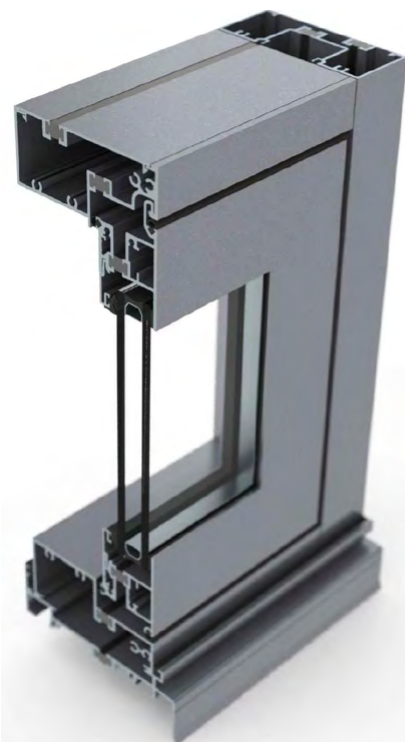


Max™ AWING & CASEMENT SASHES
Max Framing Systems: MSASHES - 1

Awning & Casement Sashes



FEATURES:

- Non-broken version of U-Max awning Sash
- Robust size, deeper Sash depth for greater strength
- Internally glazed
- Flush faced awning Sash on continuous hinge or stays
- Flush faced casement Sash on stays & cam handles
- Winder box options for concealed motorised winders
- Adaptable to all pocket glazed framing systems

FABRICATION:

- Mitre cut
- Easy Screw Flute Joinery Fabrication

PRODUCT APPLICATIONS:

- Residential, apartments or commercial

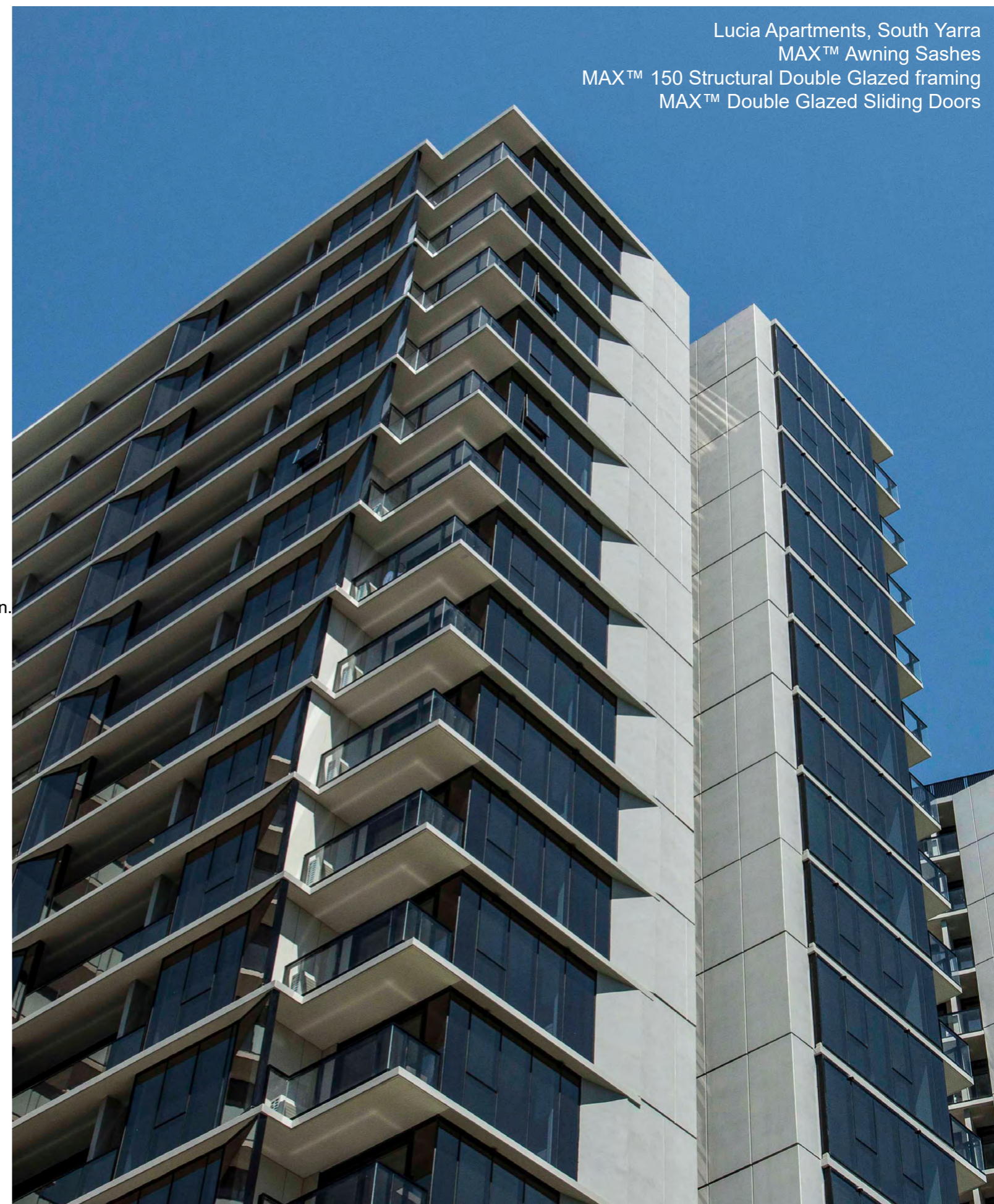
LIMITATION:

