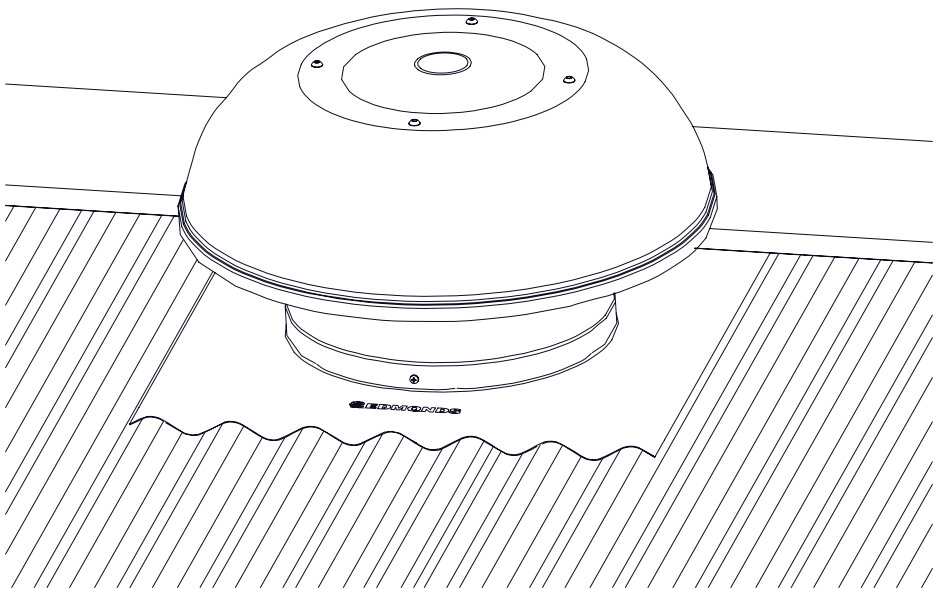


Maestro BAL™

Product Manual



Item Checklist & Additional Tools Required For Installation

Included Parts:

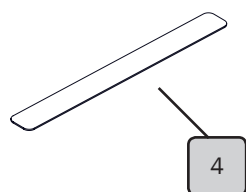
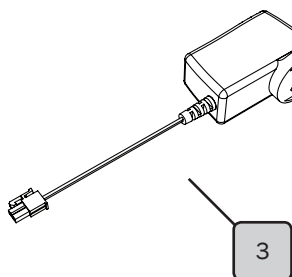
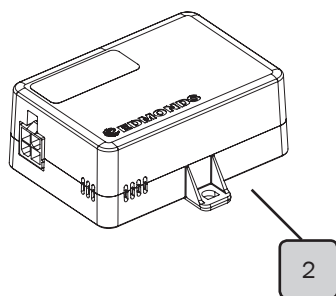
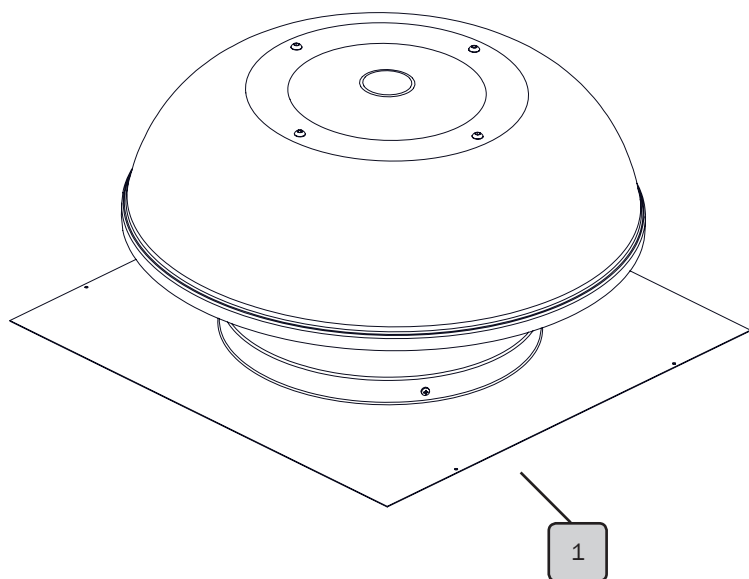
Qty:

1	Maestro BAL Ventilator	1
2	Smart Box	1
3	Power Supply	1
4	Fixing Strap	1
5	Smart Box Fixing Screws	2
6	Product Manual	1
7	Warranty Document	1

Additional Parts & Tools Required (Not Supplied)

Soft Rubber Hammer
Caulking Gun (Non BAL Install Only)
Suitable Silicone Sealant (Non BAL Install Only)
Angle grinder with cutting disc (Tile roof only)
Screw/Nail for fastening Fixing Strap (Tile roof only)
Knife (Sarked roof only)
Foil Tape (Sarked roof only)
Marker Pen
Nibbler or Similar Cutting Tool (Metal roof only)
10G Tek Screws or Sealed Rivets (Metal roof only)
Side Cutters

*** For BAL Compliance NO sealant should be used.
Instead care needs to be taken when forming the flashing
so that no gaps greater than 2mm are present.



Warnings and Important Notices

WARNING: *Do not proceed with the installation until you have read the entire instructions, including these warnings.*

INSTALL AT YOUR OWN RISK

The installation of this product may be dangerous and includes the potential of death, personal injury or property damage. Please be aware of the following before installing this product.

- Follow any state or territory regulator OH&S guidelines for working at height (e.g. Roof work), electrical, working in elevated temperatures (e.g. roof space in summer).
- Installation requires climbing and working at heights. Use caution to minimise risks by:
 - Clearing the area below the workspace
 - Not walking on surfaces that are slippery, wet or dusty
 - Using appropriate equipment (tie off ladders etc.)
- DO NOT attempt to install if you are uncomfortable with working at heights or on sloping roof surfaces
- There are sharp edges on the flashing, cut tiles, roof sheeting etc. Take care and wear personal protective equipment when handling and installing products
- Be aware that the Maestro BAL once connected to mains power will start. Do not connect the unit to mains power until the installation is complete.
- DO NOT attempt to put anything into the running fan blades as this may cause personal injury and/or damage to the unit.
- Be aware of electrical cabling in the roof. If there is any sign of risk, isolate the power before entering the roof space. Be aware that there can be non-isolated electrical cables such as mains supply and solar supply. Note if these are in the roof space and avoid these items.

