

## Main Index

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## Updates

DATE	PAGE	DESCRIPTION
Aug 2018	B07, B08 B10, C03 E04 E06, E07 E14, F02	HEA345 revised to HEA345N. HEA370 crown seal added. HEA905 punch tool added. HEA372 gasket added to EHE119. Tie bar detail added.

## Specification

### GENERAL DESCRIPTION

The "Aliver Orangery" roof system described in this manual is designed to offer a modern aluminium lantern roof with narrow sightlines and concealed fixings.

Aliver Orangery has a fixed pitch of 25°.

The system has been designed to make fabrication and site assembly a quick and simple process.

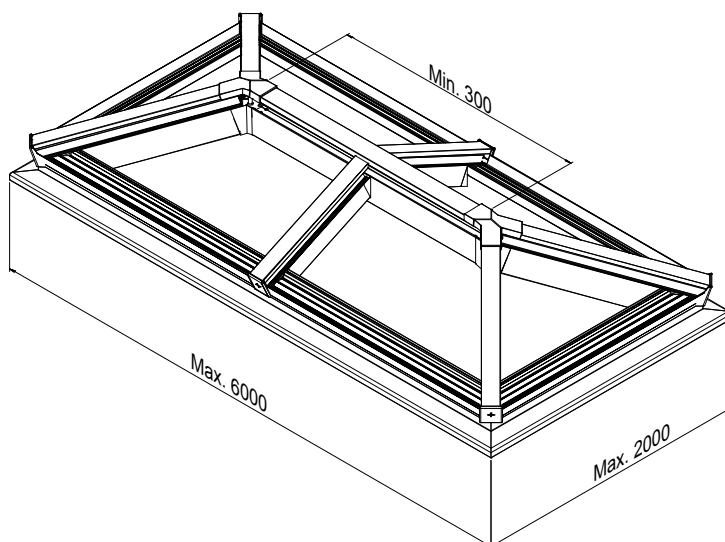
### SIZE LIMITS

Max Width: 2000mm

Max Length: 6000mm where fitted to adequate structure.

Important Note - Lengths over 4000mm require a tie bar when fitted on glazed lights or where the structure cannot support the load. See Page E14 for further details.

Min Ridge Length: 300mm



For advise on Aliver Orangery sizes outside of the recommended design limitations, please contact the Technical Department at Smart Systems Ltd Tel: 01934 876100

## Specification

### PROFILE SPECIFICATION

The roof sections are constructed of aluminium alloy extrusion to BS EN 755-9 and BS EN 12020, extruded from 6060 T6 alloy. The internal and external extrusions of the eaves beam and glass stop are separated with a polyamide thermal break.

The external aluminium alloy extrusion is pre-treated and finished either:-

- a) Anodised to BS 3987: 1987, grade AA25 to a natural self colour.
- b) Polyester powder organic coating to BS 6496. Dual colour is available.

### GENERAL MANUFACTURING

The roof is made by cutting the frame profiles with accurate 45° mitred ends or 90° square ends using Tungsten Carbide Tipped Saw Blades, operating at approximately 3000 rpm.

Eaves beam joints are formed with machine screws into extruded cleats through the mitred ends of the section.

Hip and rafter joints to the eaves beam are formed by fixing through the eaves beam into the relevant bracket with M5 machine screws.

Hip to ridge joints are formed by fixing each section to the crown bracket with machine screws. An additional clamp plate screw is also used at each joint for reinforcement.

Rafter to ridge joints are formed using an M5 rivnut into the side of the ridge to form a fixing for the bracket. The rafter is then fixed to the bracket using M5 machine screws.

On polyester powder coated finishes, great care should be taken to avoid getting gap sealer on visible surfaces and should be removed as soon as possible with a clean cloth.

Care should be exercised when using products not supplied by Smart Systems Ltd as no responsibility can be accepted.

## Specification

### DRAINAGE

As with all dry glazed systems, it is recommended that the system is adequately drained and ventilated. Refer to drainage details in manual, if in doubt ask the Technical Department.

EHE110 & EHE119 are supplied as pre-drained, reducing the preparation time for the fabricator.

### EAVES BEAM MANUFACTURING INFORMATION

The eaves beam members are cut with 45° mitred ends to the overall size required, measured to the longest point of the metal.

Corners are formed by either drilling, using drill jig HEA900, or punching, using punch tool HEA905, the corners ready for the cleat machine screws. Then, coating the cut faces to be joined with a suitable small gap sealer. Into the mitred corner insert the cleat glue and the required corner cleats. The two mitred ends are then brought together and screwed. The small gap sealer ensures a permanent joint and guards against the ingress of moisture and joint movement. After screwing the corner joint, special care should be taken to ensure any excess sealer is removed from painted surfaces.

### Aliver Orangery Weather Performance (BS6375-1)

BS EN 1026: 2000 Air Permeability:	Class 2 300Pa
BS EN 1027: 2000 Watertightness:	Class 6A 250Pa
BS EN 12211: 2000 Resistance to Wind Load:	Class C5 2000Pa

### Aliver Orangery Window Security (PAS 24)

To be tested.

### Aliver Orangery Window U Values

Please refer to the Smart Systems' Document L White Paper or contact the Technical Department.

## Specification

### GLAZING

All gasket to gasket joints shall be bonded using ACSIL05 rubber sealant.

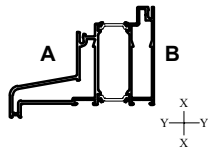
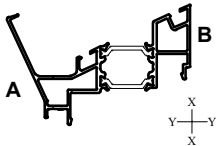
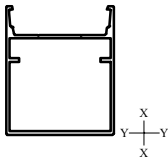
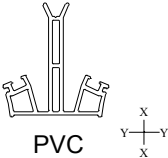
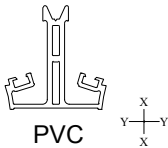
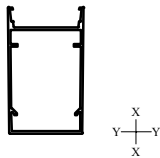
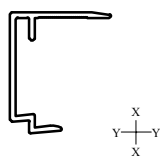
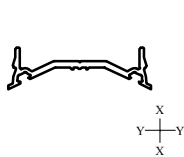
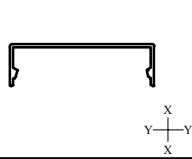
Prior to placing the double glazed units into the openings, EHE128 shall be bonded to the bottom edge of the unit using ACUN3610. The unit and EHE128 are then placed in position ensuring the bottom edge is held by EHE119 glass stop.

Units are secured in position using EHE160 & MC150 fixing plates held in place by ACDR052 self tapping fixing screw taking care not to exceed torque of 4Nm at the recommended speed of 1500-1800rpm. Stitch plates may be used to secure the units temporarily until all units are in position. Pressure plates shall be fitted at the top first, working downwards to help avoid uneven fixings.

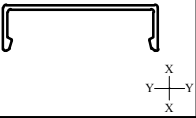
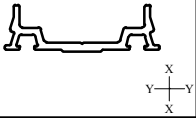

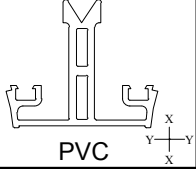





For security, the anti-tamper screws ACUN3507 self tapping fixing screw may be used as an alternative to ACDR052.

The cover caps are clipped in position using a rubber mallet taking care to strike the corners only to avoid denting the section. Vertical cover caps are fitted first followed by the horizontal caps.

PROFILES : TECHNICAL INFORMATION

Number	Picture	Page	Perim. mm	Mec. mm	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	Length	Pack pr.	MF	SA	KL	HP	M
<b>EHE110</b>		A09	536	211	188.55 — 26.01	85.45 — 20.01	6.3	1	✓	✓	✓	✓	✓
<b>EHE119</b>		A10	489	110	44.46 — 8.33	10.07 — 3.22	6.3	1	✓	✓	✓	✓	✓
<b>EHE120</b>		A11	294	208	25.79 — 9.05	24.15 — 7.50	6.5	1	✓	✓	✓	✓	
<b>EHE122</b>		A12	-	-	*** — ***	*** — ***	6.5	*	✓	✓	✓	✓	
<b>EHE123</b>		A12	-	-	*** — ***	*** — ***	6.5	*	✓	✓	✓	✓	
<b>EHE125</b>		A12	349	262	63.06 — 13.53	33.65 — 11.81	6.5	1	✓	✓	✓	✓	
<b>EHE128</b>		A13	154	31	- — -	- — -	6.5	1	✓	✓	✓	✓	
<b>EHE160</b>		A14	217	77	- — -	- — -	6.5	1	✓	✓	✓	✓	
<b>EHE170</b>		A14	221	120	- — -	- — -	6.5	1	✓	✓	✓	✓	
									A = Outside B = Inside		MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour M = Dual Colour		

## PROFILES : TECHNICAL INFORMATION

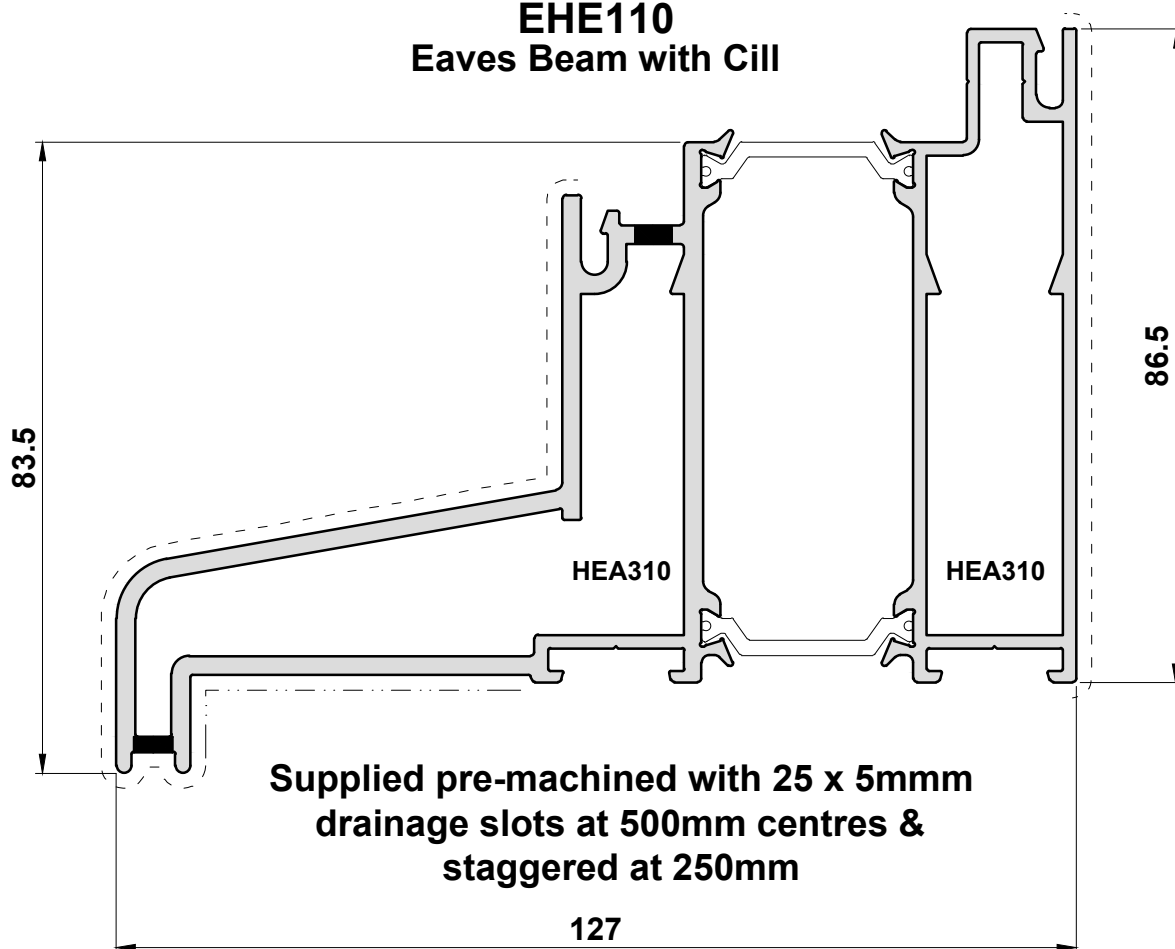
Number	Picture	Page	Perim. mm	Mec. mm	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	Length	Pack pr.	MF	SA	KL	HP	M
<b>DK052N</b>		A14	180	99	- -	- -	7	1	✓	✓	✓	✓	
<b>MC150</b>		A14	185	-	- -	- -	7	1	✓	✓	✓	✓	
<b>MC152</b>		A14	186	-	- -	- -	7	1	✓	✓	✓	✓	
<b>VR514</b>	 PVC	A11	-	-	- -	- -	7	1	✓	✓	✓	✓	
													
													
													
													
													
									A = Outside B = Inside		MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour M = Dual Colour		



