stellar™
ALUMINIUM SYSTEMS

70MM ACCESSORIES
TECHNICAL MANUAL

CONTENTS PAGE

INTRODUCTION

This manual contains information of a technical nature and consequently is only intended for use in the course of a business by persons who are skilled in the subject matter covered.

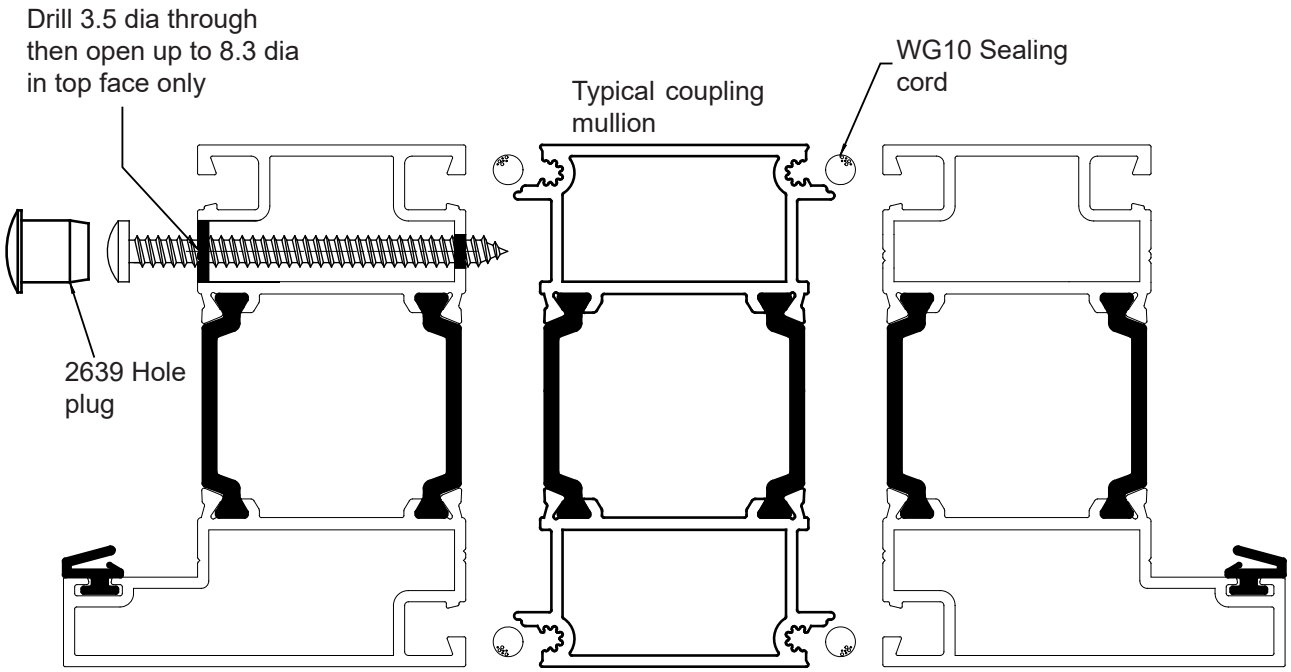
Although reasonable care has been taken in the preparation of this manual, the Epwin Group does not accept any liability for damage resulting (whether directly or indirectly) from the use of the information contained in this manual.

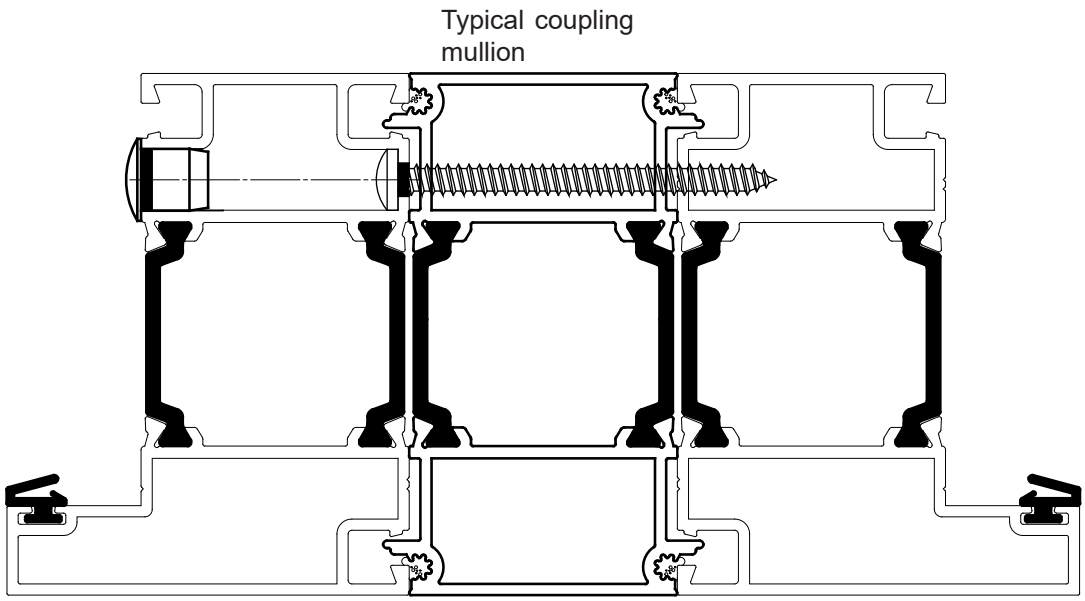
Accordingly this manual is supplied on the basis that the user accepts all risks associated with the use of the information contained within it.

COUPLERS

Fit WG10 seal cord into all 4 slots in coupling mullion (use silicone spray if necessary to ease fitting). When windows are fitted either side of coupling mullion, drill as shown below. Fix at 150 from corners and max 600 centres.

For screw size / length see chart on next page.

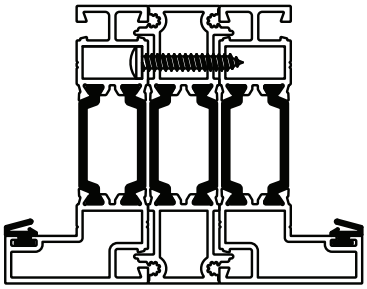
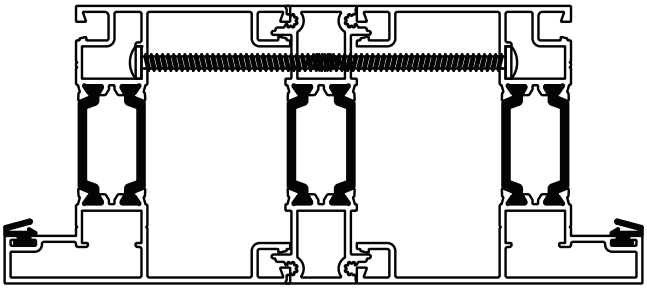
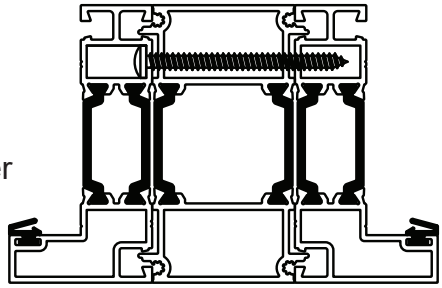
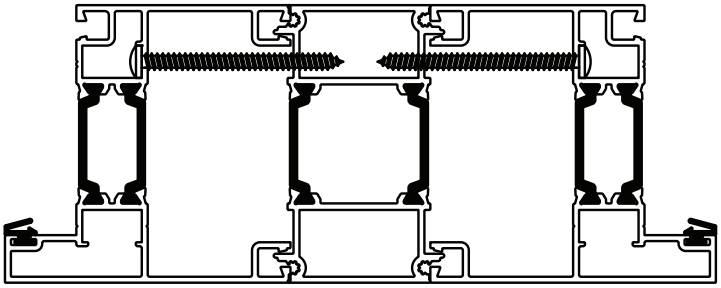
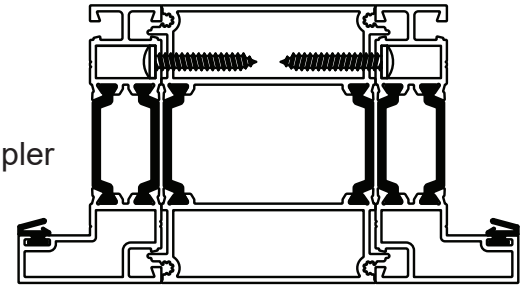
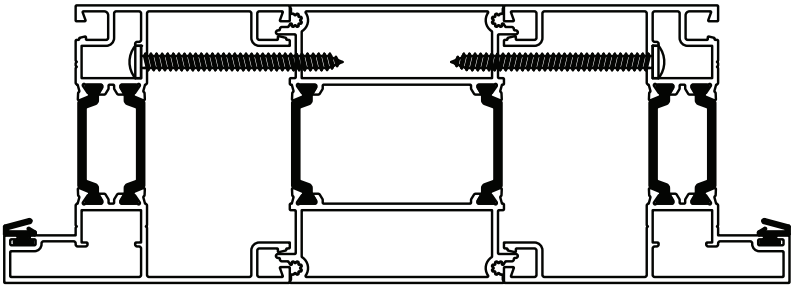