Warnings and Important Notices

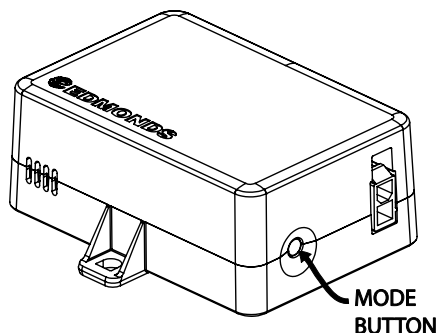
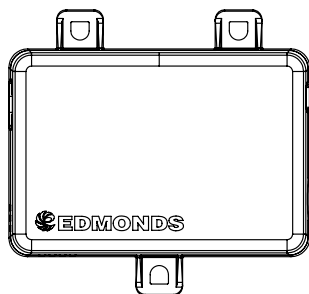
- When installing eave vents be careful to determine that the eave cladding material does not contain Asbestos. If it does or you cannot determine the make up, then the eave vent can only be installed using correct asbestos handling procedures by a person trained and/or licensed to handle asbestos.

IMPORTANT NOTES

- The Maestro BAL is designed for general household ventilation only. DO NOT use to exhaust hazardous or explosive materials and vapours.
- DO NOT use in areas contaminated with oil vapour from cooking or other oils. Oil vapour may cause product housing damage, electrical failure or fire.
- The Maestro BAL has an unguarded fan blade assembly when accessed from below. DO NOT use in locations readily accessible to people or animals.
- Always use the provided power supply and Smart Box to power the fan. Failure to do so can damage the product.
- If mains electrical connections are required (e.g. wiring a power point), then they must be carried out by a licensed electrician in accordance with local wiring codes and regulations
- Power supply and Smart Box are for dry indoor use only. Ensure that the power supply and Smart Box are not mounted on a damp surface or in a location where they could be exposed to moisture or liquid water. Fasten to the structure with screws or cable ties as required.
- Only use one Maestro BAL per Smart Box and power supply.

Installation—Speed Control Mode

SMART BOX



DEFAULT MAESTRO BAL PROGRAMMING

All Maestro BAL units are default factory programmed to operate at a 30% power fixed speed ventilation mode to meet the Bradford NCC2019 Performance Solution. This mode runs continuously on a low power setting day and night to provide ventilation of heat and moisture in the roof cavity. For more information on how many Maestro BAL and eave vents are required to satisfy the National Construction Code via Performance Solution please see Page 7 of this product manual.

If the Maestro BAL is not required for new-build NCC2019 compliance, the Bradford Air iQ smart box can be activated by holding down the 'Mode Button' for at least 5 seconds.

Important Note The default setting of 30% motor speed must not be changed if using the Maestro BAL to meet the National Construction Code. **If this setting is changed, it cannot be reactivated.**

Once the Bradford Air iQ Smart Box is activated the order of modes are: LO. MED. HI, AUTO. When engaging AUTO mode the fan will activate to full speed and then slow down to a stop to provide feedback that AUTO has been selected. Once this startup procedure is complete the fan will analyse the environment and run at the appropriate speed.

MODES: **LO** - Continuous operation, low speed, low flow rate, very quiet, very low power consumption.

MED - Continuous operation, moderate speed, moderate flow rate.

HI - Continuous operation, high speed, high flow rate.

AUTO - Variable speed. The Maestro BAL will automatically increase or decrease the speed of the fan depending on roof cavity temperature (30°C - 45°C) and roof cavity relative humidity (65%rH–80%rH).



In AUTO mode the Maestro BAL will respond to the temperature and humidity conditions stated above. When the conditions are deemed suitable for no ventilation the unit will enter power saving mode and the motor will not run.

Bradford NCC2019 Performance Solution

The Bradford NCC2019 Performance Solution provides an alternate method to comply with the Deemed-To-Satisfy roof ventilation requirements listed in NCC2019 Volume 1 Clause F6.4 and NCC2019 Volume 2 Clause 3.8.7.4

Please note, compliance with the NCC2019 is only mandatory for new build residential homes, and may not apply to reroof, or installation onto existing homes.

How To Comply with NCC2019 Performance Solution

To comply, the installation of both Maestro BAL and Metal Eave vents are required. The number of Maestro BAL and Metal Eave vents required is determined by the ceiling size directly under the roof space of the home.

General requirements for implementation of this performance solution

- Calculate the area (m²) of ceiling directly under the roof space;
- Install Maestro BAL(s) running at 30% power[^] according to the table below
- Install Bradford metal eave vents according to the table below
Note: Bradford metal eave vents cannot be substituted for any other type of eave vent including poly eave vents due to the specific openness factor required.
- Distribute the metal eave vents evenly as per NCC2019

[^]All Maestro BAL are default set to a continuous 30% fixed speed. To comply with NCC2019 Performance Solution this setting must not be changed. See Page 4 for more details.

