



A Donaldson Company

A WORLD LEADER IN FUME
EXTRACTION TECHNOLOGY

3D PrintPRO 4

USER MANUAL

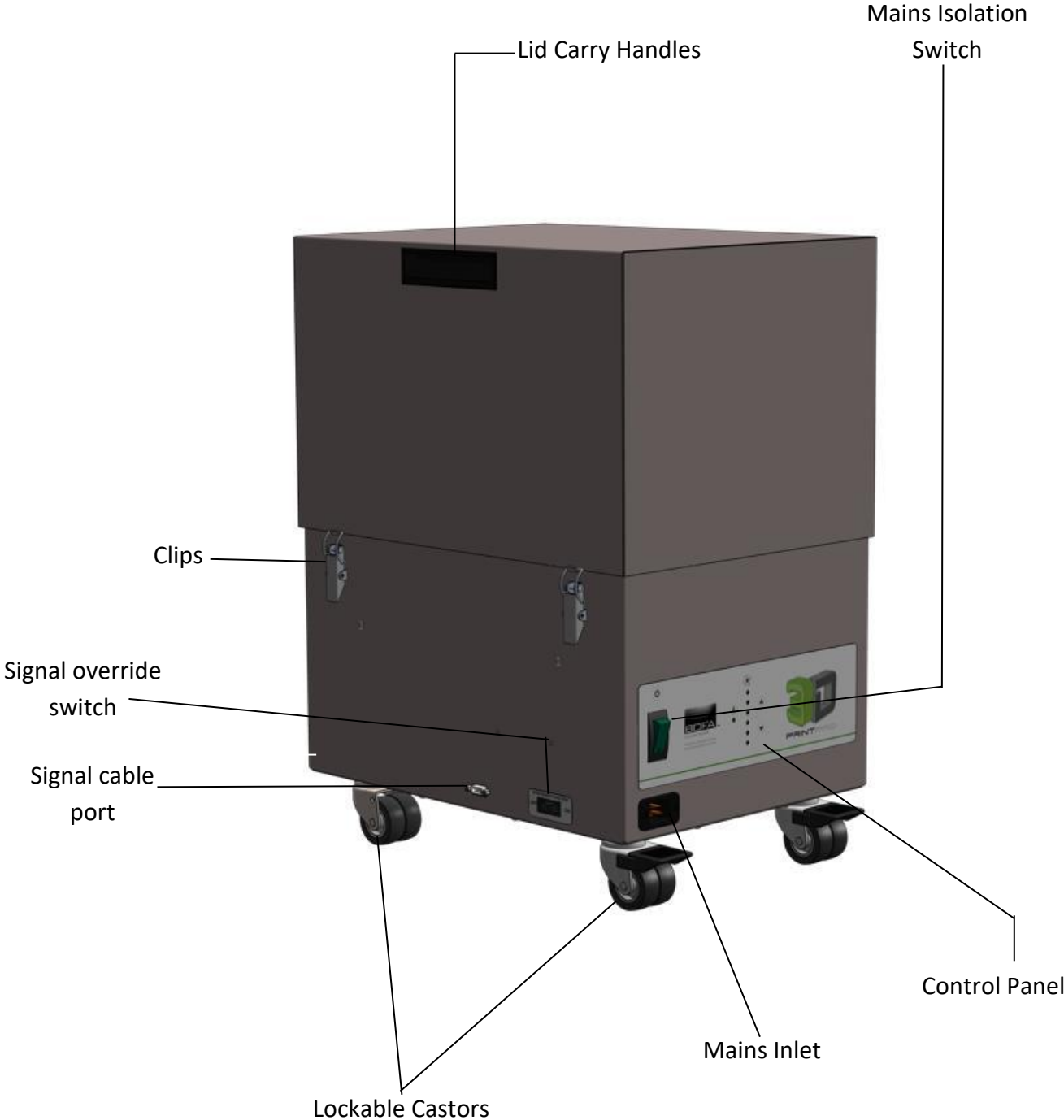


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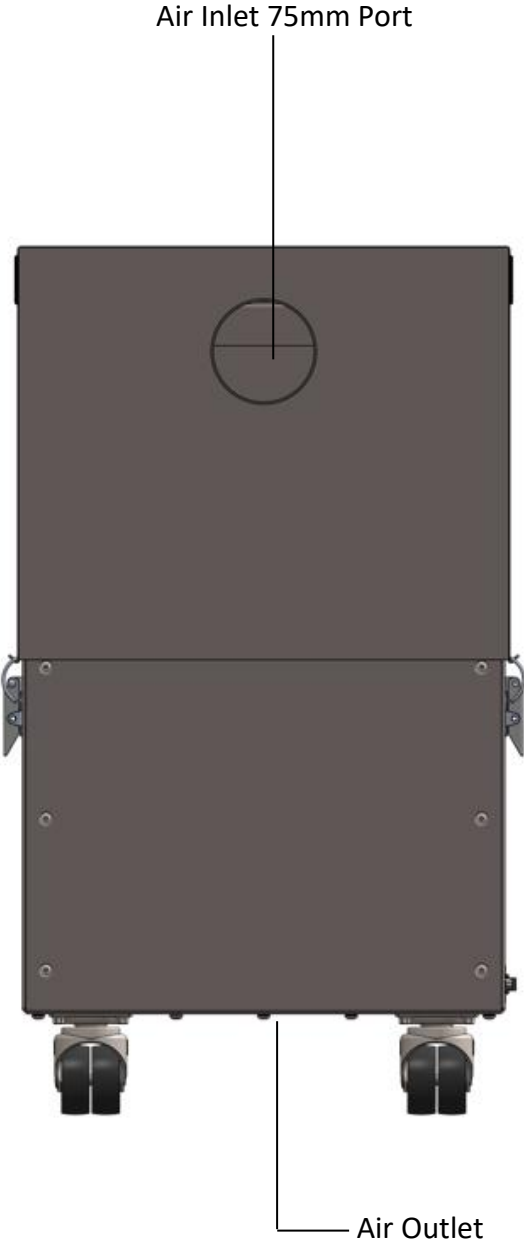
Overview

