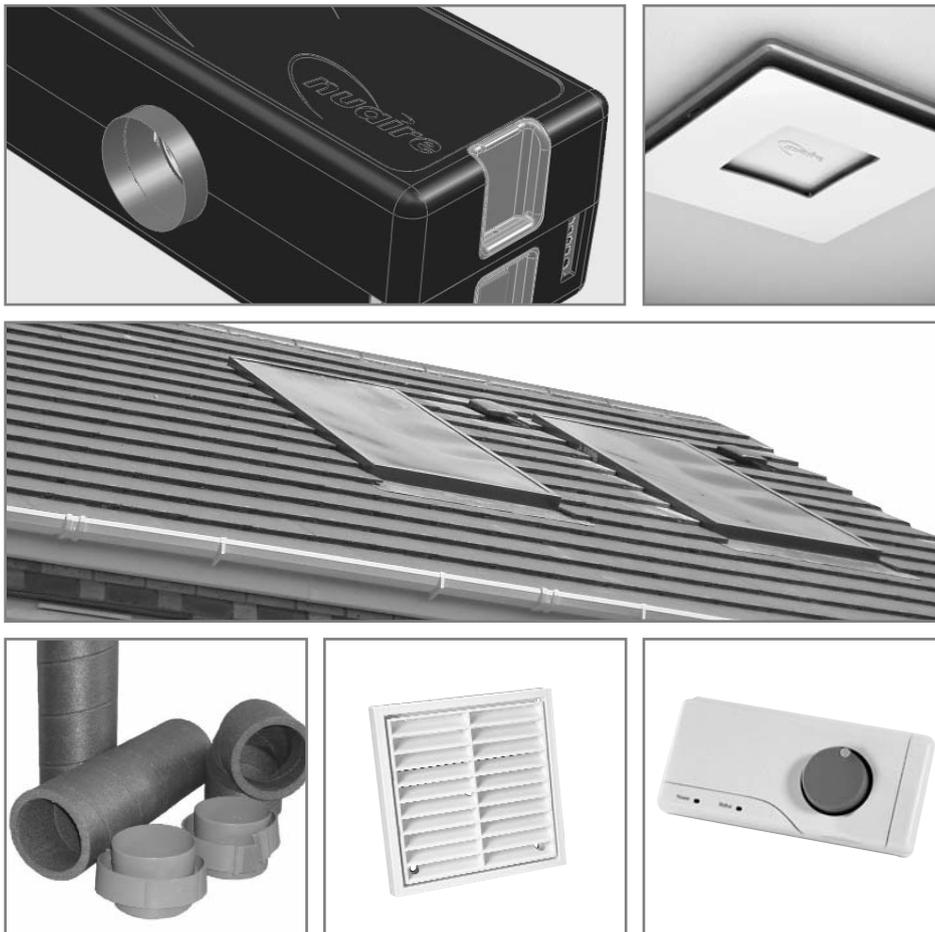


Sunwarm Air
Solar Energy Ventilation System
Installation and Maintenance Details for:

The Roofing contractor

The Building contractor

The Electrician



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Section I.0 Important notes to Designers and Installers

The successful operation of the Sunwarm Air System depends entirely upon installation and ongoing maintenance being carried out strictly in accordance with these instructions.

Additionally, SAP Appendix Q recognition of the Nuair Sunwarm Air System is contingent upon adherence to this guide, including maintenance activities.

Please read this guide in its entirety before installation and then repeat the exercise step by step to ensure satisfactory completion including any recommended maintenance activities .

Installation of the Solar Air Collectors must be carried out by a suitably qualified roofing contractor taking account of The Working at Height Regulations 2005 and in accordance with CDM Regulations 2007.

Installation of the Air Handling Unit must be carried out by a suitably qualified electrician in accordance with the Electricity at Work Regulations 1989, the 17th Edition IEE Regulations and the CDM Regulations 2007.

These instructions are limited to installation in a home with a “cold roof”. “Warm roofs” vary considerably and advice should be sought from Nuair on an individual basis.

Nuair specified insulated ducting must always be used where stated for the system to be recognised by Appendix Q within SAP Regulations.

IMPORTANT

Warning: Unit must only be installed in a horizontal position with Nuair logo on top and not upside down, at an angle or any other configuration.

I.1 General description

The Sunwarm Air System is a Low Energy Positive Input Ventilation (LEPIV) unit. Unlike conventional LEPIV units which only draw in external air via the loft in a “cold roof”, the unit is capable of drawing in external air from different locations via three air inlet spigots each fitted with their own low energy open/close damper. (See figure I).

The units airflow is controlled via an integral intelligent control system that measures, and appropriately responds to, temperatures at the various air inlet locations.

The temperature selected by the occupants on the user control panel provided will be the delivered air temperature into the home.

I.2 Handling

The Solar Air Collectors and the Air Handling Unit are delivered to site in separate crates suitable for forklift handling.

There are normally two collectors per dwelling. The units are packaged individually, net weight 61kg net.

Each Solar Air Collector consists of a sealed unit, which contains the solar absorber and is heavily insulated and covered on the top face with a polycarbonate sheet.

WARNING – take all precautions necessary to protect the polycarbonate whilst handling the collectors.

I.3 Installation requirements for the loft mounted Air Handling Unit for retrofit applications

IMPORTANT

Please note that retrofits do NOT form part of this guide in terms of Appendix Q.

I.4 Loft inspection

Check to ensure that the loft has adequate ventilation.

Look for ridge vents, tile vents, eaves vents and continuous air gaps etc. making sure none are blocked. In older properties these vents may not be provided. However, there should be enough ‘leakage’ to accommodate the requirements of the unit.

A useful way of checking such lofts is to close the hatch, switch off the lights and look for any daylight penetration.

If you can see daylight it is reasonable to assume that the loft has sufficient ventilation.

There may be occasions where a loft is so well sealed that additional ventilation may have to be provided by the owner /occupier or the unit installer. This will not only assist the operation of the unit, but will help prevent possible expensive structural damage caused by inadequate air movement in the loft itself.

It should be noted that there cannot be too much ventilation into the loft.

Additional checks should be carried out as follows:

- Ensure that all water tanks are covered and sealed.
- Check that all water pipes are lagged.
- Ensure that any extract fans are discharging to outside and not into the loft.
- Check that the loft hatch is tightly sealed.
- Ensure all holes in the ceilings are sealed i.e. ceiling light fittings etc.
- A visual inspection of flues or chimneys for leakage in the loft should be carried out by the installer. If leakage points are found, or if there is any doubt regarding the same the installer should advise the house owner/provider and seek instruction from them before continuing with installation.
- The Air Handling Unit unit must be able to pass through the loft access (minimum dimensions required are 570 x 400 mm).

1.5 General installation

The process to be followed will generally be as shown below:

- Install the Solar Air Collectors.
- Install the Air Handling Unit.
- Install all the ductwork and temperature sensors and associated sunwarm components.
- Complete all electrical installation work.
- Test and commission.

On new buildings, the installation may be phased in line with the building construction.

1.6 Other installation materials

The ducting arrangements shown in this installation manual are required to achieve the full benefits of the product.

In order to obtain SAP Appendix Q recognition the supplied ducting must always be used during installation where specified.

This arrangement, and a wide range of additional installation materials are available from Nuair. Please contact us for details.

1.7 Packing checklists

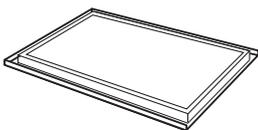
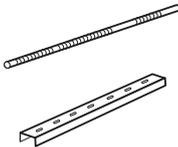
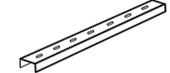
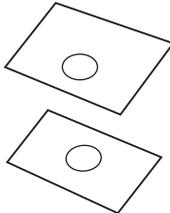
Components will be supplied in two separate deliveries.

The first will be the components to complete the roof work and the second will consist of all components for AHU and system installation.

Before beginning installation

- 1) Make sure you have received all items listed under the packing lists on this page.
- 2) Make sure you have all the necessary health and safety equipment needed.

Packing checklist 1.

Solar Panels x 2.	
M8 Threaded Rod x 4 with nuts & washers.	
U Section Clamping Bar x 2.	
Marking Out Template Set x 1.	
Tile Ventilator x 1.	

Packing checklist 2.

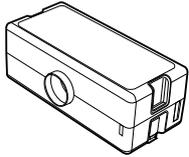
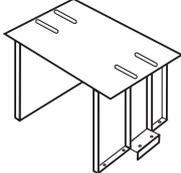
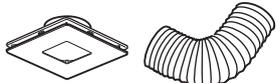
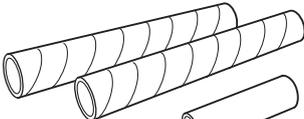
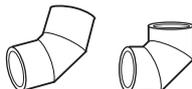
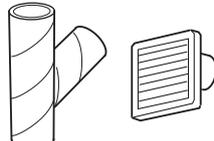
Air Handling Unit x 1	
Air Handling Kit x 1 consisting of the following:	
AHU Support Brackets and platform top 1 set.	
180mm dia. Solar Panel Spigot with Sensor x 1.	
180mm dia. Solar Panel Spigot x 3.	
User Control x 1.	
10m long pre-plugged Data Cable x 1 for User Control.	
House Sensor Cover x 2.	
Pre-plugged Temperature Sensor x 3.	
Outlet Diffuser x 1.	
2m Flexible Ducting x 1.	
Long Cable Ties x 12.	
Duct Hanging Strap 1 reel & x 5 clips.	
Solar Panel Inlet Filters x 2	
Ducting Kit x 1 consisting of the following:	
180mm Inside dia. x 2.2m long Foam Duct x 4.	
150mm Inside dia. x 2.2m long Foam Duct x 1.	
150mm dia. x 1m long rigid PVC Duct x 1.	
180mm to 150mm Reducers x 1.	
180mm Inside dia. 45° Bend x 5.	
180mm Inside dia. 90° Bend x 7.	
150mm dia. Duct Joining Piece x 1.	
180mm dia. Duct Joining Piece x 22.	
Jubilee Clip x 5.	
180mm inside dia. Y Piece x 1.	
Wall Grille x 1.	

Figure 1. Typical installation of Sunwarm Air System with air intake through gable end, collectors and from the loft.

