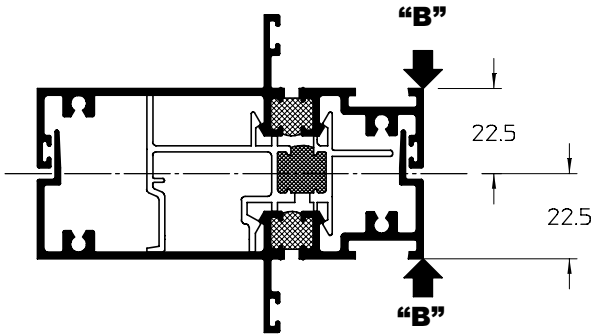
Allowance Minus 30mm



# Preparation For Fabrication

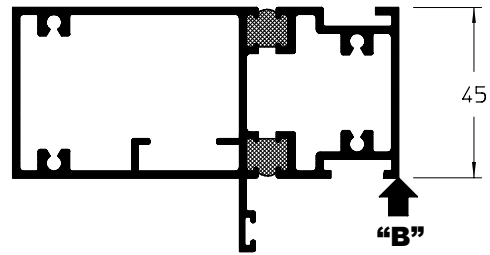
## 527/T & 528/T Coupler Mullion

Allowance Minus 22.5mm From Centreline



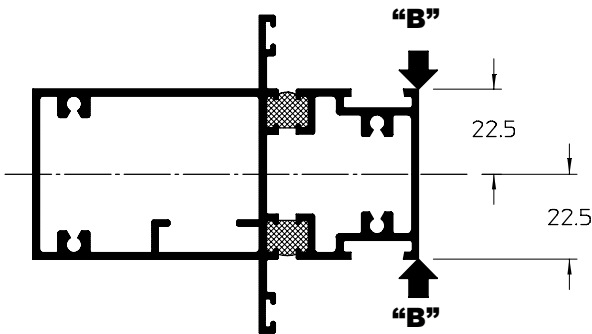
## 524/T Box Head/Jamb

Allowance Minus 45mm



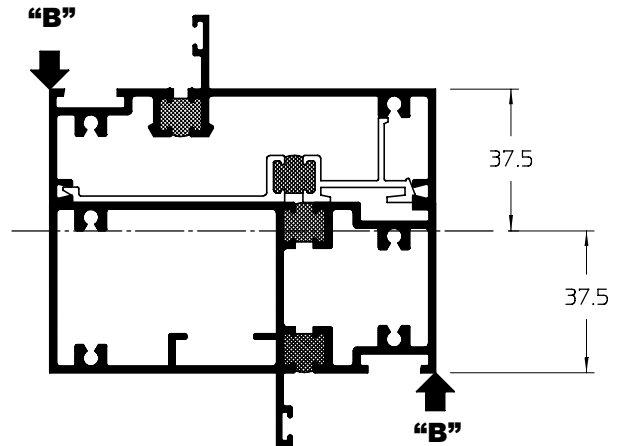
## 537/T Mullion/Transom

Allowance Minus 22.5mm From Centreline



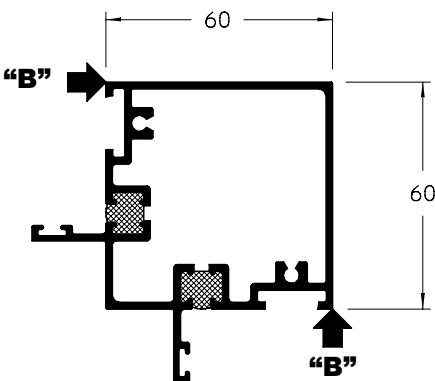
## 524/T & 526/T Reverse Mullion

Allowance Minus 37.5mm From Centreline



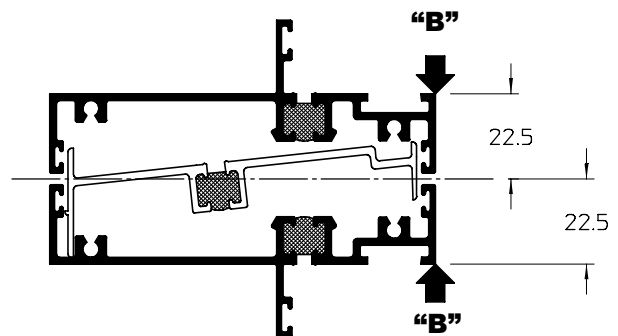
## 531/T Corner Post

Allowance Minus 60mm



## 528/T & 528/T Coupler Mullion

Allowance Minus 22.5mm From Centreline



**PROFRAME**

325 Window Wall

**Metal & Glass Sizes**

**Metal Sizes**

**Horizontal**

Rails/Head/Cill (Intermittent)	Basic Size <b>"B"</b> *
Head/Cill (Continuous)	O/A Window Width*
Subcill (530)	O/A Window Width
Intermittent Cill Packer (533)	Rail Width Minus 40mm
Continuous Cill Packer (533)	O/A Rail Width
Horizontal Bead	Basic Size <b>"B"</b>

**Vertical**

Mullions (Intermittent Head/Cill)	O/A Window Height
Mullions (Continuous Head/Cill)	Basic Size <b>"B"</b>
Vertical Bead	Basic Size <b>"B"</b> Minus 39mm
Female/Female Coupler (538/T)	O/A Window Height
Clip Cover (321)	Basic Size <b>"B"</b>

**Glass Sizes**

**Height & Width**

Basic Size **"B"** Minus 10mm  
 Tolerance Plus 0mm, Minus 3mm

**Important** : Ensure that the height of the subcill has been deducted from the overall unit height before using these calculations.

\* Note if the rail is abutting a corner post and the bar is being mitred and then cut back square add an additional 60mm to the overall rail length. See page 4-11 for alternative method.

Note the beading sizes which result from the allowances given are nominally the exact sizes, but to ensure an accurate fit which takes into account of fabrication tolerance we would advise that they are cut oversize so that they can be tailored to actual conditions when fitted.

**For Door & Casement calculations and details please see the main 325 Product Manual**

# Frame Machining

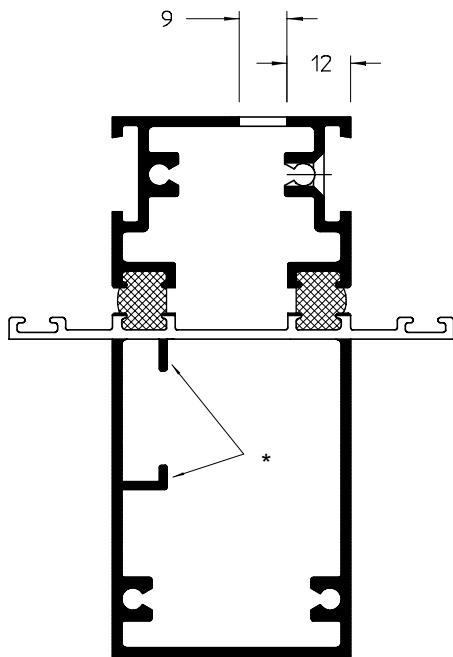
## Machining - Horizontal Rail

### Section 537/T

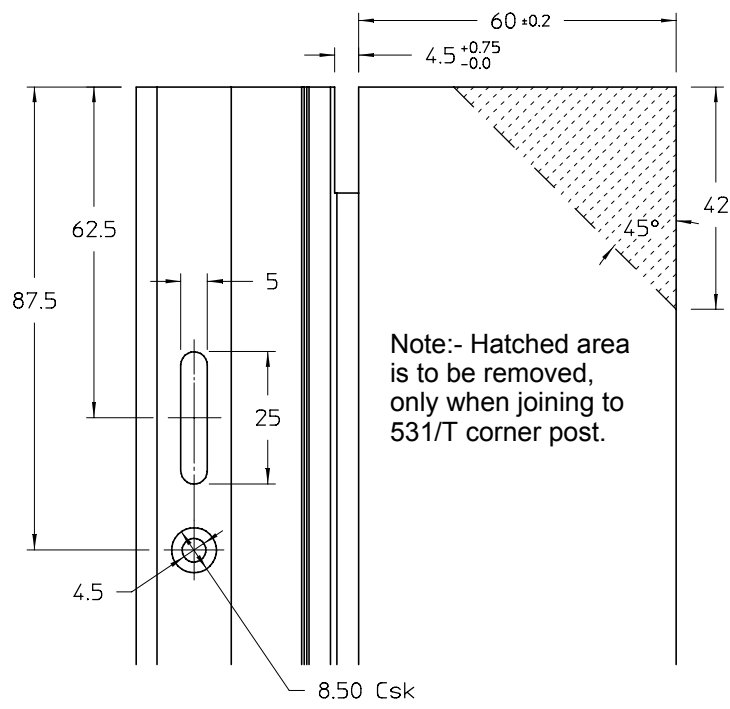
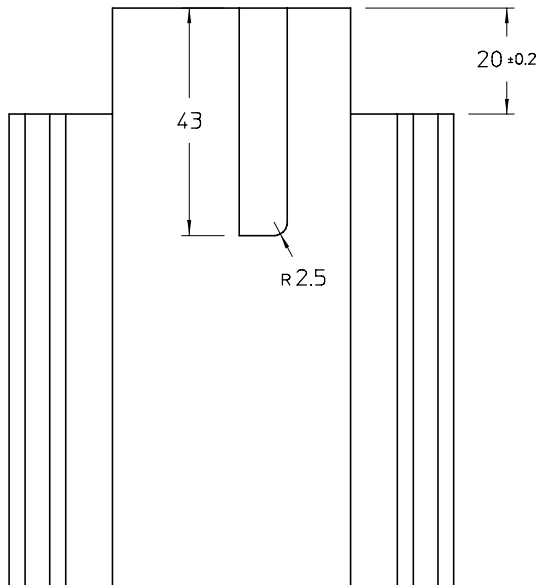
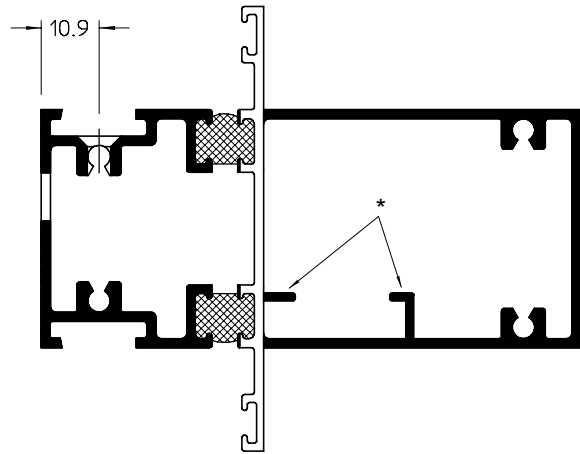
The preparation shown on this page must be carried out on both ends of the member for drainage and rebate upstand clearance.

Router Plate 325/178

Drill Jig 325/173



\* Note that the orientation of these legs in this profile are critical.



# Frame Machining

## Machining - Cill

### Section 525/T & 526/T

The preparation shown on this page must be carried out on both ends of the member for rebate upstand clearance.

If the rail is being used on a corner post, or solid mullion situation then the 25 x 5mm slot indicated by "\*" must be carried out to allow water to drain to the subcill.

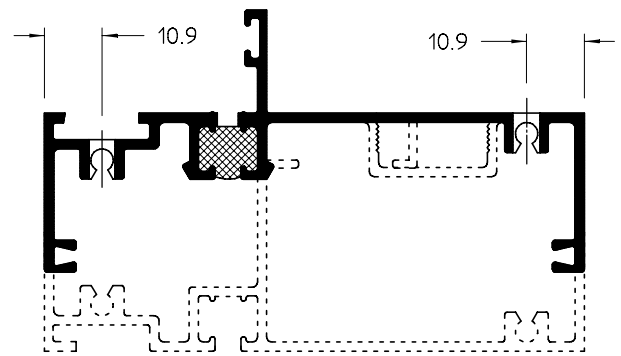
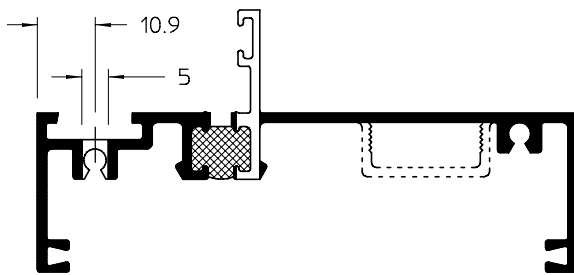
Router Plate 325/178

## Machining - Jamb End

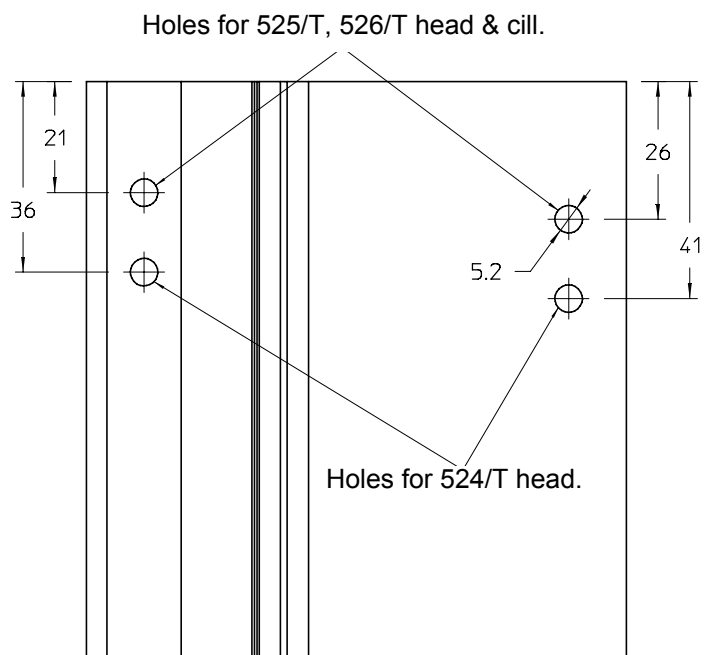
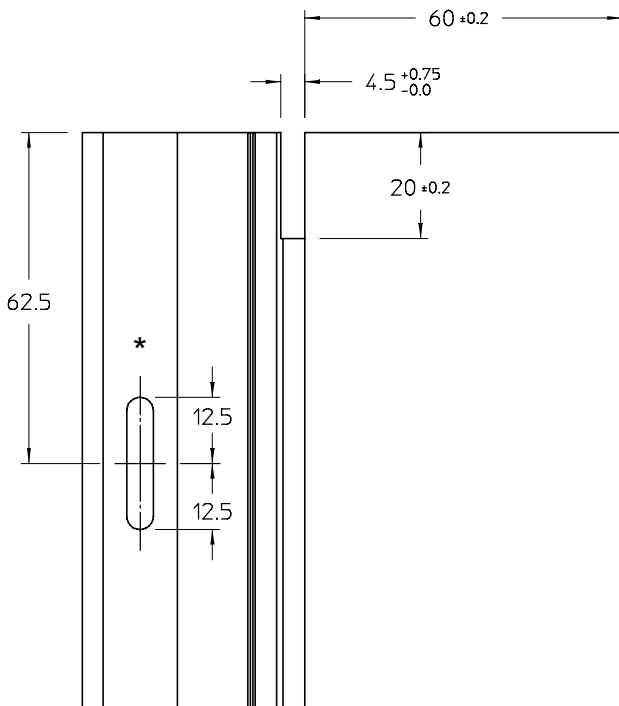
### Section 524/T, 525/T & 526/T

The preparation shown on this page must be carried out on both ends of the member to allow for fixing to the head & cill. Note only two holes are required, and appropriate holes are dependent on the head and cill profile to be used.

Drill Jig 325/173



When using section 524/T open up 5.2 dia holes to 11.0 dia on outer wall for screw head clearance.



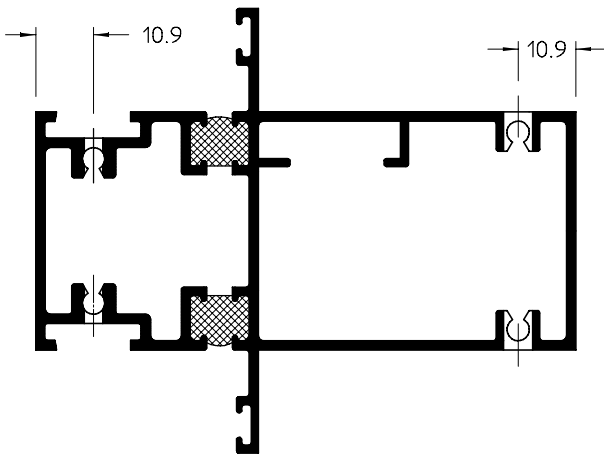
# Frame Machining

## Machining - Intermediate Mullion

### Section 537/T

The preparation shown below must be carried out on the top & bottom of mullions to allow for the attachment of the head and cill. Note only two holes are required, and appropriate holes are dependent on the head and cill profile to be used.

Drill Jig 325/173

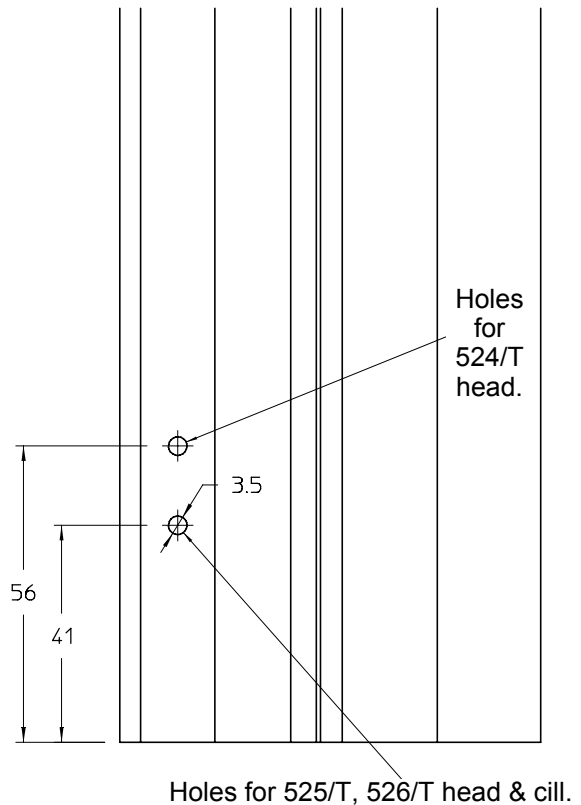
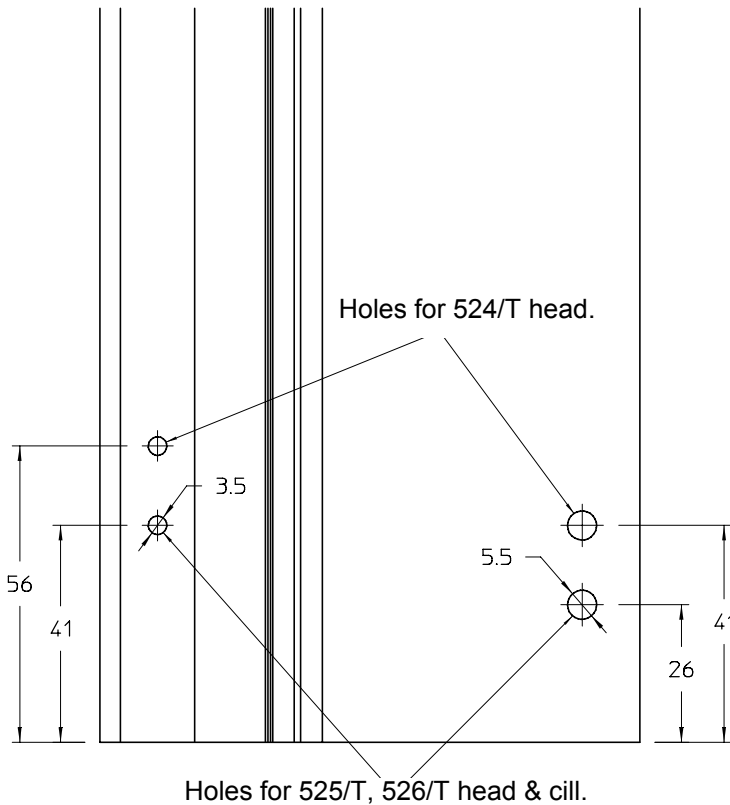
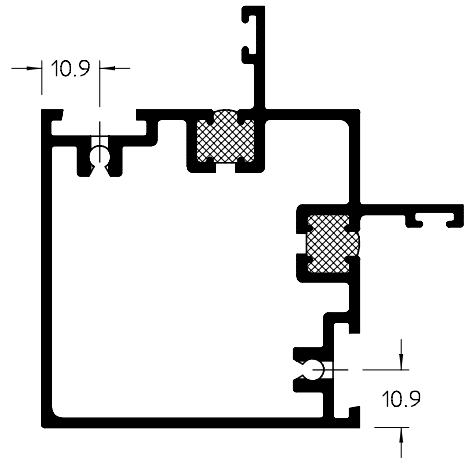


## Machining - Corner Post

### Section 531/T

The preparation shown below must be carried out on the top & bottom of corner posts to allow for the attachment of the head and cill. Note only one hole is required, and the appropriate hole is dependent on the head and cill profile to be used.