- Hardware limits (weight & size)
- Maximum recommended Sash weight 35kg with manual winder
- Maximum recommended Sash weight 50kg with Motorised winder
- Structural limitations in apartments & commercial, limited by deflection.
- Please read the limitation notes on each Sash

HARDWARE SELECTION:

Selecting the correct hardware for application is determined by many factors that change on a project by project basis. Careful consideration needs to be given to opening type, size & weight, wind loads, location within the building, security, ease of operation, budget, serviceability & aesthetic requirements.

Typical hardware is shown throughout our catalogues to depict opening types & function. There are a range of sash types available to cover a variety of applications. Once the opening type has been selected, it is the responsibility of the fabricator to determine hardware suitability with the hardware manufacturer, ensuring their selection meets project requirements.

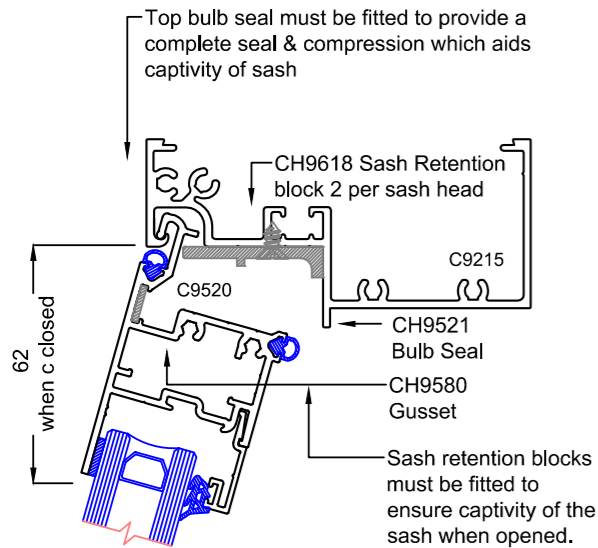


Lucia Apartments, South Yarra
MAX™ Awning Sashes
MAX™ 150 Structural Double Glazed framing
MAX™ Double Glazed Sliding Doors

Max™ AWING & CASEMENT SASHES

Max Framing Systems: MSASHES - 2

Inset Hinge Head Sash



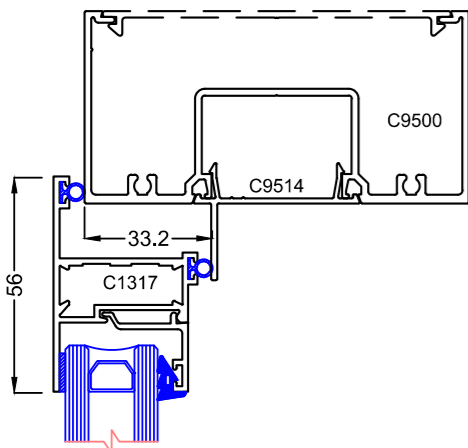
Inset Sash Features

- Available in single glazed as a wraparound glazed or beaded sash
- Identical in appearance & size as double glazed or thermally broken
- Cost effective & simple to assemble especially with its hinge head & winder sill profiles
- Does not require stays when using a hinge head
- Can be used with stays (without hinge head) if required
- Suited to 30kg sashes with single chain winder
- Suited to 70kg sashes with dual chain winder
- Available as a casement window & cam handles
- Suited to 30kg casement sashes, max 900 wide
- Exceptional air tightness as an awning window
- Push in bulb seal rather than a knife in seal, easier to fit
- Accepts Q-Lon acoustic seals
- Solid winder fixing into the back of the sash. Winder fit to most beaded sashes onto the bead which is not secure without an internal bracket - more work.
- Wraparound sash 6mm - 13.52mm glass
- Beaded sash 6mm - 28mm glass
- Screw assembled
- Corner gussets aligns face of sash & supports hinge head

Performance

- Tested window of 1500 x 900 sash size with Doric Single Chain winder achieved:
- +2300pa & -1500pa serviceability
 - 3300pa ultimate (winder connection failed)
 - 1600pa water penetration
 - 0.93 litres air infiltration