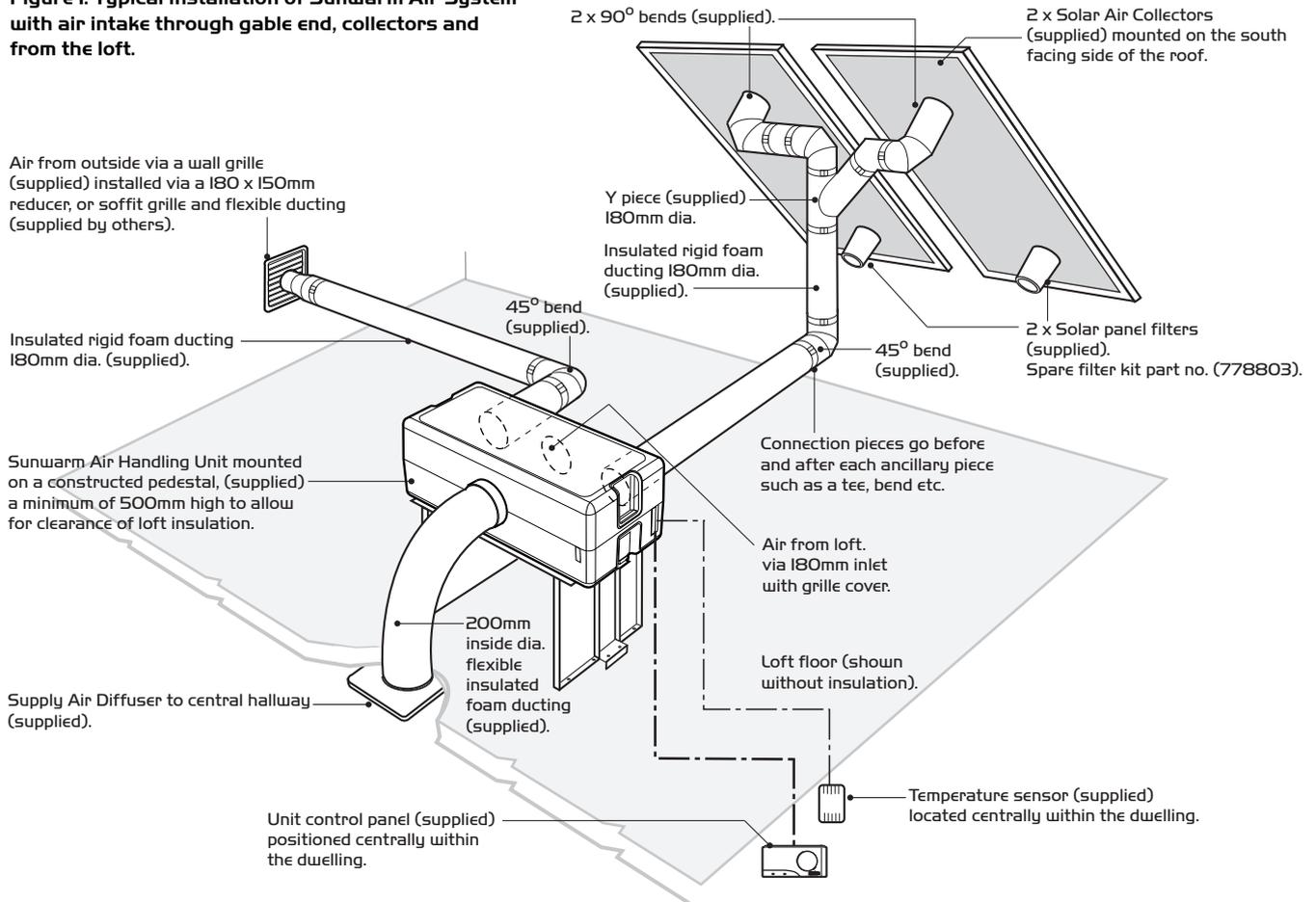
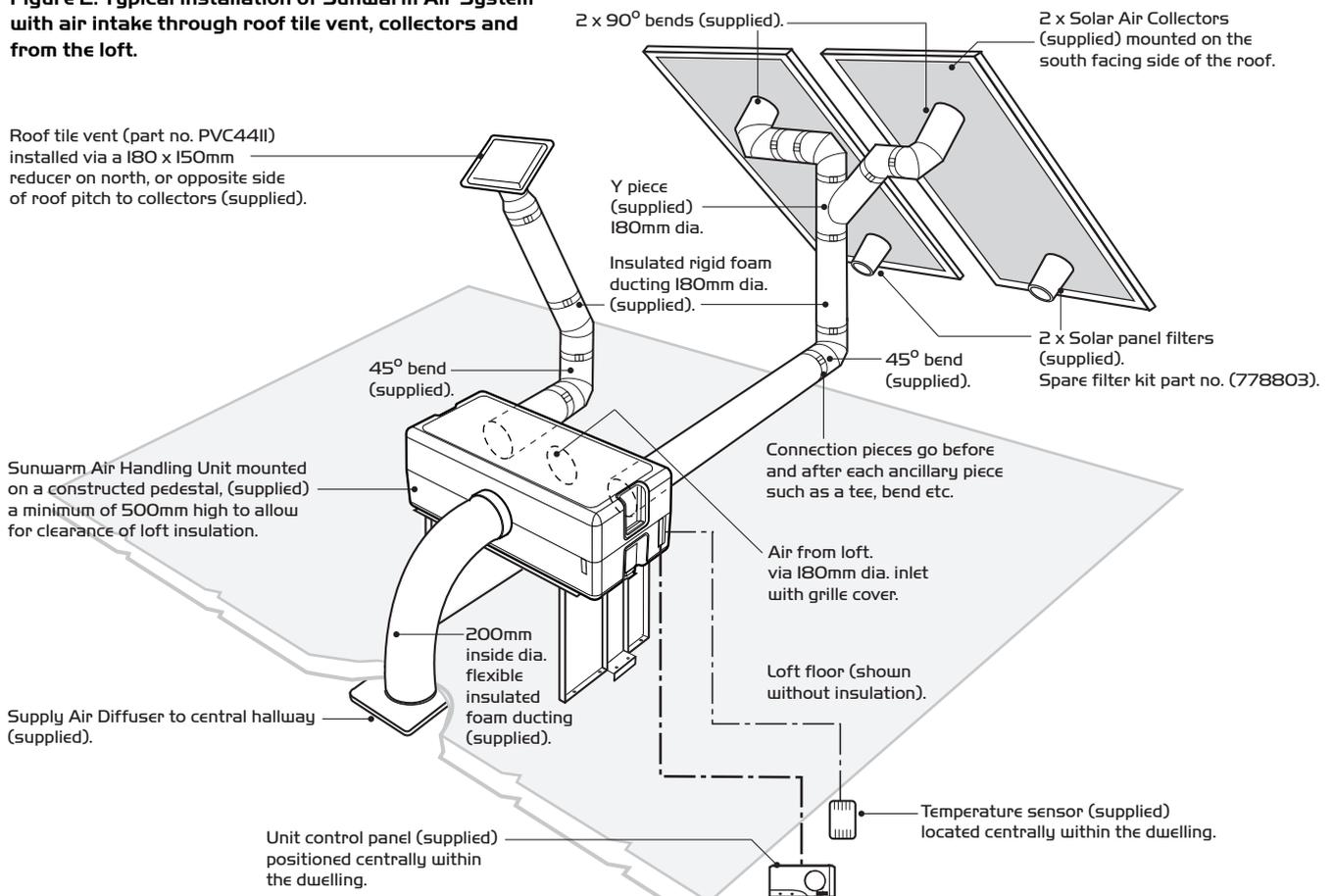


Figure 2. Typical installation of Sunwarm Air System with air intake through roof tile vent, collectors and from the loft.



Section 2.0

Roofing contractor projects

The process to be followed will generally be as shown below:

- (a) Installation of 2 Solar Air Collectors on the roof, over battens, over the rafters or sarkin board.
- (b) Preparing ducting holes in roof.
- (c) Installing flashing and weather proofing the collectors.
- (d) Installation of a tile vent if applicable and weather proofing.

On new buildings, the installation may be phased in line with the building construction.

2.1 Installation Solar Air Collectors

The installer should follow all standard safety procedures whilst working. We recommend use of appropriate personal protective equipment during installation.

In the northern hemisphere, the collectors are normally installed on a roof facing South/ South West/South East. Orientation towards the North will severely compromise the performance of the system. If in doubt, **do not fit** until you have checked with the system designer or Nuair.

The roof structure must be fit to accommodate the Solar Air Collectors mass (2 x 61 kg).

The location of the collectors on the roof should minimise any possibility of overshadowing by roof structures, trees or adjacent buildings.

The panels must be positioned in portrait mode, down the roof, with the shortest side horizontal with the ridge and/or the eaves.

Generally, the higher up the roof slope the panels are, the better is the exposure to solar energy.

Ensure that the collectors are positioned at least one metre from the base of the roof slope to allow for ductwork connections.

Each collector is essentially a weathered box that has to be secured and weathered to the roof structure.

Two penetrations are required into the loft space for ductwork connections at the back of each collector.

Each collector must be centred between two roof rafters to allow ductwork connections to be made at these points.

Four smaller penetrations, for each collector, are required for M8 Stud Bars to secure the panels in place.

2.2 Installation options for Solar Air Collectors

The Solar Air Collectors can be installed on the rafters or Sarkin board (in Scotland). This manual shows the installation on the rafters only. For more information on installation on Sarkin board, please contact Nuair.

A 25mm upstand collector is supplied as standard for installing over the rafters and/or Sarkin board.

2.3 Tilt angle

We recommend a minimum tilt angle of 12.5° in order to ensure good run off of rain water from the surface of the collectors.

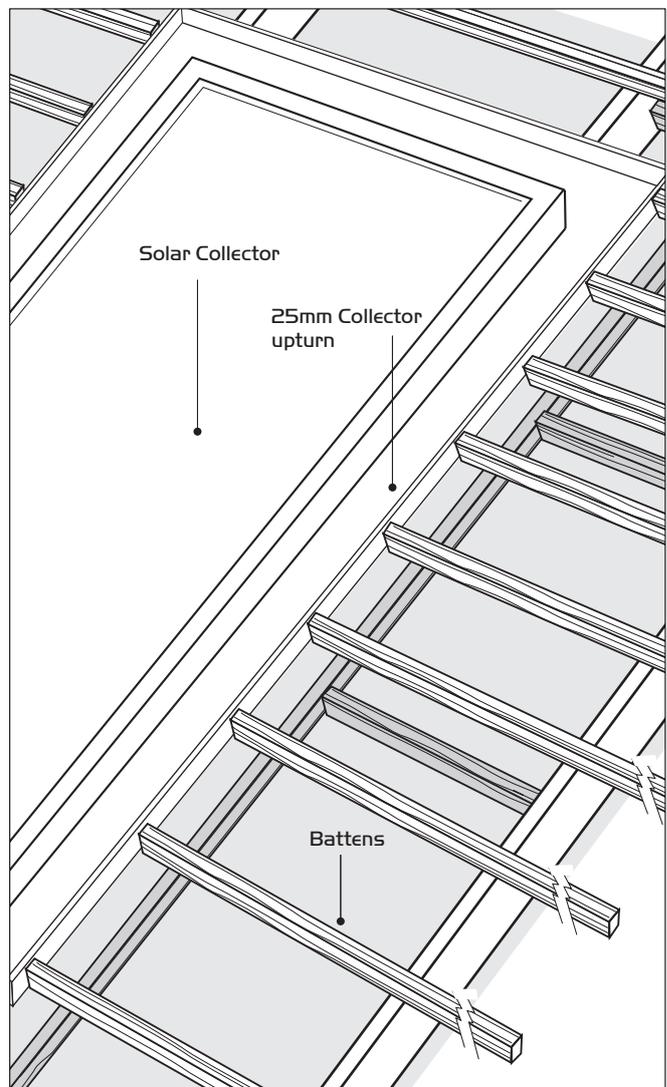
2.4 Maximum operating pressure

The Solar Air Collectors utilize an automatic temperature control device as well as other controls to distribute the air throughout the system. In the unlikely event of all measures failing, the maximum internal air pressure will not exceed 0.1bar.

2.5 Lightning protection

There are no specific requirements for installation of Solar Air Collectors; however, please consult any local regulatory or precautionary requirements if you live in an area prone to lightning strikes for protection of your building.

Figure 3. 25mm upstand collector .



2.6 Installation of collectors over the rafters

Remove enough tiles/slates (on existing roof) to clear an area large enough for each collector. Cut the battens to leave a clear area of 1250 x 2500mm for each collector. Measure along a line

2490mm from the top corner of the larger template to the bottom of the smaller template and mark onto the roof as shown below.

Also use the templates to mark the 180mm dia, ducting hole positions for forming and note the positions for the M8 studded bar positions (see figs 4, 5 and 6).