Primary Visible Side

Secondary Visible Side

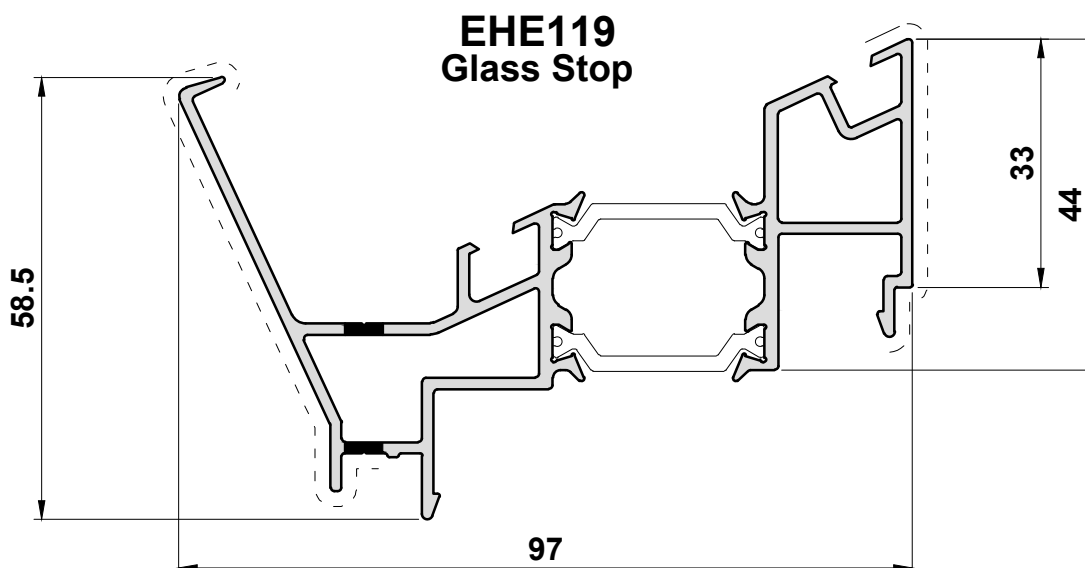
**EHE110**  
**Eaves Beam with Cill**



Scale 1:1

Primary Visible Side

Secondary Visible Side

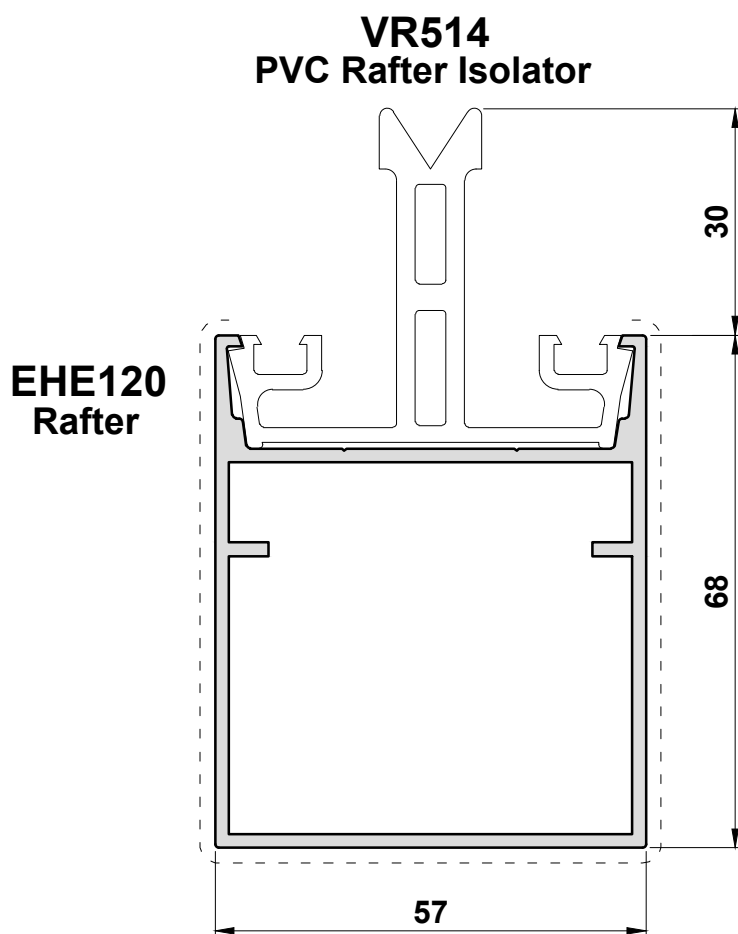


**Supplied pre-machined with 25 x 5mm  
drainage slots at 500mm centres &  
staggered at 250mm**

Scale 1:1

Primary Visible Side

Secondary Visible Side

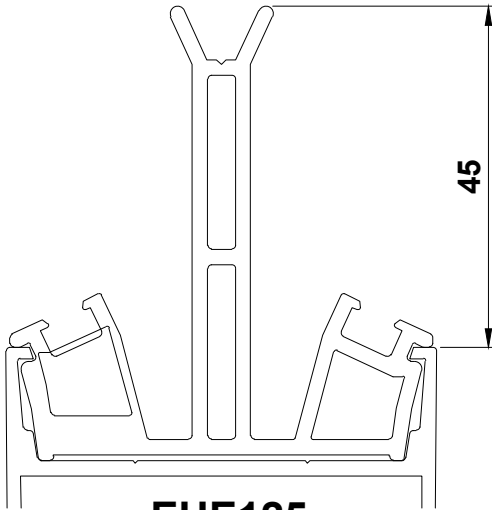


Scale 1:1

Primary Visible Side

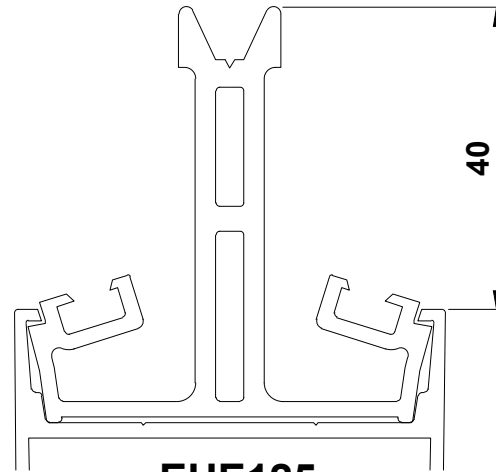
Secondary Visible Side

**EHE122**  
**PVC Ridge Isolator**



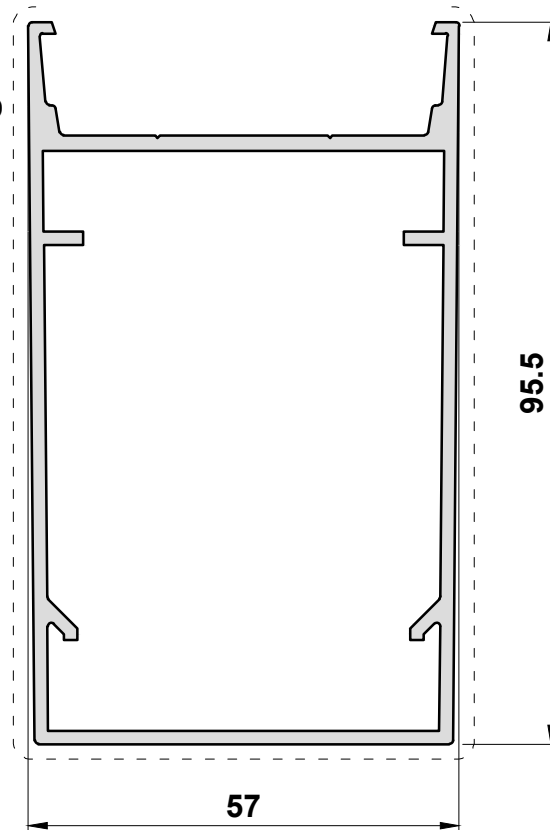
**EHE125**

**EHE123**  
**PVC Hip Isolator**



**EHE125**

**EHE125**  
**Ridge & Hip**

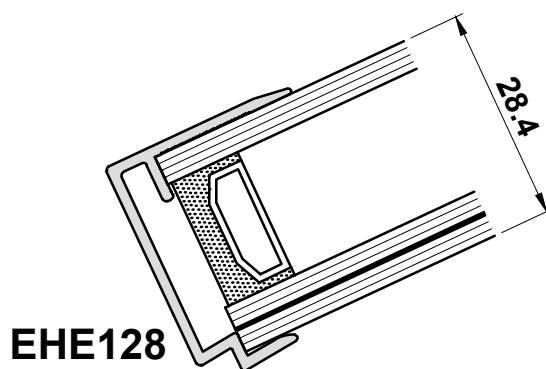
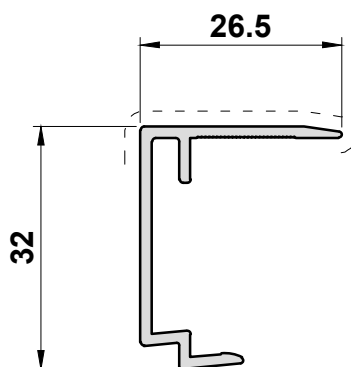


Scale 1:1

Primary Visible Side

Secondary Visible Side

**EHE128**  
**Glass End Cover**

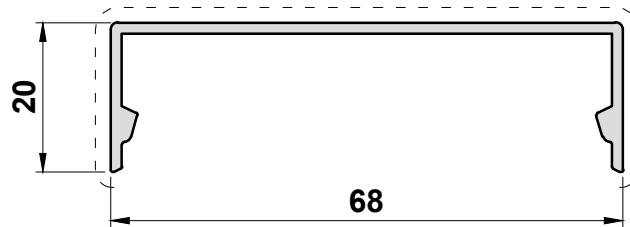


Scale 1:1

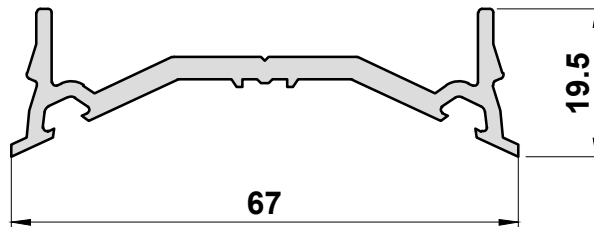
Primary Visible Side

Secondary Visible Side

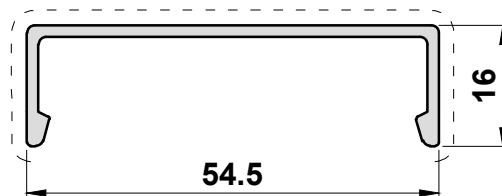
**EHE170**  
Ridge Capping



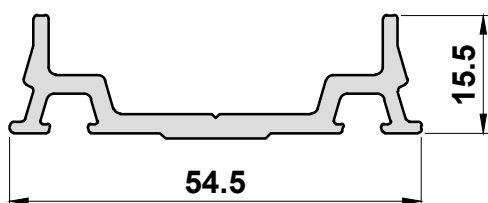
**EHE160**  
Ridge Pressure Plate



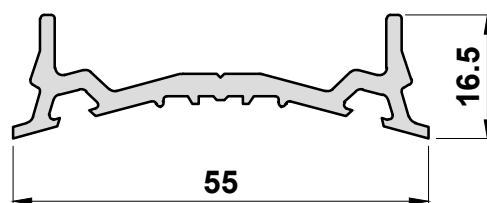
**DK052N**  
Rafter Capping



**MC150**  
Ridge Pressure Plate



**MC152**  
Hip Pressure Plate



Scale 1:1

**Section B**

**Accessories**

**Photos & Drawings**





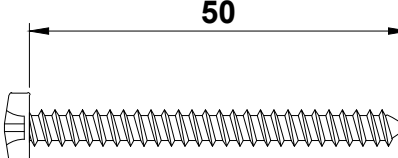
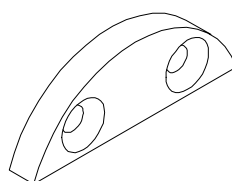
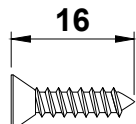
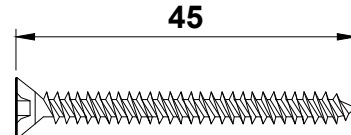
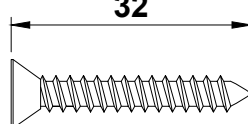


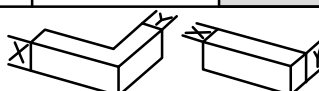
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	<b>ACET041</b>  Cill Nose Bracket  Screws = ACET064	1	each	<b>EHE110</b>	<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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	<b>ACET064</b>  No. 8 x 16 S/S Self Tapping Countersunk Screw	100	pack		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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	<b>ACET190</b>  4.3 x 45mm CSK Polyamide Screw	1000	pack	<b>EHE119</b>	<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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	<b>ACIM062</b>  No. 10 x 32 S/S Self Tapping Countersunk Screw	100	pack		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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SA																							
KL																							
HP																							
SSC																							
SMC																							
W																							
Z																							
PC																							
 T-BARS ACVG66=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	<b>W</b> = White <b>Z</b> = Black																					

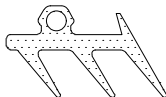
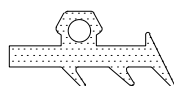

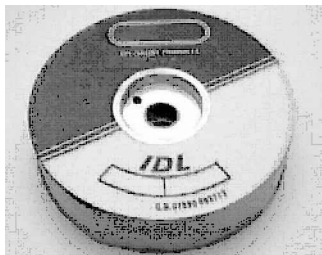
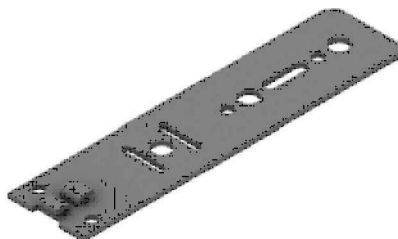


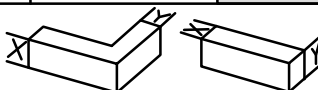
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					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACMC150</b>  Gasket for MC150	<b>100</b>	<b>m</b>	<b>MC150</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACMC635</b>  Retaining Gasket	<b>100</b>	<b>m</b>	<b>EHE122 EHE123 VR514</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACMX09811</b>  55mm Wide Sealing Tape	<b>20</b>	<b>m</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACUN23X</b>  Screw Fixing Lug  <b>ACUN232: B = 240MM ACUN233: B = 280MM</b>	<b>100</b>	<b>Pack</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
<div><div><div>T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm</div></div><div>Screw (Grub)</div></div>		<div><div>W = White Z = Black</div><div></div></div>			
<div>MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome</div>					

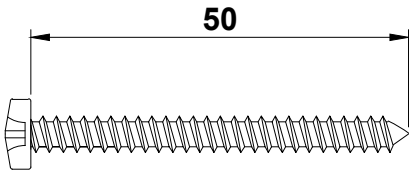


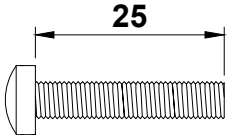
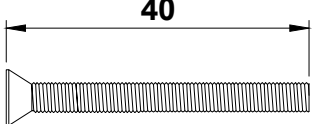


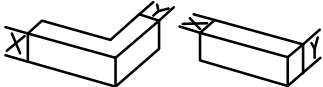
Image	Part Code	Pack	Unit	Application	Colour
	<b>ACUN3507</b>  No10 x 50mm Anti-Tamper S/S Screw	100	m	<b>EHE122 VR514</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACUN3508</b>  ACUN3507 Bit	1	each	<b>ACUN3507</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACUN3509</b>  M5 Rivnut	100	pack	<b>HEA343</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACUN3514</b>  M5 x 25mm S/S Pan Head	100	pack	<b>HEA343</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACVS061</b>  M4 x 40mm S/S CSK Screw	100	pack	<b>HEA345</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG66=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	<b>W</b> = White <b>Z</b> = Black		

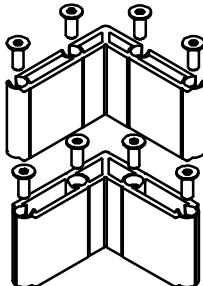
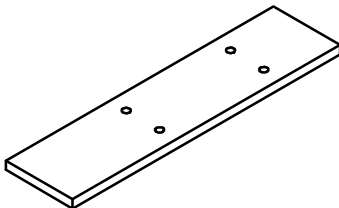
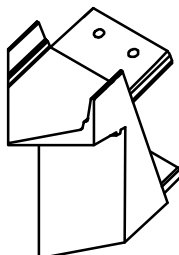
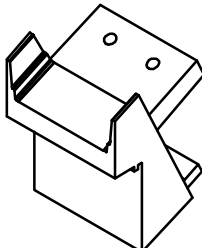



Image	Part Code	Pack	Unit	Application	Colour
	<b>HEA310</b>  <b>EHE110 Corner Cleats</b>	<b>1</b>	<b>set</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA332</b>  <b>Rafter Tie Bar Bracket</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA340</b>  <b>Rafter to Eaves Bracket</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA342</b>  <b>Rafter to Eaves Bracket</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
					MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome		<b>W</b> = White <b>Z</b> = Black		

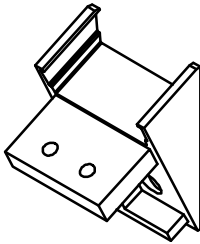
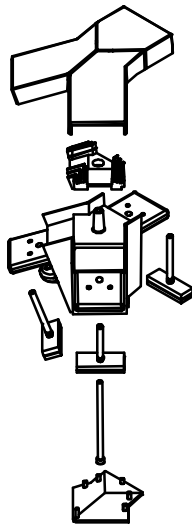
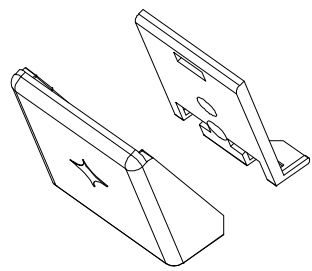
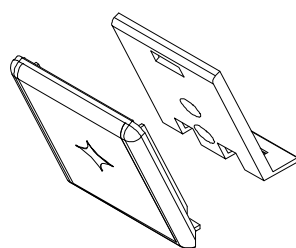




Image	Part Code	Pack	Unit	Application	Colour	
	<b>HEA343</b>  Rafter to Ridge Bracket	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>HEA345N</b>  Ridge to Hip Bracket Kit  Consists of: 1 x Top Cover Cap 1 x Rubber Seal 1 x Crown Body 1 x M5 x 100mm Fixing 3 x Clamp Sets 1 x Bottom Cover	<b>1</b>	<b>set</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>HEA350</b>  Hip End Stop & Cover Cap	<b>2</b>	<b>pack</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>HEA352</b>  Rafter End Stop & Cover Cap	<b>2</b>	<b>pack</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
 T-BARS ACVG66=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	<b>W</b> = White <b>Z</b> = Black	 		

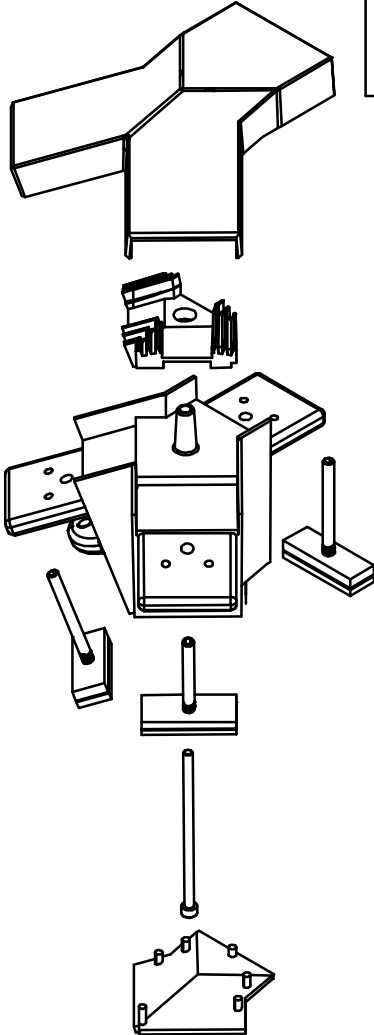
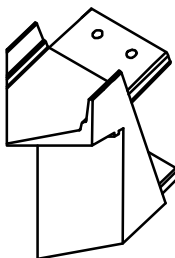
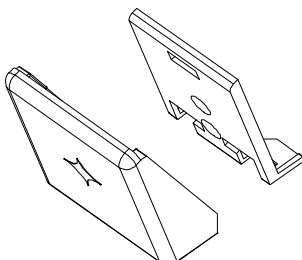

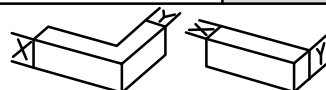
Image	Part Code	Pack	Unit	Application	Colour
 <p><b>HEA355</b></p> <p><b>Main Kit</b> <b>Consists of:</b></p> <p><b>4 x HEA340 Hip Brackets</b> <b>2 x HEA345 Crown Kits</b> <b>4 x HEA350 Hip End Caps</b></p> <p><b>HEA345N</b> <b>Consists of:</b></p> <p><b>1 x Top Cover Cap</b> <b>1 x Rubber Seal</b> <b>1 x Crown Body</b> <b>1 x M5 x 100mm Fixing</b> <b>3 x Clamp Sets</b> <b>1 x Bottom Cover</b></p>	<p><b>HEA355</b></p> <p><b>Main Kit</b> <b>Consists of:</b></p> <p><b>4 x HEA340 Hip Brackets</b> <b>2 x HEA345 Crown Kits</b> <b>4 x HEA350 Hip End Caps</b></p>	1	kit		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 <p><b>HEA340</b></p>  <p><b>HEA350</b></p>					
 <p>T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm</p> <p>Screw (Grub)</p>	<p>MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome</p>				
					

