

## Outback® Gable Sunroof Parallel



### BEFORE YOU START

Carefully read these instructions (along with the Stratco Outback Flat Attached Installation Guide, and/or Outback Sunroof Installation Guide if applicable) and refer to them constantly during each stage of construction. If you do not have all the necessary tools or information, contact Stratco for advice. Before starting, layout all components and check them against the delivery docket. The 'Components' section identifies each key part, and the component layout diagram indicates their fastening position.

Double check all dimensions, levels and bolting locations before cutting, screwing or bolting structural members. It is recommended that the installers erecting the structure have had some previous building experience because some modifications to the existing house structure may be required. Flashings do not need to be pre-fixed until all beams have been erected.

### PARALLEL TO RIDGE CONFIGURATION

An Outback Gable Sunroof is designed to either a 'Parallel to Ridge' or 'Perpendicular to Ridge' configuration.

This refers to the orientation of the Sunroof Louvres in relation to the gable ridge. The following instructions are applicable to units with louvres parallel to the ridge.

### TOOLS REQUIRED

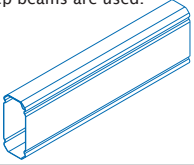
- Drill and Hex-Head Adaptor
- Rivet Gun
- Tape Measure
- Tin Snips
- Spirit Level
- Post Hole Digger
- Adjustable Construction Props
- Spanners or Ratchet
- Silicone Gun
- Concrete
- Ladder
- Pointy Nose Pliers
- File
- Vice Grips



# COMPONENTS

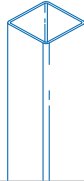
## OUTBACK BEAMS

The beams are the frame to support the roofing. 150mm deep beams are used.



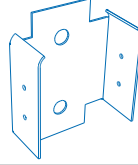
## COLUMNS

Support the beam framework.



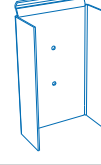
## WALL BRACKET

Fastens the Outback beams directly to a wall.



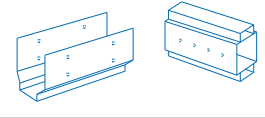
## BEAM TO BEAM BRACKET

Connects horizontal beams.



## BEAM INLINE CONNECTORS

Joins beams flush to form a continuous beam. Different connectors are available for various angles and loadings.



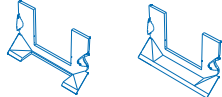
## POST BRACKET

Connects post to beam.



## BEAM FILLERS

Fills gap between intersecting beams. A notched version is available where a column also intersects.



## BEAM END CAP

Encloses the end of the beam.



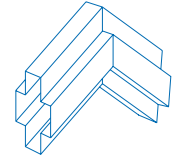
## RIDGE RAFTER BRACKET

Connects ridge beam to gable frames.



## RIDGE KNUCKLE

Slots inside the gable rafters to form a connection at the ridge.



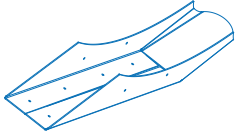
## POST CAP

Fills the gap between the post and beam.

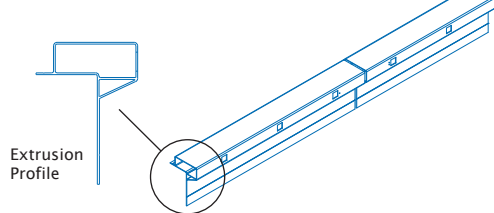


## RAFTER TO VALLEY BRACKET

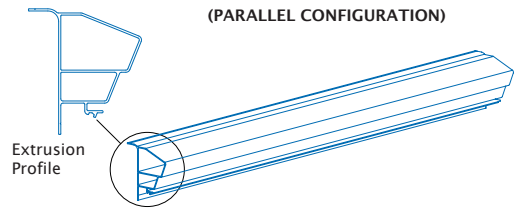
Connects the gable rafters to the header beams.



## RAFTER MOUNTING EXTRUSION

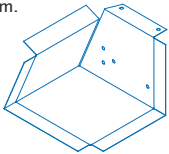


## MOUNTING EXTRUSION (RIDGE) (NON-PUNCHED) (PARALLEL CONFIGURATION)



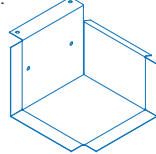
## GUTTER MITRE (VALLEY)

Corner piece for guttering configuration along the ridge beam.

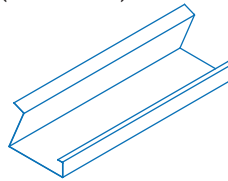


## GUTTER MITRE (RIDGE)

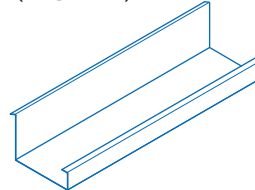
Corner piece for guttering configuration along the ridge beam.



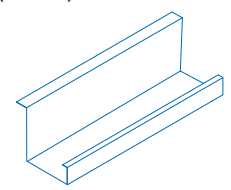
## INTERNAL BOX GUTTER (VALLEY BEAM)



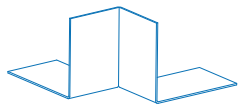
## INTERNAL BOX GUTTER (RIDGE BEAM)



## INTERNAL BOX GUTTER (RAFTER)

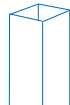


## MITRE SUPPORT BRACKET

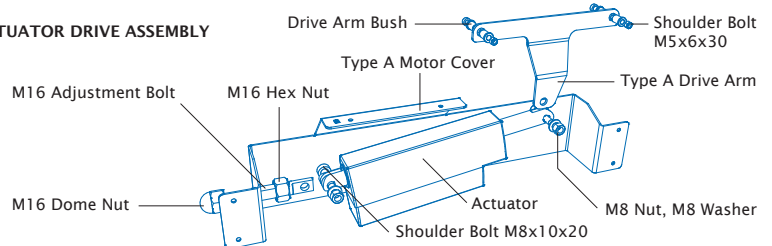


## DOWNPIPE

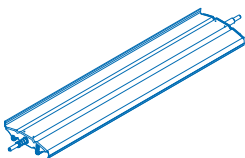
Funnels water from the gutter to the ground via an outlet. Accessories of mitres, shoes and brackets are available as optional extras.



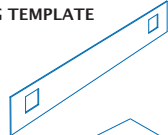
## ACTUATOR DRIVE ASSEMBLY



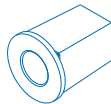
## LOUVRE BLADE WITH END CAPS



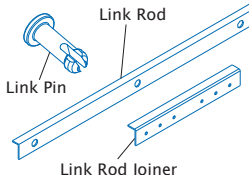
## SPACING TEMPLATE



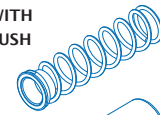
## MOUNTING BUSH



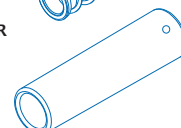
## LINK ROD AND LINK PIN



## SPRING WITH SPRING BUSH

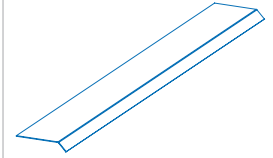


## SPACER

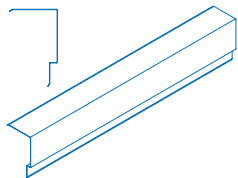


## LINK ROD FLASHING

Fastened over the link rod.

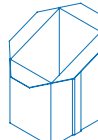


## BARGE FLASHING

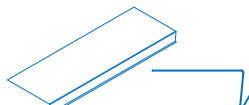


## OUTLET

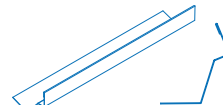
Placed through an opening in gutter mitres and fastens to the downpipe.



## FLASHINGS 'PARALLEL TO RIDGE' CONFIGURATION

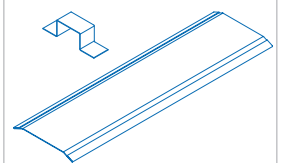


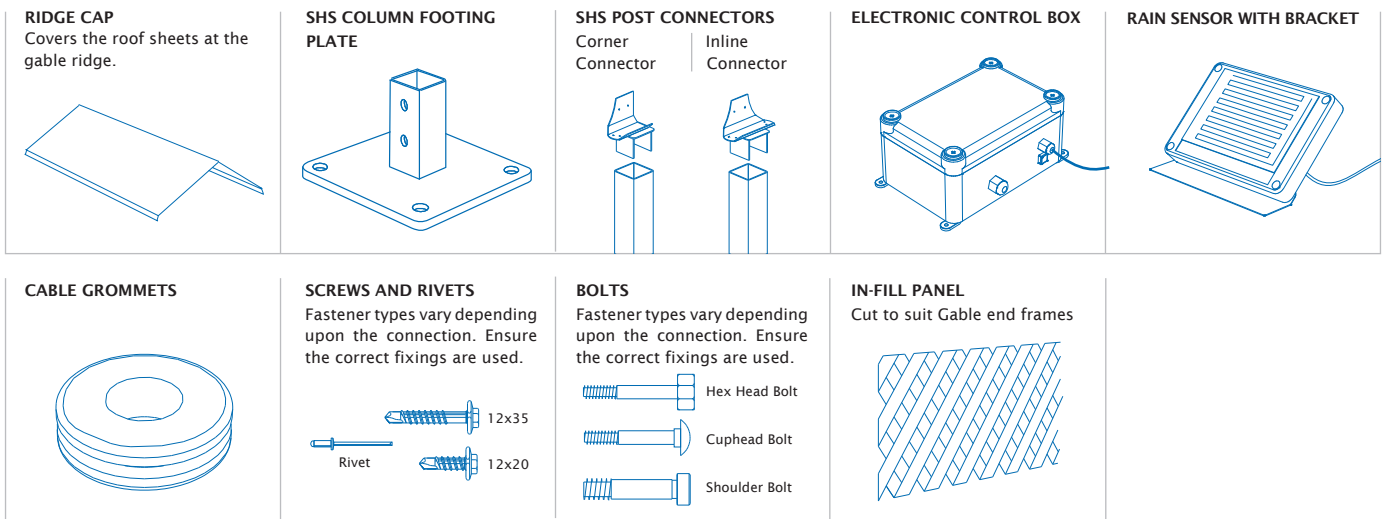
VARIABLE FLASHING



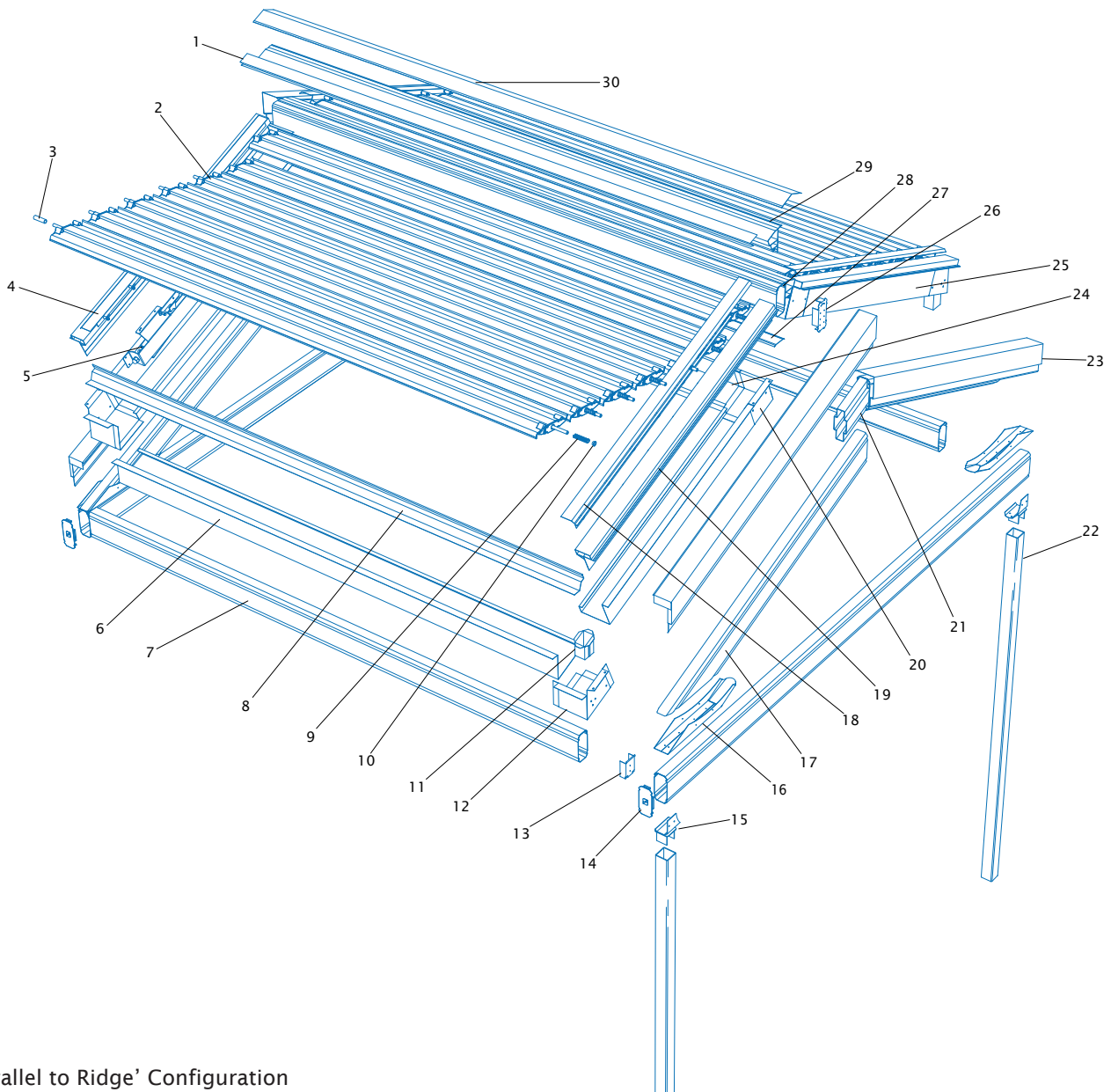
FIXED FLASHING

## RIDGE SHROUD AND SHROUD MOUNT BRACKET





## COMPONENT LAYOUT



'Parallel to Ridge' Configuration

- 1 Variable Flashing (Ridge)
- 2 Louvre Blades with End Caps
- 3 Spacer
- 4 Link Rod
- 5 Actuator Assembly
- 6 Valley Gutter
- 7 Side Fascia Beam
- 8 Fixed Flashing (Valley)
- 9 Spring
- 10 Spring Bush
- 11 Outlet
- 12 Valley Gutter Mitre
- 13 Beam to Beam Bracket
- 14 End Cap
- 15 SHS Post Connector
- 16 Rafter to Valley Bracket
- 17 Gable Rafter
- 18 Link Rod Flashing
- 19 Rafter Mounting Extrusion
- 20 Ridge Gutter Mitre
- 21 Ridge Knuckle
- 22 SHS Post

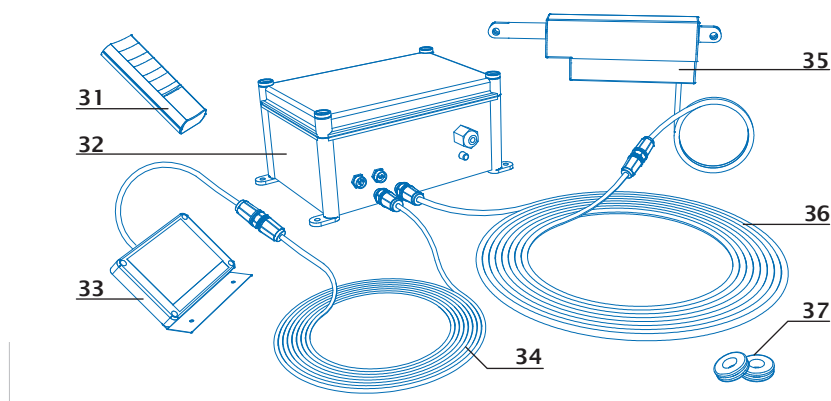


Figure 1.1

- |                             |                           |
|-----------------------------|---------------------------|
| 23 Barge Flashing           | 31 Remote Control         |
| 24 Ridge Gutter             | 32 Electronic Control Box |
| 25 Rafter Gutter            | 33 Rain Sensor            |
| 26 Ridge Rafter Bracket     | 34 Rain Sensor Cable      |
| 27 Ridge Shroud             | 35 Actuator               |
| 28 Ridge Beam               | 36 Actuator Cable         |
| 29 Ridge Mounting Extrusion | 37 Cable Grommets         |
| 30 Ridge Capping            |                           |

### Additional Items

Please note that your Stratco Outback kit does not include any brackets or fixings to attach the unit to an existing structure, or concrete/masonry anchors for the column installation. If required, they must be purchased as additional items.

## ATTACHING TO AN EXISTING STRUCTURE

The builder or council is to ensure the existing house/structure is of a suitable structural integrity and complies with all the relevant Australian Building Codes and Standards. For more information regarding the suitability of the house structure to accommodate the Stratco Attached Gable Sunroof, consult a structural engineer or a building authority. It is the builder's responsibility to ensure that the existing house roof structure is strengthened correctly.

A Stratco Gable Sunroof attached to a house is attached to the existing eaves overhang at the fascia via an attachment beam or valley beam suspension brackets, or to an existing wall if height permits. Most existing houses have not been designed for the attachment of gable verandahs to their side, therefore additional strengthening of the house rafters must be performed.