Drill Jig 325/173



# Frame Machining

## Machining - Head

### Section 524, 525/T & 526/T

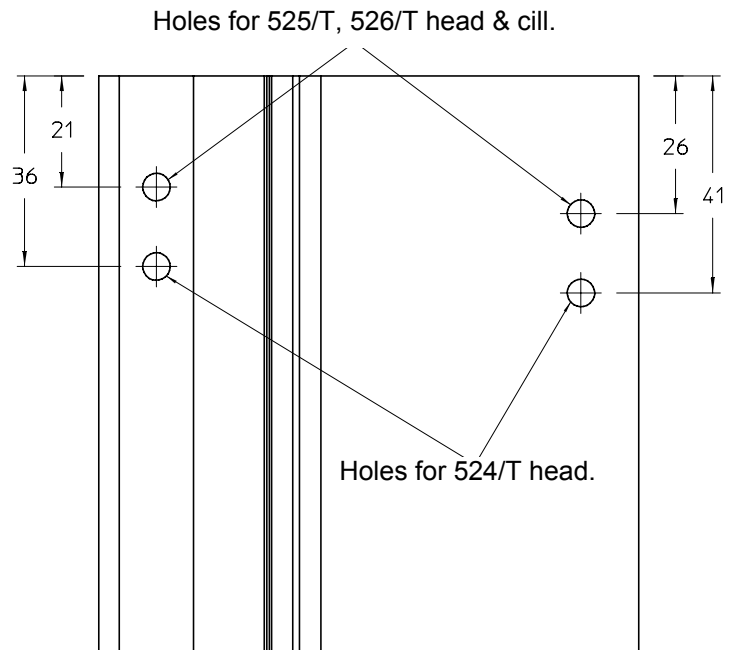
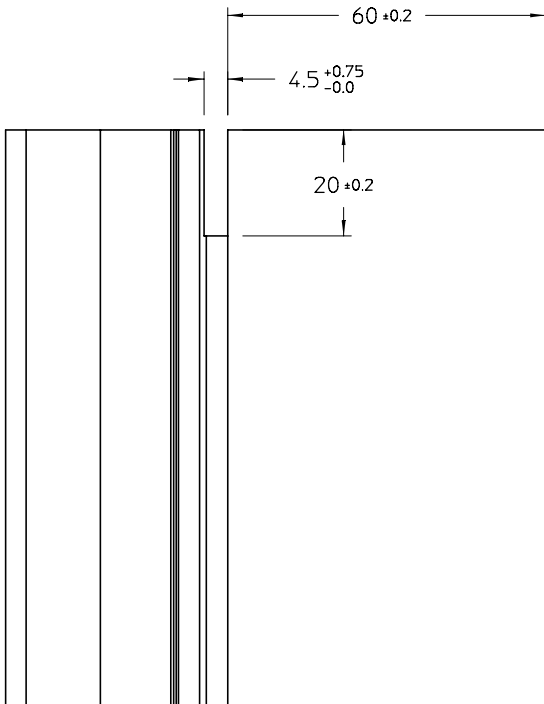
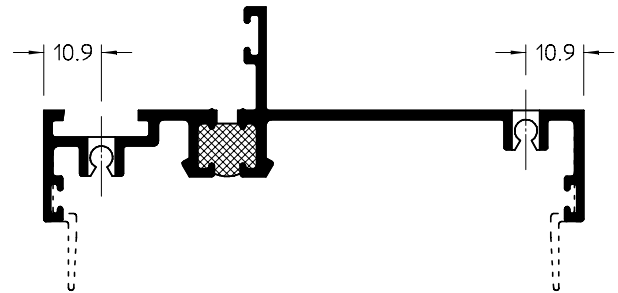
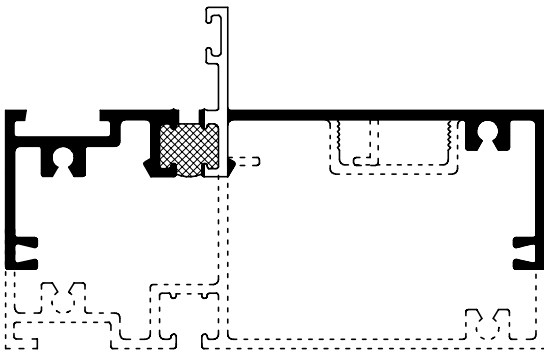
The preparation shown must be carried out on both ends of the head member for the rebate upstand clearance.

## Machining - Intermediate Mullion

### Section 527/T & 528/T

The preparation shown below must be carried out on the top & bottom of mullions to allow for the attachment of the head and cill. Note only two holes are required, and appropriate holes are dependent on the head and cill profile to be used.

Drill Jig 325/173



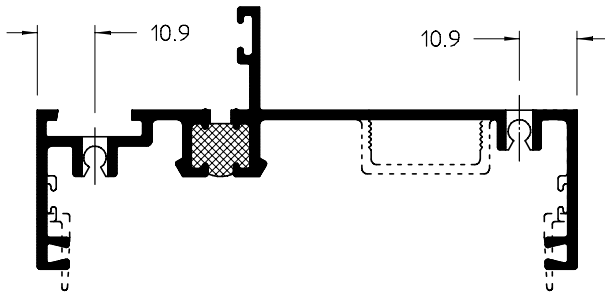
## Frame Machining

### Machining - Rail Fixings

#### Section 525/T, 526/T, 527/T & 528/T

The preparation shown below must be carried out on the mullions at the rail centres to allow for the attachment of the rails.

Drill Jig 325/172

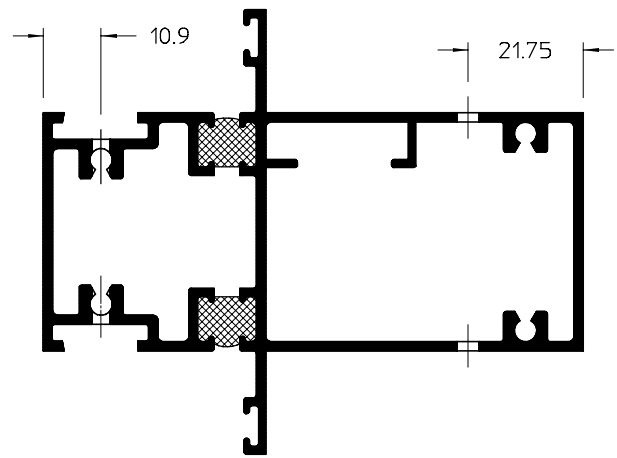


### Machining - Rail Fixings

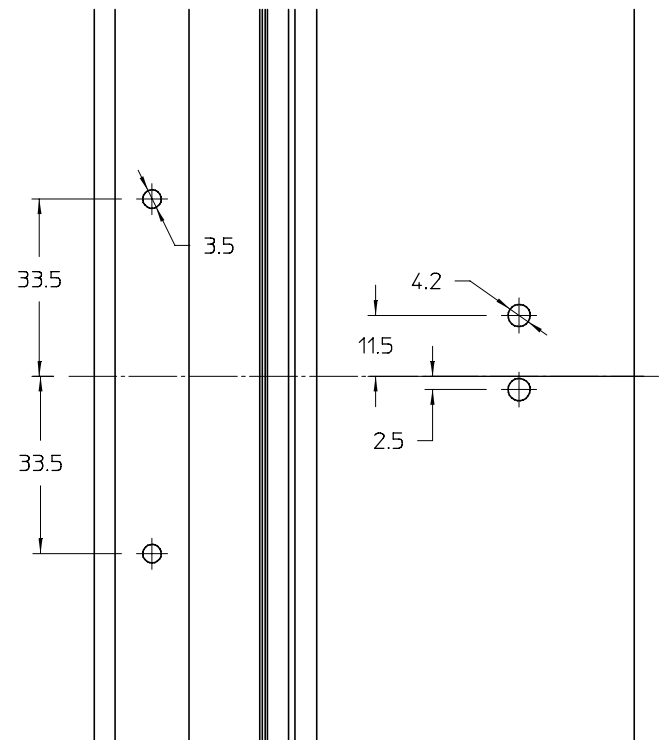
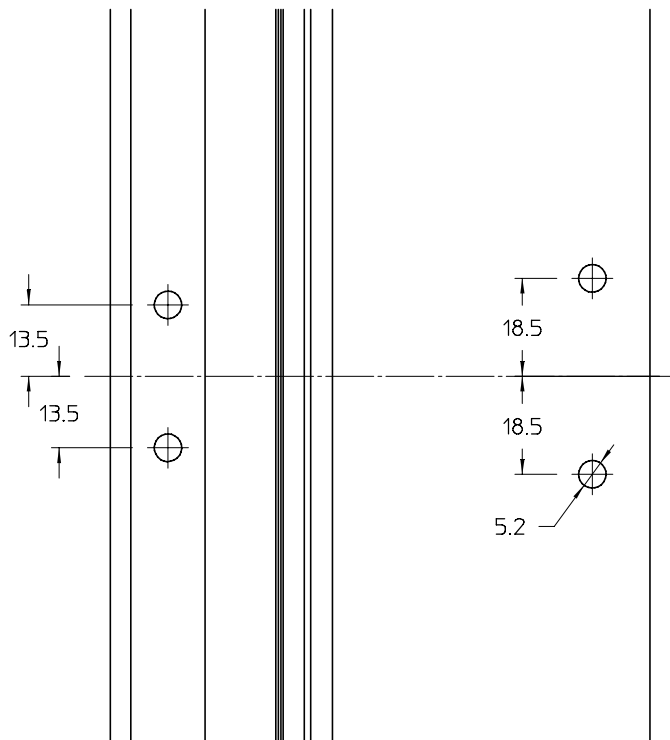
#### Section 537/T

The preparation shown below must be carried out on the mullions at the rail centres to allow for the attachment of the rails.

Drill Jig 325/172



Note these holes are offset and the 11.5 dim hole must be towards the top of the mullion.



## Frame Machining

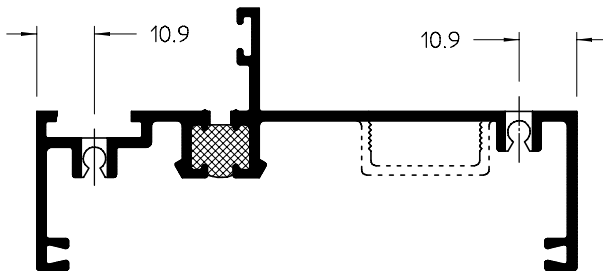
### Machining - Continuous Cill

#### Section 525/T & 526/T

The preparation shown below must be carried out at the cill on the centre line of all intermediate mullions.

Router Plate 325/178.

Drill Jig 325/172

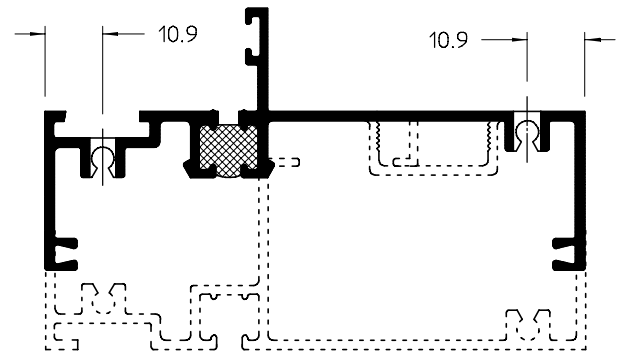


### Machining - Continuous Head

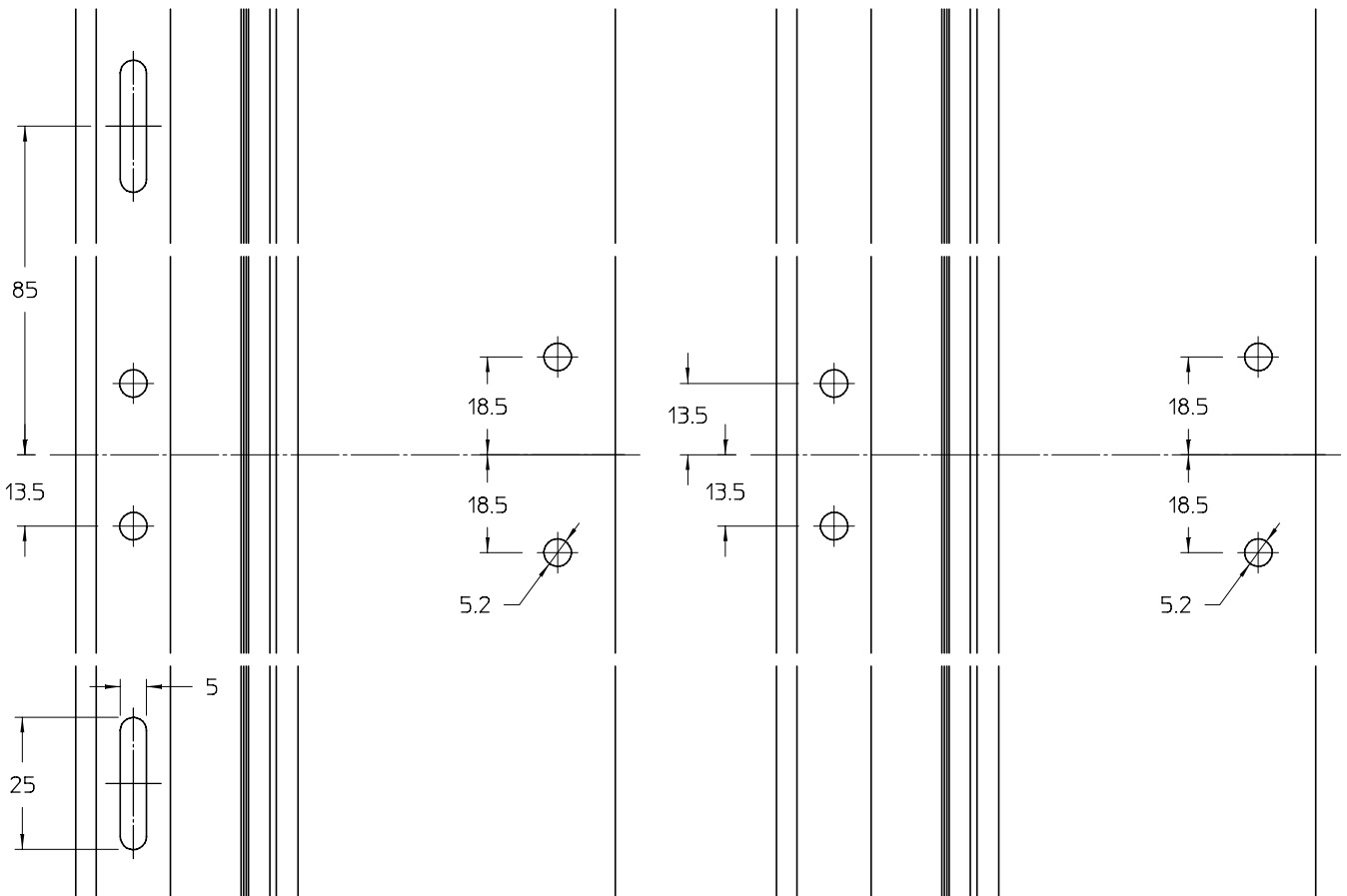
#### Section 524/T, 525/T & 526/T

The preparation shown below must be carried out at the head on the centre line of all intermediate mullions.

Drill Jig 325/172



When using section 524/T open up 5.2 dia holes to 11.0 dia on outer wall for screw head clearance.



## Frame Machining

### Machining - Female Coupler

#### Section 528/T

The preparation shown below is for the screws that close the coupler across the joint, these holes must only be prepared into one of the female jambs at the joint.

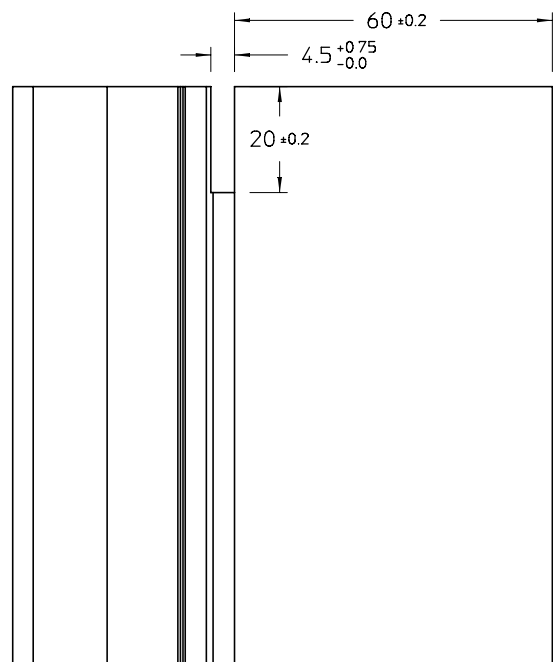
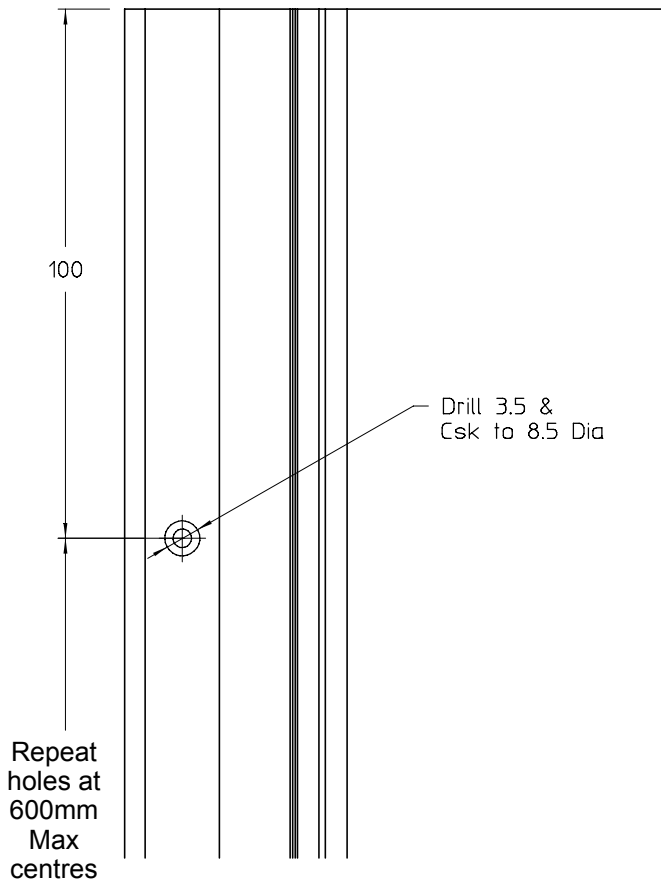
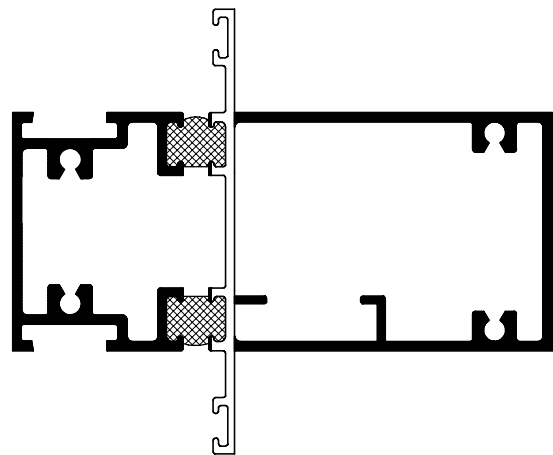
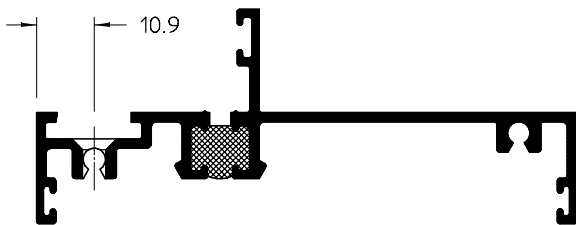
Drill Jig 325/176.

### Machining - Mullions

For use with continuous head & cill.

#### Section 537/T

The preparation shown below must be carried out at both ends of any intermediate mullions to allow them to sit over the glazing rebate of the head and cill.

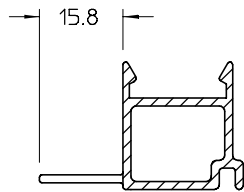


# Frame Machining

## Machining - Intermediate Insert

### Section 533

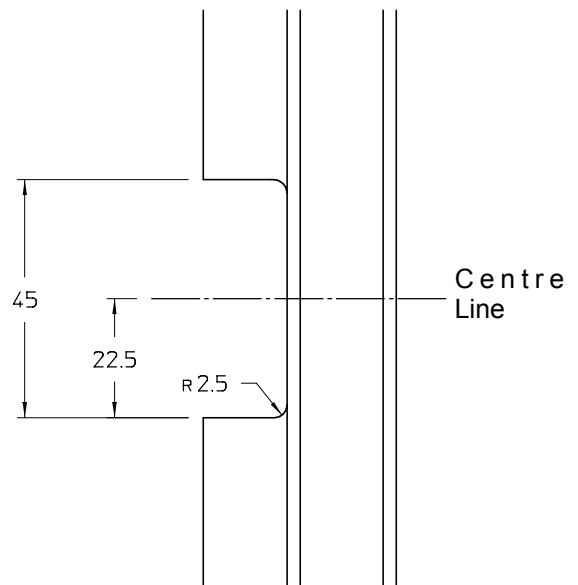
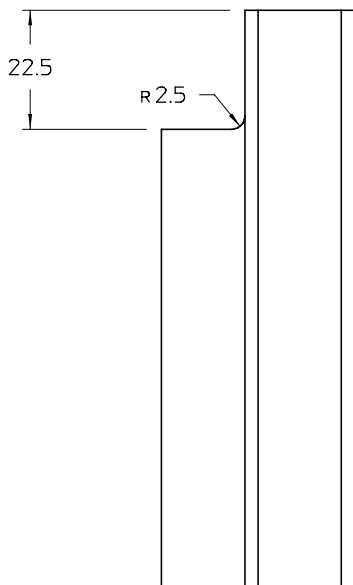
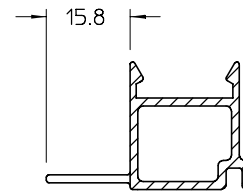
The preparation shown below must be carried out to the clip in plastic insert for the cill. Repeat both ends to allow water to drain from the cill rail drainage.



## Machining - Continuous Insert

### Section 533

The preparation shown below must be carried out to the clip in plastic insert for the cill at mullion centres to allow water to drain from the cill rail drainage.



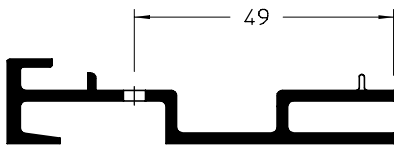
## Frame Machining

### Machining - Sub Cill 90° Corner

#### Section 530

The preparation shown below must be carried out on the mitred end of the subcill to allow for fitting of the joint bracket and corner post.

