



## **Installation & Commissioning Instructions**



**PPS/LH PIV with Heater**

**PPS/L – PIV Basic**

**Positive Input Ventilation Unit**

**PLEASE READ INSTRUCTIONS IN CONJUNCTION WITH THE ILLUSTRATIONS.**

**PLEASE SAVE THESE INSTRUCTIONS**

**220-240V ~50Hz**



## Installation and Wiring Instructions for the PPS/L & PPS/LH Units.



**IMPORTANT: READ THESE INSTRUCTIONS BEFORE COMMENCING THE INSTALLATION**

### **SAFETY AND GUIDANCE NOTES**

1. DO NOT install this product in areas where the following may be present or occur:
  - 1.1. Excessive oil or a grease laden atmosphere.
  - 1.2. Corrosive or flammable gases, liquids or vapours.
  - 1.3. Ambient temperatures higher than 40°C or less than -5°C.
  - 1.4. Possible obstructions which would hinder access or removal of the Fan.
  - 1.5. Relative humidity above 90%
  - 1.6. Sudden ductwork bends or transformations close to the Unit.
2. All wiring to be in accordance with the current I.E.E. Regulations, or the appropriate standards of your country and MUST be installed by a suitably qualified person.
3. The fan must be provided with a 3A fused, isolator switch capable of disconnecting all poles, having a contact separation of at least 3mm.
4. Ensure that the mains supply (voltage, frequency, and phase) complies with the fan's rating label.
5. The fan should not be used where it is liable to be subjected to direct water spray.
6. 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 made by children without supervision.
7. 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.
8. Children of less than 3 years should be kept away unless continuously supervised.
9. Children aged from 3 to 8 years shall only switch on/off the appliance provided the unit is installed as intended for normal operation and they have been given supervision or instruction concerning safe use of the appliance and understand the hazards involved.
10. Children aged 3 to 8 shall not plug in, regulate and clean the appliance or perform user maintenance

**Caution - some parts of PPS/LH can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present.**

## **A. INTRODUCTORY NOTES**

The Monsoon PPS loft PIV is a positive input ventilation unit, designed to be installed in the loft of a dwelling to continually supply filtered fresh air into the building.

The system consists of a fan unit, a heater unit (PPS/LH model only) and a diffuser with a short length of flexible ducting.

The Monsoon PPS loft PIV has two fully adjustable speed settings; 'Trickle' and 'Energy Recovery'. These speeds are set during installation; there are four pre-set speeds or an option allowing the speeds to be chosen manually from 19L/s to 49L/s.

The Monsoon PPS loft PIV uses a sensor to monitor the temperature in the loft, automatically adjusting the air volume when necessary.

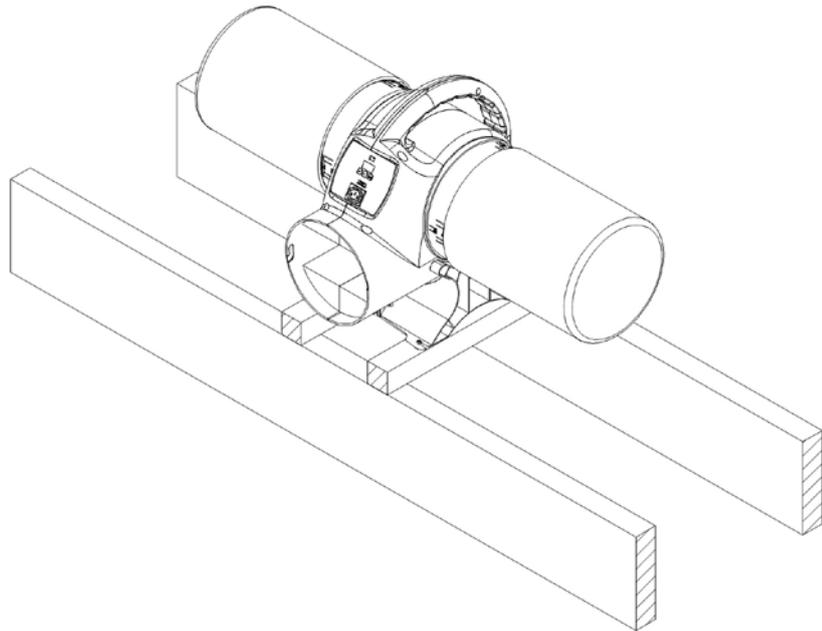
- The fan will run in 'Trickle' speed when the ambient loft temperature is less than 18°C (adjustable via the Trickle Speed Temperature Threshold setting).
- The fan will run in 'Energy recovery' speed when the ambient loft temperature is between the Trickle Speed Temperature setting (default 18°C) and Temperature Limit setting (default 27°C).
- If the ambient loft temperature exceeds the Temperature Limit setting (default 27°C), the fan will automatically switch to standby (no airflow).
- If the ambient loft temperature is below -5°C, the fan will automatically switch to standby (no airflow).
- Remote Purge/Boost is achievable by using the Boost Switch Link Connector (sold separately – 411150).