Dimensions in mm
DO NOT SCALE

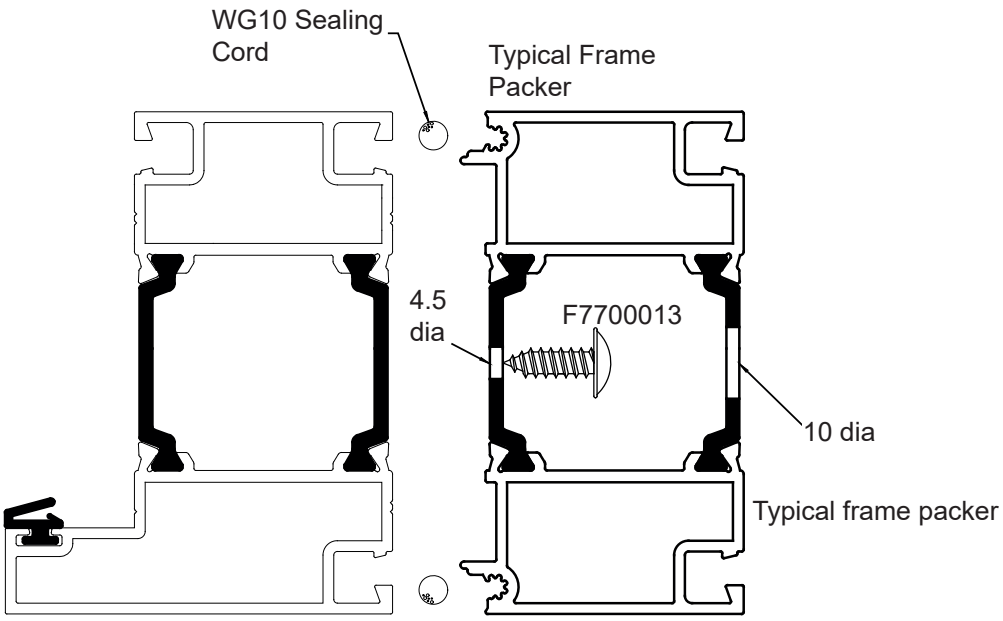
COUPLERS

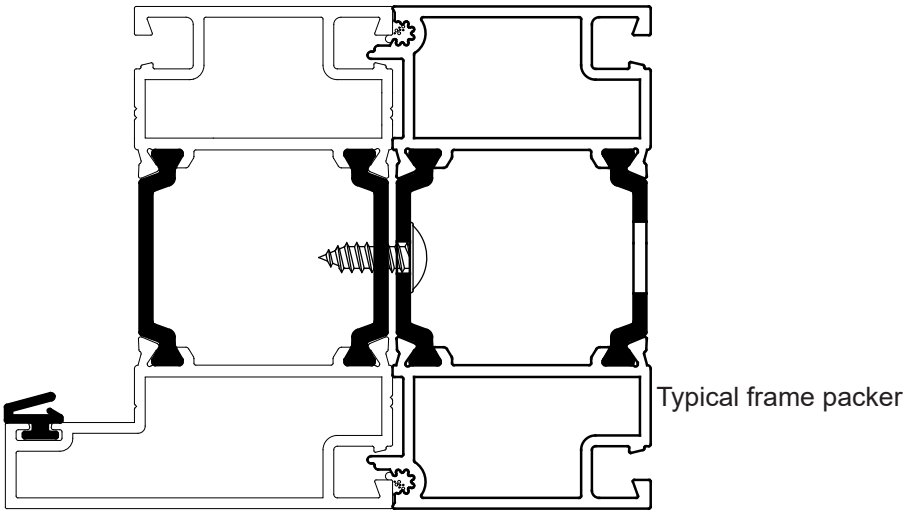
See below for screw sizes required for coupling mullion fixing.

	WQ01 & WQ02 Frames	WQ03 Frame
L10 Coupler	 F7756025 (fix from one side)	 F7756050 (stagger fix from both sides)
L11 Coupler	 F7756050 (fix from one side)	 F7756050 (fix from both sides)
L12 Coupler	 F7756025 (fix from both sides)	 F7756050 (fix from both sides)

FRAME PACKERS

Fit WG10 seal cord into both slots in frame packer (use silicone spray if necessary to ease fitting). Drill and fix packer at 150 from corners and max 600 centres using screws shown.



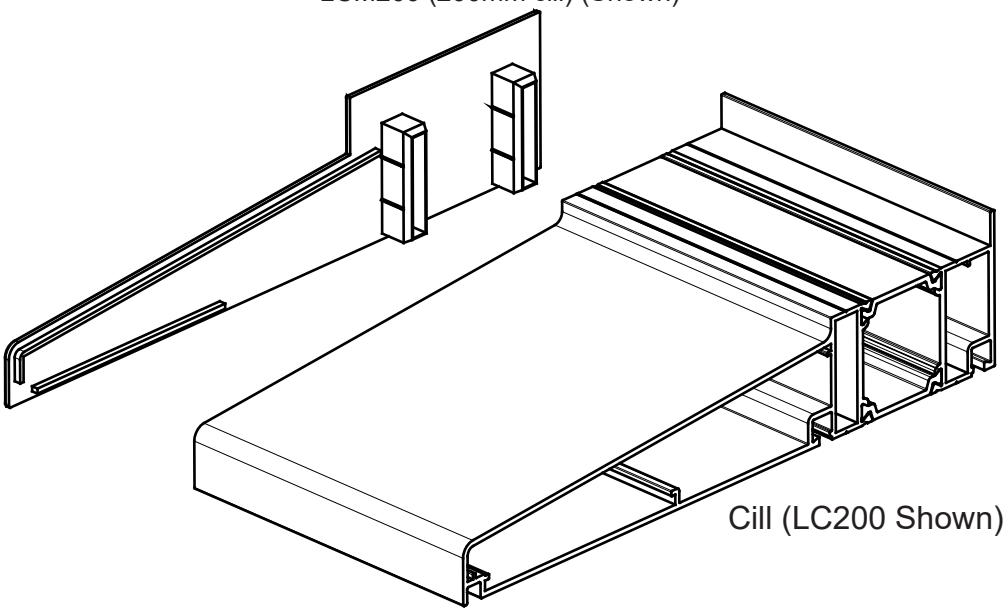


Dimensions in mm
DO NOT SCALE

CILLS

Cill end caps are supplied in pairs. Seal end caps to cill and clean off excess sealant immediately using a suitable cleaner.

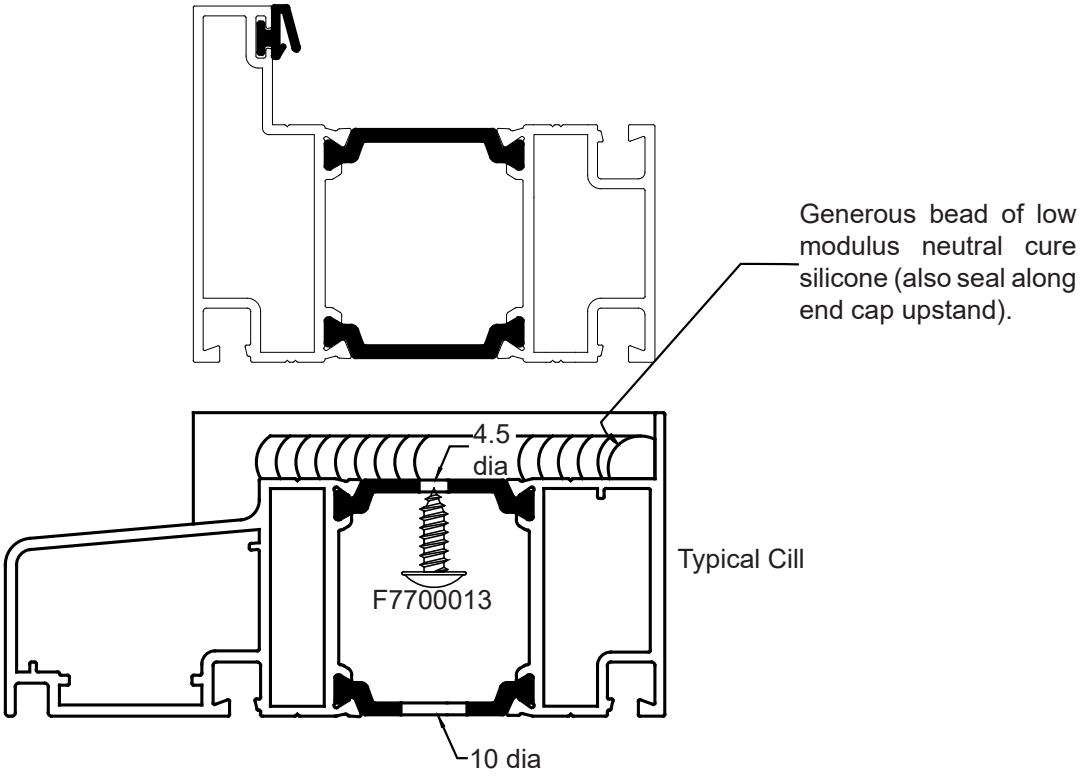
LCM100 (100mm cill)
LCM150 (150mm cill)
LCM200 (200mm cill) (Shown)