1 01



Overview

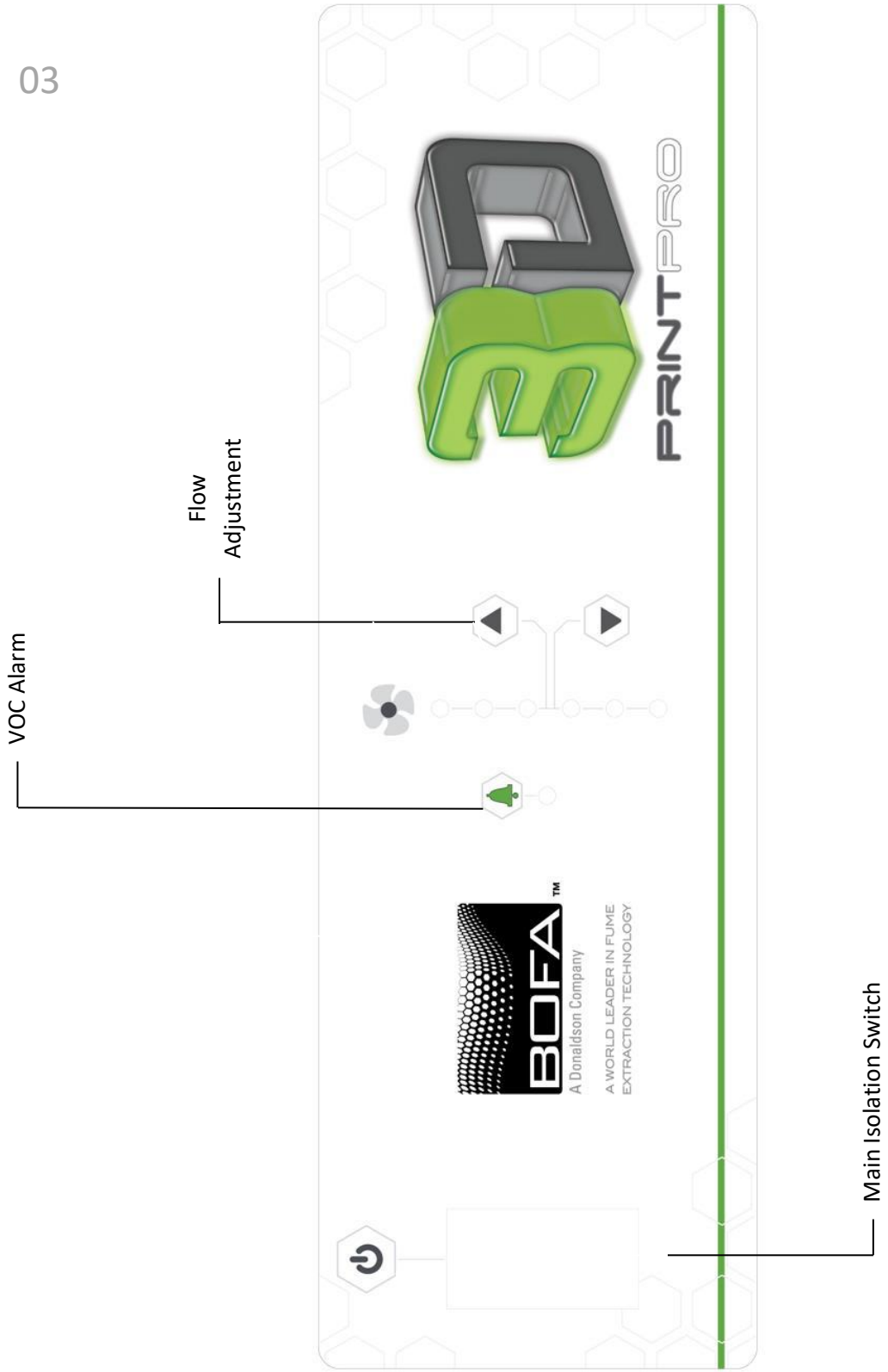
1 02



Overview

1

03



Safety Instructions

2 01

Important safety notes

Concerning symbols used on the extraction unit and referred to within this manual.



Danger

Refers to an immediately impending danger. If the danger is not avoided, it could result in death or severe (crippling) injury. Please consult the manual when this symbol is displayed.



Warning

Refers to a possibly dangerous situation. If not avoided it could result in death or severe injury. Please consult the manual when this symbol is displayed.



Caution

Refers to a possibly harmful situation. If not avoided, damage could be caused to the product or something in its environment.



Important (Refer to manual)

Refers to handling tip and other particularly useful information. This does not signify a dangerous or harmful situation. Refer to manual when this symbol is displayed.

Electrical Safety

The unit has been designed to meet the Essential Health and Safety Requirements of the Machinery Directive 2006/42/EC.

Warning

When working with the pump/motor housing open, Live 230/115 volt mains components are accessible. Ensure that the rules and regulations for work on live components are always observed.

Important

To reduce the risk of fire, electric shock or injury:

1. Always isolate the system from the mains power supply before removing the pump/motor access panel.
2. Use only as described in this manual.
3. Connect the system to a properly grounded outlet.

Dangers to eyes, breathing and skin

Once used, the filters within the 3D PrintPro 4 system may contain a mixture of particulates, some of which may be sub-micron size. When the used filters are moved it may agitate some of this particulate, which could get into the breathing zone and eyes of the operative. Additionally, depending on the materials being used, the particulate may be an irritant to the skin.

