



# FLAT2000 L/R

## Positive Input Ventilation Unit Installation Manual



### 1.0 SAFETY INFORMATION

- The provision of the electrical supply and the connection of the unit to the electrical supply must be carried out by a qualified electrician in accordance with latest edition of the wiring regulations.
- Isolate from power supply before removing any covers. During installation / maintenance ensure all covers are fitted before switching on the mains supply.
- All-pole disconnection from the mains as shown in the wiring diagram must be incorporated within the fixed wiring and shall have a minimum contact separation of 3mm in accordance with latest edition of the wiring regulations.
- This unit must be earthed.
- Ducting must be securely fixed with screws to the spigot to prevent access to live parts. Duct runs terminating close to the fan must be adequately protected by suitable guards.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. The replacement cord must be of the same technical specification as the original cord or greater.
- Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.
- This appliance should not be used by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the safe use of the appliance by a person responsible for their safety. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children.

#### 1.1 Hazard Symbols



##### **GENERAL WARNING**

Signifies a general warning regarding hazard specified by supplementary information.



##### **ELECTRIC SHOCK**

This unit must be completely electrically isolated before any panels are removed. Check mains supply and control connections.



##### **ROTATING PARTS**

This unit contains fast moving rotational parts which may start automatically. It is the sole responsibility of the installer to adequately guard these components.



##### **REFER TO INSTRUCTION MANUAL**

Read and understand the installation and maintenance manual before installing, operating or maintaining this product.

### 1.2 Important Information

This manual contains important information on the safe and appropriate assembly, transport, commissioning, operation, maintenance, disassembly and simple troubleshooting of the product.

While the product has been manufactured according to the accepted rules of current technology, there is still a danger of personal injury or damage to equipment if the following general safety instructions and the warnings contained in these instructions are not complied with.

- Read these instructions completely and thoroughly before working with the product.
- Keep these instructions in a location where they are accessible to all users at all times.
- Always include the operating instructions when you pass the product on to third parties.

### 1.3 Personal Protective Equipment

The following minimum Personal Protective Equipment (PPE) is recommended when interacting with Nuaire product:

- Protective Steel Toed Shoes - when handling heavy objects.
- Full Finger Gloves (Marigold PU800 or equivalent) - when handling sheet metal components.
- Semi Fingerless Gloves (Marigold PU3000 3DO or equivalent) - when conducting light work on the unit requiring tactile dexterity.
- Safety Glasses - when conducting any cleaning/cutting operation or exchanging filters.
- Reusable Half Mask Respirators - when replacing filters which have been in contact with normal room or environmental air.

Nuaire would always recommend a site specific risk assessment by a competent person to determine if any additional PPE is required.

## 2.0 INTRODUCTION

The Nuaire Drimaster / Flatmaster range has been curing severe condensation problems for over 20 years in some of the worst affected properties throughout the world. Its successful operation depends entirely upon the unit being installed strictly in accordance with these instructions. We would, therefore, respectfully suggest that you read through this guide in its entirety before commencing installation and then go through this guide step by step to ensure a satisfactory completion.

Units are supplied assembled and include a thermostatically controlled r. A unit mounted override switch is provided. A 'BOOST' speed facility for additional ventilation is included, this is operated by a remote switch (supplied).

The FLAT2000 L/R is a 'handed' product, with the L/R signifying the discharge direction, as viewed from the front. The FLAT2000L unit is supplied arranged for LEFT HAND discharge of air. The FLAT2000R unit is supplied arranged for RIGHT HAND discharge of air.

**Whilst the installation of the unit may be achieved by a suitable craftsman, the provision of the electrical supply and the connection of the unit to the mains must be carried out by a qualified electrician.**

## 3.0 MECHANICAL INSTALLATION

Installation must be completed by competent persons, in accordance with good industry practice and should conform to all governing and statutory bodies i.e. IEE, CIBSE, etc.

Where the systems are installed in flats, ensure all regulatory provisions are adhered to. Where the systems are installed in flats where these regulatory provisions do not apply, good installation practice should be observed.

For more information please refer to the Building Regulations, Approved Document B (Fire safety) – Volume 1: Dwelling houses (2006 Edition).