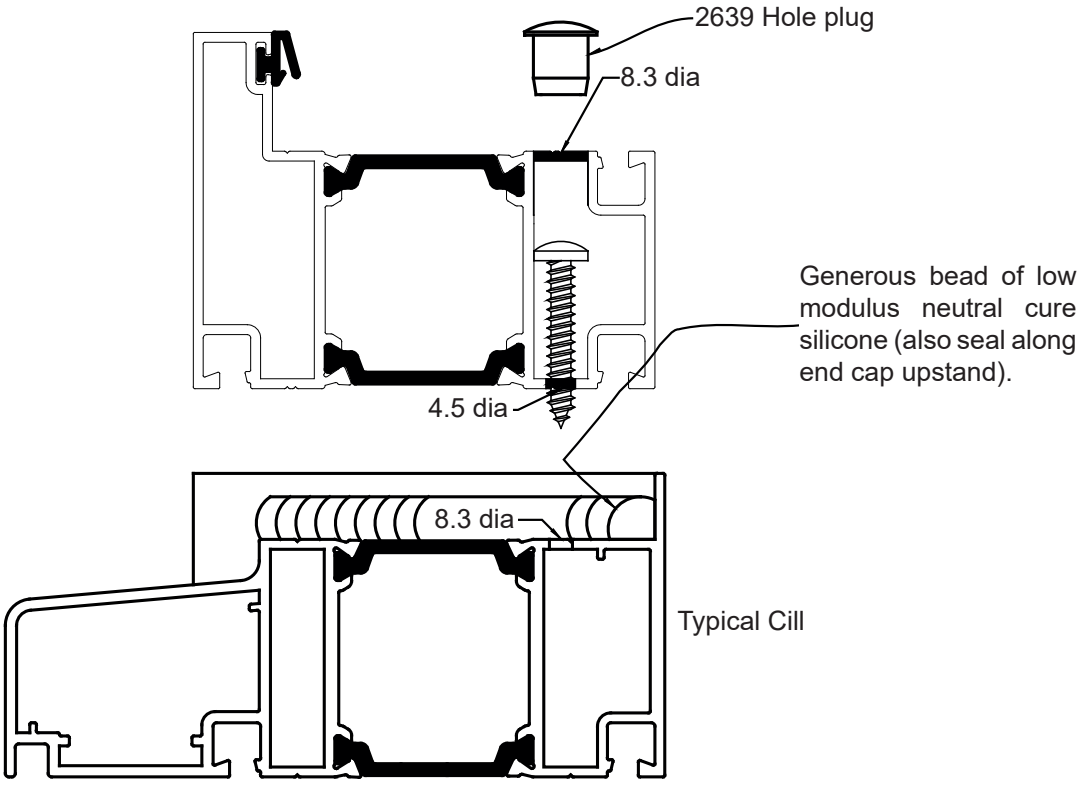
Cill (LC200 Shown)

CILLS

Where individual windows are being fitted into punched openings, cills can be pre-fixed to the window as shown below. Ensure adequate silicone is used. Also seal under heads of all fixing screws. Clean off excess silicone immediately using a suitable cleaner.



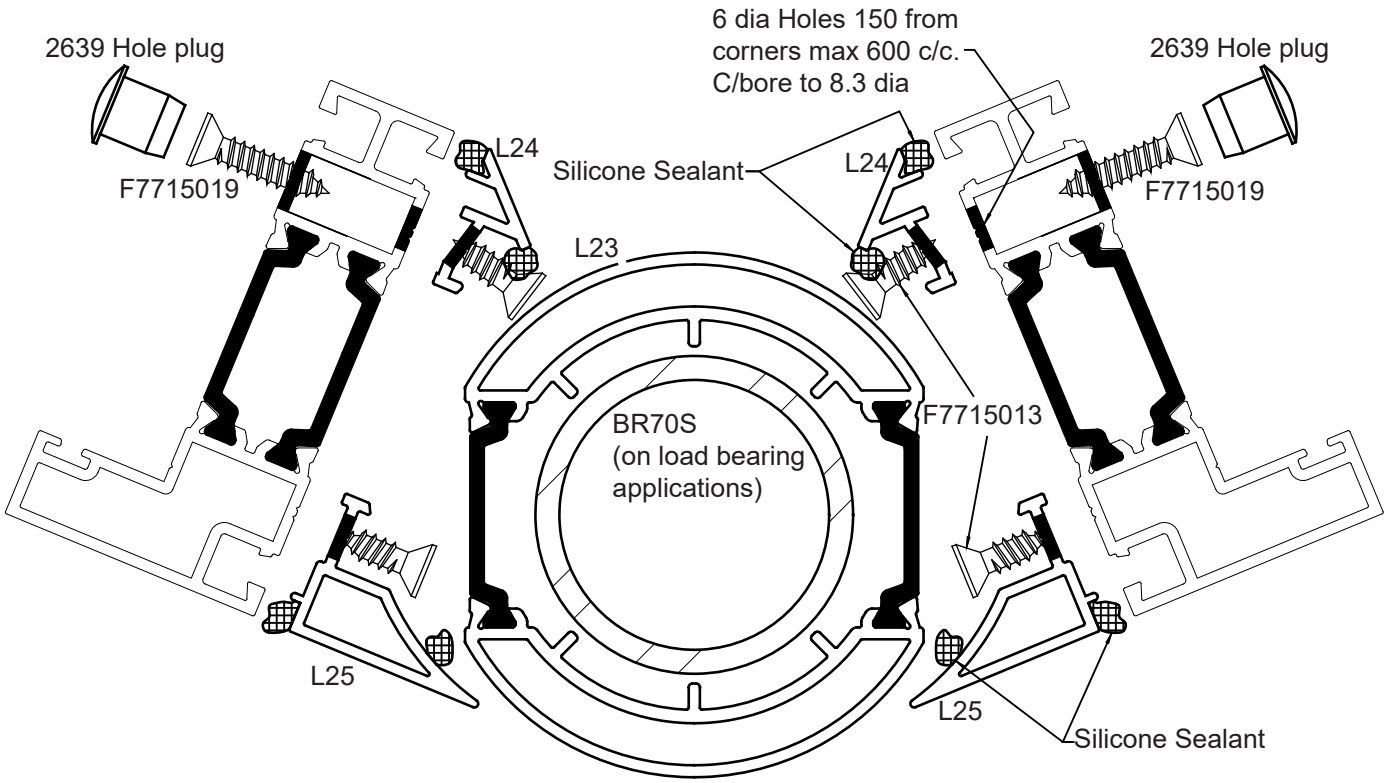
On ribbon or coupled windows, fix window to cill after cill has been installed and levelled as shown below. Ensure adequate silicone is used. Also seal under heads of all fixing screws and hole plug. Clean off excess silicone immediately using a suitable cleaner.

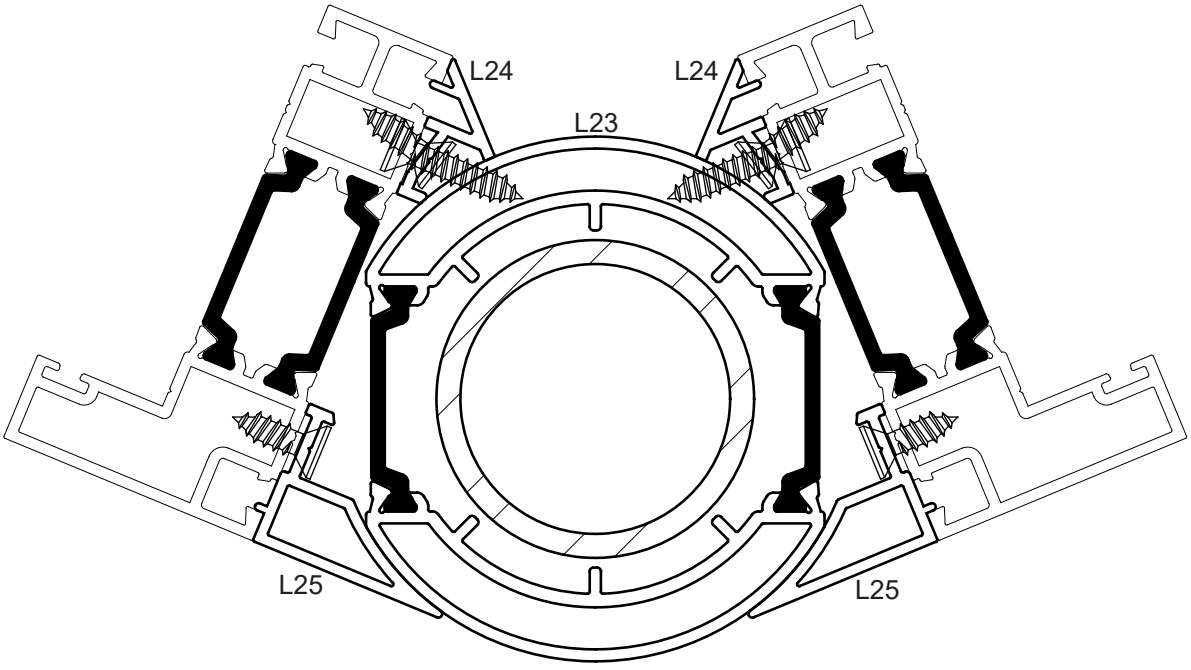


Dimensions in mm
DO NOT SCALE

VARIABLE BAY POST

Assemble variable bay posts as shown below. Clean off excess silicone immediately using a suitable cleaner.
For variable bay post deductions see pages 19 & 20.