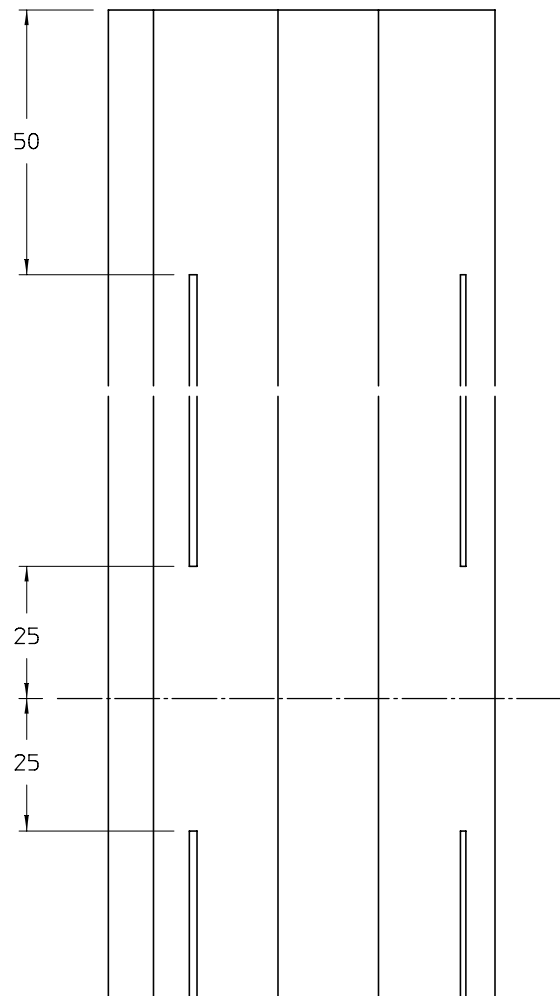
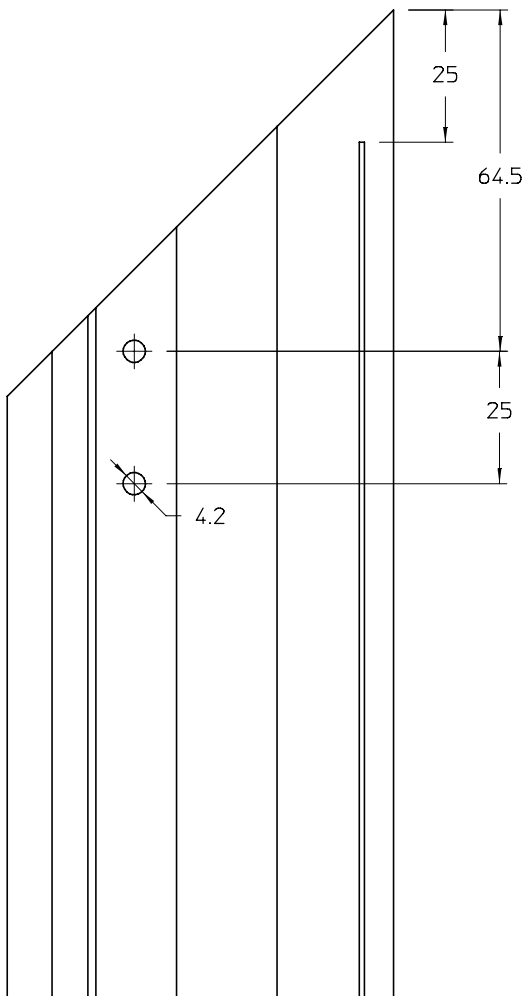
Use 325/33 corner joint bracket as template for fixing holes.



### Machining - Sub Cill

#### Section 530

The preparation shown below is for the end of the subcill and for the intermediate points for mullions.



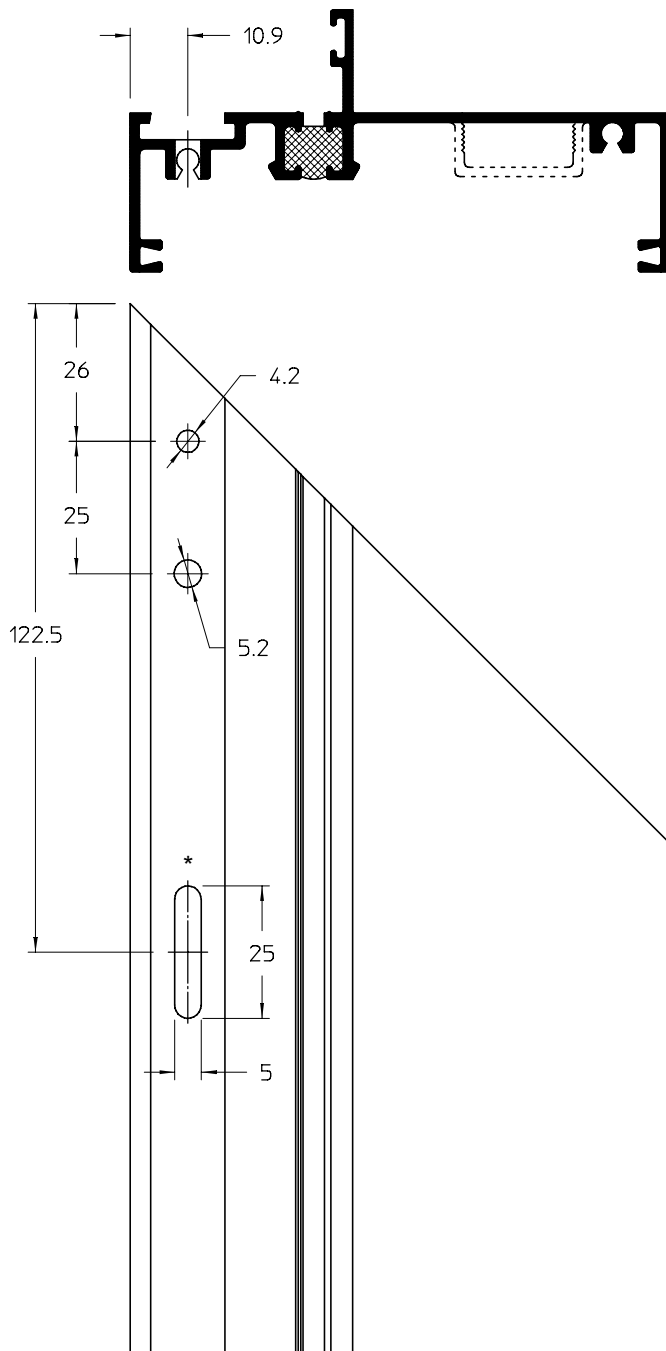
# Frame Machining

## Machining - 90° Head & Cill

### Section 525/T & 526/T

The preparation shown below must be carried out to allow the joint bracket to be fixed onto the head and cill. The 25 x 5mm drainage slot indicated by "\*" is not required in the head.

Drill Jig 325/173

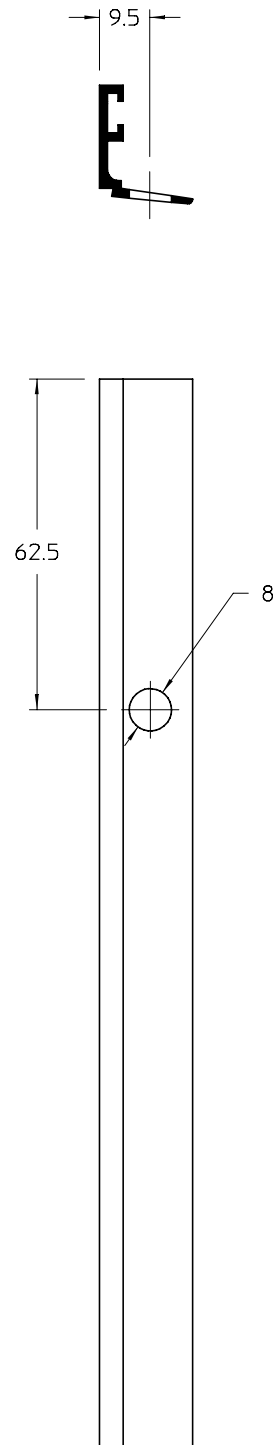


## Horizontal Bottom Bead

### Section 16130, 16131, 16132, 16133, 16135

Section 16132 shown

The preparation shown below must be carried out at both ends of any horizontal bead to allow for water to drain through the drainage slots in cill/rails.



## Frame Machining

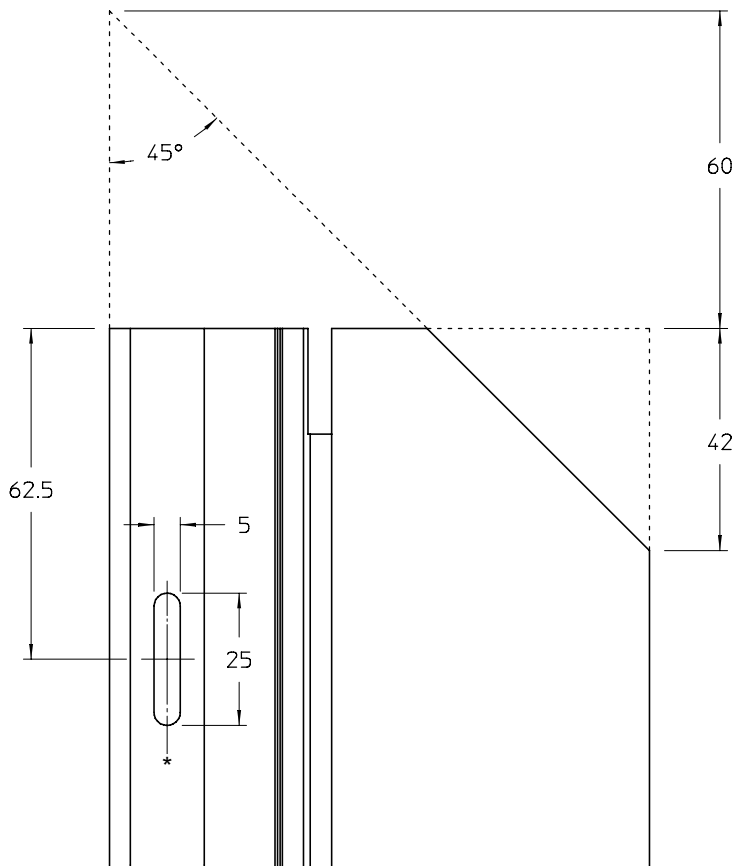
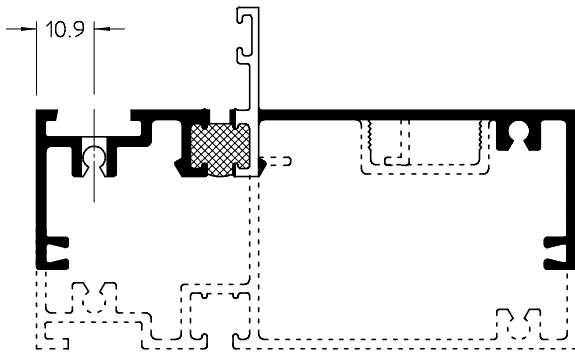
### Machining - Head Cill To Corner

#### Section 525/T, 526/T, & 524/T

The preparation shown on this page must be carried out on the ends of any head & cill that abutts a 90° corner post.

The profile can either be cut over size and then trimmed back square or cut square and then partially mitred (this will save 60mm per rail)

Omit the 25 x 5mm drainage slot indicated by "\*" in the head.

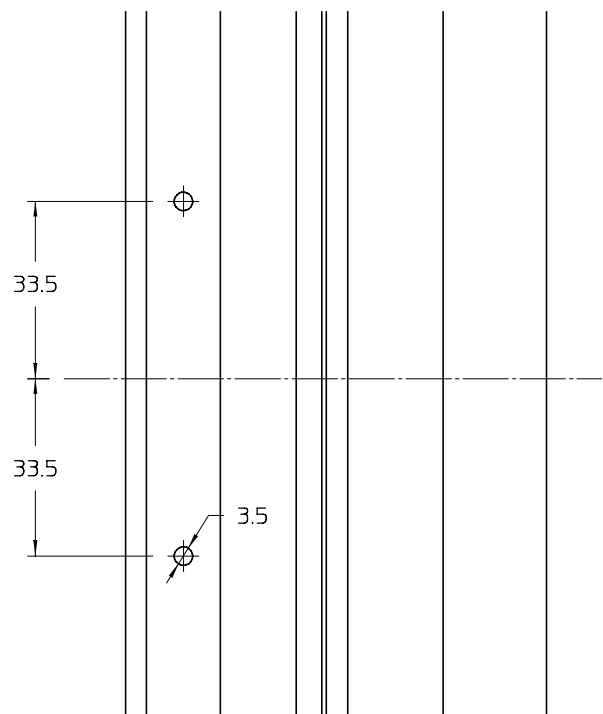
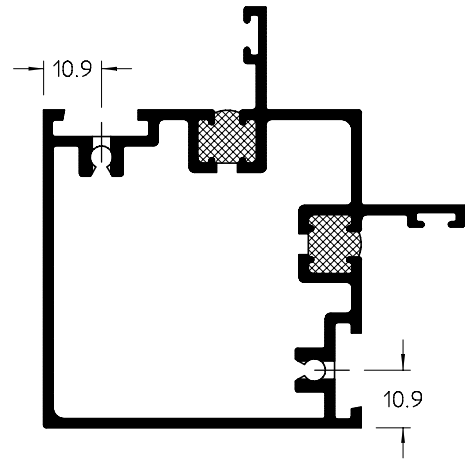


### Machining - Rail To Corner Post

#### Section 531/T

The preparation shown below must be carried out on the mullions at the rail centres to allow for the attachment of the rails.

Drill Jig 325/172



# Frame Machining

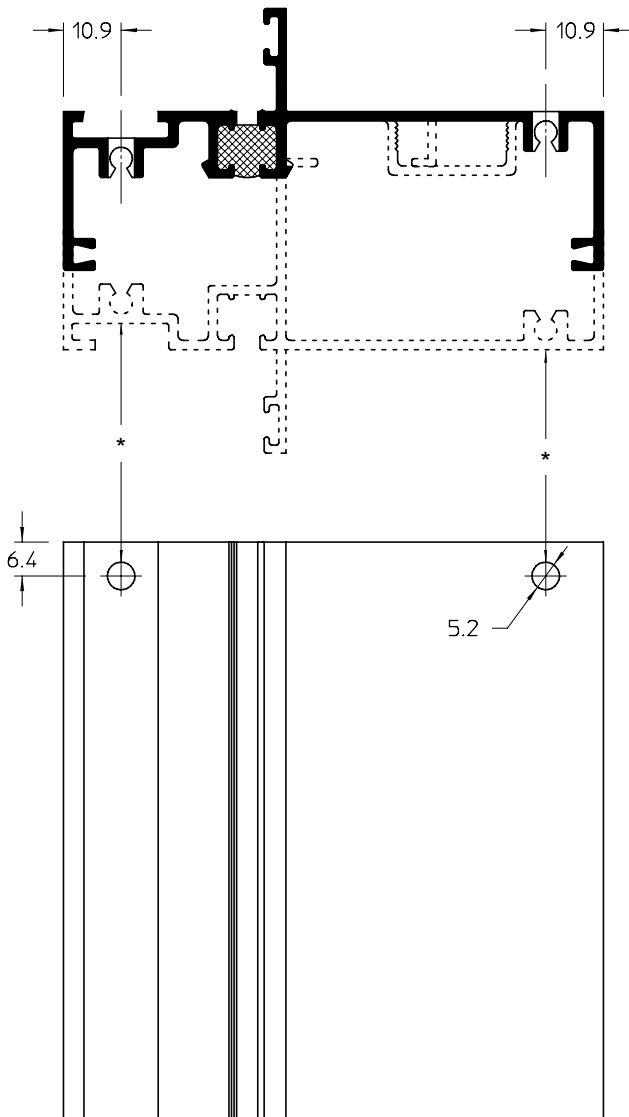
## Machining For Door Cill

### Section 524/T, 525/T, 526/T, 537/T

The preparation shown on this page must be carried out on the bottom of jambs or mullions.

\*On profiles 524/T and 537/T open out 5.2 dia holes to 11.0 dia on opposite face for screw head clearance.

Note that standard cill preparation is to be prepared on the opposite face of 537/T as per detail on page 4-6

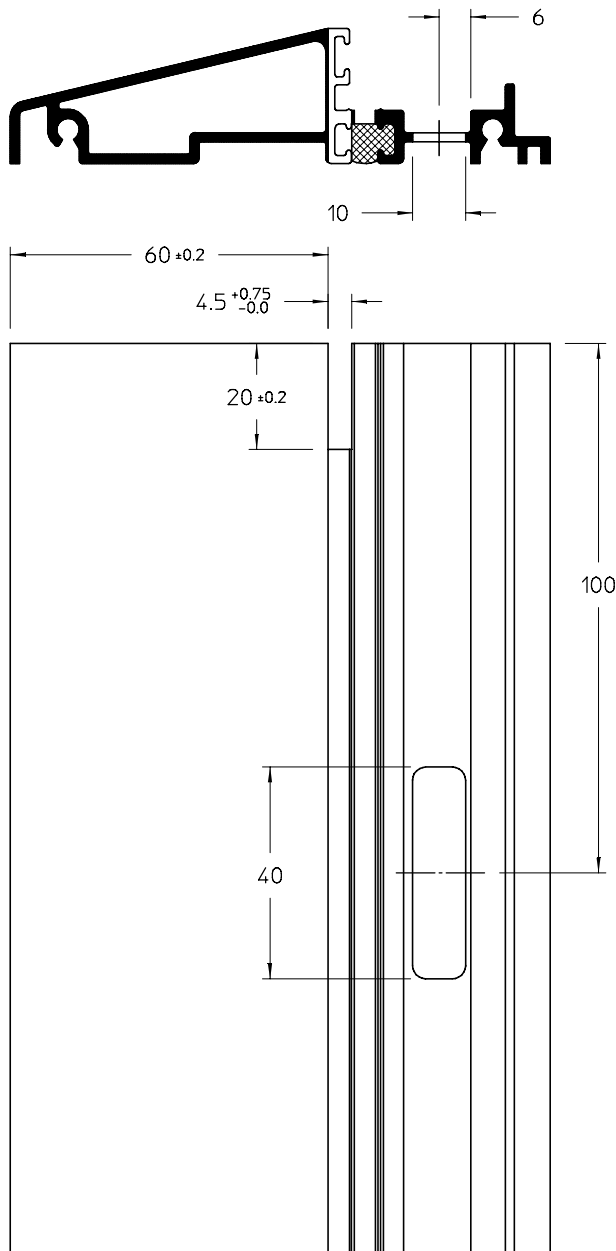


# Frame Machining

## Open Out Threshold - Single Door

### Section 529/T

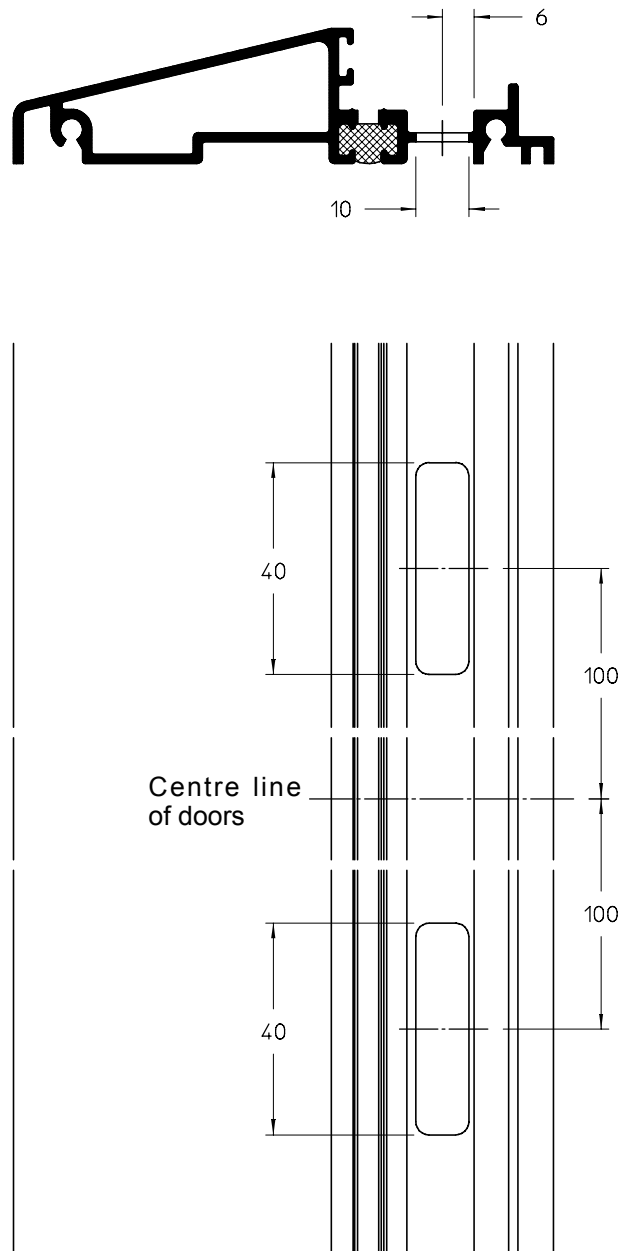
The preparation shown below is for the drainage of the threshold profile on open out single doors. Repeat preparation at the opposite end of the threshold.



## Open Out Threshold - Double Door

### Section 529/T

The preparation shown below is for the drainage of the threshold profile on open out double doors. Prepare the ends of the threshold as per single door details shown alongside.