**The heater (if applicable) will activate when the ambient loft temperature is below the Heater Threshold Temperature set point (default is 5°C).** The set point can be adjusted between 5°C and 20°C. The heater is designed to try and maintain the heater set point temperature, however will depend on the chosen flow rates and temperature of the incoming air.

## **INSTALLATION**

### **TYPICAL INSTALLATION**

Fig.1.



#### **PPS PIV UNIT:**

Prior to installation ensure that the loft is adequately ventilated. The following tips can be used as a basis for this. However this is not an exhaustive list.

Ensure that any ridge vents, tile vents and continuous air gaps are not blocked. These may not be present in older properties; however there should be enough 'leakage' to accommodate the requirements of the Monsoon PPS loft PIV unit.

One method of checking this is by entering the loft, closing the loft hatch, switching off the lights and looking for any daylight penetration. If daylight is visible it is reasonable to assume that there is adequate ventilation within the loft.

There may well be occasions where a loft is so well sealed that additional ventilation may need to be provided by the owner/occupier. This will not only assist the operation of the Monsoon PPS loft PIV, but may also help to prevent future expensive structural damage caused by inadequate air movement. It should be noted that there can never be too much ventilation in a loft.

Ensure that all water tanks are covered and sealed.

Check that all water pipes are lagged.

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

Check that the loft hatch is tightly sealed.

Ensure that all holes in the ceilings 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, the installer should advise the house owner/provider as soon as possible and seek instruction from them before proceeding with the installation.

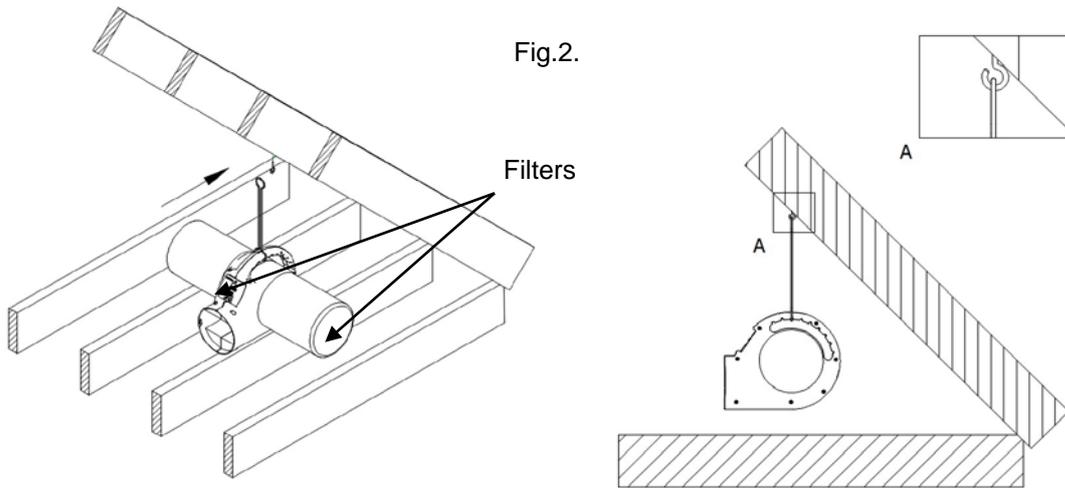
Flexible ducting is supplied as standard. Ensure that this is pulled out and does not allow any moisture to collect; it should be a smooth single curve to the grille. If the application requires a fixed 90 degree bend, straight ducting may be used.