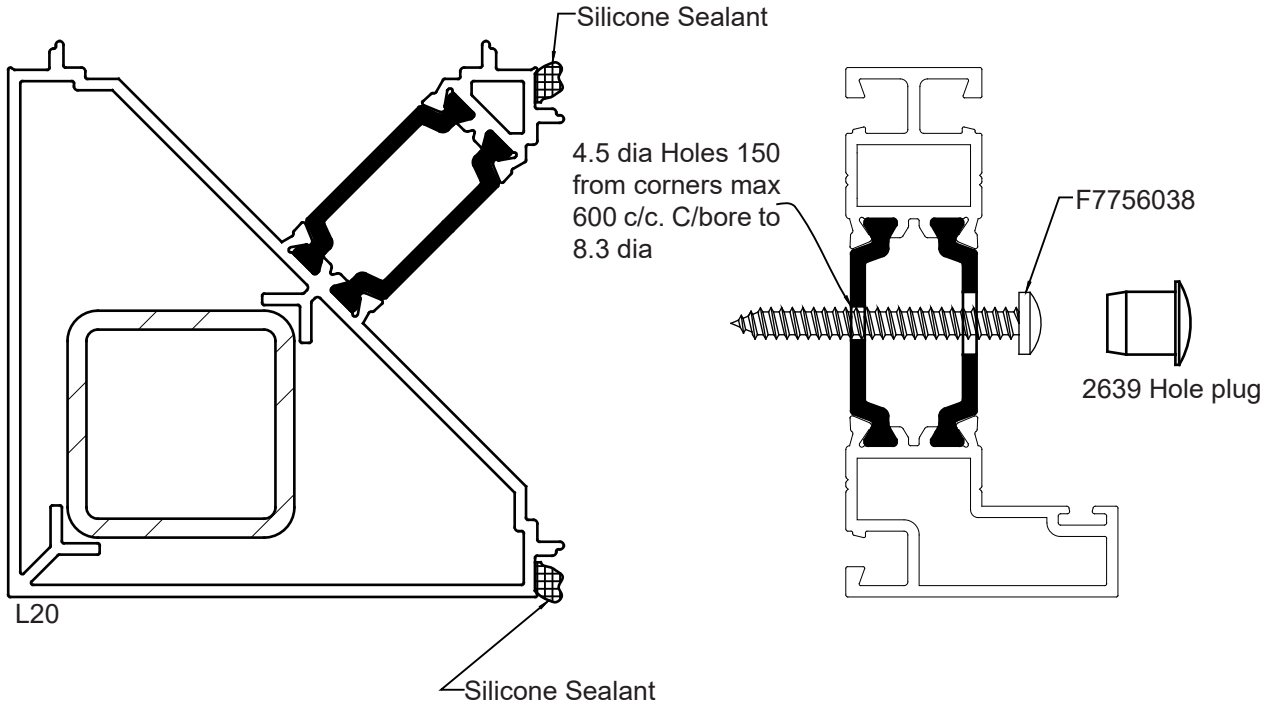


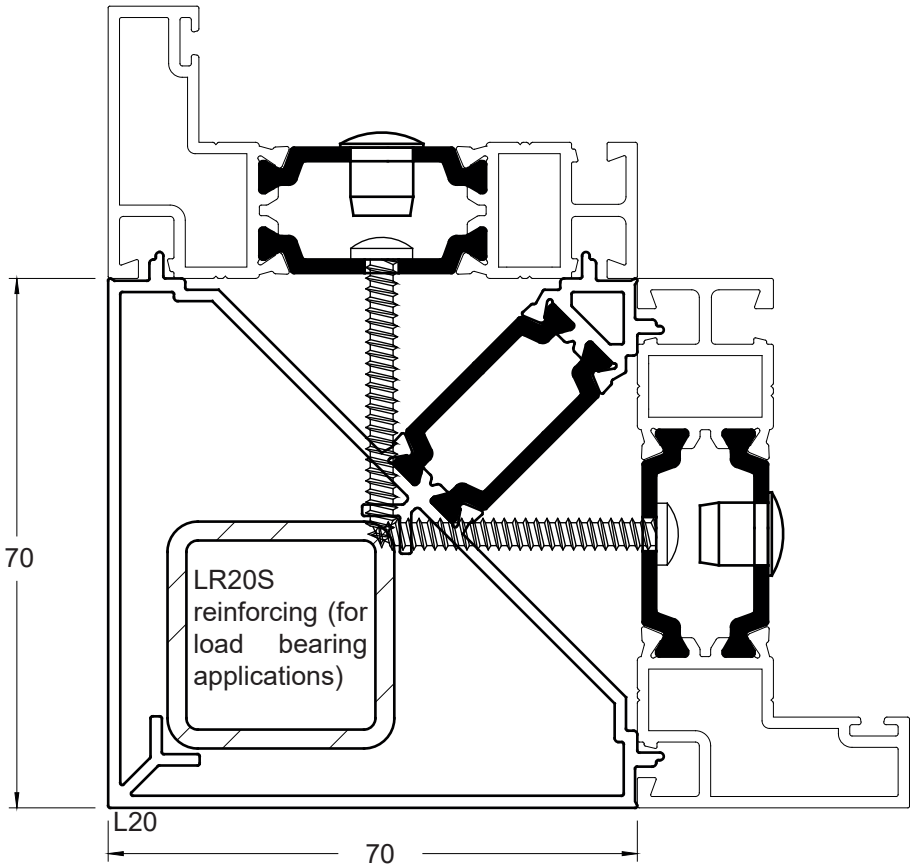


90° BAY POST

Assemble 90° bay posts as shown below. Clean off excess silicone immediately using a suitable cleaner. Normal deduction = 0. Reverse deduction = 70mm.

For loadbearing situations, aluminium or stainless steel packing shims must be used at the top and bottom of the reinforcing and bay post to trasfer loads. It is also important that the bay post is poitioned vertically (within 3mm).

