PyroVent Operating and Maintenance Manual

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Contents:

1) Safety and Warnings

- Do not put mastic on any moving parts
- Do not pour water directly into the Pyro vent

2) Description of Product

The PyroSafe range is a device for fire safety designed to compartmentalise products in the event of a fire; and stop the spread of smoke through the ducting. The PyroVent products are also deigned as an extractor fan for daily usage. Each unit has a smoke detector, rate of rise heat detector, smoke and fire valve.

On detection of smoke the valve will close over; a sounder will activate if connected. The valve will stay closed until the smoke has cleared and automatically re-open. If the sounder is connected the black button can be pressed to silence it.

- PyroSafe Vent: The PyroSafe Vent is a passive device to be used when you have a centralised fan, normally placed on the roof. It is best used in conjunction with the AUTOFLOW VALVE.
- AutoFlow Valve: The AutoFlow Valve is a mechanical self balancing valve that is ideal to use with the PyroSafe Vent to ensure that the correct ventilation rates are used. It is settable on site to 9l/s, 11l/s, 13l/s, 17l/s, & 19l/s.
- PyroVent 80: The PyroVent 80 is a combination of a <80m3h extract fan with PyroSafe Vent. This is ideal to use when you have communal ducting with no centralised fan, and used in a bathroom.
- PyroVent 210: The PyroVent 210 is a combination of a <210m3h extract fan with a PyroSafe Vent. This is ideal to use when you have communal ducting with no centralised fan, used in the kitchen.

3) Basic Working Principle

The PyroSafe range work as a smoke and fire protection unit, designed to compartmentalise in the event of a fire. When the smoke detector or the rate of heat rise detector senses smoke either in the ducting or property; the valve will shut, forming a smoke seal with the rubber seal. The rubber smoke seal will protect until 140C, when the intumescent graphite disk will expand, sealing the valve in place and providing further protection.

4) Installation

Before installing any PyroSafe units its important to do a visual check of the ducting to ensure the ducting is suitable (made of metal) there is no damage or defect, and that the fire barrier is complete (ducting reaches to the end of the wall/stud wall- if this is not achieved, a metal ductwork extension may be used, as long as the connection is compliant with all regulations).

4.1. Remove existing grille or ventilation unit.

4.2. Clean to ducting and surrounding area; it's recommend to clean with a hoover with brush attachment. Duct cleaning, where applicable, should be to TR/19 Standards.
4.3.1. If applicable, install AutoFlow Valve into ducting or adapter, setting to either; client specification or to equivalent. Make sure the Autoflow valve is far enough into the wall so as to not inhibit the installation of the PyroVent unit.
4.3.2. If applicable install adapter into the ducting.

4.3.3 If applicable attach faceplate onto the wall, lining up with any adapter.

4.4. Insert Pyro Unit into/onto ducting/adapter/faceplate and either screw to the wall or bolt to the faceplate. All metal to metal seals are to be coated with intumescent mastic prior to final assembly.

4.5. Connect electrical input- this can be spurred from the lighting circuit, back to the fuse board or from any local plug socket. We recommend using a Key-switch Isolator or similar, otherwise client specification should be adhered to.

A. PyroSafe Vent & PyroVent 80 come with a remote transformer.
B. PyroVent 210 requires 240V

4.6. Connect the battery inside the unit.
4.7. Connect to the unit with the VapourFlow App:

A. Test the functionality of the valve in the 'Smoke Control' Page-
Code is 1666.
B. Rename the device in the 'Data Centre', using client specification.

5) Daily Operation

The day to day operation of the PyroVent 80 and 210 is as an extractor fan which extracts constantly, it can either switch to high speed from the internal sensor or, when wired to the light switch, when the light is turned on.

The daily operation of the PyroVent is as a passive ventilation unit, this unit will be ducted for individual dwellings into a central ducting system.