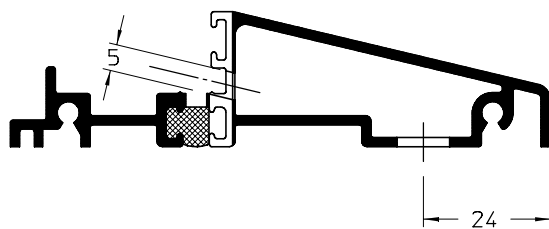


# Frame Machining

## Open In Threshold - Single/Double Door

### Section 529/T

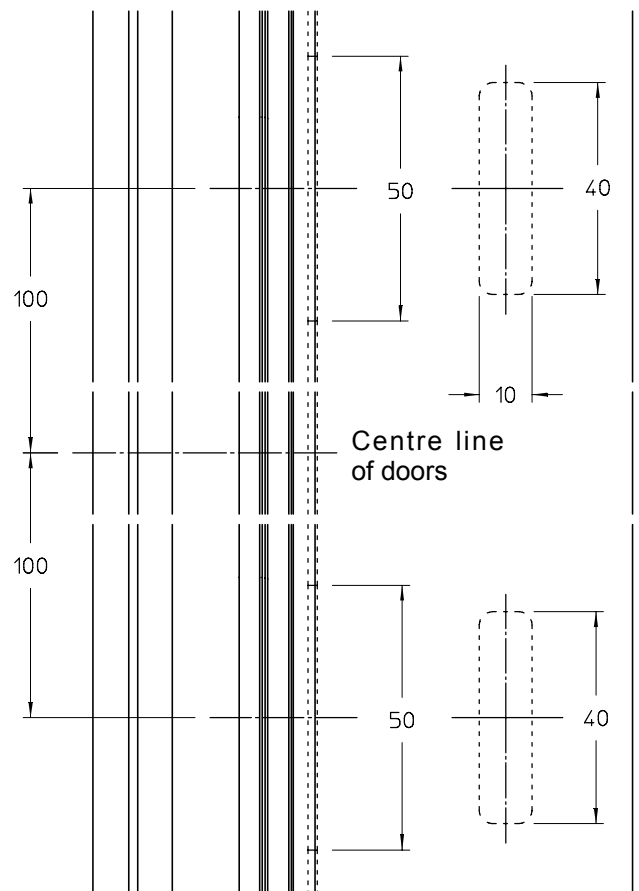
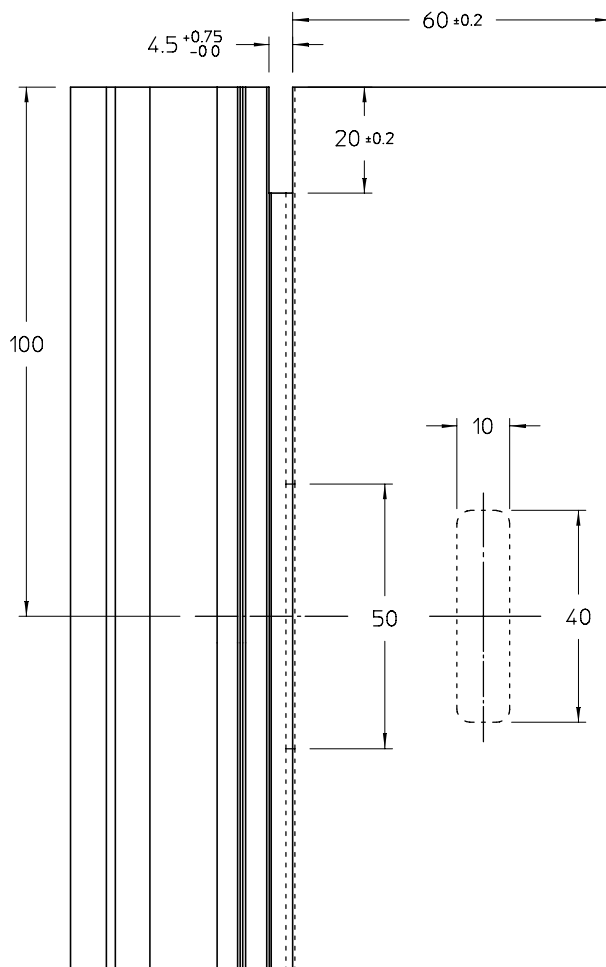
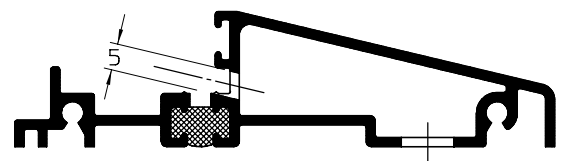
The preparation shown below is for the drainage of the threshold profile on open in single doors, and the ends of open in double door thresholds. Repeat preparation at the opposite end of the threshold.



## Open In Threshold - Double Door

### Section 529/T

The preparation shown below is for the centre drainage of the threshold profile on open in double doors. Prepare the ends of the threshold as per single door details shown alongside.



# Frame Machining

## Side Hung Normal Duty Stay

### Section 525/T, 526/T & 537/T

The preparation shown below is for the fixing of the side hung stays to the outerframe.

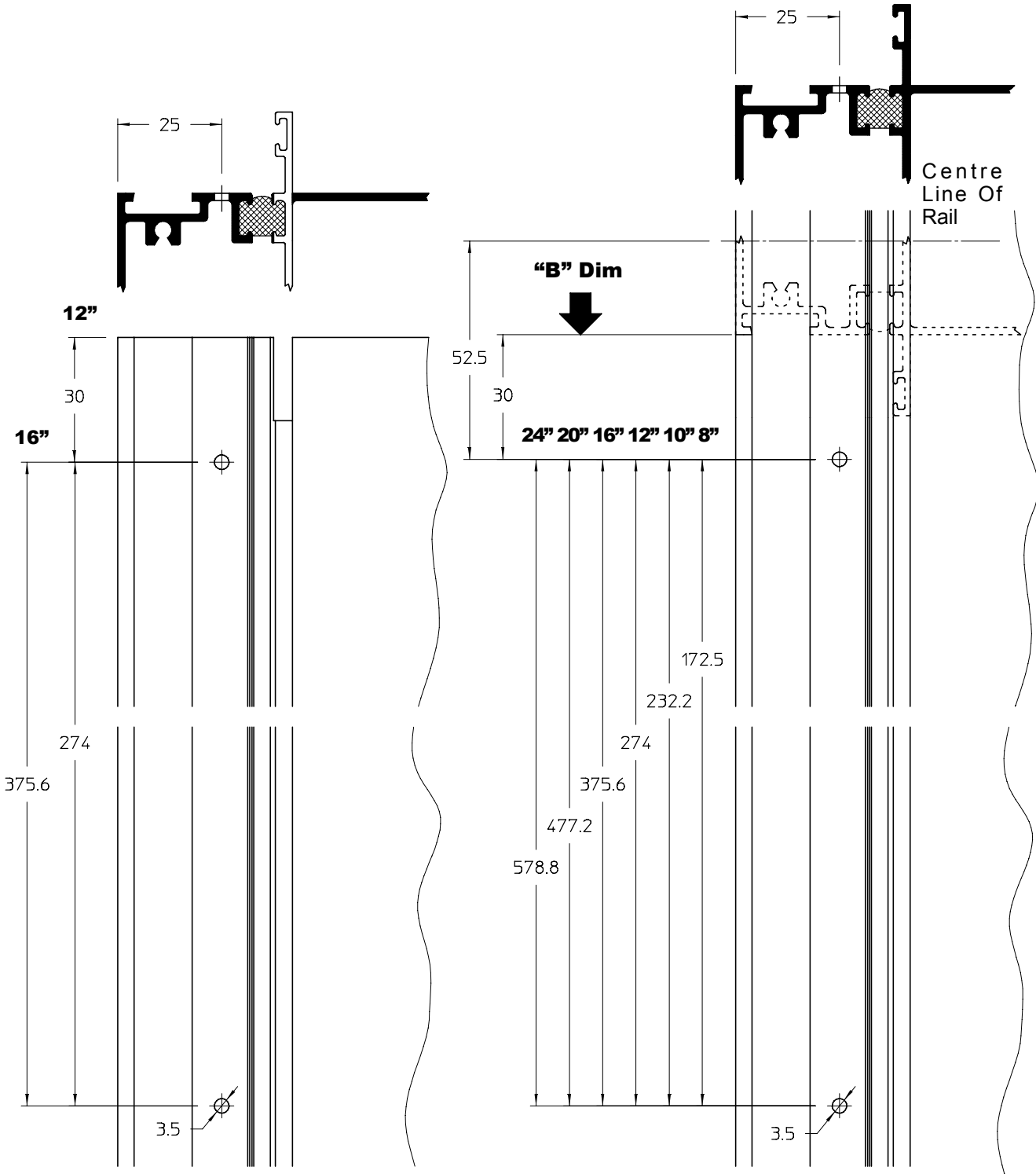
Drill Jig 325/174

## Top Hung Normal Duty Stay

### Section 524/T, 525/T, 526/T, 527/T, 528/T, & 537/T

The preparation shown below is for the fixing of the top hung stays to the outerframe.

Drill Jig 325/174



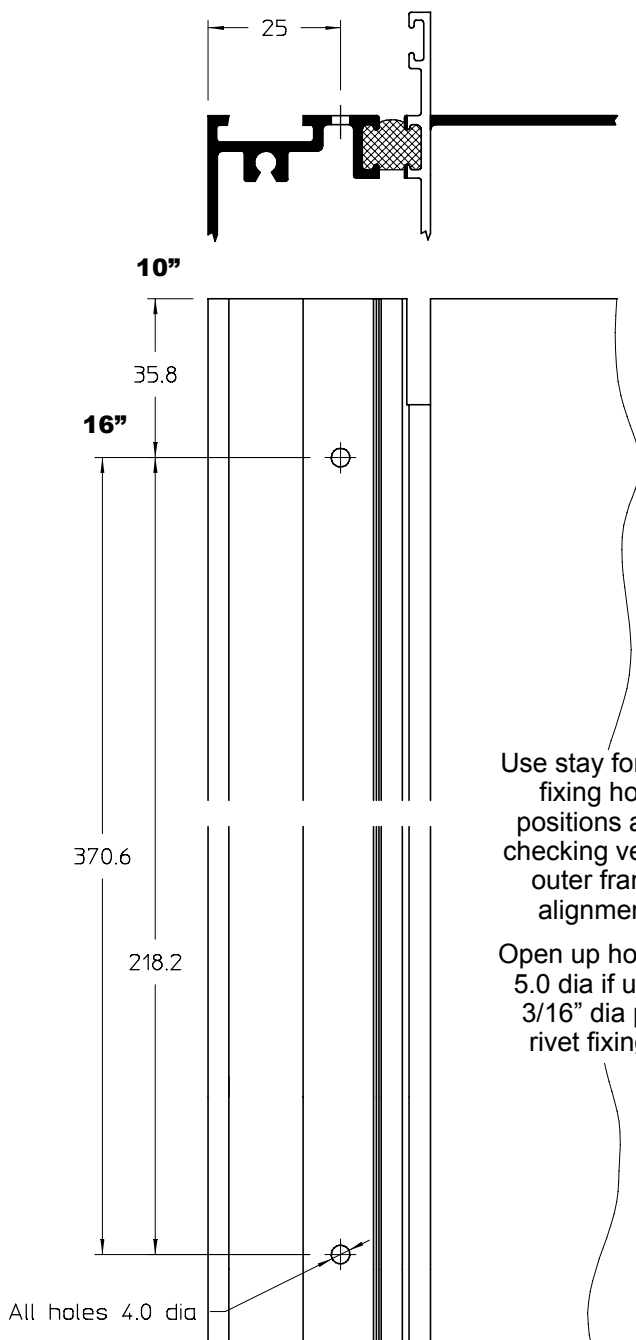
# Frame Machining

## Side Hung Heavy Duty Stay

### Section 525/T, 526/T & 537/T

The preparation shown below is for the fixing of the side hung stays to the outerframe.

Drill Jig 325/175

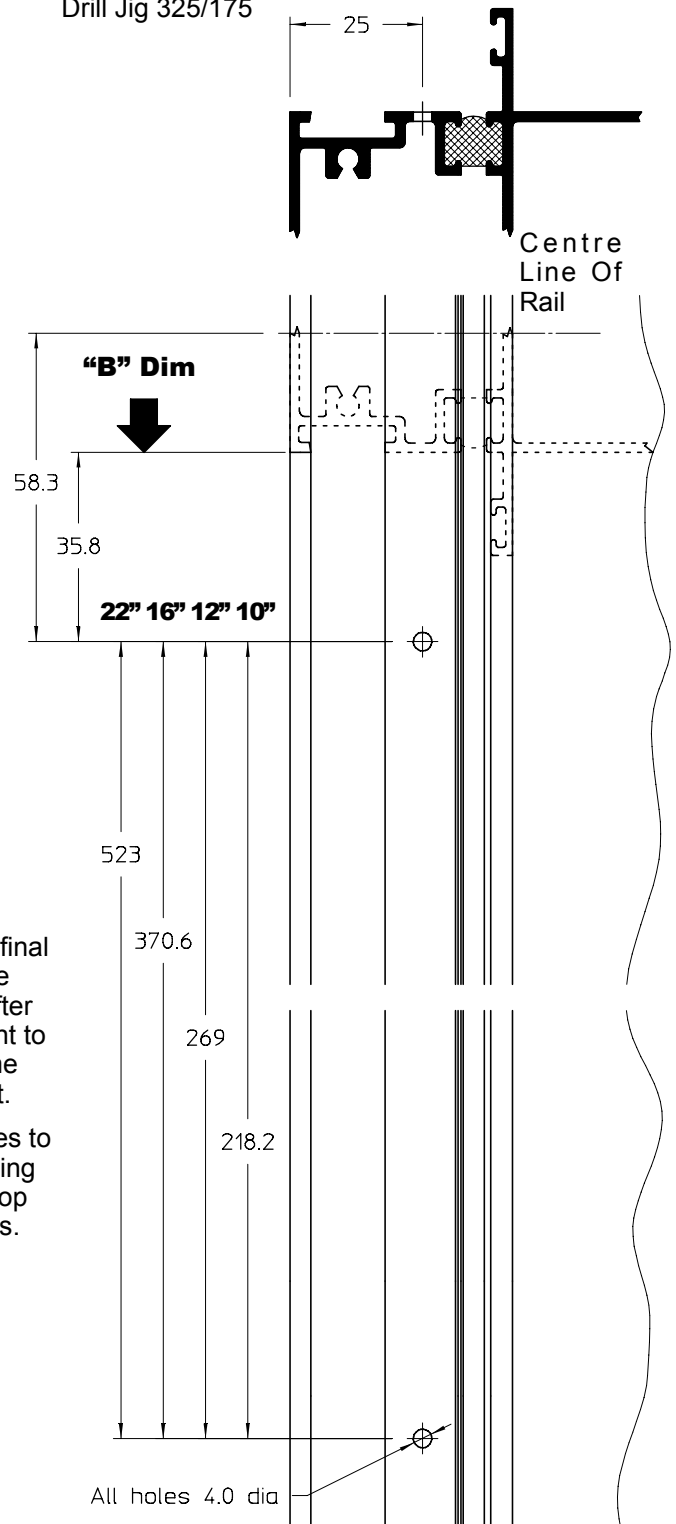


## Top Hung Heavy Duty Stay

### Section 524/T, 525/T, 526/T, 527/T, 528/T, & 537/T

The preparation shown below is for the fixing of the top hung stays to the outerframe.

Drill Jig 325/175



Use stay for final fixing hole positions after checking vent to outer frame alignment.

Open up holes to 5.0 dia if using 3/16" dia pop rivet fixings.

## Frame Machining

### Machining - Riser Blocks

#### Section 525/T, 526/T & 537/T

The preparation shown below must be carried out on both ends of a rail below a top hung vent and at the locking point end of the rail for a side hung vent.

Router Plate 325/178

Use riser block as template for fixing holes.

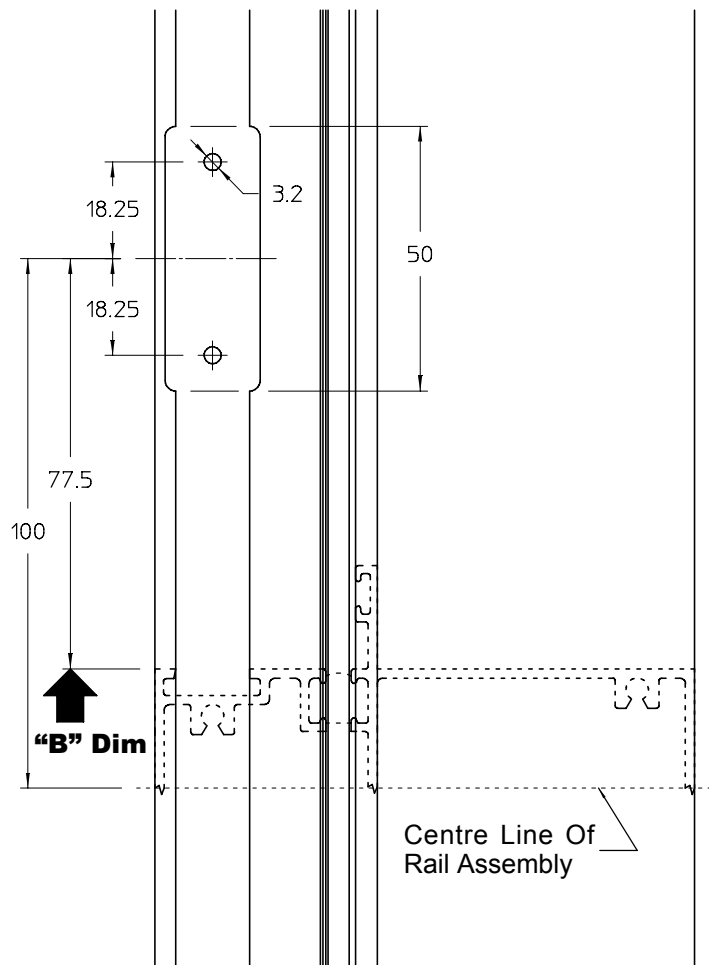
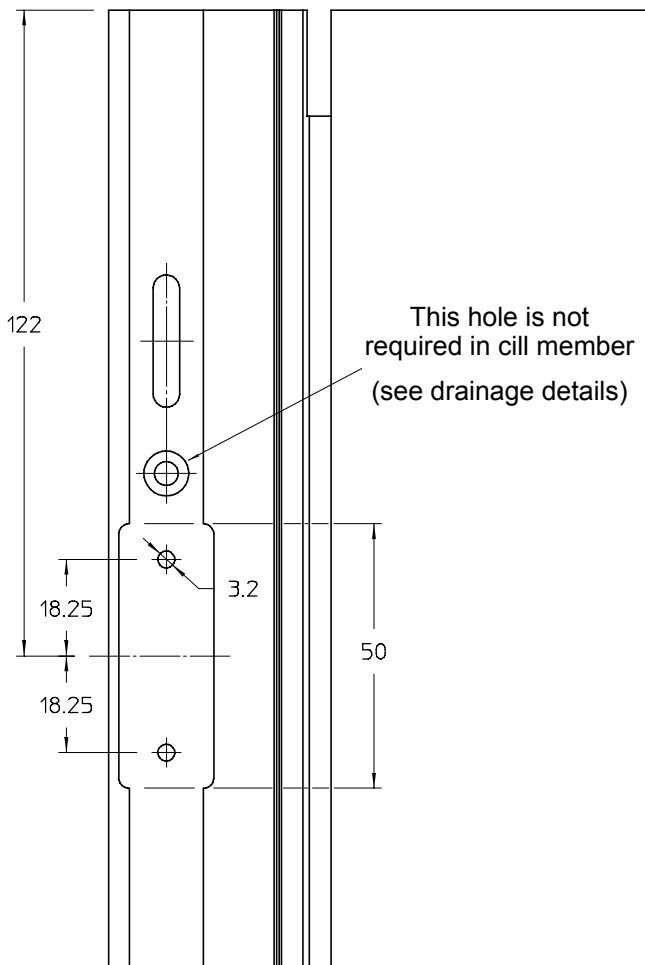
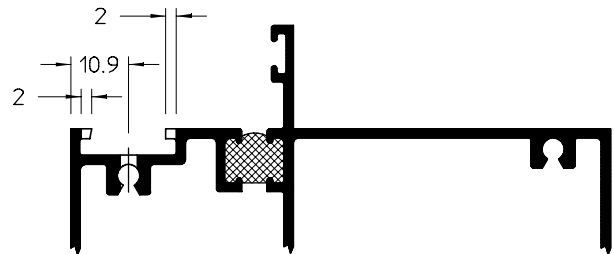
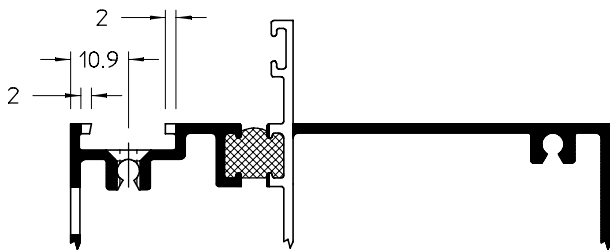
### Machining - Riser Blocks

#### Section 524/T, 525/T, 526/T, 527/T, 528/T, & 537/T

The preparation shown below must be carried out on both mullions at the rail preparations to either side of a top hung vent. Note this preparation is only required when the vent height exceeds 850mm.

Router Plate 325/178

Use riser block as template for fixing holes.



# Frame Machining

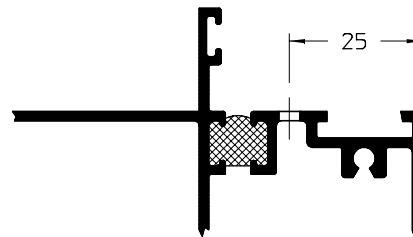
## Espagnolette Keep Preparation

### Section 524/T, 525/T, 526/T, 527/T, 528/T, & 537/T

The preparation shown below is for the fixing of the espagnolette keeps on both side hung & top hung units the centre line denotes the centre of the vent.

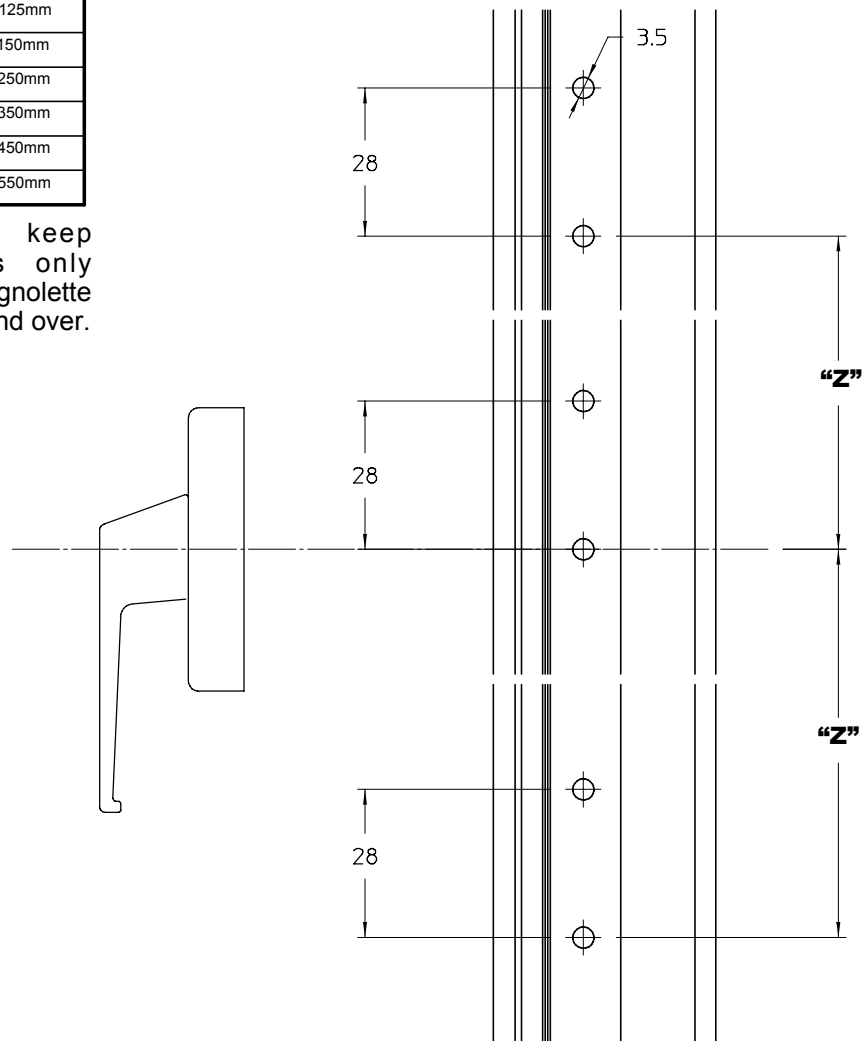
Note handle direction

Drill Jig 325/153



Slide Bar Length	"Z"
250mm Long	125mm
400mm Long	150mm
600mm Long	250mm
800mm Long	350mm
1000mm Long	450mm
1200mm Long	550mm

The central keep preparation is only required on espagnolette bars of 800mm and over.