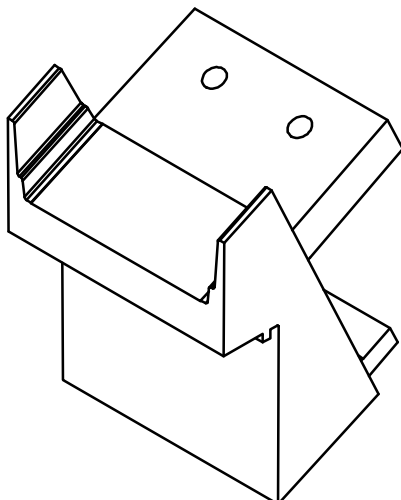
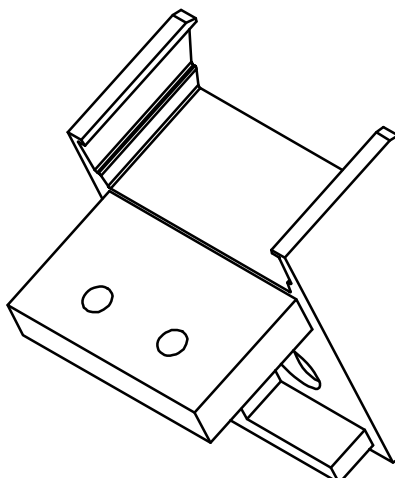
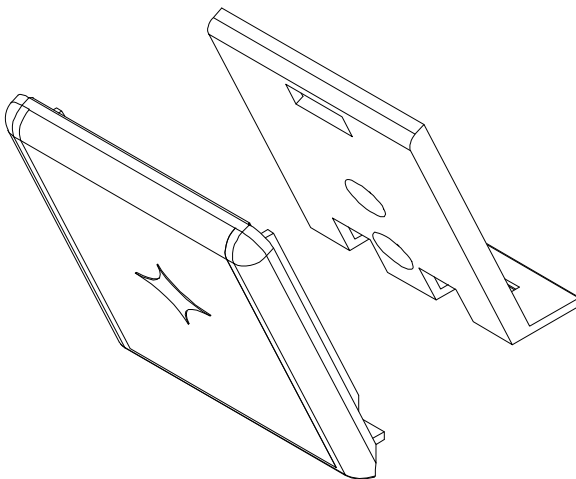


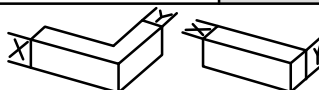
Image	Part Code	Pack	Unit	Application	Colour
	<b>HEA356</b>  <b>Rafter Kit</b> <b>Consists of:</b>  <b>2 x HEA342 Rafter to Eaves Bracket</b> <b>2 x HEA343 Rafter to Ridge Bracket</b> <b>2 x HEA352 Rafter End Caps</b>	<b>1</b>	<b>kit</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
					
<b>HEA342</b>					
					
<b>HEA343</b>					
					
<b>HEA352</b>					
 T-BARS ACVG66=2.5mm ACVG66=3.0mm ACVL150=4.0mm		 Screw (Grub)		<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	
		<b>W</b> = White <b>Z</b> = Black			

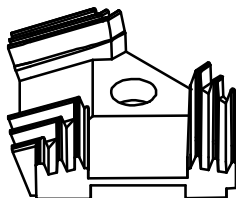
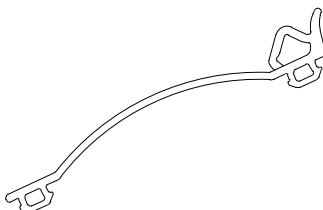
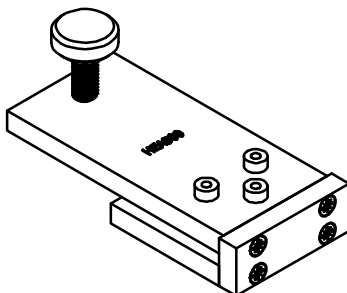
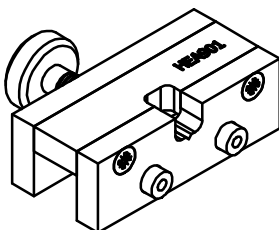
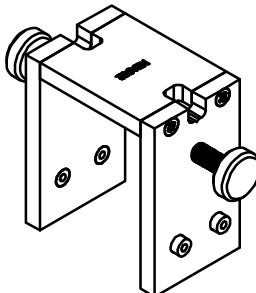


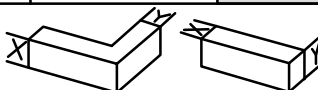
Image	Part Code	Pack	Unit	Application	Colour
	<b>HEA370</b>  Crown Rubber Seal	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA372</b>  EHE119 Gasket	<b>25</b>	<b>m</b>	<b>EHE119</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA900</b>  Ridge, Hip & Rafter Drill Jig	<b>1</b>	<b>each</b>	<b>EHE120</b> <b>EHE125</b> <b>HEA340</b> <b>HEA342</b> <b>HEA343</b> <b>HEA345</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA901</b>  HEA340 & HEA342 Drill Jig	<b>1</b>	<b>each</b>	<b>EHE110</b> <b>HEA340</b> <b>HEA342</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA902</b>  HEA343 Drill Jig	<b>1</b>	<b>each</b>	<b>EHE125</b> <b>HEA343</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	<b>W</b> = White <b>Z</b> = Black		



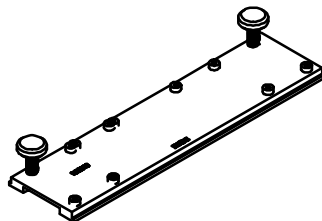
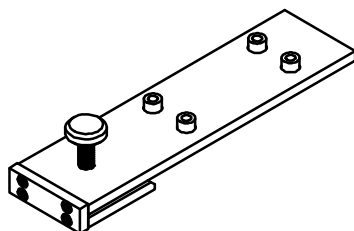
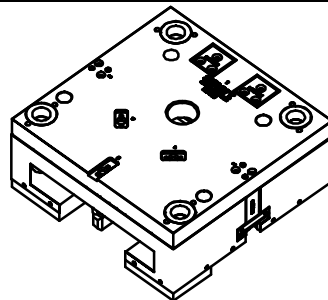
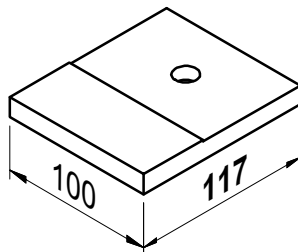
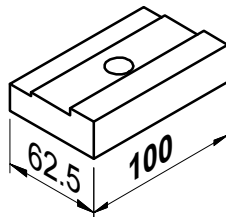




Image	Part Code	Pack	Unit	Application	Colour
	<b>HEA903</b>  EHE110 Corner Drill Jig	1	each	<b>EHE110</b> <b>HEA310</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA904</b>  Tie Bar Drill Jig	1	each	<b>EHE120</b> <b>HEA336</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA905</b>  Punch Tool	1	each	<b>EHE110</b> <b>EHE120</b> <b>EHE125</b> <b>EHE128</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA910</b>  Contour Block for EHE110	1	each	<b>EHE110</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>HEA911</b>  Contour Block for EHE119	1	each	<b>EHE119</b>	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	<b>W</b> = White <b>Z</b> = Black	 	

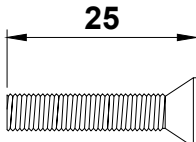


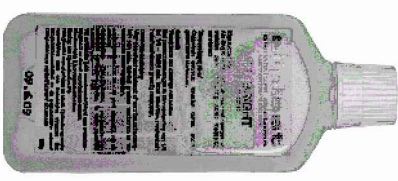
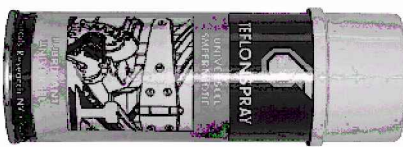


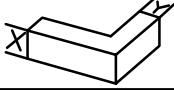
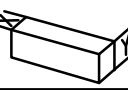




Image	Part Code	Pack	Unit	Application	Colour	
	<b>WCA143</b>  <b>M5 x 25mm Screw</b>	<b>100</b>	<b>pack</b>	<b>HEA340</b> <b>HEA342</b> <b>HEA343</b> <b>HEA345</b>	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACMX09700</b>  <b>Alu-Polish</b>  <b>Cleaning emulsion for aluminium oxide.</b>	<b>1</b>	<b>each</b>		MF	✓
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACMX09761</b>  <b>Maxi Gloss</b>  <b>Protection for painted and anodised surfaces.</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACMX09762</b>  <b>Alu. Bright</b>  <b>Cleaner for rough, anodised or enamelled aluminium frames.</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACMX09763</b>  <b>Teflon Spray</b>  <b>Lubricant</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
<div><div><p>T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm</p></div><div><p>Screw (Grub)</p></div></div>	<div><div><p>MF = Mill Finish</p><p>SA = Silver Anodised</p><p>KL = Basic Colour</p><p>HP = Special Colour</p><p>SSC = Smooth Satin Chrome</p><p>SMC = Smokey Chrome</p><p>PC = Polished Chrome</p></div><div><p>W = White</p><p>Z = Black</p></div></div>	<div><div></div><div></div></div>				

Image	Part Code	Pack	Unit	Application	Colour																		
	<b>ACMX09764</b>  <b>Maxi Cleaner</b>  <b>For cleaning oily surfaces.</b>	<b>1</b>	<b>each</b>		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
MF																							
SA																							
KL																							
HP																							
SSC																							
SMC																							
W																							
Z																							
PC																							
	<b>ACMX09765</b>  <b>Glue Cleaner</b>  <b>De-grease and silicone remover.</b>	<b>1</b>	<b>each</b>		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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	<b>ACMX09770</b>  <b>Roll &amp; Wrap 100mm</b>	<b>1</b>	<b>each</b>		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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SMC																							
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	<b>ACMX09775</b>  <b>Grip Handwrap</b>	<b>1</b>	<b>each</b>		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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PC																							
	<b>ACMX09801</b>  <b>Protective Tape 50mm</b>	<b>1</b>	<b>each</b>		<table><tr><td>MF</td><td></td></tr><tr><td>SA</td><td></td></tr><tr><td>KL</td><td></td></tr><tr><td>HP</td><td></td></tr><tr><td>SSC</td><td></td></tr><tr><td>SMC</td><td></td></tr><tr><td>W</td><td></td></tr><tr><td>Z</td><td></td></tr><tr><td>PC</td><td></td></tr></table>	MF		SA		KL		HP		SSC		SMC		W		Z		PC	
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PC																							
 T-BARS ACVG66=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome	<b>W</b> = White <b>Z</b> = Black	 																			

Image	Part Code	Pack	Unit	Application	Colour
	<b>ACMX09802</b>  <b>Protective Tape 70mm</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACMX09803</b>  <b>Protective Tape 100mm</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACSILO5</b>  <b>Rubber Sealant</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	<b>ACSIL04</b>  <b>Sealing Glue</b> Order with suffix of KL colour (eg.ACSIL04KL005) or BL=Black/WP=White/ CL=Clear	<b>1</b>	<b>each</b>		MF
					SA
					KL ✓
					HP
					SSC
					SMC
					W ✓
					Z ✓
					PC
	<b>ACSIL08</b>  <b>Silicon Gun</b>	<b>1</b>	<b>each</b>		MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome				W = White Z = Black
					 

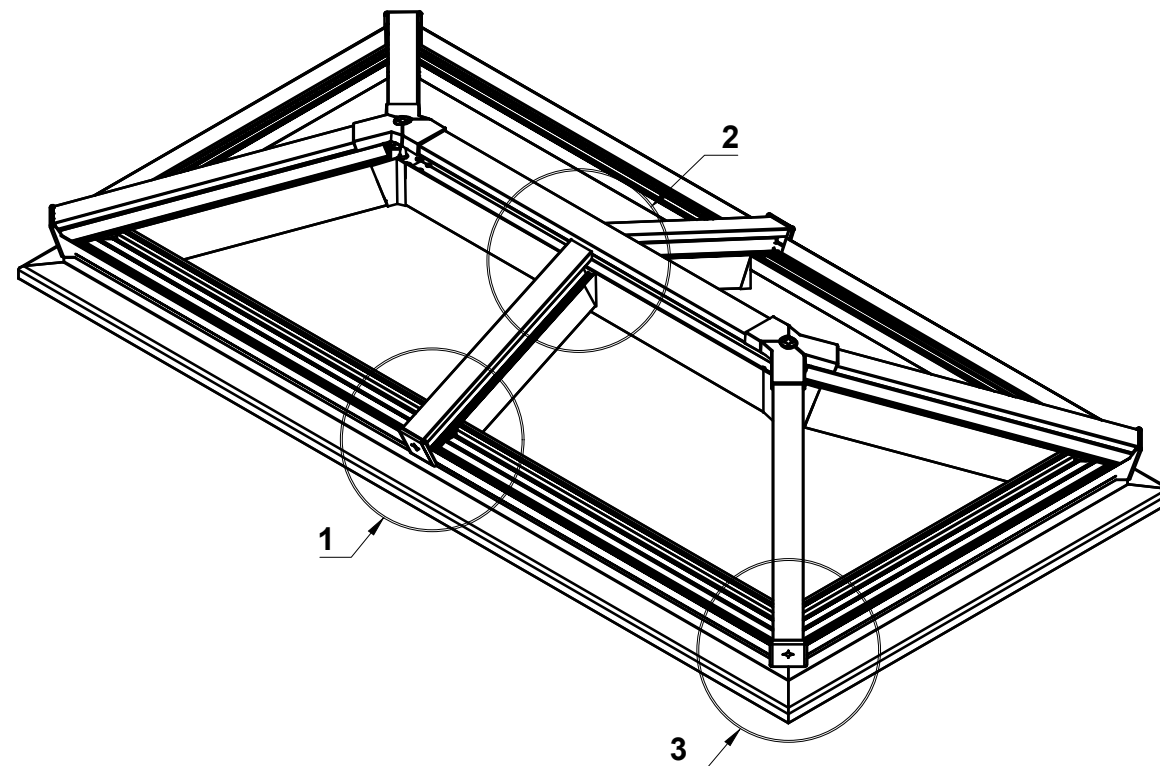
Image	Part Code	Pack	Unit	Application	Colour	
	<b>ACSIL013</b>  <b>Glue for Mitre</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACSIL014</b>  <b>Anti-Corrosion Coating</b>	<b>1</b>	<b>each</b>		MF	✓
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACUN3610</b>  <b>Single Component Adhesive</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACUN3612</b>  <b>Surface Activator (1L)</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	<b>ACUN3900</b>  <b>Gasket Roller</b>	<b>1</b>	<b>each</b>		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	<b>MF</b> = Mill Finish <b>SA</b> = Silver Anodised <b>KL</b> = Basic Colour <b>HP</b> = Special Colour <b>SSC</b> = Smooth Satin Chrome <b>SMC</b> = Smokey Chrome <b>PC</b> = Polished Chrome		<b>W</b> = White <b>Z</b> = Black	 	

Image	Part Code	Pack	Unit	Application	Colour	
					MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
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					PC	
					MF	
					SA	
					KL	
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					SA	
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					SSC	
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					MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
<div><div></div><div><div>T-BARS</div><div>ACVG65=2.5mm</div><div>ACVG66=3.0mm</div><div>ACVL150=4.0mm</div></div></div> <div><div></div><div>Screw (Grub)</div></div>	<div>MF = Mill Finish</div> <div>SA = Silver Anodised</div> <div>KL = Basic Colour</div> <div>HP = Special Colour</div> <div>SSC = Smooth Satin Chrome</div> <div>SMC = Smokey Chrome</div> <div>PC = Polished Chrome</div>	<div>W = White</div> <div>Z = Black</div>	<div></div> <div></div>			

Section C

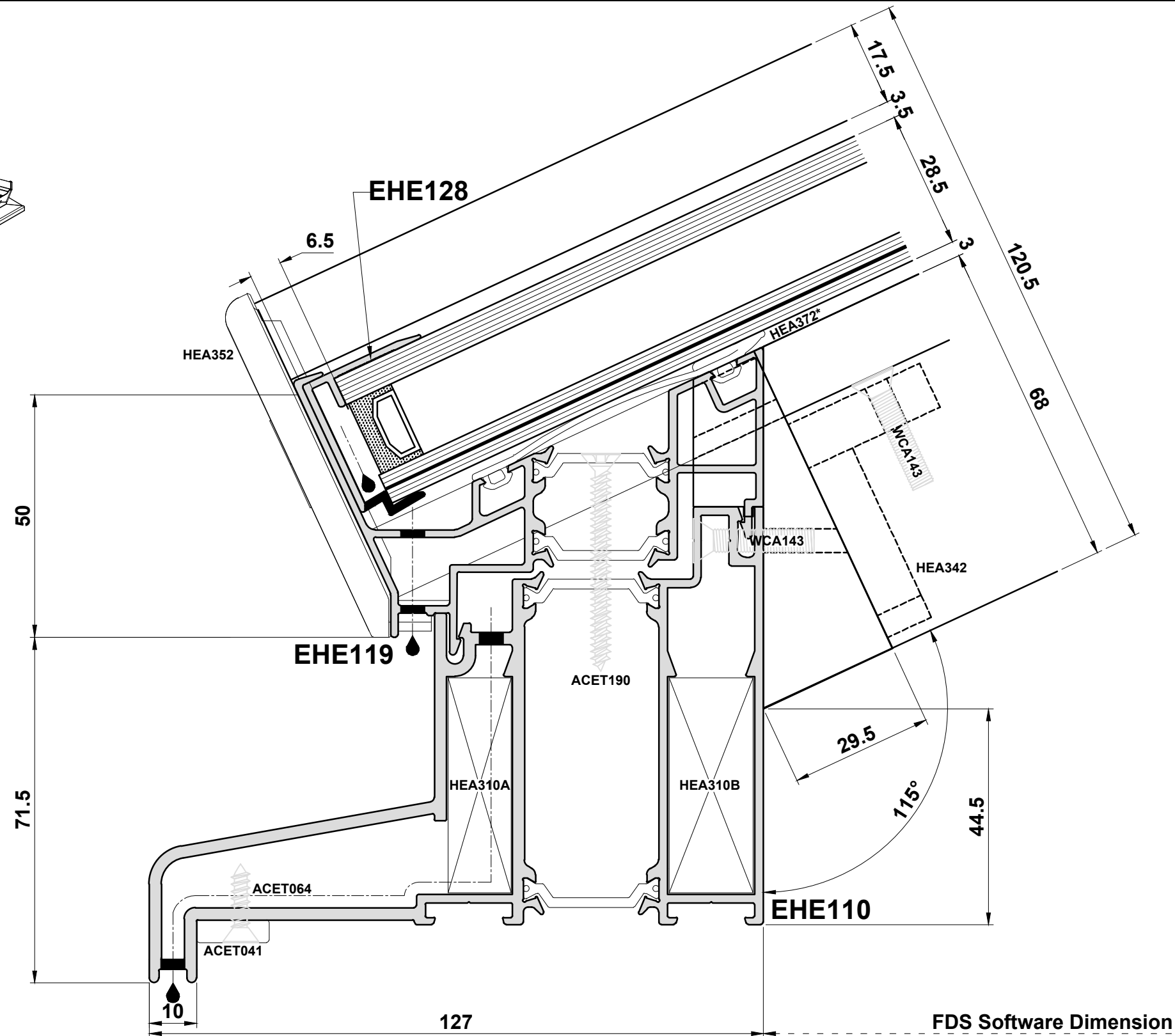
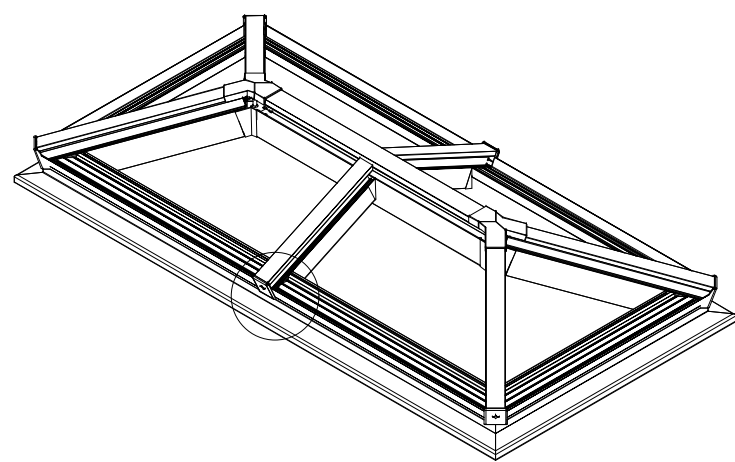
Sections