**Hanging method:**

The Monsoon PPS loft PIV can be hung from a roof beam (Fig. 2). Fix the screw eye to a convenient roof beam. Use the cord provided to loop through the eye and around the handle on the unit, there are various notches for the cord to run through, tie the two ends together using a suitable knot such as an over hand or fisherman’s knot.

Ensure that the route for the flexible ducting has gentle bends and that the duct cannot be crushed. See **Diffuser Grille Fitment** section below for more information.

Fit the filters to the unit. **Please make sure that the filter is fitted correctly. This will ensure that all the fresh air entering the dwelling has passed through the filter first.** Ensure that the screw eye is attached to the beam strongly enough and that the beam is in sufficient condition to withstand the load. The unit weight is approximately 4 kg.



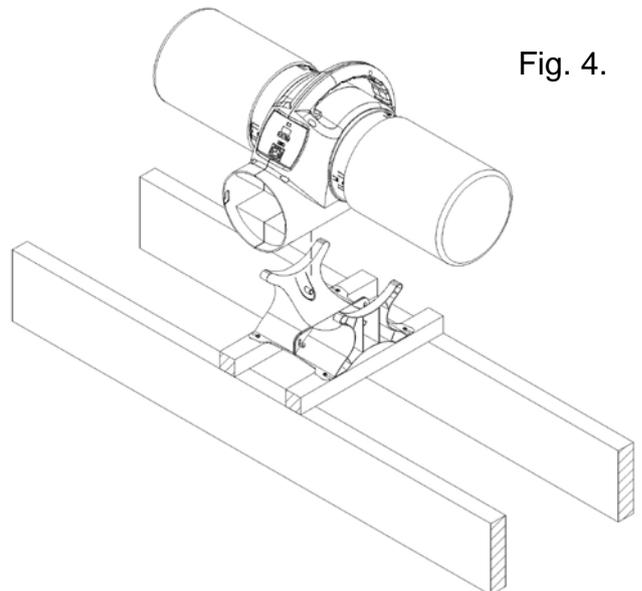
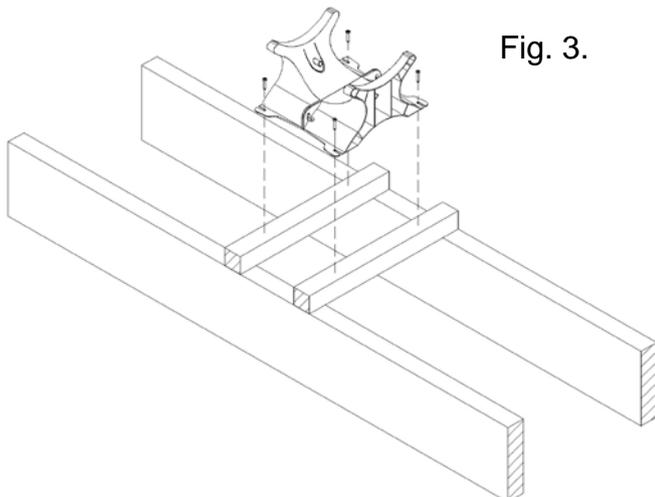
**Floor mounting:**

Find a suitable location to fix the unit near to where the diffuser is to be located. Ensure that the route for the flexible ducting has gentle bends and that the duct cannot be crushed.

Affix the mounting base to a wooden board or two lengths of timber which can then be screwed to the joists.

Place the unit in the mounting base cradle; two retaining pins hold the unit in place.

Fit the filters to the unit. **Please make sure that the filter is fitted correctly. This will ensure that all the fresh air entering the dwelling has passed through the filter first.**



## DIFFUSER GRILLE:

The diffuser must be carefully sited to ensure the maximum effectiveness of the system. It should be fitted in the ceiling of a common area, ideally above the landing so that the incoming air can reach all the rooms.

Cut the flexible ducting to a suitable length, where possible stretch the ducting to its maximum extent and ensure that there is one continuous smooth bend to the diffuser. The ducting **must** remain a minimum of 1m in length.

Remove the loft insulation from the location of the diffuser and cut a 240-260mm dia hole in the ceiling.