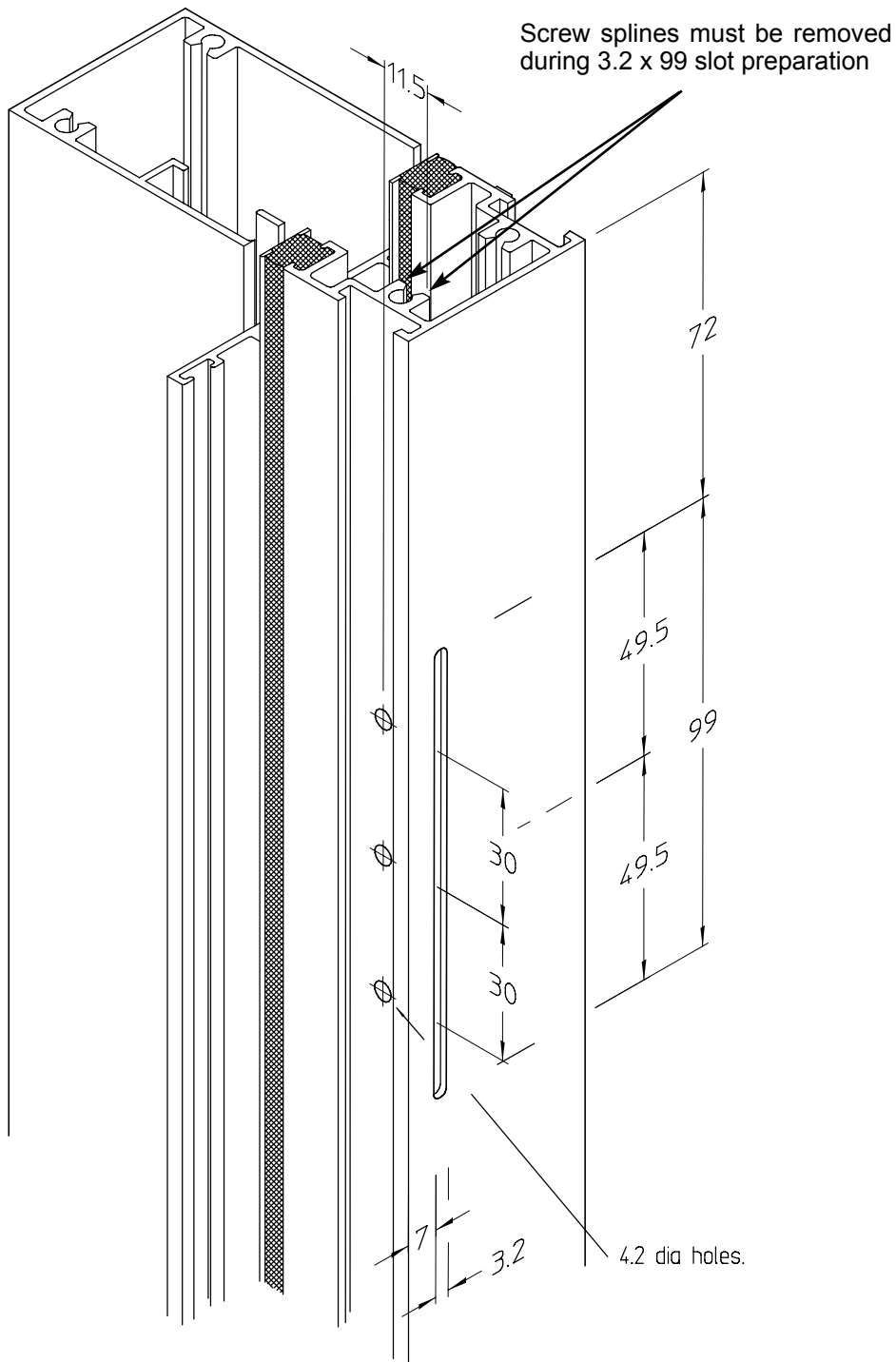
# Frame Machining

## Butt hinge machining

### Section 524/T & 537/T

The preparation shown is for the butt hinge and must be carried out at both ends of the opening that is to receive a butt hinged vent.

Use drill jig 325/165



## Frame Machining

### Folding opener machining

#### Section 525/T, 526/T & 537/T

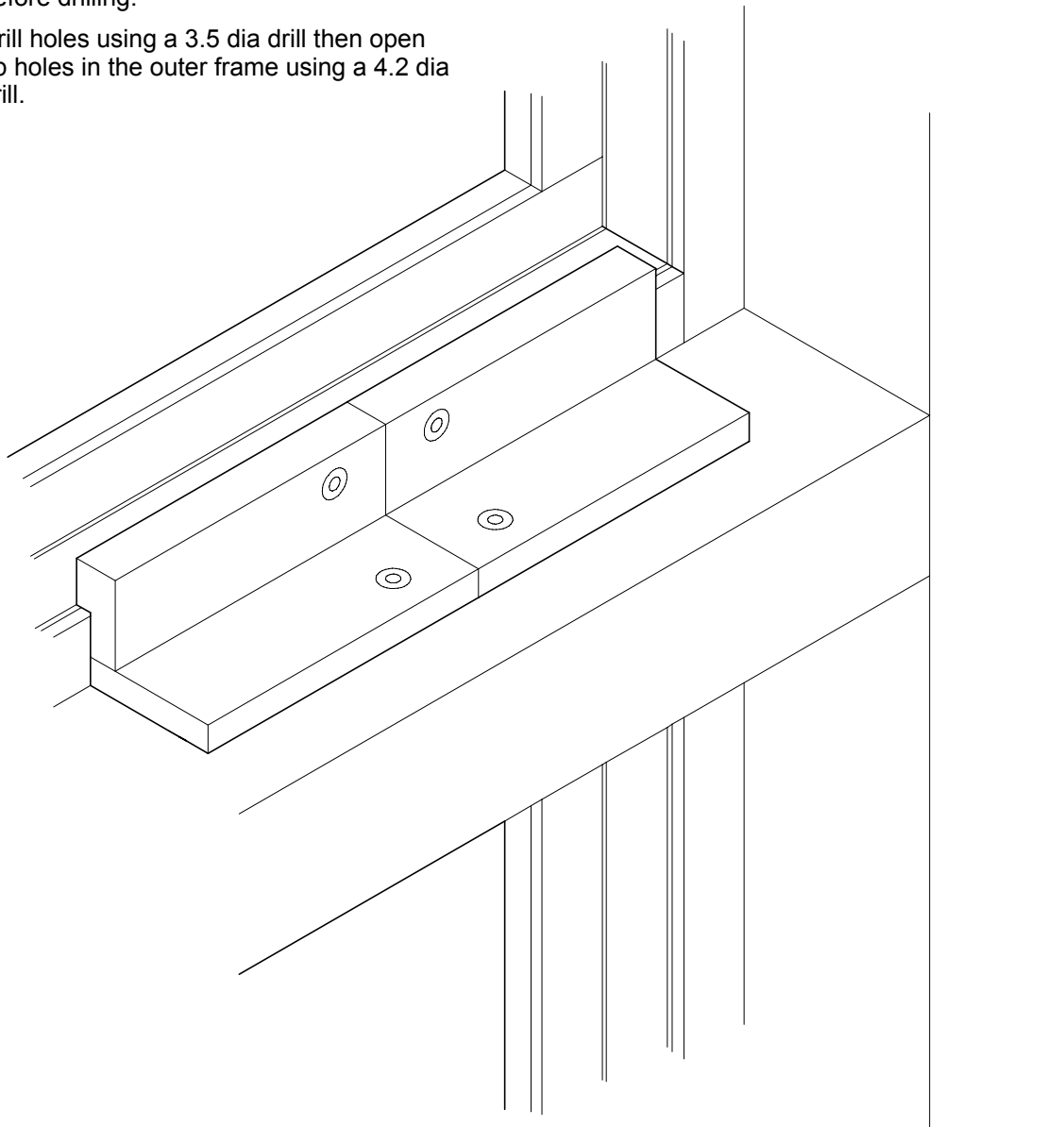
The preparation shown is for the folding opener. Where the operating side of the opening light exceeds 900mm, two folding openers must be fitted 1/4 in from each corner, otherwise only opener is centrally fitted.

Drill jig 325/179

These holes are drilled after the vent has been assembled into the outer frame.

Ensure that the vent is centrally located before drilling.

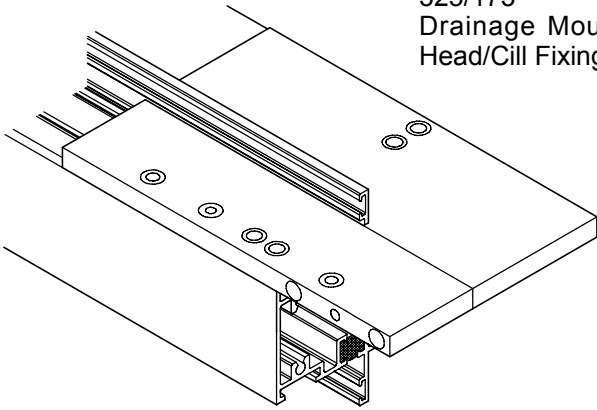
Drill holes using a 3.5 dia drill then open up holes in the outer frame using a 4.2 dia drill.



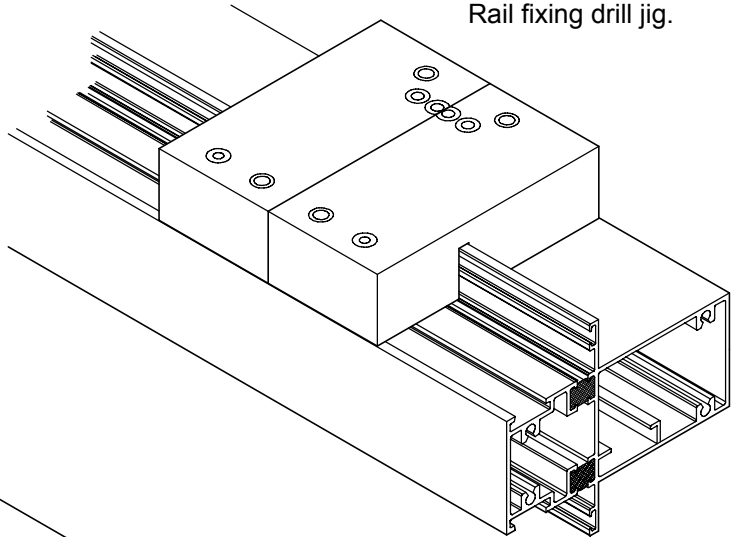
# Frame Machining

## Drill Jig Usage

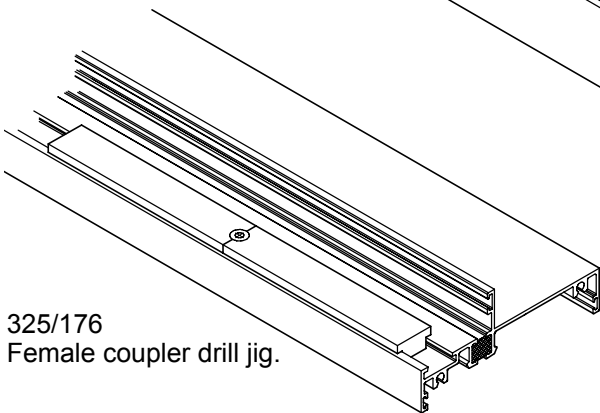
325/173  
Drainage Moulding &  
Head/Cill Fixings



325/172  
Rail fixing drill jig.



325/176  
Female coupler drill jig.



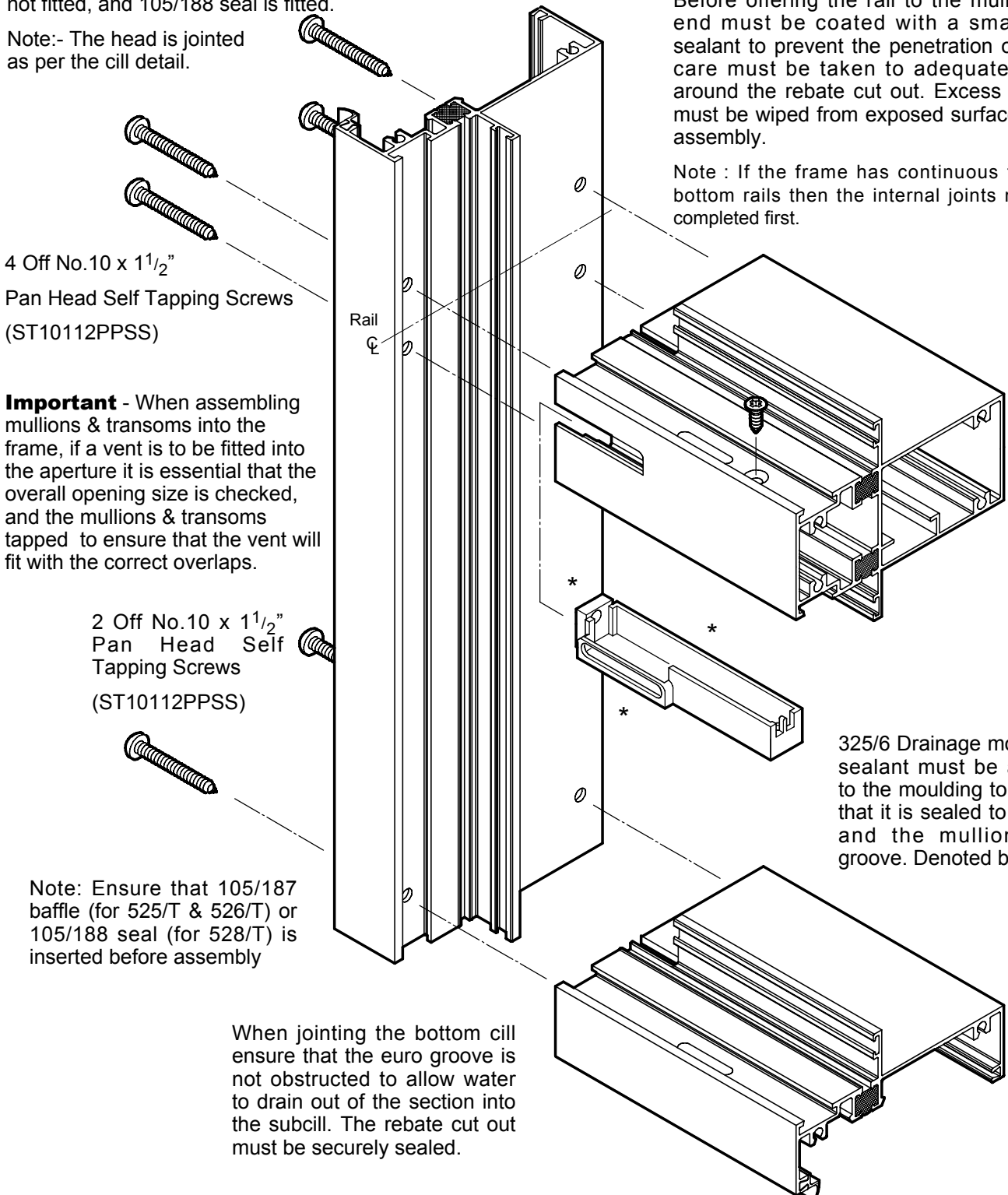
325/174 or 325/175  
Frame fixing for normal or heavy  
duty side and top hung stays.

## Frame Assembly

### Framing Jamb, Cill & Rails or Split Mullion, Cill & Rails

This detail is also applicable to split mullion assembly, and is exactly the same for profiles 527/T & 528/T (526/T shown). With the exception that the baffle seal 105/187 is not fitted, and 105/188 seal is fitted.

Note:- The head is jointed as per the cill detail.



The 325/6 must be secured into the rail using a No.8 x 1/2" Csk head self tapping screw, carefully driven into inserted drainage moulding.

Before offering the rail to the mullion the end must be coated with a small joint sealant to prevent the penetration of water care must be taken to adequately seal around the rebate cut out. Excess sealant must be wiped from exposed surfaces after assembly.

Note : If the frame has continuous top and bottom rails then the internal joints must be completed first.

4 Off No.10 x 1 1/2"  
Pan Head Self Tapping Screws  
(ST10112PPSS)

**Important** - When assembling mullions & transoms into the frame, if a vent is to be fitted into the aperture it is essential that the overall opening size is checked, and the mullions & transoms tapped to ensure that the vent will fit with the correct overlaps.

2 Off No.10 x 1 1/2"  
Pan Head Self Tapping Screws  
(ST10112PPSS)

Note: Ensure that 105/187 baffle (for 525/T & 526/T) or 105/188 seal (for 528/T) is inserted before assembly

325/6 Drainage moulding, sealant must be applied to the moulding to ensure that it is sealed to the rail and the mullion euro groove. Denoted by "\*"

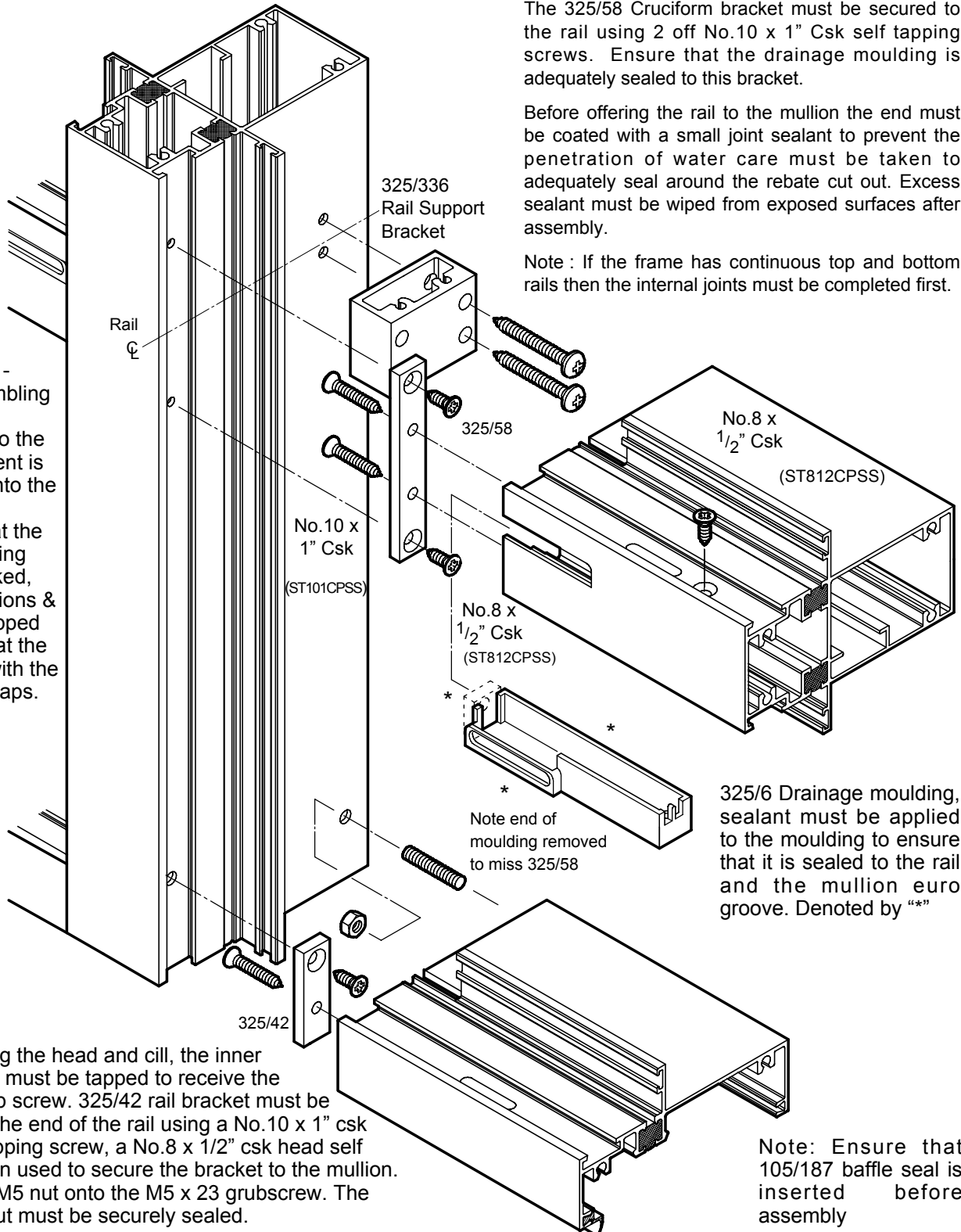
When jointing the bottom cill ensure that the euro groove is not obstructed to allow water to drain out of the section into the subcill. The rebate cut out must be securely sealed.

# Frame Assembly

## Framing Mullion, Cill & Rails

Note:- The head is jointed as per the cill detail.

**Important -** When assembling mullions & transoms into the frame, if a vent is to be fitted into the aperture it is essential that the overall opening size is checked, and the mullions & transoms tapped to ensure that the vent will fit with the correct overlaps.



The 325/6 must be secured into the rail using a No.8 x 1/2" Csk head self tapping screw, carefully driven into inserted drainage moulding.

The 325/58 Cruciform bracket must be secured to the rail using 2 off No.10 x 1" Csk self tapping screws. Ensure that the drainage moulding is adequately sealed to this bracket.

Before offering the rail to the mullion the end must be coated with a small joint sealant to prevent the penetration of water care must be taken to adequately seal around the rebate cut out. Excess sealant must be wiped from exposed surfaces after assembly.

Note : If the frame has continuous top and bottom rails then the internal joints must be completed first.

325/6 Drainage moulding, sealant must be applied to the moulding to ensure that it is sealed to the rail and the mullion euro groove. Denoted by "\*"

Note: Ensure that 105/187 baffle seal is inserted before assembly

When jointing the head and cill, the inner screw spline must be tapped to receive the M5 x 23 grub screw. 325/42 rail bracket must be secured to the end of the rail using a No.10 x 1" csk head self tapping screw, a No.8 x 1/2" csk head self taper is then used to secure the bracket to the mullion. Tighten the M5 nut onto the M5 x 23 grubscrew. The rebate cut out must be securely sealed.

