

# FLATMASTER

## 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.

**Whilst the installation of the Flatmaster 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.

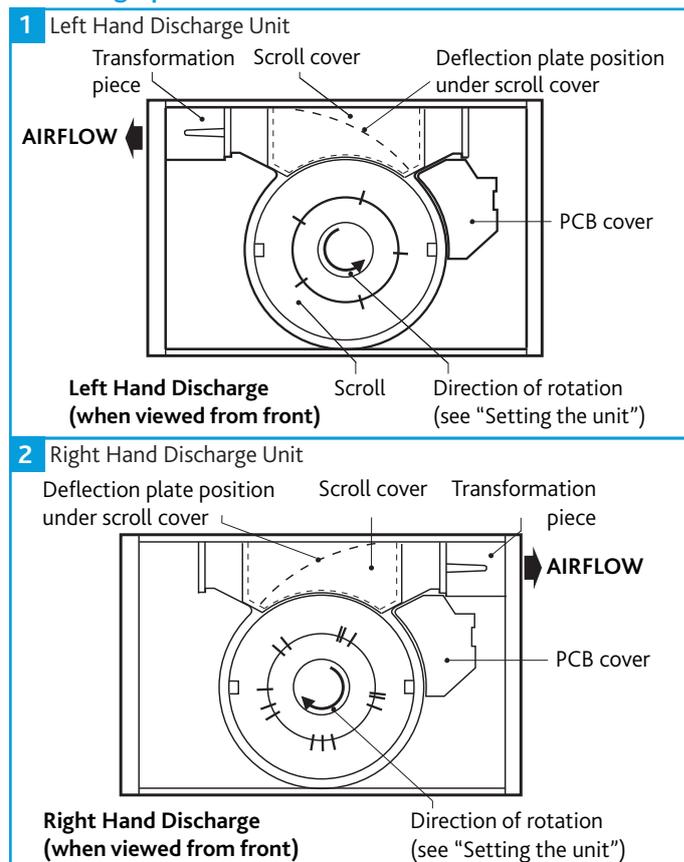
This unit is suitable for ceiling mounting.

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 round (100mm) or rectangular ducting (121mm x 60mm).

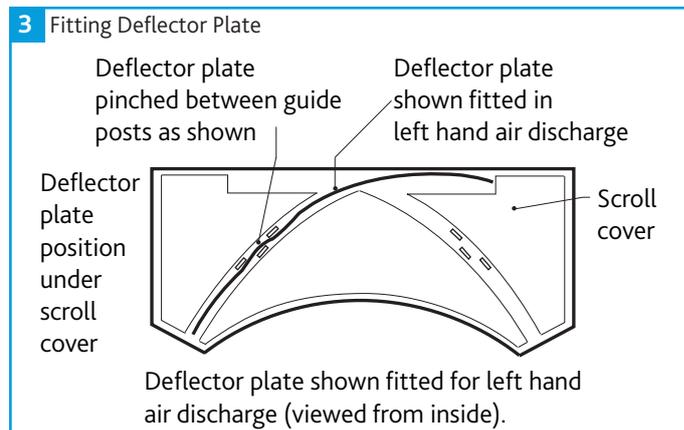
The unit can be turned through 180° to any angle if required.

### 3.1 Setting Up The Correct Airflow Direction



#### 3.1.1 Fitting The Deflector Plate

Fit deflector plate into scroll cover as shown below. Once fitted the assembly can be slotted into the scroll and clipped firmly in place.