In order to strengthen the existing house rafters, the roof tiles or roof sheets need to be lifted to expose the roof frame. Steel rafter brackets and channels are then bolted along the house rafters.

A 150mm Outback beam is bolted to the strengthening brackets at the fascia. Once the 150 attachment beam is secured to the house, the Gable Sunroof unit can be erected and fastened to the beam.

### Rafter Strengthening

Determine the number of rafters which need to be strengthened and their location relative to the unit. You will have to lift some roof tiles or roof sheets to discover the rafter positions and spacings. The number of rafters

which need to be strengthened is determined by the builder, however spacing is recommended not to exceed 1200mm. Use an adjustable rafter strengthening bracket (Figure 2.0).

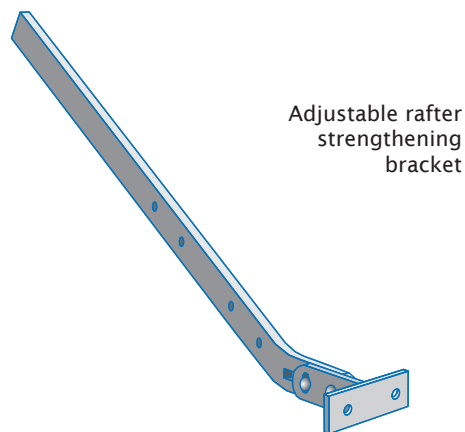


Figure 2.0

**Note:** It is the builder's responsibility to ensure the existing rafters and fascia are adequately reinforced and strengthened to accommodate any additional attached structure. The reinforcing method must be approved by the appropriate council or engineer. It is recommended an adjustable rafter strengthening bracket is used in conjunction with an extension channel, as shown in Figure 2.1.

Please note that this bracket may not be suitable for applications where the front face of the house gutter is higher than 120mm. In these cases please contact Stratco for alternative solutions.

## Fixing Rafter Strengthening Brackets

The adjustable rafter strengthening bracket allows for an adjustment of pitch in the range of 15 to 30 degrees. The distance the bracket extends past the fascia is also adjustable to allow for standard gutters or box gutters with a width of up to 200mm.

In conjunction with rafter strengthening brackets a channel is fixed to the side of the house rafter (Figure 2.1). The bottom end of the channel will be located at the base of the house rafter. Holes should be marked and pre-drilled in the channel to suit the location of existing holes in the bracket. The channel will extend beyond the bracket so additional holes are to be drilled in the channel at approximately 500mm centres.

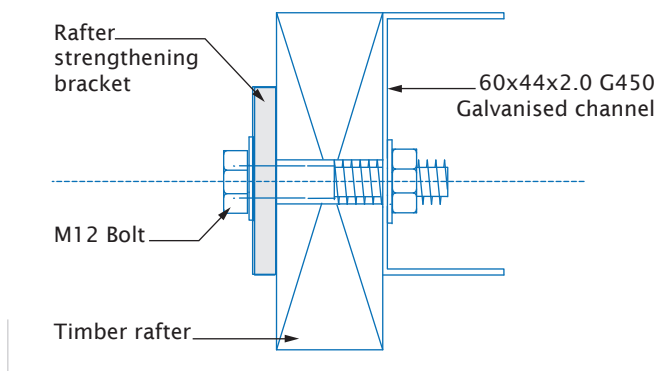


Figure 2.1

Initially the bracket T piece shall be fixed to the bracket arm with two M12 cup head bolts (hand tighten only). A spring washer is to be located between the standard M12 washer and nut (Figure 2.2).

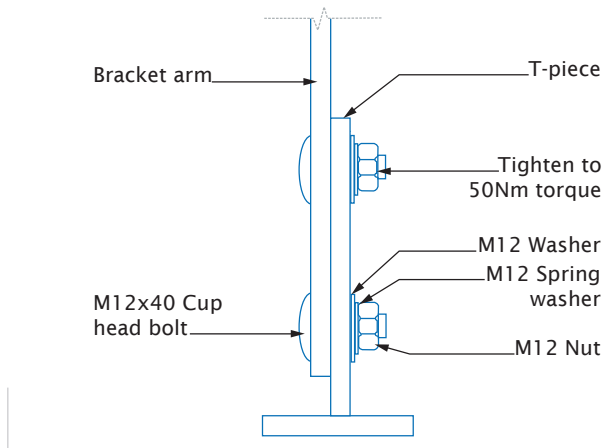


Figure 2.2

Mark the position of the bracket on the fascia and notch a rectangular hole in the fascia allowing the bracket to be fed through the front of the fascia. The hole may need to be enlarged slightly if the M12 cup head bolts interfere with the fascia.

Insert the bracket through the fascia and fix with the channel to the house rafter using M12 hex head bolts through the existing holes in the bracket and further up the channel (Figure 2.1). Adjust the T piece so it is horizontal and has the appropriate extension past the fascia to allow for fixing of the attachment beam. T piece connection bolts are to be tightened to a minimum 50Nm torque.

Fix the bracket as close to the base of the gutter as possible (recommended distance 10mm from lowest end of gutter), as shown in Figure 2.3.

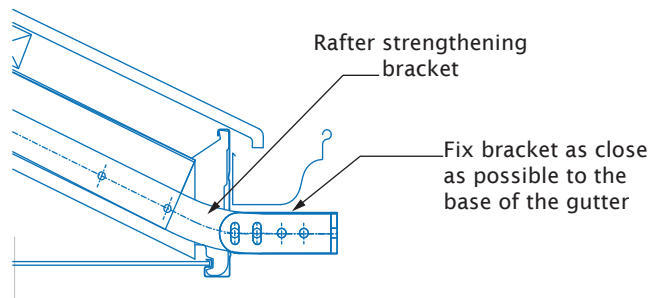


Figure 2.3

## Preparing the 150 Attachment Beam

### Side Attached:

Once the rafter strengthening brackets have been installed, the bolt heads fastening the attachment beam and rafter strengthening brackets (located on the internal face of the attachment beam) will interfere with the internal box gutter system. For this reason, the internal box gutter and valley mitres, will need to be pre-fixed to the attachment beam.

At one end, position a gutter mitre over the attachment beam as shown in Figure 2.4. Place the mitre so that it sits flush with the end face of the beam. Clamp the mitre in place. Be sure to leave the gutter mitre featuring the downpipe outlet for the corner where the downpipe will be installed.

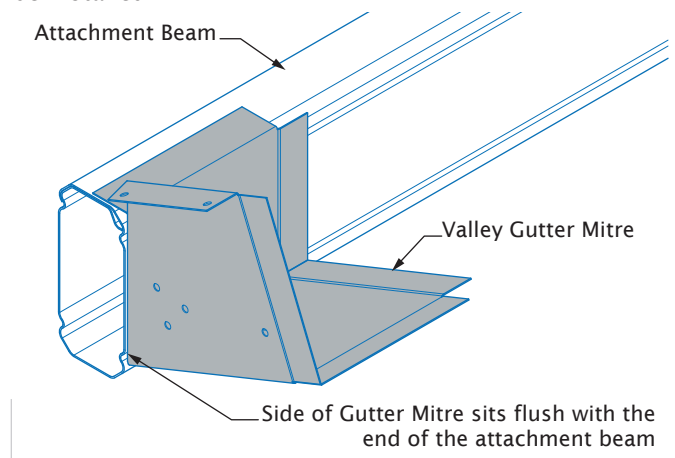


Figure 2.4

Position the internal box gutter over the attachment beam and beneath the flange in the gutter mitre (Figure 2.5 & 2.6).

When the gutter is in place, position and clamp the second gutter mitre as per the first, aligning with the side fascia beam mark.

**Note:** The gutters will need to be trimmed back to fit the required length between gutter mitres.

Whilst clamped, fasten the inside face of the gutter and gutter mitres to the attachment beam using 12x25 hex head self-drilling screws at 900mm centres (Figure 2.5).

**Note:** Ensure all screws which fix gutter to the inside of the beam are fully sealed with silicone.

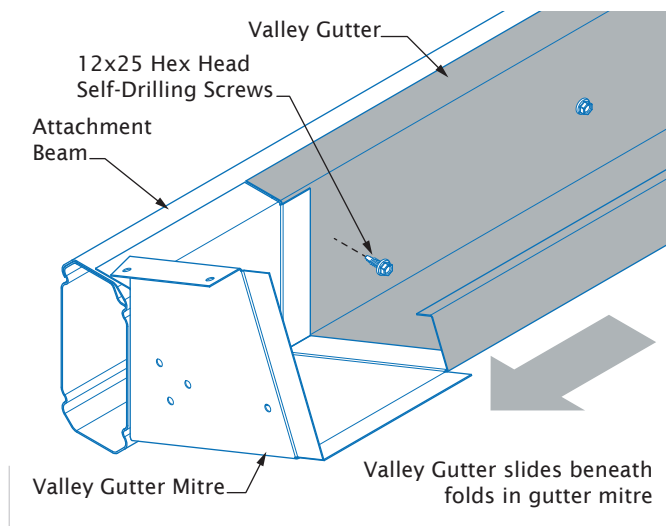


Figure 2.5



Figure 2.6

When the gutter has been secured through the inside face, the valley flashing can be attached atop the attachment beam. For installation details see the 'Installing Cover Flashing & Ridge Capping' section. Installing the valley flashing at this stage of the assembly process is not critical and can be installed later in the process.

#### Rear Attached:

For rear attached units, the rear header beam becomes the attachment beam (box gutters are not used on this beam). The attachment beam is installed as normal.

#### Fixing the 150 Attachment Beam in Place

Prop up the 150 attachment beam in position with the double flange on top. For side attached units, a minimum fall of 1:60 must be applied towards the downpipe outlet when louvre blades are running parallel to the ridge beam. Insert spacers to prevent the beam from crushing, and bolt in position using nuts and washers (only use washers to the inside face of the beam).

To insert spacers, drill 13mm holes through the 150 attachment beam, then drill 16mm holes on the inside face only. This will allow the spacer to slide in from the inside and stop at the other side as shown in Figure 2.7.

**Note:** Do not over tighten the bolts as this can lead to a visible indentation due to the high gloss nature of the material.

A cover flashing may be ordered as an additional option and custom made to cover the exposed brackets and holes through the fascia. Rivet flashing in place as shown in Figure 2.8. The assembled attachment beam for a side attached unit, including box gutter system, is shown in Figure 2.9.

**Note:** Ensure bolts on the inside face of the box gutter are fully sealed with silicone.

**Note:** It is the builder's responsibility to ensure

the existing rafters are adequately reinforced and strengthened to accommodate any additional attached structure. The reinforcing method must be approved by the appropriate council or engineer.

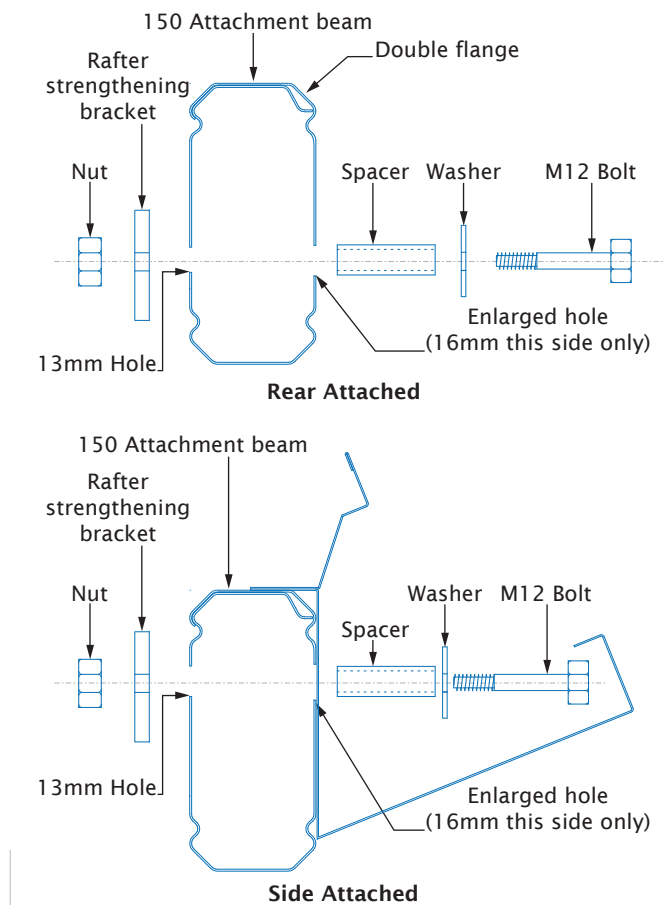


Figure 2.7

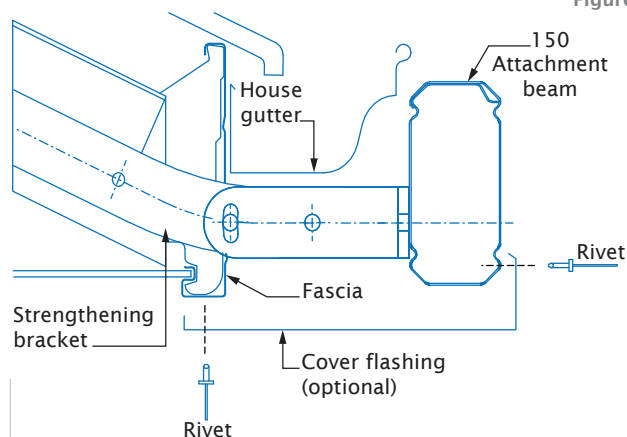


Figure 2.8

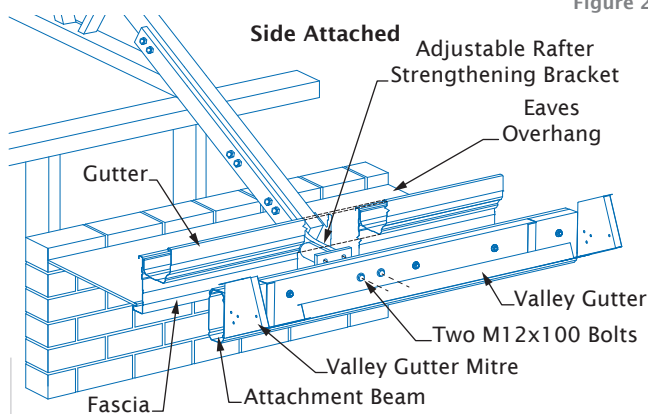


Figure 2.9

## Attaching to a Masonry Wall

For units attached to a wall, the attachment beam is secured with 10mm diameter masonry anchors at 900mm spacings (Figure 2.10 and 2.11). Ensure the first and last anchors are within 200mm of the end of the beam or wall.

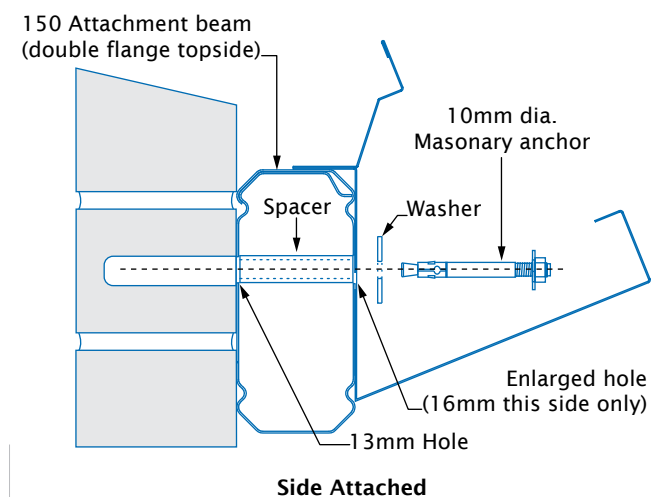
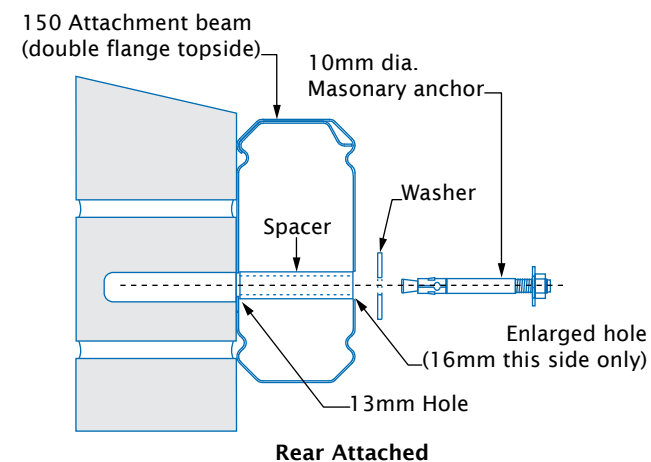


Figure 2.10

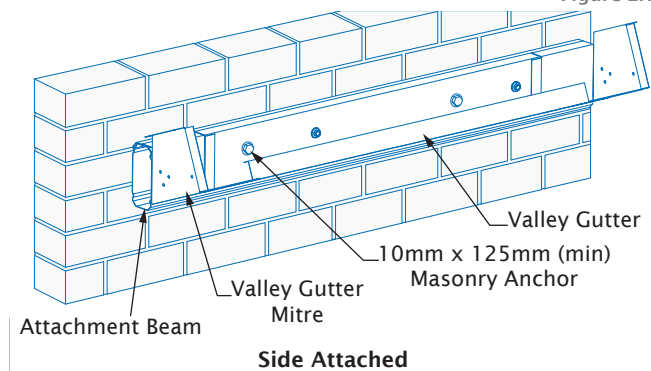


Figure 2.11

For side attached units, pre-fix the internal box gutter to the attachment beam as previously described in the step 'Preparing the 150 Attachment Beam'.