## Frame Assembly

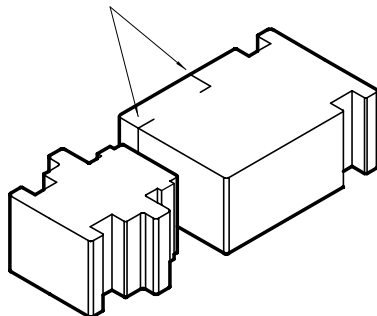
### Continuous Cill Solid Mullion Sealing

Note:- The head is jointed as per the cill detail.

Note : All internal transoms must be fitted before to the mullion prior to the fitting of the continuous head and cill rail as they will not be able to be fitted afterwards. For details of the procedures for fitting these transoms see proceeding pages of this manual.

**Important** - When assembling mullions & transoms into the frame, if a vent is to be fitted into the aperture it is essential that the overall opening size is checked, and the mullions & transoms tapped to ensure that the vent will fit with the correct overlaps.

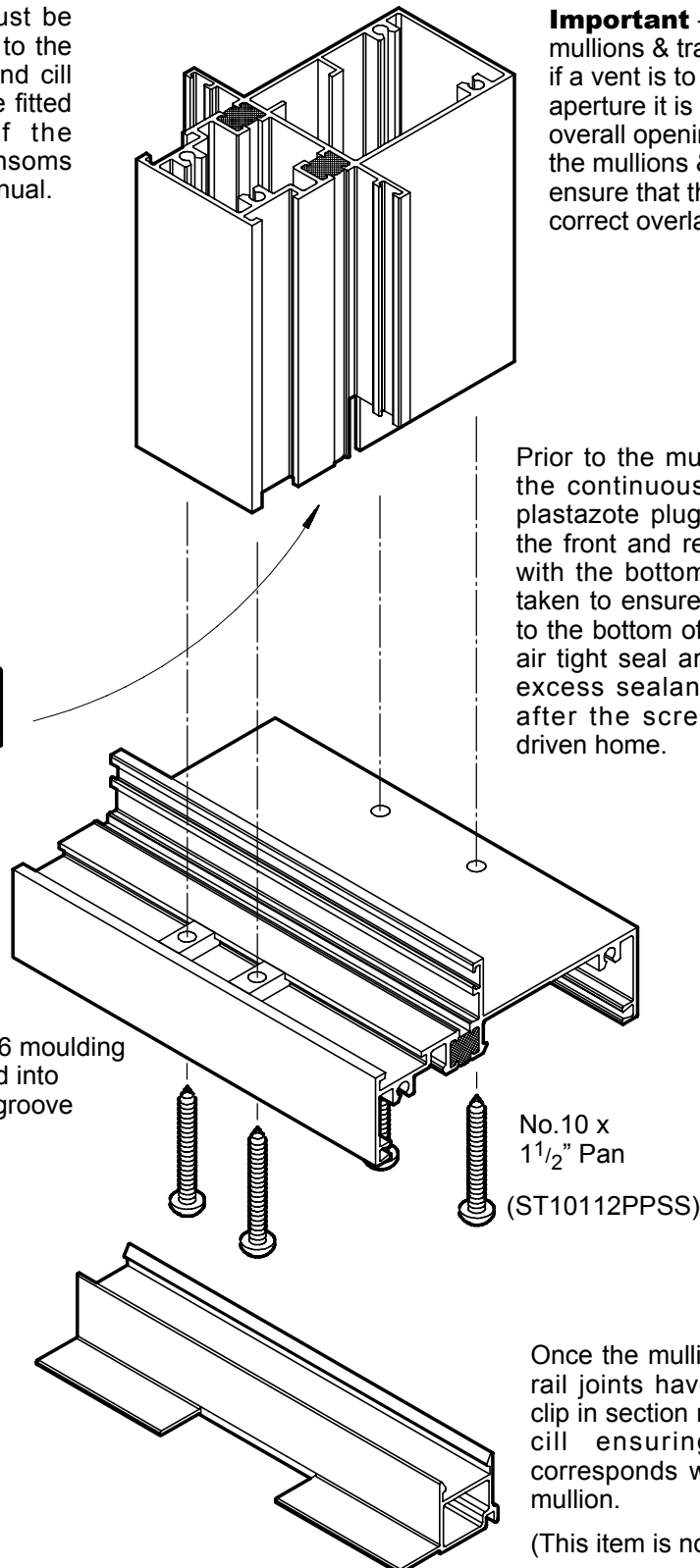
325/63 Plastazote Rear Sealing Plug.  
(Align knife cuts with legs in mullion)



325/62 Plastazote Front Sealing Plug

325/26 moulding sealed into euro-groove

Prior to the mullion being screwed to the continuous head & cill, the two plastazote plugs must be sealed into the front and rear of the mullion flush with the bottom. Care must then be taken to ensure that sealant is applied to the bottom of the mullion to form an air tight seal around the rebate. Any excess sealant must be cleaned of after the screw fixings have been driven home.



No.10 x 1 1/2" Pan  
(ST10112PPSS)

Once the mullion to bottom rails / top rail joints have been made the 533 clip in section must be fitted along the cill ensuring that the cutout corresponds with the position of the mullion.

(This item is not required at the head)

# Frame Assembly

## Framing 90° Corner

Note:- The head is jointed as per the cill detail.

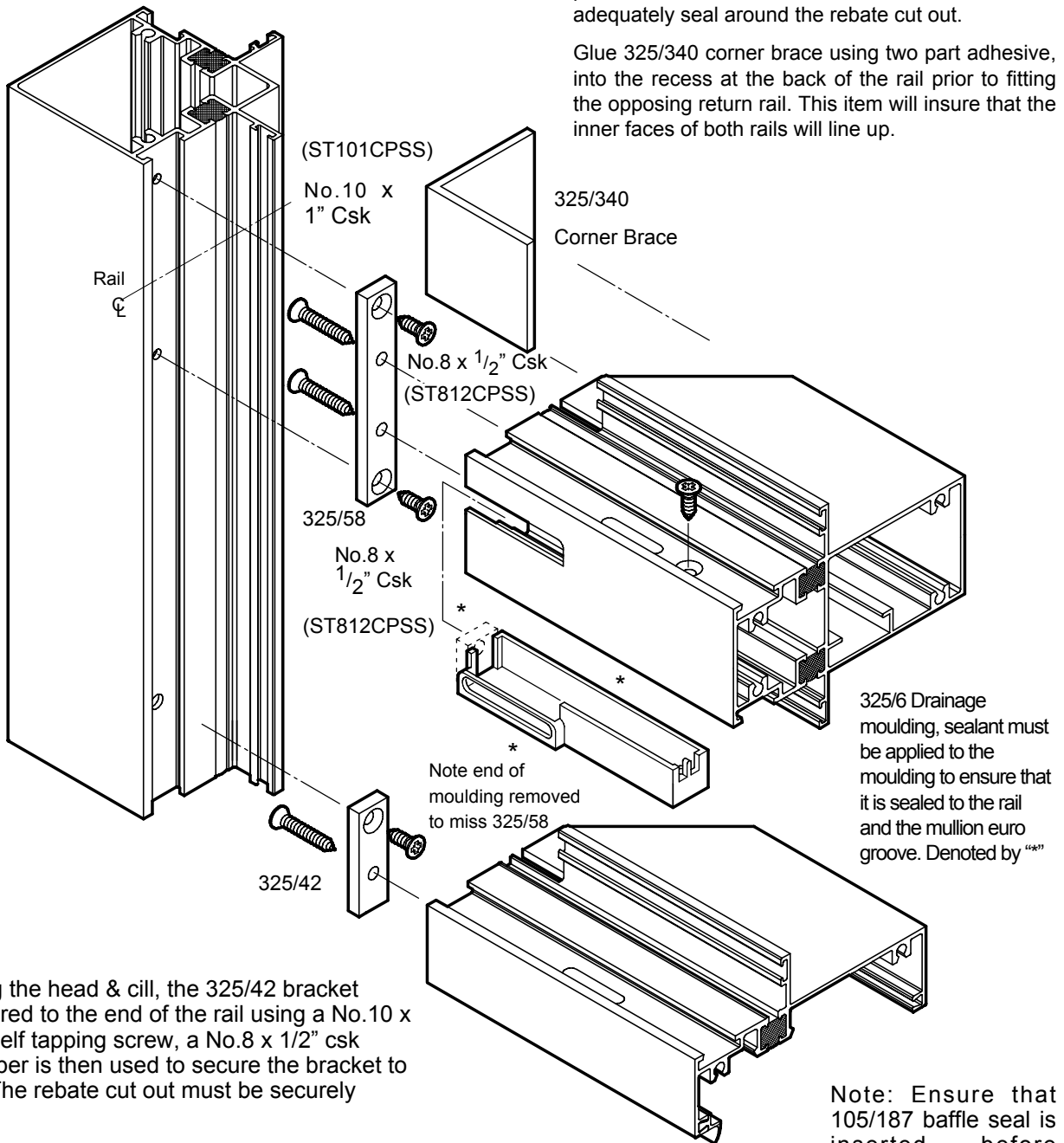
**Important** - When assembling mullions & transoms into the frame, if a vent is to be fitted into the aperture it is essential that the overall opening size is checked, and the mullions & transoms tapped to ensure that the vent will fit with the correct overlaps.

The 325/6 must be secured into the rail using a No.8 x 1/2" Csk head self tapping screw, carefully driven into inserted drainage moulding.

The 325/58 Cruciform bracket must be secured to the rail using 2 off No.10 x 1" Csk self tapping screws. Ensure that the drainage moulding is adequately sealed to this bracket.

Before offering the rail to the mullion the end must be coated with a small joint sealant to prevent the penetration of water care must be taken to adequately seal around the rebate cut out.

Glue 325/340 corner brace using two part adhesive, into the recess at the back of the rail prior to fitting the opposing return rail. This item will insure that the inner faces of both rails will line up.



When jointing the head & cill, the 325/42 bracket must be secured to the end of the rail using a No.10 x 1" csk head self tapping screw, a No.8 x 1/2" csk head self taper is then used to secure the bracket to the mullion. The rebate cut out must be securely sealed.

Note: Ensure that 105/187 baffle seal is inserted before assembly

**PROFRAME**

325 Window Wall

# Frame Assembly

## Continuous Cill 90° Corner

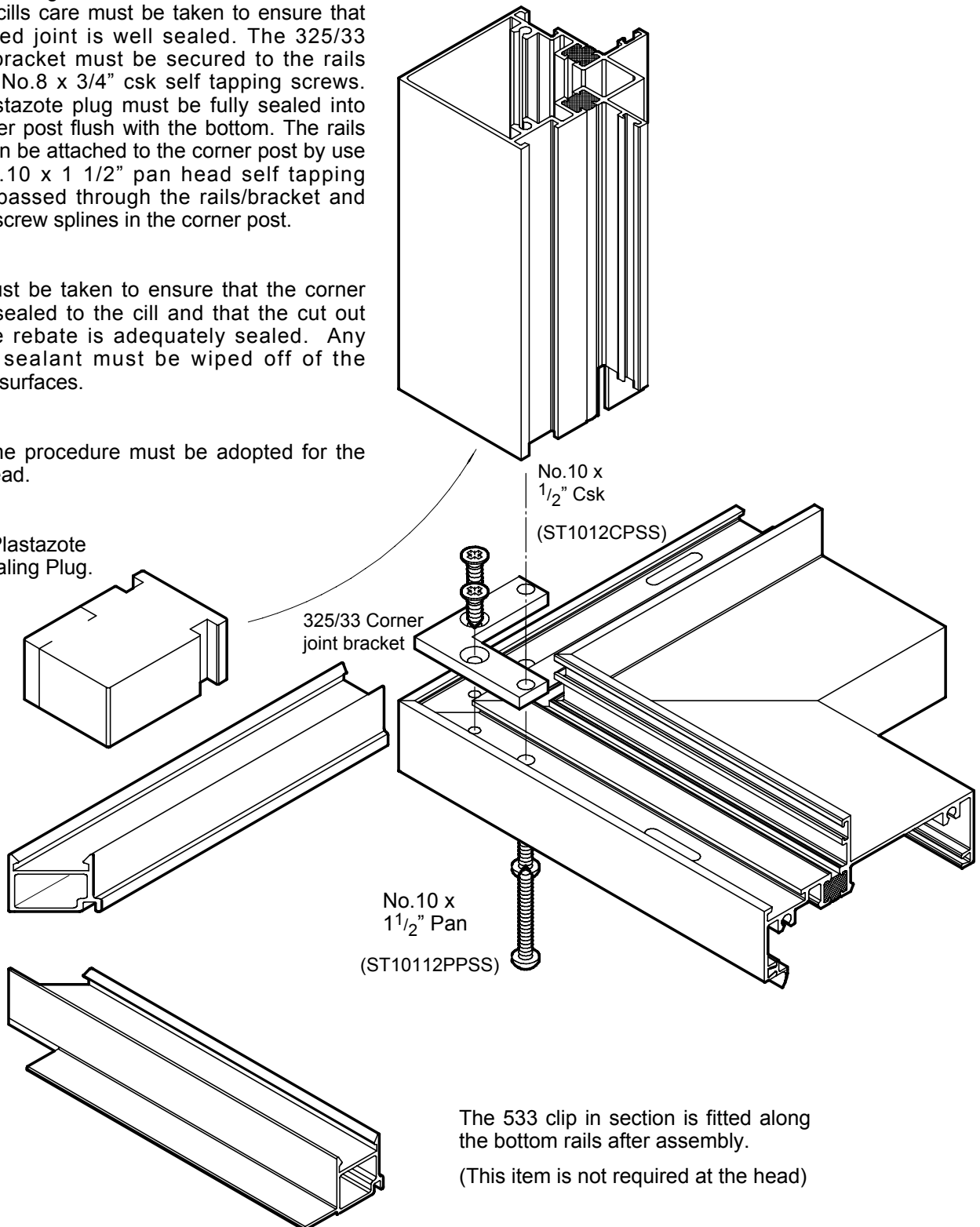
Note:- The head is jointed as per the cill detail.

When jointing a 90° corner with continuous head & cills care must be taken to ensure that the mitred joint is well sealed. The 325/33 corner bracket must be secured to the rails using 2 No.8 x 3/4" csk self tapping screws. The plastazote plug must be fully sealed into the corner post flush with the bottom. The rails must then be attached to the corner post by use of 2 No.10 x 1 1/2" pan head self tapping screws passed through the rails/bracket and into the screw splines in the corner post.

Care must be taken to ensure that the corner post is sealed to the cill and that the cut out over the rebate is adequately sealed. Any excess sealant must be wiped off of the external surfaces.

The same procedure must be adopted for the frame head.

325/63 Plastazote Rear Sealing Plug.

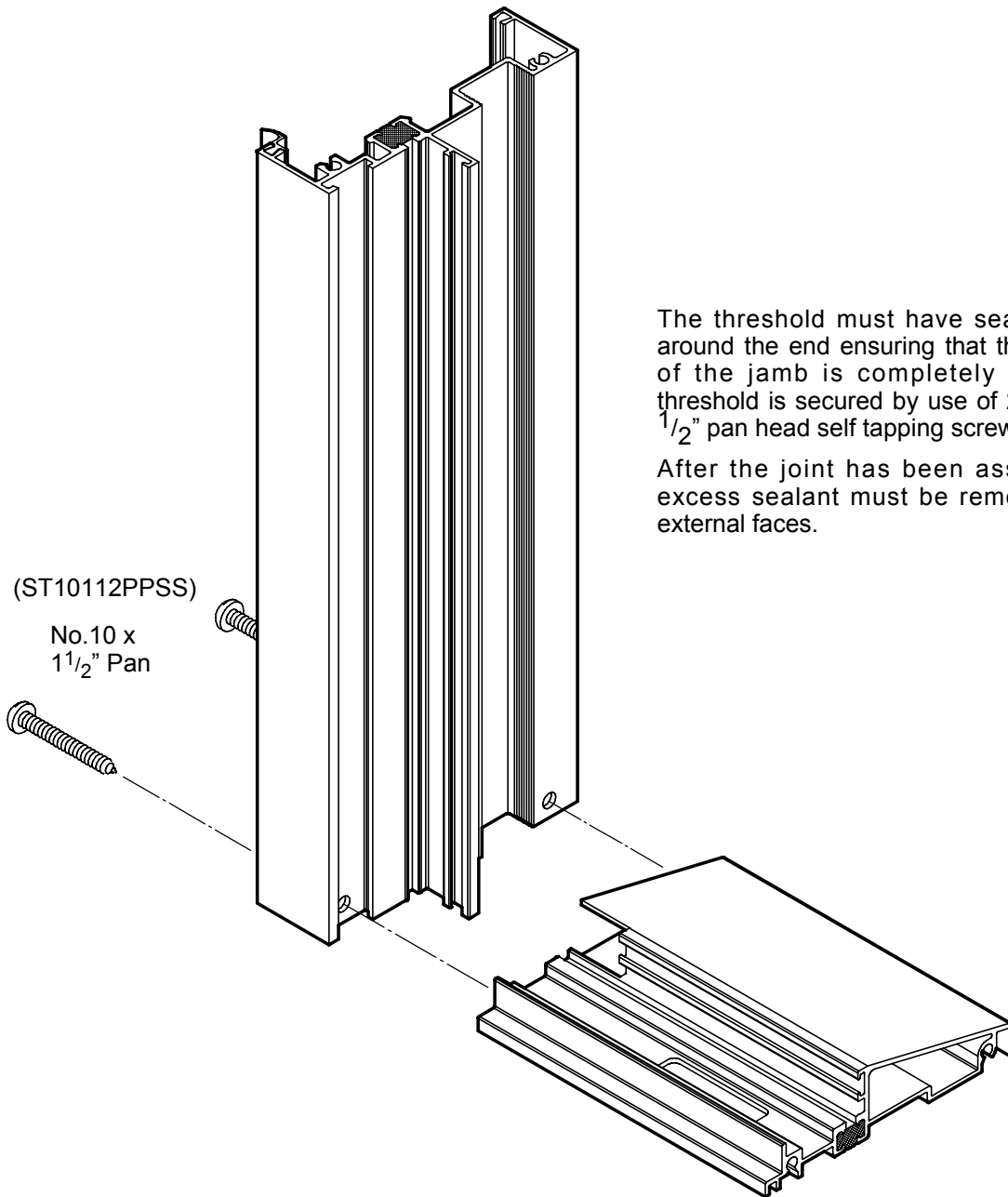


The 533 clip in section is fitted along the bottom rails after assembly.  
(This item is not required at the head)

## Frame Assembly

### Jamb & Door Threshold

**Important** - When assembling mullions & transoms into the frame, it is essential that the overall opening size is checked, and the mullions & transoms tapped to ensure that the door will fit with the correct overlaps.



The threshold must have sealant smeared around the end ensuring that the euro groove of the jamb is completely sealed. The threshold is secured by use of 2 off No. 10 x 1 1/2" pan head self tapping screws.

After the joint has been assembled, any excess sealant must be removed from the external faces.

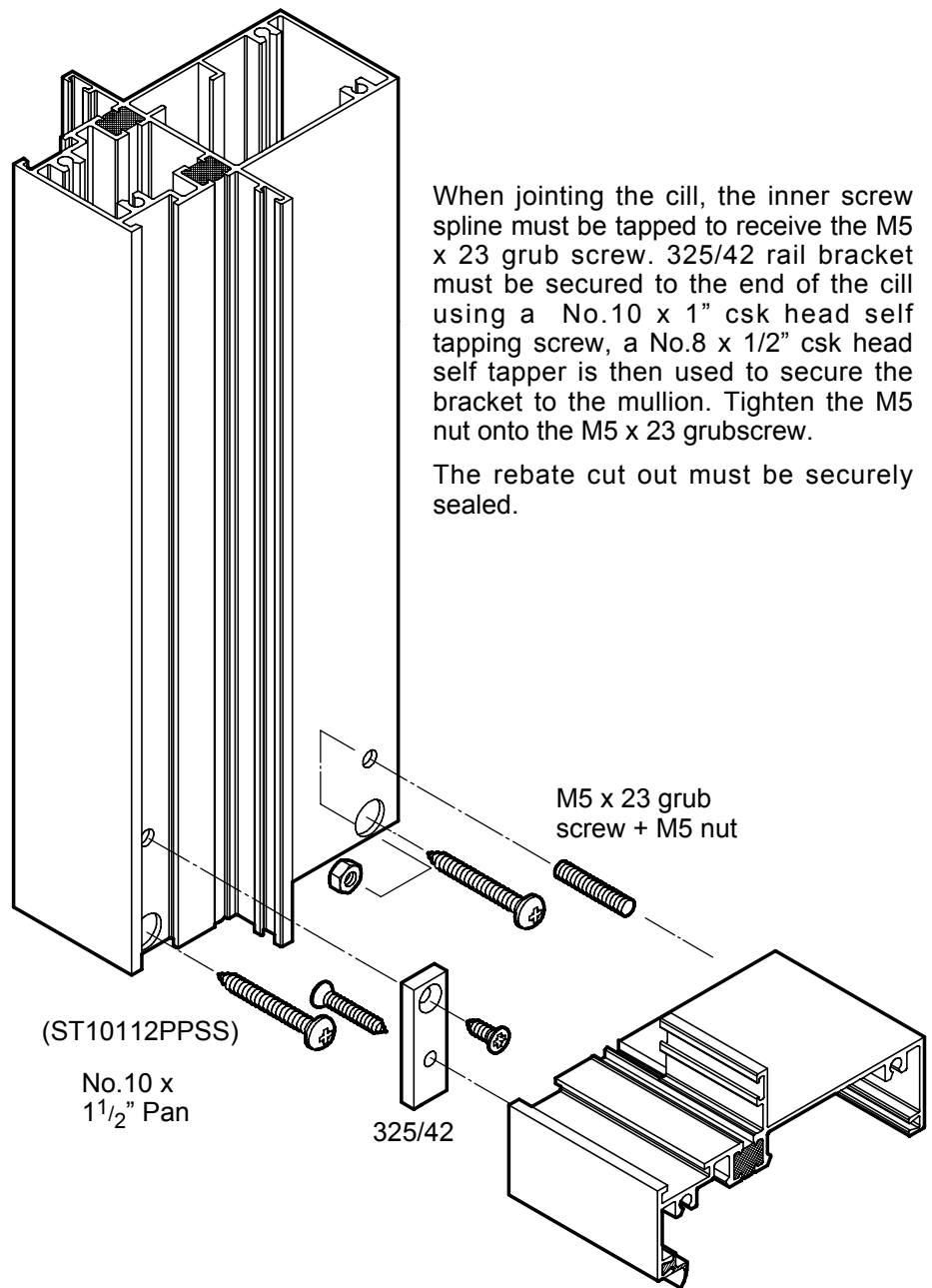
# Frame Assembly

## Mullion & Door Threshold

**Important** - When assembling mullions & transoms into the frame, it is essential that the overall opening size is checked, and the mullions & transoms tapped to ensure that the door will fit with the correct overlaps.