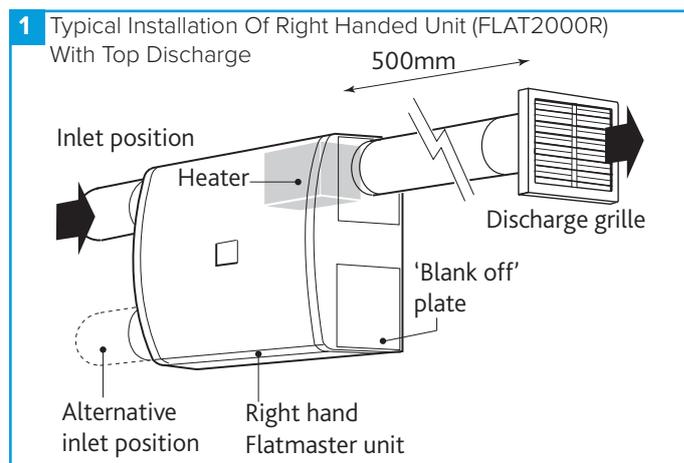
The unit is designed to take fresh air from outside, clean the air, and discharge it into the central hallway via a system of ducting supplied by the installer.

This unit **MUST** be mounted in the orientation shown in Figure 8 and 9. The unit is **NOT** suitable for mounting upside down or on the ceiling.

The dwelling supply grille is usually installed at high level in a central location within the hallway, although discharging the air down the length of the hallway (away from the front door) should also prove acceptable. Unit performance may be enhanced if an existing heat source can warm the discharged air e.g. by locating the discharge grille above a radiator.

Before commencing installation decide the best position for the unit and where the fresh air is to come from and be discharged to. The unit can be installed in many different configurations and is supplied with enough interchangeable spigots to enable it to be used with either circular (100mm) or rectangular ducting (121mm x 60mm).

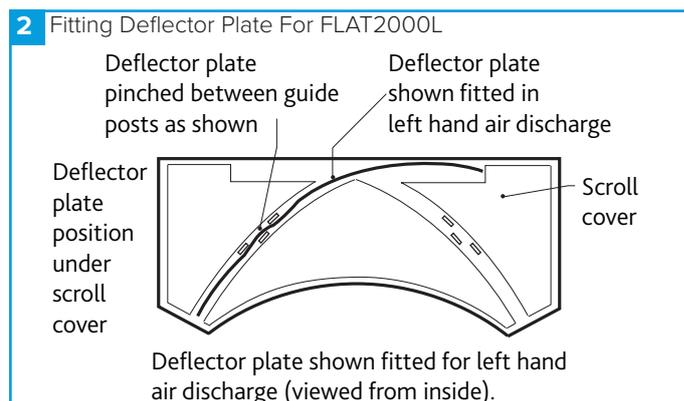
**The heater outlet MUST NOT be left exposed. A minimum distance of 500mm is required between the discharge grille and the heater.**



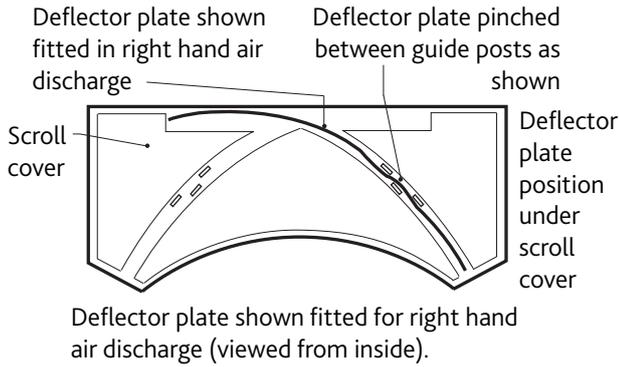
### 3.1 Setting Up The Correct Airflow Direction

#### 3.1.1 Fitting The Deflector Plate

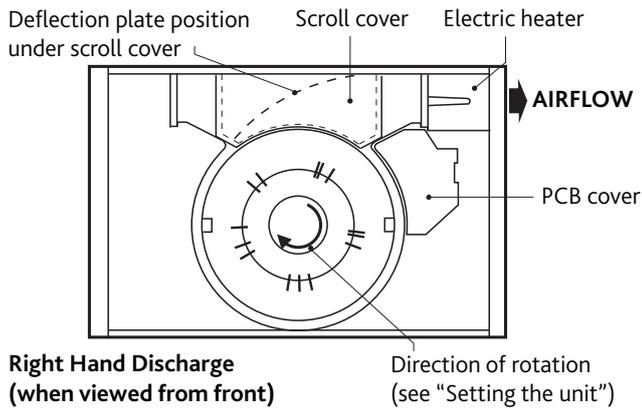
Ensure the deflector plate is fitted correctly into scroll cover as appropriate for the handing of the unit (Figures 2 & 3). Once fitted the assembly can be slotted into the scroll and clipped firmly in place (Figure 4).