## Fixing the 150 Attachment Beam in Place

Prop up the 150 attachment beam in position with the double flange on top. For side attached units, a minimum fall of 1:60 must be applied towards the downpipe outlet when louvre blades are running parallel to the ridge beam.

Insert spacers to prevent the beam from crushing, and bolt in position using nuts and washers (only use washers to the inside face of the beam).

To insert spacers drill 13mm holes through the 150 attachment beam. Then drill 16mm holes on the inside face only. This will allow the spacer to slide in from the inside and stop at the other side as shown in Figure 2.10.

**Note:** Do not over tighten the bolts as this can lead to a visible indentation due to the high gloss nature of the material.

**Note:** Ensure all bolts on the inside face of the box gutter are fully sealed with silicone.

## Fascia Strengthening

If fixing a Gable Sunroof with suspension brackets to a fascia (Figure 2.12) the gable rafter at the rear of the unit is to be set back sufficiently from the house fascia to accommodate the house gutter and infill panel.

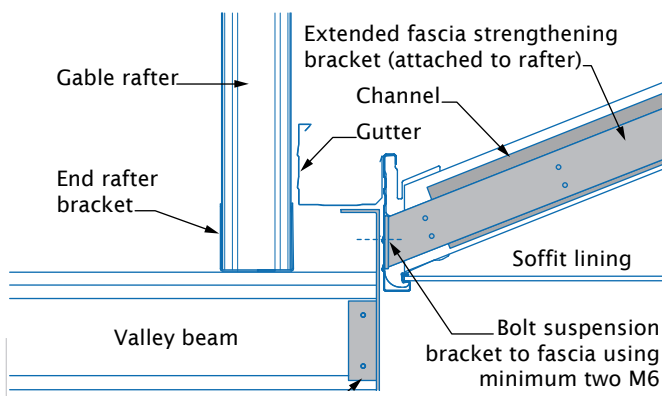


Figure 2.12

Locate a 2mm washer plate behind timber or steel fascia at beam to fascia connection. Bolt through suspension bracket, fascia and washer plate.

It is recommended extended fascia strengthening brackets are located at maximum 1200mm centres for the full length of the gable opening and to the first rafter either side of the valley beams. Reinforcing channels are recommended to the first rafter either side of the valley beam.

**Note:** Additional strengthening may be required and it is the builders responsibility to ensure rafters are adequately reinforced and appropriately tied down to walls.

## Attaching Fascia Beams

When fixing beams to the attachment beam, beam to beam brackets are required. Position the brackets to the inside face of the attachment beam, aligning the curved flange with the beam profile. Fasten through the bracket holes into the beam using two 12x20 hex head screws per bracket.

Lift the adjacent fascia beams up and attach one end to the beam-to-beam brackets while supporting the other end on adjustable construction props. Fasten using 12x20 hex head self-drilling screws on the outside of the beam. Adjust the construction prop to allow for the required fall.

Before positioning the opposite beam, attach the beam to beam brackets as per the attachment beam. Using adjustable construction props, position the beam in

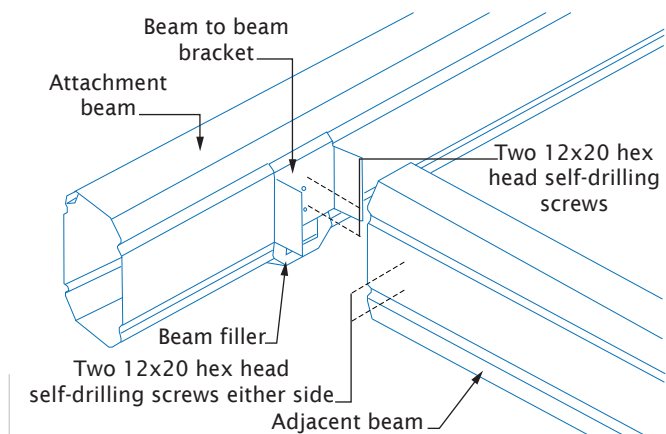


Figure 2.13

place parallel to the attachment beam and attach the fascia beams to the beam to beam brackets using two 12x20 hex head self-drilling screws on the outside of the beam (Figure 2.13).

When beams are secured, it is important to measure the diagonal distances as to maintain a square and symmetrical unit (Figure 2.14).

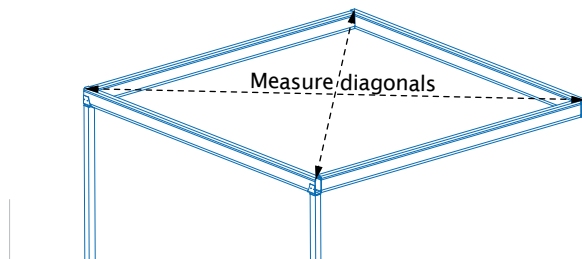


Figure 2.14

## GABLE FRAME ASSEMBLY

**IMPORTANT:** Ensure that the double thickness portion is at the top when installing all beams and rafters.

**Note:** The rafters are supplied pre-cut.

Insert ridge knuckle into the pre-cut rafters and screw together using two 12x20 hex head self-drilling screws through the external side of each rafter (to allow for the internal box gutter and flashings).

Screw placement is indicated in the locations shown in Figure 3.0. Make sure that the two ends are flush at the connection, leaving no gaps. Measure the distance between rafter ends, W, to check valley beam spacing (outside beams) (Figure 3.1).

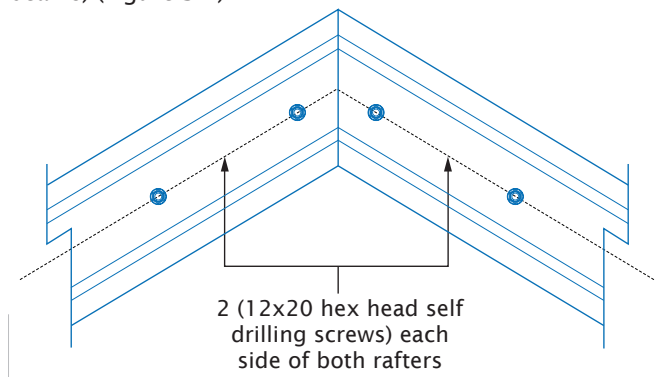


Figure 3.0

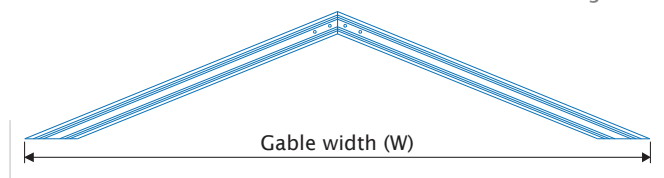


Figure 3.1

Fix the ridge rafter bracket at the ridge using six 12x20 hex head self-drilling screws through the gable frame and into the ridge knuckle (Figure 3.2). This is best achieved before the rafters are positioned on the unit. Locate the ridge rafter bracket using the angled cut-out in the bracket aligned with the top edge of the gable rafters (Figure 3.3).

12x20 Hex head self-drilling screws mounted through rafters and ridge knuckle

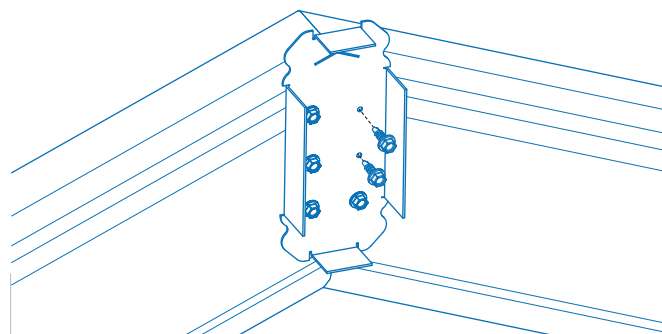


Figure 3.2

Align cut-out with rafter angles

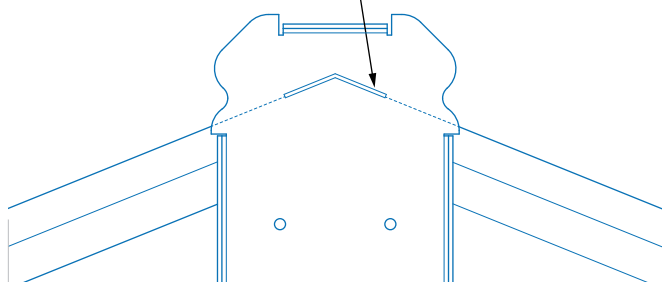


Figure 3.3

With the brackets in place, the ridge rafter later can be lifted in to position, with the brackets allowing for the ridge beam to be supported on its own.

### Collar Ties

If collar ties are required on intermediate frames they are to be mitred to suit the pitch of the gable rafters. For gable openings up to 6000mm collar ties are to be located mid-height of the gable frame. For gable openings greater than 6000mm collar ties are to be located at a height to give a collar tie length of 3000mm. Collar tie brackets are to be fixed to gable rafters with six 12x20 hex head self-drilling screws at the appropriate height. Collar ties are then fixed inside the brackets using three 12x20 hex head self-drilling screws either side (Figure 3.4).



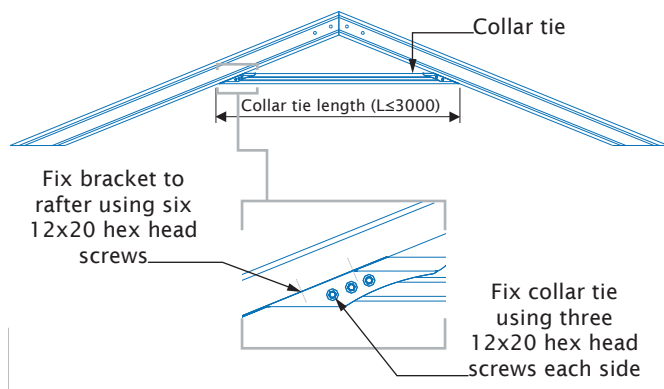


Figure 3.4

### Fastening Gable Rafters

Measure the end gable frame width and attach end rafter brackets to the header beam at the appropriate spacing using a minimum of eight 12x20 hex head self-drilling screws. End rafter brackets are to align with the outside beam (Figure 3.5). Rafters are fastened inside the end rafter brackets with a minimum of three 12x20 hex head self-drilling screws as shown in Figure 3.6. Be sure to only fasten through the outside of the unit to prevent obstructing the placement of gutters.

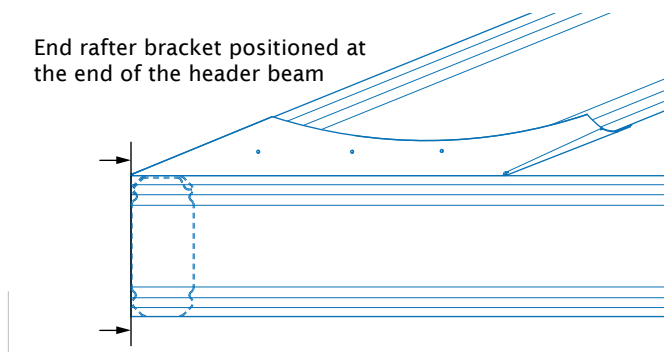


Figure 3.5

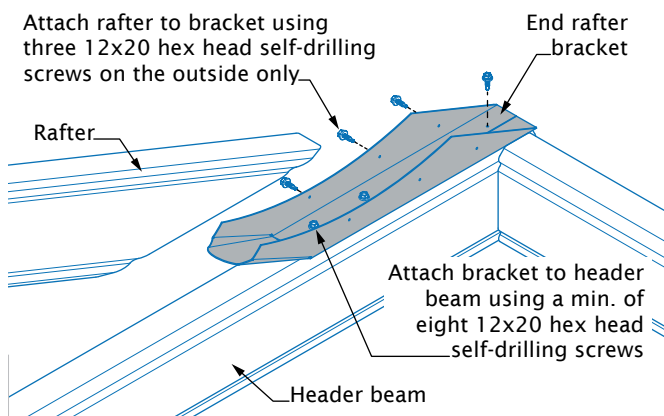


Figure 3.6

### Fastening Gable Rafters (No Header Beam)

For units without a header beam, rafter to valley brackets must be used. The rafter to valley brackets are to be fastened to the valley beams using six 12x20 hex head self-drilling screws per bracket (Figure 3.7 & 3.8). Position the brackets so that the bottom face of the bracket is in line with the bottom edge of the lower groove in the beam and approximately 22mm from the top of the valley beam (Figure 3.8)

The end of the rafters are then placed within the brackets and secured using two 12x20 hex head self-drilling screws.

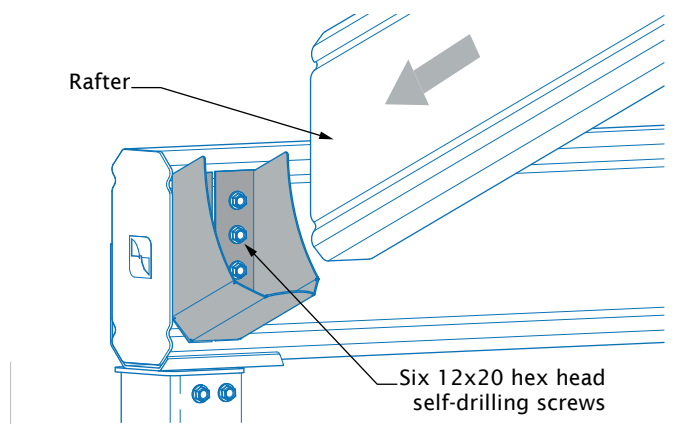


Figure 3.7

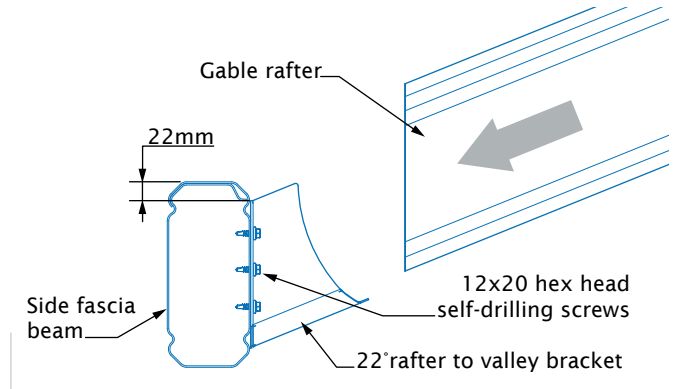


Figure 3.8

Be sure to only fasten through the outside of the unit to prevent obstructing the placement of gutters.

### Double Bank Gable Sunroof

For units with multiple banks, fix the double rafter-to-valley brackets to the 150 valley beam at the correct rafter positions using six 12x20mm hex head screws per bracket through the pre-drilled holes. This process is quite similar to fixing gable rafters when no header beam is present.

Please note that the bottom face of the bracket is in line with the bottom edge of the lower groove in the beam and approximately 22mm from the top of the side fascia beam (Figure 3.8). Check positions before drilling. If any intermediate columns are required measure the valley beam marking where they meet.

Fasten post brackets as explained in 'Outback Flat Attached Verandahs, Patios & Carports' under 'Bracket and Filler Connections'. Support the second valley beam at the spacing determined in the 'Gable Frame Assembly' section on adjustable construction props.

Before positioning any double rafters, they must first be fastened to one another. The first step in joining the two rafters is to drill four 12mm diameter holes through one side of the beam only (Figure 3.9). These holes will allow the rafters to bolt together.

The holes must be a mirror image on each rafter pair (Figure 3.10).

Place the rafters side-by-side and secure together through the holes using four M10x25 bolts, an M10 washer, and an M10 nut (Figure 3.11).

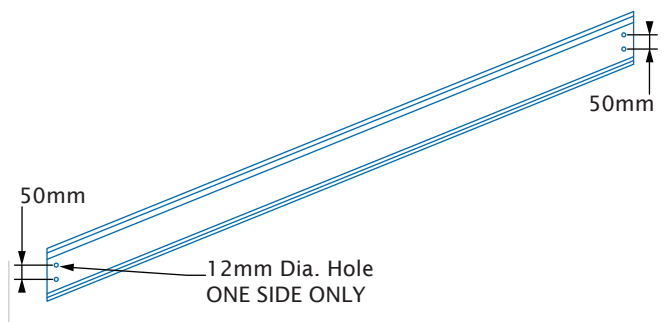


Figure 3.9

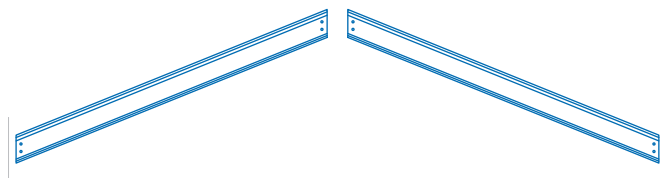


Figure 3.10

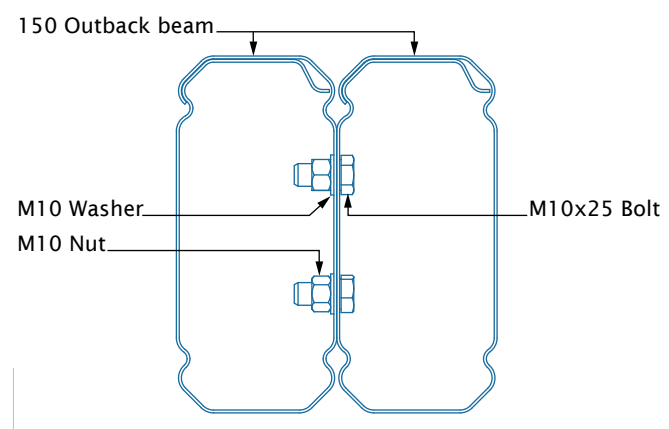


Figure 3.11

With the rafters now secured, drill 20mm diameter holes along one beam at 500mm centres (Figure 3.12).