The threshold must have sealant smeared around the end ensuring that the euro groove of the mullion is completely sealed. The threshold is secured by use of 2 off No.10 x 1 1/2" pan head self tapping screws.

After the joint has been assembled then any excess sealant must be removed from the external faces.



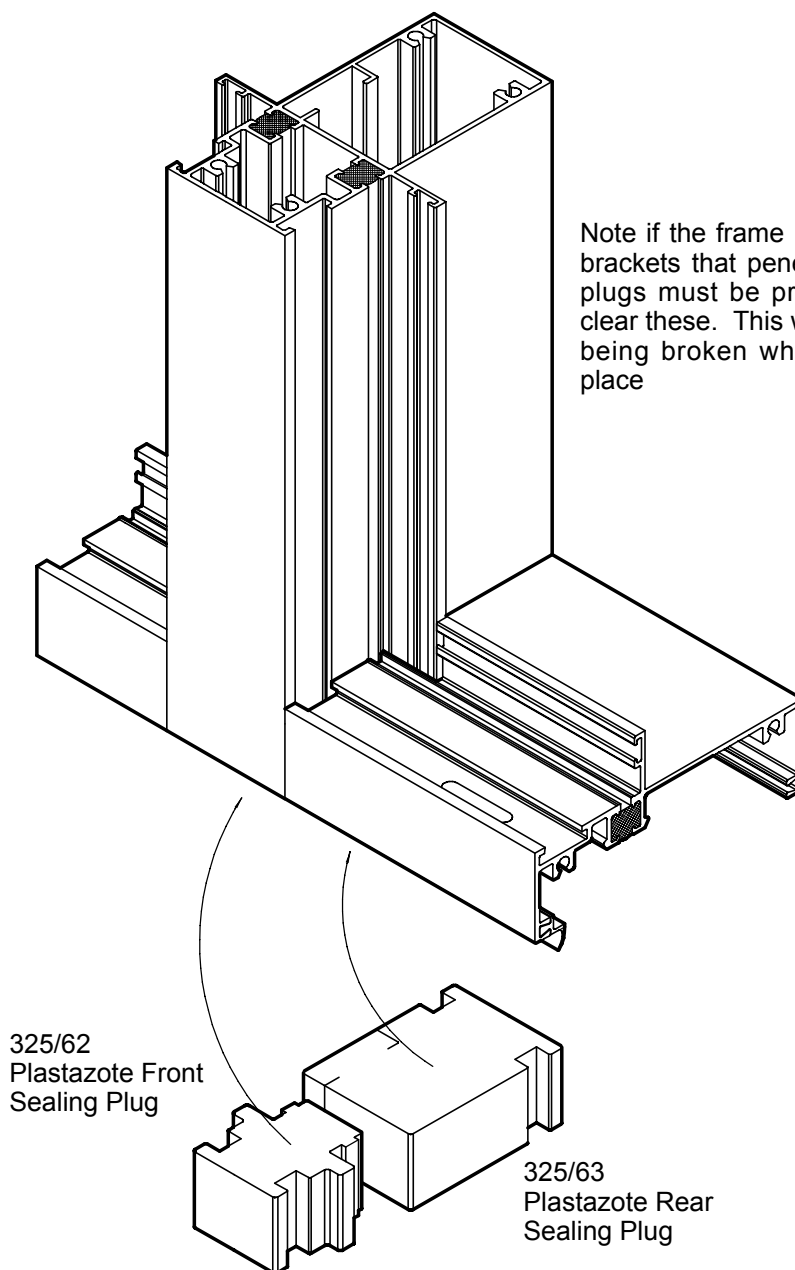
When jointing the cill, the inner screw spline must be tapped to receive the M5 x 23 grub screw. 325/42 rail bracket must be secured to the end of the cill using a No.10 x 1" csk head self tapping screw, a No.8 x 1/2" csk head self taper is then used to secure the bracket to the mullion. Tighten the M5 nut onto the M5 x 23 grubscrew.

The rebate cut out must be securely sealed.

## Frame Assembly

### Solid Mullion Sealing

When the frame has been assembled plastazote plugs must be sealed into the cavities of any solid mullions within the screen. These plugs must be carefully sealed into position so that an air seal is formed to prevent the passage of air up the hollows of the section. Plugs are to be sealed at the head and cill.

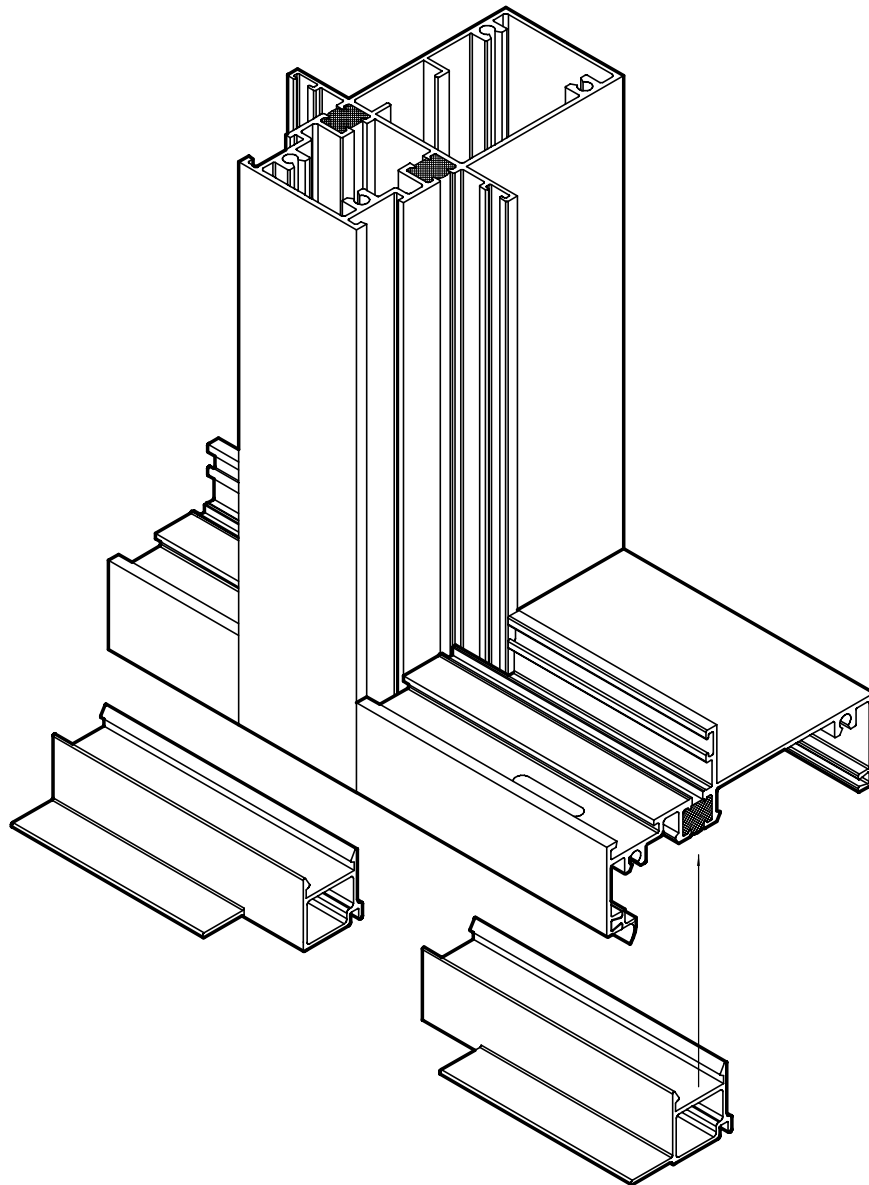


## Frame Assembly

### Bottom Rail Clip

Before the frames are sent to site the 533 plastic clip section, must be cut in between the mullions and snapped into position in the cills.

Ensure that the drainage cut out in the 533 section is not obstructed.



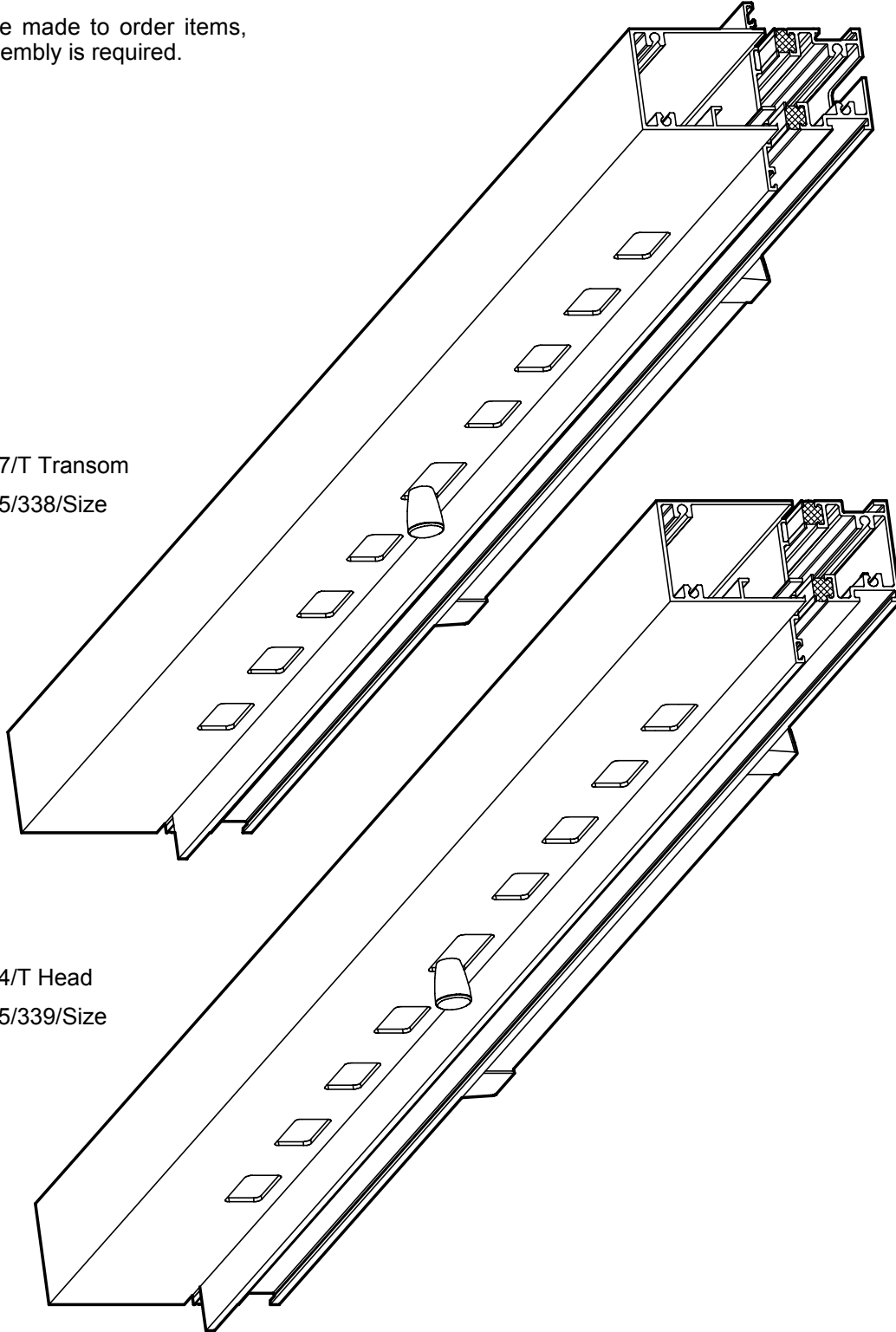
## Frame Assembly

### Trickle Vents

Trickle vents are made to order items, therefore no assembly is required.

537/T Transom  
325/338/Size

524/T Head  
325/339/Size



# Frame Assembly

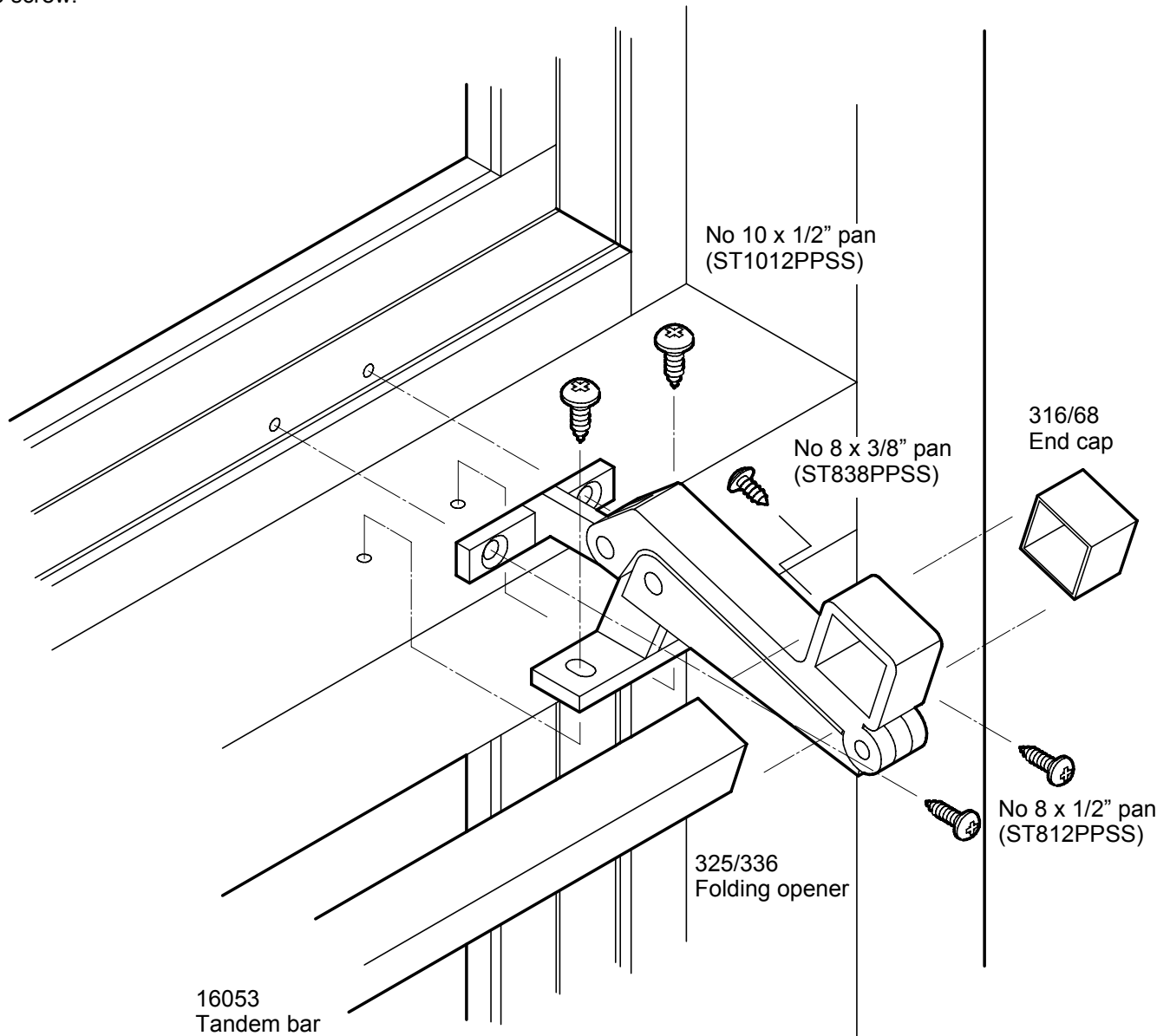
## Folding Opener

The folding opener is fitted to the frame using two No 8 x 1/2" pan head self tap screws into the vent and two No 10 x 1/2" pan head self tap screws into the frame.

The folding opener tandem bar is cut to length before fitting to the openers.

Length of 16053 with end caps = Opener centres + 16mm

Push end caps onto the ends of the tandem bar and drill a 3.5 dia hole through the pre drilled hole in the end caps into the tandem bar, ready for fixing to the folding opener. Slide bar with end caps into rectangle in folding opener and secure in place with No 8 x 3/8" pan head self tap screw.

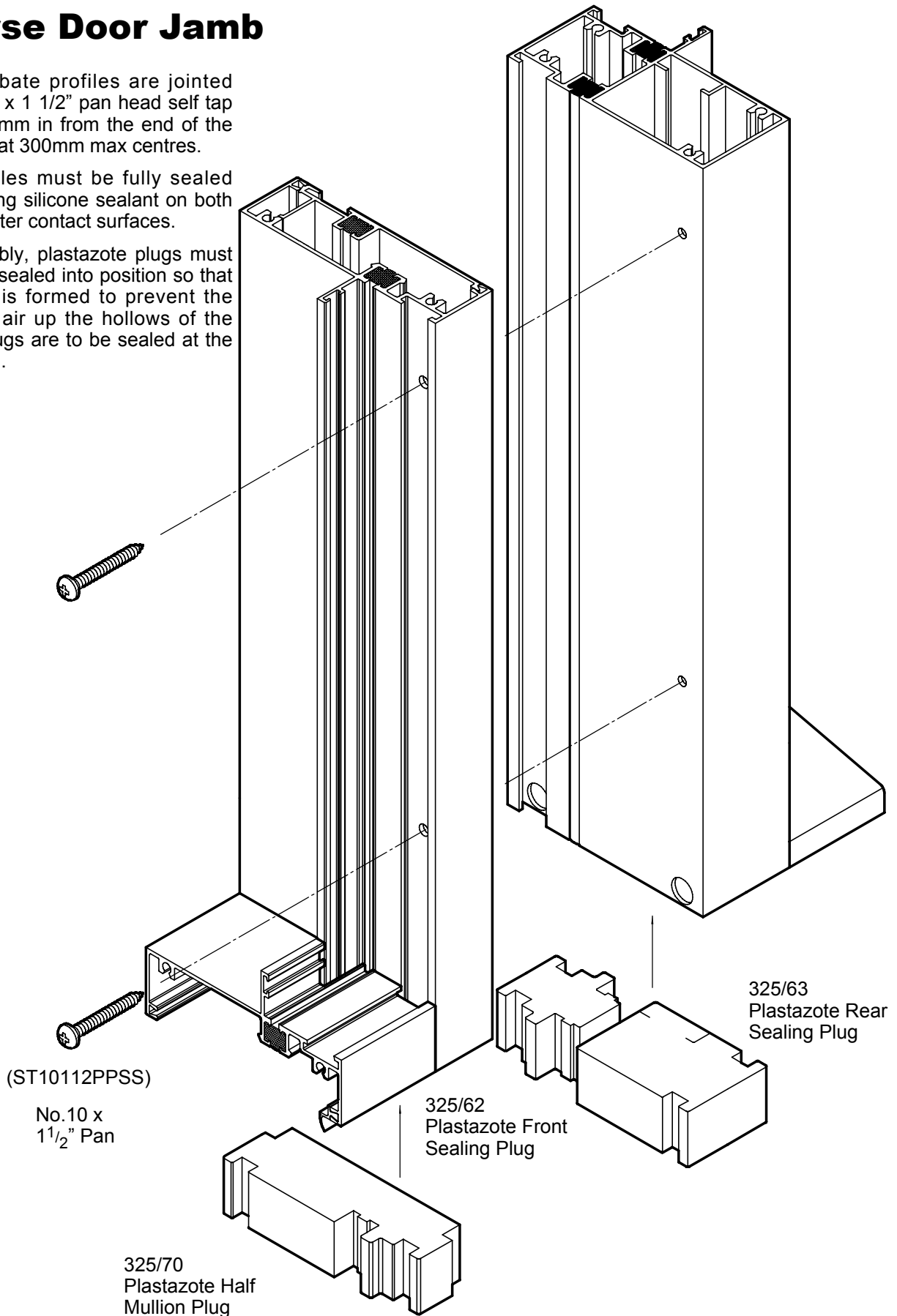


## Reverse Door Jamb

Reverse rebate profiles are jointed using No 10 x 1 1/2" pan head self tap screws, 100mm in from the end of the profiles and at 300mm max centres.

These profiles must be fully sealed together using silicone sealant on both inner and outer contact surfaces.

After assembly, plastazote plugs must be carefully sealed into position so that an air seal is formed to prevent the passage of air up the hollows of the sections. Plugs are to be sealed at the head and cill.



(ST10112PPSS)

No. 10 x  
1 1/2" Pan

325/70  
Plastazote Half  
Mullion Plug

325/62  
Plastazote Front  
Sealing Plug

325/63  
Plastazote Rear  
Sealing Plug

## Frame Installation

The following paragraphs deal with the overall dimensions and clearances relating to the outer frame of 325 Window Wall.

It is assumed that the installer has an adequate knowledge of building principles and that he can ensure that the frames are installed in accordance with good working practice, i.e installed plumb, square and securely.

The same clearance apply to open out and open in conditions.

### Installation Preliminaries

Check that the masonry opening is square etc, and the frame will fit within the opening.

Ensure as far as is practicable that all metal is protected from possible mortar or plaster dropping and splashing.

### Installation into masonry

At survey or contract stage ensure that the position of fixings is not too close to the edge of brickwork etc, or in the area of the DPC.

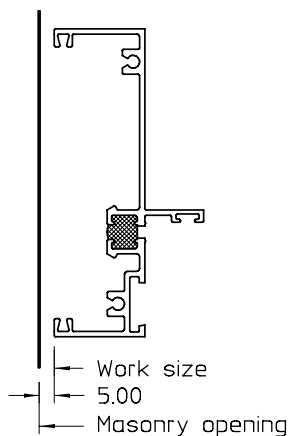
Allow a minimum of 5mm clearance between masonry and aluminium at each jamb, head and cill i.e.

$$\text{Worksize} = \text{Masonry opening} - 10\text{mm}$$

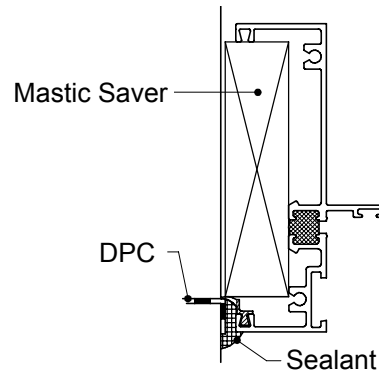
See below.

Consideration must be given to any special conditions which will reduce the height of the work size.

Note: additional clearances for non standard cill conditions must be allowed for.

