# MEVDC

## Continuous Mechanical Extract Ventilation

## Installation Manual

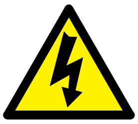
## 1.0 SAFETY INFORMATION

- The provision of the electrical supply and the connection of the unit to the mains must be carried out by a qualified electrician.
- 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.
- 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

Nuaire's MEV-DC units are designed to provide continuous mechanical extract ventilation to homes in accordance with Part F of the Building Regulation 2006 & BRE digest 398.

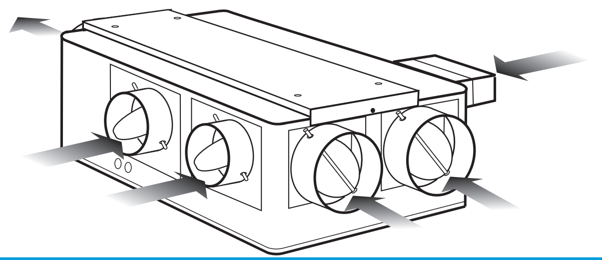
The case is constructed in grey /blue ABS plastic. The full length access cover which is located on the underside of the unit, on the opposite side to the mounting bracket, is retained by four 1⁄4 turn fasteners. This cover is acoustically lined with flame retardant acoustic foam (full lining also available).

### 2.1 Code Description:

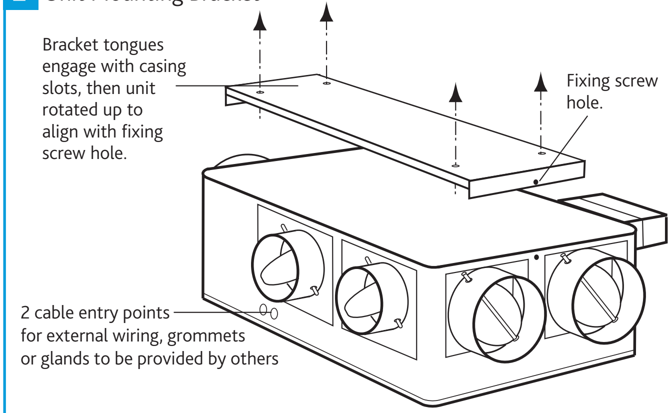
```
MEV DC - ES R G2 L H D4
 |   |    | |  | | | |
 1   2    3 4  5 6 7 8
```

| | |
|---|---|
| 1. Range: | **Mechanical Extract Ventilation** |
| 2. Motor Type: | **DC Motors** |
| 3. Ecosmart Compatibility: (optional) | **ES** |
| 4. Run-On Timer (optional): | **R** |
| 5. Filtration (optional): | **G2 or G4** |
| 6. Case Lining (optional): | **L** |
| 7. Humidistat (optional): | **H** |
| 8. Damper Kits (optional): | **S1, S2, D3 or D4** |

**1** Unit Airflow Path



**2** Unit Mounting Bracket



## 3.0 INSTALLATION

Installation must be carried out by competent personnel in accordance with the appropriate authority and conforming to all statutory and governing regulations.

The fan must be fitted indoors, away from sources of water spray or steam generation. The fan can be installed at any angle using the integral mounting bracket supplied (Figure 2).

It is assumed that a solid non-reverberant mounting position has been selected and the electrical mains wiring and any optional control wires have been made ready.

It is also assumed that compatible ductwork is already installed and ready to be connected to the 125mm diameter discharge spigot and the chosen 100mm, 125mm diameter and/or 110 x 54mm rectangular inlet spigots.

The unit is not fitted with a backdraught shutter (when using the continuous background vent facility a shutter is not needed). However a backdraught shutter is available from Nuaire if required.

An integral fixing bracket with a single bolt fixing allows easy mounting and removal of the unit when necessary. The unit is supplied with the 125mm diameter discharge spigot for fitting during installation.

### 3.1 Unit Installation

The integral mounting bracket supplied can be offered up to position, the fixing points marked through and the bracket installed with 4 screws by others (Figure 2).

Offer the unit into position and locate the bracket into the slots in the case before fixing with the single bracket fixing screw.

Various damper/inlet spigot positions can be utilised as required to suit the system ductwork and extract grilles as all spigot positions are removable.

After the spigots have been located in their correct position, adjust the damper with a screwdriver (Figure 4).

As supplied the unit is fitted with:

- 5 off blanking plates.
- 4 off 100mm diameter spigots.
- 2 off 125mm diameter spigots.