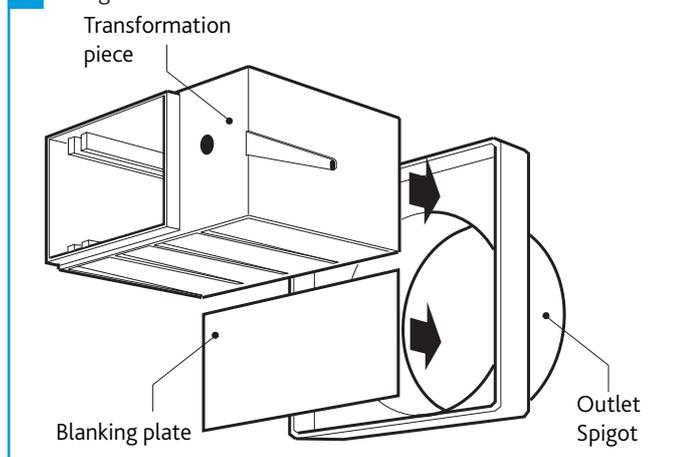


### 3.1.2 Transformation Piece

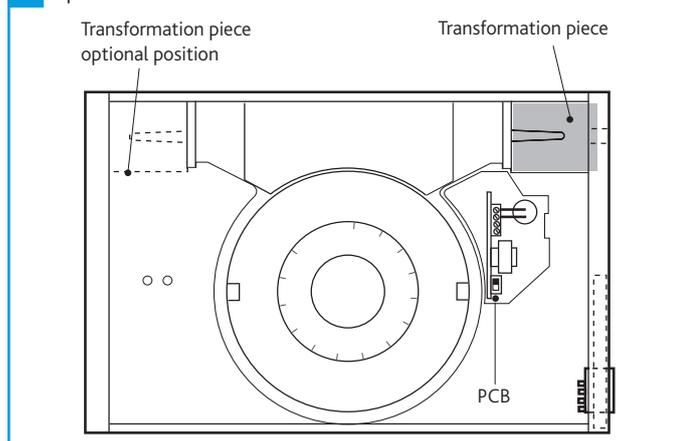
This should be on the appropriate scroll outlet. The transformation piece should be fitted into the chosen outlet spigot insert, prior to fitting.

If the round spigot is used as an outlet, the 115 x 55mm clear blanking plate will need to be fitted (as shown). This plate should be prevented from movement by the use of silicone sealant.

#### 4 Fitting Transformation Piece



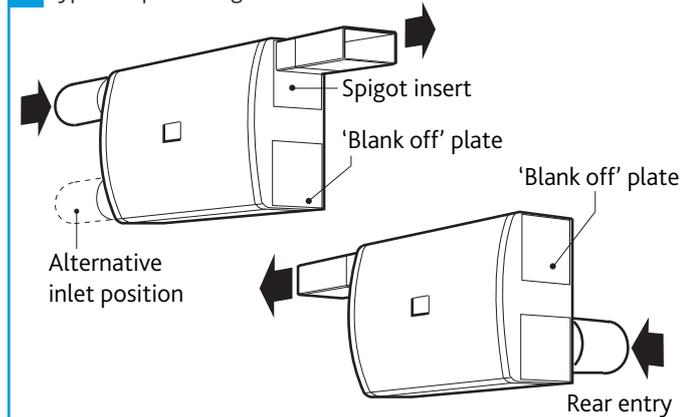
#### 5 Optional Transformation Piece Location



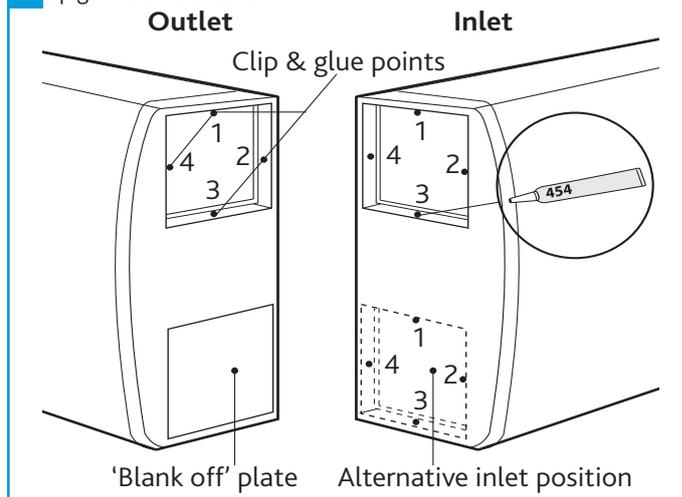
### 3.2 Spigot Inserts

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 6) 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 7).