Figure 4. Using templates for installation over the battens and marking ducting hole positions.

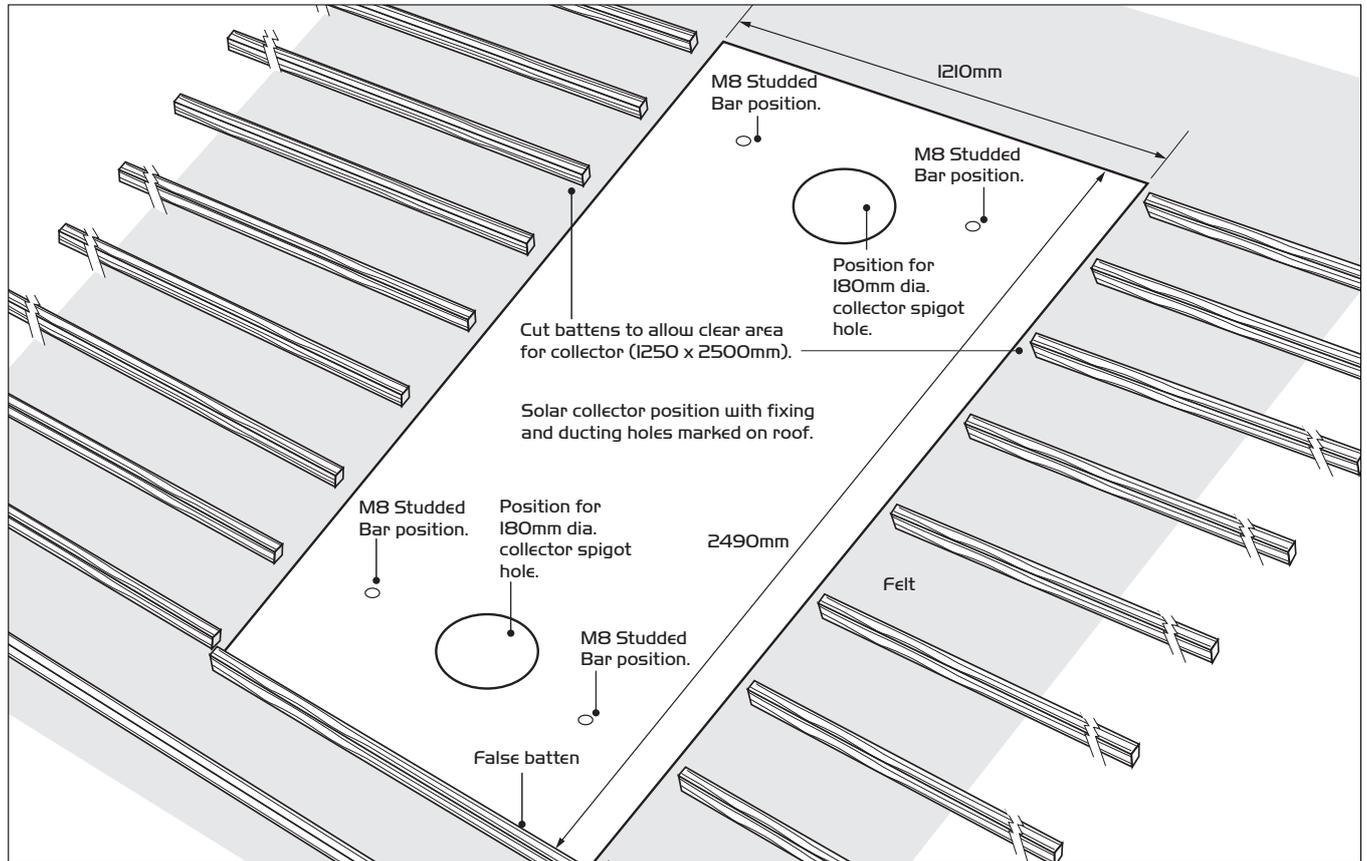


Figure 5. Side view of collector across roof, over rafters.

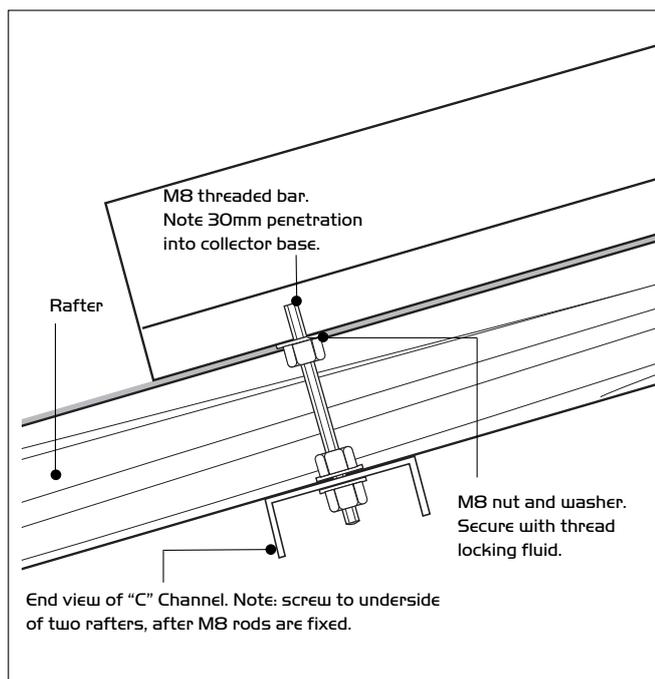
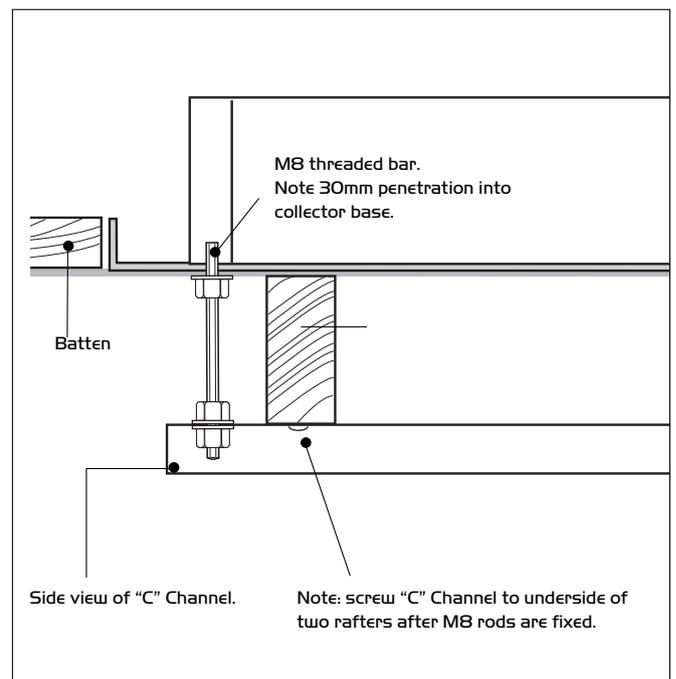


Figure 6. End view of collector down roof, over rafters.

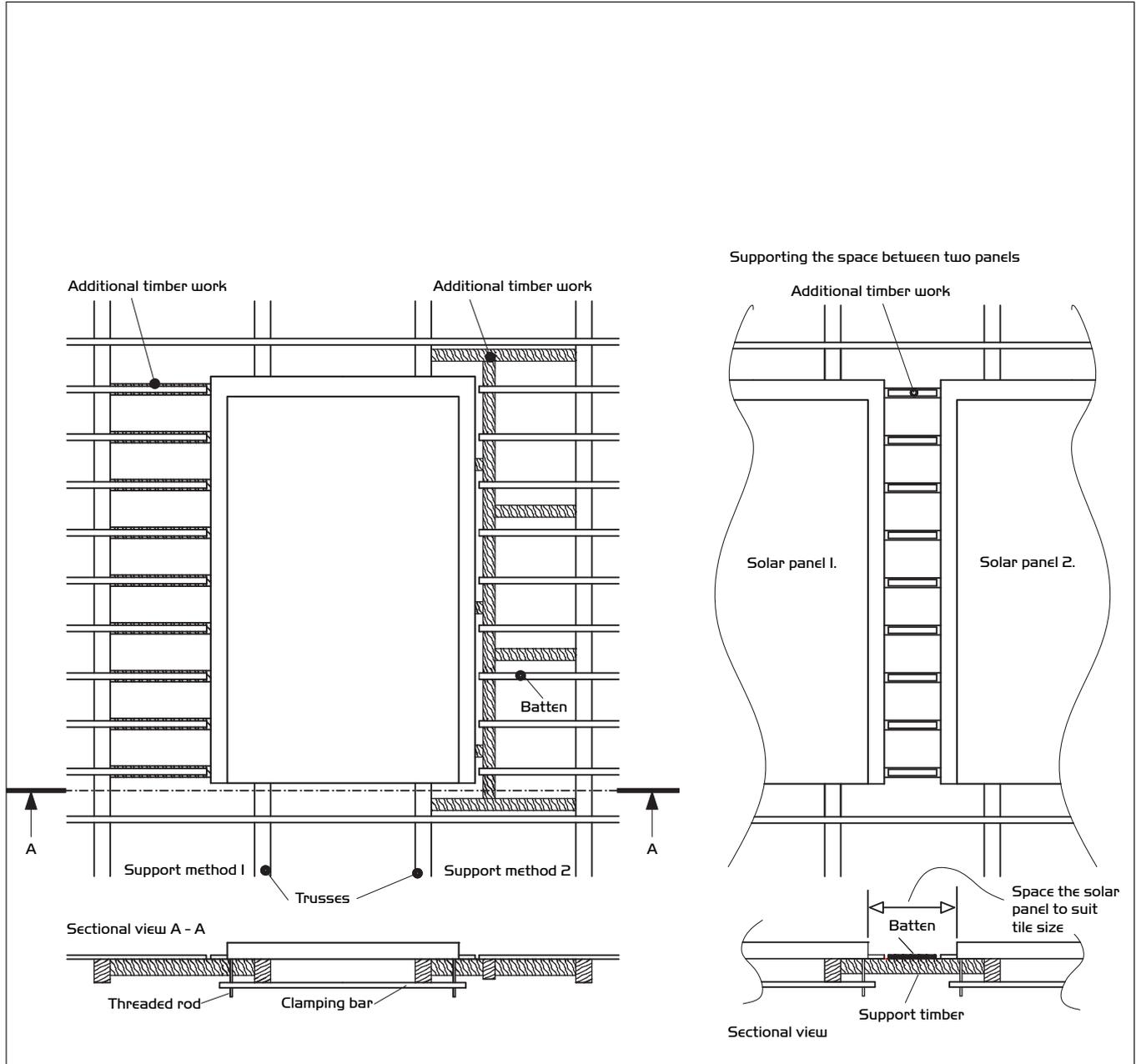


Installation of collectors over the rafters continued.

Support methods (figures 7a and 7b) are suggested alternative methods for supporting the roof and solar panels. It is essential

that the actual design of the timber work is checked by a qualified structural engineer to ensure full compliance with all relevant regulations.

Figure 7a. and 7b. Examples of additional timber work required to support the weight of the solar panels.



