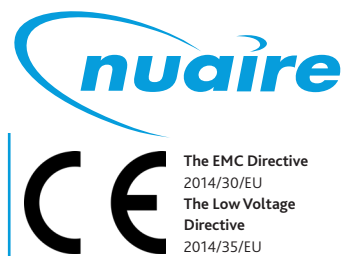


NOXMASTER

PIV with Carbon Filtration Installation Manual



1.0 SAFETY INFORMATION

- The provision of the electrical supply and the connection of the NOXMASTER unit to the mains must be carried out by a qualified electrician.
- For installation and maintenance isolate from power supply before removing any covers.
- 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.
- In order to avoid a hazard due to inadvertent resetting 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 switched on and off by the utility.
- The fan unit is supplied with a fused spur. The three core mains cable from the fan unit should be connected to a fixed wiring installation, via the spur, in accordance with current IEE wiring regulations.
- If the mains supply cord to the PSU is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- The heater unit must be connected to the ceiling vent and fan unit using the 3 looms that protrude from the heater module.
- The unit must be situated in a dry environment that avoids dripping water and installed fully level in the horizontal plane.
- It is important to ensure that the diffuser is NOT placed within 1 metre of a smoke alarm. If the diffuser cannot be repositioned, two sides of the diffuser must be closed off using the air dams supplied to encourage the air through the remaining open sides that faces at least 1.5 metres of unobstructed area away from the smoke alarm sensor.
- If the unit is required to switch off in the event of smoke/CO detection, alarms are available with separate relay bases from 3rd party companies. This is a mandatory requirement for all units installed in a 3 Storey property.
- The flexible duct (maximum length 2m) is connected to the base unit by inserting the duct over the outlet duct and held in place using the supplied cable tie. Fix the duct in place by drilling through the duct into the spigot (at the 2 O'clock and 10 O'clock position) and screwing together. Finally secure the duct with a cable tie fitted between the screws and outlet face of the unit.
- Ducting must be securely fixed with screws to the spigot to prevent access to live parts.
- When installing the duct to the heater unit, insert the duct over the back of the heater, over the protruding screw heads (3mm from the face of the duct) and fasten the cable tie below the screws. This ensures that the duct will be held on securely, check all duct joints are air tight.
- Appropriate PPE (Personal Protective Equipment) should be worn during maintenance. Precautions may also be needed to protect the surrounding area from excess carbon residue.
- Carbon filters/pellets are not to be ingested, ensure hands are thoroughly washed after handling.
- 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.

2.0 INTRODUCTION

Nuaire's NOXMASTER range has been specifically designed to improve the indoor air quality and provide a whole home ventilation solution. Combining the principles of positive input ventilation (PIV) and carbon filter technology the unit provides cleaner, fresher, filtered air into the a dwelling at a continuous rate, encouraging the movement of air from inside to outside. To achieve this, the unit is mounted in the loft space and draws air from either the loft space or ducted supply from the exterior of the house (dependant on the operating temperatures).

Unlike conventional PIV units, NOXMASTER units are fitted with dual inlets, which automatically select the air source based on the surrounding temperature:

- If the loft temperature is below the set point (recommended 24°C) then the unit will take fresh air from the loft space.
- If the loft temperature is above the set point (recommended 24°C) then cooler fresh air will be taken from outside the dwelling through a ducted supply (if fitted).

To improve the efficiency of the NOXMASTER unit, it is fitted with a carbon filter bypass. The bypass is controlled on a time basis and is programmed to operate during times of low pollution (e.g. night time when air pollution is lower).

3.0 PACKAGING AND DELIVERY

The system will be delivered in 3 boxes and may be strapped to a pallet therefore please consider handling and storage space.

4.0 INSTALLATION

Successful operation of the fan depends entirely upon the unit being installed strictly in accordance with these instructions. Please read through this guide in its entirety before commencing installation and follow step by step to ensure a satisfactory completion. Whilst the installation of the NOXMASTER unit may be achieved by suitable persons, the provision of the electrical supply and the connection of the unit to the mains must be carried out by a qualified electrician.

Warning: Isolate from power supply before removing any covers. During installation/ maintenance ensure all covers are fitted before switching on the mains supply.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and

understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children without supervision.

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.

Means for disconnection must be incorporated in the fixed wiring as shown in the wiring diagram in accordance with IEE wiring or national wiring rules.