6) Scheduled Maintenance and Service

Every 12 (14 max) months cycles the Pyrosafe to be tested as manufacturers recommendations by trained operative's. Including test operation by the App, including interactive test button, checks that the smoke sensor is powered with corresponding shutter operation, App visual indicators seen including, battery state, Heat alarm circuit and main input power. The units to be wiped clean and vacuum cleaned through the external grille.

At year 3 (38 Months Max) from installation date, the recommendation is for MOT of the unit by Approved Technicians, in the event the units have not received the annual service for over there years this is should be a mandatory requirement. This will include all previous servicing steps, along with direct testing of the Ionisation smoke detector, full servo motor testing, airflow testing and replacement of any internal components.

Advanced service detail as Table 2

Trained and approved servicing operatives are recommended, as having an understanding of the components, sensitivity and performance are essential to ensure these safety devices perform as intended.

Training is available from VapourFlow Ltd, all enquiries to vents@vapourflow.com

7) Yearly Maintenance & Service

Table 1

Type	Work	Inspection (12 Months)	Maintenance (36 Months)
Visual	Blue light is on on the transformer		
	Front cover is undamaged		
	Valve is in correct position (should be open)		
Clean	Use hoover and damp cloth to clean front cover before removing		
	Remove front cover and use hoover to remove dust & detritus from internal workings.		
	Clean any last detritus with a damp cloth, making sure to clean inside the spigot and the valve.		
App Function	Use the 'reset/test' button on the app to activate valve		
	Check smoke sensors powered with corresponding shutter operation		
	App visual indicators; battery state, heat alarm, circuit and main input power		
	If Pyro80/210- check fan is running correctly- low speed trickle- high speed- speed adjustment		
Electrical	Full servo motor testing		
Ionisation	Check ionisation of smoke detector		
Airflow	Testing of airflow through Pyrosafe vent		
	If AutoFlow Valve installed, check airflow is correct with plenum chamber and airflow meter		

8) Troubleshooting and FAQ

8.1 User reports shutter/alarm keeps going off

A. Do they smoke?

B. Do they burn candles or incense in the bathroom?

C. Did they burn any food?

If yes to any of the above that is the reason. If no, remove front cover and check sensor, clean as described in table 2

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8.2. Valve closes when door is shut over.

A. Is there a 10mm gap under the door- if not the pressure change is causing the close- either create 10mm gap or install door vents.

8.3. Valve is constantly closed and steam is not clearing:

A. Is the device turned on? Check Transformer, isolator and battery connection.

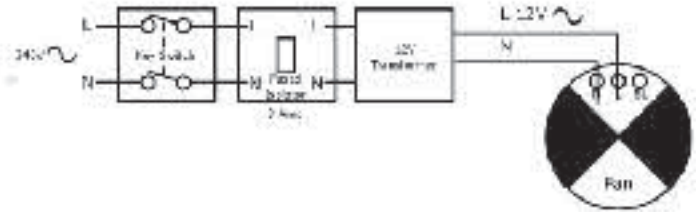
B. If device is turned on, press the black button and see if it re-opens.

C. If the device does not re-open; reset the device by disconnecting the battery and power supply for 2 minutes, then reconnect.

D. Use a straw/kitting needle to gently push open the shutter then test to ensure theres no debris.

E. If this does not work the unit needs replacing.

9. W



Technical Notes

Sensors

9) The PyroSafe units contain 3 sensing elements

9)1)Smoke sensor, this is an ionisation sensors that are primarily used in passive smoke sensors, in the Pyro unit the air has a greater air flow and as such it is a requirement to keep clean and free from dust. A picture of the sensing chamber is shown in the advanced servicing section.

9)2)Temperature sensor, this is located next to the humidity sensor, this is used for the rate of rise heat detection as well as showing ambient temperature on the Dashboard in the App, plus its output is used in conjunction with the humidity sensor to show Absolute humidity.

9)3)Humidity Sensor - this is the Humeral ceramic humidity sensor - it has good accuracy and repeatability and its able to withstand harsh environments.