Ensure the four locking tabs are folded in and then push the spigot in to the hole. Holding the diffuser in place; screw the four screws until the locking tabs are holding the diffuser tight against the ceiling. Fig. 5 **It is important not to over tighten these screws as this may warp the diffuser.**

Fit the free end of the flexible ducting to the diffuser spigot using the worm drive clip supplied. (Fig 7)

Fig. 5.

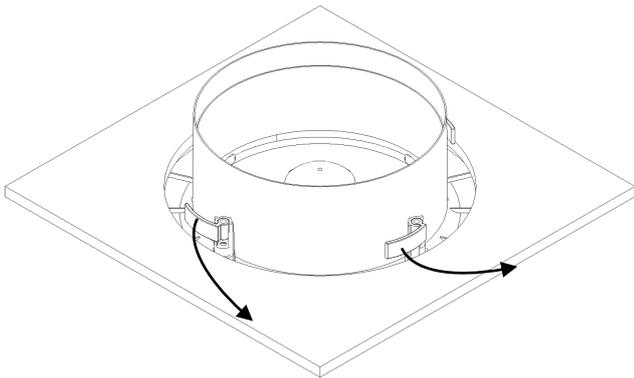
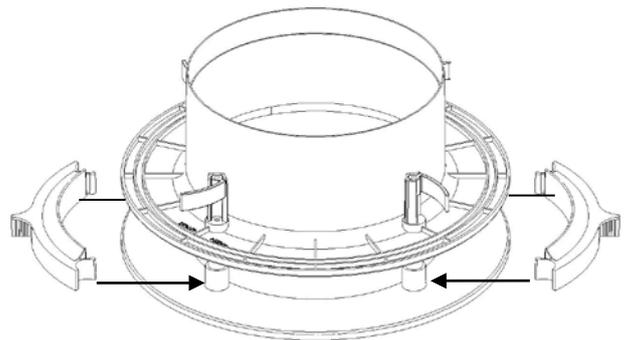


Fig. 6.



**IMPORTANT – SMOKE DETECTORS:** The diffuser should not be situated within 1m of a smoke detector, however if this is not possible the Monsoon PPS loft PIV has provisions to blank off the airflow for up to two quadrants of the diffuser. Two blanking plates are provided; these should be pushed on to the support struts inside the diffuser as required. This should be done before the diffuser is installed in the ceiling as when the screws are tightened down the plates can no longer be removed. See Fig.6, showing blocking off opposing quadrants, note any 1 or pair of quadrants can be blocked off as necessary for the install. These block off plates can also be used to ensure the supply air is spread across a room rather than directed at close by walls.

Blanking off one side reduces the flow by about 6%, but blanking off two sides reduces the flow by about 20% and so if two sides are blanked off then you should consider increasing the fan speed to maintain the appropriate airflow.

## **Air filter**

The Monsoon PPS loft PIV is provided with G4 filters which are suitable for removing airborne contaminants such as pollen and dust. Fit the 2 filters to each side of the unit.

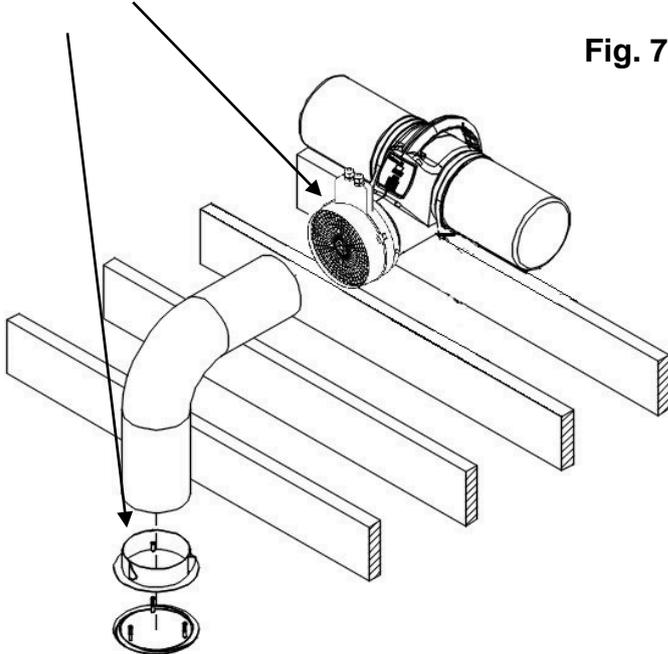
## **Ducting fitment**

Ensure the ducting is securely fixed to the diffuser and fan (or heater if applicable) via the provided worm drive clips. (Fig 7)

## **Heater Unit – PPS/LH Only**

**The fan/heater unit must not be located directly below a socket.**

Apply worm drive clips provided  
in positions shown



## C. WIRING

A MEANS FOR DISCONNECTION MUST BE INCORPORATED IN THE FIXED WIRING IN ACCORDANCE WITH THE WIRING REGULATIONS.