CAUTION: In order to avoid a hazard due to inadvertent resetting 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 switched on and off by the utility.

4.1 Loft Inspection

Ensure that the loft has adequate ventilation. There may be occasions where a loft is so well sealed that additional ventilation may have to be provided by the owner/occupier.

Ensure that all water tanks are covered and sealed.

Check that all water pipes are lagged.

Check the area of the installation that beams are flat and level and are capable of supporting the total weight of the unit.

Ensure the insulation is not proud of the beams. If insulation is prouder than the beams, alternative arrangements to provide a flat surface above the insulation may be required. Do not install the unit with insulation contacting the underside of the unit.

Ensure that extract fans are discharging to outside, not into the loft.

Check that the loft hatch is tightly sealed.

Ensure that all ceiling holes are sealed i.e. ceiling light fittings etc. A visual inspection of any flues or chimneys for leakage in the loft should be carried out by the installer.

If any leakage points are found, or if there is any doubt at all, then the installer should advise the house owner/provider as soon as possible and seek instruction from them before proceeding with the installation.

Item	Dimensions (mm)			Weight (kg)
	A	B	C	
Euro Pallet	900	1200	800	
Delivery Option: -P (Three Individual Boxes)				
BOX 1	362	981	585	22
BOX 2	362	685	685	12
BOX 3	340	535	230	6

Figure 1. Unit Layout & Dimensions

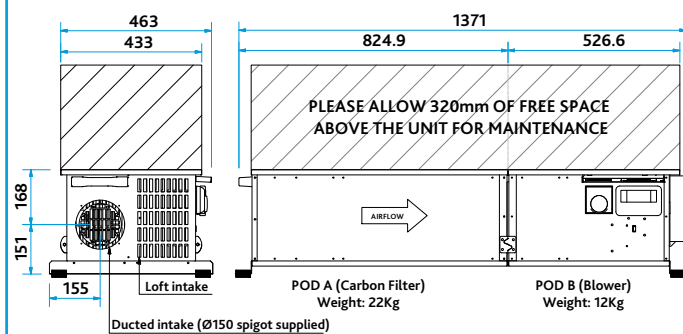
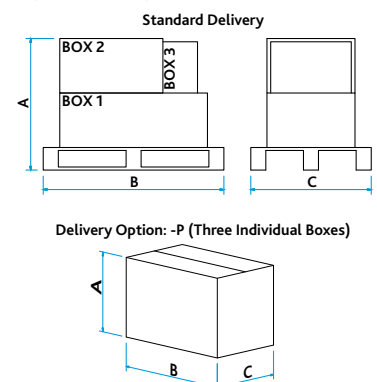


Figure 2. Package Dimensions



IMPORTANT

The unit must be situated in a dry environment that avoids dripping water and installed fully level in the horizontal plane.

4.2 Diffuser Installation

4.2.1 Positioning the Diffuser

The diffuser has a unique air throw pattern and it is essential that it is located correctly in the central hallway in single storey properties or in the ceiling of the top floor landing on two or more storey dwellings. The diffuser discharges air evenly in all directions along the underside of the ceiling.

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

Note: SMOKE ALARMS -It is also important to ensure that the diffuser is NOT placed within 1 metre of a smoke alarm.

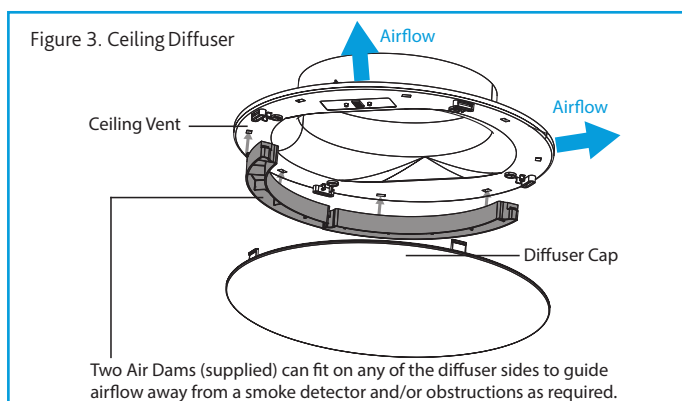
If the diffuser cannot be repositioned, two sides of the diffuser must be closed off using the air dams supplied to encourage the air through the remaining open sides that faces at least 1.5 metres of unobstructed area away from the smoke alarm sensor.