#### 6 Typical Top Discharge Unit Installation



#### 7 Spigot Insert Installation



### 3.3 Fixing The Unit To The Wall

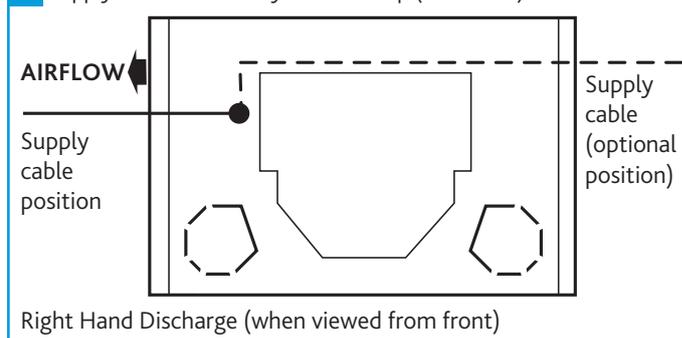
The unit has three mounting feet. Mark through these feet when the unit is in the correct position. Drill and plug wall with suitable fixings. Remove PCB cover and feed the electrical supply cable through the grommet hole (standard 1mm three core lighting cable is recommended) in the rear of the unit screw unit to wall (Figure 8).

**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.

#### 8 Supply Cable Secured By Cable Clamp (Rear View)



### 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 Nuair for further details.

### 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.**

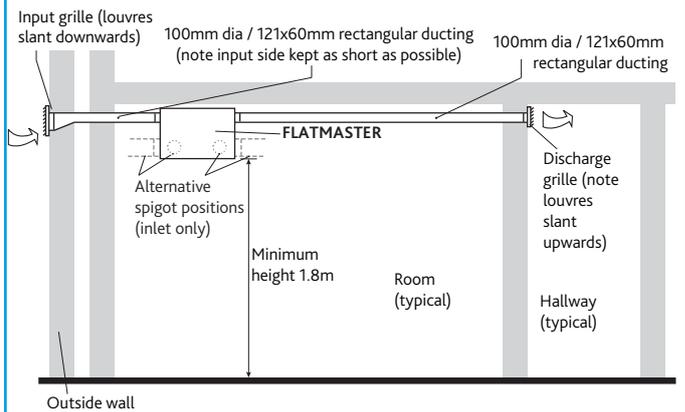
Standard 100mm diameter ducting or 121 x 60mm ducting is used to connect the Flatmaster to the input and discharge grilles.

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

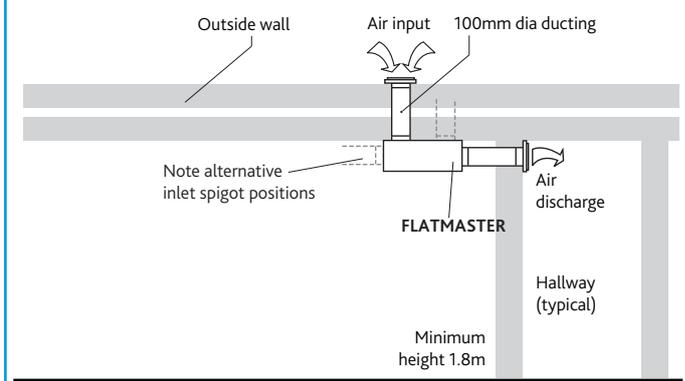
As a guide, the BS5440 series of British Standards deals with this issue and currently states that an air intake must be at a minimum distance of 300mm from a gas boiler balanced flue. Installers are advised to be aware of the requirements of this standard when installing 'through the wall' supply air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