**WARNING: THE POSITIVE VENTILATION UNIT AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING THE INSTALLATION / OR MAINTENANCE.**

The Monsoon PPS loft PIV is designed for operation from a single-phase alternating current source (220-240V AC).

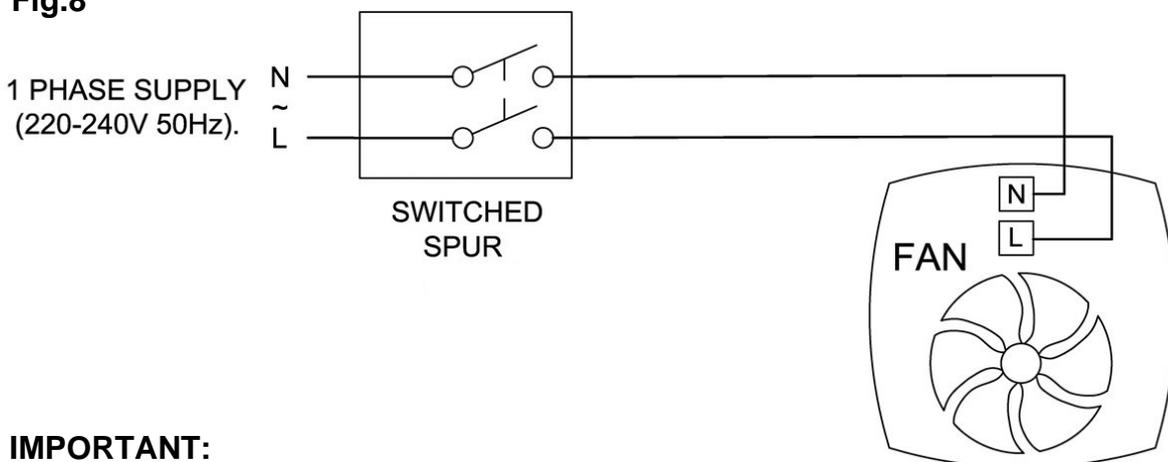
Mains supply voltages (220-240V AC) are present in this equipment which may cause death or serious injury by electric shock. Only a qualified electrician or installer should connect the power supply to this unit.

A 2m integral mains flying lead is connected to the unit for connection to a spur. It should be capable of disconnecting all poles, having a contact separation of at least 3mm.

**WARNING: If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or a similarly qualified person in order to avoid a hazard**

- Ensure the local AC power supply is isolated.
- The product has a pre-wired flying lead. Connect the brown core to Live and the blue core to Neutral.
- Use cable clamps and clips to secure the cable, as appropriate.

**Fig.8**

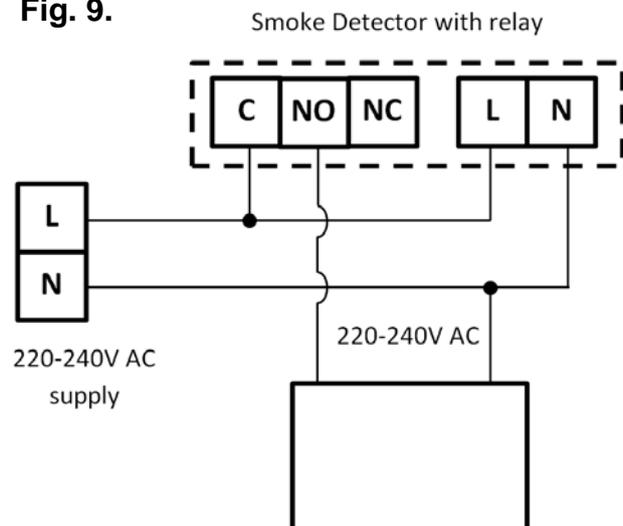


### IMPORTANT:

In order to have the product switch off in the event of a fire it must be wired using a smoke alarm with a relay system.