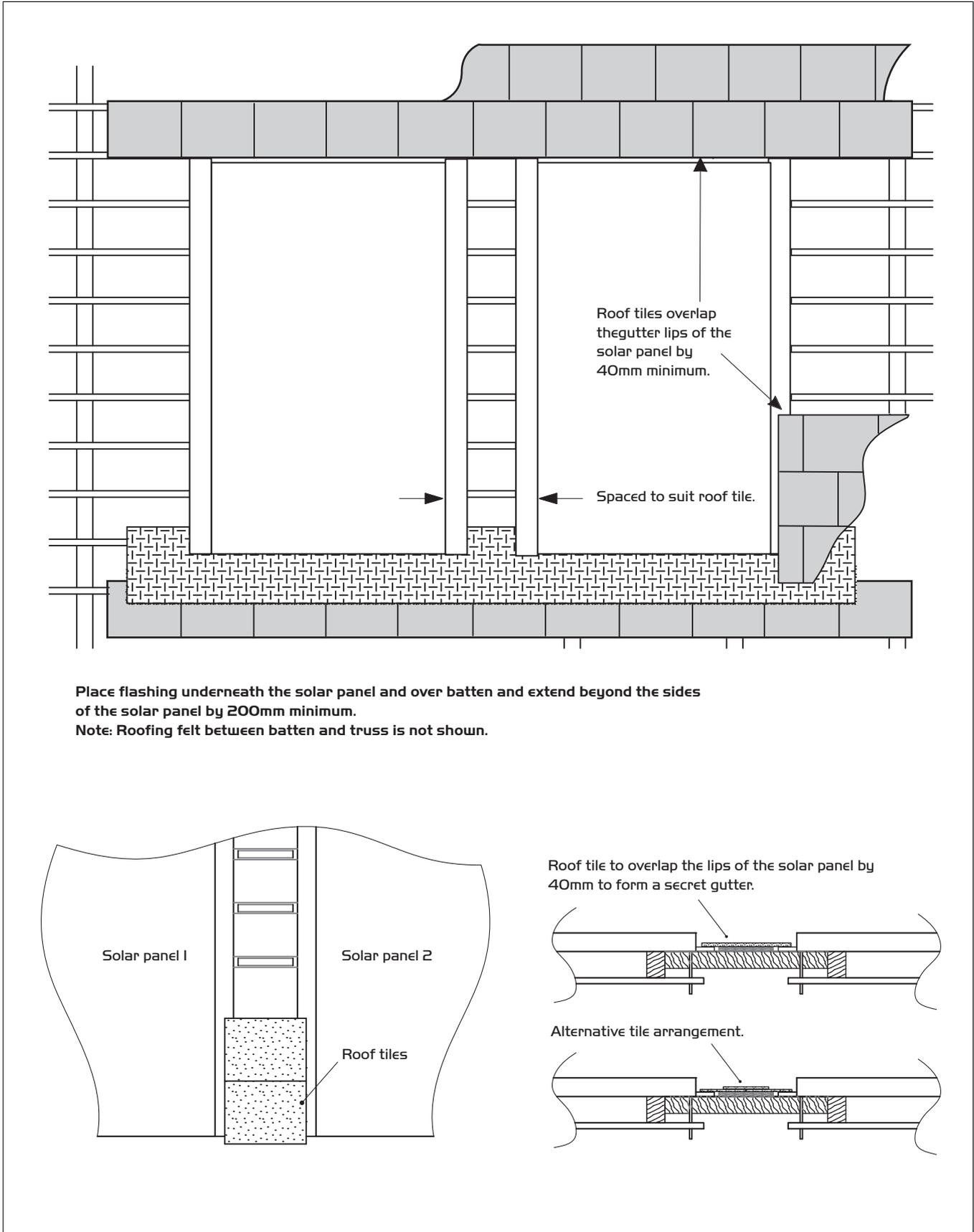
Note: Additional timber work must be sized to support the weight of the solar panel and to retain the structural integrity of the roof structure.

Trim batten back to clear the edge of the solar panel by 25mm approx.

Roofing felt located between truss and batten is not shown.

Installation of collectors over the rafters continued.

Figure 8. Flashing installation and tiling layout.



2.7 Installation of the Tile Vent if applicable

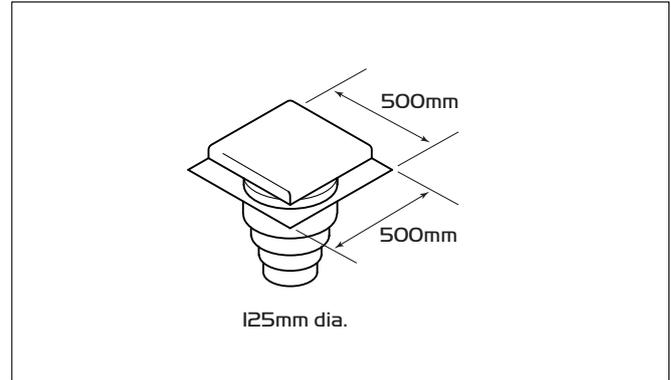
Roofing requirements

The Nuair tile ventilators are suitable for use in all tiled and slated pitched roof styles without the need to identify the make or design of the tiles or slates. When used with Sunwarm Air the tile ventilator must be installed on a north facing roof pitch or the opposite side to the collectors.

The tile ventilators comprises a flat box hood on a circular upstand, a 500 x 500mm flashing skirt of non-lead material and a stepped adaptor that allows connection to the 180mm dia. ducting via a 150 x 180mm dia. reducing piece and a 150mm dia. duct joining piece.

The unit is easy to install, the adaptor is simply cut at the required diameter step and attached to the undertile spigot with solvent weld/PVC glue.

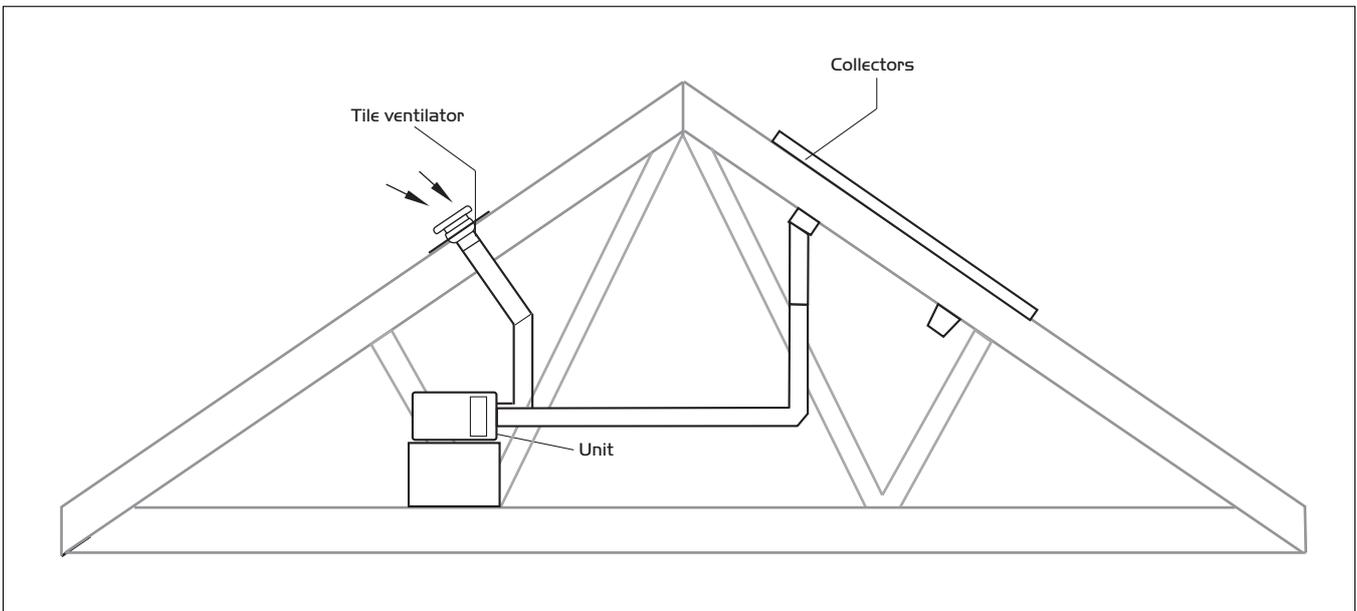
Figure 9. Tile ventilator dimensions (mm).



The free areas and pressure/airflow readings are as follows:

Diameter (mm)	Free vent area mm ²	Pressure/Airflow Resistance (pa)	
		100m ³ /hr	200m ³ /hr
125	12,250	5.3	24.0

Figure 10. Installing the tile ventilator on the roof.



Section 3.0
Building contractor projects

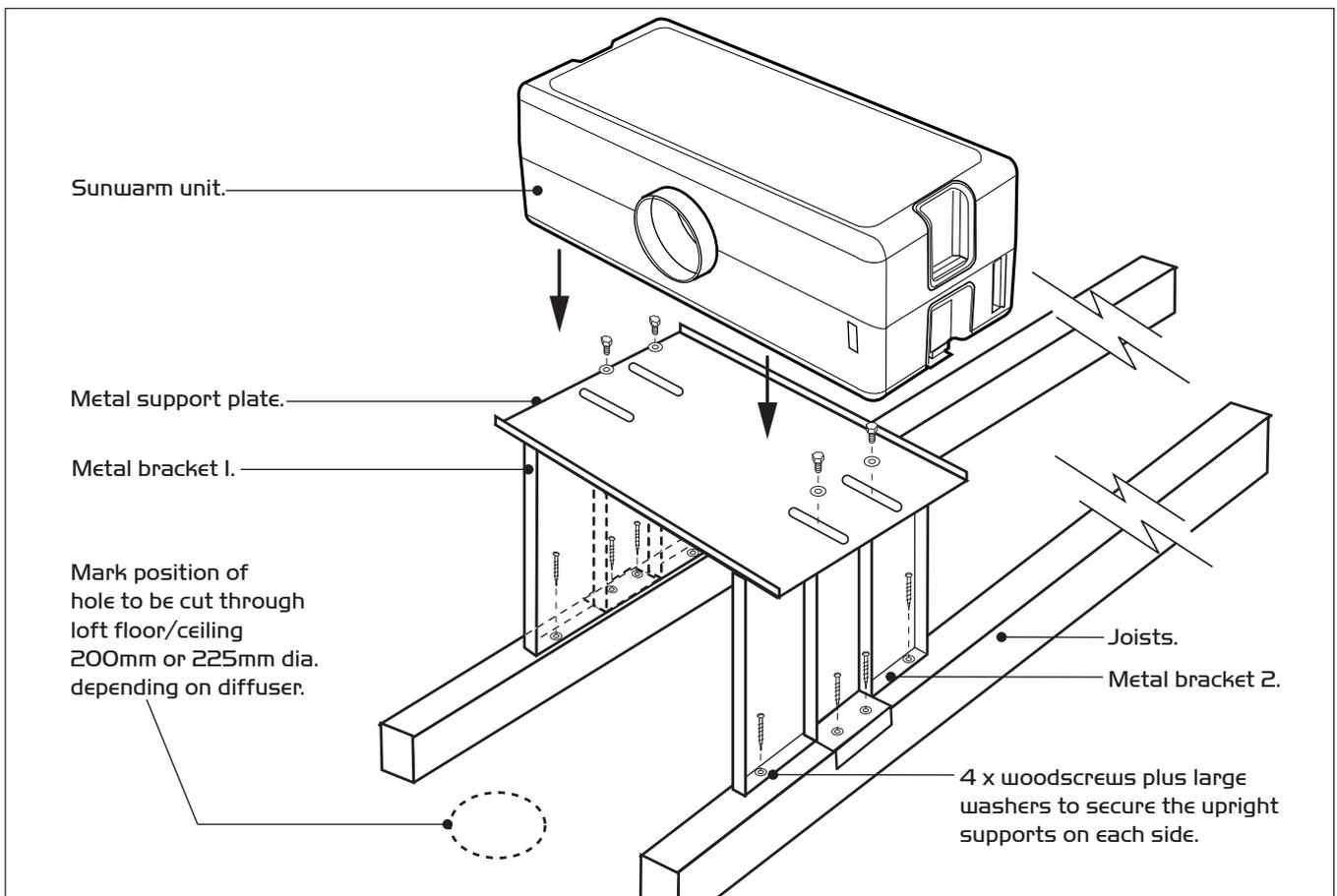
- (a) Assemble and install a metal in the loft and mount the Sunwarm air unit.
- (b) External hole forming on gable end if applicable, and installation of an external louvre wall grille.
- (c) Internal hole forming and installation of the ceiling mounted diffuser.
- (d) Prepare and install all ducting as necessary.