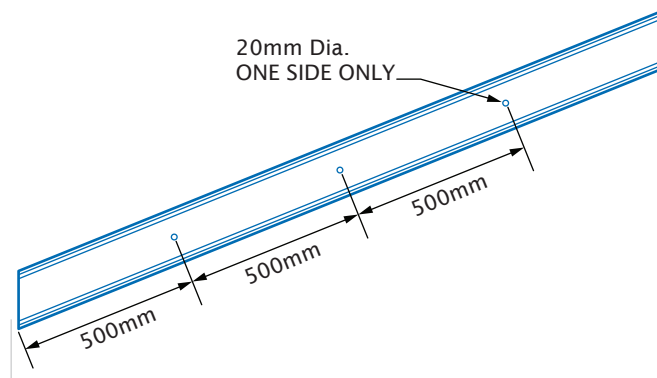


Figure 3.12

These holes will now allow you to fasten the beams using 12x20 hex head self-drilling screws (Figure 3.13).

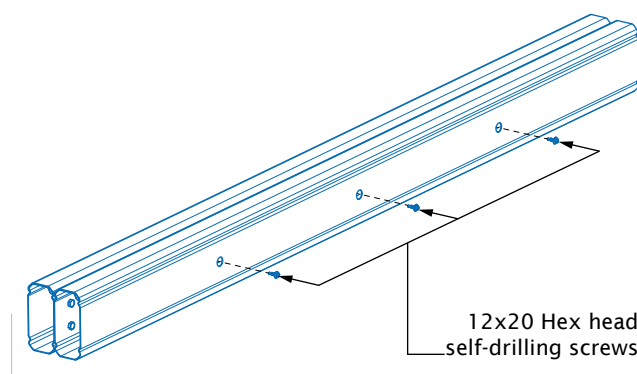


Figure 3.13

**Note:** An extension piece will be needed on your drill.

## RIDGE BEAM ASSEMBLY

A ridge mounting extrusion is required on each side of the ridge beam. This occurs in both 'Parallel to Ridge' and 'Perpendicular to Ridge' configurations. Before mounting the extrusion, the louvre closing direction must be known. Louvres will always close down at the 'fixed' end on 'Parallel to ridge' configurations (Figure 4.0).

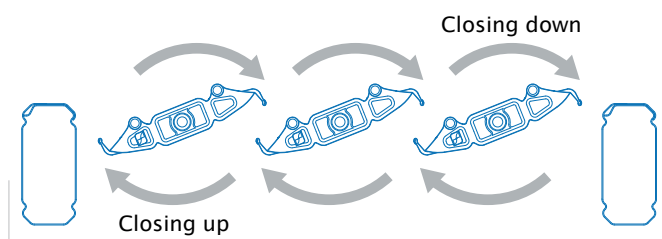


Figure 4.0

Mount the ridge extrusion over the ridge beam and fasten using 12x20 hex head self-drilling screws at 900mm centres along the beam (Figure 4.1). Fasten another ridge extrusion on the opposite side (Figure 4.2).

Use the allocated grooves as locating points for fastening. The ridge extrusions should be fixed in two locations, through the top lip of the extrusion, and the front face, with the screws staggered.

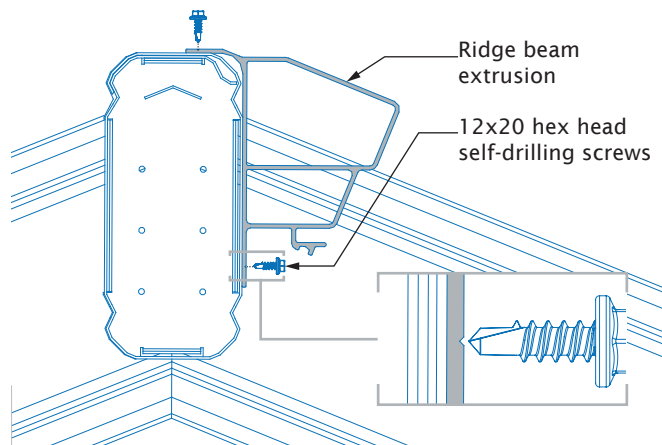


Figure 4.1

Ridge assembly under 3m in length

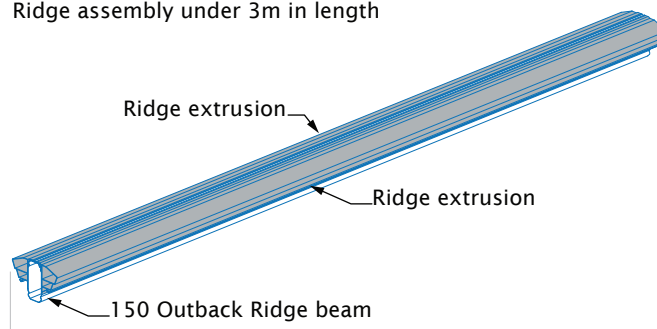


Figure 4.2

If the unit is longer than three metres in length additional ridge extrusions will be required (Figure 4.3). The ends of the extrusions with the small round holes must butt together.

Once lifted into position over the ridge rafter brackets, screws at each end will also tie the ridge beam extrusion, ridge beam, and ridge rafter bracket together.

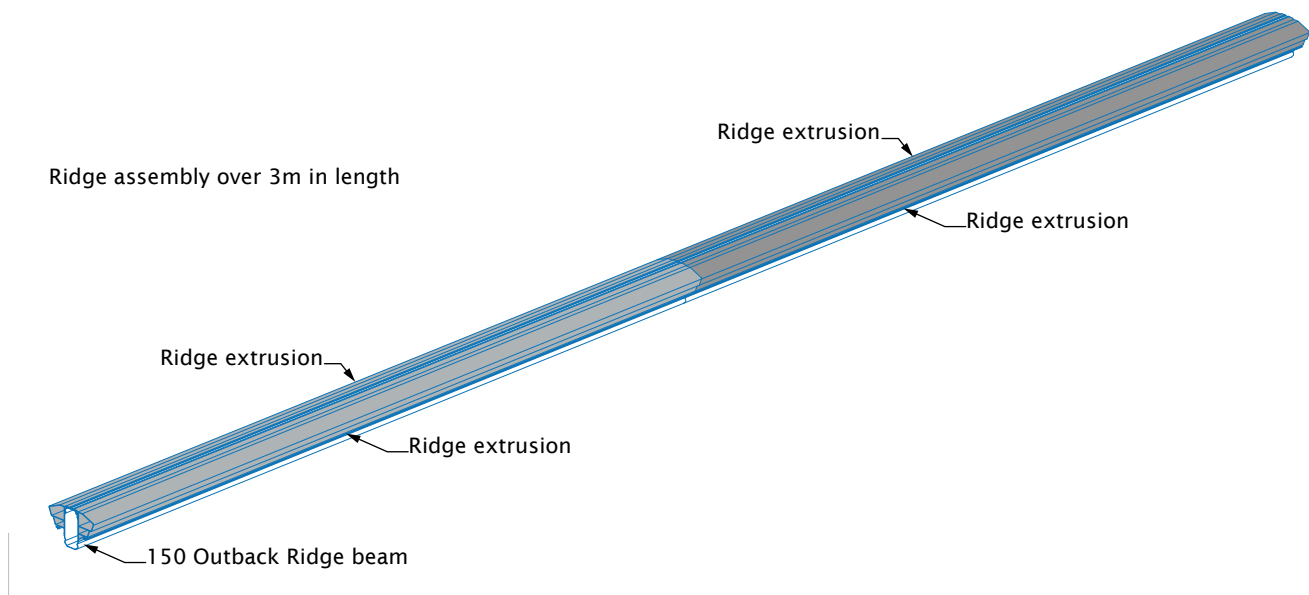


Figure 4.3

## STANDARD COLUMNS AND FOOTINGS

If fixing the columns into the ground, dig the holes to the specified size. Place a brick in the bottom of the hole (Figure 5.0).

Measure from the underside of the beam to the top of the half brick and cut posts to this length at each post location.

If Outback columns have been supplied, clip post brackets to the underside of beams where columns are to be located. Fasten through the holes in the brackets using two 10x25 countersunk screws either side into the flute of the beam. Position beam fillers on the bottom flute if any beam intersects at this point (Figure 5.0).

### Reinforcing the 68 Outback Column

The fluted 68 Outback columns will need to be reinforced with 50x50mm square hollow section (SHS).

Cut the 50x50mm SHS 75mm shorter than the fluted post and slide into the column. Ensure the square section is positioned inside the column and fix using two 12x35 hex head screws per side, at both ends, as detailed in Figure 5.0 and 5.1.

Slide the top of the 68 Outback column over the post bracket until it is flush with the underside of the fascia beam.

The unfluted faces of the column should be aligned with each face of the post to beam bracket. Fasten the 68 Outback column to the post bracket using two 12x20 hex head screws either side (Figure 5.0).

Use construction props or bracing to hold columns in position, but do not concrete in place at this stage.

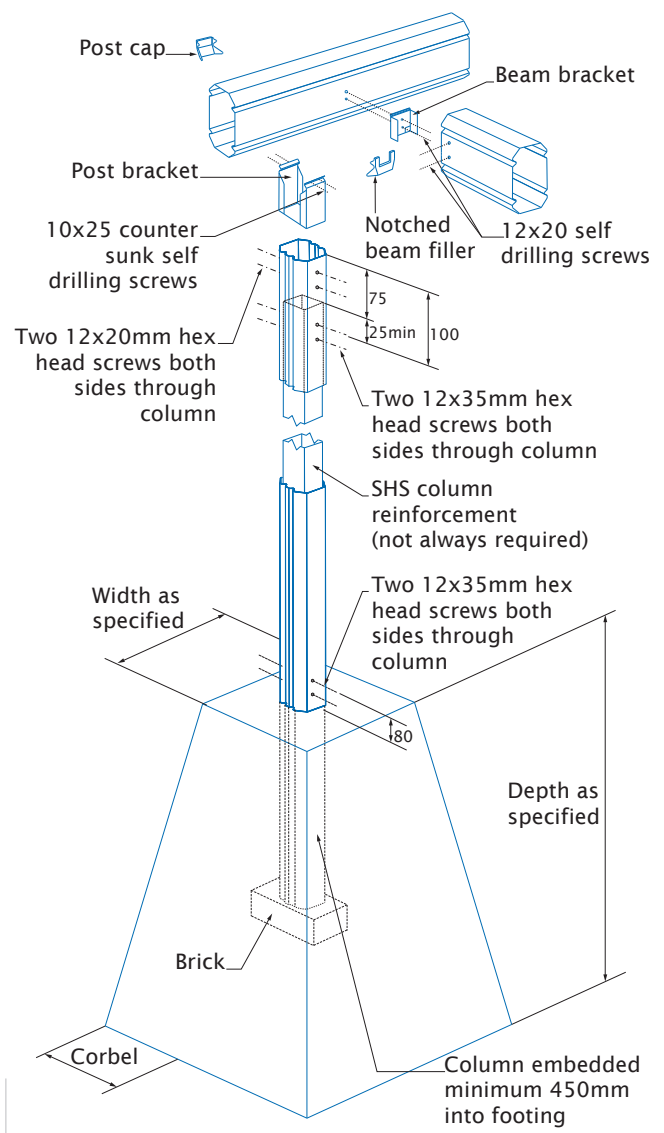


Figure 5.0

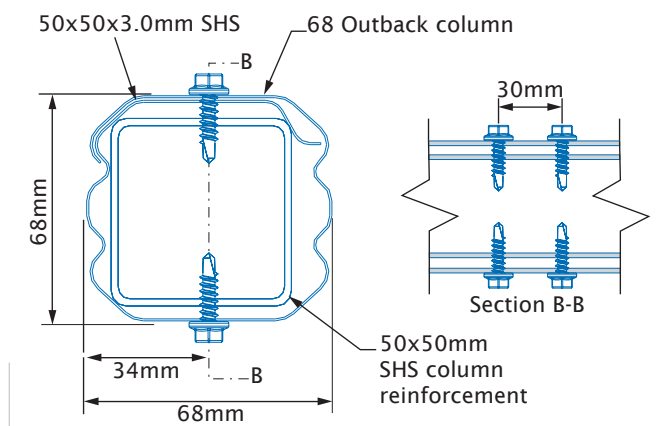


Figure 5.1

## Square Hollow Section (SHS) Columns

If 65x65mm or 75x75mm square hollow sections (SHS) have been supplied, an alternative post to beam connection method is used.

Measure from the underside of the beam to the top of the brick and cut posts to this length at each post location. Screw the corner connector or inline connector to the top of the SHS post with two 12x20 hex head self drilling screws on either side of the column. Stand the post in position. Screw the connector to the outside face of the beam with 12x20 self drilling hex head screws (Figure 5.2).

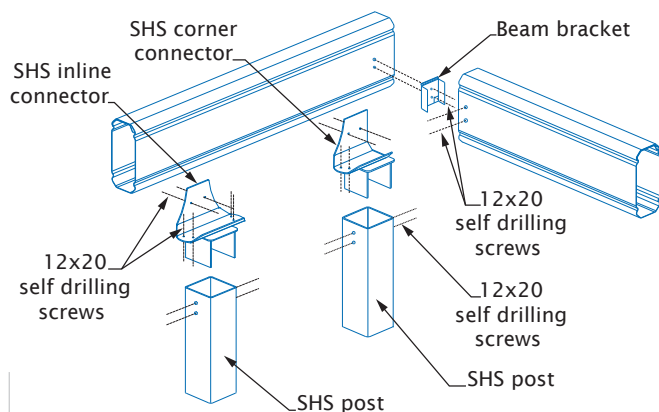


Figure 5.2

**Note:** The connectors must be fixed to the outside face of the beam to allow for the internal box gutter and mounting flashings.

Use construction props or bracing to hold columns in position, but do not concrete in place at this stage.

## Footing Plates

Footing brackets are available if the posts are to be fixed to an existing concrete slab. Establish the column lengths by measuring the distance from the underside of the fascia beam to the concrete slab, less the thickness of the footing plate.

## SHS Reinforced Column Footing Plate

Slide the SHS reinforced footing bracket into the bottom of the column, and fasten with two 12x20 hex head screws on either side of the post. Locate the top screws approximately 100mm from the base of the footing

plate, and the bottom screws 50mm from the base. This is shown in Figure 5.3.

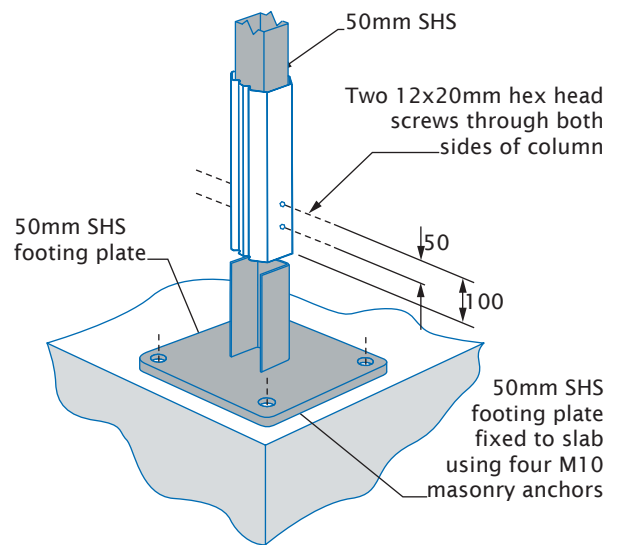


Figure 5.3

Slide the top of the column over the post bracket and align the column and footing bracket. (Note: It may be necessary to lift the fascia beam slightly to slide the column over the post bracket). The unfluted faces of the column should be aligned with each face of the post to beam bracket. Fasten using two 12x20 hex head screws either side as shown in Figure 5.0.

Use construction props or bracing to hold columns in position but do not bolt to the concrete slab at this stage.

## SHS Column Footing Plate

Slide the SHS column footing bracket into the bottom of the column, and fasten with two M10 bolts through the post (Figure 5.4).

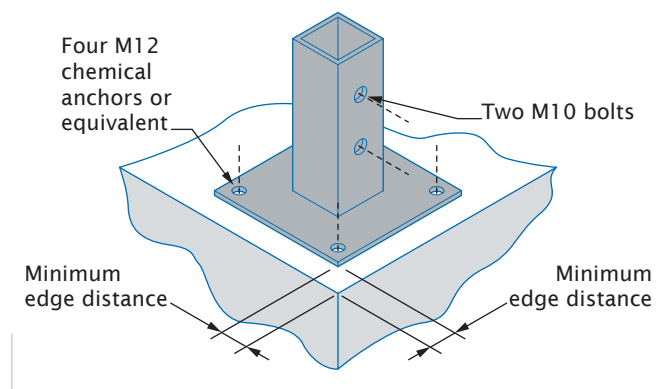


Figure 5.4

Screw the corner connector or inline connector to the top of the SHS post with two 12x20 hex head self drilling screws on either side of the column. Stand the post in position and screw the connector to the outside face of the beam with 12x20 self drilling hex head screws (Figure 5.2).