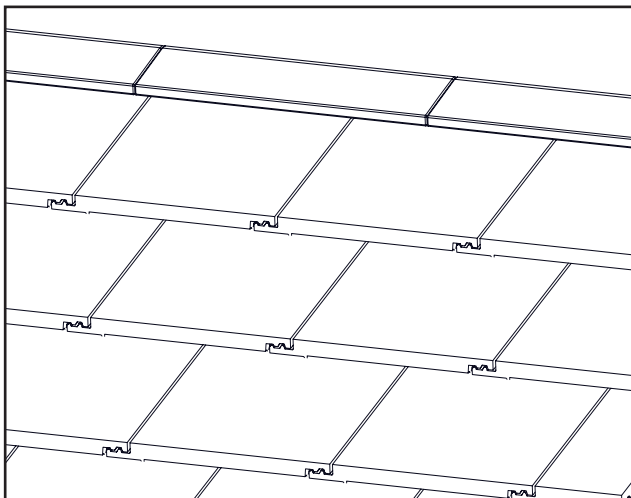
	Total Ceiling Area * (m ²)	Number of Maestro BAL at Default Speed required	Number of Bradford Metal Eave Vents required
Roof Pitch > 22°	< 203	1	4
	< 407	2	6
	Total Ceiling Area * (m ²)	Number of Maestro BAL at Default Speed required	Number of Bradford Metal Eave Vents required
Roof Pitch ≤ 22°	< 127	1	4
	< 254	2	6
	< 381	3	8

Installation - Tiled Roof

STEP 1

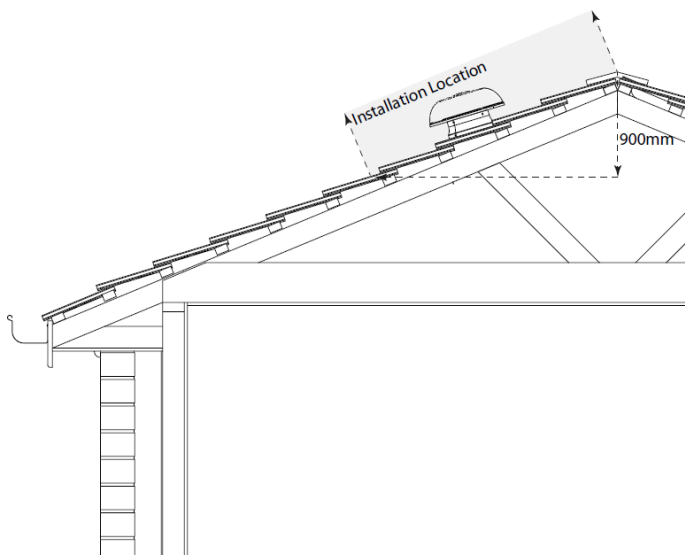
Select a suitable position for the ventilator on the roof no higher than the third row of tiles down from the ridge.

Take care to check that there are no obstructions below the tile such as a rafter.



The removal of a tile higher than the third row down from the ridge may damage the ridge tile pointing and is NOT recommended.

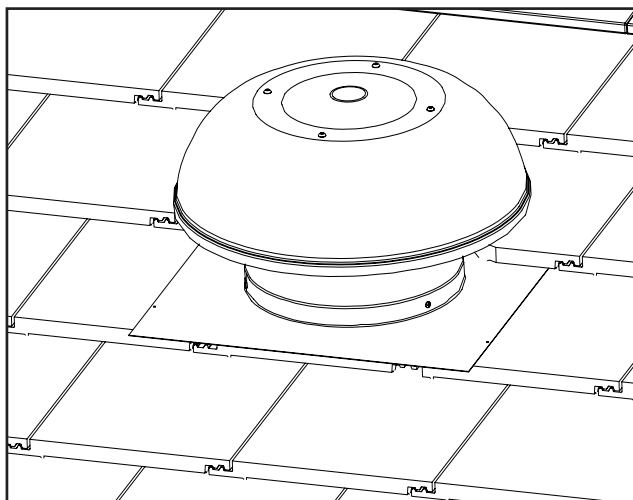
Note If installing in accordance with the NCC2019 Performance Solution, the Maestro BAL must be located not more than 900mm below the ridge or the highest point of the roof space when measured vertically.



STEP 2

Position the ventilator in the desired location to determine which tiles need to be removed or cut.

Mark out position and determine tiles to be removed or cut.

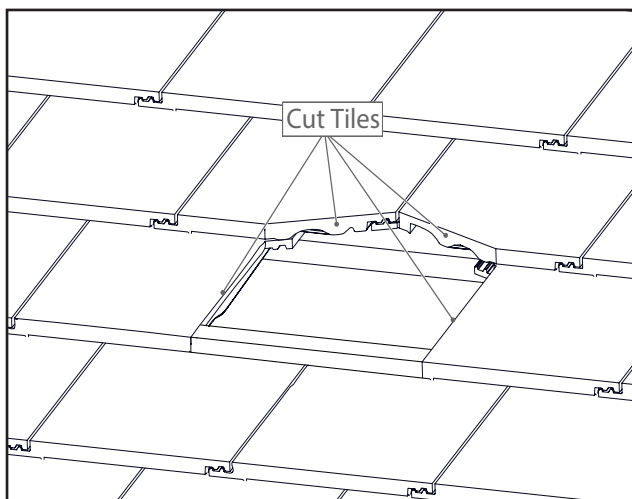


STEP 3

Remove a single complete tile as required.

Cut other tiles as required to fit the housing.

Cut the removed tile and leave the lower portion fitted in place. This helps to seal the flashing.



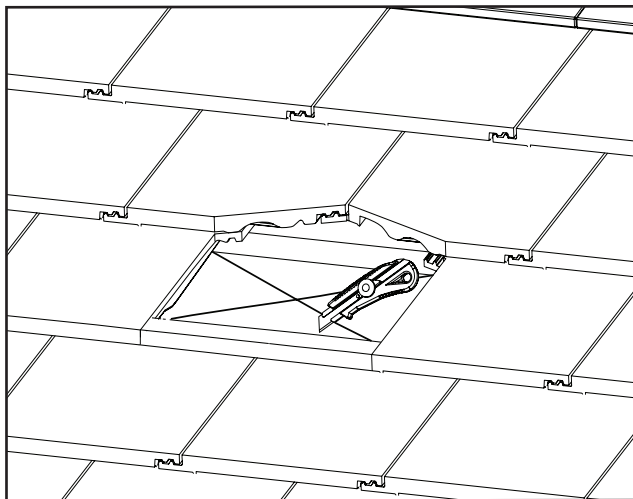
Depending on roof construction a tile batten may be obstructing a clear access to the throat. This batten can be left in place with the Maestro BAL sitting above it.