**3** Fitting Deflector Plate For FLAT2000R



**4** FLAT2000R



**3.3 Fixing The Unit To The Wall**

The unit has three mounting feet located on the back plate. Two are accessible by removing the front cover (fixed by two screws), with the third also requiring removal of the deflector plate assembly. Position the unit on the wall where it is to be mounted and mark through the feet. Drill and plug the wall with suitable fixings.

Remove the PCB cover and feed the electrical supply cable through the grommet hole in the rear of the unit (standard 1mm three core lighting cable is recommended).

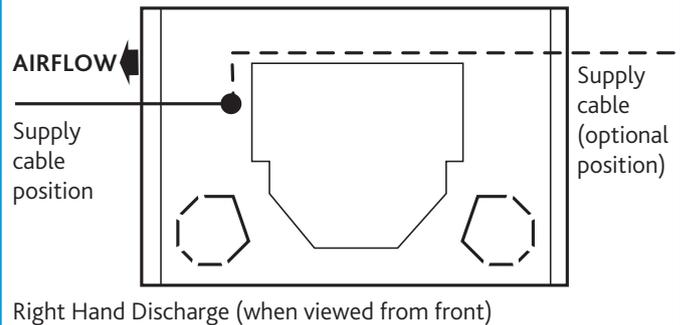
Screw the unit to the wall and refit the PCB cover, deflector plate assembly (Section 3.1.1) and front cover.

**Installers must ensure the grommet provided or other suitable insulated grommet/bushing is used for cable entry.**

**3.3.1 Points to Consider**

- The inlet ducting should be kept as short as possible to avoid condensation build up on the ducting surface.
- Find the shortest, most direct route from outside of the unit and then to the discharge grille using the least number of bends (these bends increase the airflow resistance).
- Note the location of any joists, pipes, electrical cables etc.
- Allow adequate access to the front cover to allow filter cleaning.

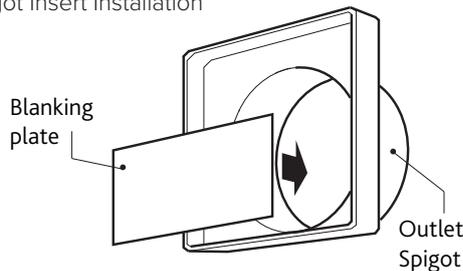
**7** Supply Cable Secured By Cable Clamp (Rear View)



**3.2 Spigot Inserts**

The unit is designed to be used with rigid ducting only. Ensure that when the ducting is fitted it is secured in place using wall brackets and screws on the duct as close to the spigots as possible to prevent the spigot inserts (Figure 5) or rigid ducting from being removed or accidentally knocked off. If it is necessary to fit flexible ducting then the spigot inserts should be glued in place, using super glue Loctite 454 Gel, at the clip points 1, 2, 3 & 4 for all spigot inserts (Figure 6).

**5** Spigot Insert Installation



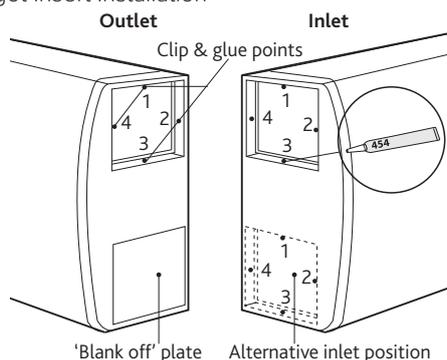
**3.4 Fitting Of Ducts**

To prevent access to live or moving parts ensure ducts are adequately secured to the spigots by fitting self tapping screws or by other means requiring a tool. If using duct tape ensure tape cannot be removed without the use of a tool by securing with tie wraps.