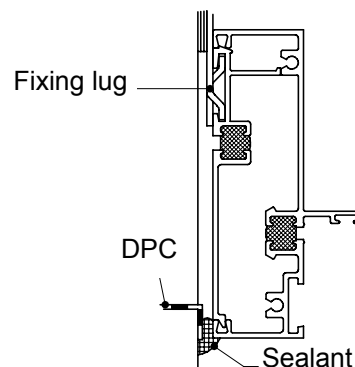


Fit polystyrene or equivalent "mastic saver" material into perimeter channel as shown below. Offer window into opening, packing frame fixing points to ensure frame is square in opening.



Using fixing plugs which allow drilling through clearance holes, drill masonry and plug, fixing with minimum No.10x2 1/2" Pan head or round head screws. Ensure that the frame is not distorted when fixing.

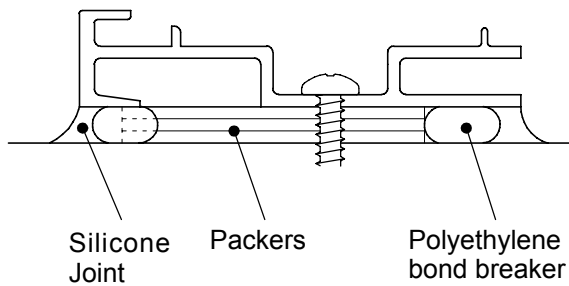
Alternative frame fixing can be performed by using 211/14 fixing lugs with 521/T clip in plain plate. The plate clips into sections 525/T & 526/T, it has an extruded groove that allows the use of the 211/14 fixing lugs. The lug if used must be adequately packed to prevent deformation of the jambs/head. Do not use fixing lugs on door frames.



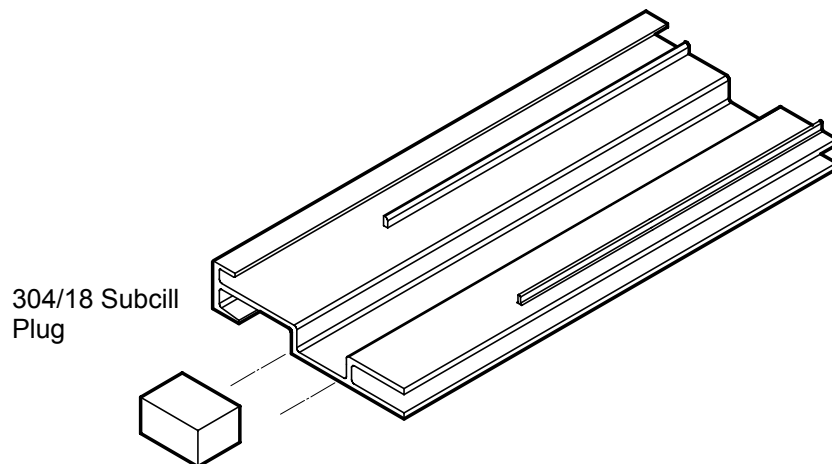
## Frame Installation

### Subcill

Care must be taken to ensure that the subcill is installed level with packing all fixing points to prevent distortion additional packers must be positioned under any doors to support the weight of people stepping onto the door threshold. Polyethylene bond breaker must be used to ensure correct adhesion of the silicone sealant.

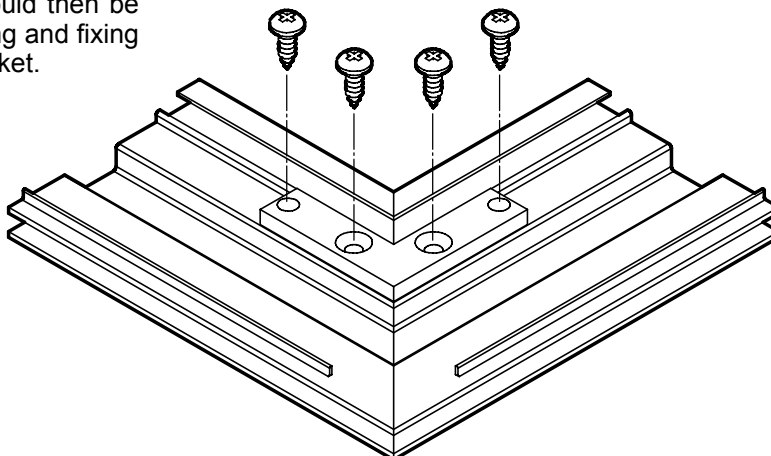


When the subcill has been fixed into position 304/18 blocks must be sealed into the extreme ends of the threshold.



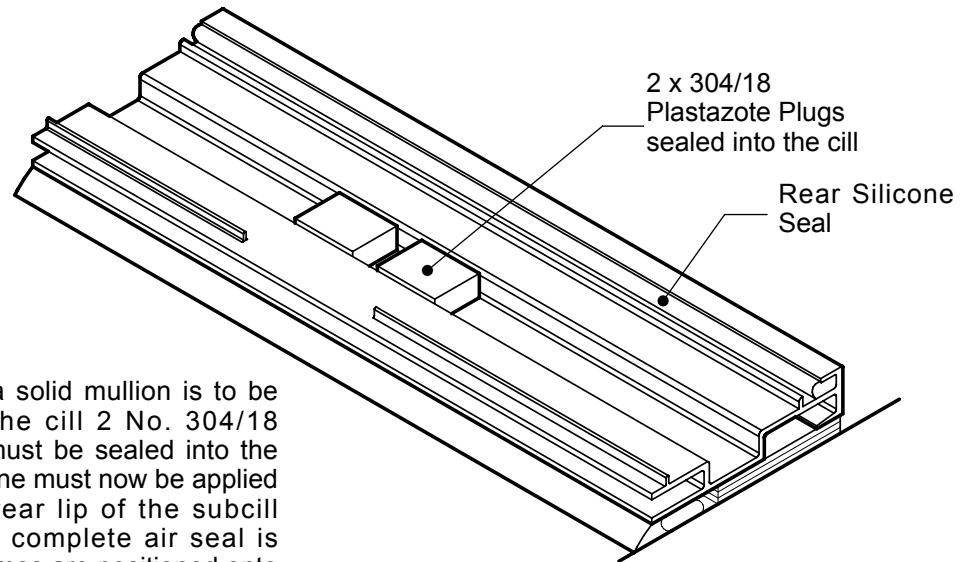
When jointing a 90° corner care must be taken to ensure that the mitred joint is completely sealed, the joint should then be reinforced by applying and fixing the 325/33 joint bracket.

No.10 x 1/2" Pan head self tapper  
(ST1012PPSS)



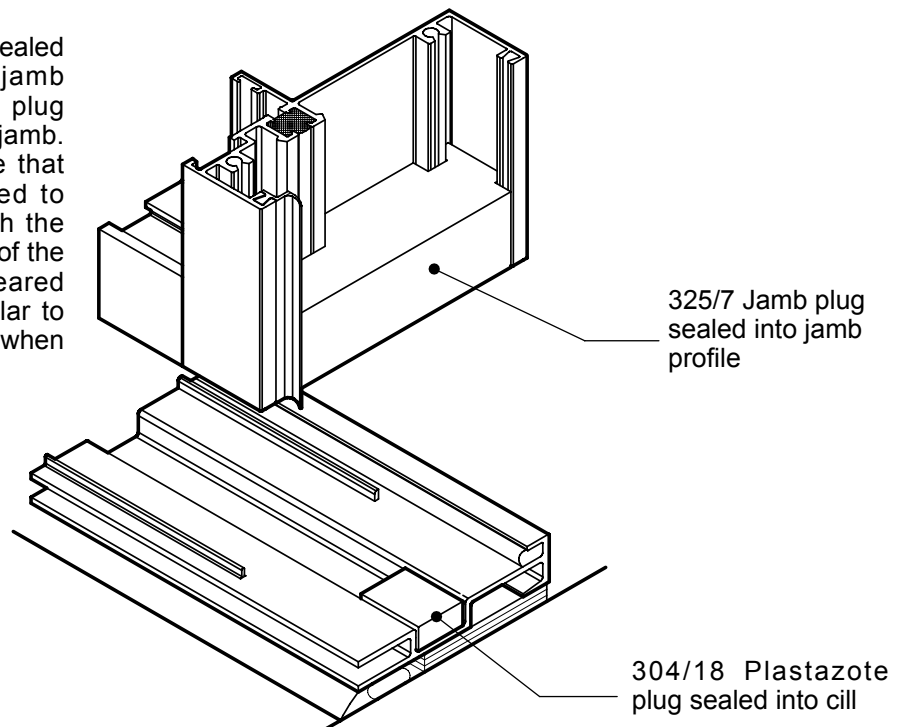
# Frame Installation

## Subcill & Framing



At the point where a solid mullion is to be positioned onto the cill 2 No. 304/18 plastazote blocks must be sealed into the cill. A bead of silicone must now be applied along the entire rear lip of the subcill section, so that a complete air seal is formed once the frames are positioned onto the subcill.

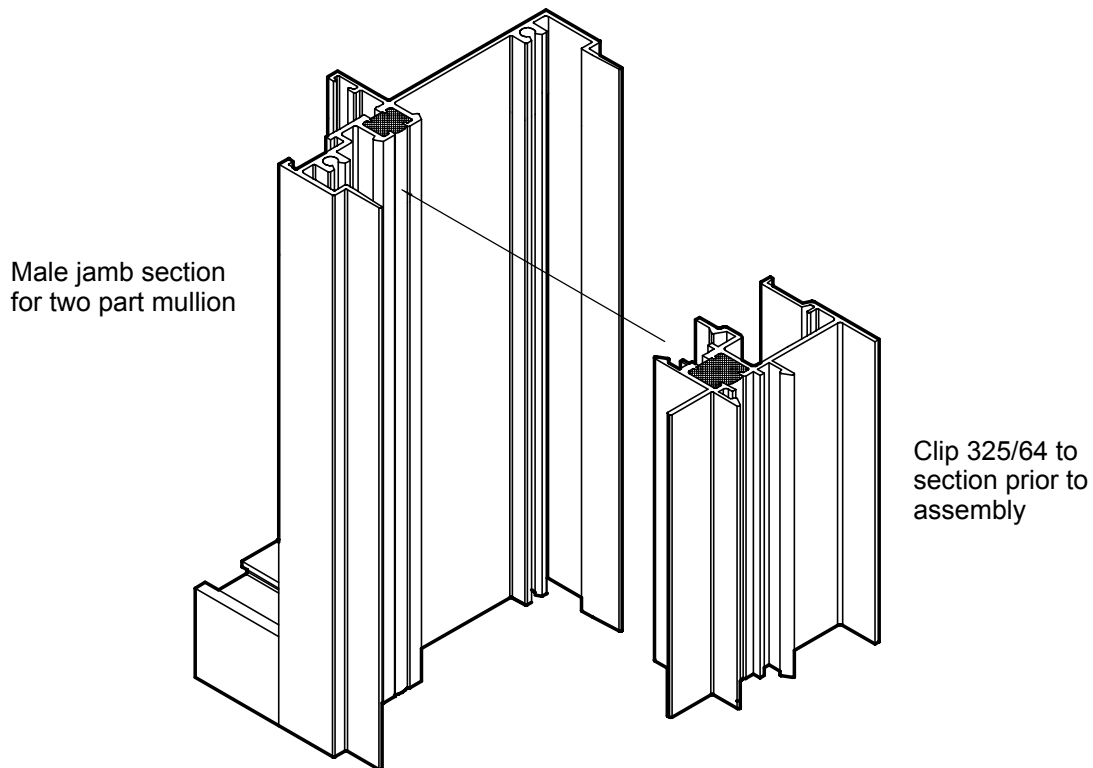
Once all the plugs have been sealed into the subcill. The frame jamb must have a 325/7 plastazote plug sealed into the bottom of the jamb. Care must be taken to ensure that this plug is adequately sealed to prevent air penetration through the jamb of the frame. The bottom of the plastazote block must be smeared with small joint sealant or similar to form a seal with the cill profile when placed into position.



## Frame Installation

### Two Part Mullions

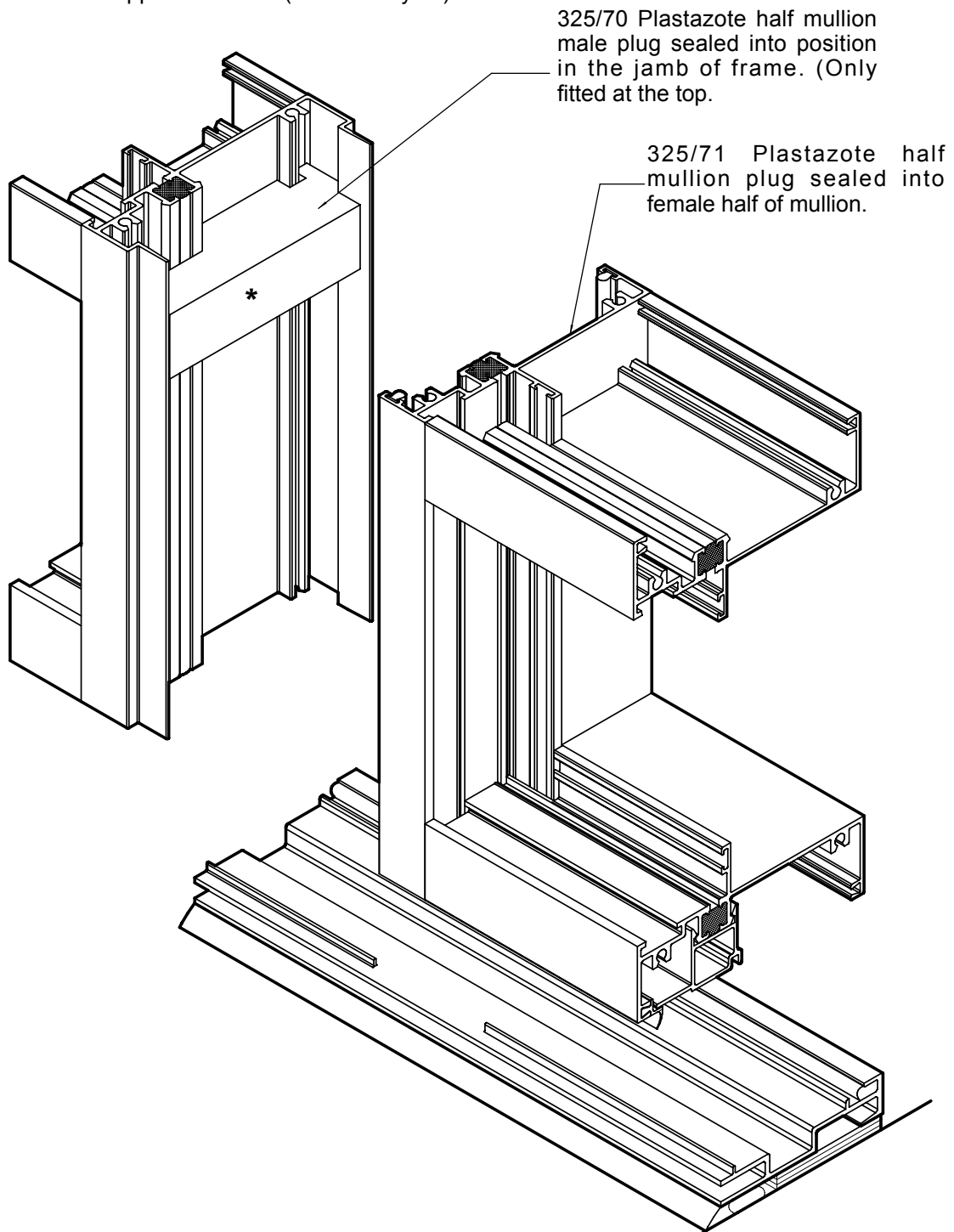
When the frames are being coupled using the two part mullion section, 325/64 must be applied at approximately 400mm centres. a small amount of silicone sealant must be applied to one clip fit prior to fitting to prevent slippage. These items can if required be fitted in the factory prior to shipping the frames to site. The purpose of this component is to prevent the joints closing vertical and as such affecting the sight lines of the frame.



## Frame Installation

### Frame To Frame Mullion Joint

Before offering the frames into the opening the jambs of any two part mullion must have the relevant plugs sealed into them depending whether they are male or female. Care must be taken to ensure that the plug is adequately sealed to prevent air penetration, sealant must be applied to the face of one plug to ensure that it seals to the half in the opposite mullion (indicated by “\*”).

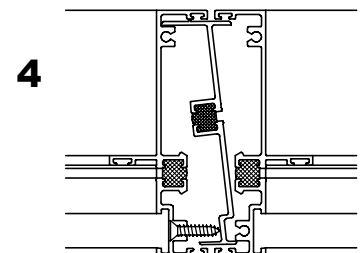
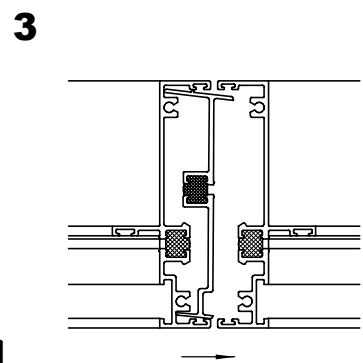
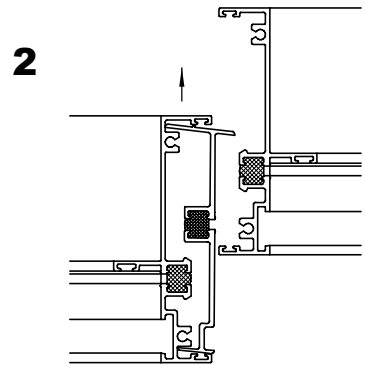
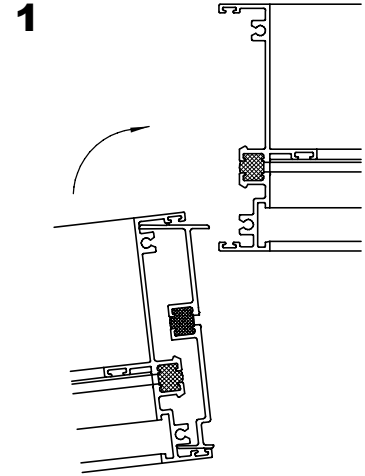
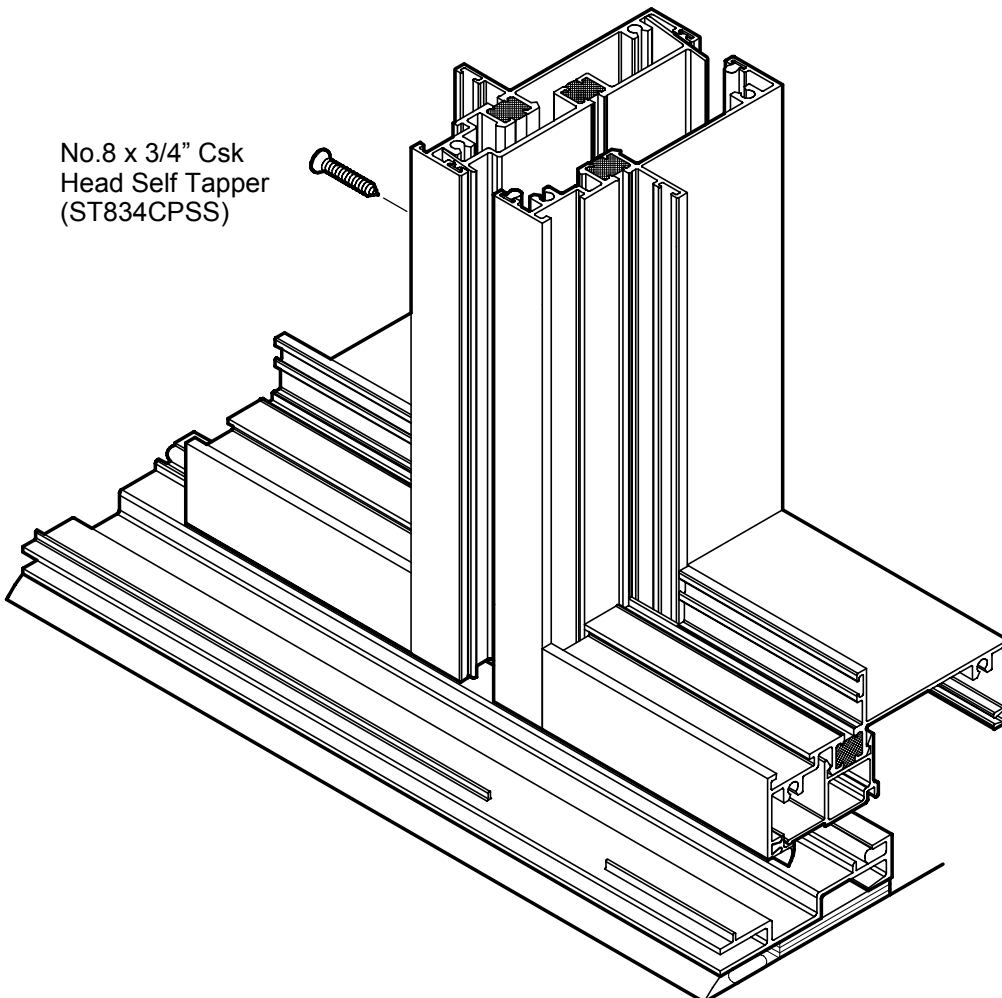


# Frame Installation

## Female / Female Coupling

The coupler must be fitted into the frame to be positioned taking note of the orientation. Once the coupler has been inserted into the frame, the frame must be swung into position so that the exposed leg goes behind the outer leg of the fitted frame (1). The frame must then be rotated so that it may be pushed back into the opening until it is flush with the inside edge of the fitted frame (2 & 3). Once the frame has been pushed back flush with the fitted frame the No.8 x 3/4" Csk must be driven home through the pre-prepared holes in the jamb, this will cause the coupler to pivot across the profiles locking the mullion into position and sealing the vertical joint (4).

Where a female/female coupling occurs, the mullion sponge plugs should be omitted.



## Frame Installation

### Double Door Flush Bolt Keep

Doors are assembled as per the current 325 product manual with the exception of the 325/59 double door flush bolt keep.

Mark position of flush bolt in cill then position the slot in the 325/59 bolt keep, in line with the mark on the cill. Note orientation of the bolt keep, making sure that the fixing holes are nearest the seal in the cill. Drill 3.5 dia holes through fixing holes in the plate into the cill (DO NOT DRILL INTO SUBCILL). Attach plate in place with 2 off No 8 x 5/8" csk self tap screws. If required the height of the flush bolt can be adjusted by loosening the retaining grub screws and sliding up or down to required height for optimum engagement then retightening grub screws.