35mm Overlap Sash



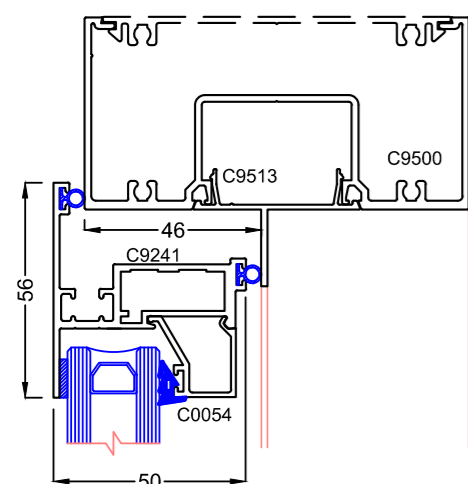
35mm Sash Features

- Available in single glazed with optional beads to double glazed
- Requires stays that accept a 14mm cavity
- Suited to 30kg sashes with single chain winder
- Suited to 70kg sashes with dual chain winder
- Available as a casement window & cam handles
- Suited to 30kg casement sashes, max 900 wide
- Accepts glass from 6mm - 24mm glass
- Crimped design
- Accepts Q-Lon acoustic seals

Performance

- Tested window of 1500 x 920 sash size with Doric Single Chain winder achieved:
- +2000pa & -1100pa serviceability
 - 3000pa ultimate (winder connection failed)
 - 1200pa water penetration
 - 1.31 litres air infiltration

46mm Overlap Sash



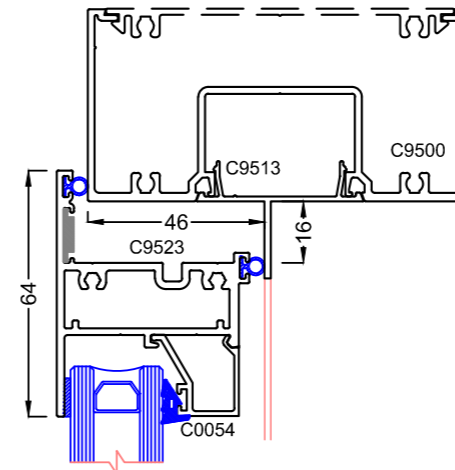
46mm Overlap Sash Features

- Available in single glazed with optional beads to double glazed
- Identical sash can be used thermally broken
- Requires stays that accept a 14mm cavity
- Suited to 30kg sashes with single chain winder
- Suited to 70kg sashes with dual chain winder
- Available as a casement window & cam handles
- Suited to 30kg casement sashes, max 900 wide
- Accepts glass from 6mm - 35mm glass
- Crimped design
- Accepts Q-Lon acoustic seals

Performance

- Tested window of 1500 x 920 sash size with Doric Single Chain winder achieved:
- +2300pa & -1900pa serviceability
 - 3000pa ultimate (winder connection failed)
 - 1000pa water penetration
 - 1.31 litres air infiltration

46mm Heavy Duty Overlap Sash

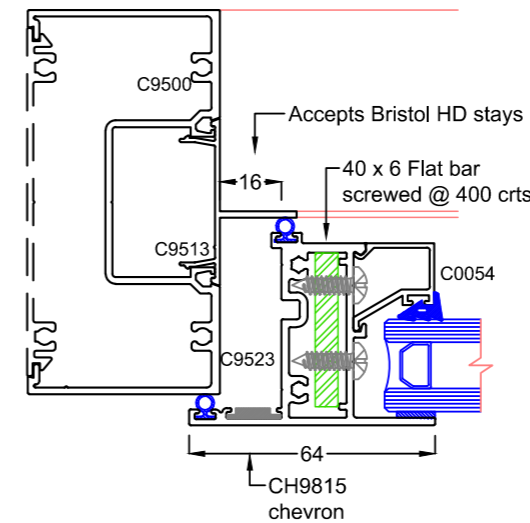


46mm Heavy Duty Overlap Sash Features

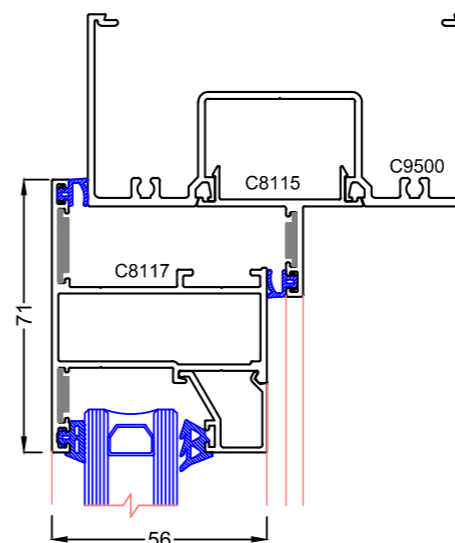
- Available in single glazed with optional beads to double glazed
- Requires stays that accept a 16 / 16.5mm cavity
- Suited to 70kg sashes with dual chain winder
- Available as a casement window & cam handles
- Suited to 70kg casement sashes, max 900 wide
- Accepts glass from 6mm - 35mm glass
- Accepts S/Steel corner chevron for additional strength
- Can accept a 40 x 6mm gal. steel flat in stiles to allow larger sashes to be manufactured
- Screw Assemble design