Installation - Tiled Roof

STEP 4

If the roof is sarked, cut sarking in a cross and fold back onto itself to give a 300mm opening.

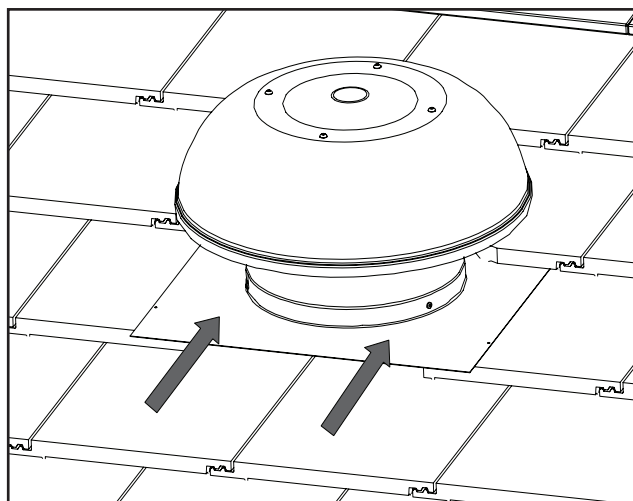
Tape the corners to the surrounding sarking with foil tape to prevent them fouling the ventilator.



Folding the cut sarking flaps back on themselves results in a gutter arrangement that helps to prevent any water running down the sarking from entering through the opening

STEP 5

Fit the ventilator into place and ensure surrounding tiles are fitted securely.



For BAL compliance, no gaps greater than 2mm may be present. A water tight install can be achieved by carefully forming the flashing to the tile profiles, without the use of sealant.

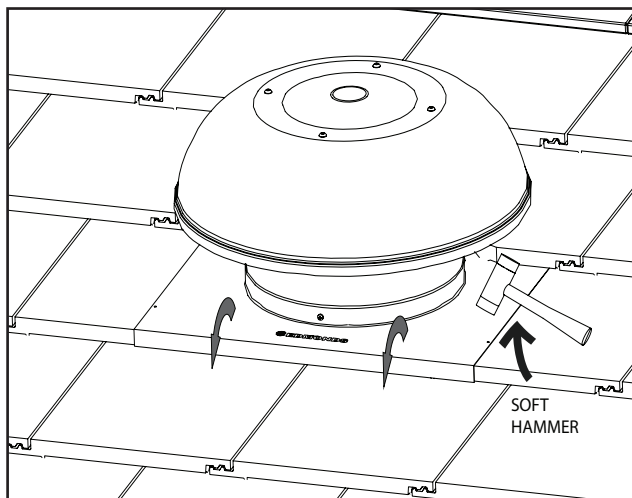
Installation - Tiled Roof

STEP 6

Fold and form the front edge of the flashing to seal against the tiles below.

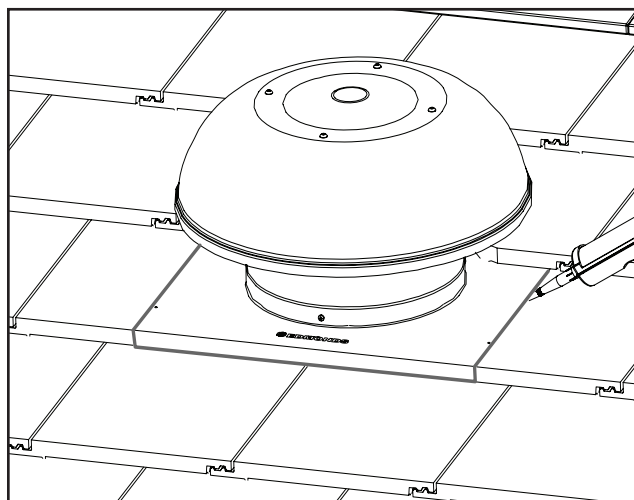
Using a soft hammer, carefully dress the front and sides of the flashing into the shape of the tiles.

For BAL installs this must be done with care to ensure that no gaps greater than 2mm are present.



STEP 7 - NON BAL ONLY

To assist with weatherproofing a bead of silicone sealant can be applied between the tiles and the side and front edges of the flashing. THIS SHOULD NOT BE DONE FOR BAL ZONE INSTALLATIONS DUE TO THE COMBUSTIBLE NATURE OF SEALANTS.



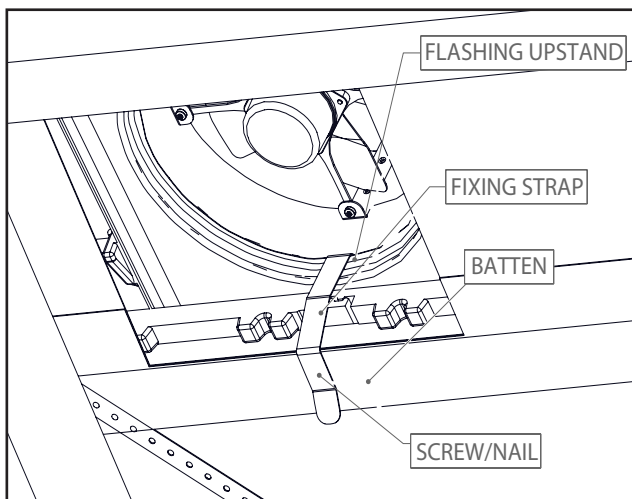
Installation - Tiled Roof

STEP 8

Form the fixing strap so that one end can hook over the flashing upstand

From within the roof space, hook the fixing strap over the edge of the flashing upstand at the lowest point of the roof. Screw/nail (not supplied) the fixing strap to the bottom batten to securely hold the ventilator down.

For additional weather proofing turn the rear edge of the flashing up so that it seals against the tiles above.



Turning the rear of the flashing upwards allows it to act as a gutter to prevent any wind driven water from entering the roof space.