Scale Elevations





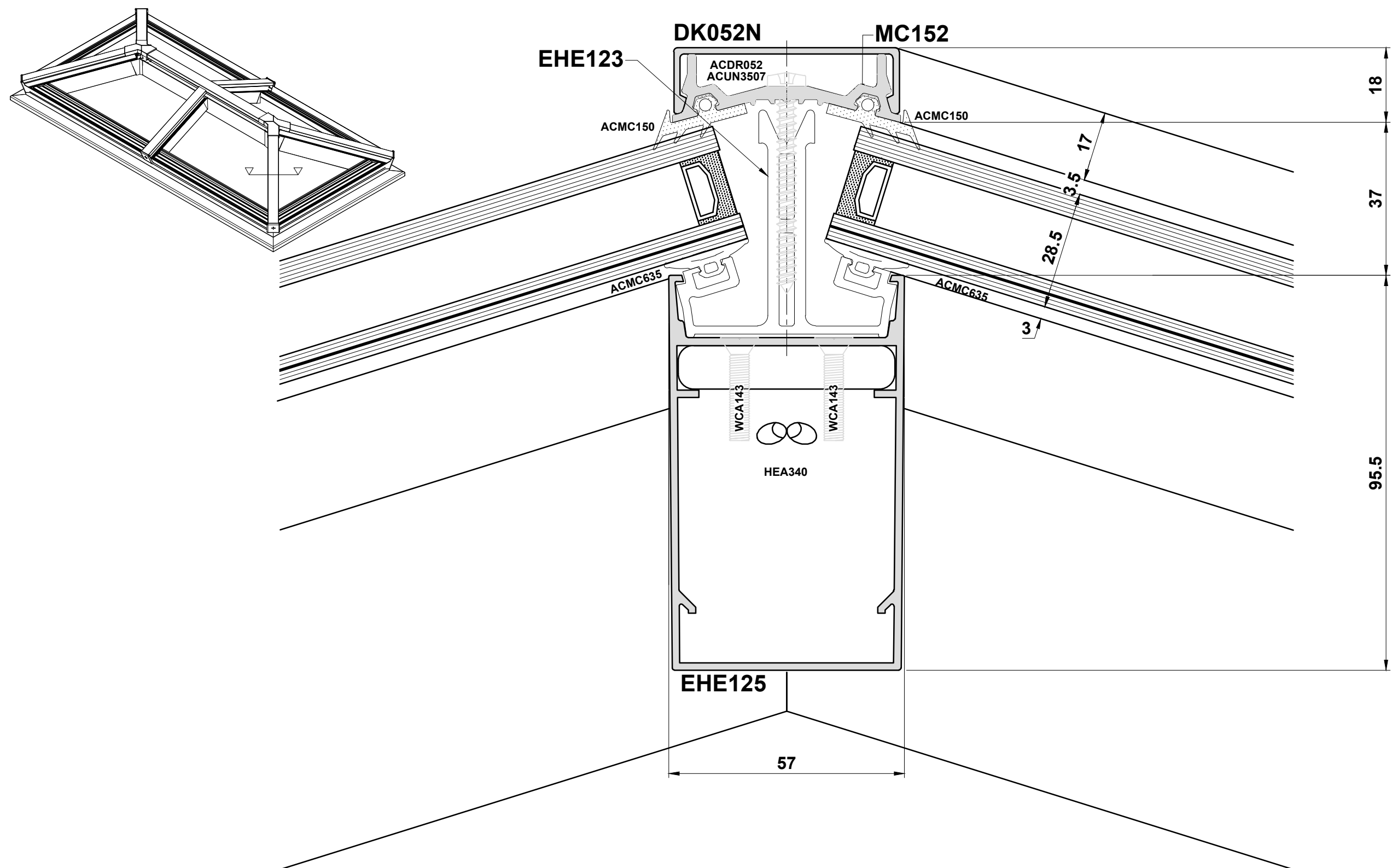
Detail 1: Eaves



Do Not Scale From This Drawing



### Detail 3: Hip



**Do Not Scale From This Drawing**

Do Not Scale From This Drawing

**Section D**

**Statics**

**General Size Limitations are shown on Page A03.**

**For Wind Loading Limitations, Please Contact  
The Technical Department - T: 01934 833100**



Section E



Construction Drawings

EHE119 Corner Detail..... E03

HEA905 Punch Tool..... E04

Hip to Eaves Assembly..... E05

HEA350 Hip End Cap..... E06

Ridge & Hip Assembly..... E07

Crown Assembly..... E08

Rafter to Ridge Assembly..... E09

Rafter to Eaves Assembly..... E10

HEA352 Rafter End Cap..... E11

EHE128 Glass End Cover..... E12

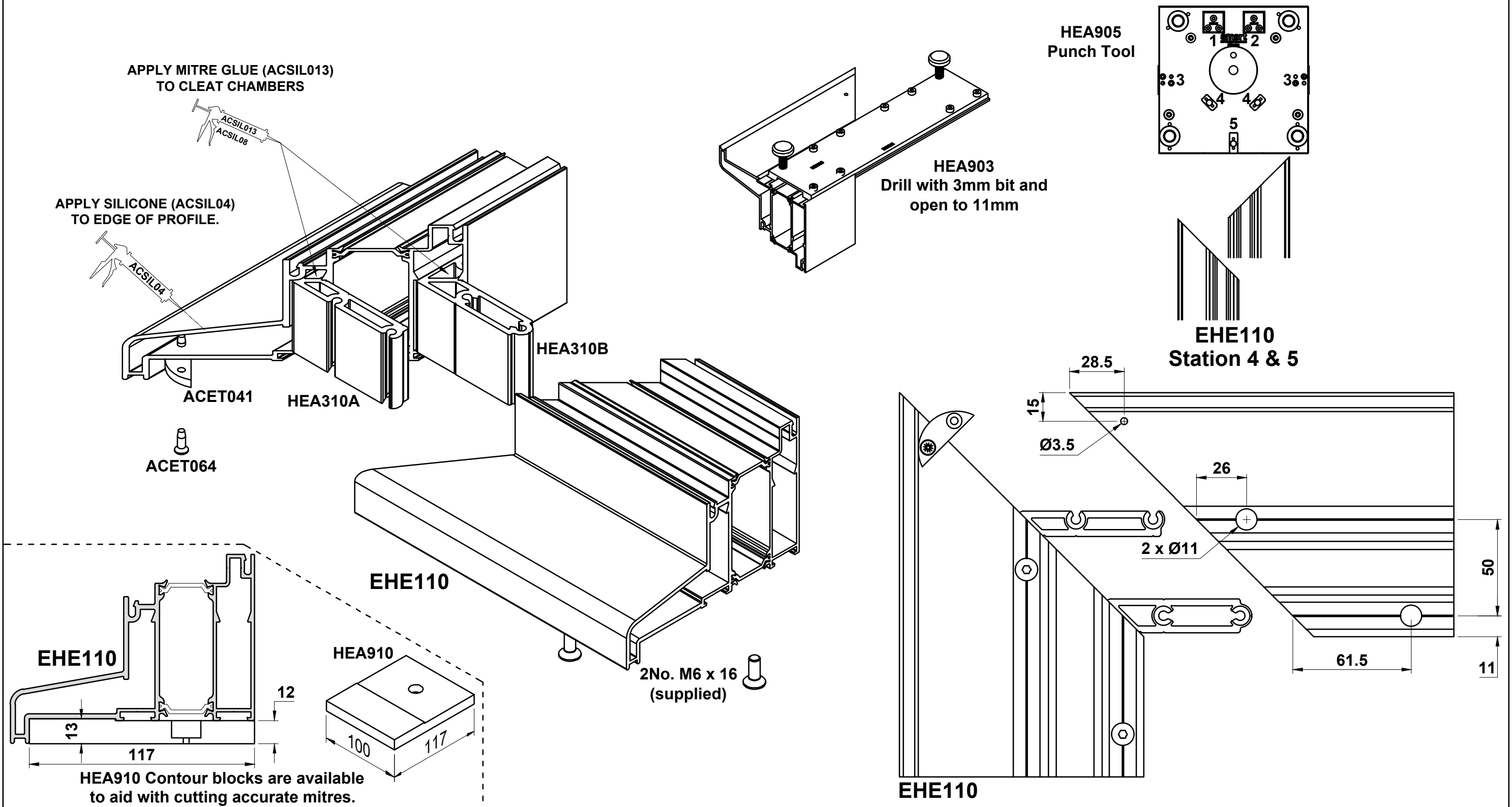
Typical Installation Details..... E13 - E14

Tie Bar Details..... E15



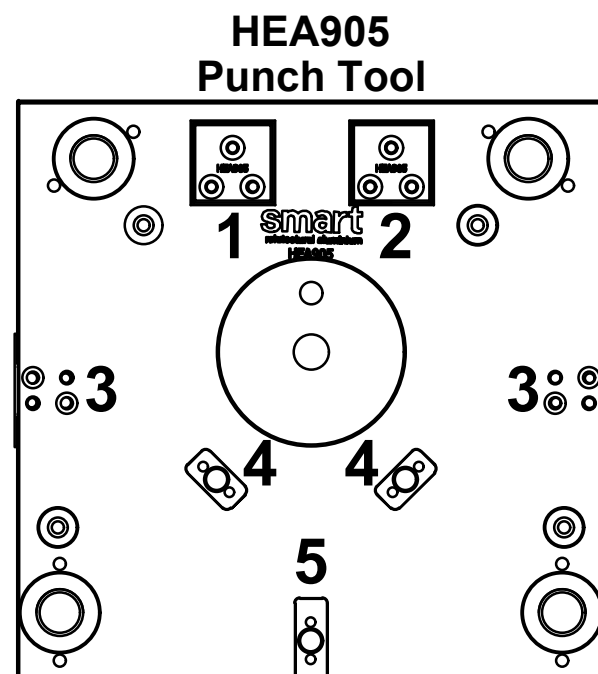


## Corner Joint Details

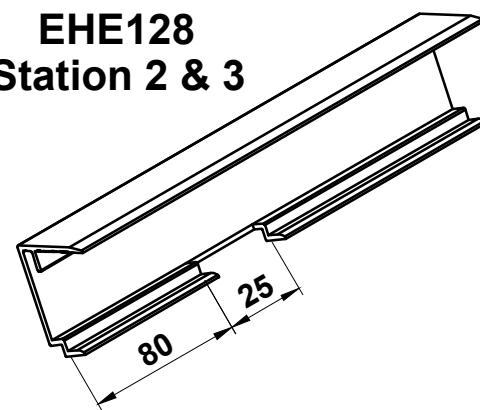


Do Not Scale From This Drawing

## HEA905 Punch Tool



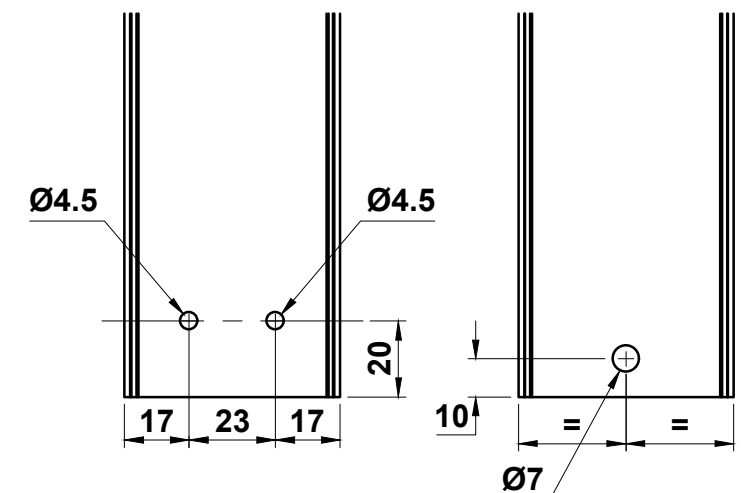
**EHE128  
Station 2 & 3**



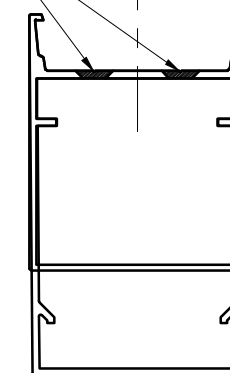
**EHE128**

**EHE120  
EHE125**

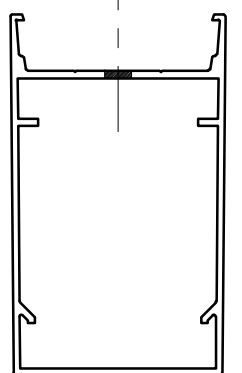
**EHE128**



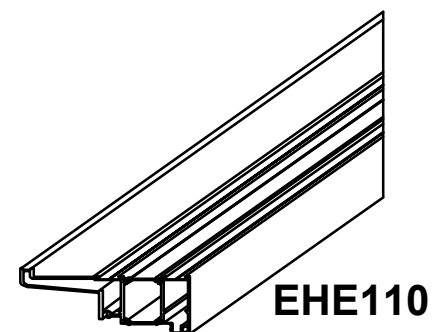
**Countersink  
punched hole for  
M5 screw**