**3.4.1 Necessary Ducting**

A full range of ductwork and ductwork ancillaries are available. Please contact Nuairé for further details.

**6** Spigot Insert Installation



### 3.5 Inlet / Outlet Grille Installation

If a fly screen is fitted it should be removed from both the internal and external grille.

**When installing the internal grille, the louvres must slant upwards to ensure the correct air circulation and the avoidance of unpleasant down draughts. The outside wall input grille louvres must slant downwards.**

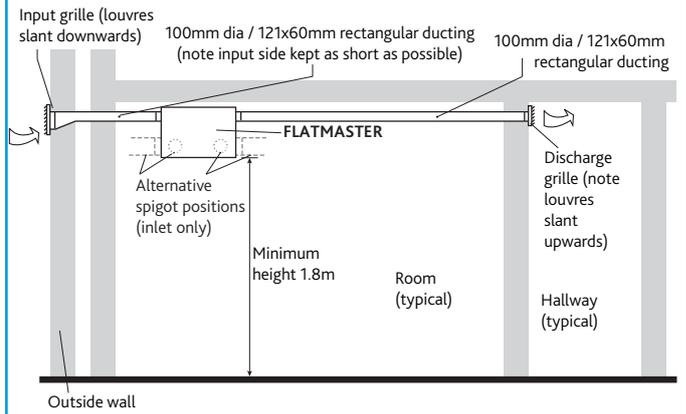
Standard 100mm diameter ducting or 121 x 60mm ducting is used to connect the Flatmaster to the input and discharge grilles.

**Any air intake terminal MUST be installed in accordance with the appropriate regulation.**

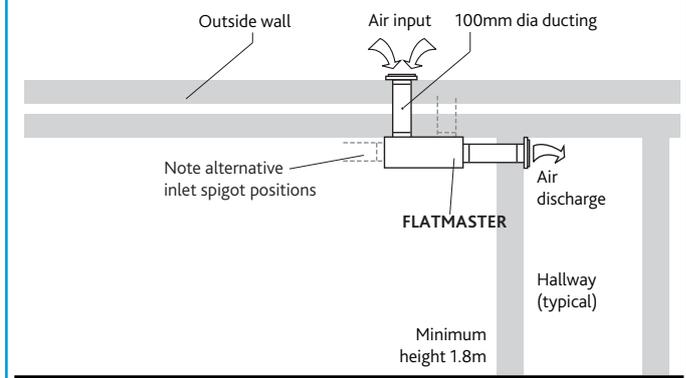
**As a guide, the BS5440 series of British Standards deals with this issue and currently states that an air intake must be at a minimum distance of 300mm from a gas boiler balanced flue. Installers are advised to be aware of the requirements of this standard when installing 'through the wall' supply air ducting. Similarly, supply and extract air grilles should be at least 300mm apart.**

**The internal grille must not be placed within 1.5m of a smoke alarm.**

### 8 Side Input Installation (Front View)



### 9 Rear Input Installation (Top View)



## 4.0 DIMENSIONS(mm)

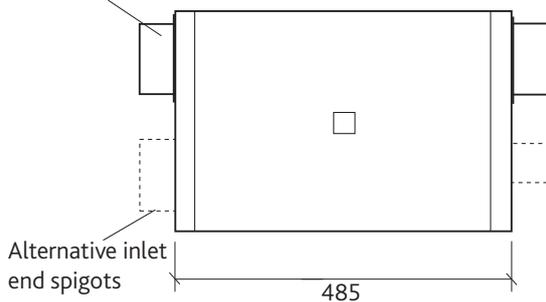
Dimensions for the space required can be determined from the dimensions shown in Figure 10 below.

Allow an additional 32mm for the length of each end spigot and any additional room for installation and maintenance e.g. access to screws on top and bottom of unit for front cover.