**Note:** The connectors must be fixed to the outside face of the beam to allow for the internal box gutter and mounting flashings.

Use construction props or bracing to hold columns in position, but do not bolt to the concrete slab at this stage.

# GUTTER INSTALLATION

After the structural framework is complete, the internal box guttering can be installed.

One mitre per louvre bank will be supplied with a pre-cut pilot hole. This pilot hole is to assist in cutting an opening for the downpipe outlet. Cut an opening in the mitre to fit the size of your specific downpipe outlet. The outlet is to be positioned through the hole, and tightly fastened in place using four rivets (Figure 6.0). Remove any swarf and silicone all material connections and joins.

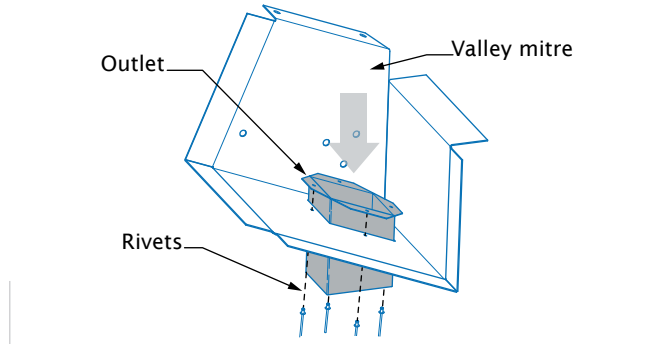


Figure 6.0

Before affixing the guttering, the valley gutter mitre (with outlet) and the ridge mitre on the opposite rafter are to be fastened in position, with the remaining mitres clamped in the appropriate position. Measure the appropriate length between the gutter mitres as to trim the gutters back to. The measurement should be taken from the position indicated in Figure 6.1 on each mitre.



Figure 6.1

## Parallel to Ridge Unit

Begin installation by securing a valley mitre (with outlet) in its appropriate position. The mitre must nest in the corner with the side faces resting flat against the Outback beams (Figure 6.3). Secure this mitre through to the side fascia beam using 12x20 hex head self-drilling screws. Be sure not to fasten to the rafters at this stage.

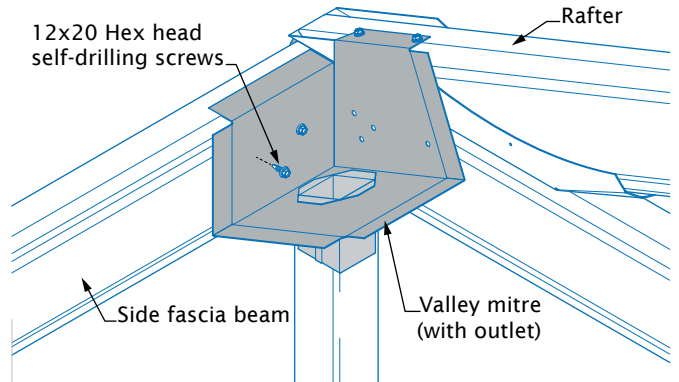


Figure 6.3

From that mitre, the rafter gutter is to be positioned. Using clamps will assist in holding the gutter firmly and

## Parallel to Ridge Gutter and Mounting Extrusion Layout

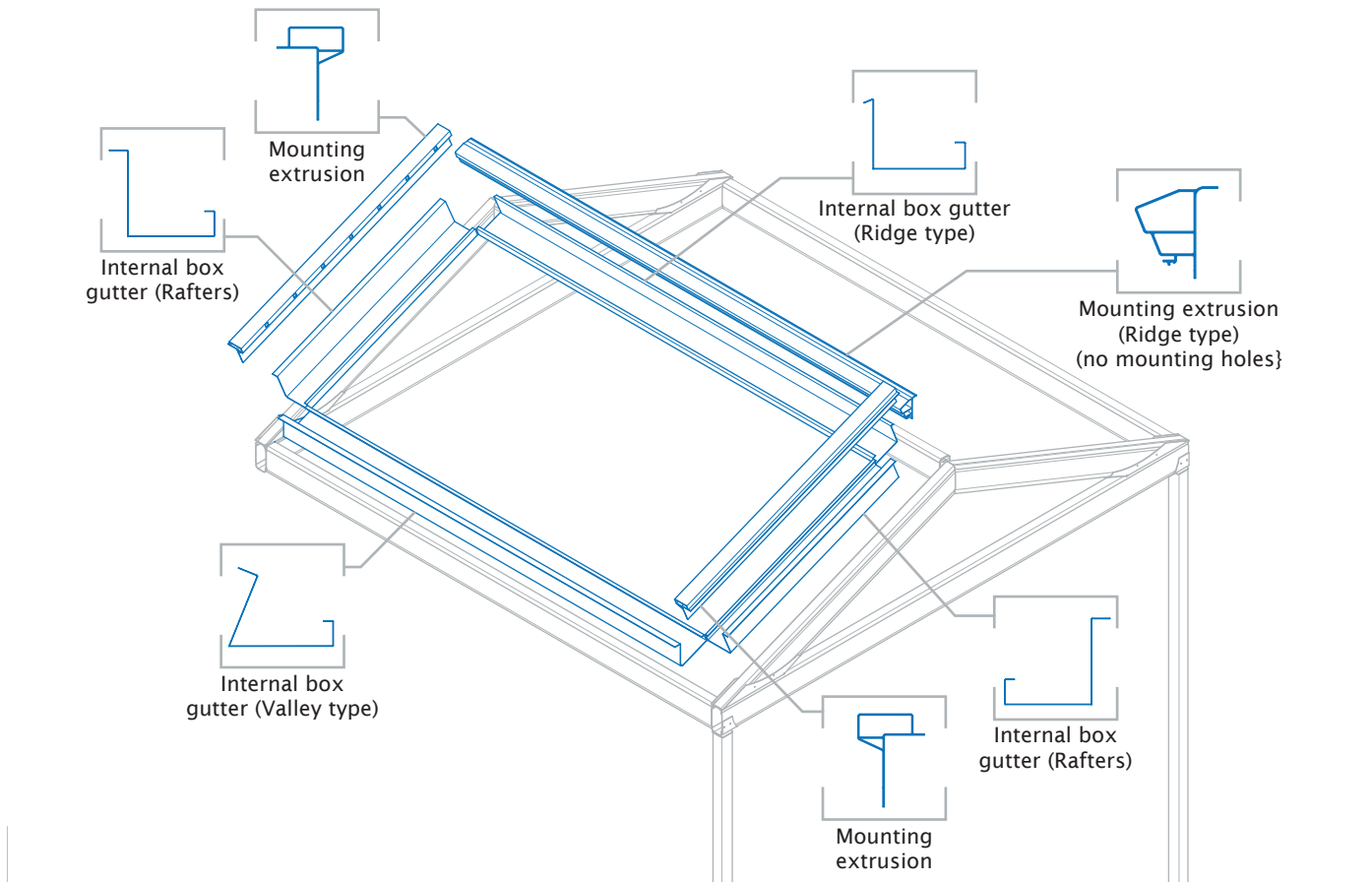


Figure 6.2

accurately in place. Do not fasten this gutter as fasteners will obstruct the placement of mounting extrusions.

Before fastening the gutter, situate the ridge mitre in position to make sure the gutter fits between the valley and ridge mitres (Figure 6.4). The gutter must be positioned against the ridge mitre with roughly 2mm gap between the end of the gutter and the bend in the mitre (Figure 6.1).

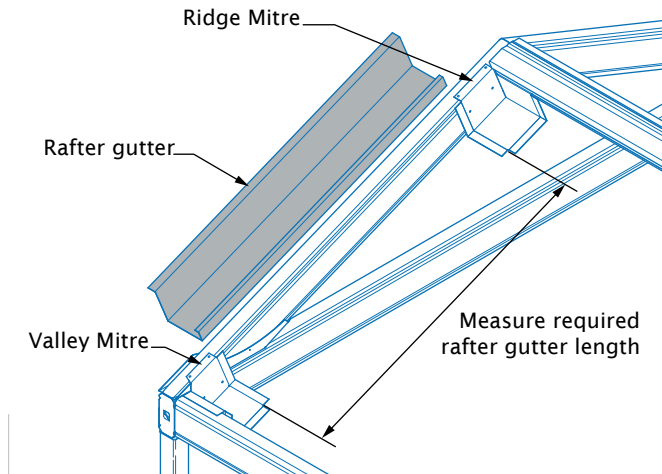


Figure 6.4

The ridge gutter must then be positioned in the ridge extrusion (figure 6.5) and supported in place. Make sure the length of the gutter is correct between ridge mitres. When the gutter is positioned correctly, secure through the underside of the ridge extrusion using 12x35 hex head self-drilling screws. A hex head extension will be needed to allow the drill to reach the fastening point. A pilot hole may also need to be pre-drilled through the ridge extrusion to allow the screw to drive easier.

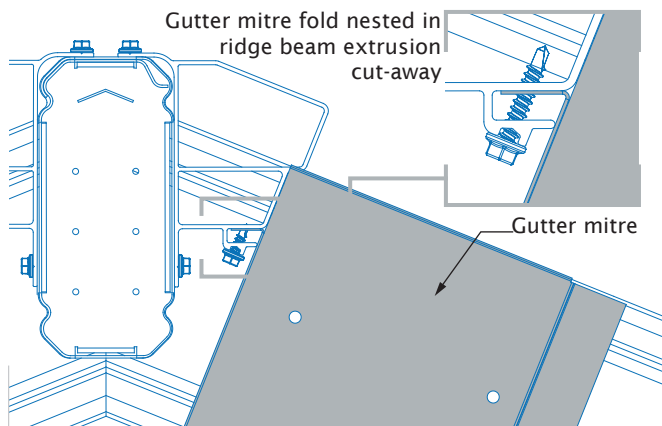


Figure 6.5

The unfastened ridge mitre can now also be secured through the underside of the ridge extrusion.

Following on, the remaining rafter gutter is to be positioned against the rafter and ridge mitre and clamped in place. The valley gutter must now be positioned

against the side fascia beam and also clamped in place. The final valley mitre can then be positioned and the gutters checked for correct length and placement. When all components are positioned correctly, the unsecured valley mitre, and valley gutter can be fastened.

The mounting extrusions can then be positioned along the rafters and fastened using 10x16 hex head self-drilling screws (see 'Sunroof Framework Assembly'). This will subsequently secure the rafter gutters and mitres.

Place the mitre support bracket in the corner of the mitre, beneath the folds of the gutters (Figure 6.6). Cut the fold in the gutter back to the bend, approximately 15-20mm from the end (Figure 6.6).

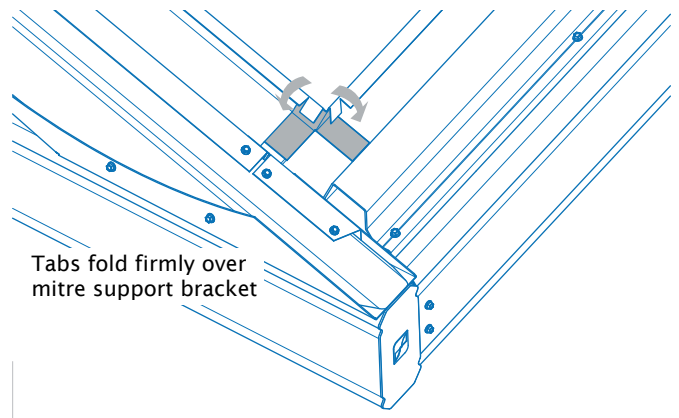


Figure 6.6

Using vice grips, hold the bottom face of the gutter flush with the bottom face of the mitre and fold the cut on the gutter fold over the mitre support bracket (Figure 6.6). The gutter and mitre support bracket must now be secured using a rivet (Figure 6.7).

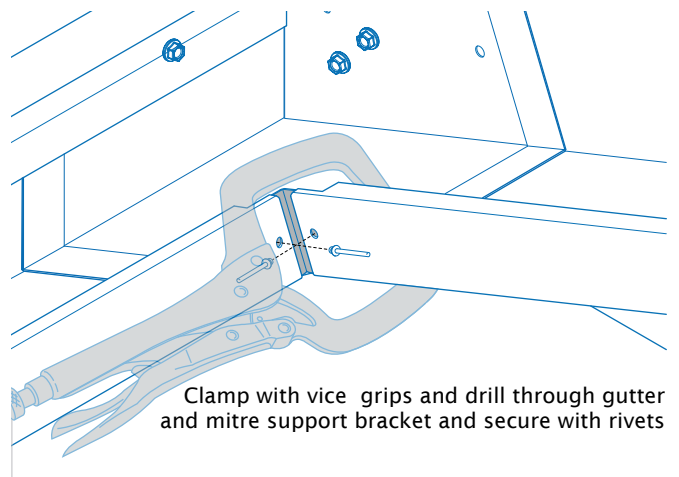


Figure 6.7

Repeat this for each side of the mitre support bracket, and for each mitre. Silicone all rivet holes and material connections and joints to ensure the gutter is waterproof.

# SUNROOF FRAMEWORK ASSEMBLY

## Parallel to Ridge Unit

The rafter mounting extrusions come as a standard 3 metre length. They run perpendicular to the louvres and have square holes in the front face. There are two alternative extrusions, referred to as type 1 and type 2. Type 1 is the mirror image of type 2, and each can be identified by the small round holes located at the 'non-fixed' end (Figure 7.0).

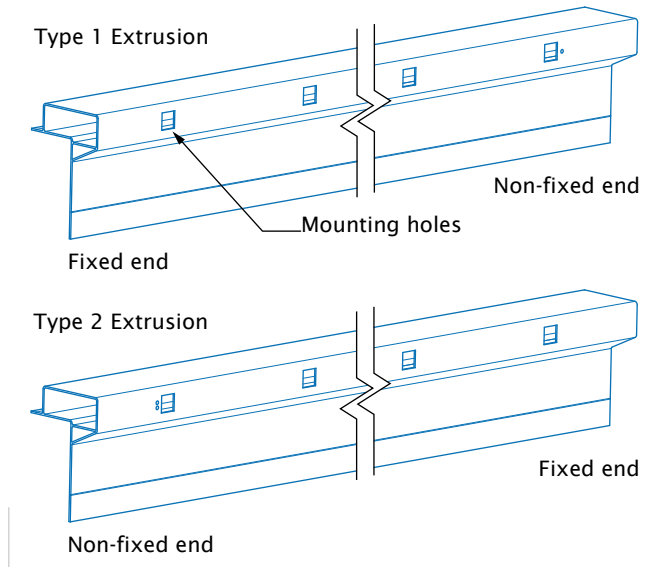


Figure 7.0

For Gable Sunroof units with rafters shorter than three metres, one type 1 and one type 2 extrusion will be used each side of the gable. The 'fixed' end of the rafter mounting extrusion will always be positioned at the valley beam (Figure 7.1).

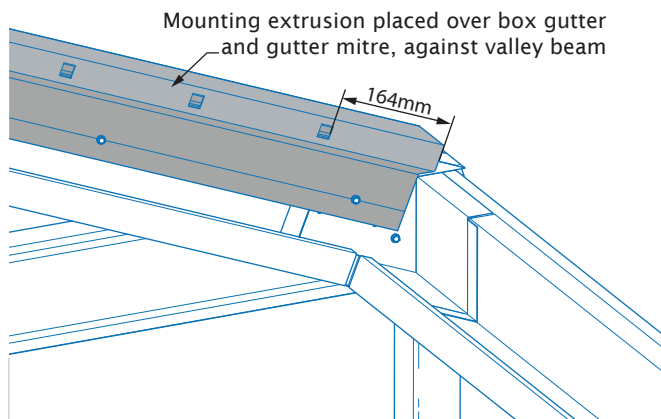


Figure 7.1

For rafters shorter than three metres the mounting extrusion will need to be cut back from the 'non-fixed' end (end with the small hole on the last square mounting hole) as to fit against the ridge mounting extrusion. It is important that the extrusions are cut from the correct end so the variable flashings will fit the unit.

Position the first extrusion so the end not displaying the small holes is pushed hard up against the box gutter and over the gable rafter, as shown in Figure 7.2. This end will become the fixed end and the first hole will be automatically set at 164mm along the extrusion. Clamp the extrusion to the beam and screw fix with 12x20 self-

drilling screws with neo washers at 900mm centres. Repeat this step for the other type of the extrusion on the other side, being sure to use the opposite 'type' of extrusion.