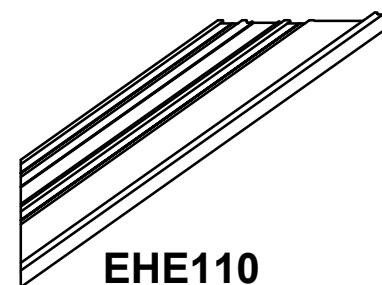
**EHE120  
EHE125  
Station 1**



**EHE125  
Station 2**

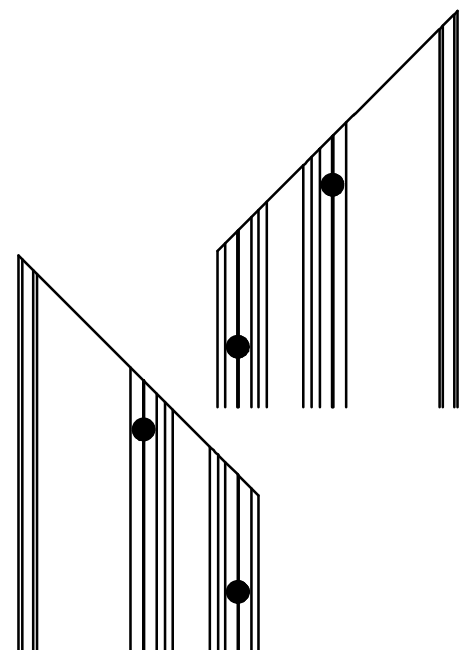


**EHE110**

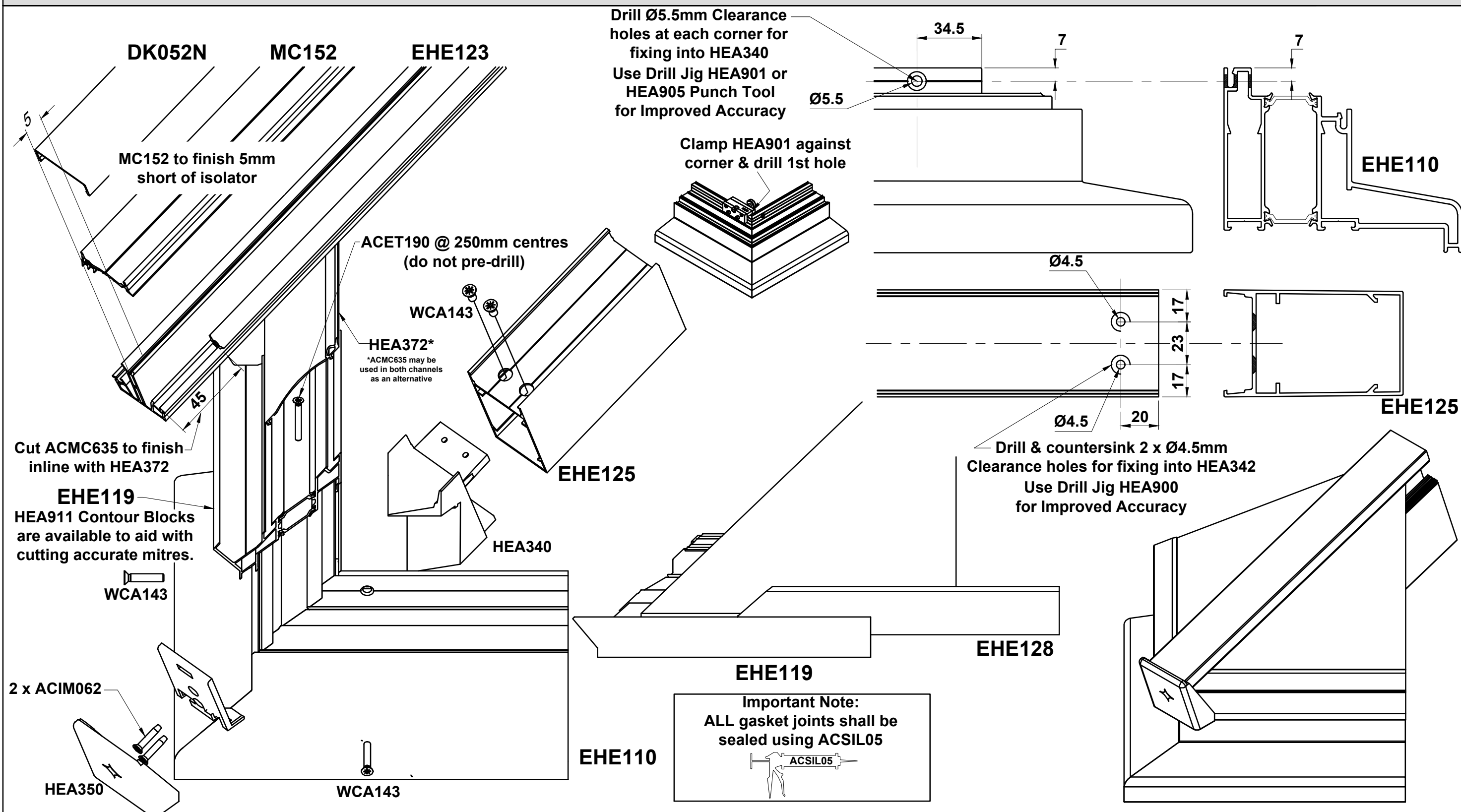


**EHE110**

**EHE110  
Station 4 & 5**



Do Not Scale From This Drawing



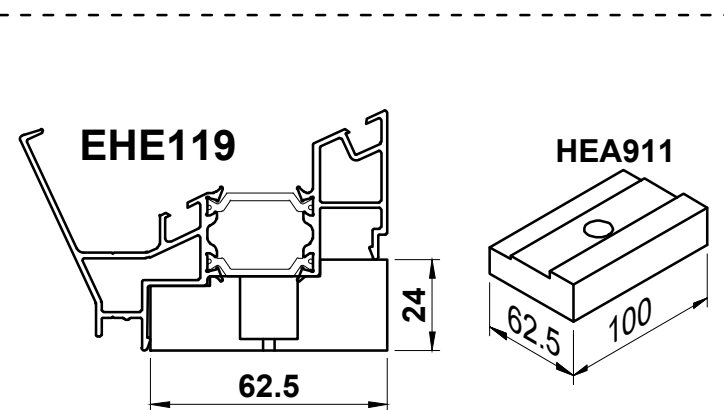
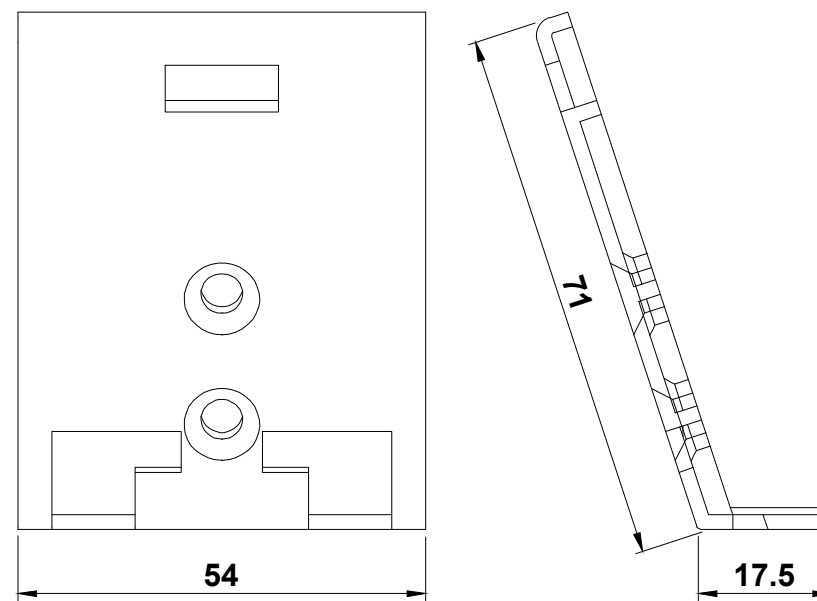
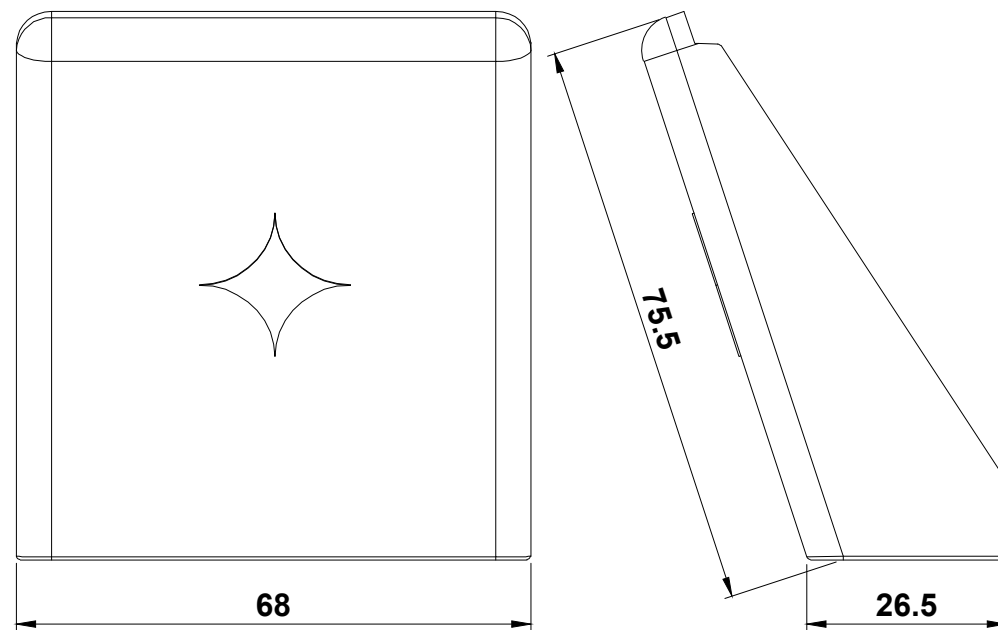
**Do Not Scale From This Drawing**

## HEA350 Hip End Cap

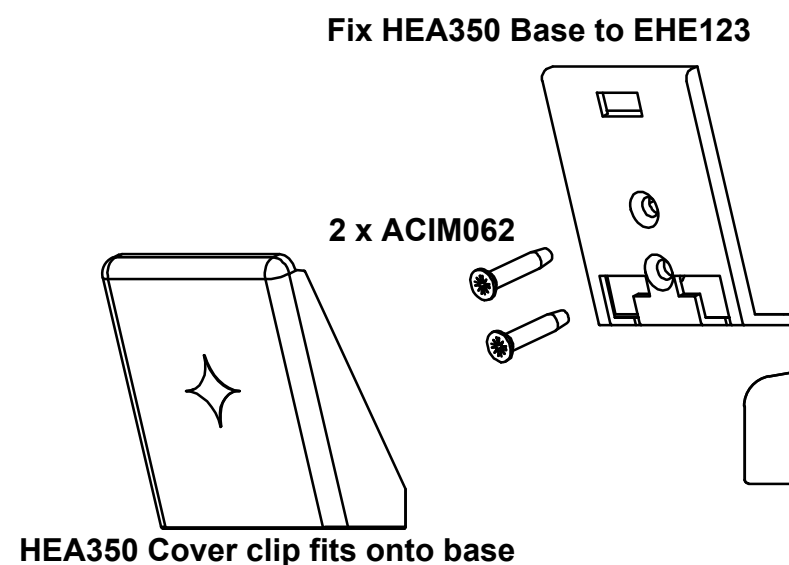
**HEA350 Includes:**

**Cover - colour match to frame**

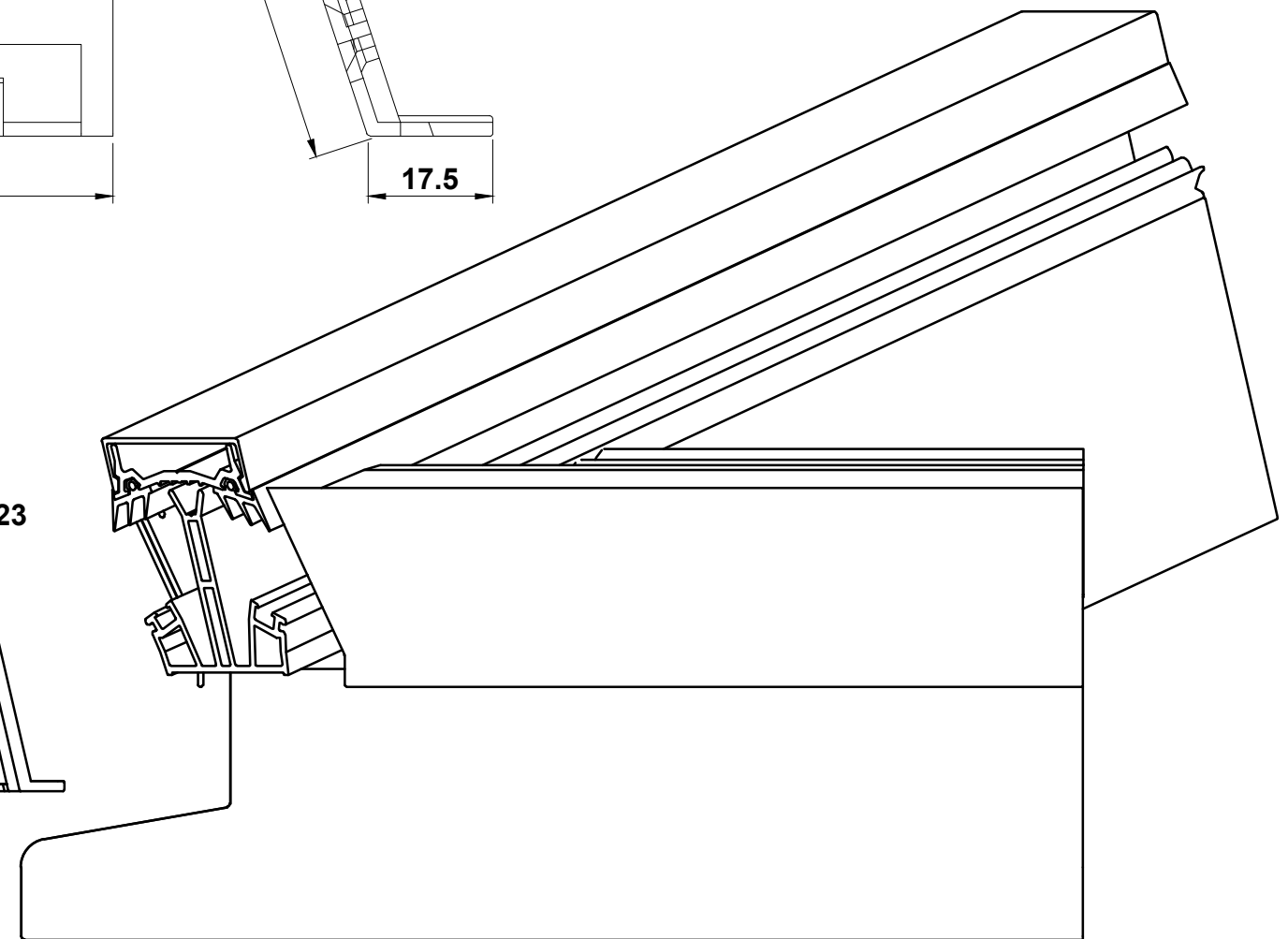
**Base**



HEA911 Contour blocks are available to aid with cutting accurate mitres.

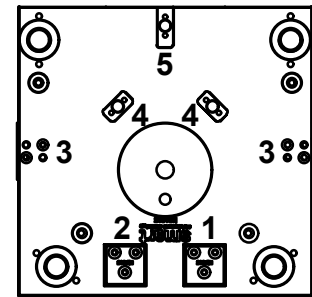


HEA350 Cover clip fits onto base

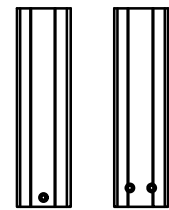


**Do Not Scale From This Drawing**

## Ridge & Hip Assembly

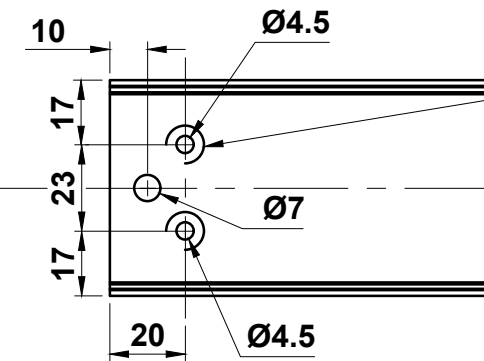
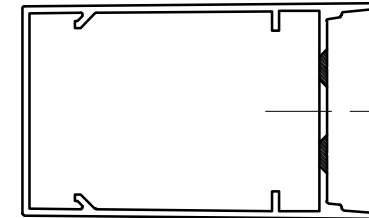