PROCEED TO ELECTRICAL CONNECTION

Important Note If using the Maestro BAL to comply with NCC2019 Performance Solution additional Maestro BAL's and eave vents may be required depending on the ceiling area of the home. For more information on the number of Maestro BAL and eave vents required see Page 7 of this manual or visit bradfordventilation.com.au

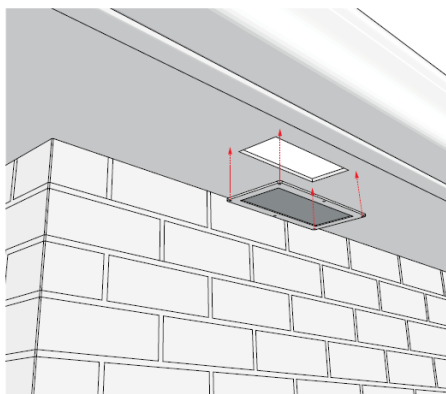
Installing an eave vent

Mark a 185mm x 385mm rectangle on the eave lining

Drill holes to mark out the rectangle

Use a hacksaw to cut out the rectangle

Attach the vent using the screw provided



Installation - Metal Roof

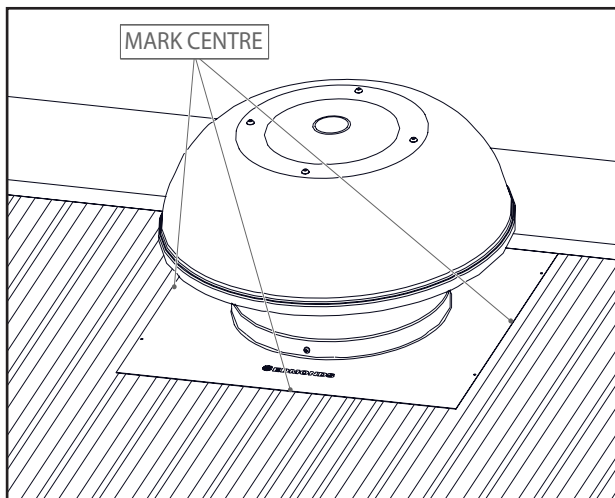
Note: Ridge capping screws may need to be removed whilst performing installation. Upon completion, return the fixing screws to the previous positions

STEP 9

Select a suitable position for the ventilator.

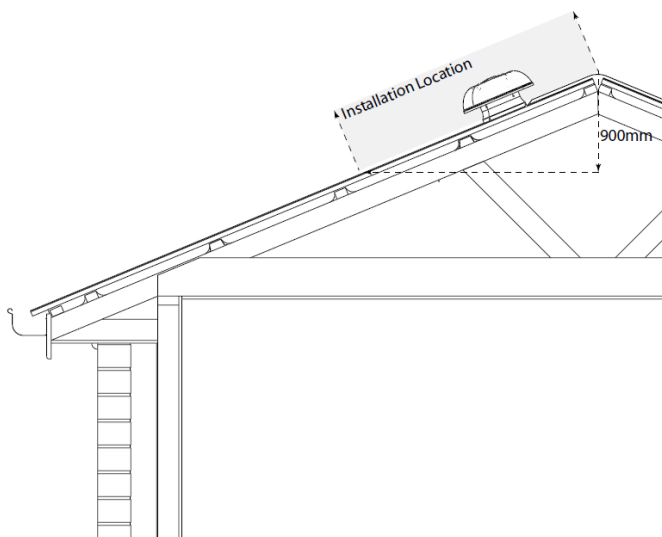
Slip the top edge of the flashing under the ridge cap and mark position.

To Install the vent lower down the roof, appropriate backflashing must be installed, extending back to the ridge capping.



Ensure that the flashing covers the roof corrugations or ribs equally and that it is located between roof rafters.

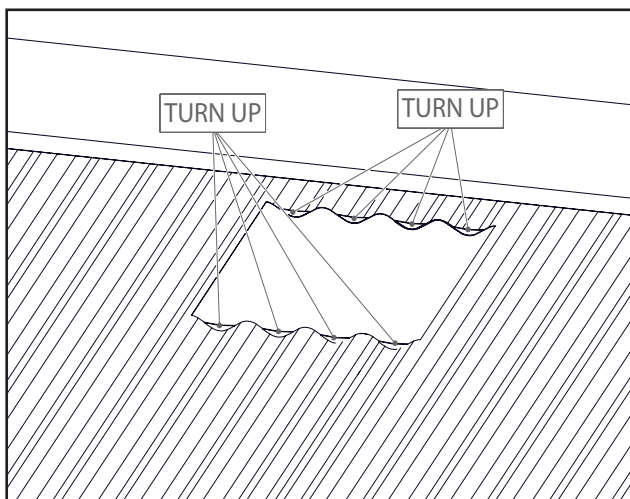
Note If installing in accordance with the NCC 2019 Performance Solution, the Maestro BAL must be located not more than 900mm below the ridge or the highest point of the roof space when measured vertically.



STEP 10

Remove the ventilator and cut a 300mm square or round opening around the centre of the position marks.

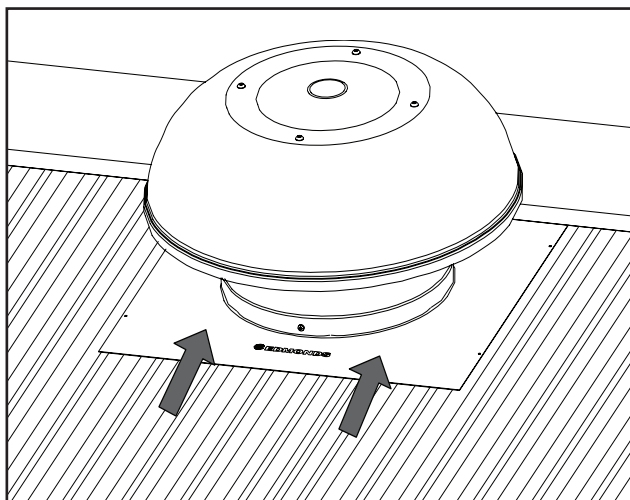
Turn up the corrugations or pans on both the low and high sides. This will help to prevent water ingress.