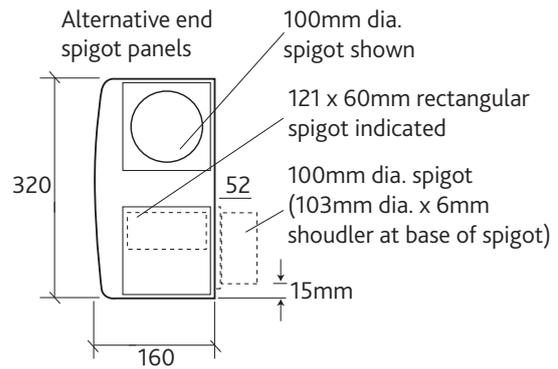
### 10 Unit Dimensions

#### Front view

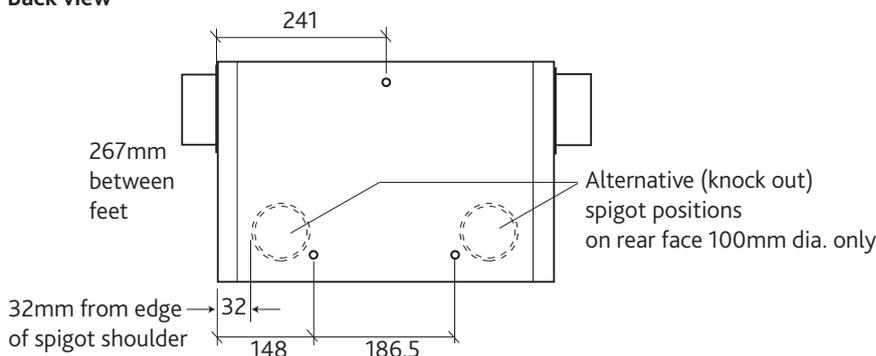
100mm dia. or 121 x 60mm interchangeable spigots supplied with unit



#### End view



#### Back view



## 5.0 ELECTRICAL INSTALLATION

Ensure that the fan is isolated from the mains supply before removing cover.

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.

### 5.1 Electrical Information

Supply - 230V 1 phase 50Hz

| Speed  | Power Consumption* |           |
|--------|--------------------|-----------|
|        | Heater Off         | Heater On |
| Low    | 3.0 W              | 287 W     |
| Medium | 5.5 W              | 287 W     |
| High   | 9.2 W              | 293 W     |
| Boost  | 35.0 W             | 316 W     |

\*At free air (0 Pa).

It is necessary to allow all pole disconnection of the appliance from the supply by incorporating a switch in the fixed wiring in accordance with current IEE wiring regulations.

### 5.2 Electrical Connection

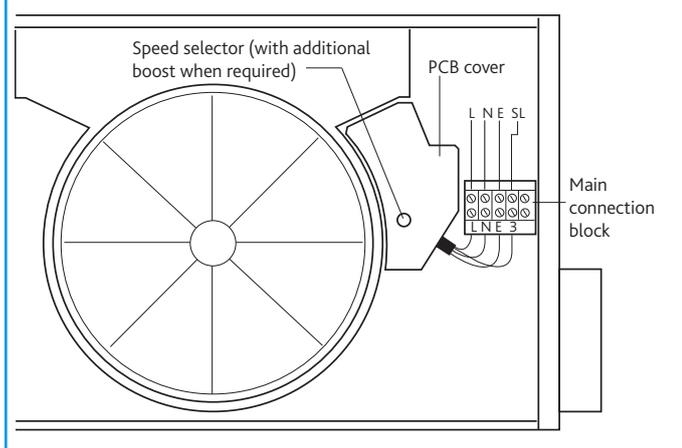
The electrical connections to the unit should be carried out by a qualified electrician. Wiring connections can be seen in Fig 11/12. Ensure a 3A fused spur is fitted on the supply along with a 3 pole isolator if required.

#### CAUTION!

To avoid a hazard due to inadvertent re-setting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switch on and off by the utility.

### 5.3 Wiring Diagrams

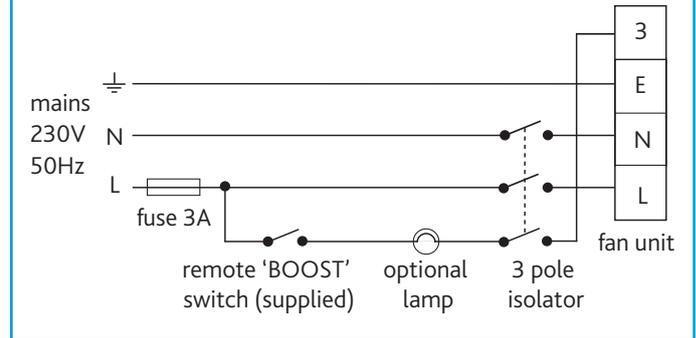
#### 11 Unit Wiring Diagram



### 5.4 Remote 'BOOST' Switch Wiring

A remote 'BOOST' switch is supplied and provides a 'BOOST' speed facility for additional ventilation on demand.