HEA905  
Punch Tool



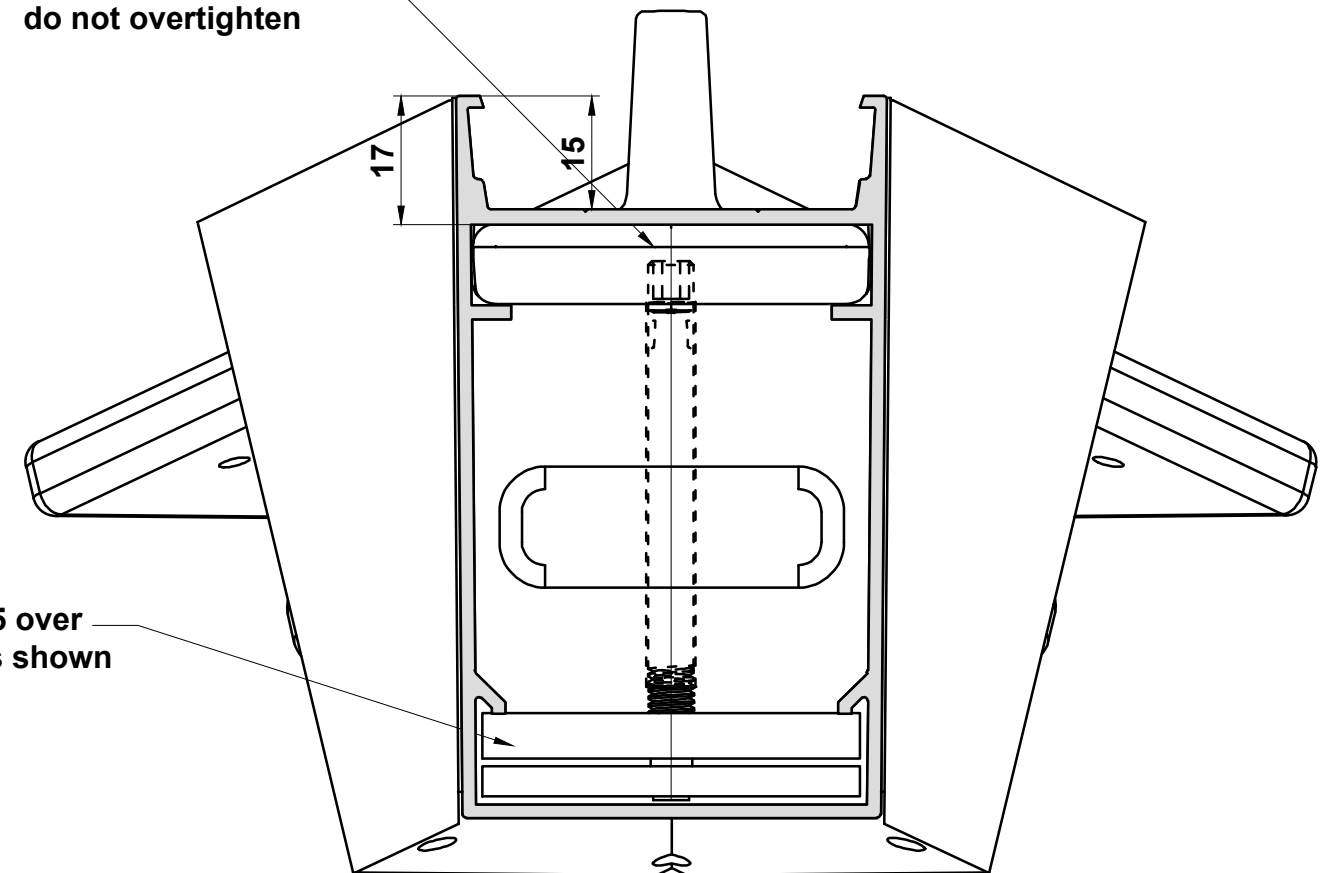
EHE120  
EHE125

EHE125

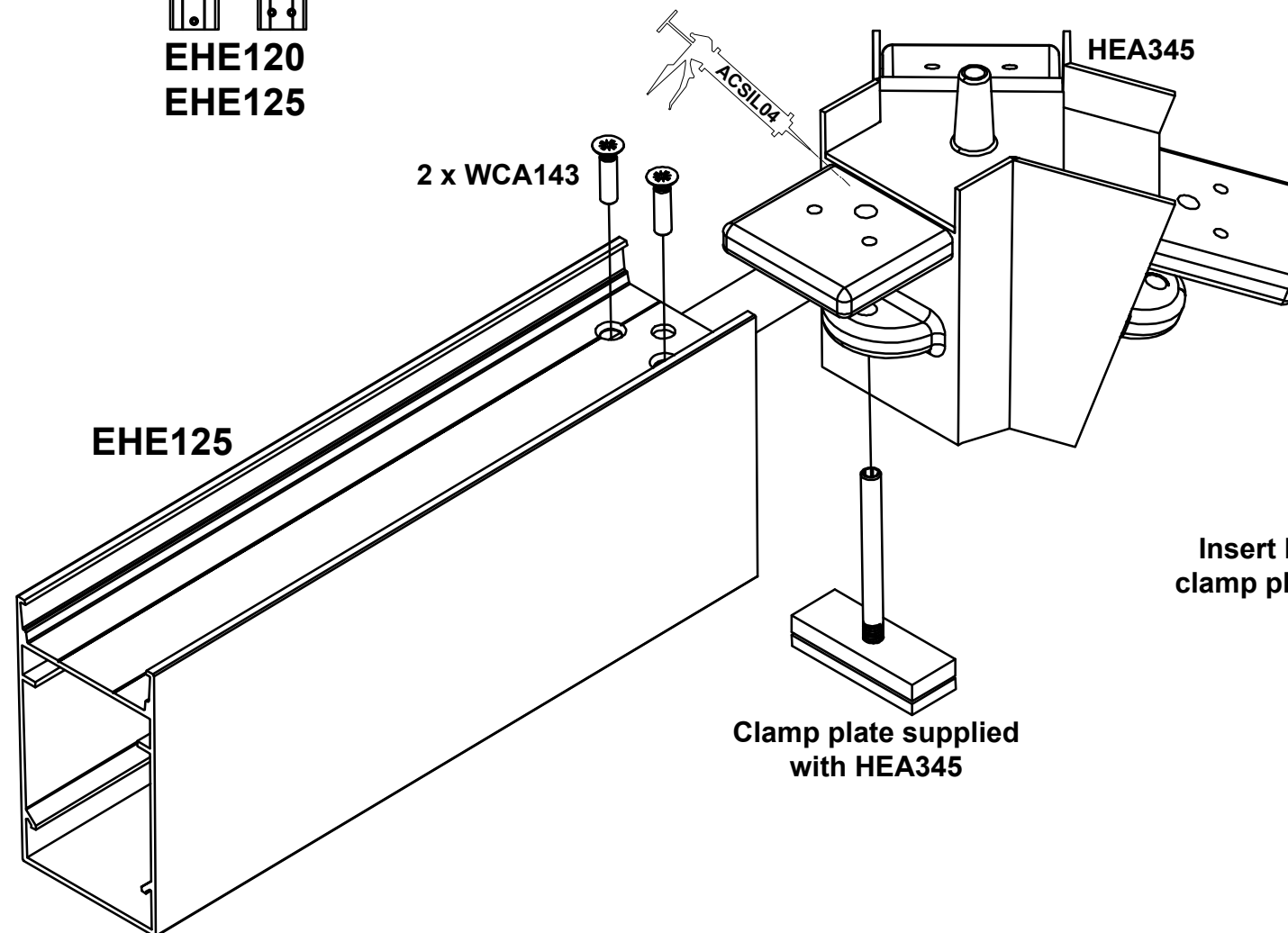


Drill & countersink 2 x  
Ø4.5mm Clearance holes  
for fixing into HEA342  
Use Drill Jig HEA900 or  
HEA905 Punch Tool  
for Improved Accuracy

Secure clamp plate but  
do not overtighten



Insert EHE125 over  
clamp plates as shown



Clamp plate supplied  
with HEA345

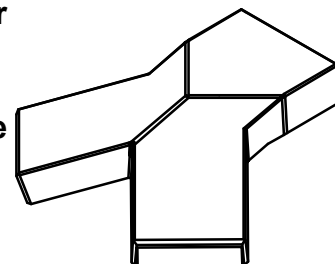
Do Not Scale From This Drawing

## Crown Assembly

**Important Note:**  
ALL crown joints shall be  
sealed using ACSIL04



**Cover Cap**  
HEA345 crown Cover  
cap is sealed &  
secured over the  
cappings from inside  
after glazing



**HEA370 Rubber Seal**



**DK052N  
&  
MC152**  
(ACMC150  
Gasket)

**EHE123**  
(ACMC635 Gasket)

**EHE125**

**EHE170**

**EHE122**  
(ACMC635 Gasket)

**EHE160**  
(ACMC019  
Gasket)

**EHE125**

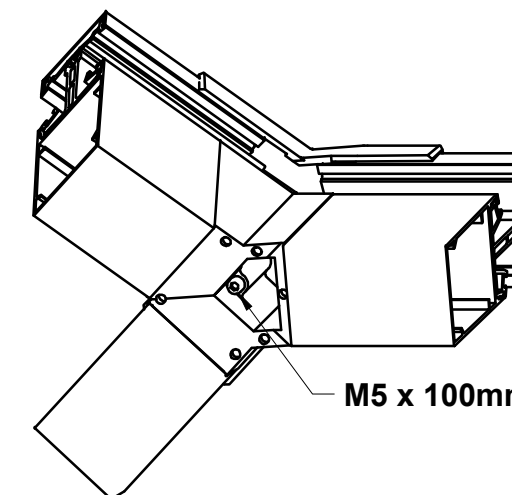
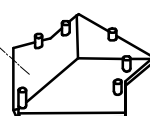
**Important Note:**  
ALL gasket joints shall be  
sealed using ACSIL05



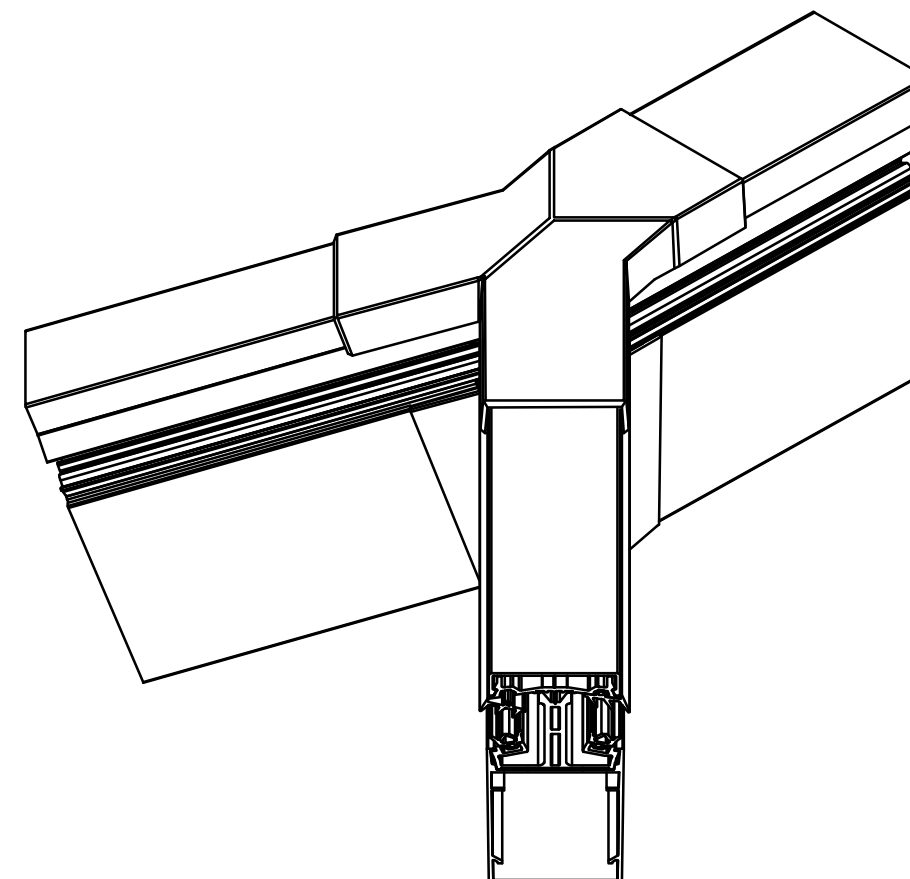
**M5 x 100mm  
Fixing Bolt**



**Bottom Cover Cap**  
Bond in place using a thin  
application of ACSIL04

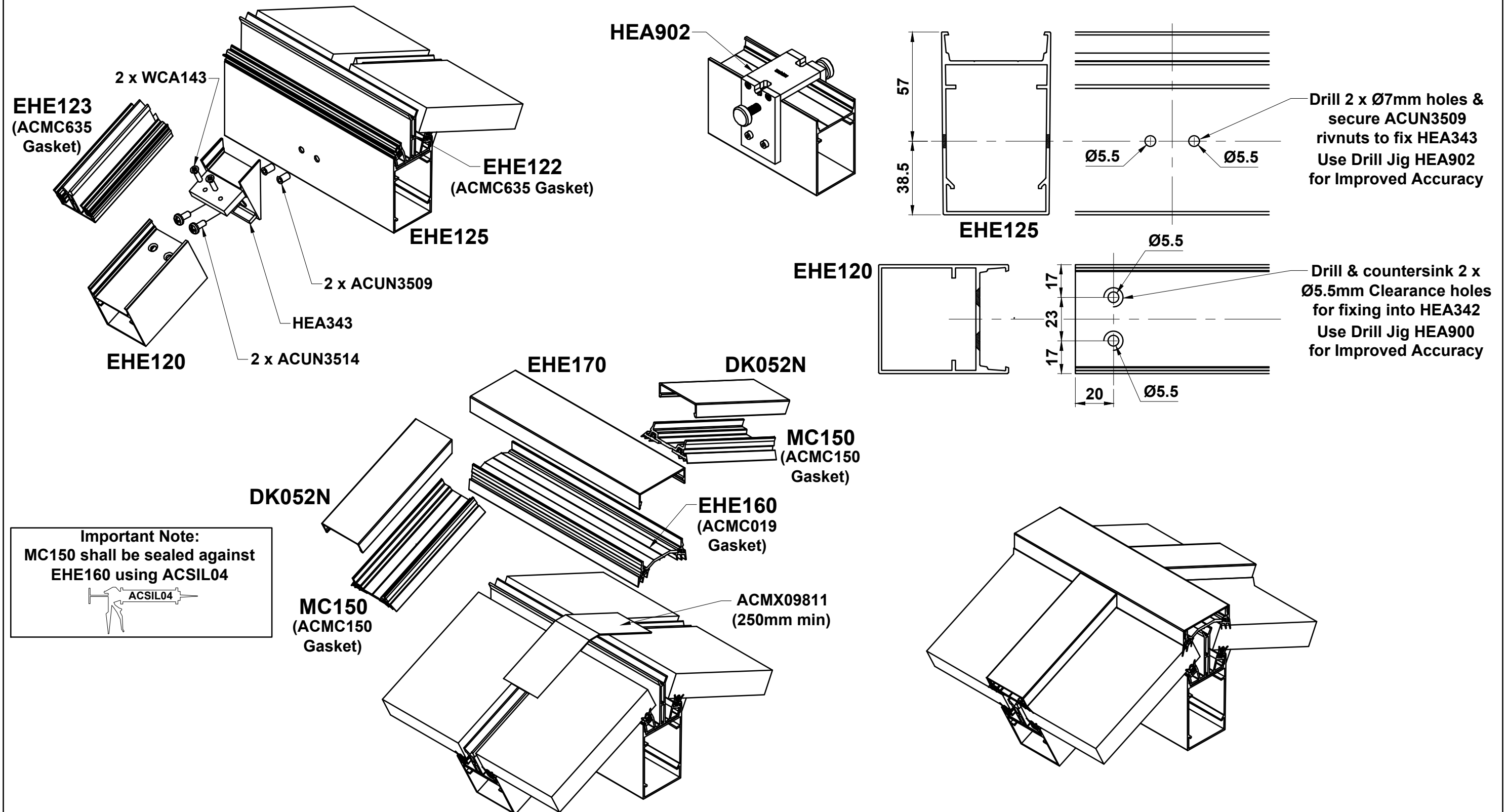


**M5 x 100mm Fixing Bolt**

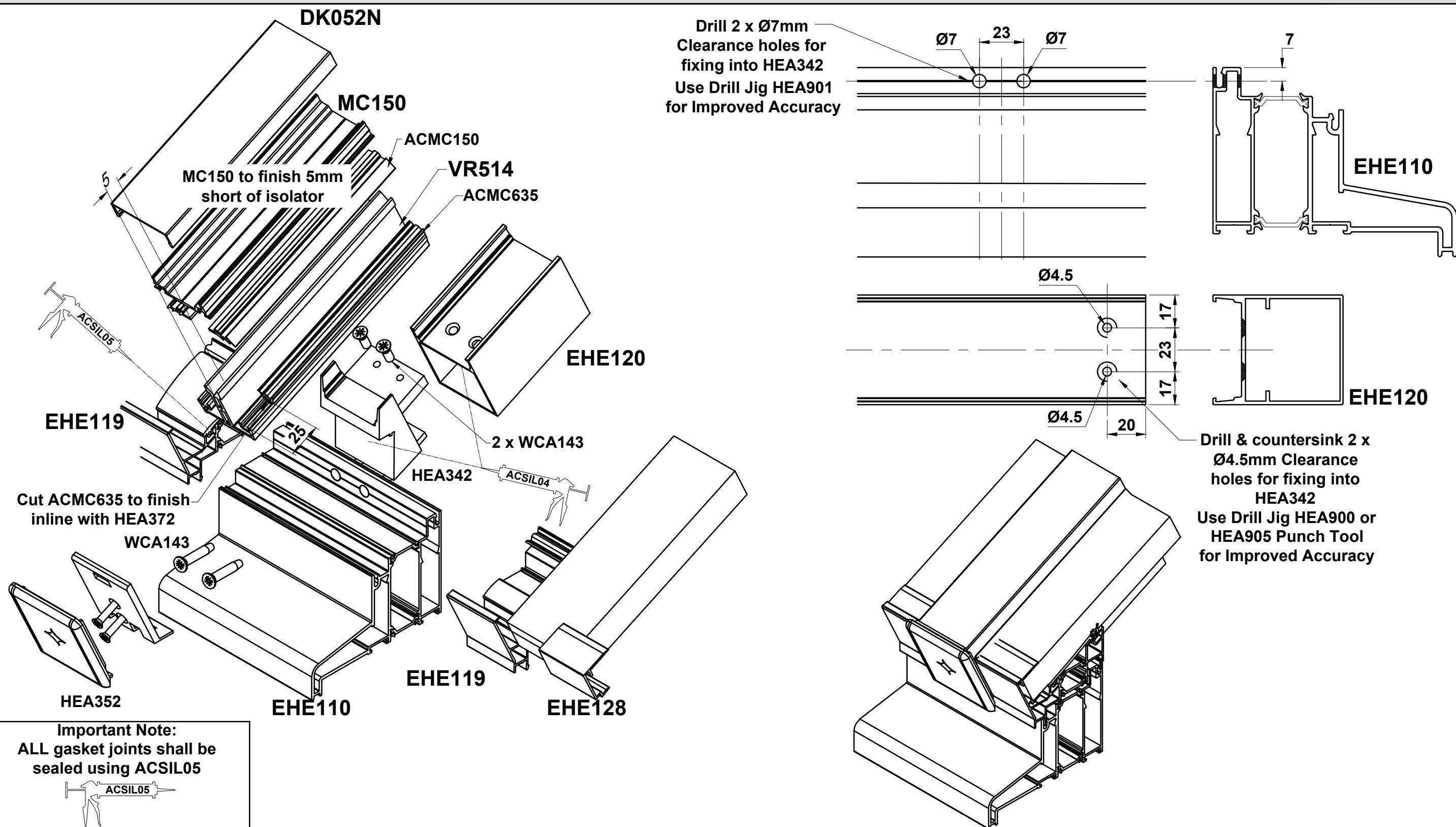


Do Not Scale From This Drawing

## Rafter to Ridge Assembly



## Rafter to Eaves Assembly

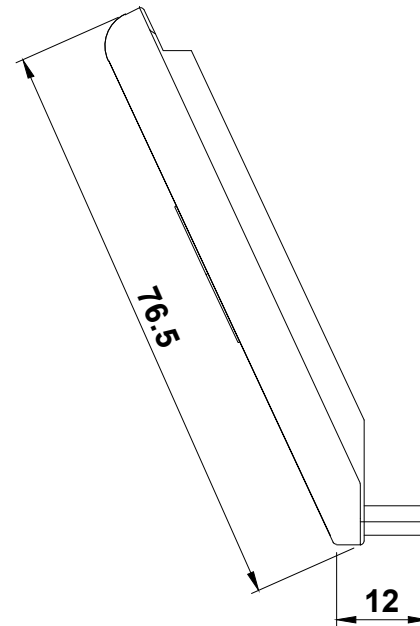
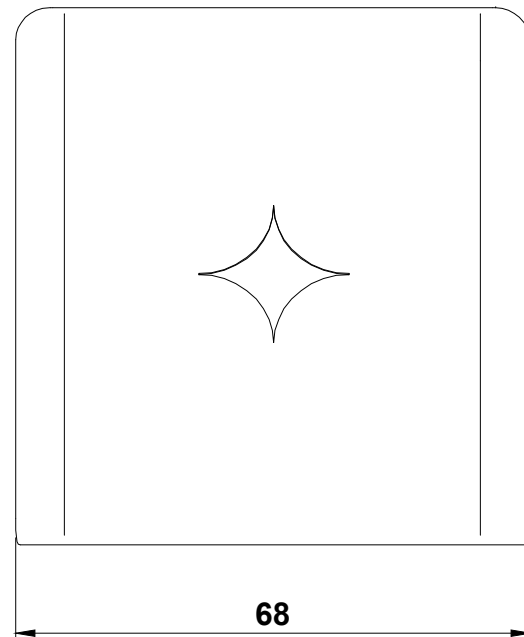