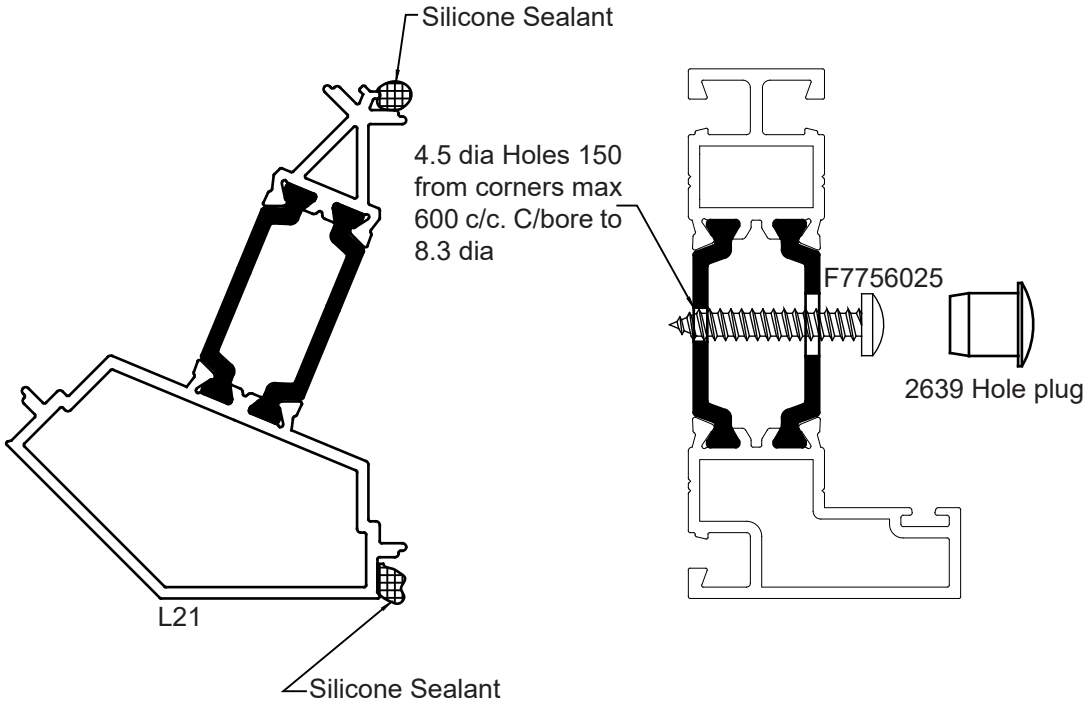


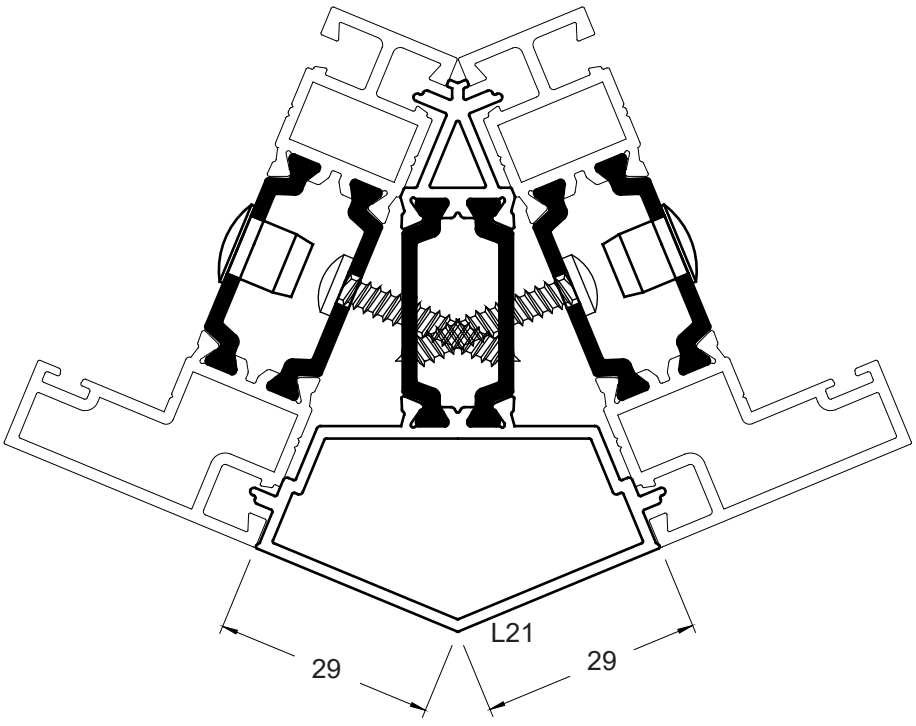


Dimensions in mm
DO NOT SCALE

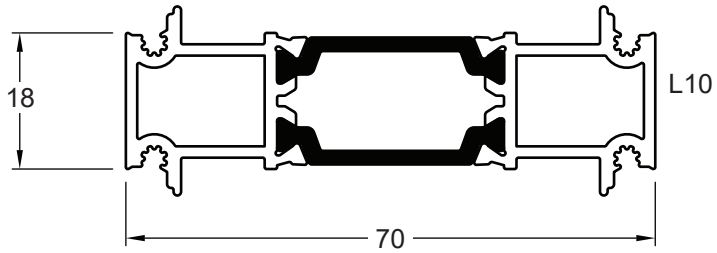
135° BAY POST

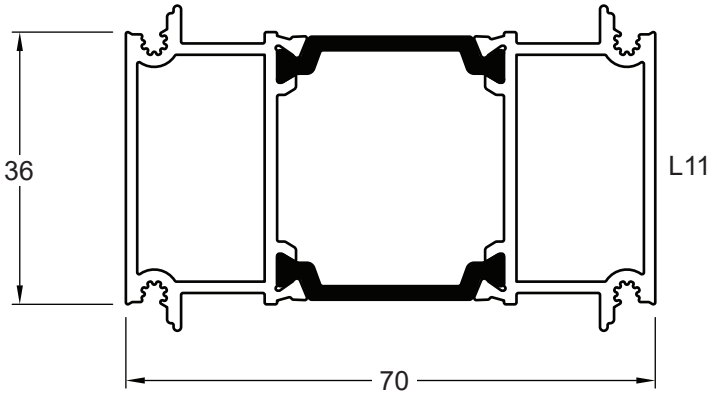
Assemble 90° bay posts as shown below. Clean off excess silicone immediately using a suitable cleaner.
Normal deduction = 0. Reverse deduction = 29mm.