4.2.2 Fitting the Air Dams (if Required)

Air dams should be fitted where needed in order to alter the direction of airflow. Two air dams are supplied and will fit on any of the diffuser sides to guide airflow away from a smoke detector and/or obstructions.

4.2.3 Fitting the Ceiling Diffuser

To install the diffuser, use the tear-out template from the lid of the unit packaging and trace the shape onto the ceiling between two convenient



joists. The shape is elliptical to allow space for the PCB of the controls and this should be positioned for ease of access (i.e. NOT facing over a stairwell). Once the shape has been cut out, position the ceiling vent and secure it in place using the 4 screws and plugs provided. After fitting, the fan unit must be connected to the diffuser using the loom provided. The connectors are located on the rear of the ceiling vent and the side of the POD B below the controls.

Finally, attach the diffuser cap to the frame using the four built-in, press on clips provided.

4.2.4 Fitting the Heater (if Applicable)

The heater unit must be connected to the ceiling vent and fan unit using the 3 looms that protrude from the heater module. Connect the ceiling vent control loom to the circuit board on the ceiling vent and insert the heater module into the ceiling vent. Connect the interconnecting loom into the control output and the mains power loom into the heater output (Figure 4). The flexible duct (maximum length 2m) is connected to the base unit by inserting the duct over the outlet duct and held in place using the supplied cable tie.

Finally when installing the duct to the heater unit, insert the duct over the back of the heater, over the protruding screw heads (3mm from the face of the duct) and fasten the cable tie below the screws. This ensures that the duct will be held on securely, check all duct joints are air tight. **FURTHER MEASURES MAY BE REQUIRED.**

4.3 NOXMASTER Installation

4.3.1 Connecting Sections

The unit is delivered in two sections, pod A (Carbon filter) and pod B (blower) which require connecting, refer to layout drawing (Figure 1).

- Remove the nut and bolt from the black connectors on either side of the unit and store safely to one side.
- Position the pods 1 – 1.5M away from the desired location of the ceiling vent. Ensure there is a minimum of 320mm above the assembled unit for maintenance. Align the two pods with both spigots facing out, leaving a space between the pods to make the electrical connection (Figure 5).
- Release the free end of the fly lead from pod B and align the flats on the male connectors with the flats on the fixed connector in pod A. Push the connectors together until the outer clips have fully engaged and the connection is secure.
- Pull the pods together and re-insert the nut and bolt back into the black connectors. Tighten the connectors evenly, when fully tightened ensure the foam gasket has been evenly compressed.

4.3.2 Fitting the NOXMASTER

Connect the two 'L' shape fixing brackets to the short sides of the unit with the M5 screws (provided), then lower the unit with the "L" shape fixing brackets attached, onto the joists. Mark 4 holes through the brackets so that the holes will be centrally positioned over a joist.

Locate anti-vibration mounts (supplied) above and below each bracket fixing joint hole and, using the fixings provided, fix the unit to the joists. **Note: Do not overtighten the fixings.**

Connect the flexible duct (maximum length 2m) to the blower unit by placing the duct over the spigot. Secure the duct in place by drilling through the duct and spigot (at the 2 O'clock and 10 O'clock position) and securing with screws (provided). Finally secure the duct to the heater/ceiling diffuser. Secure with a with a cable tie fitted between the screws and outlet face of the unit. To connect to the ceiling vent place the duct over the vent and secure with cable tie. Ensure all duct joints are airtight.

Please note: The flexible ducting should NOT be installed in a compressive state, as this will negatively impact on the performance of the unit.

IMPORTANT

In the event of an ESD to the back of the control PCB on the diffuser the heater may switch off. The heater can be switched back on by pressing the button in the normal way for enabling the heater. Care therefore should be taken not to touch the back of the PCB during installation/commissioning.