Do Not Scale From This Drawing

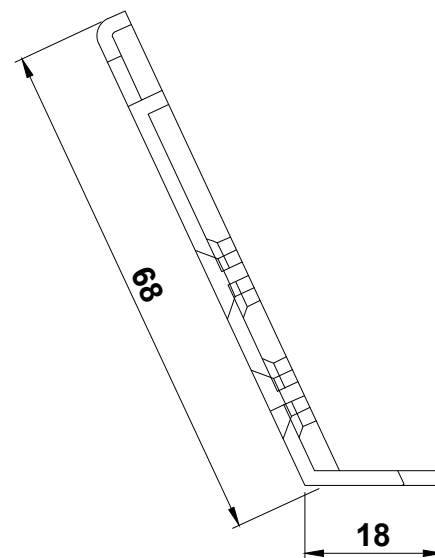
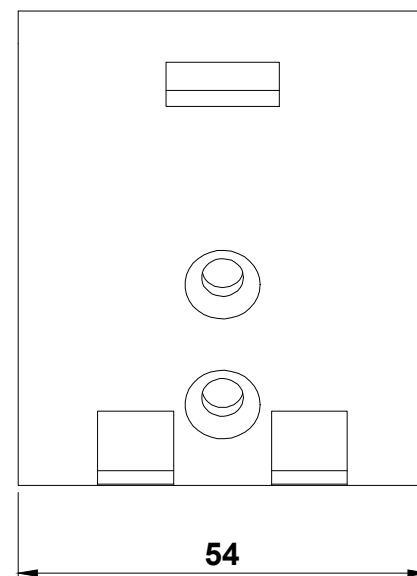


## HEA352 Rafter End Cap

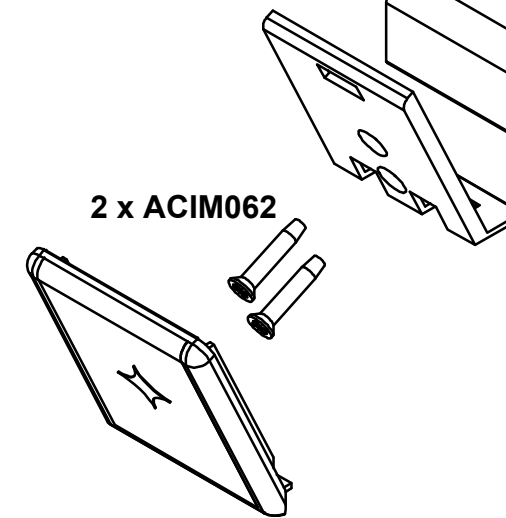
**HEA352 Includes:**  
Cover - colour match to frame



**Base**



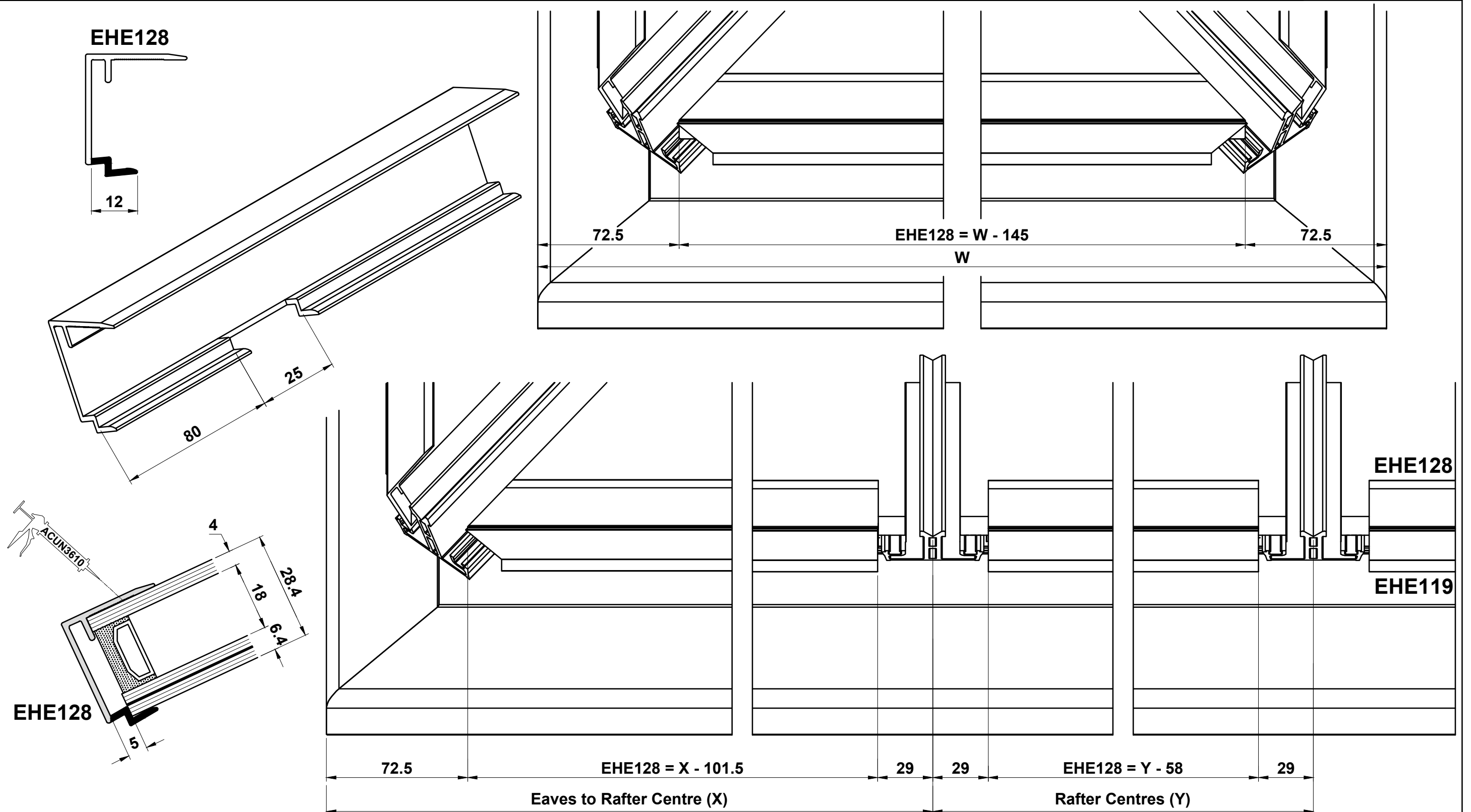
**Fix HEA352 Base to VR514**



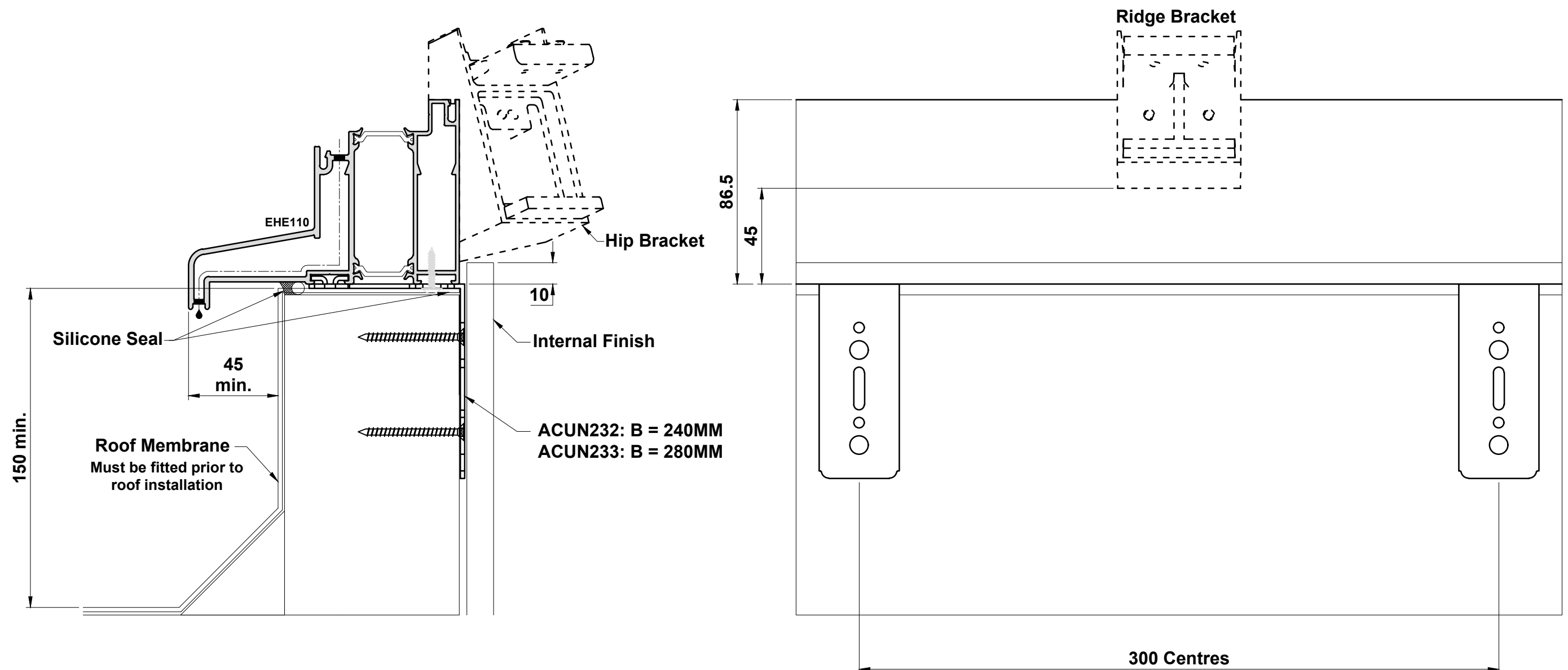
**HEA352 Cover clip fits onto base**

**Do Not Scale From This Drawing**

## EHE128 Drainage & Deductions



## Typical Installation Detail



Do Not Scale From This Drawing

## Installation Process

### Installation Method:

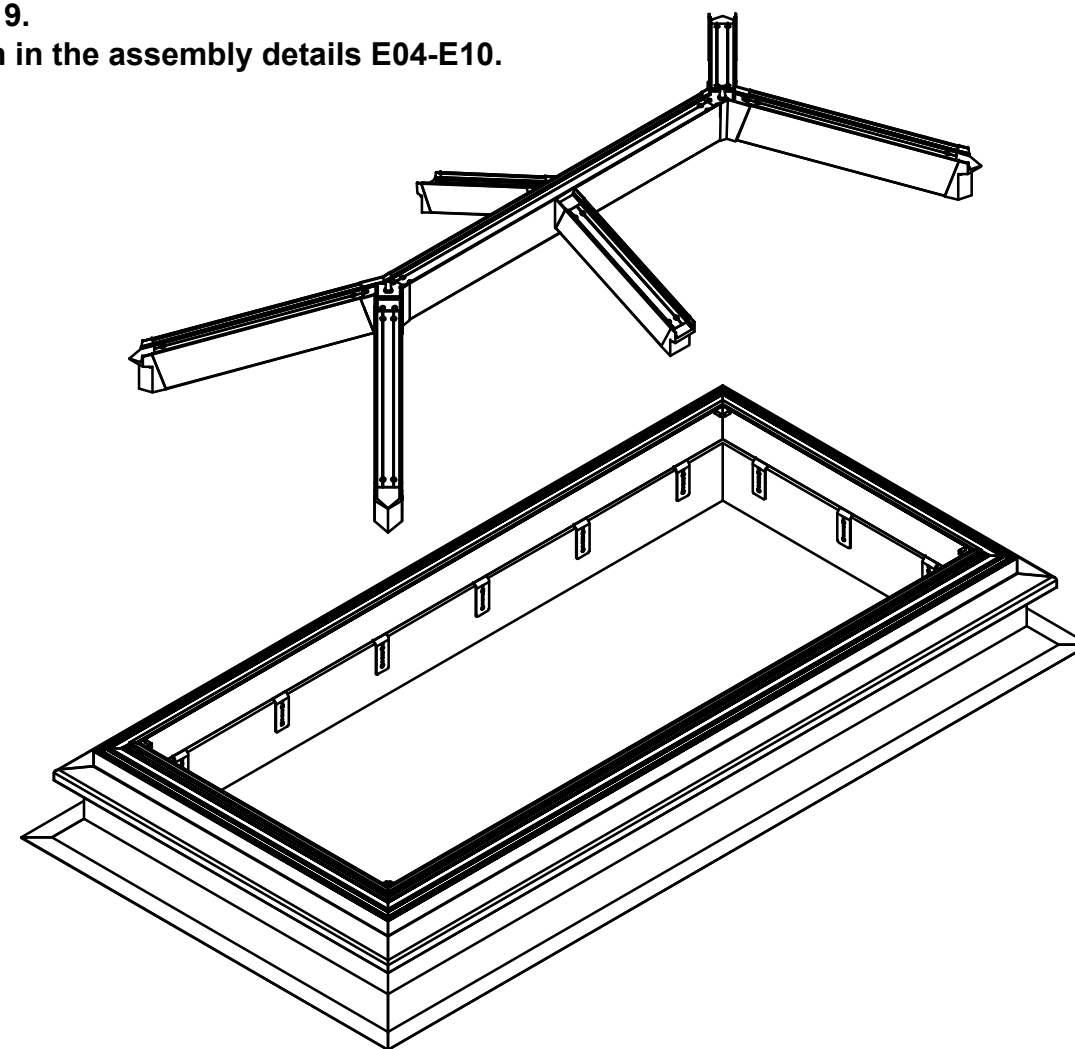
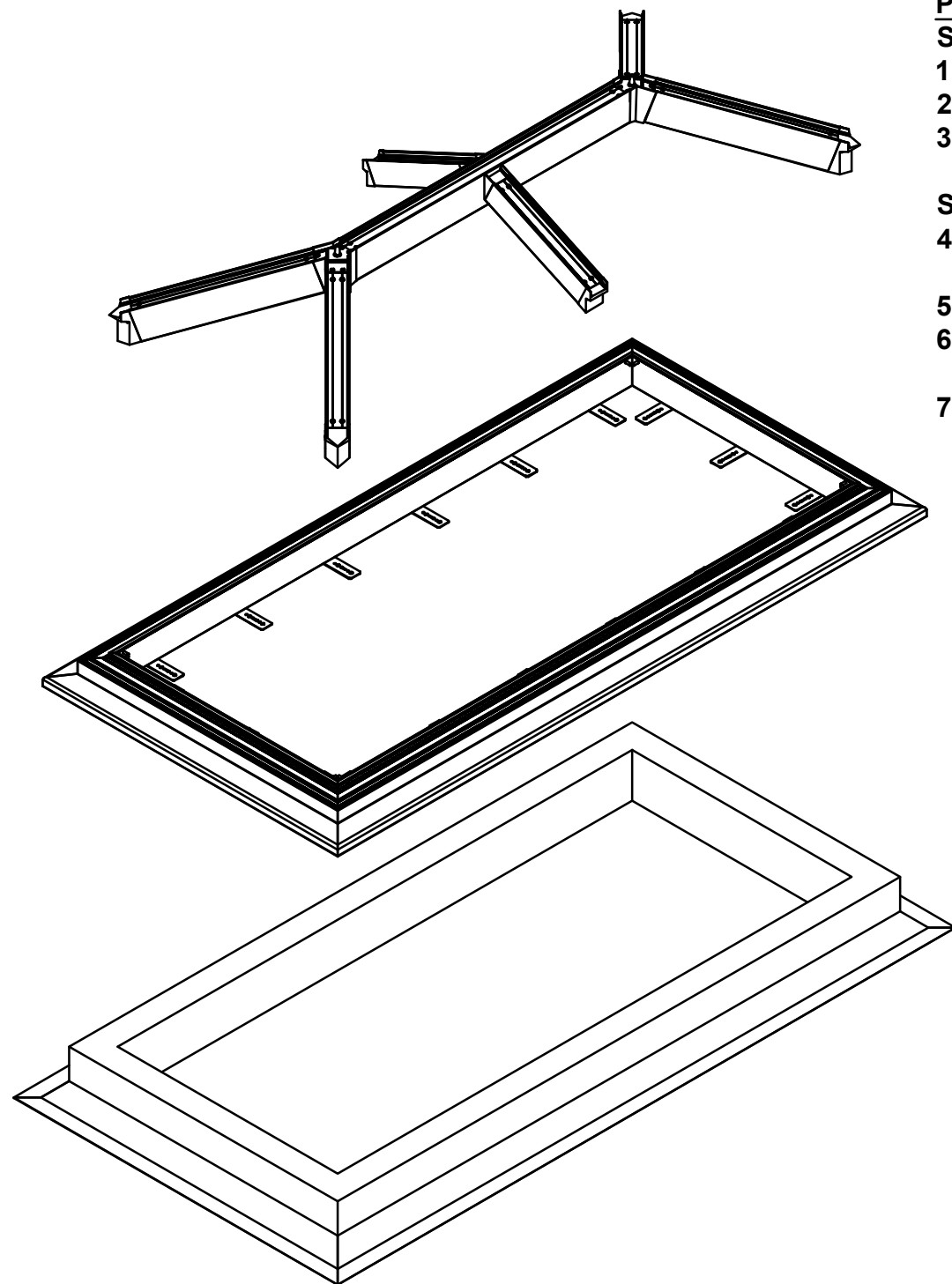
Please note that a minimum of 2 people are required for installation.