#### 12 Boost Switch Wiring Diagram



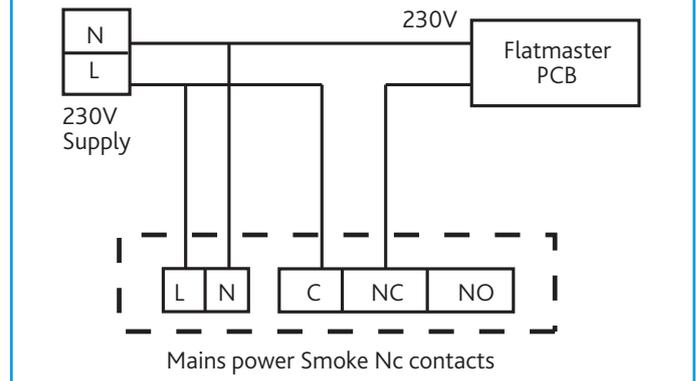
### 5.5 Smoke Alarm Automatic Shut Down

If the unit is required to switch off in the event of smoke detection, alarms are available with separate relay bases from companies such as:

Dicon Safety products – [www.diconsafety.co.uk](http://www.diconsafety.co.uk)

Aico Ltd – [www.aico.co.uk](http://www.aico.co.uk)

#### 13 Typical Smoke Alarm Wiring (Refer to Manufacturers Instructions)



## 6.0 CONTROLS

### 6.1 Setting Unit Speed

The unit has a choice of three speeds to suit the size of the dwelling and the moisture being generated and is factory set at speed 3 - High speed. We recommend that the unit is operated at this speed and the setting reduced if and when necessary in the future.

#### CAUTION!

Ensure minimum airflow at system resistance and minimum speed setting is sufficient to prevent the self-resetting thermal cut-out from operating

The speed selector is located on the PCB (Figure 14). Adjustments can be made via the access holes without removing the PCB cover. Use a small screwdriver to move the slide switches.

'Boost' Speed = 31 l/s

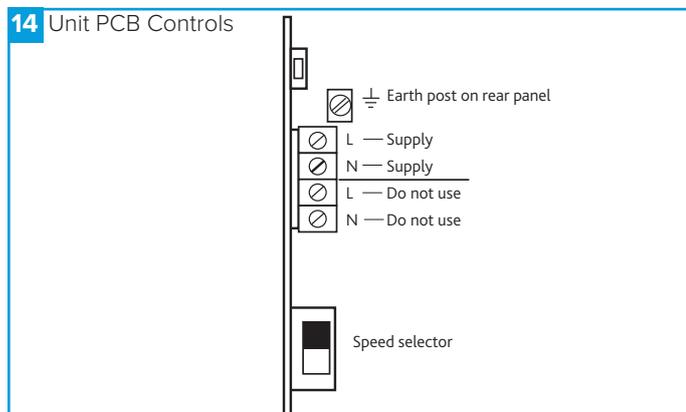
Speed 3 = 20 l/s

Speed 2 = 16 l/s

Speed 1 = 11 l/s

The flow rates given are independently tested and based on a typical installation including: inlet grille, 500mm circular ducting (100mm diameter), FLAT2000, 400mm rectangular ducting (120 x 60 mm), transition piece and supply grille.

The FLAT2000L & FLAT2000R are handed products, the rotation switch should not be adjusted from its factory setting.



## 6.2 Enabling the Heater

An integral heater is provided with this unit and can be enabled or disabled by use of the red neon switch located on the side of the unit.

When the switch is illuminated, the heater is enabled and if the outside air temperature falls below the thermostat set point, the heater will activate. If the outside air temperature is above the thermostat set point, the heater will not activate.

If the switch is not illuminated, the heater is disabled and heating will not activate regardless of the thermostat set point or the outside air temperature.