Performance

- Tested window of 1950 x 1150 sash size with steel insert with Doric Dual Chain winder achieved:
- +2500pa & -1900pa serviceability at span/250
 - 900pa water
 - +3000pa -2500pa Ultimate (winder connection failed)



56mm Multi Locking Sash



56mm Multi locking Sash Features:

- Refer Multi locking segment of this manual
- Preferred for large sashes or medium - high rise and high wind loads
- Preferred sash for Casement application instead of cams handles
- Quality Roto European Hardware
- S/Steel Chevron corners for added strength
- Sash Adaptor Mitre cut - adaptable to Centre & Front Glaze
- Multi Locking as a turn handle - sill mounted as an awning
- Multi Locking as a turn handle - side mounted as a casement
- No screen option unless winder operated or retractable screens
- 180kg Sash weight
- Capable of awning sashes up to 2400mm high & 1200mm wide, subject to hardware limits
- Capable of casement sashes up to 2400mm high & 900mm wide, subject to hardware limits
- Glass: 24mm - 38mm IGU's

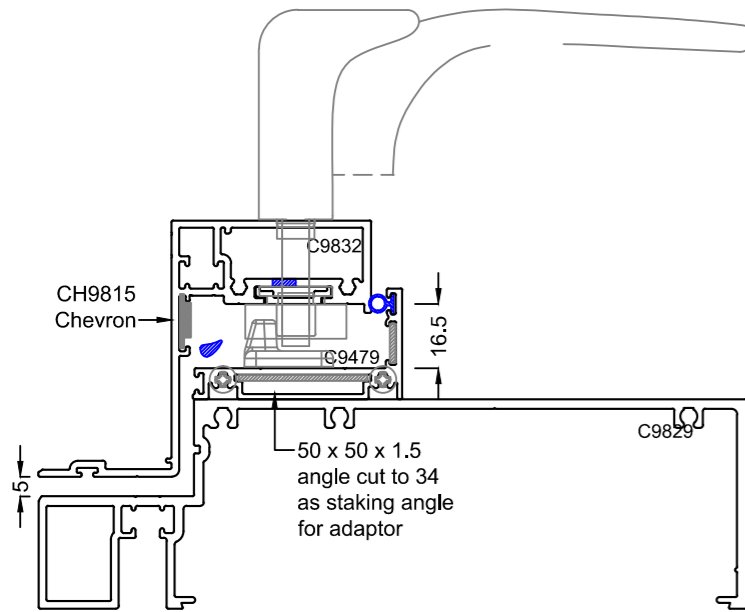
Max™ AWING & CASEMENT SASHES
Max Framing Systems: MSASHES - 3
Structural Glazed Sashes

- Available double glazed only as inserts into framing systems or SG150 and SG182 structural glazed suites
- Requires stays that accept a 16 / 16.5mm cavity
- Suited to 70kg sashes with dual chain winder
- Available as a casement window & cam handles
- Suited to 70kg casement sashes, max 900 wide
- Accepts multi locking Eurogroove hardware for added structural integrity
- Accepts 20 - 28mm IGUs dependant on choice
- Accepts S/Steel corner chevron for additional strength
- Screw Assemble design