3.1 Construct a unit platform

Use the 2 metal brackets and metal unit support plate supplied to construct a platform to mount the Sunwarm unit on. Fix the 2 metal brackets to adjacent joists using 4 wood screws. The metal support plate can then be fixed to the top of the 2 brackets through the rectangular slots in the plate using M4 mechanical screws and washers (see figure II).

It will be necessary to locate the platform in its final chosen position so that ducting lengths, and the hole which must be cut for the diffuser can be undertaken. (see section 3.3 and 3.5). The diffuser must be located correctly in the central hallway in single storey properties or in the ceiling of the top floor landing on 2 or more storey dwellings.

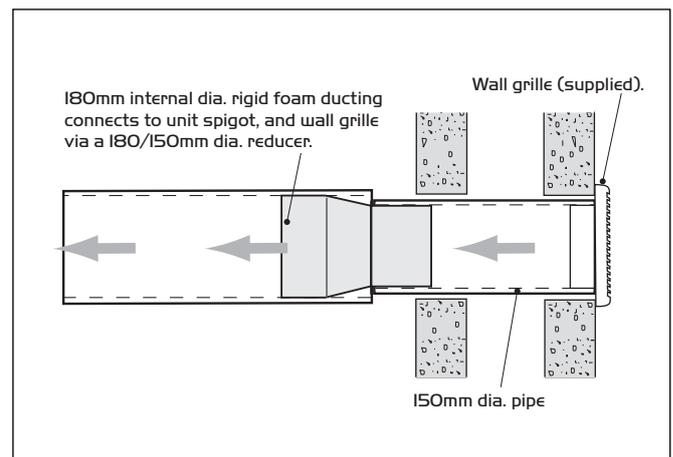
Figure II. Metal platform for Sunwarm unit.



3.2 External hole forming on gable end if applicable

The builder needs to form a ducting hole in the gable end depending on the chosen ventilation method and install a louvred wall grille (see fig. I2). Alternatively use the tile vent for fresh air input.

Figure I2. Connection to outside via a wall grille (supplied) and ducting supplied by others.



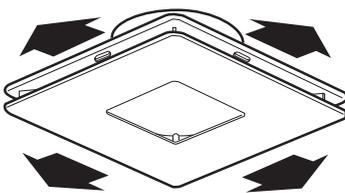
3.3 Internal hole forming and installation of the ceiling mounted diffuser

3.4 Positioning the Diffuser

The diffuser has a unique air throw pattern and it must be located correctly in the central hallway in single storey properties or in the ceiling of the top floor landing on 2 or more storey dwellings.

As can be seen (Figure 13) the diffuser discharges air from all four sides along the underside of the ceiling.

Figure 13. Diffuser viewed from below.



Airflow from four sides

Note: The positioning of the diffuser should be in strict accordance with the table shown below to ensure correct operation:-

Speed Setting	Minimum distance of diffuser from wall
1	100mm
2	155mm
3	400mm
4	625mm
5	850mm
6	1000mm

Note: Smoke Detectors

It is important that any open side of the diffuser is not positioned within 1m of a smoke detector.

If the diffuser cannot be repositioned, two sides of the diffuser must be closed off using the foam strips supplied so that the open sides face a minimum 1.5m unobstructed path away from the detector.

As an alternative to the aforementioned, a smoke detector maybe fitted directly onto the underside of the aluminium diffuser only.

3.5 Installing the diffuser

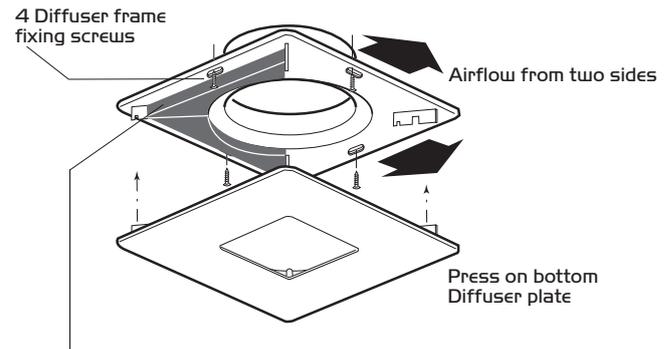
a) Plastic Type

Cut a circular hole 225mm diameter in the ceiling between two convenient joists. Position the diffuser frame and secure it to the underside of the ceiling with the 1 1/2" x 8 csk. hd. screws and plugs provided. (see fig. 14).

Attach the diffuser plate to the frame using the four built in press on clips provided.

Foam strips should also be used as required when this method of installing the diffuser is used.

Figure 14.



2 Foam strips (supplied) fit on any of the diffuser sides to guide airflow away from a smoke detector and/or obstructions as required.

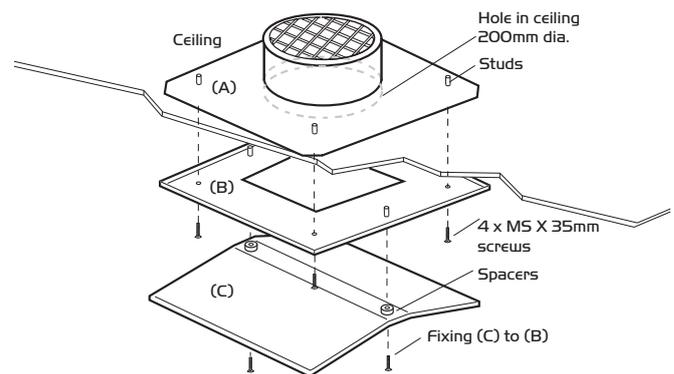
b) Painted aluminium type c/w intumescent fireblock

Cut a 200mm hole in ceiling and align the top portion of unit (A) above the ceiling over the hole.

Position the central ceiling plate (B) on the ceiling in the room ensuring the the central hole is aligned with the hole in the ceiling. Use the 4 MS X 35mm screws to fix (B) to (A) through the 4 studs positioned on the upper side of (B).

Screw bottom part of the unit (C) to the the ceiling plate (B) through the plastic spacers and into the 2 studs positioned on the upper side of (A).

Figure 15.



Note: Due to the higher air resistance of the fireblock, the speed of the unit should be increased by one increment for the particular property (see speed setting).

3.6 Prepare and install all ducting as necessary

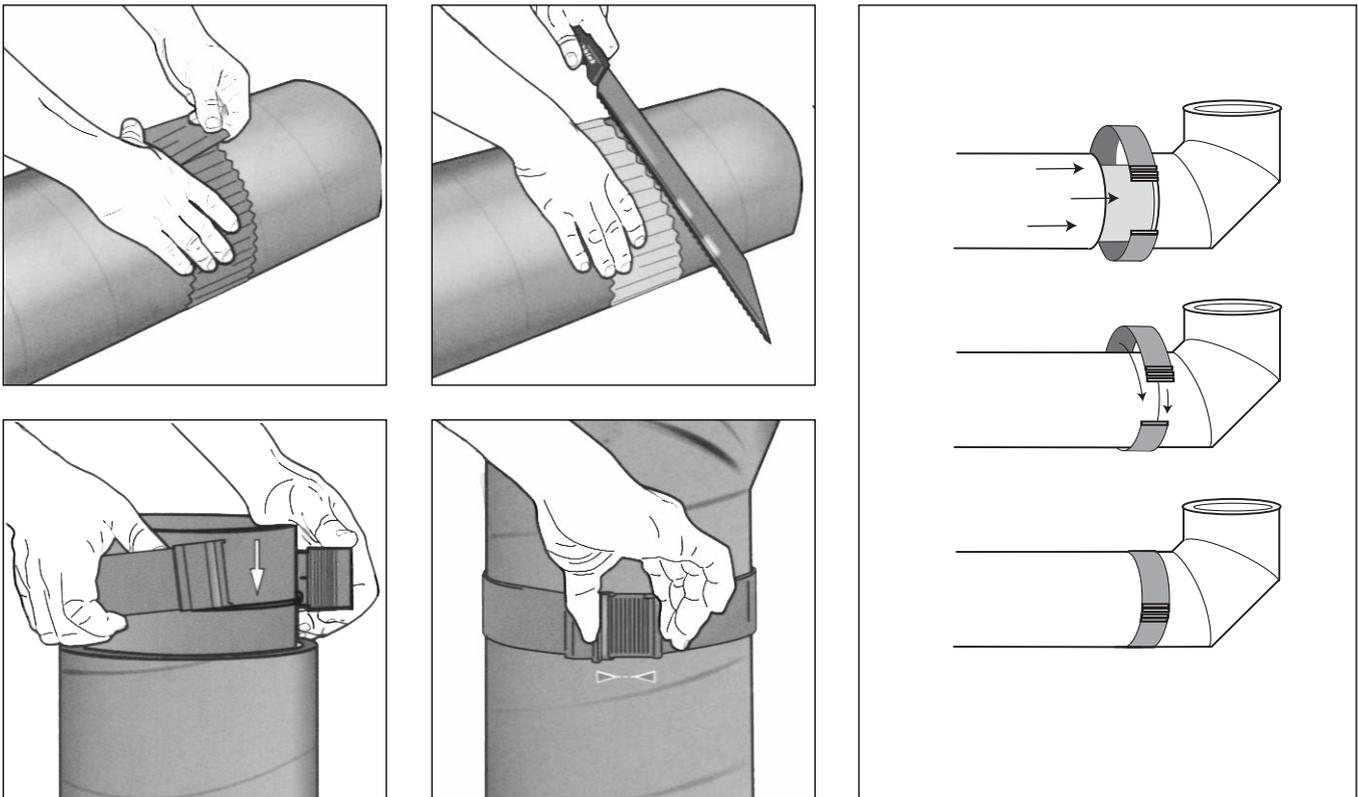
3.7 Rigid ducting preparation and use

The system uses 180mm dia. insulated foam ducting. It is rigid yet lightweight and will not burr when cut. Supplied in 2.25 metre lengths, the ducting is easy to install and can be used with minimum waste, has a neat and tidy appearance. The ducting has to be cut to the required lengths and joined where necessary with 30, 45 and 90° bends and an equal Y piece.

1. Position a template at desired length and cut perpendicular with knife ensuring a clean edge.
2. The ducting lengths must be installed tight to each other using insert connectors with inbuilt clamping collars.
3. All joints and bends must be clamped with the supplied clamping collars every other metre or where a 30 or 90° bend is inserted.
4. The ducting can be connected to the Sunwarm Air unit with an insert connector.

Note: the ducting from the unit to the diffuser is 200mm dia. insulated flexible ducting (see 3.9 for details).

Figure 16a. Cutting the rigid light weight insulated foam ducting and connecting with with insert clamping collars.



3.8 Ducting support straps

A reel of Duct Hanging Strap 15m long and 5 clips is supplied to support ducting where necessary. Make a loop in the strapping to contain the ducting, adjust to the appropriate length to support the ducting from the ceiling joists, cut to the required length and use a clip to join the ends.