#### 9 Side Input Installation (Front View)



#### 10 Rear Input Installation (Top View)



### 4.0 DIMENSIONS(mm)

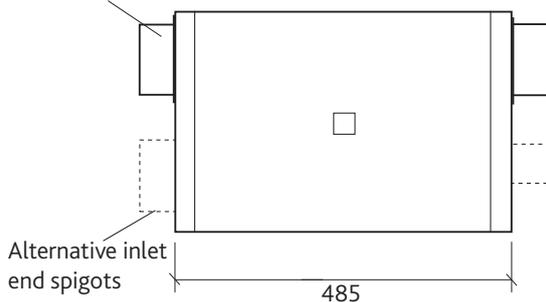
Dimensions for the space required can be determined from the dimensions shown in Figure 11 below.

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.

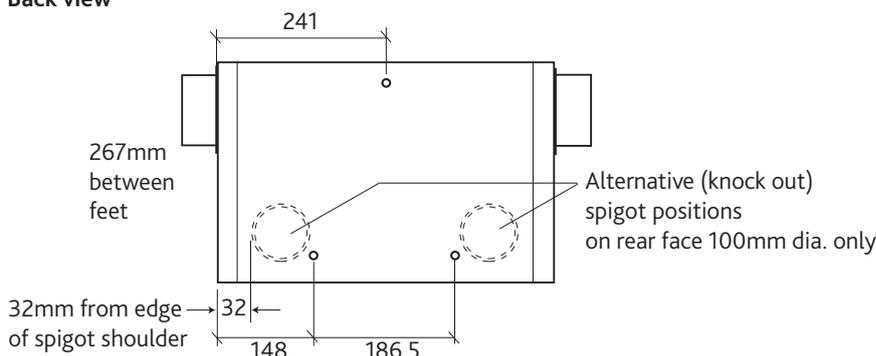
#### 11 Unit Dimensions

##### Front view

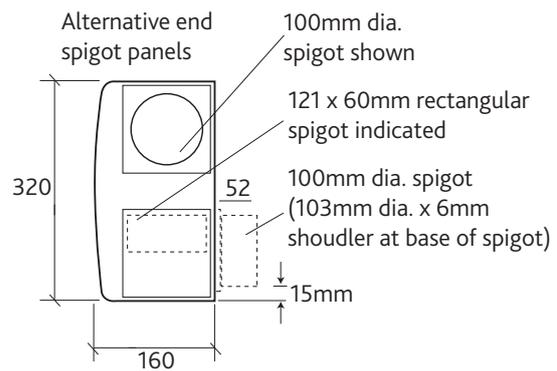
100mm dia. or 121 x 60mm interchangeable spigots supplied with unit



##### Back view



##### End 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

Power Consumption*	
Low Speed	3.1 W
Medium Speed	5.7 W
High Speed	9.4 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.

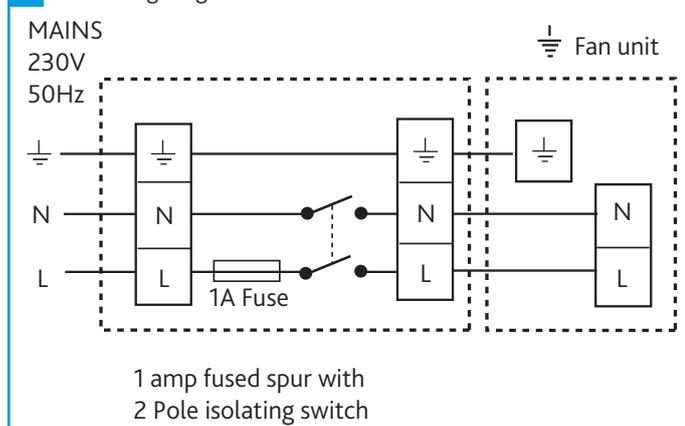
### 5.2 Electrical Connection

Please note the electrical connections to the unit should be carried out by a qualified electrician. With the PCB cover removed (Figure 1) pull the PCB forward to gain access to earth post behind. Connect Earth cable to Earth post next to the grommet hole.