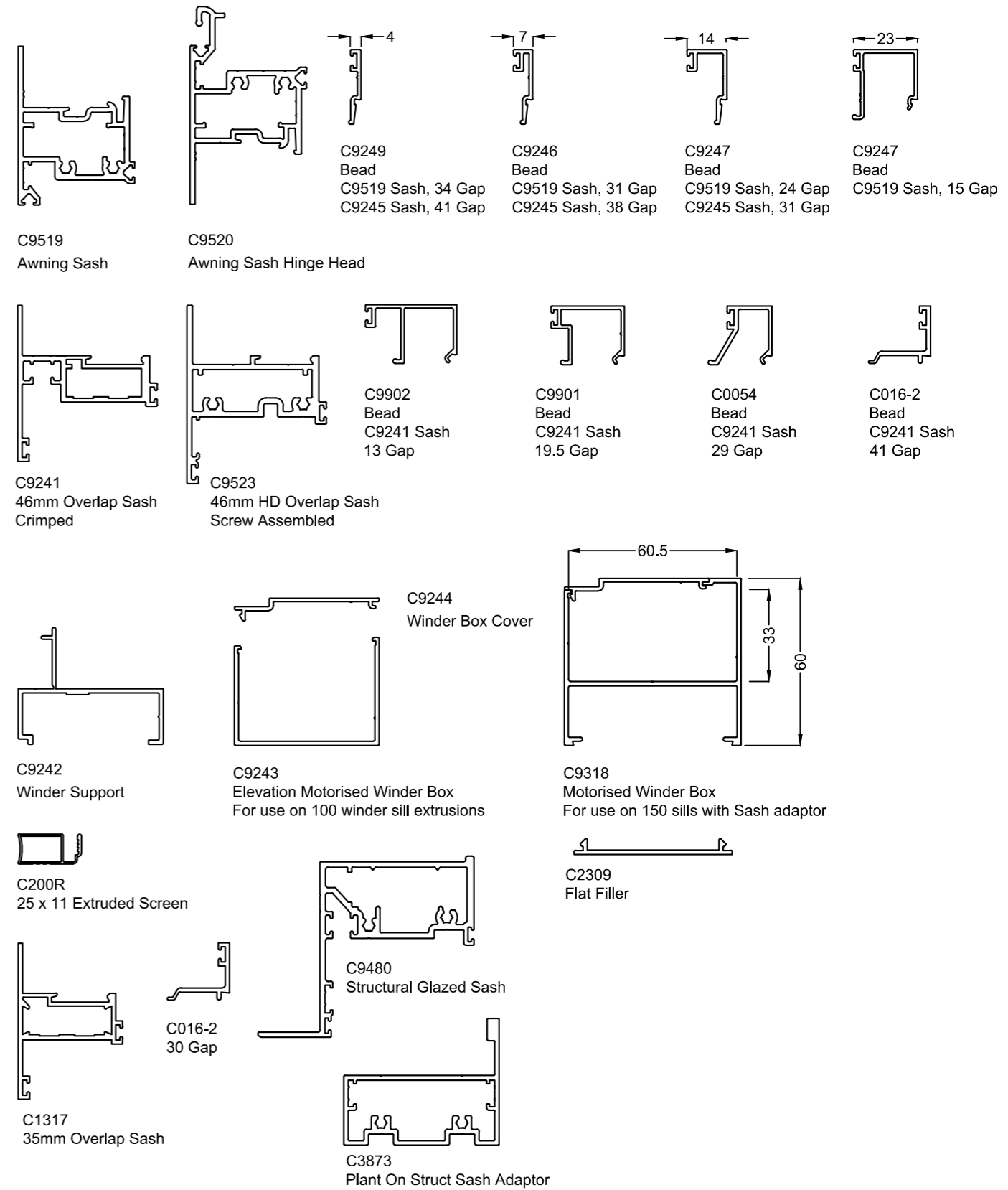
Performance

Tested window of 1700 x 1000 sash size with Doric Dual Chain winder met both AS2047 and AS4284:

- +1700pa & -1700pa serviceability at span/250
- -3400pa ultimate
- 1000pa water at AS4284
- 1500pa water at AS2047
- 0.2 air infiltration



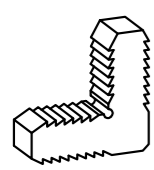
Extrusion ID



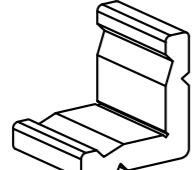
Max™ AWING & CASEMENT SASHES

Max Framing Systems: MSASHES - 4

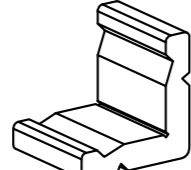
Component ID



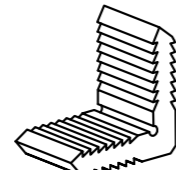
CH9557
Cornerstake
C9519, C9245 Sash



CH1317
Cornerstake
C1317 Sash



CH131737
Cornerstake
C9519, C9523 Sash

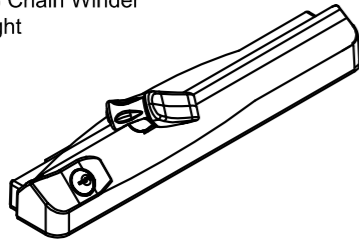


CH1928
Cornerstake C9480
Structural Sash

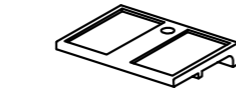
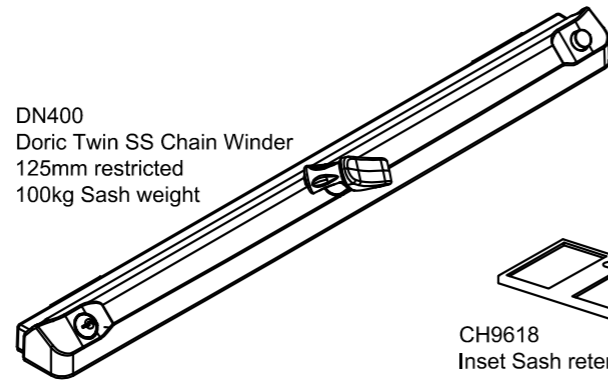