STEP 11

Return the Maestro BAL to the roof, positioning it over the cutout. Ensure that the top of the flashing is slipped under the ridge capping.

For lower pitched roofs, turn up the top edge of the flashing before slipping under ridge capping. This will help prevent water ingress.



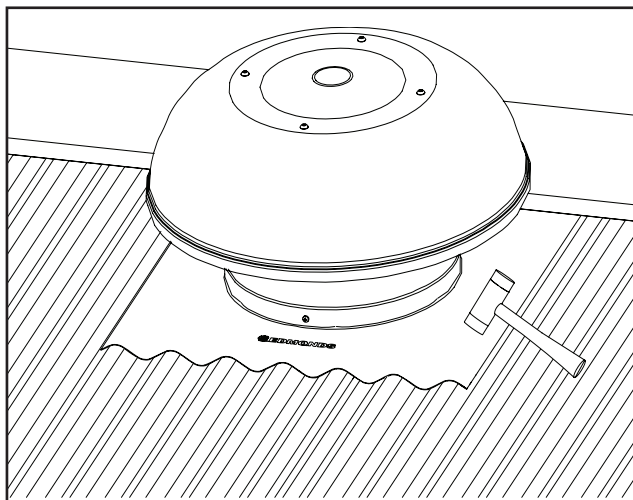
For BAL compliance, no gaps greater than 2mm may be present. A water tight install can be achieved by carefully forming the flashing to the roof sheeting profile, without the use of sealant.

Installation - Metal Roof

STEP 12

Using a soft rubber hammer, carefully work around the sides and lower edge of the flashing to form it into the corrugations of the metal sheeting profile.

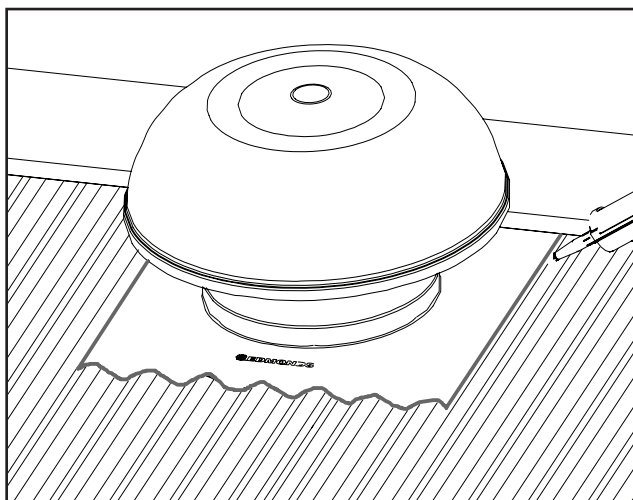
For BAL installs this must be done with care to ensure that no gaps greater than 2mm are present.



STEP 13 - NON BAL ONLY

To assist with weatherproofing a bead of silicone sealant can be applied between the sheeting and the side and front edges of the flashing.

THIS SHOULD NOT BE DONE FOR BAL ZONE INSTALLATIONS DUE TO THE COMBUSTIBLE NATURE OF SEALANTS.

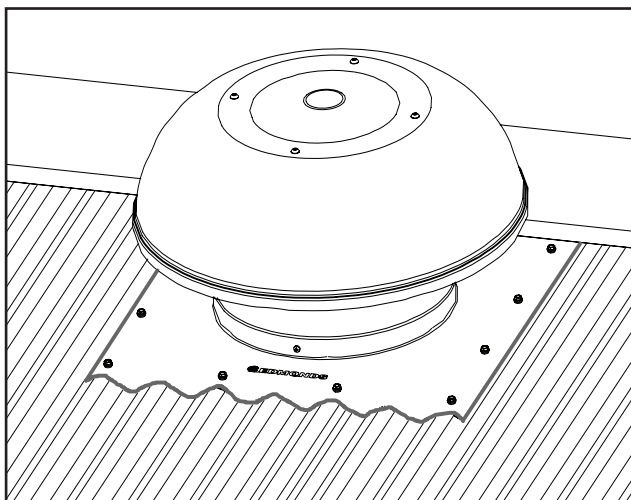


Installation - Metal Roof

STEP 14

Secure the flashing to the metal sheeting with Tek screws or sealed rivets along the 3 exposed edges of the flashing.

Approximately 10 required (not supplied)



PROCEED TO ELECTRICAL CONNECTION

Important Note If using the Maestro BAL to comply with NCC2019 Performance Solution additional Maestro BAL's and eave vents may be required depending on the ceiling area of the home. For more information on the number of Maestro BAL and eave vents required see Page 7 of this manual or visit bradfordventilation.com.au

Installing an eave vent

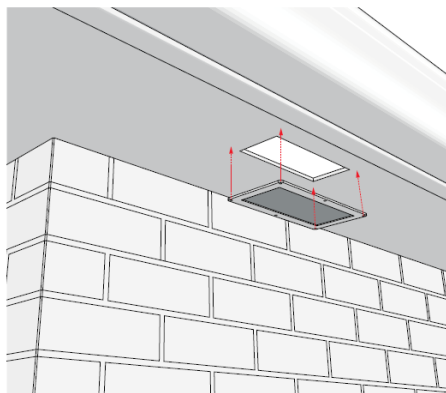
Mark a 185mm x 385mm rectangle on the eave lining