Figure 4. Anti-Vibration Mount Installation

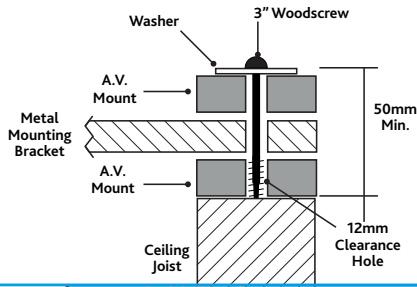


Figure 5. NOXMASTER-HEAT Installation

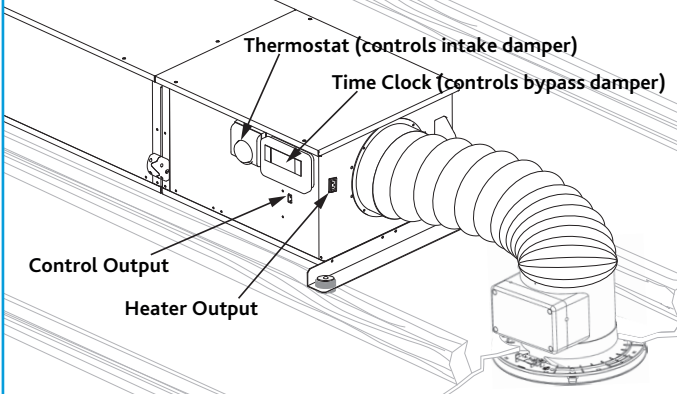


Figure 6. NOXMASTER-HEAT Installation

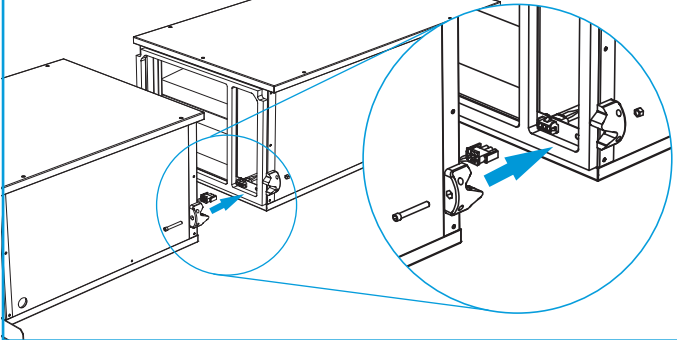


Figure 8. Soffit Installation

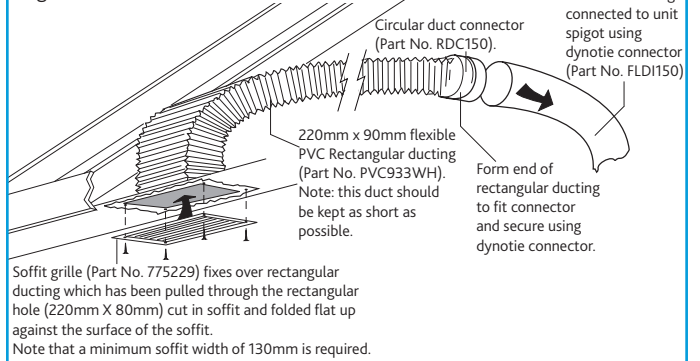
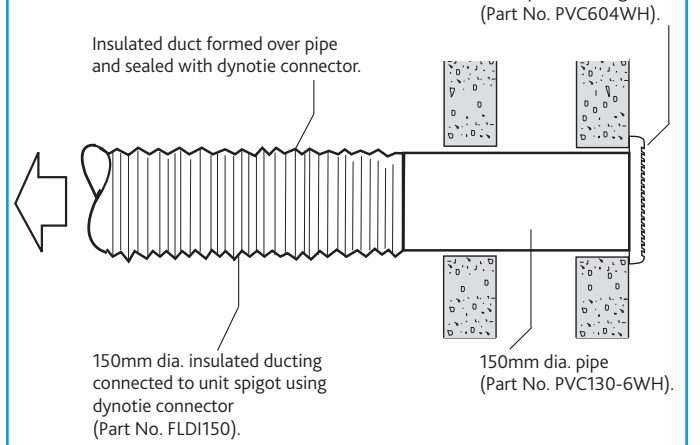


Figure 9. Wall Installation



5.0 ELECTRICAL CONNECTION

5.1 Electrical Details

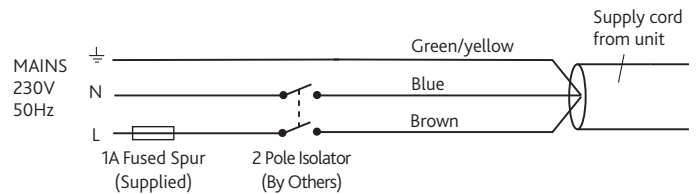
Voltage:
230V 1ph 50Hz

IMPORTANT

The electrical connection of the unit must be carried out by a qualified electrician.
For good EMC engineering practice, the power supply output cable and any sensor cables should not be placed within 50mm of other cables or each other.