CH9580
Sash Gusset

DN4
Doric Single SS Chain Winder
30kg Sash weight



DN400
Doric Twin SS Chain Winder
125mm restricted
100kg Sash weight



CH9618
Inset Sash retention block



CH9500
3mm wedge PVC



CH9501
4mm wedge SANT



CH9502
5mm wedge PVC



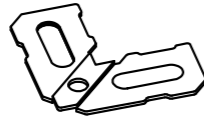
CH9503
7mm wedge PVC



CH9521
Sash Bulb Seal



CH13NEW
Sash Bulb Seal
suit C9241



CH8515
SS Chevron 13.9mm
suit C9523

ASSA ABLOY Awning & Casement Stays for Max, U-Max & 35mm Sashes

The following details standard Sash hardware readily adaptable to awning & casement windows. Stainless steel stays only are detailed in the following charts, as generally double glazed Sashes will exceed the weight limits with aluminium stays.

ASSA ABLOY NON Friction 4 Bar stays, suits Awning Sashes & winders

Suits C1317, C9519, C9241 Sashes

NON Friction	Stay	Max Sash Height	Opening Angle	Max Sash Weight	ASSA Product Code	Rebate Size
	200 4BV	300mm	40'	8kg	P1001	14mm +-1
200 4B NF	600mm	40'	10kg	P1002NF	14mm +-1	
350 4B NF	800mm	30'	20kg	P1003NF	14mm +-1	
500 4B NF	1800mm	25'	30kg	P1004NF	14mm +-1	

Note:

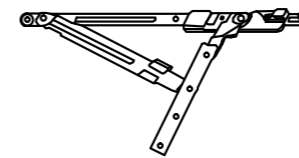
- Use the largest stay suitable for the Sash
- Single Chain awning winders are rated to 30kg maximum Sash weight generally. Where possible consider restricting the chain to reduce the potential for excessive wear on the winder mechanism.
- The Doric DN400 twin chain winder is rated to 100kg & 125mm restricted.
- Stainless Steel chains are recommended for best durability in all conditions

ASSA ABLOY Friction 4 Bar stays, suits Awning Sashes & cam handles

Friction stays	Stay	Max Sash Height	Opening Angle	Max Sash Weight	ASSA Product Code	Rebate Size
	200 4B	600mm	40'	10kg	P1002	14mm +-1
350 4B	800mm	30'	20kg	P1003	14mm +-1	
500 4B	1800mm	25'	30kg	P1004	14mm +-1	

Note:

- Sashes generally over 1200 should use 2 cam handles
- Sashes wider than 1500 should use snubber blocks on top



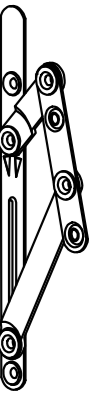
ASSA ABLOY Friction 4 Bar stays, suits Casement Sashes & cam handles

Suits C1317, C9519, C9241 Sashes

Casement Friction stays	Stay	Max Sash Width	Opening Angle	Max Sash Weight	ASSA Product Code	Rebate Size
	200 4BC	800mm	90'	25kg	P1090	14mm +-1
300 4BC	750mm	56'	20kg	P1120	14mm +-1	
330 4BC	800mm	90'	30kg	12C-NS3300-00F	14mm +-1	
430 4BC	1000mm	90'	40kg	P1080	14mm +-1	

Note:

- Casement stays should only be used where Sash height is twice Sash width
- Sashes over 1200 high should have 2 cam handles
- Snubber blocks should be fitted to the pivot side of the Sash for Sashes over 1500
- Sashes must be heel & toe blocked to avoid Sashes sagging



Max™ AWING & CASEMENT SASHES

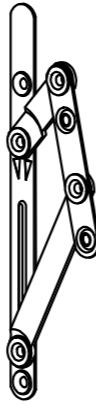
Max Framing Systems: MSASHES - 5

Bristol Awning & Casement Sash Stays for Max, U-Max & 35mm Sashes

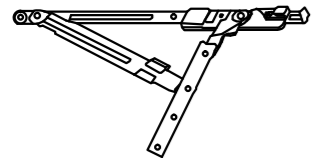
The following details standard Sash hardware readily adaptable to awning & casement windows. Stainless steel stays only are detailed in the following charts, as generally double glazed Sashes will exceed the weight limits with aluminium stays.