#### Step One

1. Fix ACUN232/3 fixing straps at 100mm from each corner and at 400mm max. centres
2. Position eaves beam into position, level and square as required and then seal
3. Bend the fixing straps into position and secure using suitable screws for the structure

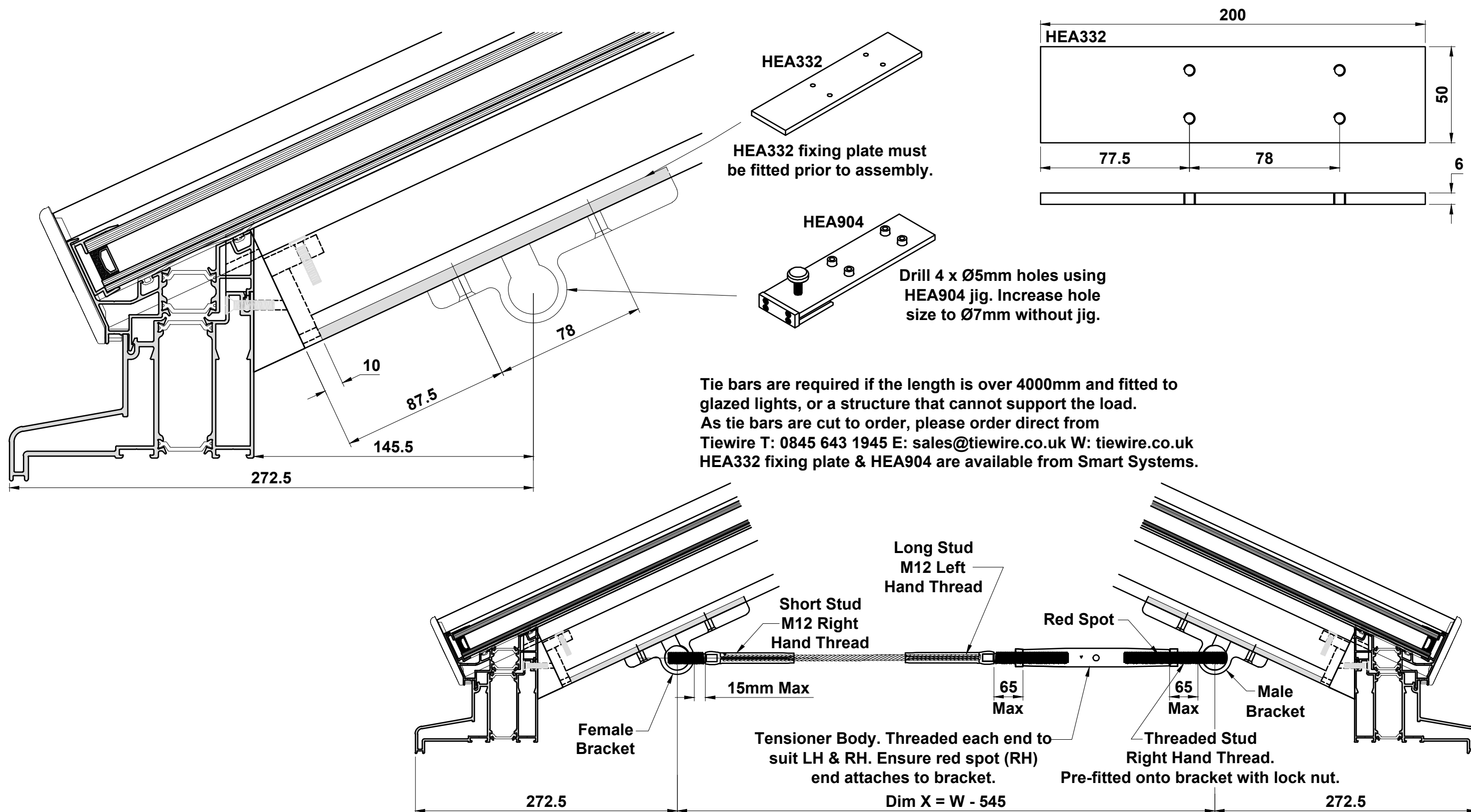
#### Step Two

4. Lower the pre-fabricated ridge, hip & rafter assembly onto the eaves beam, seal and fix using WCA143 machine screws
5. Clip fit the EHE119 glass stop and seal against the hips & rafters
6. Position the glass (with EHE128 fitted) into the openings and ensure the bottom of the glass is held under the ridge of EHE119.
7. Glaze following the steps shown in the assembly details E04-E10.



Do Not Scale From This Drawing

## Tie Bar



Do Not Scale From This Drawing





























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Sawing Tables





















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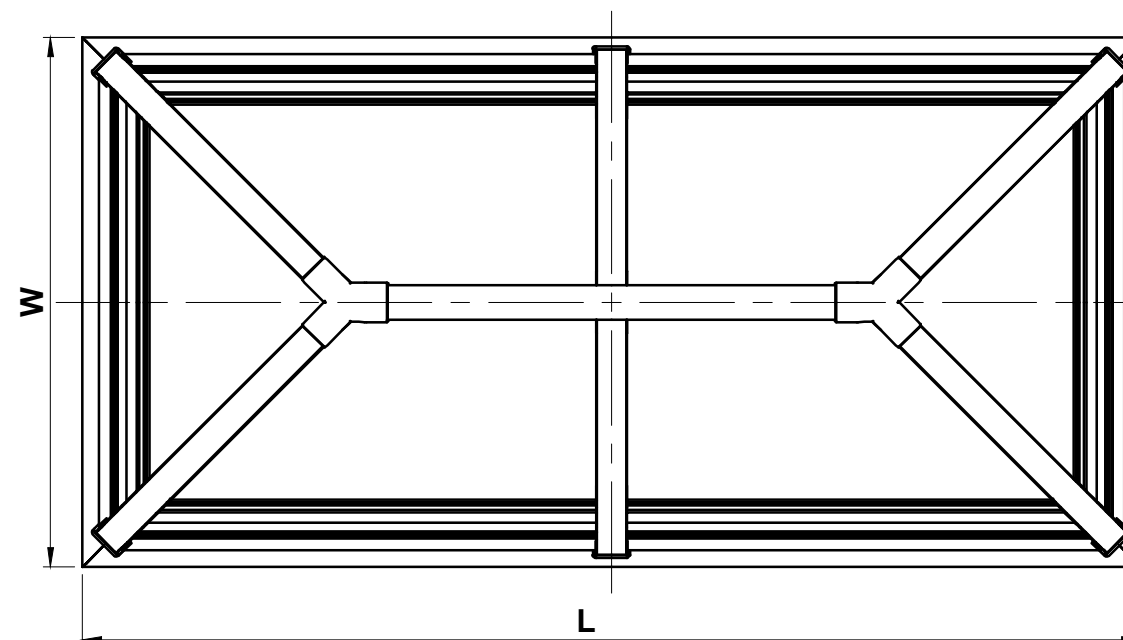
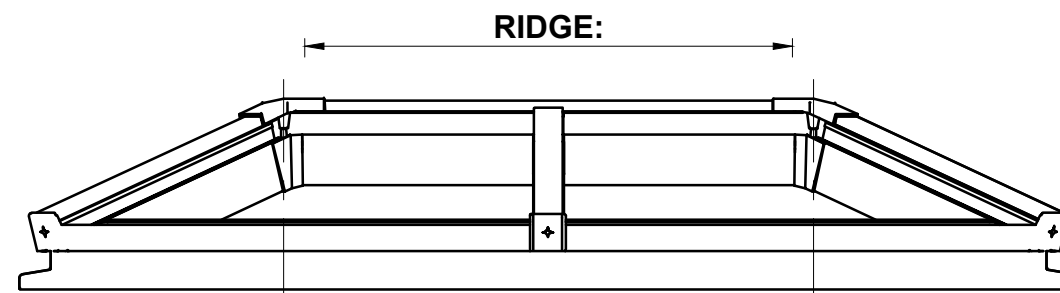
## Cutting Information

### PROFILE CUTTING SCHEDULE WITHOUT RAFTERS

EAVES	EHE110		2		W
	EHE110		2		L
	EHE119		2		W - 144
	EHE119		2		L - 144
	EHE128		2		W - 144
RIDGE	EHE128		2		W - 144
	EHE122		1		(L-W)-25
	EHE125		1		(L-W)-69
	EHE160		1		(L-W)-20
	EHE170		1		(L-W)-20
HIPS	EHE123		4		(W/2√2-113.5) COS 18.2 + 4
	EHE125		4		(W/2√2-113.5) COS 18.2 - 165.5
	DK052		4		(W/2√2-113.5) COS 18.2 + 4
	MC152		4		(W/2√2-113.5) COS 18.2 + 4

### PROFILE CUTTING SCHEDULE WITH RAFTERS

EAVES	EHE119		2		W - 144
	EHE119		2		(L/2) - 101.5
	EHE119		2		(L/2) - 101.5
	EHE128		2		W - 145
	EHE128		2		(W/2) - 101.5
	EHE128		2		(W/2) - 101.5
RAFTERS	EHE120		2		(W/2-32.5) / COS 25 - 167
	DK052		2		(W/2-32.5) / COS 25 - 77
	MC150		2		(W/2-32.5) / COS 25 - 77
	VR514		2		(W/2-32.5) / COS 25 - 80.5

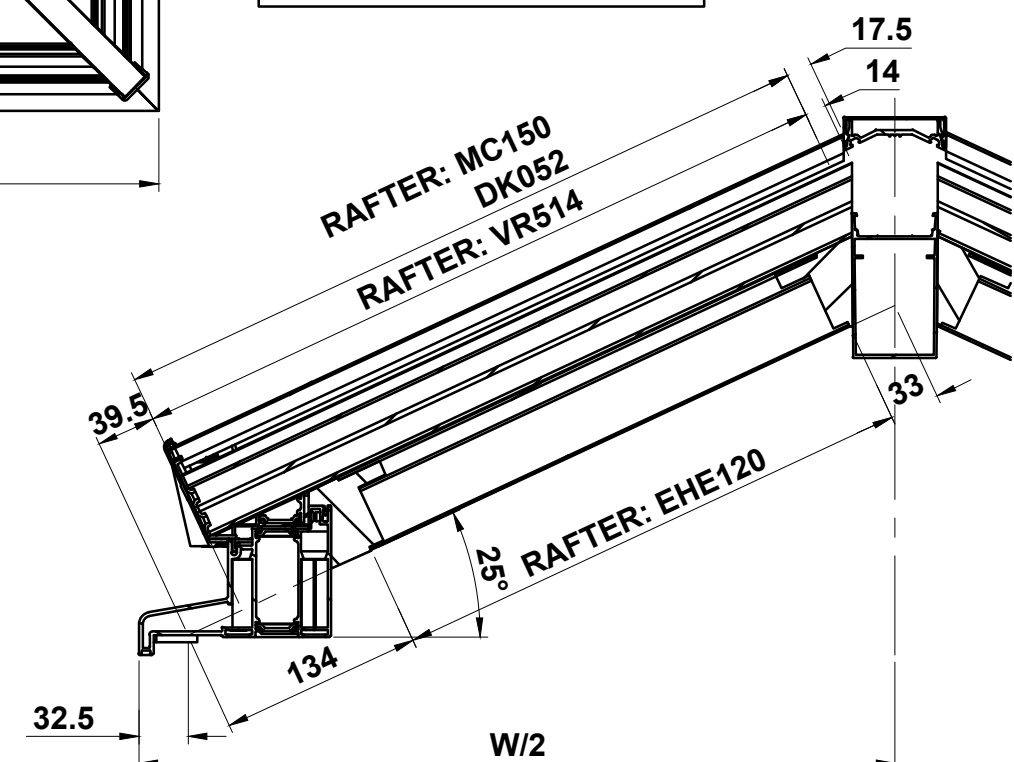
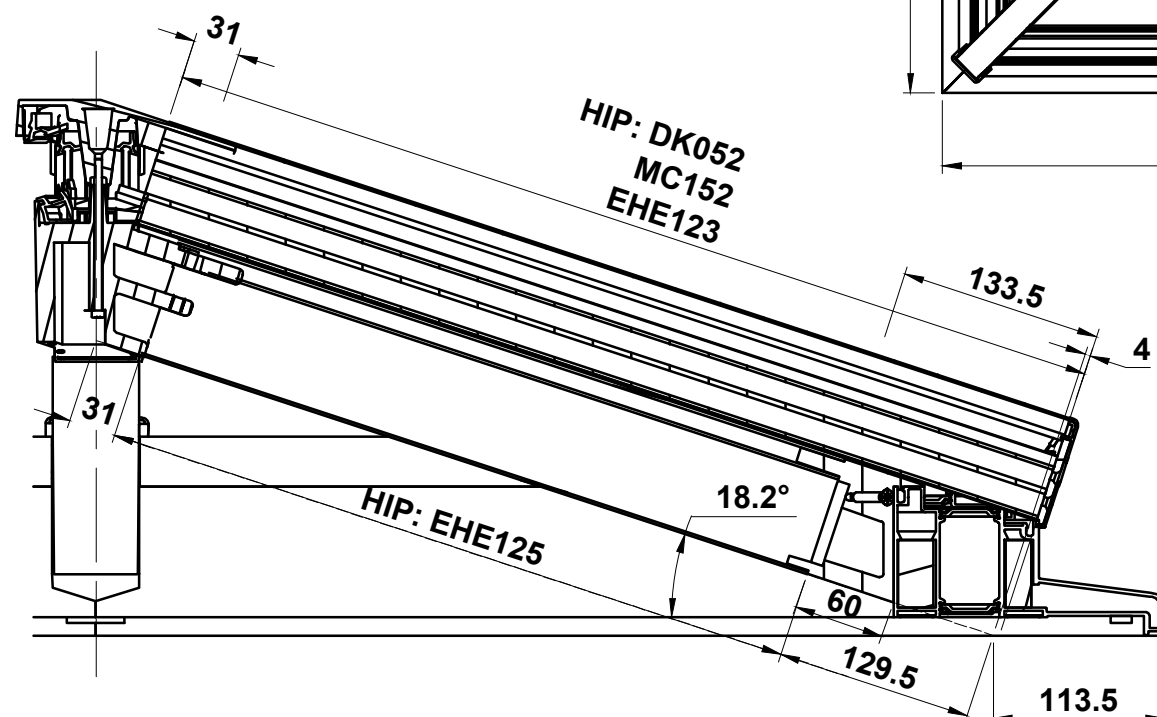


### ACCESSORIES

EAVES	ACET041	4	EHE110 Nose Bracket
	ACET064	8	ACET041 Screw
	ACET190	At 300mm Centres	Polyamide Screws
	HEA310	4	EHE110 Corner Cleats
	HEA372	4 x W & 4 x L	EHE119 Gasket
RIDGE & HIPS	HEA340	4	Hip to Eaves Bracket
	HEA345N	2	Ridge to Hip Bracket Kit
	HEA350	4	Hip End Stop & Cover
	ACDR052/ACUN3507	At 300mm Centres	Pressure Plate Screws
	ACMC019	(L-W) - 20	EHE160 Pressure Plate Gasket
RAFTERS	ACMC150	8 x (W/2√2-113.5) COS 18.2 - 46	MC152 Pressure Plate Gasket
	ACMC635	8 x (W/2√2-113.5) COS 18.2 + 4	MC150 Hip Gasket
	ACMC635	8 x (L-W) - 25	EHE123 Hip Gasket
	WCA143	28	Bracket Screws
	HEA342	2	Rafter to Eaves Bracket
RAFTERS	HEA343	2	Rafter to Ridge Bracket
	HEA352	2	Hip End Stop & Cover
	ACDR052/ACUN3507	At 300mm Centres	Pressure Plate Screws
	ACMC635	2 x (W/2-32.5) / COS 25 - 80.5	VR514 Rafter Gasket
	ACMC150	8 x (W/2√2-113.5) COS 18.2 + 4	MC150 Rafter Gasket
	ACMX09811	2 at 250mm min.	Sealing Tape
	ACUN3509	4	HEA343 to EHE125 Rivnut
	ACUN3514	4	HEA343 to EHE125 Screw
	WCA143	12	Bracket Screws

### GLASS

Use FDS Software for glass sizes  
or contact the Smart Systems  
Roof Department on 01934 876100



Do Not Scale From This Drawing