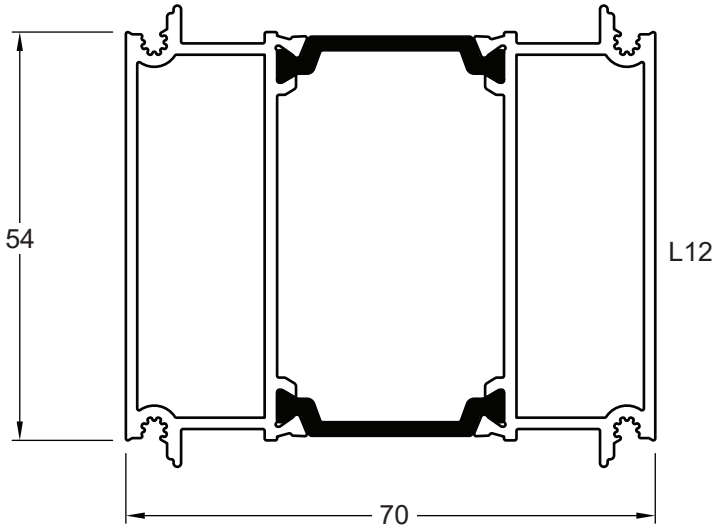




PROFILES



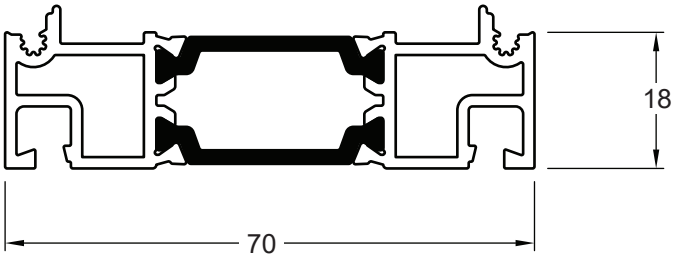




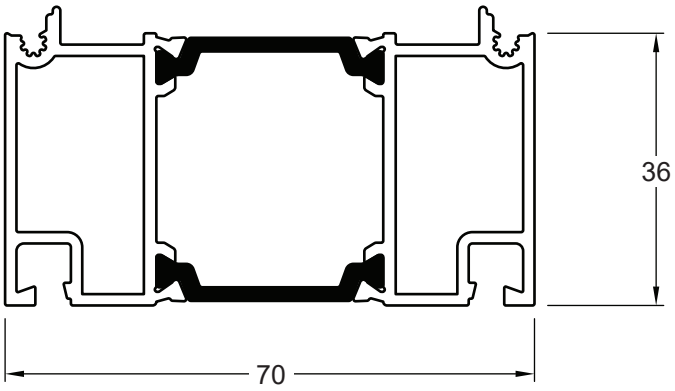
Dimensions in mm
DO NOT SCALE

PROFILES

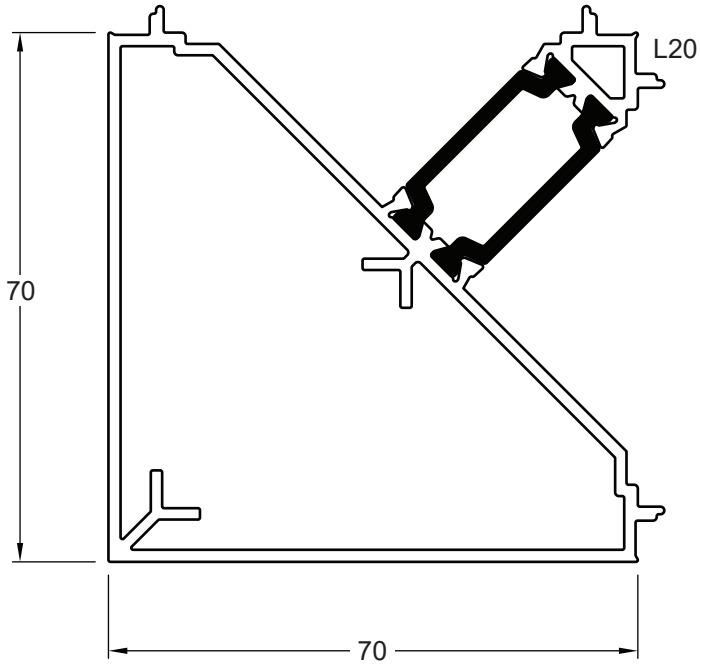
L01

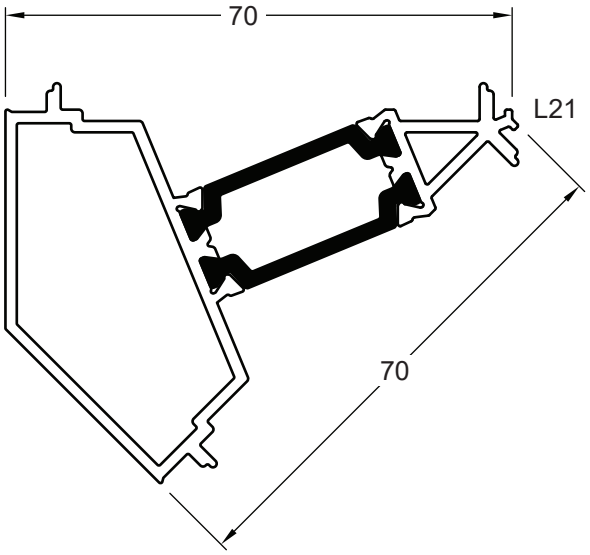


L02



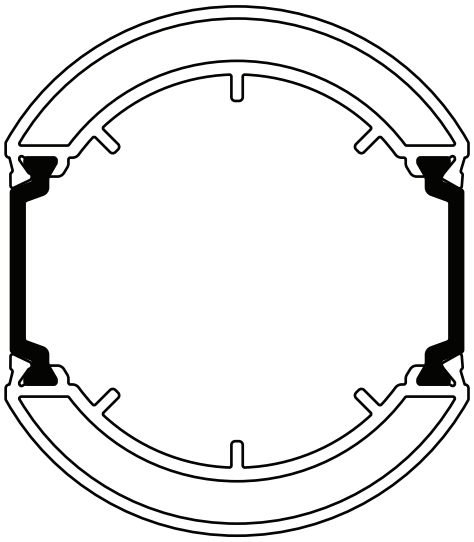
PROFILES

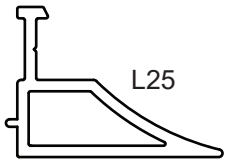




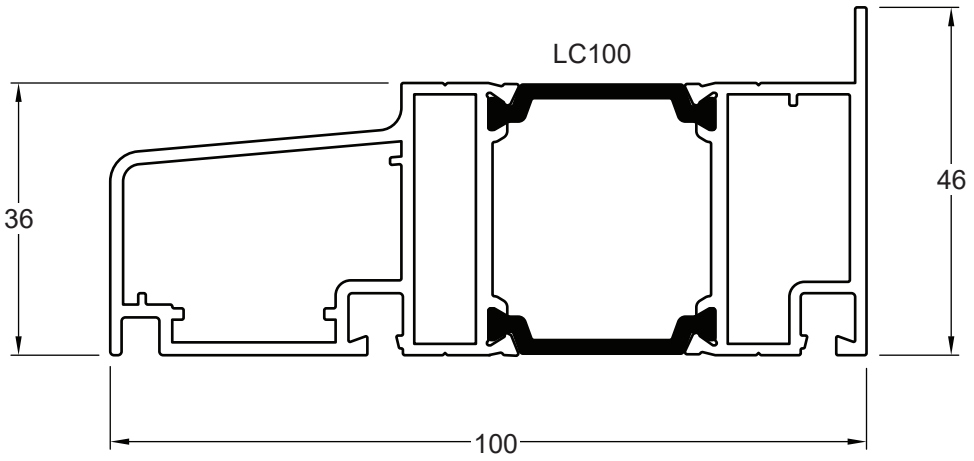
Dimensions in mm
DO NOT SCALE

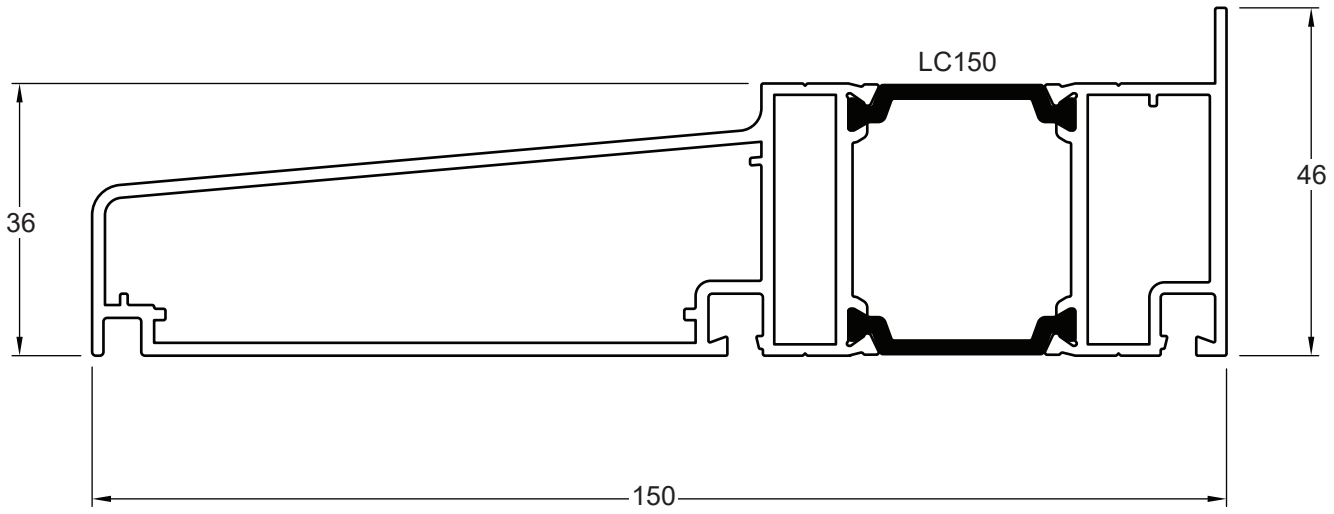
PROFILES





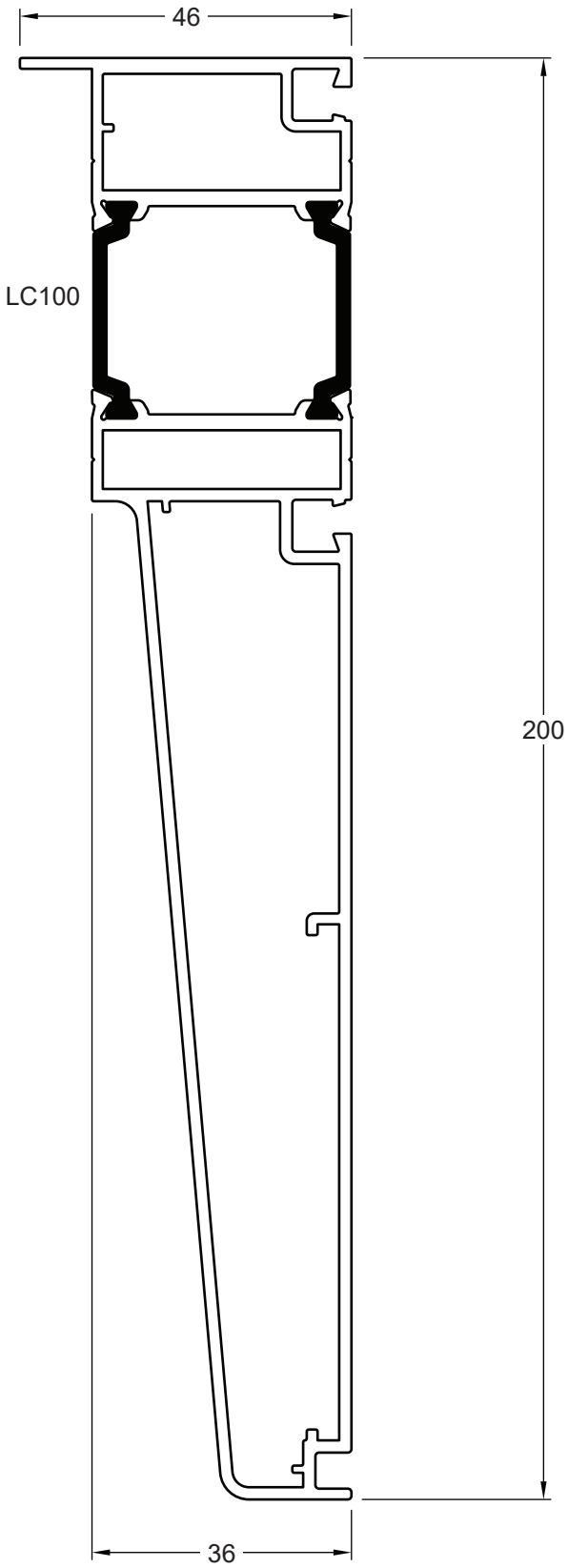
PROFILES





Dimensions in mm
DO NOT SCALE

PROFILES



Load Bearing Capacity of Bay Posts

In situations where an axial load is required to be supported by a bay post, a check must be carried out to ensure that the strength of the bay post and reinforcing (where fitted) is adequate to support those loads. Below is a chart that gives the load capacity of each combination. This is a guide for estimation purposes only. The services of a suitably qualified person with Professional Indemnity Insurance is required to ensure compliance with Part A of the Building Regulations, BS EN 1991 (Eurocode 1), BS EN 1993 (Eurocode 3) and BS EN 1999 (Eurocode 9).

All of the poles/posts shown in this table have been independently verified by a structural engineer.

Saw Cuts
To ensure that the load is distributed evenly, it is important that the metal load bearing poles /posts are cut at 90 degrees. It is recomended that they are cut on an automatic saw, not with a hacksaw.

Load Capacity (unfactored) in kN					
	L23 + BR270-S	L23 - ONLY	L20 +LR20S	L20 - ONLY	L21 - ONLY
L(mm)					
800	38.9	7.7	53.1	51.4	9.1
900	35.9	6.0	51.7	48.8	6.1
1000	32.6	4.3	50.4	46.7	3.3
1100	29.2	2.8	48.8	44.1	0.8
1200	25.7		47.0	41.3	
1300	22.1		44.8	38.2	
1400	18.6		42.5	34.8	
1500	15.1		39.8	30.5	
1600	11.7		36.9	26.3	
1700	8.5		33.7	22.3	
1800	5.5		30.3	18.5	
1900	2.6		26.6	14.8	

Design Assumptions
- ‘L’ is the vertical clear span of the pole/post.
- Results are for axial capacity (kN) of posts for unfactored loads.
- Maximum wind pressure taken to be 1.2 kN/m2 (1200 pascals).
- Tables are applicable for domestic use only.
- Poles/posts must be installed as close to vertical as possible, maximum 3mm vertical misalignment has been assumed.
- No Initial curvature or defects manufacturing error within the poles/posts has been considered.
- All aluminium poles/posts to be grade 6063-T6.
- All steel poles/posts to be grade S355.
- Material assumed to be homogeneous - Neutral axis taken at centroid.
- All poles/posts assumed to be drawn tubes with no welding.
- Loads limited to pole/post jack capacity. Factor of 1.6 on initial failure loads.

INSTALLATION

Drill adaptors as shown. Temporarily hold against frame and drill 3.5 though holes into frame. Run a bead of silicone along the L24 & L25 adaptors where they mate with the frame. Fix using F771013 screws.