The strapping can also be used to secure the Sunwarm Air unit to the support platform if required.

Figure 16b. Support the ducting if necessary with supplied strapping and clips.

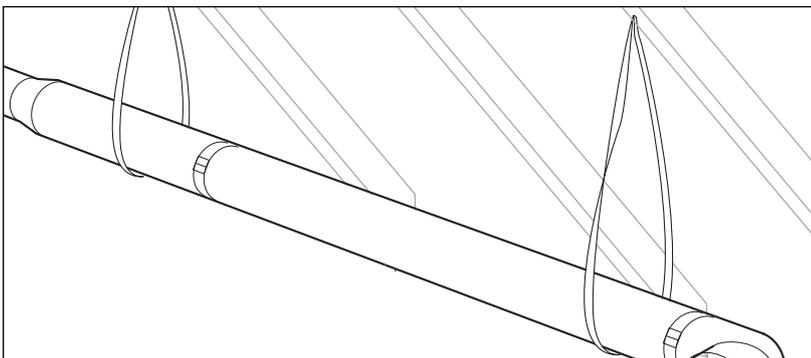
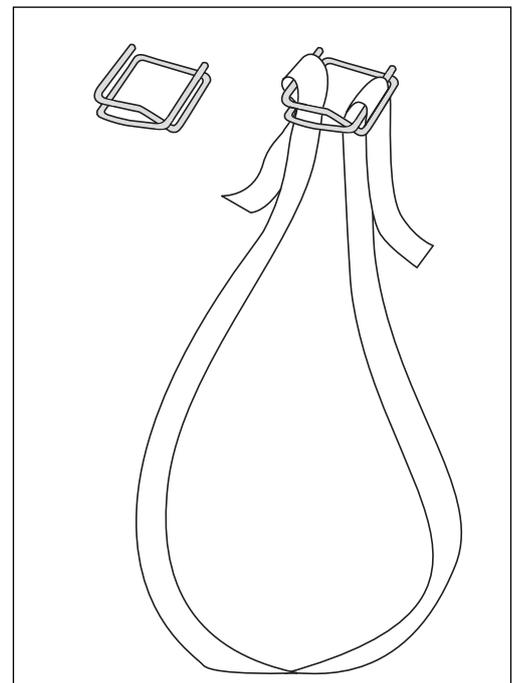


Figure 16c. Supplied clips join ends of strapping.



3.9 Unit air inlet ducting connections

As explained previously the unit is capable of drawing in external air from different roof locations via three air inlet spigots each fitted with their own low energy open/close damper.

Air inlet connections are made as follows and as shown in figure 17.

Connection to Solar Air Collectors

- 1) Use the 4 self tapping screws supplied to connect each of the 4 solar collector spigots to inlet and outlet holes of the collectors, ensuring that the spigot with a pre-connected sensor is located in one of the top 2 outlet locations.
- 2) Attach the two filters to the outside of the bottom two collector spigot inlet ports.
- 3) Using 180mm (internal) rigid insulated ducting and bends connect the top 2 collector outlet spigots together through the supplied Y Piece which should connect to the unit via ducting cut to suit the installation, as shown in figure 17.

Connection to outside as shown in figure 17, via:

4/5) A roof tile vent (supplied) and 180 x 150mm reducing piece, rigid foam ducting and bends. (see figure 17).

6/7) A wall grille (if applicable) and 180 x 150mm reducing piece, rigid foam ducting and bends. (see figure 12 and 17) or:

A soffit grille if applicable (part no. 775229) and insulated flexible ducting no more than 500mm in length (supplied by others).

3.10 Unit air outlet duct connection

The main fan single air outlet spigot on the air handling unit should be connected to the diffuser spigot using the 2m long 200mm inside dia. flexible insulated ducting as supplied.

The length of the ducting must be trimmed to suit the installation and fixed to the diffuser spigot with a dynotic.

Figure 18. Unit air outlet duct connection.

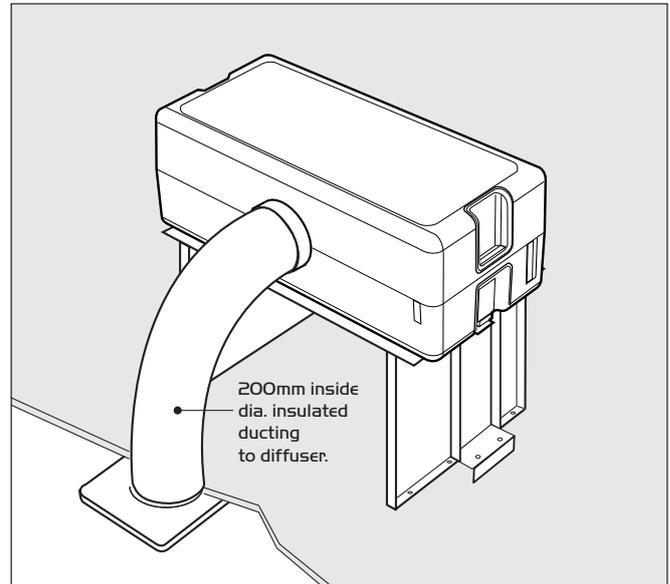
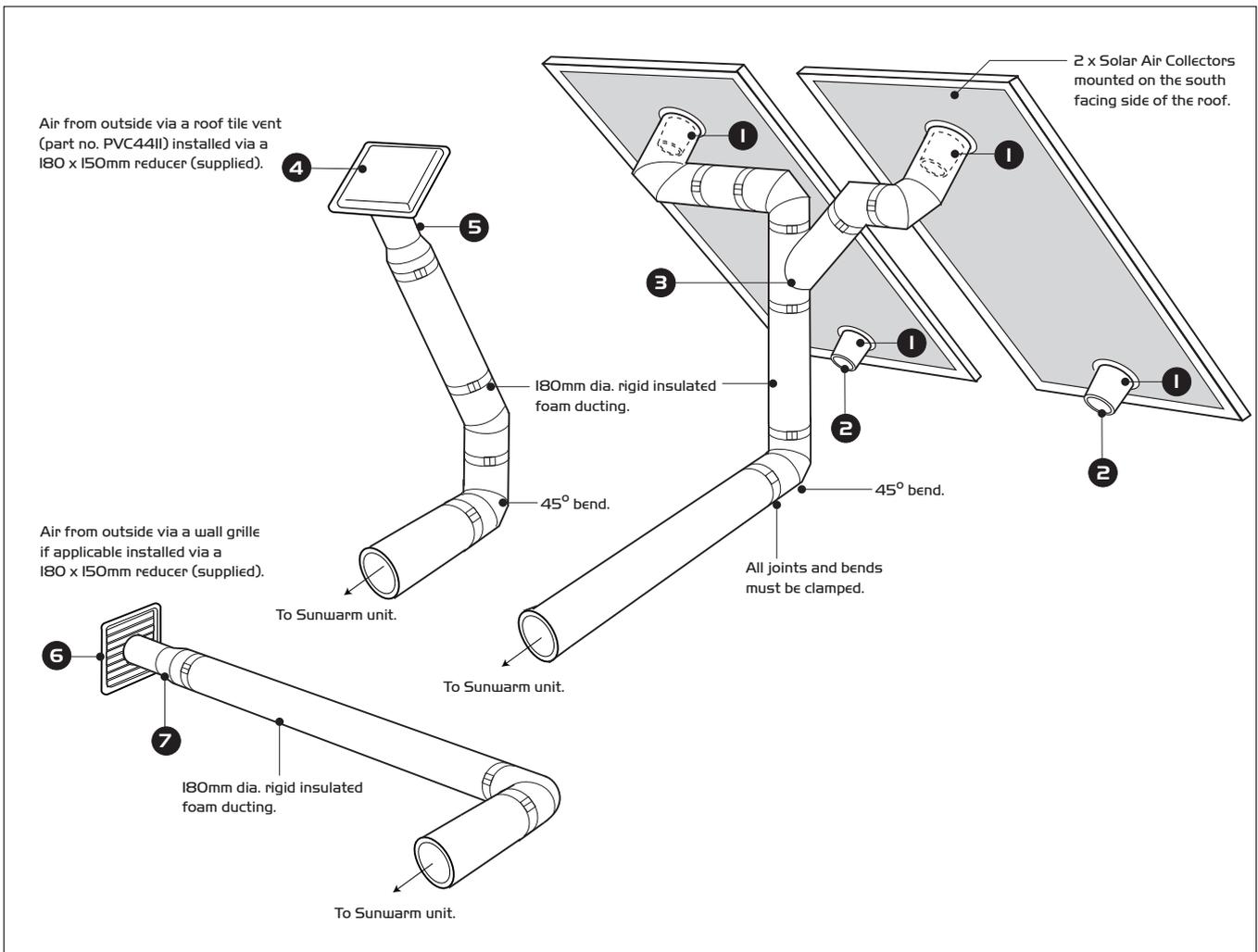


Figure 17. Ducting connections to Solar Air Collectors and outside.



Section 4.0 Electrical contractors projects

- (a) Installing sensors.
- (b) Wiring control panel.
- (c) Completing wiring to Sunwarm air unit
- (d) Commissioning including inserts to the diffuser on final set up.

4.1 Installing temperature sensors

Supplied with the unit are three black leads each incorporating a temperature sensor which is sealed at one end. Typically this will measure the following temperatures.

- A) Measuring the outside air temperature.** (see figure I9a and I9b).
- B) Measuring loft temperature.** This sensor can be positioned adjacent to the units central spigot.
- C) Measuring Solar Collector temperature.** This sensor is supplied pre-connected to spigot (see figure I9a and I9b).
- H) Home temperature sensor position in a suitable location in the home** (see figure I9a and I9b).

Figure I9a. Location of temperature sensors in loft.