Drill holes to mark out the rectangle

Use a hacksaw to cut out the rectangle

Attach the vent using the screw provided

Eave vents should be evenly distributed around the perimeter of the home



Installation - *Electrical Connection*

STEP A

Connect lead coming from the Maestro BAL fan unit to the Smart Box

STEP B

Connect the power supply lead to the Smart Box

STEP C

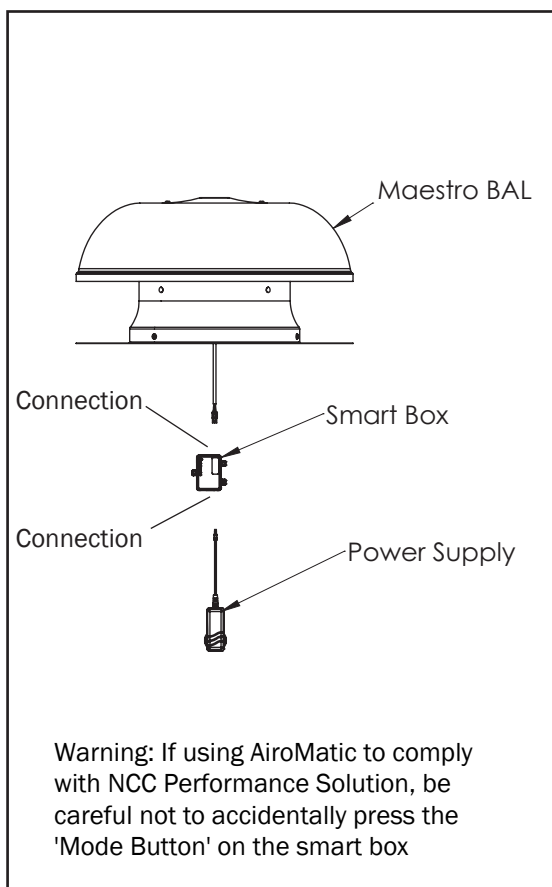
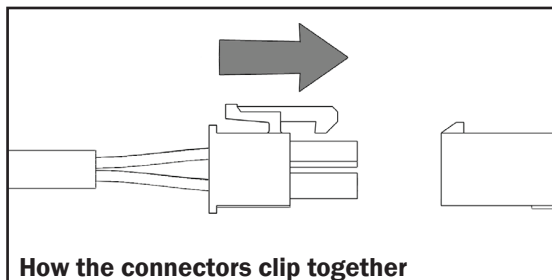
Connect the power supply to a mains socket. Turn on and check fan runs freely.

STEP D

Using either the supplied screws or cable ties, mount the Smart Box on a suitable piece of structure that does not place it near direct sunlight or the airflow of the Maestro BAL.

STEP E

Set the control mode by pressing the button on the side of the Smart Box. Please note the default 30% fixed speed cannot be reactivated if changed.



Ensure the power supply is not in contact with damp or wet areas.

Maintenance - Ember Screen

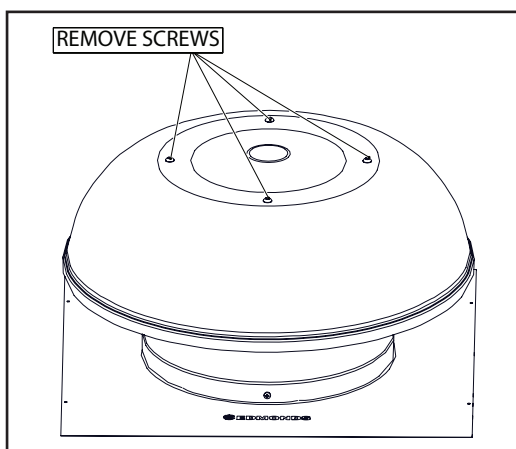
The only maintenance required for the Maestro BAL is the occasional cleaning of the stainless steel ember screen. Time between cleaning depends on operating conditions, however yearly cleaning should be performed to maintain optimal performance of the product's airflow. To clean the ember screen follow the instructions below.



Turn off the power to the Maestro BAL before conducting any maintenance. Failure to do so will expose the running fan assembly

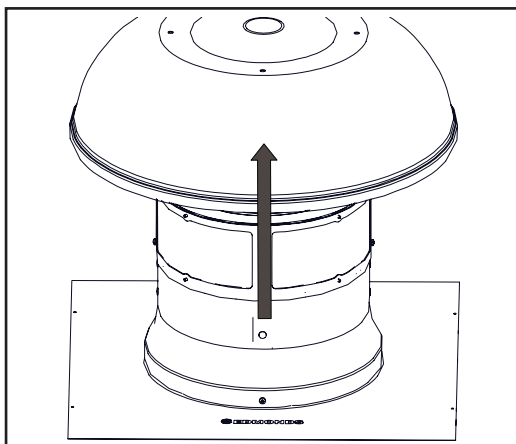
STEP 1

Remove the 4 screws securing the dome



STEP 2

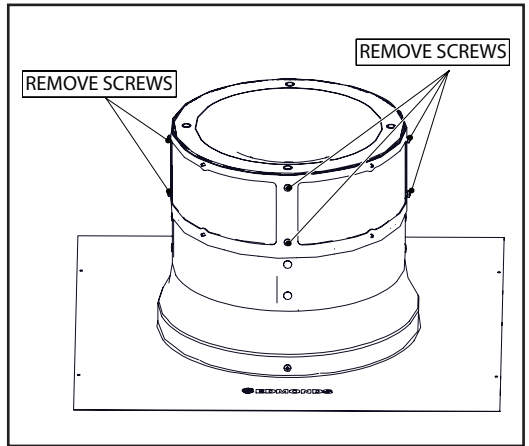
Lift the dome to remove it and place on a safe surface to prevent scratching or damage.



Maintenance - Sparkguard

STEP 3

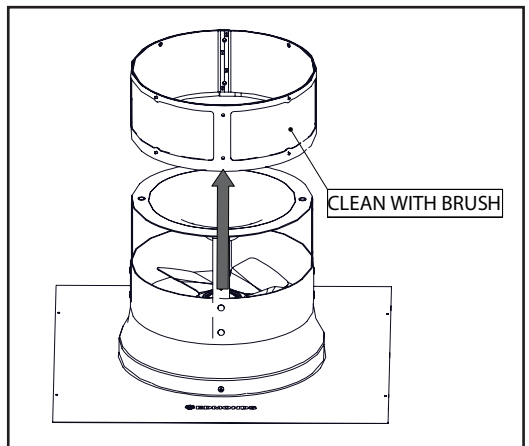
Using a phillips #2 bit, remove the 8 screws that are securing the ember screen to the housing.