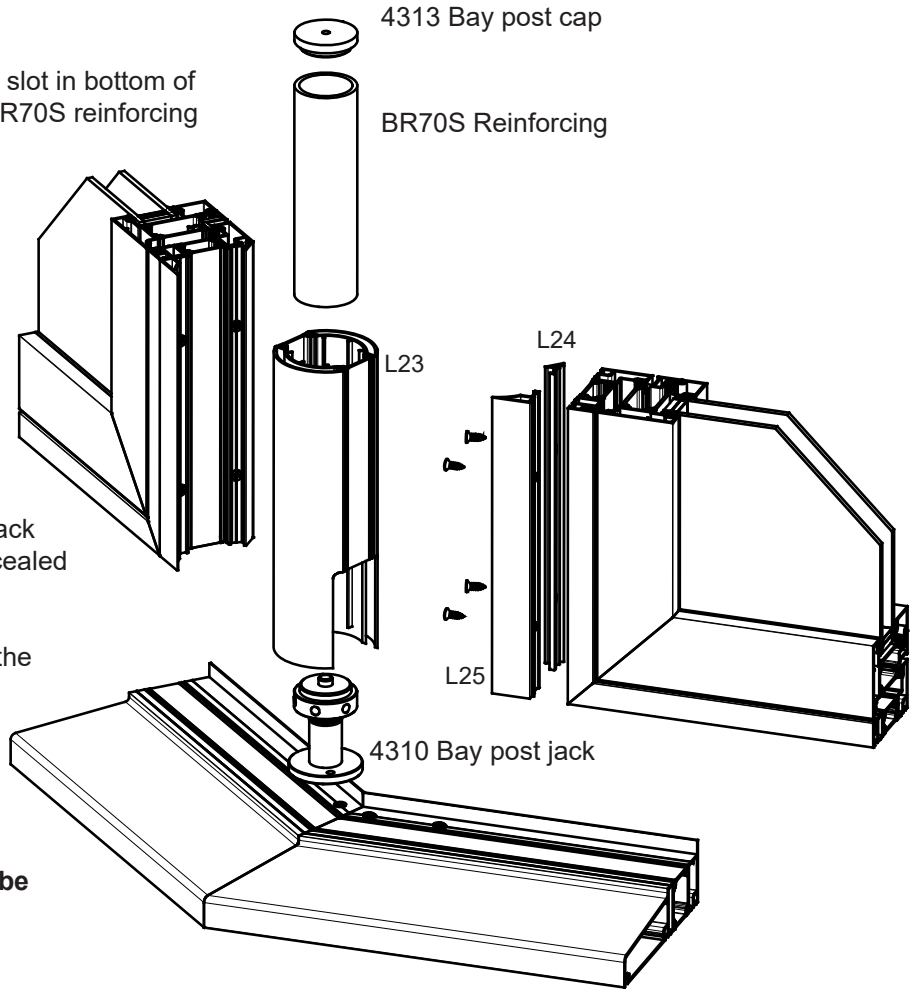
On load bearing applications prepare slot in bottom of bay post as shown and always use BR70S reinforcing with cap and jack shown.

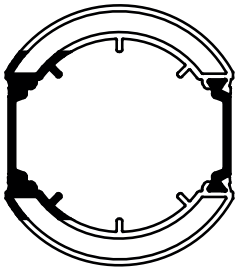
See following pages for load limitations, deductions and assembly sequence.

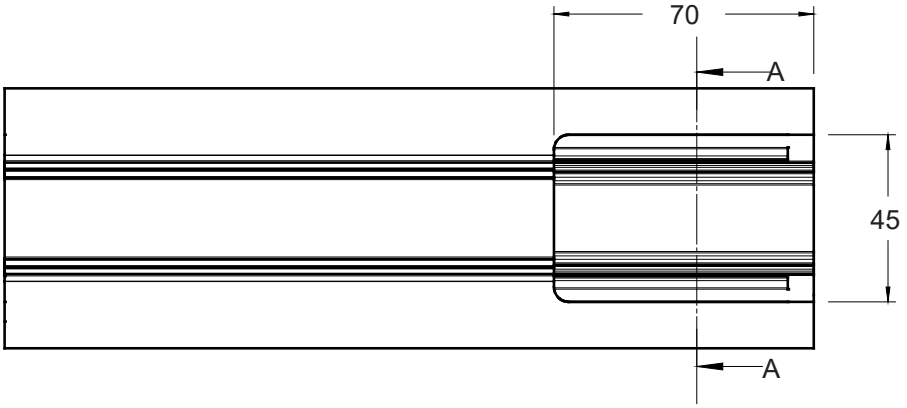
Apply thread lock adhesive (e.g. locktite) to the jacking screw and then wind it fully into the jacking base. ***ensure work is carried out before the thread lock adhesive sets*** Assemble the L23 bay post, and BR70S reinforcement, over the jack (ensuring that the cut out will be concealed when the window frames are fitted).

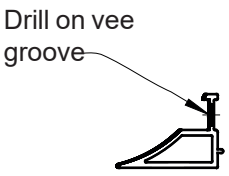
Using a screw driver or similar, wind the jacking screw up until the post is in a secure load bearing position.

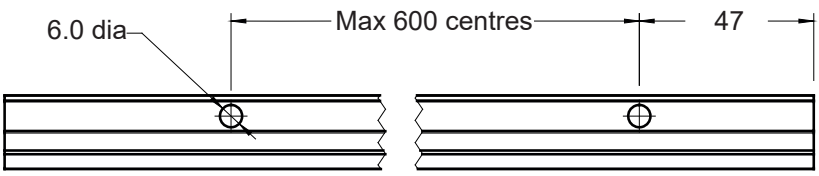
Please note: When installing load bearing posts, it is critical that they are fitted as close to vertical as possible. There should be a maximum of 3mm vertical misalignment.