Use Fig.9 as a reference and refer to the instructions provided by the manufacturer of the smoke alarm and relay in order to wire the unit correctly. Ensure the relay works correctly by testing the fire alarm; the unit should switch off when the alarm is sounding.

**Fig. 9.**



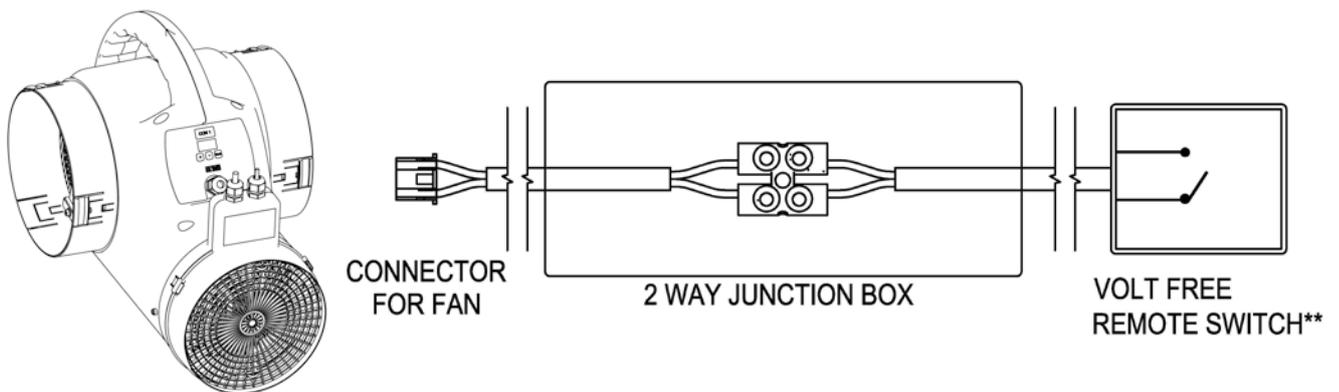
## Boost Switch Link Connector option (Ref:- 411150)

### IMPORTANT:

Do not connect mains or any other device to the remote boost cable. It is only intended to be linked via a remote volt free switch to activate the boost function.

- 1) Connect the boost cable (supplied with 411150) to the connector under the display (on the fan).
- 2) Wire the boost switch to the two terminals within the junction box. Ensure the cable is secured properly. The switch links the two wires together to activated boost remotely. Once deactivated the fan overruns for the set timeout period (\*see bst timer within the fan menu).
  - a. Normally open – normal mode/trickle
  - b. Closed link – boost is activated.

\*Within the fan menu “bst” can be set to have an overrun timer of either 0, 1hr, 2hr, 4hr, 8hr.



## D.START UP SEQUENCE

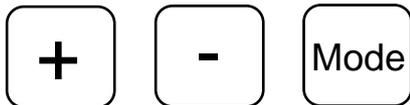
When the unit is switched on it will first run through a period of system checks. During this time the display will show various system parameters before the fan motor starts. After 10 seconds the product will be ready for commissioning.