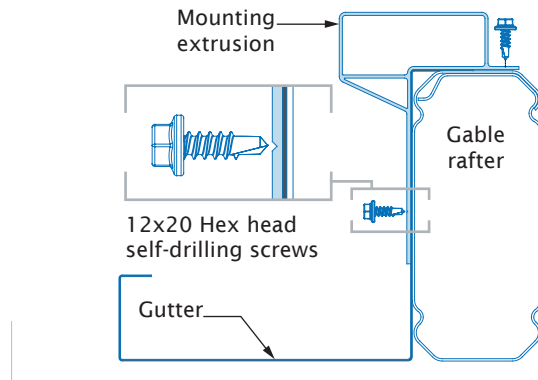


Figure 7.2

For Gable Sunroof units longer than 3 metres a second mounting extrusion will need to be used and cut back to suit the frame of the Sunroof. Where a type 1 mounting extrusion is used at the fixed end, a type 2 mounting extrusion is placed alongside to create the additional length. Similarly, where a type 2 extrusion is used at the fixed end, a type 1 will be placed alongside.

Position the first extrusion with the fixed end at the valley beam as previously described.

Measure the remaining distance between the mounting extrusion edge and ridge extrusion and cut the second extrusion (use the alternate type) to fit the length. It is important to cut the second extrusion from the correct end, do not cut the end which has the dots.

The dots should now meet where the two extrusions are joined. This is very important as this will ensure that the 195mm spacing remains between the louvres. A spacing template has been included to make sure this distance is exact (Figure 7.3).

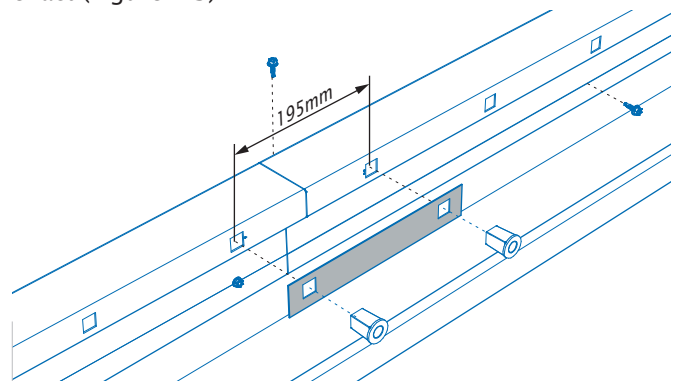


Figure 7.3

Clamp the second extrusion in place and use a rubber mallet to hammer two plastic end cap bushes into the template to hold it across the join. Screw fix the extrusions to the beam with 12x20 self-drilling screws at 900mm centres.

The mounting extrusions should be fixed in two locations, through the top lip of the extrusion, and the front face (above the gutter water level), with the screws staggered (Figure 7.2).

## INSTALLING INFILL PANELS

Two styles of header flashings are available to neatly finish the base of infill panels, one is used on header beams with aesthetic guttering, and the other for headers without gutter. Gable infill panels are to be cut in triangular shapes to fit the end frame. Panels can be painted to the desired colour before installing.

End struts are fixed mid-span of the header to a header beam bracket at the base and an end strut plate at the ridge with four 12x20 hex head self-drilling screws (Figure 8.0).

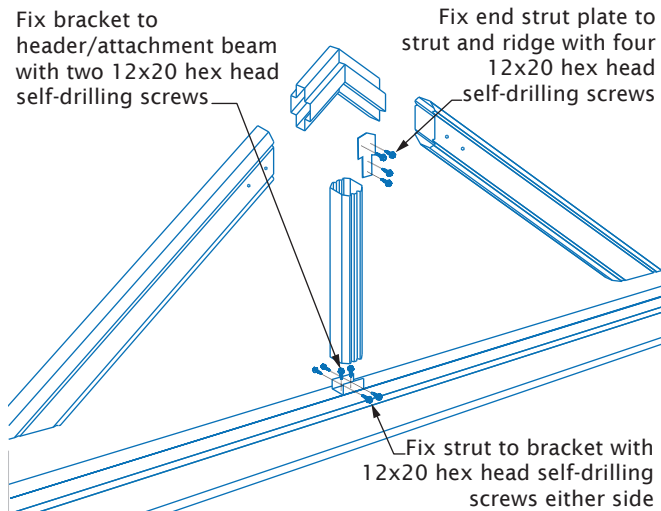


Figure 8.0

### Header Beam with Gutter

Attach the header flashing to the rear gutter lip with rivets. Infill panels are fixed through the top groove of rafters and the end strut with 12x20 hex head self-drilling screws at 500mm centres. Panels are fixed at the base through the header flashing with rivets at 500mm centres (Figure 8.1).

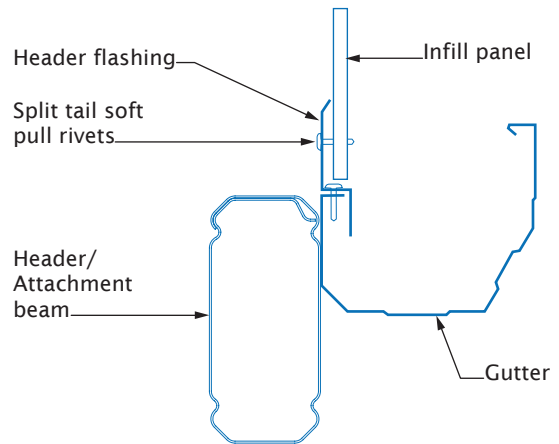


Figure 8.1

### Header Beam without Gutter

Infill panels are fixed through the top groove of rafters and the lower groove of the header beam with 12x20 hex head screws. Fix at 500mm centres.

Panels are fixed to the end strut at the same spacings. Attach the header flashing to the underside of the header beam with 12x20 hex head screws to neatly finish the base of the infill panels (Figure 8.2).

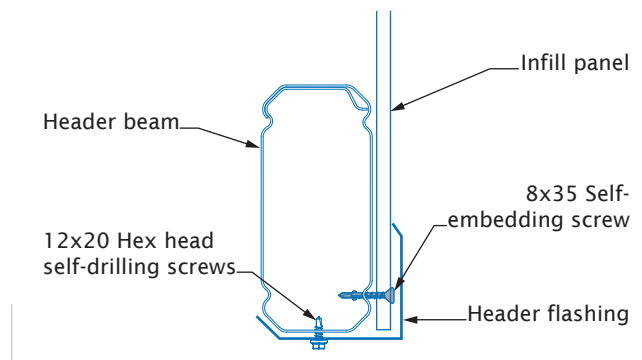


Figure 8.2

## DOWNPIPE INSTALLATION

Before attaching the downpipe, rivet the downpipe bracket to the column and bend its flanges along the break-line to conform to the shape of the downpipe.

The outlet is located in the valley mitre so the downpipe offset elbow can drop and return to the upright column.

Slide the downpipe over the gutter outlet (pop) and rivet into position. Rivet the downpipe to the downpipe bracket. Weatherproof all fasteners and joins with silicone.

**Note:** Each side of the Gable Sunroof will require a gutter outlet and downpipe and if your Sunroof unit has multiple louvre banks, each bank will also require a downpipe per side.

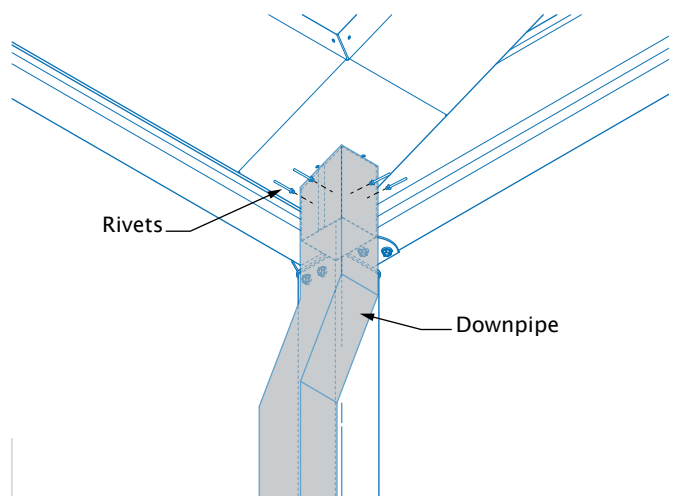


Figure 9.0



## CAPPING

To prevent moisture from entering the beams, and for aesthetics, any beams with exposed ends require end caps be fitted. Align the end cap and push into the exposed beam end. The post caps can be fitted over the post-beam connection. Align the two lugs with the two exposed holes of the post bracket and push firmly.

## LOUVRE INSTALLATION

### Spring and Spacer Ends

Establish the correct closing up and closing down orientation for each louvre and prepare the ends accordingly. Slide a spring bush into the end of each spring and thread over the end cap shaft.

At the opposite end of the louvre, slide a plastic spacer (use the mark on the spacer to orientate it correctly) over the end cap shaft as illustrated in Figure 10.0.

Please note that the actuator will always need to be located at the same end as the spacers.

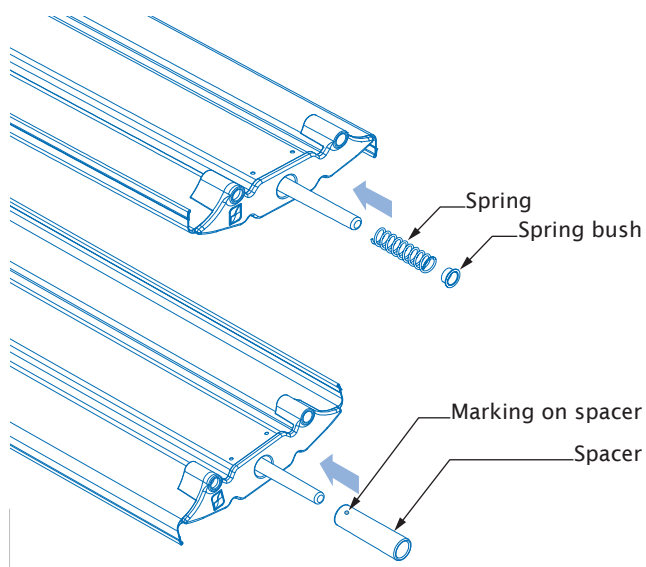


Figure 10.0

### Install Louvres

Install the first louvre by lifting it up and over the beam at the spacer end. Insert the other end (spring end) into the first hole and compress the spring completely as shown in Figure 10.1.

Lower the spacer end and slot it into the aligning hole.

Determine the approximate location for the actuator, and leave two louvres out to allow for easy installation of the actuator cover.

**Note:** The actuator can be located anywhere along the mounting extrusion, however, it must be at least two louvres in from the ends and three louvres either side of a join in the mounting extrusions.

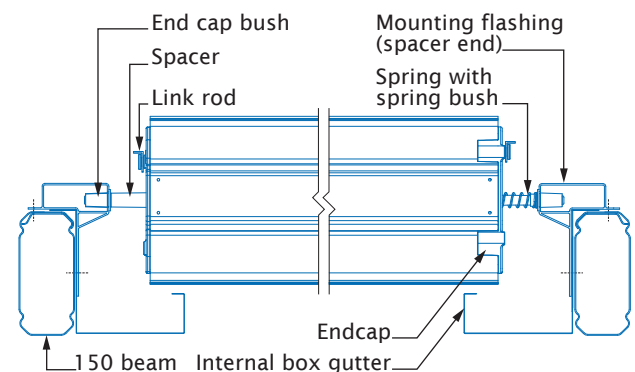


Figure 10.1

## ACTUATOR INSTALLATION

### Electronic Control Box Installation

The control box must be installed in a position that is protected from direct weather and sharp objects. The control box must not be installed within 2 metres of a large air-conditioning unit or large sources of electrical noise.

A suitable location may be to mount the box against an exterior wall, directly under the eaves. Alternatively, the box could be located in the roof space. Ensure the cable glands are pointing down from the unit to ensure water does not enter it (Figure 11.0). Screw the plastic attachment feet to the base of the enclosure box in all four corners using the small bolt/nut provided.

A standard single mains power point is required to be located directly next to the control box (within 1800 mm).

Lay the main cable on the ground from the control box position to the motor position to ensure there is enough

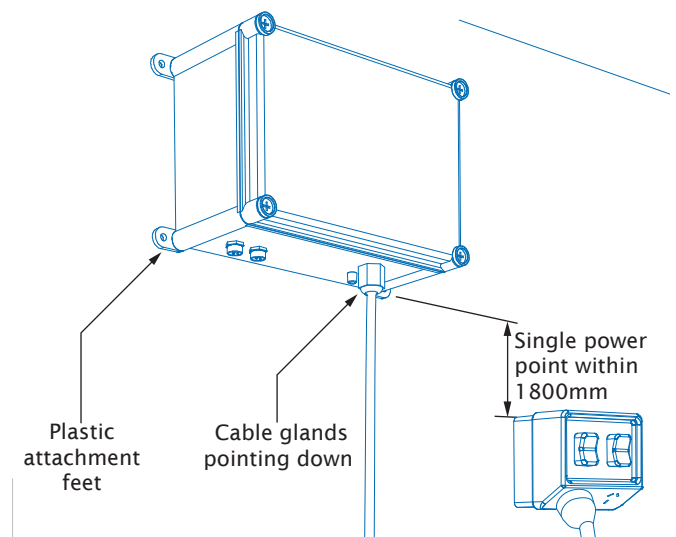


Figure 11.0

overall cable length. The kit has been supplied with a 6 metre connection cable for both the actuator and rain sensor. If additional cable is required, an extension cable can be purchased and used for up to 18 metres in length.

### Rain Sensor Installation

Select a flat area on the structure that is open to the weather and does not interfere with the louvre rotation and fix the rain sensor and bracket using two 12x20 hex head self-drilling screws.

Run the rain sensor cable back to the control box (an extension cord can be provided if needed). Simply plug the cable into the corresponding three pin connection at the bottom of the control box. The connection is marked 'rain sensor'. Finally tighten the plastic locking nut.

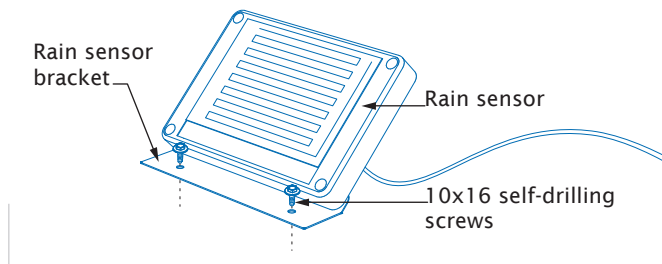


Figure 11.1

### Actuator Assembly

Pre-assemble the actuator components at ground level. Attach the drive arm to the actuator with an M8 10x20 shoulder bolt, and secure with an M8 washer and lock-nut (Figure 11.2).

Please note that the drive arm should be orientated so the square edge (with 90° angle) is facing the actuator.

**Note:** The drive arm provided may be folded in the opposite direction to the component shown in Figure 11.2. The appropriate hand has been determined by Stratco, based on the opening direction of the louvres relative to the intended motor location.

Attach the adjustment bolt to the other end of the actuator with an M8 10x20 shoulder bolt (Figure 11.2). Secure with an M8 washer and lock-nut (do not over tighten the lock nut). Ensure the flat surface on the adjustment bolt faces up.

Thread the M16 nut on to the end of the adjustment bolt so the nut is approximately 20mm in from the end of the adjustment bolt (Figure 11.2).

Insert the adjustment bolt through the circular cut out located in the side of the actuator cover, and secure the cover with the M16 dome nut. The actuator and cover is now ready to be fixed to the mounting extrusion.

### Install Actuator and Actuator Cover

Position the cover so the top lip hangs over the top face of the mounting extrusion as illustrated in Figure 11.3. The lip should be located centrally between the end cap bushes. Also, allow a minimum of two louvre spacings from the end of the unit.

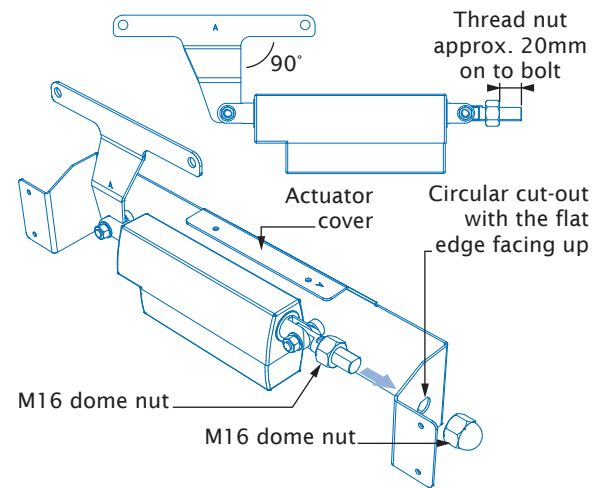
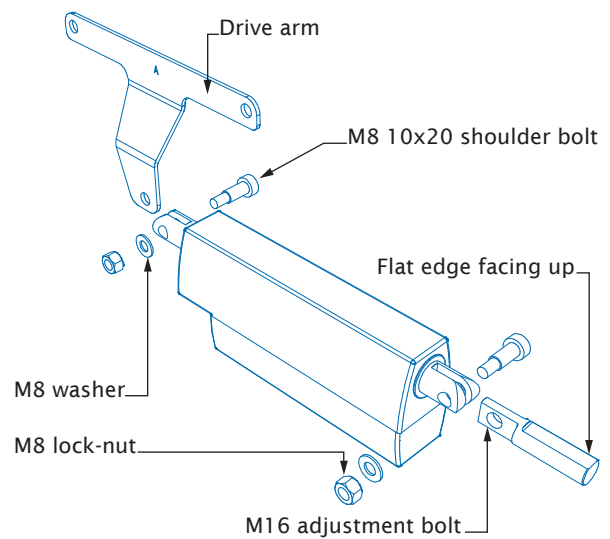


Figure 11.2

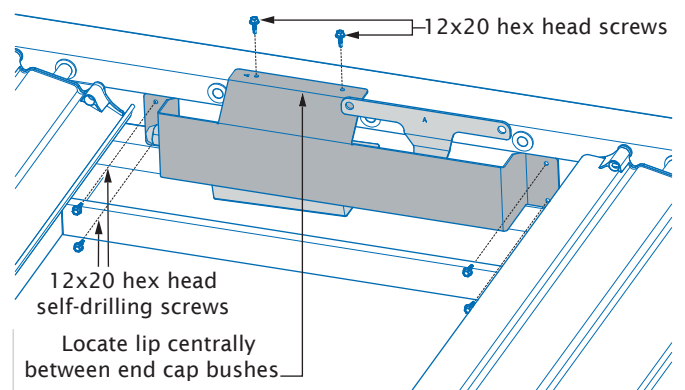


Figure 11.3

Screw the top lip of the cover to the rafter mounting extrusion with two 12x20 self-drilling screws with neo washers. Screw the front face of the cover to the mounting extrusion with four 12x20 self-drilling screws (Figure 11.3).