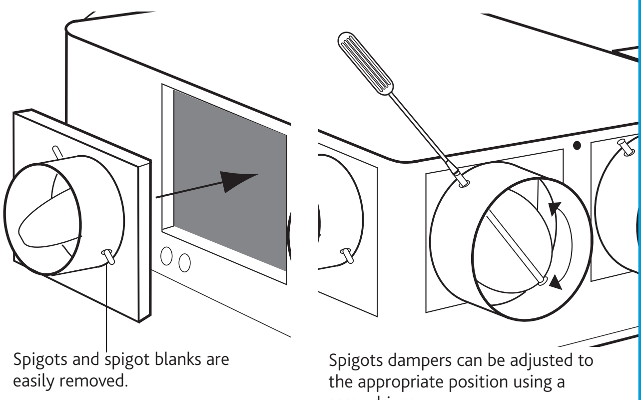
Any, or all of the spigots can be utilised. 110 x 54mm spigots plus additional spigots are available on request.

Volume control dampers and filters (Figures 3 and 5) are optional extras. If filters are fitted they are located inside the fan case and is easily removed for cleaning following removal of the filter cover.

A clear space of at least 470 x 320mm is required to allow the cover to be removed and provide sufficient access for maintenance.

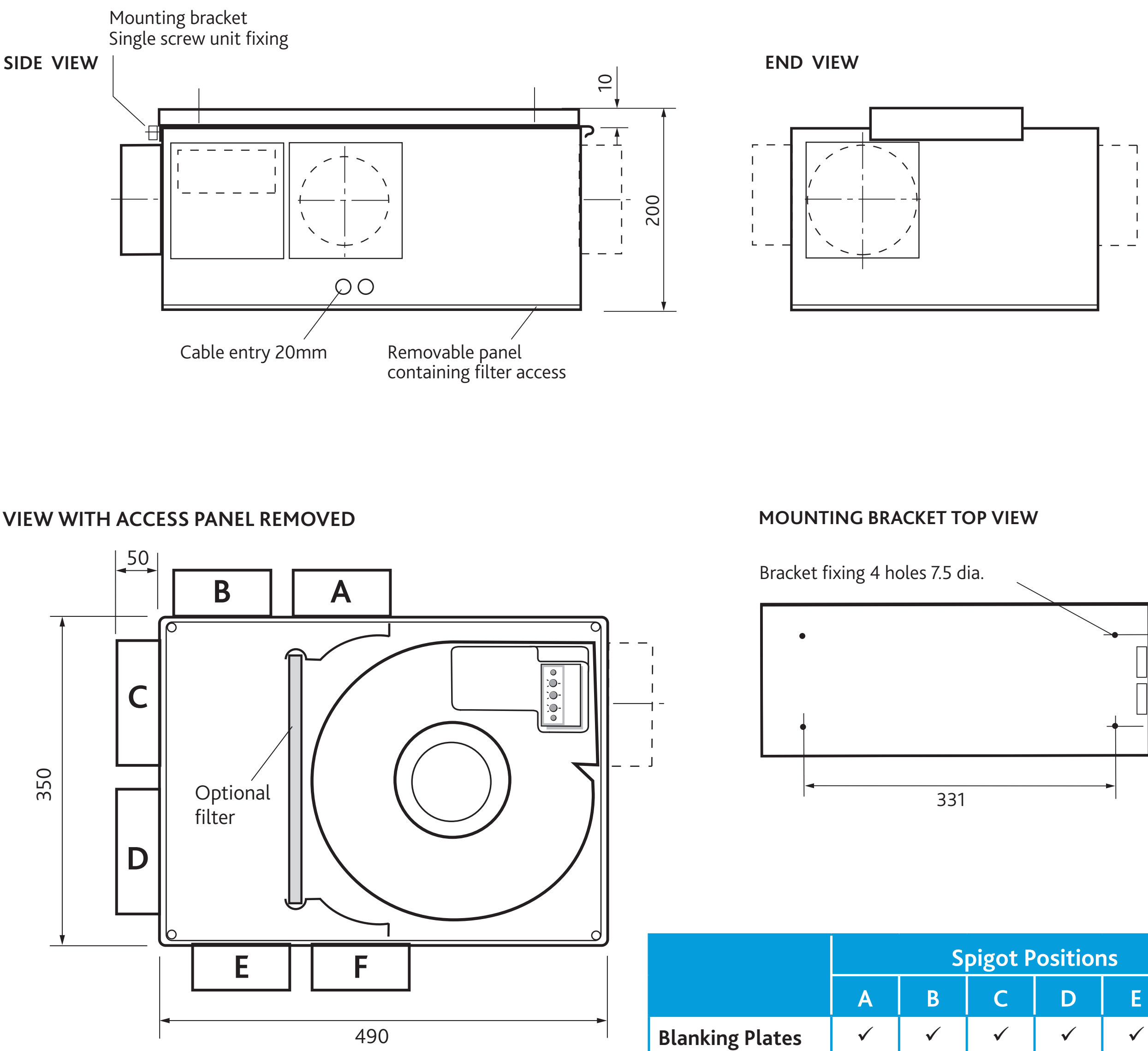
The fan is designed to be wired direct to the mains supply through a fused spur isolator (by others) and run continuously in the **NORMAL** mode (which is the low speed, background or trickle ventilation setting) with occasional **BOOST** airflow (high speed setting) as and when required.