## 6.3 Thermostat Set Point

The occupier will normally require the heater to activate when the outside air temperature falls below a predetermined point. This predetermined point is factory set to 10°C, Nuair recommend that the thermostat be set at 10°C.

## 7.0 MAINTENANCE

It is important that maintenance checks are recorded and that the schedule is always adhered to, in all cases, the previous report should be referred to.

The maintenance requirements for this product can be found in the “Product Safety – Essential Operational Checks” section, which is located in this document and includes the replacement of the filter (Our part number FLAT-FILTERKIT) every 12 months; this interval may need to be shortened, if the unit is operating under adverse environmental conditions. Failure to do so may impair the performance and energy efficiency of this unit.

If the heater does not seem to be operating the internal over temperature cut-out may have tripped. To reset, switch unit off at the isolator / mains for approximately 5 mins. However before this, checks should be made to the filter and inlet / outlet grilles for blockages.

## 8.0 WARRANTY

The 5 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers replacement parts only.

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuair International Sales office for further details.

**Failure to maintain the unit as recommended will invalidate the warranty.**

## 9.0 END-OF-LIFE AND RECYCLING

**Ensure that Nuair product is made safe from any electrical / water / refrigerant supplies before dismantling commences. This work should only be undertaken by a qualified person in accordance with local authority regulations and guidelines, taking into account all site based risks.**

Where possible Nuair use components which can be largely recycled when the product reaches its end-of-life:

- Fans, motors, controls, actuators, cabling and other electrical components can be segregated into WEEE recycling streams.
- Sheet metal parts, aluminium extrusion, heating/cooling coils and other metallic items can be segregated and fully recycled.
- EPP, plastic ducting, nylon corner pieces, plastic heat exchangers, packaging material and other plastic components can be segregated into mixed plastic and widely recycled.
- Cardboard packaging, wood, used filters and other paper components can be largely recycled or fully processed in energy from waste centres.
- Remaining Items can be further segregated and processed in accordance with the zero waste hierarchy. Please call After Sales Support for further information on items not listed above.

## 10.0 AFTER SALES AND REPLACEMENT PARTS

For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

If ordering spares please quote the serial number of the unit together with the part number, if the part number is not known please give a full description of the part required. The serial number will be found on the identification plate attached to the unit casing.

**Telephone 02920 858 400**  
**aftersales@nuair.co.uk**

**Product Safety - Essential Operational Checks**

Project Address

Date Of Check

Unit Code

Unit Serial Number

- No action required
- Remedial action required
- Make safe and corrective action required



**Product Condition**

**DATE OF LAST MAINTENANCE**

Within last 12 months     12-24 months ago     More than 24 months ago     Unknown

**GENERAL CONDITION**

General condition     Ductwork intact     Casing damaged     Ductwork damaged

**GENERAL CLEANLINESS EXTERNAL**

Clean     Light contamination     Heavy contamination

**GENERAL CLEANLINESS INTERNAL**

Clean     Light contamination     Heavy contamination

**CONDITION OF FANS**

Operational     Clean     Light contamination     Heavy contamination     Non-operational

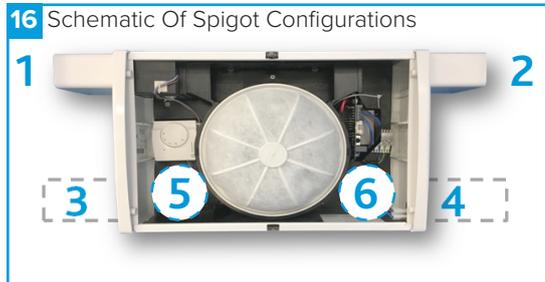
**CONDITION OF FILTERS**

Clean     Light contamination     Missing     Heavy Contamination     Damaged/perforated

**CONDITION OF HEATER**

Operational     All components present     Discoloured     Distorted     Non-operational or incomplete

**Installation**



Indicate Inlet Position (3, 4, 5 or 6)

Indicate Supply Outlet Position

Approx length of ductwork on inlet (600mm min.)

Approx length of ductwork on supply outlet (600mm min.)

Height of unit above floor level (1.8m min)

Fused spur fitted? (Y/N)

Fused rating fitted (Amp)