5.2 Wiring Diagrams

5.2.1 NOXMASTER (All Versions Without Heater)



IMPORTANT

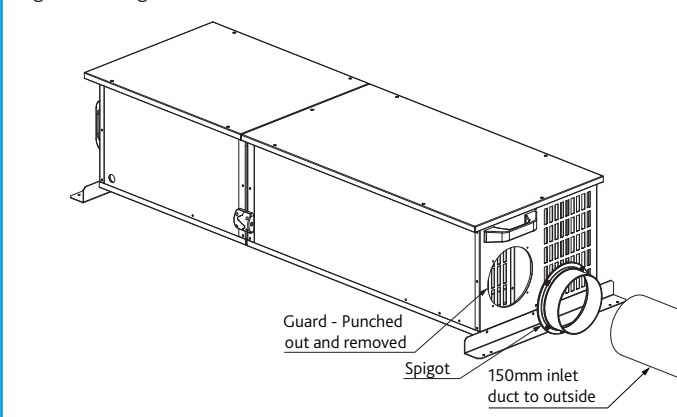
The fan unit is also supplied with a fused spur. The three core mains cable from the unit should be connected to a fixed wiring installation, via the spur, in accordance with current IEE wiring regulations.

4.3.3 Dual Inlets

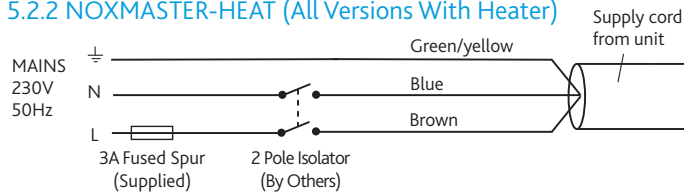
The unit features a dual inlet which automatically selects the air source based on the surrounding temperature. To utilise this feature, the circular guard needs to be knocked out and the supplied spigot fitted (ensure the lose guard is removed from the unit). If ducted air supply is not being used, **do not knock out guard**.

- Fix the required spigot to the unit with the screws provided and seal with silicone to eliminate air leakage.
- Duct to the outside using ridged ducting.

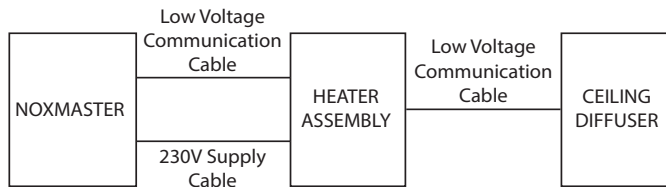
Figure 7. Fitting Dual Inlets



5.2.2 NOXMASTER-HEAT (All Versions With Heater)



5.2.3 Unit, Heater and Diffuser Connections



IMPORTANT

Disconnection from mains must be incorporated within the fixed wiring and shall have a maximum contact separation of 3mm in accordance with latest edition of the wiring regulations.

6.0 SMOKE / CARBON MONOXIDE ALARM AUTOMATIC SHUT DOWN

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

Dicon Safety products – www.diconsafety.co.uk
Aico Ltd – www.aico.co.uk

Note: This is a mandatory requirement for all units installed in a 3 storey property.

7.0 CONTROLS

7.1 Speed Settings

The unit has 6 air flow rate (speed) settings. Speeds 3 - 6 are recommended depending on the size of the dwelling.

The following table shows the flow rates and their corresponding speed settings.

As an example a one bedroom bungalow should be set to speed 3, and a large 5 bedroom detached property would require speed 6.

Please note: the heater (if fitted) will not work below speed 3.

Speed	Air Flow Rate (litres/second)	
	NOXMASTER & NOXMASTER-HEAT	NOXMASTER-PM2.5 & NOXMASTER-HEAT-PM2.5
1	8	4
2	13	9
3	20	16
4 (Default)	28	23
5 (Recommended min speed for PM2.5 filters)	36	30
6	44	37

7.2 Speed Selection

When power to the unit is switched on the display will show LED start-up pattern for 2 minutes. Once the start-up pattern has completed you may now press the "up" or "down" switch to choose the flow rate appropriate to the property you are installing the unit in.