Section A-A

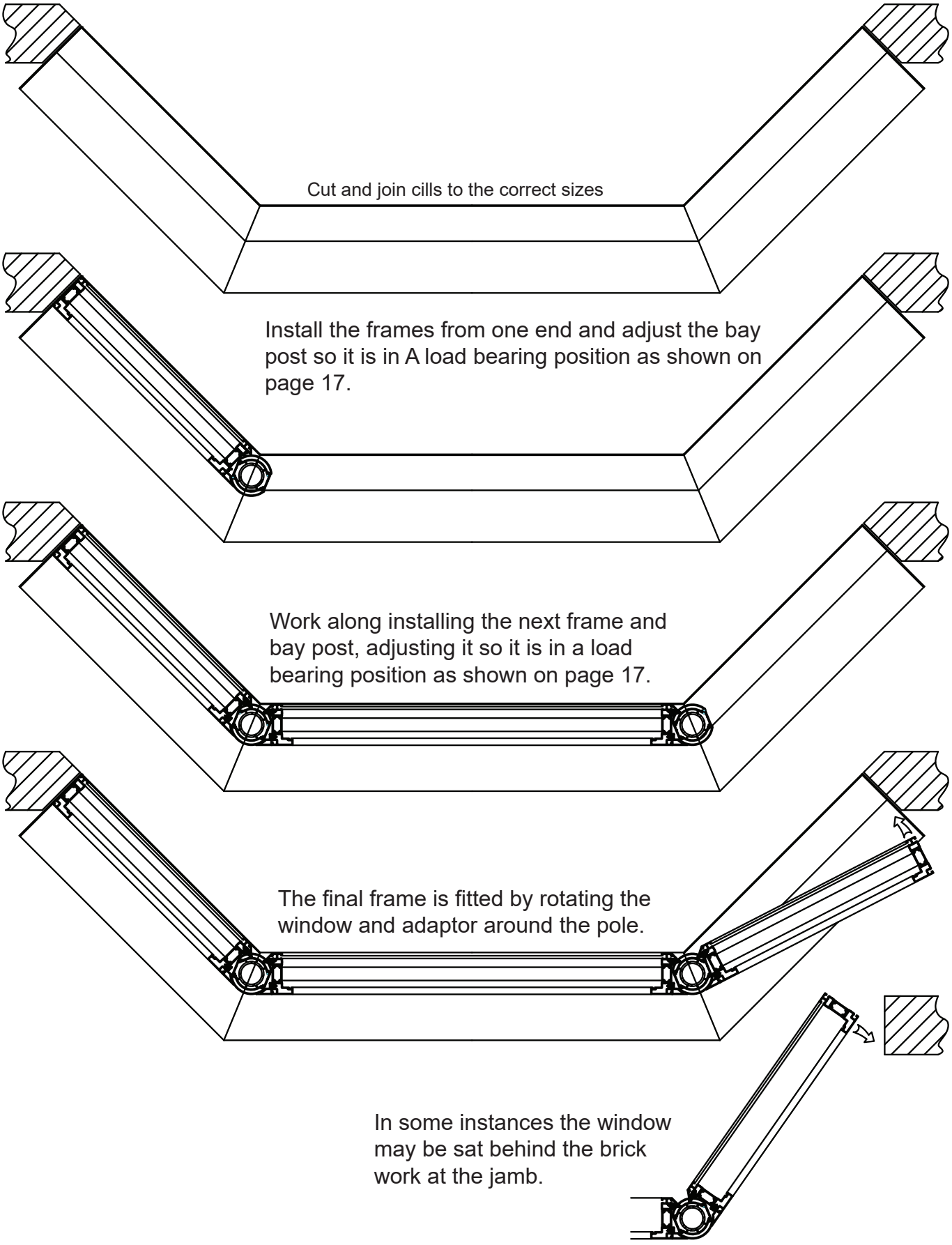






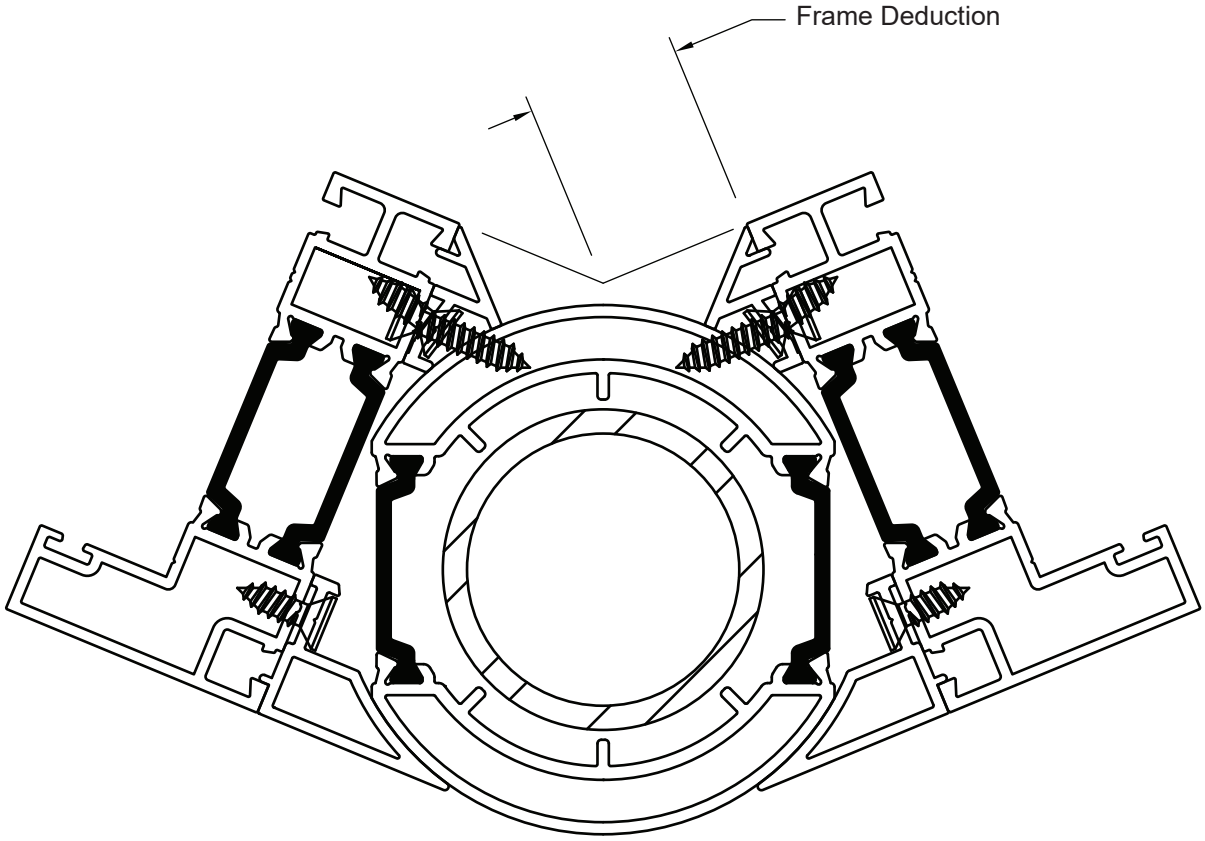
INSTALLATION

Bay windows should be installed in the following sequence.



Dimensions in mm
DO NOT SCALE

VARIABLE BAY POST ALLOWANCE

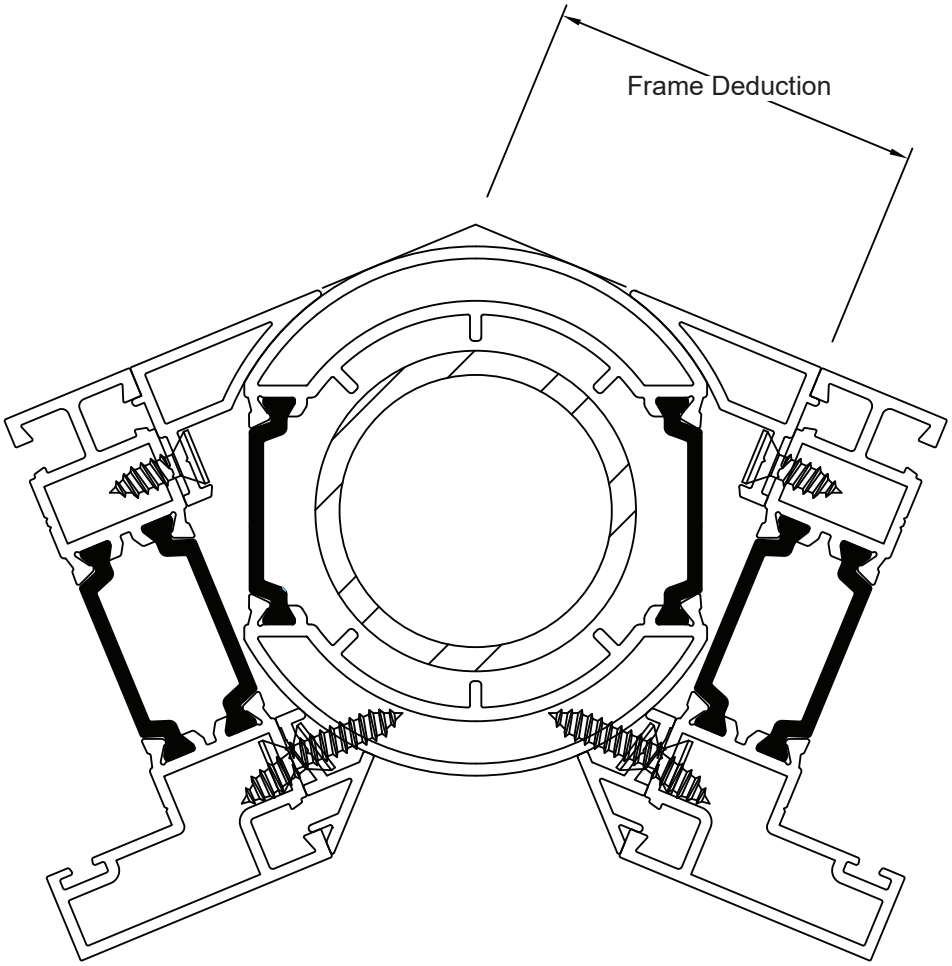


Bay Angle (Total included angle)	Cill Cut Angle	Frame Deduction
90	45	0
91	44.5	0.5
92	44	1
93	43.5	2
94	43	2.5
95	42.5	3
96	42	3.5
97	41.5	4
98	41	4.5
99	40.5	5
100	40	5.5
101	39.5	6
102	39	6.5
103	38.5	7
104	38	7.5
105	37.5	8
106	37	8.5
107	36.5	9
108	36	9.5
109	35.5	10
110	35	10.5
111	34.5	11
112	34	11.5
113	33.5	12
114	33	12.5
115	32.5	12.5
116	32	13
117	31.5	13.5
118	31	14
119	30.5	14.5
120	30	15

Bay Angle (Total included angle)	Cill Cut Angle	Frame Deduction
121	29.5	15
122	29	15.5
123	28.5	16
124	28	16.5
125	27.5	17
126	27	17
127	26.5	17.5
128	26	18
129	25.5	18.5
130	25	18.5
131	24.5	19
132	24	19.5
133	23.5	20
134	23	20
135	22.5	20.5
136	22	21
137	21.5	21
138	21	21.5
139	20.5	22
140	20	22.5
141	19.5	22.5
142	19	23
143	18.5	23.5
144	18	23.5
145	17.5	24
146	17	24.5
147	16.5	24.5
148	16	25
149	15.5	25.5
150	15	25.5

Bay Angle (Total included angle)	Cill Cut Angle	Frame Deduction
151	14.5	26
152	14	26.5
153	13.5	26.5
154	13	27
155	12.5	27
156	12	27.5
157	11.5	28
158	11	28
159	10.5	28.5
160	10	29
161	9.5	29
162	9	29.5
163	8.5	30
164	8	30
165	7.5	30.5
166	7	30.5
167	6.5	31
168	6	31.5
169	5.5	31.5
170	5	32
171	4.5	32
172	4	32.5
173	3.5	33
174	3	33
175	2.5	33.5
176	2	34
177	1.5	34
178	1	34.5
179	0.5	34.5
180	0	35

VARIABLE BAY POST REVERSE ALLOWANCE



Bay Angle (Total included angle)	Cill Cut Angle	Frame Deduction
90	45	70
91	44.5	69.5
92	44	69
93	43.5	68
94	43	67.5
95	42.5	67
96	42	66.5
97	41.5	66
98	41	65.5
99	40.5	65
100	40	64.5
101	39.5	64
102	39	63.5
103	38.5	63
104	38	62.5
105	37.5	62
106	37	61.5
107	36.5	61
108	36	60.5
109	35.5	60
110	35	59.5
111	34.5	59
112	34	58.5
113	33.5	58
114	33	57.5
115	32.5	57.5
116	32	57
117	31.5	56.5
118	31	56
119	30.5	55.5
120	30	55

Bay Angle (Total included angle)	Cill Cut Angle	Frame Deduction
121	29.5	55
122	29	54.5
123	28.5	54
124	28	53.5
125	27.5	53
126	27	53
127	26.5	52.5
128	26	52
129	25.5	51.5
130	25	51.5
131	24.5	51
132	24	50.5
133	23.5	50
134	23	50
135	22.5	49.5
136	22	49
137	21.5	49
138	21	48.5
139	20.5	48
140	20	47.5
141	19.5	47.5
142	19	47
143	18.5	46.5
144	18	46.5
145	17.5	46
146	17	45.5
147	16.5	45.5
148	16	45
149	15.5	44.5
150	15	44.5

Bay Angle (Total included angle)	Cill Cut Angle	Frame Deduction
151	14.5	44
152	14	43.5
153	13.5	43.5
154	13	43
155	12.5	43
156	12	42.5
157	11.5	42
158	11	42
159	10.5	41.5
160	10	41
161	9.5	41
162	9	40.5
163	8.5	40
164	8	40
165	7.5	39.5
166	7	39.5
167	6.5	39
168	6	38.5
169	5.5	38.5
170	5	38
171	4.5	38
172	4	37.5
173	3.5	37
174	3	37
175	2.5	36.5
176	2	36
177	1.5	36
178	1	35.5
179	0.5	35.5
180	0	35

Dimensions in mm
DO NOT SCALE

TECHNICAL MANUAL ISSUE RECORD

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Initial release.