10. VapourFlow Advanced PyroSafe service kit

Contents

- Ion protective shield tape
- Eutectic Nebuliser EN1
- Vacuum Adaptor/Nozzle
- Protective Cover PC1
- Protective Cover PC2
- Snipe nose Pliers
- Sensor cleaning swabs

- Microfibre Cleaning Cloth
- Compressed Air Canister C1
- Air flow tester

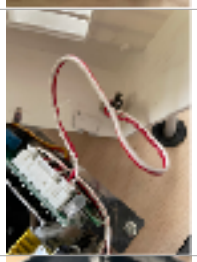
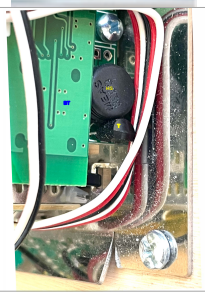
Note: Contents of the kit may vary

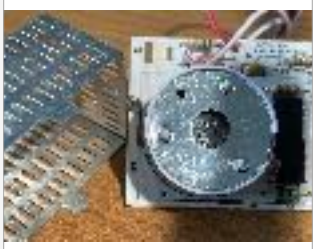
11. Advanced Pyro Cleaning

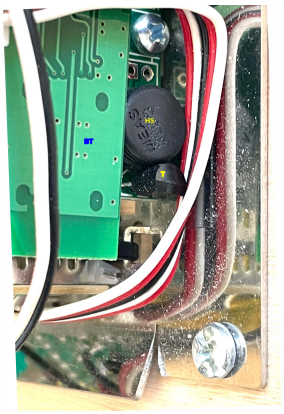
Table 2

Advanced Maintenance Procedure

VapourFlow Advanced PyroSafe service kit will be required for this Procedure

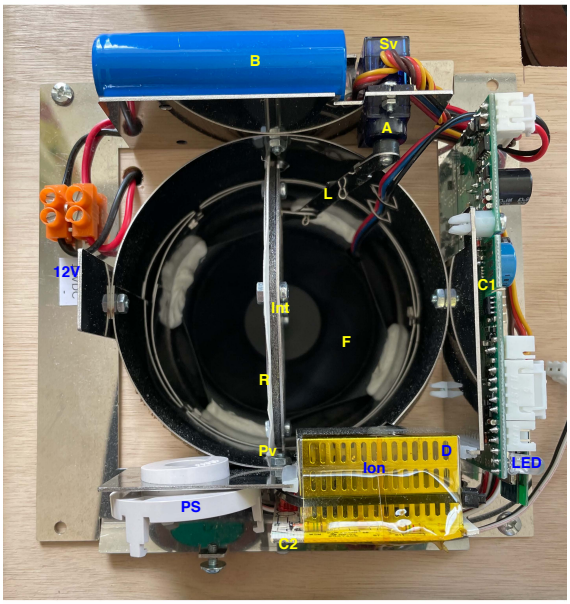
Part	Work	Image
SMP 1 Gang Power Supply	Check Blue LED light is on, this is on the from of the power supply Box, Use the local mains Isolator to power down to proceed to the next step	
Front Cover	Use hoover and damp cloth to clean front cover before removing, Remove Front Cover of the PyroSafe Unit, unplug switch lead for the push button from the circuit board. Take great care when removing the socket connector, Check holding nut on the switch is tight and secure	
Smoke/ Intumescent Valve	Check Valve is in correct position (open as in Pyro Parts image)	
Observation and preparation	Before starting any cleaning do a visual inspection, check each functional component, as in Image 1	
Ionisation Sensor Cage	Before any cleaning using the Artist brush sweep away surface dust, ensure cover D is in place, in either case apply temporary protective wrap around the whole cage, if cover is loose or not present, instal on completion a new cover as detailed in the appendix to this guide.	
PCB C1 & C2	Using the blower brush remove detritus from C1 & C2. take care around the humidity Sensor HS, place temporary protective cover PC1 over 1 & C2	