### Run Cable to Control Box

**Note:** The control box must be unplugged from the mains power.

Run the actuator connection cable from the actuator to the control box location. The cable must be protected from the weather and sharp objects. The cable can be

installed so that it runs through any beam, passing through the end of the beam and fascia, eaves and finally to the control box location.

Drill a hole next to the actuator cover, ensuring it is above the gutter line. Use a 20mm drill bit with 5mm pilot hole to drill through the front face of the extrusion and beam. A wire pull cable may be required to pull the cable through and out the end of the beam. This is shown in Figure 11.4.

Ensure the right end of the cable is threaded through the hole so it matches the control box. The actuator connection cable has a two pin female end that connects with the two pin male plug on the base of the control box, marked 'Motor 1'.

Rubber grommets have been supplied to protect the cable and must be installed at this stage. Slit half way

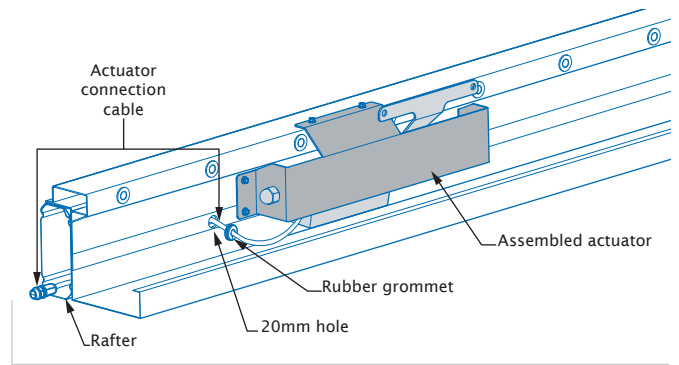


Figure 11.4

through the grommet so that it can be threaded over the cable and into the hole.

Plug the two pin cable end into the control box and turn the power on.

## INSTALLING COVER FLASHINGS & RIDGE CAPPING

### Parallel to Ridge Unit

Along the Valley Beam the fixed flashing is to be mounted and screw fixed using 12x20 hex head self-drilling screws at 900mm centres over the lip of the box guttering, facing inwards towards the louvres (Figure 12.0).

These flashings are to be positioned on each valley beam.

On the ridge mounting extrusion the variable flashing is similarly required, this time fixing to the ridge beam extrusion at an overhang distance allowing nesting of the louvre and flashing (Figure 12.1).

Fix flashings along their lengths using 12x20 hex head self-drilling screws at 900mm centres.

### Barge Flashing

The barge flashings are required over the gable rafters at the end of the unit.

At the ridge end, the flashing must be trimmed to an angle of 22° (Figure 12.2). From the ridge end, the flashing must be marked out to the same length as the rafter and trimmed back accordingly (Figure 12.3 & 12.4).

Once trimmed, the side tab must be folded in 90° in and the top tab folded in to the side tab (Figure 12.4).

Rivet through the tabs to secure the end.

Position the barge flashing on the gable rafters, aligning at the ridge. Fasten through the front face using the supplied rivets at 500mm centres and also through the top face to the rafter flashing using 12x20 hex head self-drilling screws with neo washers (Figure 12.5).

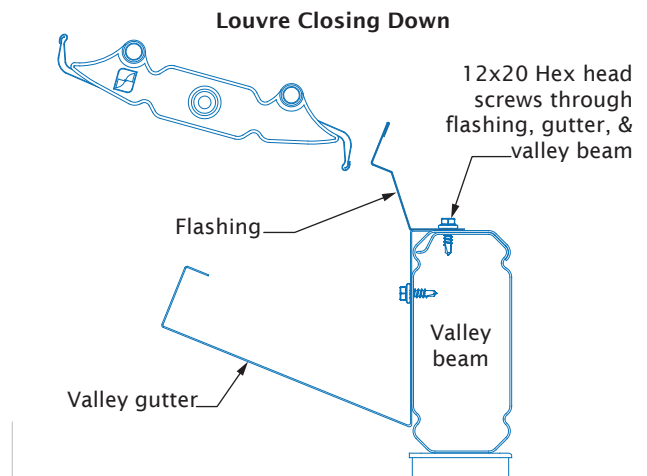


Figure 12.0

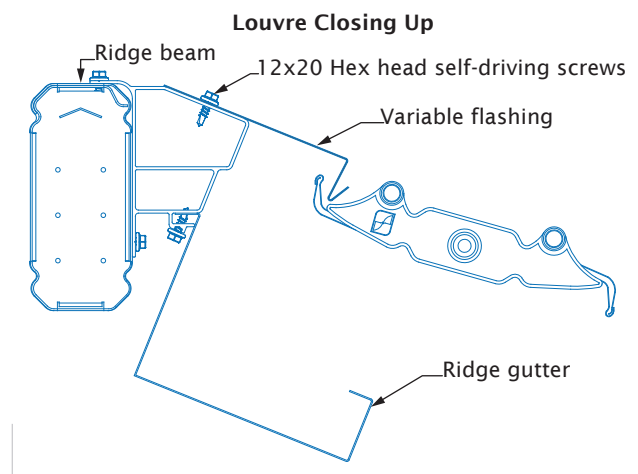


Figure 12.1

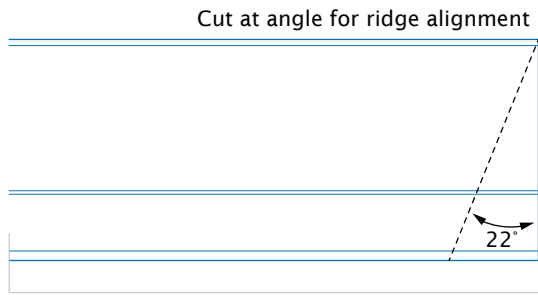


Figure 12.2

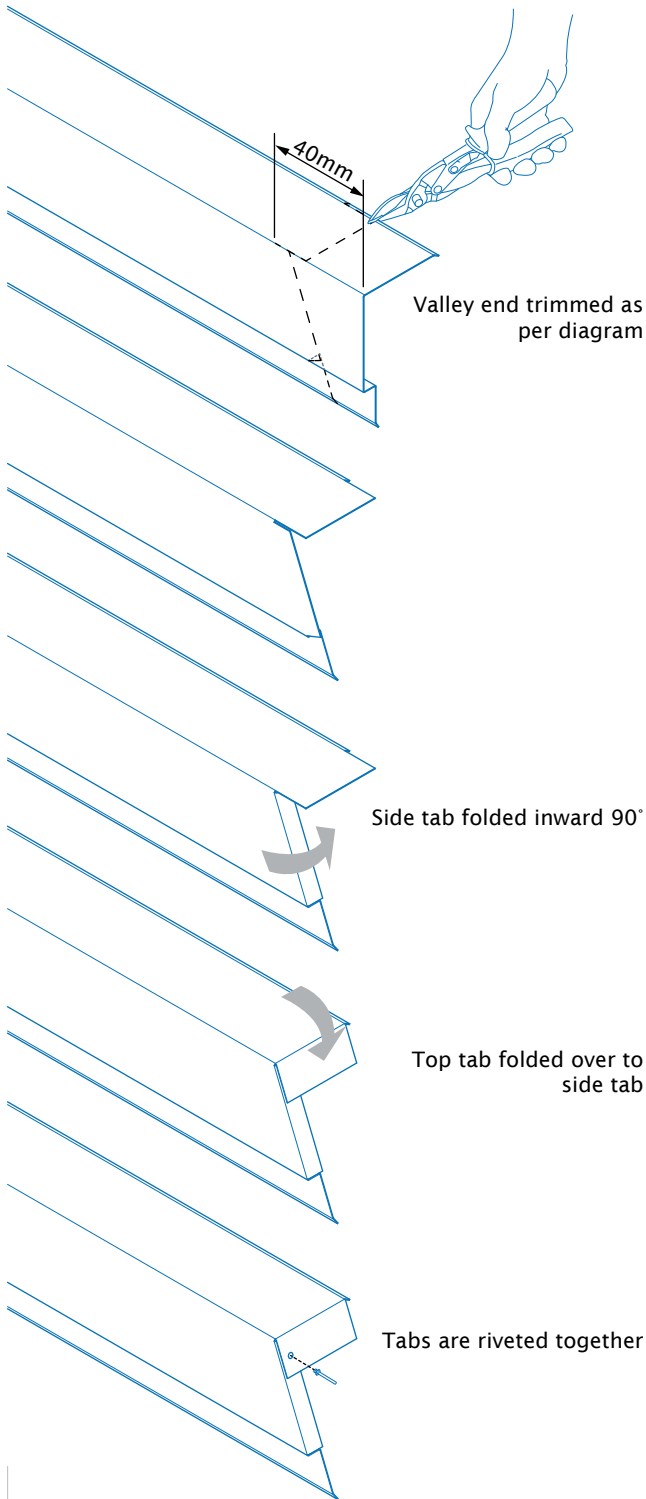


Figure 12.4

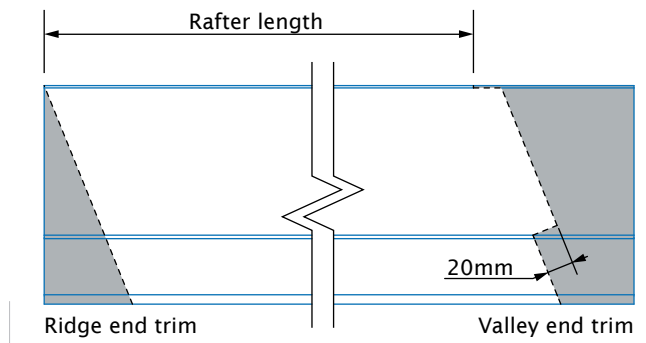


Figure 12.3

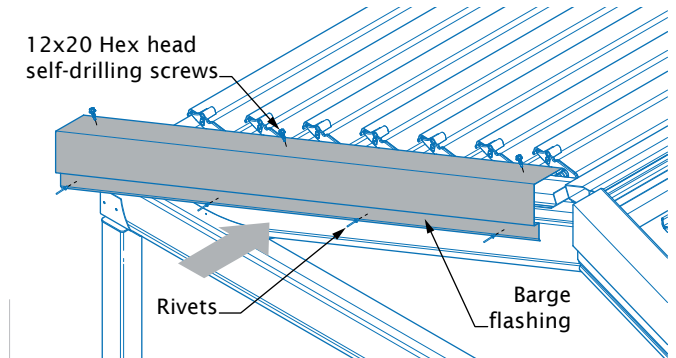


Figure 12.5

### Ridge Capping

A ridge cap is finally mounted over the barge flashing and ridge beam/mounting extrusion, fastened with 12x20 hex head self-drilling screws (with neo washer) at 500mm centres along the ridge cap (Figure 12.6).

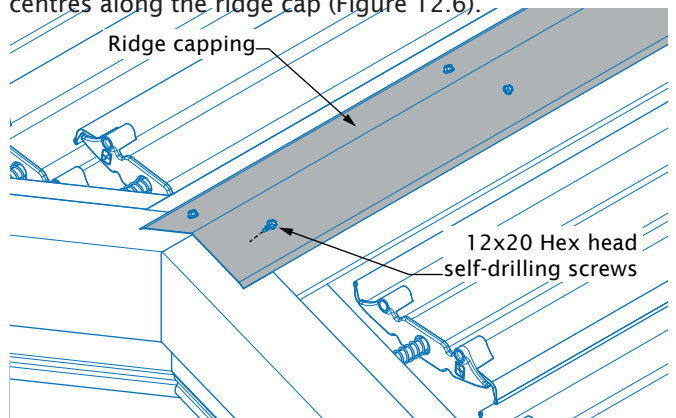


Figure 12.6

## SHROUD INSTALLATION

Shroud mounting brackets must be evenly spaced and fastened to the underside of the ridge beam using two 12x20 self-drilling screws per bracket (Figure 13.0).

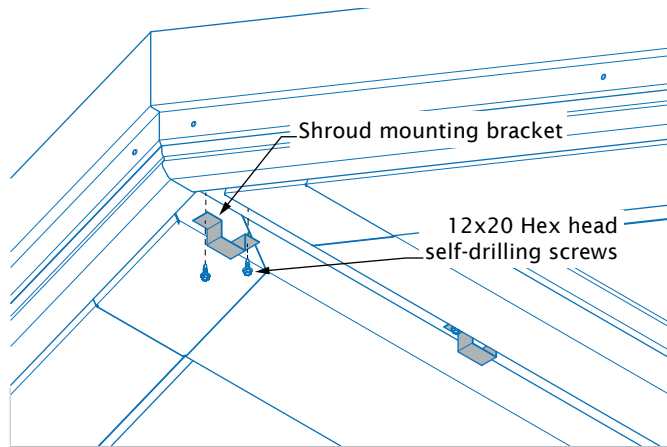


Figure 13.0

The shroud is to be lifted into position and secured to the face of the shroud mounting brackets using rivets (Figure 13.1). Be sure not to bend the shroud.

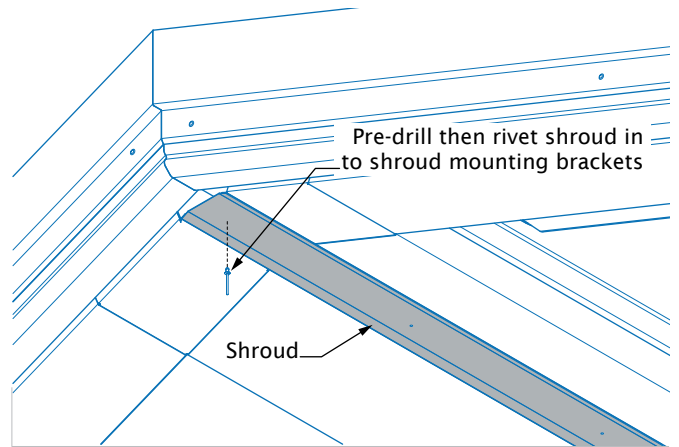


Figure 13.1

## INSTALL LINK RODS & LINK PINS

Lay the link rods on the ground, taking care not to bend them. The short angle should be facing upwards, towards the sky. Determine where the link rod needs to be cut by counting the number of holes required for the louvres. If the louvre bank is longer than 3m (14 louvres) a second link rod will be required to make up the extra length. Mark and cut the link rod, allowing 50mm overhang past the final hole as shown in Figure 14.0.

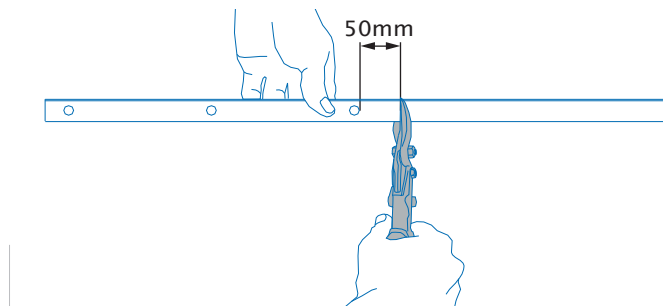


Figure 14.0

Keep the rods straight at all times when handling.

If two link rods are required, for louvre banks over 3m (14 louvres), the link rods will need to be joined using a Link rod joiner. Make sure to join the link rods at the uncut ends. **Rivet the link rod joiner to the link rod, though the 6 predrilled holes on the joiner as shown in Figure 14.1.**

**Note:** The join of the link rods should always be over the join in any mounting extrusions.

Connect both link rods, located at each end of the louvres, by pushing a link pin through the appropriate hole in the link rod, and into the end cap. This is shown in Figure 14.2. The link pins should push in and snap fit into place for a solid hold. Repeat this process for the remaining louvres, ensuring all louvres are orientated correctly and each lap is the same as the previous lap.