## E. COMMISSIONING

### Accessing the Commissioning Menu

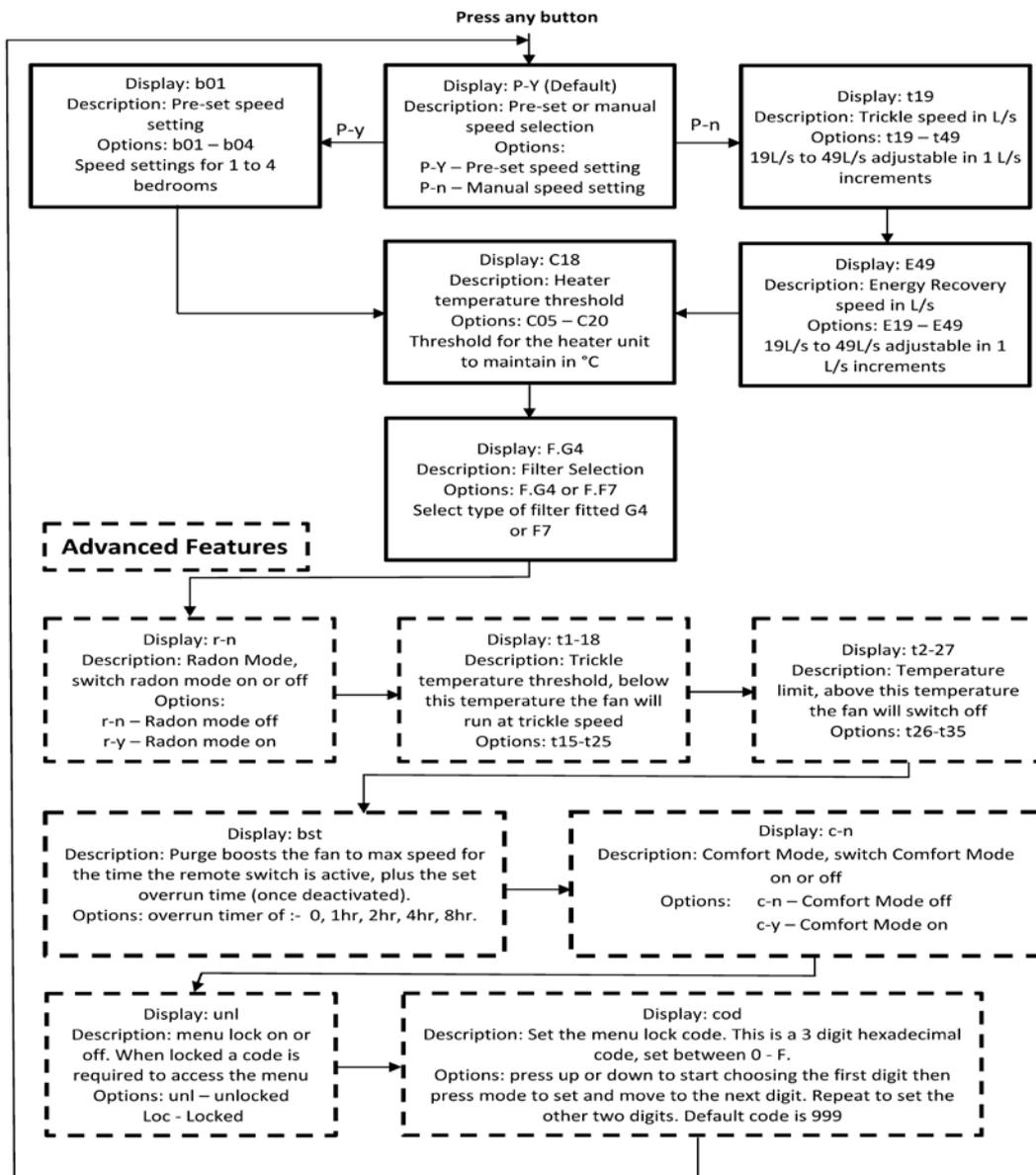
If the fan is powered and the display is not lit, then press any button to access the menu. After 30 seconds without menu activity the display will switch off; any new settings will then be applied.

There are three buttons on the front of the unit:



The “+” button is used to increase the value of a setting, the “-” button is used to reduce the value of a setting and the “Mode” button moves to the next menu item.

### Commissioning Menu Structure



## Speed Settings

The Monsoon PPS loft PIV has two speed settings, 'Trickle' and 'Energy Recovery'.

- 'Trickle' speed is automatically selected when the ambient loft temperature is **below** the Trickle Speed Temperature Threshold setting. Default setting is 18°C.
- 'Energy Recovery' is automatically selected when the ambient loft temperature is between the Trickle Speed Temperature (default is 18°C) and Temperature Limit setting (default is 27°C).
- If the ambient loft temperature exceeds the Temperature Limit setting, the fan automatically switches to standby (no airflow) - except when **Radon Mode** is enabled. See Radon Mode below for more details.
- If the input air is **below -5°C** the fan will switch to standby.

There are 4 pre-set speeds that can be selected based on number of bedrooms in the property. For example, setting b03 being for a three bedroom dwelling. Please see **Fig.10** for the approximate flow rates at each setting.

Alternatively, the speed settings are also fully adjustable between 19L/s and 49L/s via the manual speed setting option.