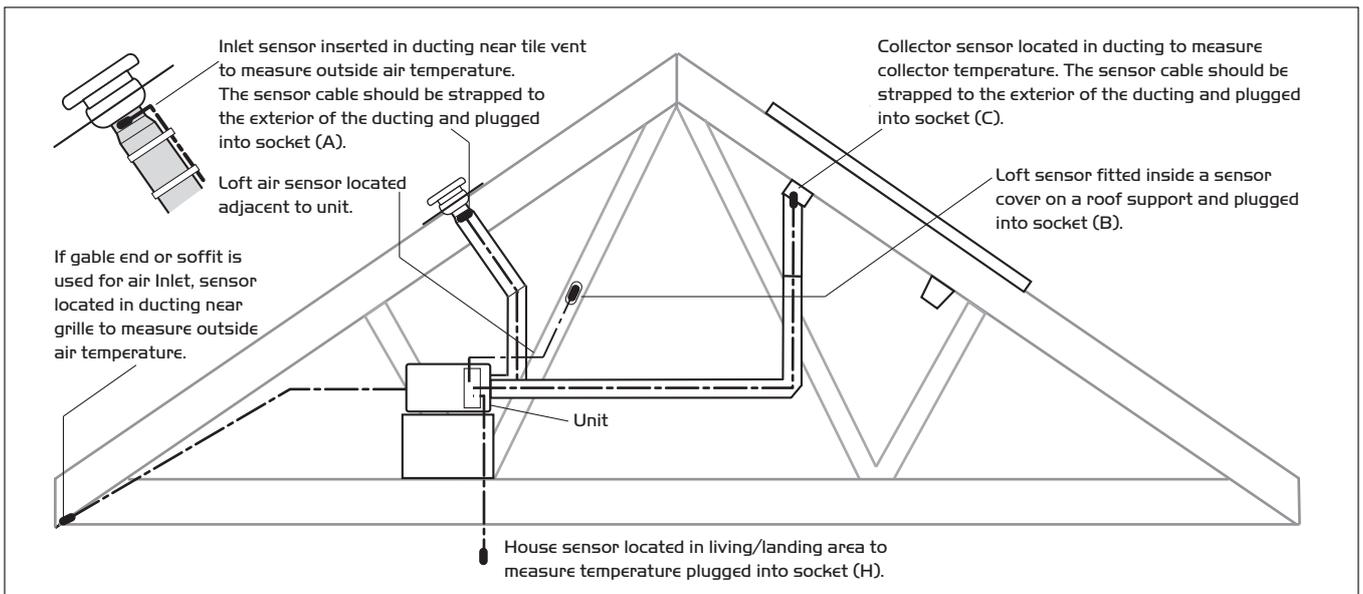
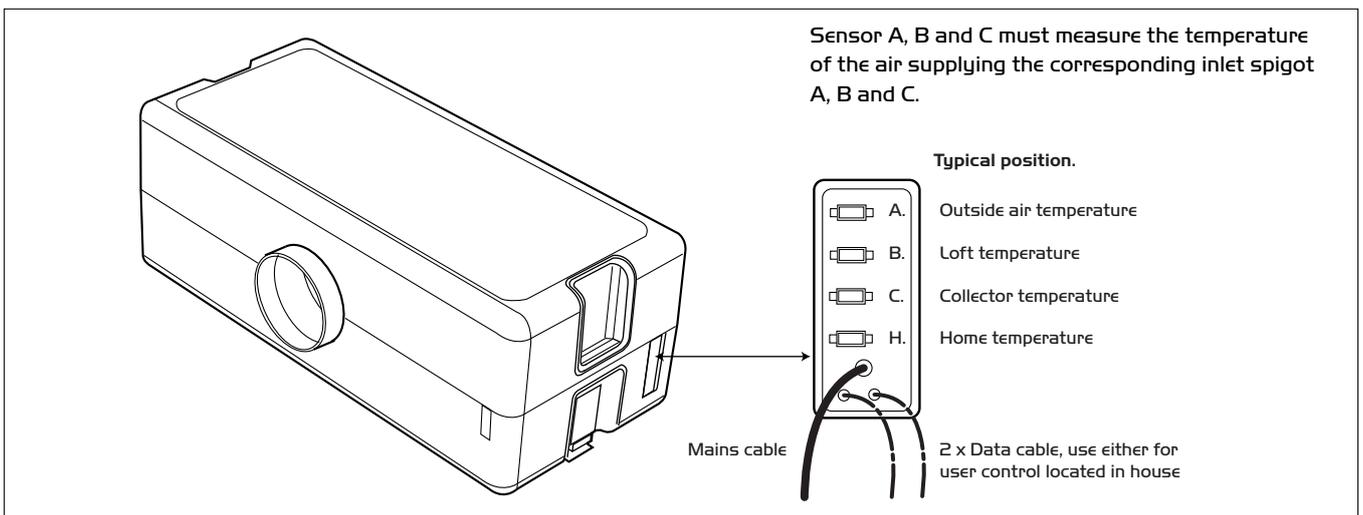


Figure 20. Location of temperature sensor connection panel on Sunwarm Air unit.

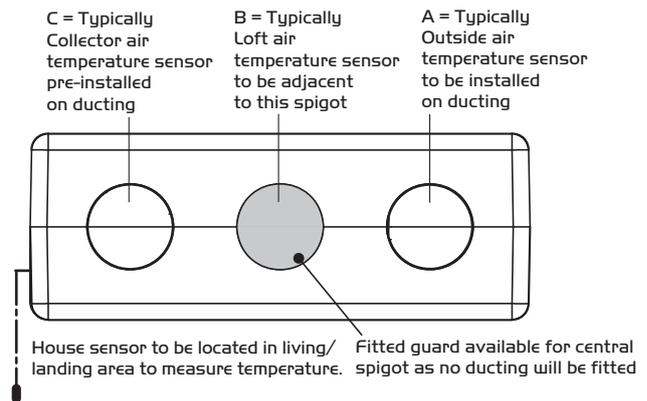


Select a position unaffected directly by heating radiators or possible draughts from opening windows. Using a small screwdriver, pierce a hole in the corner of the ceiling and push the end of the sensor through until it just protrudes into the room.

With the cable sensors installed as described, the black sensor leads can be strapped to the exterior of the ducting until the ends reach the Sunwarm Air unit control panel.

Attach the ends of the cables to the appropriate connector block on the main unit (see Fig. 20).

Figure I9b. Rear view of unit showing location of sensors in loft.



4.2 Wiring control panel and completing wiring to unit

Please note: the electrical connection of the unit must be carried out by a qualified electrician.

Electrical details:-

Voltage: 240V lph 50Hz

Consumption: 15W

Fuse rating: 3 Amp

NOTE This unit must be earthed

The three core cable from the mains power supply should be connected to a fixed wiring installation, via a fused isolator, in accordance with current IEE wiring regulations.

IMPORTANT

For good EMC engineering practice, any sensor cables or switched live cables should not be placed within 50mm of other cables or on the same metal cable tray as other cables.

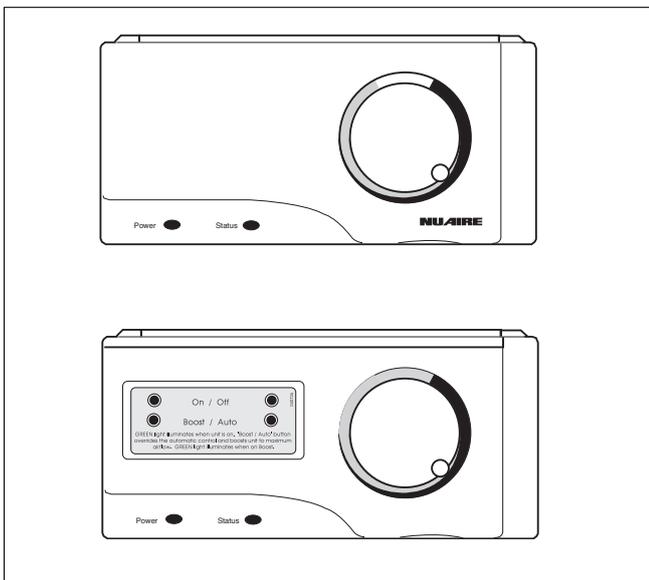
4.3 User Control

The user control should be fitted to an appropriate wall (fixings supplied). Position the control so that the user can gain easy access. Instructions for fixing are supplied with the control.

Screw the backplate to the wall. Connect the data cable (supplied) and clip the control into place. Route the cable to the loft and connect to the main Sunwarm unit control module panel (see figure 20).

Secure the cable to prevent accidental dislocation.

Figure 21. User control.



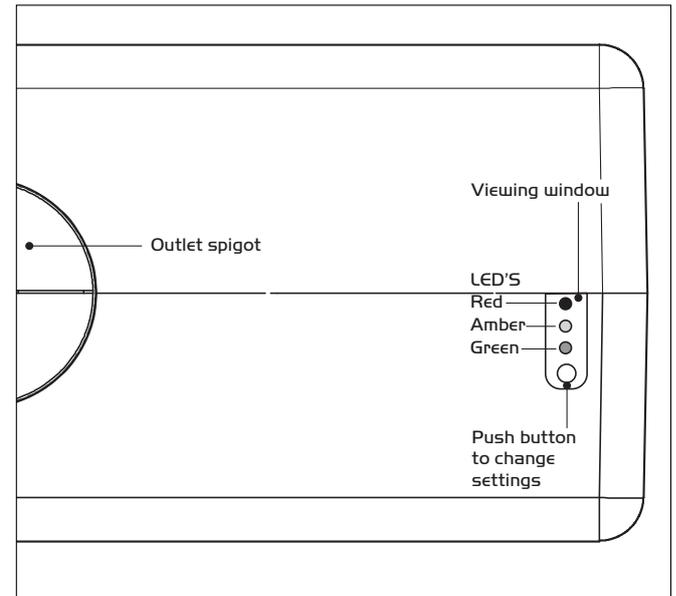
User Control Test

Ensure the power light is on green and the status light is either green or amber.

If the power light is not on check the wiring and connections between the fan unit and the user control.

The user control as shown in figure 21 above, has a target temperature setting dial knob and two press buttons (under the flap) which enable the fan to be switched off or the airflow to be boosted to its maximum duty.

Figure 22. Control module panel on Sunwarm unit.



4.4 Checking the flow rate setting

The control has three LED lights; one each of green, amber and red plus one push button to allow system to be set up.

Press and hold the button down for approximately 8 seconds; the LEDs will go from green through the following sequence: amber, red, amber & red, all off. Release the button when all the LEDs are turned off. The red LED will flash to indicate the flowrate in tens followed by the amber LED which indicate flowrate in units. For example: 2 red flashes followed by 4 amber flashes means the flowrate setting is 24l/s.

4.5 Setting the flowrate

The selectable flowrate range is between 15 and 40 litres per second (l/s). The flowrate is split into two halves, tens and units for adjustment e.g.

2	5	l/s
Tens	Units	

Press and hold the button until just the AMBER light is lit; release the button. Press and release the button to increase the unit setting starting from 0. For example; 3 presses will set the unit value to 3. The valid range is 0-9. Note this setting works in a loop so 11 presses produce value of 1. The green LED will flash after each button press.

Press and hold the button until just the RED light is lit; release the button. Press and release the button to increase the setting in tens starting from 0. For example; 2 presses will set the unit value to 2. Valid range is 1-4. Note this setting works in a loop so 5 presses produce value of 1. The green LED will flash after each button press.

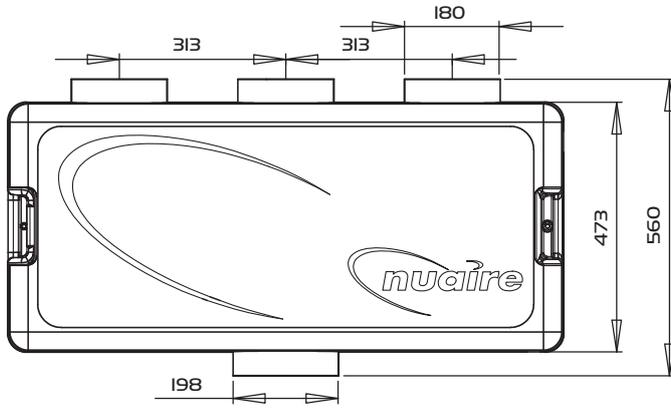
Example: set the flowrate to 25l/s, press and hold until amber light is lit; press and release 5 times. Press and hold until red light is lit; press and release twice. Press and hold all the LED are switched off, the red will then flash twice followed by amber flashing 5 times to indicate 25l/s.

If the setting is below 15l/s; then 15l/s will be the default flowrate. If the setting is above 40 then 40l/s will be the flowrate.

Section 5.0 Dimensions (mm)

Figure 23. Sunwarm Air Handling Unit.

View from Top



View from back

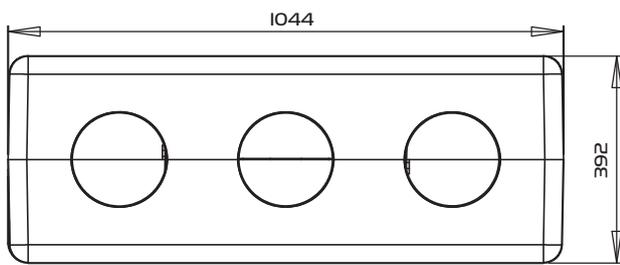


Figure 25. Sunwarm Air Handling Unit Support pedestal.