Figure 10. Ceiling Diffuser - Heater

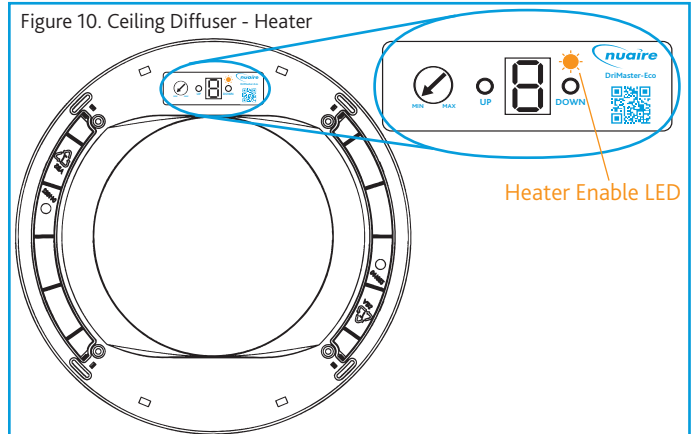
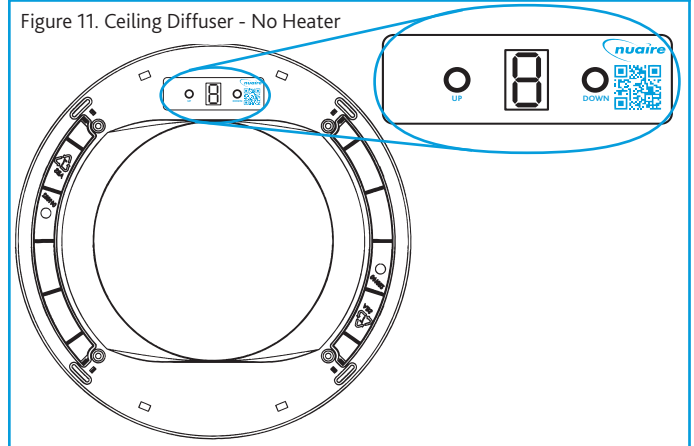


Figure 11. Ceiling Diffuser - No Heater



7.3 Change Carbon Filter Alert

The carbon filters are required to be changed every five years, the display on the ceiling diffuser will show the letter 'C' once this time has elapsed. New filters can be purchased direct from Nuair (please refer to Section 8.0 below for further details).

To reset the change filter message on the display, press and hold both "up and "down" button until the letter 'C' starts to flash then release and press the "down" button to confirm.

7.4 Setting the Temperature Speed Control Option

The unit has been designed to continuously run 24 hours a day, 365 days a year (provided the unit is ducted to the outside).

If an alternative temperature control is needed due to excessive heat in the property, please contact after sales to discuss your requirements.

7.5 Setting the Thermostat

The thermostat controls the front damper which determines where the air supply is drawn from (either loft space or external). It's recommended that the thermostat is set to 24°C. This setting would enable the unit to automatically switch from the loft intake (warm air) to external air once the loft space reached 24°C, provided the unit is ducted to the outside of the property.

7.6 Time Clock

The time clock controlling the carbon filter bypass is pre-programmed to operate the bypass (controller must be in "run" mode).

Air passes through the Carbon filter between 6.00AM & 8.00PM. Between 8.00PM and 6.00AM the air flow is directed through the bypass.

IMPORTANT

In the event of RF interference between 84MHz to 89MHz the fan speed may increase to full speed. Operation will return to normal when the interference stops.

8.0 HEATER CONTROL (Heater Versions Only)

When the orange LED on the diffuser control panel is illuminated, the heater is active in autoheat mode and is controlled by the temperature setpoint. When the orange LED is not lit, the heater is off.

In order to enable the heater, press the DOWN button for five seconds and release. The orange LED will illuminate indicating that the heater is active and in auto heat mode.

To turn the heater off, press the DOWN button for five seconds and release. The Orange LED will no longer be illuminated, indicating that the heater is off.

8.1 Setting the Temperature Set Point

A temperature sensor is fitted to the outlet of the heater and will control the heater output to maintain the set point. The set point ranges between 5°C (fully anti-clockwise) and 15°C (fully clockwise) and can be adjusted via the min/max commissioning pot located on the ceiling vent diffuser.

9.0 MAINTENANCE

IMPORTANT

Isolation - Before commencing work make sure that the unit and Nuair control are electrically isolated from the mains supply and switched live supply.

Appropriate PPE (Personal Protective Equipment) should be worn during maintenance. Precautions may also be needed to protect the surrounding area from excess carbon residue.