<b>Fig.10</b>		Trickle*	Energy Recovery*
No. Bedrooms	Setting	L/s	L/s
1	b01	19	29
2	b02	25	37
3	b03	31	46
4	b04	37	49

**\*The table shows a set up representative of a good low resistance installation using the supplied filters.**

The Monsoon PPS loft PIV must be set to provide adequate ventilation according to Part F of the building regulations.

## Heater Threshold Temperature

This is the temperature at which the heater will switch on. Default is 5°C. The higher the temperature setting/threshold, the more energy the heater will use. However, the lower the setting, the colder the air will be supplied into the house. The heater modulates (switches on/off) to maintain the set heater threshold temperature.

### **Lock feature**

The **menu lock** feature will prevent the unit from being adjusted after commissioning as a pass code is required to access the menu. This can be set in the menu to any 3-digit hexadecimal combination.

If the lock feature is enabled; when a button is pressed the display will show, – – –. At this point enter the three-digit code by first pressing “+” or “-” until the first digit is correct then press “**Mode**” to move to the next digit. Repeat until the code is entered and press “**Mode**” to enter the commissioning menu. If the code is entered incorrectly, wait until the screen switches off then press any button to begin again.

### **Radon Mode**

**Radon mode** keeps the fan running even at high temperatures to prevent the build-up of dangerous radon gas in the property. If this is not required, it is recommended not to use this setting.

### **Trickle Speed Temperature Threshold**

The temperature the fan will switch from Energy Recovery Mode to Trickle mode. Usually this would be set to around 18-20°C to be slightly cooler than the normal heating thermostat temperature. Default is 18°C.

### **Temperature Limit**

This is the maximum temperature the fan will run until going into standby. The higher the temperature the more heat will be extracted from the loft. Default is 27°C. Note that this limit is ignored in radon mode.

### **Comfort Mode**

The comfort mode feature offsets/delays the boost when the Boost Switch has been activated until after the Boost Switch has been deactivated (up to a maximum of 20 minutes). Therefore reducing any nuisance noise until after the user has left the room.

When the Boost Switch is deactivated, fan will run at boost mode for the length of time the Boost Switch was present (up to a maximum of 20 minutes) plus the set overrun time.

If the Boost Switch was activated for less than 3 minutes, no boost will occur to prevent nuisance activations.

If the Boost Switch is still connected after 20 minutes, the fan will boost anyway. Once the Boost is disconnected, the fan will run for only 20 minutes plus the set overrun timeout.

**E. SERVICING AND MAINTENANCE.**



**WARNING: THE POSITIVE VENTILATION UNIT AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING THE INSTALLATION / OR MAINTENANCE.**

The fan motor uses sealed ball bearings, and does not require further lubrication. Apart from filter change the Monsoon PPS loft PIV contains no user serviceable parts.

**Filter:** Under normal conditions, i.e. away from main roads and industrial areas, it is recommended that the filter is checked annually and cleaned or replaced as necessary. Otherwise change as required. (See Spares part list below)

The filter may be gently cleaned with a vacuum cleaner or washed in a soapy water solution and allowed to air dry before re-fitting. Do not dry the filter in a tumble dryer.

**When re-fitting make sure that the filter is fitted correctly. This will ensure that all the fresh air entering the dwelling has passed through the filter first.**

**Below is a list of spares and accessories available for the Monsoon PPS loft PIV:**

<b>Spares and Accessories</b>	Part Number
F7 FILTER PACK	477957
MOUNTING BASE ASSEMBLY	477749
HANGING KIT	477893
REPLACEMENT G4 FILTER PACK	477891
200mm DIAMETER 2m FLEXIBLE DUCTING	477955
REPLACEMENT DIFFUSER	478228
BOOST SWITCH	411150







### **Disposal**

This product should not be disposed of with household waste. Please recycle where Facilities exist. Check with your local authority for recycling advice.

National Ventilation  
Stathe Road  
Burrowbridge  
Somerset  
TA7 0RY

### **Contact Information**

Website: [www.nationalventilation.co.uk](http://www.nationalventilation.co.uk)  
email: [info@nvagroup.co.uk](mailto:info@nvagroup.co.uk)  
Sales and technical hotline: 01823 690290

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