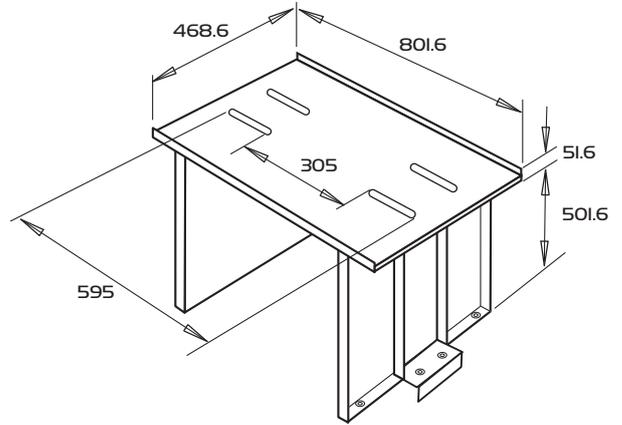


Figure 26. User control.

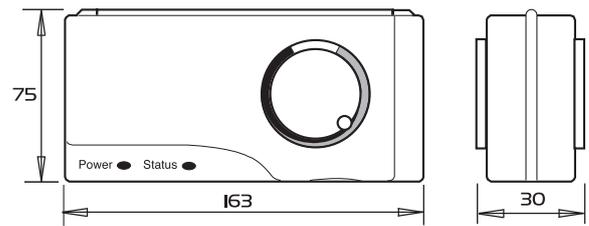


Figure 24. Diffuser.

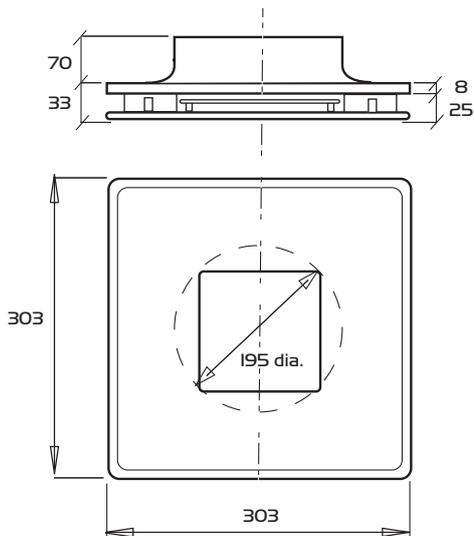
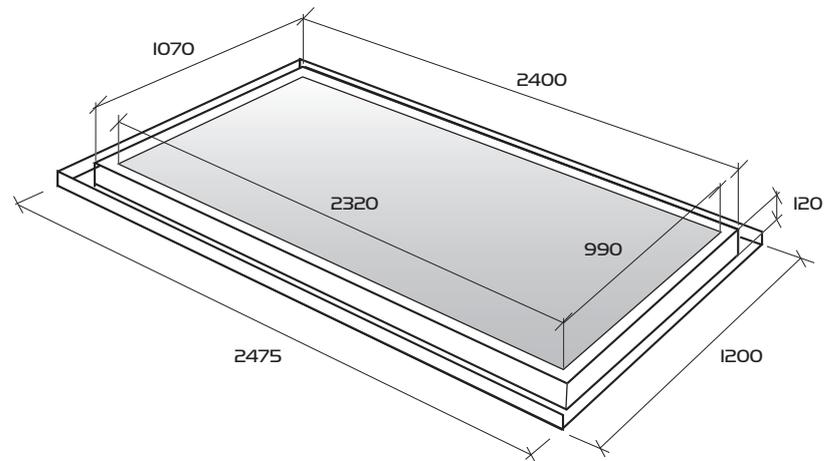


Figure 27. 25mm Upstand Solar Air Collector.



Section 6.0 Maintenance

A filter change on both the unit and solar collector will be required annually. The status light will flash red on the user control panel to indicate when this is due.

The ductwork and electrical connections will also require inspecting annually.

New filter kits can be purchased direct from Nuaire using the following code: 778803.

If the status light is permanently red, or if the units performance has been reduced dramatically and there is no flashing red light, please contact our service department.

Dust can occasionally accumulate through static, on the diffuser and the adjacent ceiling. This can be removed if required by vacuuming.

Note: A clear distance of 500mm should be available above the unit to allow access for maintenance.

6.1 Filter Change

Once a year the status LED on the main user control will flash red. This indicates filters need changing.

Spare filter kits code: (778803) contains 2 x filters for fan unit and 2 x filters for solar panel inlets.

- a) **Make sure power supply to the unit is isolated and turned off.**
- b) **Remove the 2 screws at the white handle of the unit using a 5mm Allen key.**
- c) **Gently prise away the 2 filters from each side of the fan housing.**
- d) **Replace with new filters ensuring the ring on the filter is clipped into place on the green fan housing.**
- e) **Replace the lid and secure to the base using the 2 screws.**
- f) **Switch the power supply back on.**
- g) **To reset the filter change reminder, press and hold the push-button in until both red and amber LED's are lit. Release the push-button and the control will flash the LED to show the elapsed time (in days) since the last filter change.
Green for hundreds, red for tens, amber for units.
Press and holding in the push-button during this period will reset the reminder to zero.**

6.2 Warranty

The 5 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining 4 years covers parts only. This warranty is conditional on planned maintenance being undertaken.

6.3 Service Enquiries

Nuaire can assist you in all aspects of service. Our Technical Support department will be happy to provide any assistance required.

Telephone 029 2085 8400

DECLARATION OF INCORPORATION AND INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE

We declare that the machinery named below is intended to be assembled with other components to constitute a system of machinery. All parts except for moving parts requiring the correct installation of safety guards comply with the essential requirements of the Machinery Directive. The machinery shall not be put into service until the system has been declared to be in conformity with the provisions of the EC Machinery Directive.

Designation of machinery: SUNWARM AIR
Machinery Types: Solar Energy Ventilation System
Relevant EC Council Directives: 2006/42/EC (Machinery Directive)
Applied Harmonised Standards: BS EN ISO 12100-1, BS EN ISO 12100-2, EN60204-1, BS EN ISO 9001, BS EN ISO 13857
Applied National Standards: BS848 Parts 1, 2.2 and 5

Note: All standards used were current and valid at the date of signature.

Signature of manufacture representatives:

Name:	Position:	Date:
1) C. Biggs 	Technical Director	11. 05. 11
2) A. Jones 	Manufacturing Director	11. 05. 11

CE DECLARATION OF CONFORMITY

We declare that the machine named below conforms to the requirements of EC Council Directives relating to Electromagnetic Compatibility and Safety of Electrical Equipment.

Designation of machinery: SUNWARM AIR
I & M Serial No.: 671379
Machinery Types: Solar Energy Ventilation System
Relevant EC Council Directives: 2004/108/EC (EMC), 2006/95/EC (Low Voltage Directive)
Applied Harmonised Standards: EN55014-1, EN55014-2, EN61000-3-2, EN61000-3-3, EN60335-2-80
Basis of Self Attestation: Quality Assurance to BS EN ISO 9001 BSI Registered Firm Certificate No. FM 149

Signature of manufacture representatives:

Name:	Position:	Date:
1) C. Biggs 	Technical Director	11. 05. 11
2) A. Jones 	Manufacturing Director	11. 05. 11

Nuaire Ltd,
 Western Industrial Estate,
 Caerphilly CF83 1NA.

Note: All standards used were current and valid at the date of signature.

INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE OF NUAIRE VENTILATION EQUIPMENT

To comply with EC Council Directives 2006/42/EC Machinery Directive and 2004/108/EC (EMC).

To be read in conjunction with the relevant Product Documentation (see 2.I)

1.0 GENERAL

- 1.1 The equipment referred to in this Declaration of Incorporation is supplied by Nuaire to be assembled into a ventilation system which may or may not include additional components.
 The entire system must be considered for safety purposes and it is the responsibility of the installer to ensure that all of the equipment is installed in compliance with the manufacturers recommendations and with due regard to current legislation and codes of practice.

2.0 INFORMATION SUPPLIED WITH THE EQUIPMENT

- 2.1 Each item of equipment is supplied with a set of documentation which provides the information required for the safe installation and maintenance of the equipment. This may be in the form of a Data sheet and/or Installation and Maintenance instruction.
 2.2 Each unit has a rating plate attached to its outer casing. The rating plate provides essential data relating to the equipment such as serial number, unit code and electrical data. Any further data that may be required will be found in the documentation. If any item is unclear or more information is required, contact Nuaire.
 2.3 Where warning labels or notices are attached to the unit the instructions given must be adhered to.

3.0 TRANSPORTATION, HANDLING AND STORAGE

- 3.1 Care must be taken at all times to prevent damage to the equipment. Note that shock to the unit may result in the balance of the impeller being affected.
 3.2 When handling the equipment, care should be taken with corners and edges and that the weight distribution within the unit is considered. Lifting gear such as slings or ropes must be arranged so as not to bear on the casing.
 3.3 Equipment stored on site prior to installation should be protected from the weather and steps taken to prevent ingress of contaminants.

4.0 OPERATIONAL LIMITS

- 4.1 It is important that the specified operational limits for the equipment are adhered to e.g. operational air temperature, air borne contaminants and unit orientation.
 4.2 Where installation accessories are supplied with the specified equipment eg. wall mounting brackets. They are to be used to support the equipment only. Other system components must have separate provision for support.
 4.3 Flanges and connection spigots are provided for the purpose of joining to duct work systems. They must not be used to support the ductwork.
 4.4 In the event of RF interference the fan may change speed. This is normal and will have no adverse effect on the fan. The speed will return to normal once the interference has subsided.

5.0 INSTALLATION REQUIREMENTS

In addition to the particular requirements given for the individual product, the following general requirements should be noted.

- 5.1 Where access to any part of equipment which moves, or can become electrically live are not prevented by the equipment panels or by fixed installation detail (eg ducting), then guarding to the appropriate standard must be fitted.
 5.2 The electrical installation of the equipment must comply with the requirements of the relevant local electrical safety regulations.
 5.3 For EMC all control and sensor cables should not be placed within 50mm or on the same metal cable tray as 230V switched live, lighting or power cables and any cables not intended for use with this product.

6.0 COMMISSIONING REQUIREMENTS

- 6.1 General pre-commissioning checks relevant to safe operation consist of the following:
 Ensure that no foreign bodies are present within the fan or casing.
 Check electrical safety. e.g. Insulation and earthing.
 Check guarding of system.
 Check operation of Isolators/Controls.
 Check fastenings for security.
 6.2 Other commissioning requirements are given in the relevant product documentation.

7.0 OPERATIONAL REQUIREMENTS

- 7.1 Equipment access panels must be in place at all times during operation of the unit, and must be secured with the original fastenings.
 7.2 If failure of the equipment occurs or is suspected then it should be taken out of service until a competent person can effect repair or examination. (Note that certain ranges of equipment are designed to detect and compensate for fan failure).

8.0 MAINTENANCE REQUIREMENTS

- 8.1 Specific maintenance requirements are given in the relevant product documentation.
 8.2 It is important that the correct tools are used for the various tasks required.
 8.3 If the access panels are to be removed for any reason the electrical supply to the unit must be isolated.
 8.4 A minimum period of two minutes should be allowed after electrical disconnection before access panels are removed. This will allow the impeller to come to rest. **NB: Care should still be taken however since airflow generated at some other point in the system can cause the impeller to "windmill" even when power is not present.**
 8.5 Care should be taken when removing and storing access panels in windy conditions.



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