Bristol 4 Bar stays ,suits C1317, C9519, C9241 Awning Sashes

NON Friction	Stay	Max Sash Height	Opening Angle	Max Sash Weight	Rebate Size
	BP8TH	350mm	73'	12kg	13mm +-1
	BP10TH	450mm	84'	14kg	13mm +-1
	BP12TH	550mm	87'	16kg	13mm +-1
	BP16TH	N/A	60'	20kg	13mm +-1
	BP20TH	1200mm	45'	24kg	13mm +-1
	BP24TH	1200mm	40'	35kg	13mm +-1



- Note:
- These are Friction Stays with adjustable friction screw & can also be used as non-friction where winders are used.
 - Use the largest stay suitable for the Sash
 - Single Chain awning winders are rated to 30kg maximum Sash weight generally or 70kg with dual chain winders. Where possible consider restricting the chain to reduce the potential for excessive wear on the winder mechanism.
 - The Doric DN400 twin chain winder is rated to 100kg & 125mm restricted.
 - Stainless Steel chains are recommended for best durability in all conditions



Bristol Friction 4 Bar stays, suits Casement Sashes & cam handles

Suits C1317, C9519, C9241 Sashes

Casement Friction stays	Stay	Max Sash Width	Opening Angle	Max Sash Weight	ASSA Product Code	Rebate Size
	BP12SH	650mm	87'	24kg	14mm +-1	14mm +-1
	BP16SH	800mm	88'	30kg	14mm +-1	14mm +-1

- Note:
- Casement stays should only be used where Sash height is twice Sash width
 - Sashes over 1200 high should have 2 cam handles
 - Snubber blocks should be fitted to the pivot side of the Sash for Sashes over 1500
 - Sashes must be heel & toe blocked to avoid Sashes sagging

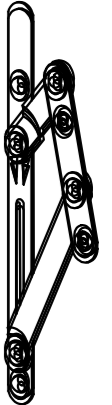
Bristol HD Awning Sash Stays - suit Multi Locking & Structural Glazed Sashes

The following details standard Sash hardware readily adaptable to Multi Locking Awning & Structural Glazed sashes.

Bristol Heavy Duty 4 Bar stays

Suits C9480, C9497, C9544, C9832 Structural Awning Sashes

NON Friction	Stay	Max Sash Height	Opening Angle	Max Sash Weight	Rebate Size
	BP10HD	762mm	82'	50kg	16mm +-1
	BP10HD	N/A	82'	34kg	16mm +-1
	BP16HD	1120mm	83'	63kg	16mm +-1
	BP16HD	N/A	83'	37kg	16mm +-1
	BP22HD	1321mm	83'	74kg	16mm +-1
	BP22HD	N/A	83'	42kg	16mm +-1
	BP26HD	1800mm	23'	90kg	16mm +-1

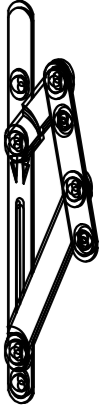


- Note:
- These are Friction Stays with adjustable friction screw & can also be used as non-friction where winders are used.
 - Use the largest stay suitable for the Sash
 - Awning winders are rated to 30kg maximum Sash weight generally or 70kg with dual chain winders. Where Sashes exceed this weight, consider restricting the chain to reduce the potential for excessive wear on the winder mechanism.
 - Stainless Steel chains are recommended for best durability in all conditions

Bristol Heavy Duty 4 Bar Casement stays

Suits C9523, C9497, C9832 Sashes

Friction	Stay	Max Sash Width	Opening Angle	Max Sash Weight	Rebate Size
	BP10HD	660mm	82'	35kg	16mm +-1
	BP16HD	800mm	83'	37kg	16mm +-1



- Note:
- These are Friction Stays with adjustable friction screw & suitable only with cam handles
 - Use the largest stay suitable for the Sash

Max™ AWING & CASEMENT SASHES

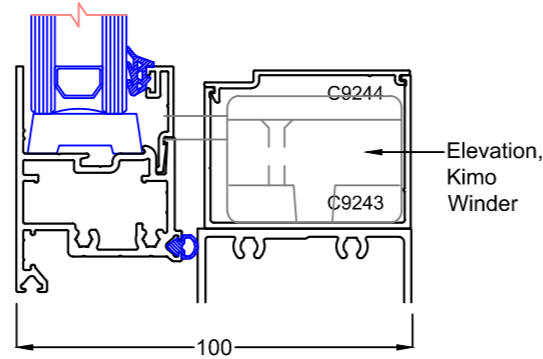
Max Framing Systems: MSASHES - 6

Elevation, Kimo Motorised winders

This winder is suitable for 100 & 150 deep framing systems for use on highlight windows & in applications where remote operation is required. It is also suitable as an alternative to a manual winder for people with disabilities as its keypad requires no force to operate. It can also be suitable for Sashes heavier than a conventional winder (maximum 50kg)

Stand alone Motorised window operators are designed to be operated with standard "off the shelf" switches or alternatively connected to various Smart home or building management systems through a C-Bus interface. Note that this winder requires a transformer.