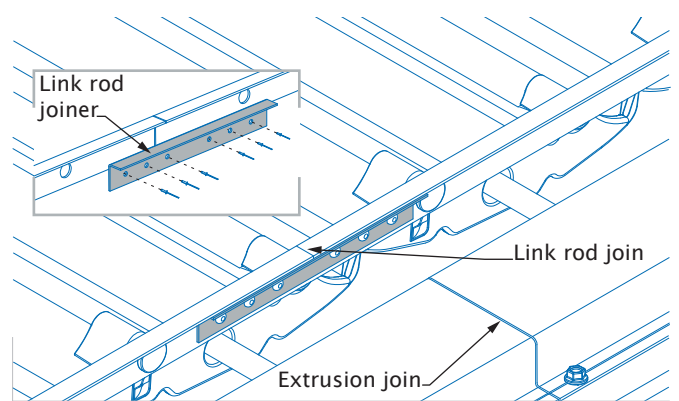


Figure 14.1

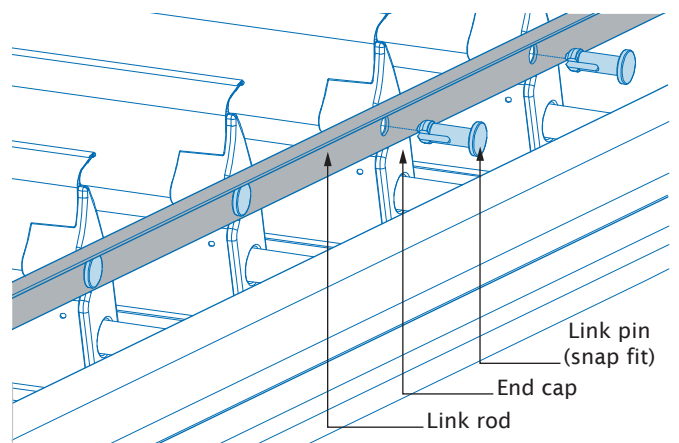


Figure 14.2

Leave two holes without pins where the drive arm will be fitted to the link rod.

If a link pin needs to be removed once it has been installed, squeeze the pin's legs together with needle nose pliers and push it towards the link rod until it releases.

## Connecting Drive Arm to Link Rod

Line the drive arm up with the two remaining link rod holes. Rotate the first free louvre so the end cap hole is also aligned.

Insert a bush through the drive arm and link rod, and into the first louvre end cap. Similarly, insert another bush into the back of the end cap and secure with an M5 6x30 shoulder bolt and M5 lock-nut. The shoulder bolt head should be recessed into the back of the end cap so that it is not visible. The M5 lock-nut will be located on the drive arm side.

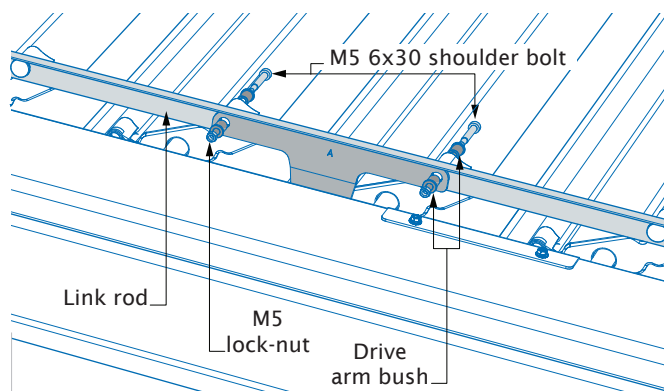


Figure 14.3

## ADJUSTING THE CLOSED POSITION

Use the remote control to drive the louvres until they are closed by holding the 'close' button down.

### Louvres Are Not Fully Closed

If the louvres have not closed fully, the position of the actuator must be adjusted. To adjust the position of the actuator, loosen the M16 nut by one to two rotations, and push the adjustment bolt away from the actuator, through the circular cut-out in the side of the actuator cover. Tighten the dome nut and use the remote control to open and close the louvres again (Figure 15.0).

Repeat this step until the louvres are fully closed, without deflecting the link rod.

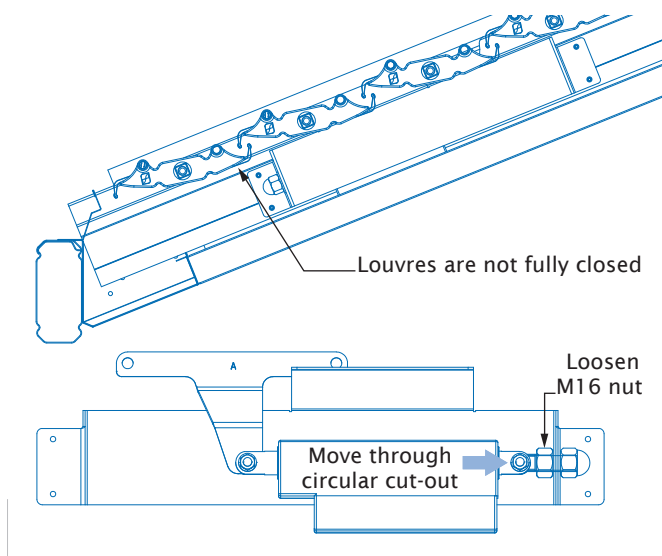


Figure 15.0

**Note:** The louvres are in the fully closed position when the link rod becomes stiff (but does not deflect) at the drive arm. Ensure it does not back drive the motor when the 'closed' button is released, as this may reduce the systems life.

### Louvres Are Closing Too Tightly

If the louvres have over closed, the link rod can be seen to significantly deflect. To adjust the position of the actuator, loosen the M16 dome nut by one to two rotations, and push the adjustment bolt towards the actuator, through the circular cut-out in the side of the cover. Tighten the M16 nut and use the remote control to open and close the louvres again (Figure 15.1). Repeat this steps until the louvres are fully closed, ensuring the link rod does not deflect.

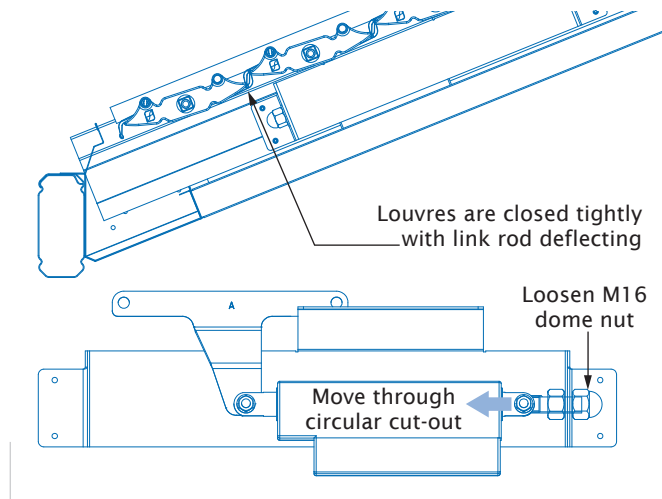


Figure 15.1

## LINK ROD FLASHING

### Link Rod Flashing

Flashings are to be mounted to each link rod using the supplied rivets at 900mm centres (Figure 17.0).

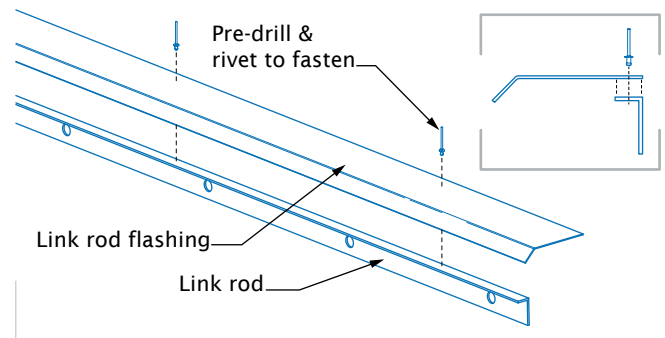


Figure 17.0

## FINAL POST HOLE FIXING

Re-check that the fall of at least 1 in 200 has been achieved towards the downpipes.

Fill the holes with approximately 150mm of concrete and use a shovel to agitate the concrete to remove air pockets. Recheck if the posts are plumb and repeat this process

until the hole is full. Once the concrete is set, remove any temporary bracing or props.

**Note:** The concrete must be finished slightly raised towards the column, ensuring water runs away from the column.

## HELPFUL TIPS

Double check all measurements and drilling locations before proceeding. Regularly check framework for square and vertical alignment to make sure it has not moved during construction.

Leave the plastic coating on the parts until they are about to be fastened to the unit. This will help prevent scratching of the finish.

Sweep the roof and clean gutters after the completion of work. Ensure any swarf and rivet stubs are removed as they can cause unsightly rust stains.

Do not allow soil to remain in permanent contact with the columns, as corrosion will result in the base of the column.

Leave all construction props and/or bracing in place until concrete is set or columns are bolted to the slab.

## CRITICAL NOTES

- A. Outback Sunroof units are not designed to take foot loading and at no stage should the louvre blades be walked on.
- B. Ensure the mains power is switched off and the control box is unplugged when connecting the electronic components.
- C. It is important each Outback Sunroof bank has a downpipe and the unit fall towards the downpipe is at least 1 in 200.
- D. For cases when the unit is less than 3 metres long only one mounting extrusion is required per side. Ensure that when you come to cutting the extrusions to length that the end with the identifying dots is cut. This is slightly different to units which are more than 3 metres long and need two mounting extrusions per side. For more details refer to 'Sunroof Framework Assembly'.

# TROUBLE SHOOTING

Problem	Check	Possible Cause	Remedy	
<b>The Sunroof louvres will not move when the 'OPEN' or 'CLOSE' buttons on the remote control are pushed.</b>	If the green 'CONTROLLER POWER ON' led on the electronic controller does not illuminate.	Faulty 240V ac power supply.	Check that the 240V AC power cord to the control box is plugged in and the power point is turned on.	
			Use another appliance to test for power at the power point.	
			Call an electrician if power is not available at the power point.	
		Check fuses/circuit breakers in switchboard.		
	If the green 'REMOTE SIGNAL RECEIVED' LED on the electronic controller does not illuminate while the remote control buttons are being pushed.	Faulty transformer or wiring in the control box.	Replace the entire control box and remote control unit if power is available at the power point.	
			Electronic controller not receiving signal from remote control unit.	Check that the green 'CONTROLLER POWER ON' LED on the electronic controller is illuminated. If it is not illuminated, refer to checks for faulty power supply/transformer.
				Check that the correct bank of louvres is selected on the remote control unit.
				Replace the batteries in the remote control unit.
	If the green/red 'ACTUATOR POWER' LED on the electronic controller does not illuminate while the buttons are being pushed.	Faulty electronic controller.	Replace the entire control box and remote control unit if the 'CONTROLLER POWER ON' LED is illuminated and the 'REMOTE SIGNAL RECEIVED' LED illuminates while the buttons are being pushed.	
			Check that the green 'CONTROLLER POWER ON' LED on the electronic controller is illuminated. If it is not illuminated, refer to checks for faulty power supply/transformer.	
			Check that the green 'REMOTE SIGNAL RECEIVED' LED on the electronic controller illuminates while the buttons are being pushed. If it does not illuminate, refer to checks for electronic controller not receiving signal from remote control unit.	
			Check that the correct bank of louvres is selected on the remote control unit.	
Damaged wiring or faulty connections.		Check the connections between the actuator, extension cable and control box are secure.		
		Check the actuator/extension cable is connected to the correct actuator power socket on the control box.		
		Remove and replace the extension cable if the actuator functions correctly when plugged directly into the control box.		
Faulty actuator.		Remove and replace the actuator if another actuator functions correctly when plugged into the extension cable or control box.		
Jammed mechanism.	Disconnect the actuator from the link rod and check that the louvres move freely through full range of travel.			
<b>The Sunroof louvres move in the wrong direction when the 'OPEN' or 'CLOSE' buttons on the remote control are pushed.</b>	If the 'ACTUATOR POWER' LED on the electronic controller glows green while the 'OPEN' button is being pushed and red while the 'CLOSE' button is being pushed:	Faulty extension cable.	Remove and replace the extension cable if the actuator functions correctly when plugged directly into the control box.	
		Faulty actuator.	Remove and replace the actuator if another actuator functions correctly when plugged into the extension cable or control box.	
	If the 'ACTUATOR POWER' LED on the controller glows red while the 'OPEN' button is being pushed and green while the 'CLOSE' button is being pushed.	Mechanism installed incorrectly.	Check that the mechanism is installed as per the installation manual.	
		Faulty electronic controller.	Replace the entire control box and remote control unit.	



# TROUBLE SHOOTING

Problem	Check	Possible Cause	Remedy
<b>The Sunroof louvres will not open or close fully when the 'OPEN' or 'CLOSE' buttons on the remote control are pushed.</b>	If the louvres move excessively in the fully closed position or do not open to 135° in the fully open position.	Faulty actuator.	Remove and replace the actuator if the piston stroke is not 105mm from fully retracted to fully extended position.
		Mechanism installed or adjusted incorrectly.	Check that the mechanism is installed and adjusted as per the installation manual.
		Jammed mechanism.	Check that the mechanism is installed and adjusted as per the installation manual.
<b>The Sunroof louvres open automatically when the rain sensor is wet.</b>	If the green 'RAIN SENSOR' LED and the red 'ACTUATOR POWER' LED on the electronic controller illuminate when the rain sensor is first wetted.	Faulty extension cable.	Remove and replace the extension cable if the actuator functions correctly when plugged directly into the control box.
		Faulty actuator.	Remove and replace the actuator if another actuator functions correctly when plugged into the extension cable or control box.
		Mechanism installed incorrectly.	Check that the mechanism is installed and adjusted as per the installation manual.
		Faulty electronic controller.	Replace the entire control box and remote control unit.
<b>The Sunroof louvres will not close automatically when the rain sensor is wet.</b>	If the green 'RAIN SENSOR' LED on the electronic controller does not illuminate while the rain sensor is wet.	Damaged wiring or faulty connections.	Check that the connections between the rain sensor, extension cable and control box are secure. Remove and replace the extension cable if the rain sensor functions correctly when plugged directly into the control box.
		Faulty rain sensor.	Remove and replace the rain sensor if another rain sensor functions correctly when plugged into the extension cable or control box.
		Remote control has been used to manually over-ride the rain sensor.	The louvres can still be closed manually by pushing the 'CLOSE' or 'CLOSE ALL' buttons on the remote control unit. The louvres will be closed automatically if the rain sensor is still wet an hour after being manually over-ridden. The electronic controller can be reset by turning the power off and back on.
	If the green 'RAIN SENSOR' LED illuminates but the red 'ACTUATOR POWER' LED on the electronic controller does not illuminate when the rain sensor is first wetted.	Faulty electronic controller.	Replace the entire control box and remote control unit.
		Damaged wiring or faulty connections.	Check the connections between the actuator, extension cable and control box are secure.
			Check the actuator/extension cable is connected to the correct actuator power socket on the control box.
			Remove and replace the extension cable if the actuator functions correctly when plugged directly into the control box.
		Faulty actuator.	Remove and replace the actuator if another actuator functions correctly when plugged into the extension cable or control box.
		Jammed mechanism.	Disconnect the actuator from the link rod and check that the louvres move freely through full range of travel.
		<b>The Sunroof louvres do not stay closed.</b>	If the part number on the actuator is not LA12 121000 - 1105242X.

## RAIN SENSOR FUNCTIONS

If the Sunroof is left open and it rains, the rain sensor will auto-close the roof. If someone chooses to override the auto-close function and re-opens the roof there is a one hour delay after override, following this the roof will auto-close again if raining.

If 'Open' is pressed while the roof is closing due to rain, the roof will stop. If 'Open' is pressed again it will open, then auto-close again an hour later if it is still raining.

**Note:** For the rain sensor to work correctly it needs to be dry and clean from dirt.

## MAINTENANCE

Your Stratco Outback Sunroof Verandah, Patio or Carport will give you many years of service by simply following the important recommendations set out in the Stratco 'Selection, Use and Maintenance' brochure.

Wash and wipe down your Stratco Outback unit with a soft broom, mop or sponge as frequently as you would wash your car to maintain its duco. More frequent cleaning and rinsing will be required in severe environments. Before doing this, disconnect power to unit to prevent injuries.

In corrosive industrial or marine environments, the manufacturer recommends the use of colour steel with a stainless steel base. Contact Stratco for further details.

## REMOTE CONTROL FUNCTIONS

Below is a description of the remote controls.

### Open

Press down the 'Open' button, then let go when the louvres reach the required finishing position. Press quickly and release to rotate in small increments. The unit will stop automatically in the fully open position.

### Close All

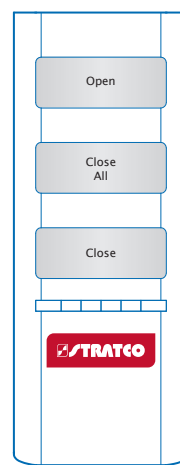
With multiple Sunroof units/banks this function will close all Sunroof units/banks with one push. With single Sunroof units this will also close the Sunroof. 'Close All' can be interrupted by pushing any button. On multiple bank units, it will start with bank 1.

### Close

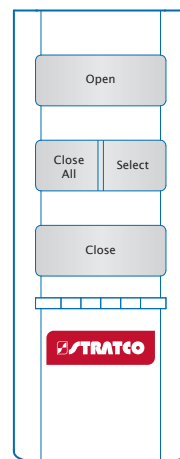
Press down the 'Close' button, then let go when the louvres reach to the required position. Press quickly and release to close in small increments. Will stop automatically in fully closed position.

### Select

This function is for multiple Sunroof units/banks only. The button will change the Sunroof motor that the remote is controlling. When pressed the red lights (above the select button) indicate which Sunroof is under control. Press again while light is on to index to next bank. This function lets you place separate Sunroofs into individual open positions.



Single Motor Remote



Multiple Motor Remote

Figure 24.0