**3** Fitting spigots / dampers



## 3.2 Dimensions (mm)

**4** Unit Dimensions



| | Spigot Positions | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| **Blanking Plates** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **100mm Ø Spigot** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **125mm Ø Spigot** | × | ✓ | ✓ | ✓ | ✓ | × |

## 3.3 Electrical Installation

**Isolation - Before commencing work make sure that the unit, and Nuaire control are electrically isolated from the mains supply.**

**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.**

The unit is designed to operate continuously to give a background ventilation rate with the facility to boost the fan to a higher duty as required.

The boost can be achieved by the following methods:

### 3.3.1 Switched Live (SL)

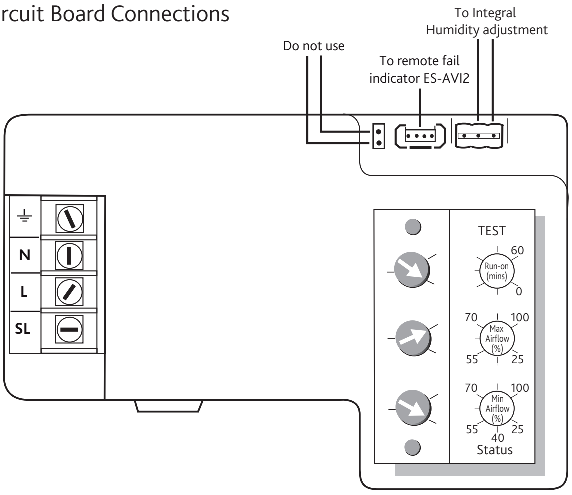
Connection of 230V mains to SL terminal.

### 3.3.2 Internal Humidistat (where fitted)

The internal humidistat can be found on the base of the fan case. The adjustment dial gives a range of 50 - 80% @ 20°C (Figure 9). Setting to mid position gives 65% which should be acceptable for most circumstances. If the unit boosts at unacceptable times, this dial should be turned clockwise by a small amount.

## 3.4 Electrical Connections

**5** Circuit Board Connections

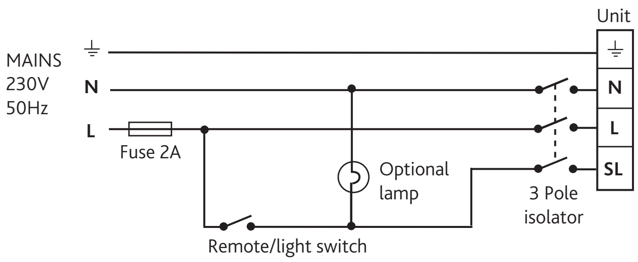


## 3.5 Wiring Diagrams

All field wiring and switches by others.