It allows up to 30 actuators to operate from one touch screen.



Elevation, Kimo Motorised winder recommended limitations					
Application	Min Sash Height	Max Sash Height	Min Sash Width	Opening Angle	Max Sash Weight
Awning	400mm		400mm	20'	50kg
		2100mm	400mm	*	50kg

Note:

- Elevation winder box extrusions C9243, C9244 conceal the winder
- Elevation, Kimo Operators are only to be used on Sashes with hinges or non-friction stays
- 240v with 12v transformer. Single operators require separate transformers, multiple operators on keypads use a single transformer.
- Standalone & multiple / keypad operators cannot be interchanged
- * Limited by chain length

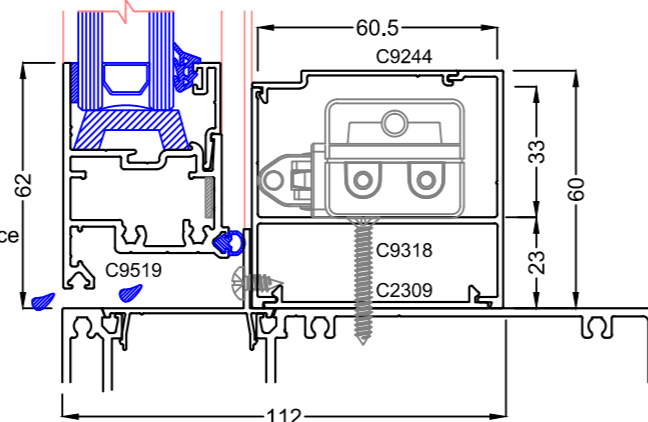
Commercial Motorised winders

A number of motorised winders can be fitted into this winder box including D&H Mechatronic Motorised winder CDC 200 & Somfy Linkeo Series 2.

This winder box is suited only to 150 deep framing systems only for use in applications where remote operation is required. Motorised winders are especially suited to commercial applications to reduce the reliance on airconditioning system provide automated ventilation & smoke control & automatic opening in case of fire.

Motorised window operators are designed to be operated with standard "off the shelf" switches or alternatively connected to various Smart home or building management systems through a C-Bus interface. The above winders do not require transformers and are easily wired into window systems.

- Note:
- Winder box extrusions C9318, C9244 conceal the winder
 - Motorised winders should only to be used on Sashes with hinges or non-friction stays
 - The above 240v winders do not require a transformer.
 - Please refer the manufacturers recommended limitations on use



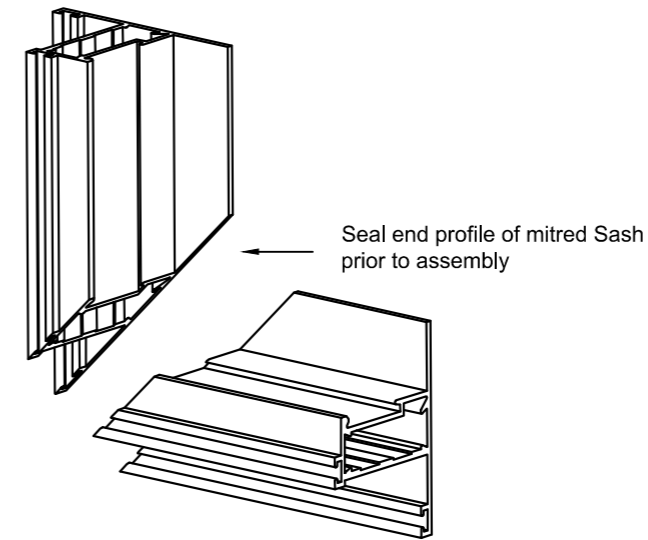
Sash Assembly

Irrespective of the Sash being made it must be stated that all butted joints must be sealed. This includes the Sash, beads & bulb seals (which are sealed by vulcanising). This approach is vital to the consistent manufacture of any window product.

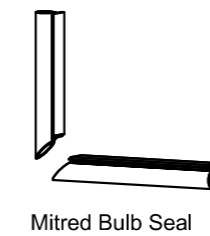
In sealing all butted joints, it does the following:

- Seals the joint which provides an air seal & water seal
- Reduce the incidence of seeing daylight through a joint

Please refer the details below.



Sash viewed from inside



Bulb seals are usually stripped up into the mitred Sash prior to assembly (most can be knifed in later however).

The mitred corners of the bulb seal are vulcanised prior to pressing the ends together. Once cooled this creates a continuous seal around the perimeter of the Sash.

Vulcanising is done with a hot iron or the like. The wall of the bulb is quite thin & care must be taken to not melt the ends out of shape.