STEP 4

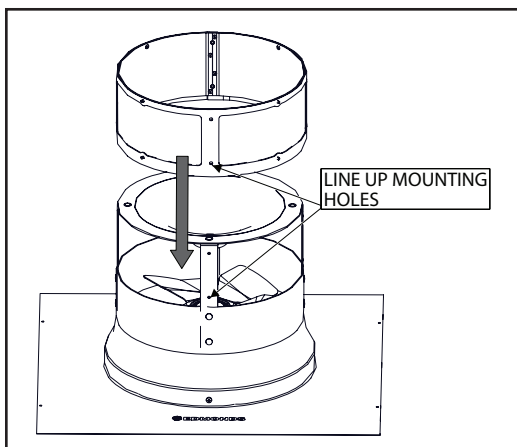
Slide the ember screen off the housing and clean with a soft brush.

Be careful to not deform the mesh from overly vigorous cleaning.



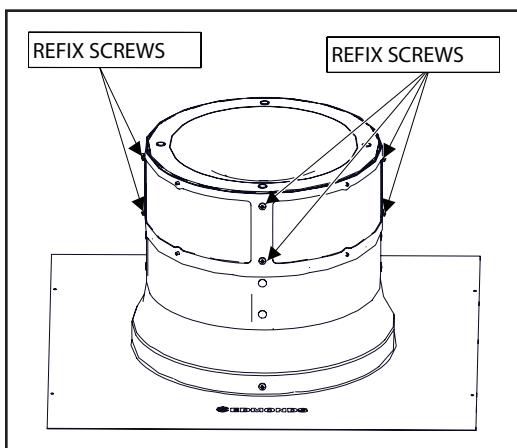
STEP 5

Slide the ember screen back onto its mounting brackets. Align the holes in the ember screen frame with the holes on the support brackets.



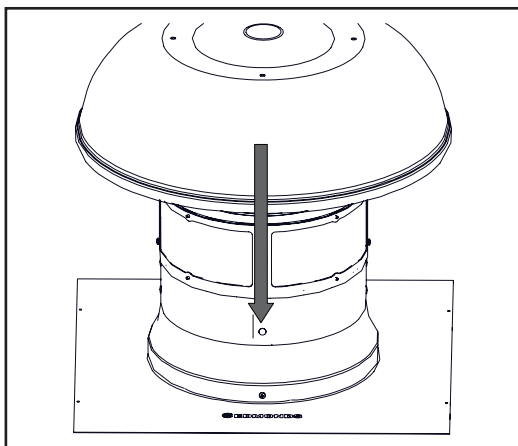
STEP 6

Refix the ember screen to the mounting bracket with the screws removed in step 3.



STEP 7

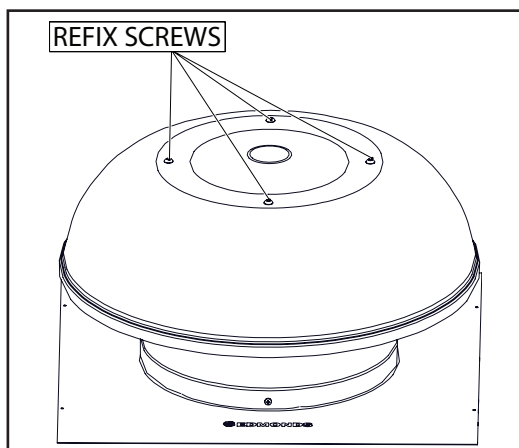
Place the dome onto the unit.
Line up the holes in the dome
with the mounting points on
top of the fan housing.



STEP 8

Refix the dome to the Maestro
BAL housing with the 4 screws
removed in step 1.

Tighten until snug.



Technical Data

Material:

Ventilator Housing:	Aluminium
Dome Support Brackets:	Galvanised Steel
Ember Screen:	Stainless Steel Woven Mesh
	(Aperture Less than 2mm compliant to AS3959-2009)
Flashing:	Aluminium 500x500mm

Weight:

Ventilator:	3.7 kg
-------------	--------

Electrical:

Power Supply:

Type	Electronic Switching Mode
Input	100-240VAC ~ 50-60Hz, 0.45A Max
Output	24VDC

Fan Motor:

	Electronic Commutating (EC) Motor
Input Voltage	24VDC
Max. Running Power Consumption	37W

Other:

Inlet Throat Diameter	300mm
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	LO	Default	MED	HI
Noise Level	35	40	45	53 dB(A)
Flow Rate (@ $\Delta p=0$)	220	350	377	596 m ³ /hr
Power Consumption	4.8	6	11.2	30.8 W

FAQ & Troubleshooting

Q: Do I need an electrician to install the Maestro BAL?

A: If you have an available power point that can be reached then no electrician is required. If a power point is unavailable then an electrician will be required to install one.

Q: Is the Maestro BAL, BAL Compliant?

A: If installed as per the instructions, the Maestro BAL is compliant for all BAL levels up to BAL-40. The Maestro BAL is not suitable or compliant for BAL-FZ.

Q: Can I duct the Maestro BAL?

A: Yes, with a suitable collar the Maestro BAL can be ducted. Accessories for ducting Maestro BAL can be purchased from Bradford. Call for further details.

Problem	Possible Actions
System not running	<ul style="list-style-type: none">- The Smart Box may be in AUTO mode and may have determined that no ventilation is necessary. Change to LO to confirm the Smart Box is functioning.- Check power is on and all electrical connections are secure.
Water leaks when raining	<ul style="list-style-type: none">- Check installation integrity of ventilator on roof

Contact Details

General Enquiries and Support

PH: 1300 760 233
Email: sales@csr.com.au

Technical Ventilation Enquiries

PH: 1800 354 044

Please fill out for your reference in case support is required	
Serial Number	Purchase Date
-----	___ / ___ / _____

Dec 2020
I-041-B



Bradford is a business division of CSR Building Products Limited ABN 55 008 631 356
10 Stanton Road, Seven Hills NSW 2147 Australia | www.bradfordventilation.com.au

Notes

[illegible]

Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

bradfordventilation.com.au