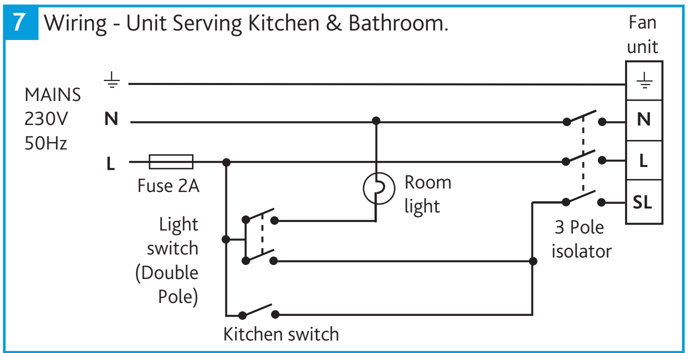
### 3.5.1 Unit Serving Bathroom

**6** Wiring - Unit Serving Bathroom Only.



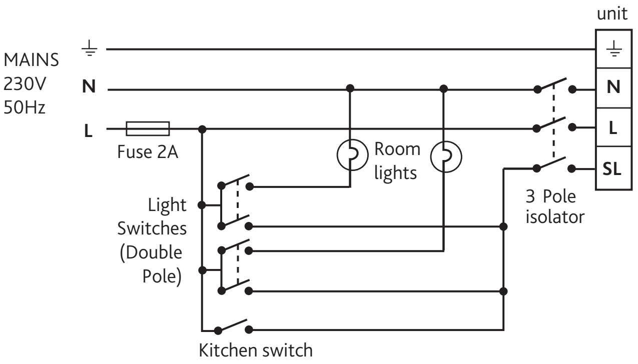
### 3.5.2 Unit Serving Bathroom

**7** Wiring - Unit Serving Kitchen & Bathroom.



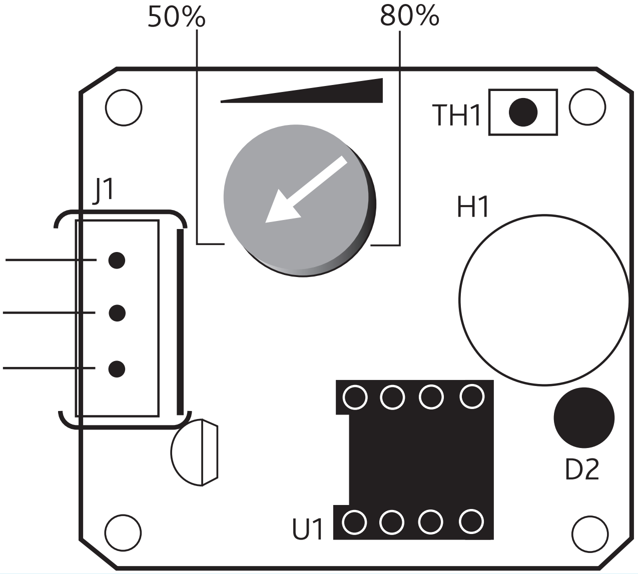
### 3.5.3 Unit Serving Bathroom

**8** Wiring - Unit Serving Kitchen & Two Bathrooms.



## 3.6 Humidistat Adjustment

**9** Humidistat Adjustment



## 4.0 OPERATION

**The unit must not be switched off, this product is designed to run continuously.**

### 4.1 Speed Control

To control the flow rate of air, the unit is equipped with two control dials, for trickle and boost duties.

In order to set the air extract rates correctly please refer to Approved Document F which can be found at: http://www.planningportal.gov.uk

### 4.2 Run-on Timer

The Run-on timer adjustment is from 0 - 60 minutes. Run-on is only available from the switched live (SL) signal.

### 4.3 Status Light

- **Green light - Fan running.**
- **Red light - Fan failure.**
- **Flashing green light - Set-up period.**
- **Flashing red light - Insufficient pressure reading.**

Check ducting/installation e.g. remove inlet/outlet ducting & test.

## 5.0 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.

### 5.1 Annually

- All electrical terminals within the unit should be tightened.
- Check all earth connections.
- Thoroughly inspect the unit and its components for dirt, clean any affected areas.

## 6.0 WARRANTY

The 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.

**Only genuine Nuaire parts and filters may be used to maintain the unit. Failure to maintain the unit as recommended will invalidate the warranty.**

## 7.0 END-OF-LIFE AND RECYCLING

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 for energy from waste centres or, as a last resort, sent to landfill. Please call After Sales Support for further information on items not listed above.

**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.**

## 8.0 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**

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.

# 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:** | MEV-DC2 |
| **Machinery Types:** | Continuous Extract Ventilation Unit |
| **Relevant EC Council Directives:** | 2006/42/EC (Machinery Directive) |
| **Applied Harmonised Standards:** | BS EN ISO 12100-1, BS EN ISO 12100-2, BS EN 60204-1, BS EN ISO 9001, BS EN ISO 13857 |
| **Applied National Standards:** | BS848 Parts 1, 2.2 and 5 |

**Signature of manufacture representatives:**

| Name: | Position: | Date: |
|---|---|---|
| 1)C. Biggs | Engineering Director | 08. 07. 11 |
| 2)A. Jones | Manufacturing Director | 08. 07. 11 |

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 2014/30/EU (EMC).**
**To be read in conjunction with the relevant product documentation (see 2.1)**

**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 e.g. 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 **Local Environment - Humidity.** Ambient humidity (the humidity at the unit's installed location) shall be within the range: 10 to 95% (for controls, non-condensing). Air humidity (the humidity of the air passing through the unit) shall be within the range: 10 to 95% (for controls, non-condensing).

**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 (e.g. 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.