Slide PCB into slot and connect the mains supply L and N to the terminal block. Ensure the supply cable does not come into contact with the PCB transformer by tie wrapping to the slots in the PCB enclosure. Ensure that a 1 amp fused spur is fitted on the supply.

### 5.3 Wiring Diagrams

12 Unit Wiring Diagram



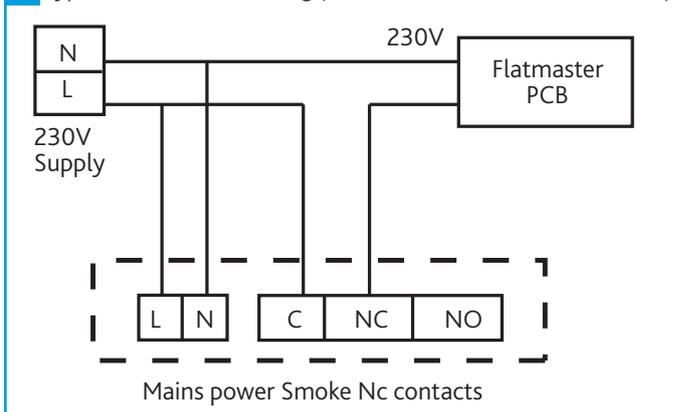
### 5.4 Smoke Alarm Automatic Shut Down

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)



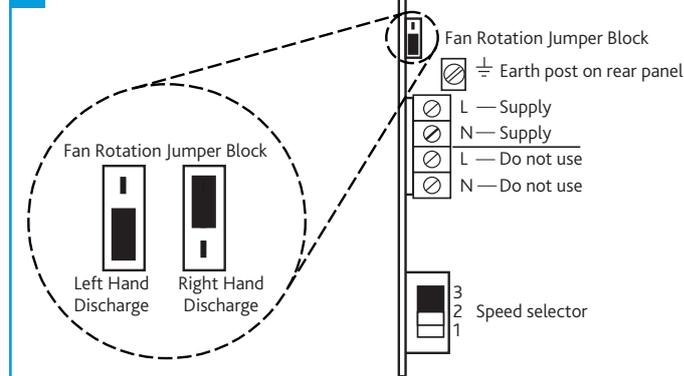
## 6.0 CONTROLS

### 6.1 Setting Unit Speed & Direction Of Airflow

The speed selector is located on the PCB (Figure 14). The unit has a choice of three speeds to suit the size of the dwelling and the moisture being generated. The unit is factory set at No. 3 - High Speed. We recommend that the unit is operated at this speed and the setting reduced if and when necessary in the future.

Replace PCB cover and test the unit. Check rotation of fan with diagrams under airflow direction. If direction is incorrect, isolate the unit, remove PCB cover and alter the fan rotation jumper block (mounted on the PCB). Replace PCB cover and re-check direction of fan. Replace filter and front cover.

14 Unit PCB Controls



## 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.

## 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 Nuaire 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 Nuaire 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 Nuaire 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@nuaire.co.uk](mailto:aftersales@nuaire.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

**15 Unit With Cover Installed**



**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**

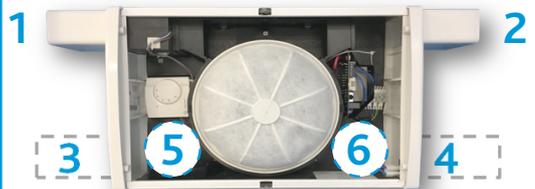
- Operational
- Clean
- Light contamination
- Heavy contamination
- Non-operational

**CONDITION OF FILTERS**

- Clean
- Light contamination
- Missing
- Heavy Contamination
- Damaged/perforated

**Installation**

**16 Schematic Of Spigot Configurations**



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)