To ensure the carbon filter maintains its high reduction of NO₂ the filter must be replaced once the end of its lifespan has been reached. The lifespan of the carbon filter in normal circumstances is shown in the table below.

Unit Code	Carbon Filter Lifespan	Carbon Filter Weight
NOXMASTER RANGE	5 years	2 x 6Kg

9.1 Replacement Filter Codes

To ensure effective particulate filtration and low system resistance, optional air filters must be replaced every 12 months. Replacement filters are available for purchase direct from Nuair, with the relevant part codes shown in this document. Alternatively the product website can be accessed directly via the QR code below.

Product Code	Replacement Filter Code	Filter Description
NOXMASTER	NOXMASTER-FR-PM10	ePM10 (Pre) & ISO COARSE 75% (Post) Filter
NOXMASTER-HEAT	NOXMASTER-FR-PM10	ePM10 (Pre) & ISO COARSE 75% (Post) Filter
NOXMASTER-PM2.5	NOXMASTER-FR-PM2.5	ePM2.5 (Pre) & ISO COARSE 75% (Post) Filter
NOXMASTER-HEAT-PM2.5	NOXMASTER-FR-PM2.5	ePM2.5 (Pre) & ISO COARSE 75% (Post) Filter

Unit Code	Replacement Filter Code	Filter Description
NOXMASTER	NOXMASTER-CF	Carbon Filters (x2)
NOXMASTER-HEAT	NOXMASTER-CF	Carbon Filters (x2)
NOXMASTER-PM2.5	NOXMASTER-CF	Carbon Filters (x2)
NOXMASTER-HEAT-PM2.5	NOXMASTER-CF	Carbon Filters (x2)

9.2 Replacing the Carbon Filter

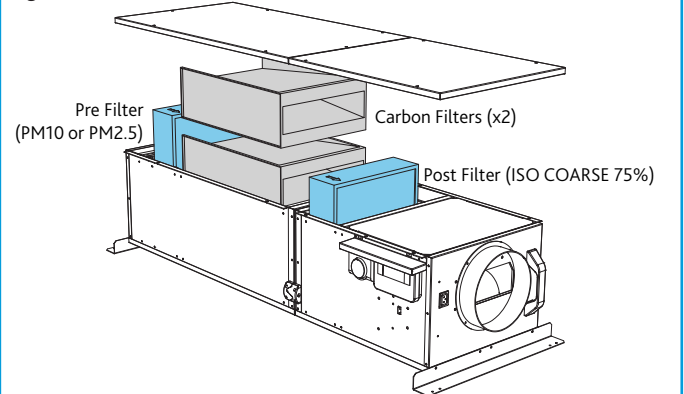
Carbon filters are located in Pod A (larger section).

- Isolate the unit from mains power supply.
- Unscrew the fixings securing the lid in place and remove lid from unit (Figure 8).
- Remove the Carbon filter(s) by lifting vertically.
- Replace the carbon filter(s), ensuring the airflow direction matches the air flow of the unit (if applicable).
- Refit the unit lid.
- Reconnect the main supply.
- Wash hands thoroughly after handling the carbon filters.

IMPORTANT

Carbon filters / pellets are not to be ingested and hands are to be thoroughly washed after handling.

Figure 12. Filter Removal



9.3 Replacing Particulate Filter

To ensure effective particulate filtration and low system resistance, optional air filters must be replaced every 12 months. Replacement filters are available for purchase direct from Nuair, with the relevant part codes shown in this document.

There are two particulate filters per unit, these are located within Pod A and Pod B.

- Ensure unit is isolated from mains power supply.
- Unscrew the fixings securing the lid(s) in place and remove from unit.
- Lift out and remove the filter(s).
- Fit the replacement filter ensuring the airflow direction matches the air flow of the unit.
- Refit lid(s) and restore power to the unit.

10.0 WARRANTY

Given proof of regular maintenance, this unit will come with a 5 year warranty starting from the day of delivery and includes parts and labour for the first year. The remaining period covers parts only, filter replacement is not covered by the unit warranty. If the above is not adhered to, the stated warranty will be void and all equipment will only have a 12 month defect warranty subject to terms and conditions.

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.

11.0 AFTER SALES ENQUIRIES

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

Figure 13. Unit Website QR Code



<https://www.nuair.co.uk/residential/positive-input-ventilation-piv/noxmaster>

Telephone 02920 858 400
aftersales@nuair.co.uk