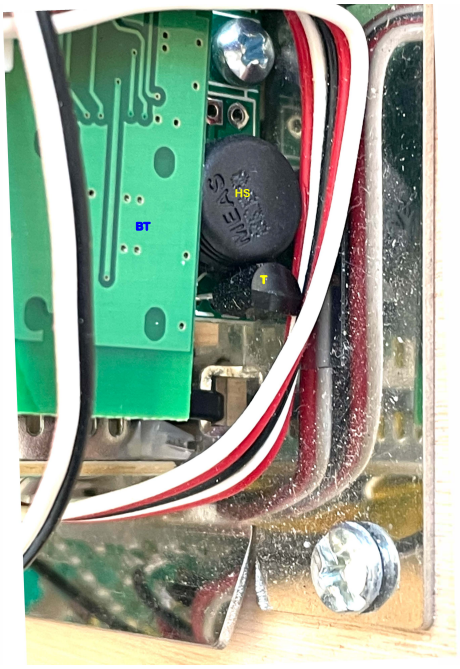
Part	Work	Image
Chassis & Smoke Valve	Using the hover manoeuvre the adaptor to penetrate the area beyond the smoke valve then extract detritus as far as practicable, when fitted, fan or Airflow valves should also be clean taking care not to damage these components, hover all visible dust/ detritus from the PyroSafe Vent, clean any last detritus with a damp cloth, making sure to clean inside the spigot and the valve	
C1, C2 & Ion sensor	Remove protective cover PC1, gently vacuum with a brush attachment over C1 & C2, however round the duct side of the Ion sensor. Using a blower brush gently go around the Ion sensor, removing all signs of dust/detritus, this image shows the inner construction, all dust must be removed from the circular metal plate and below the centre circle in the plate, use compressed air canister AC1 to clear any remaining dust from the sensor	
Smoke valve, Pivot Points & linkage	Smoke valve, Pivot Points & linkage, ensure clean, slowly move the valve to close position and fully open, ensure no obstruction and linkage moving freely, apply one drip of watch oil on the linkage mechanism and he two pivot points	
Wiring observational checks	View all terminals including the 12v input terminals, ensure no exposed wires giving chance of a short , and that all connectors are in place	
Power Up	Turn the Power on, wait 5 minutes for the unit to run through the set up period, On the Master C1 Control Circuit PCB during this time the LED will be flashing Red.	

Part	Work	Image
App Connection	DownLoad the VapourFlow App from the IPhone store, Connect to the unit and run the App following the App user Guide, The maintenance area will be accessible via the code 1666	
App	Use the 'reset/test' button on the app to activate valve	
Ion sensor	Check Ion smoke sensors powered with corresponding shutter operation, use supplied nebuliser test EN1 - 1 second burst 10cm away aimed at open side of sensor cage, wait 20 seconds, if no response try a second time. Once alarm activated press reset, this will take up to 10 minutes to reset as will require any nebuliser material to evaporate. In the event no activation repeat cleaning step for the detector, then try again, if no response replace the Ion sensor complete with Circuit C2	
Temperature sensor	Using moderate heat from a hairdryer on low heat direct warm air onto the heat sensor for around 30 seconds, trigger will be seen by shutter activation	
Battery, Heat alarm & mains input	Follow the App manual, App visual indicators; battery state, heat alarm, circuit and main input power	

Part	Work	Image
	If Pyro80/210- check fan is running correctly. Low speed trickle to high speed, the low and high levels are adjustable.	
Electrical	The servo operation will be self evident during the tests	
Airflow	Testing of airflow through Pyrosafe vent, use device supplied with the Kit	
Auto Air Flow Valve	If AutoFlow Valve installed, check correctly installed, the view looking through the PryoSafe vent will be as this image, heads of screws on the valve seen	

12. Pyro Parts Image 1 & 2





12V, Power Supply connection. A, Actuator. B, Li Ion Battery. BT, Bluetooth Module. C1 Control Circuit. C2 Ionisation Circuit. D. Deflector. F, Fan. HS, Humidity Sensor. Int, Intumescent Material. Ion Ionisation Cage. L, Linkage Mechanism.Sv, Servo Motor. T, Temperature Sensor. PS Pizzi Sounder. Pv, Pivot Point.