This unit should not be used on processes with sparks of flammable materials or with explosive dusts and gases, without implementation of additional precautions.

Caution: When changing used filters always wear a mask, safety shoes, goggles and gloves.

Carbon selection

Please note that the media within the filter fitted in the unit is capable of adsorbing a wide range of organic compounds. However, it is the responsibility of the user to ensure it is suitable for the particular application it is being used on.

Intended use

This equipment has been designed to extract and filter fume from a variety of applications. However it is the users responsibility to ensure the equipment is installed correctly and is suitable for the application.

This machine must not be used on wet applications or acidic fumes.

BOFA Technical Service

If problems arises with your 3D PrintPro4 unit or if it displays a fault code, please contact us:

- Visit our website at www.bofainternational.com for on-line help.
- Or contact the helpline on **+44 (0) 1202 699 444**, Mon-Fri, 9am-5pm.
Email: Technical@bofa.co.uk

Safety Instructions



Warning and Information labels

The following listing details labels used on your unit.

Goggles, Gloves & Mask Label



Location: Front face of filter.

Meaning: Goggles, Gloves and Masks should be worn while handling used filters.

Do Not Cover Label



Location: Bottom Panel

Meaning: Do not cover any louvers or holes adjacent to the label.

Electrical Danger



Location: Back of unit close to the top and central.

Meaning: Removal of panels with this label attached will allow access to potentially live components.

Warning Label



Location: Next to release clips.

Meaning: Power should be isolated before the panel with this label attached is opened/ removed.

Serial Number

For future reference, fill in your system details in the space provided. The serial number is on the rating label located on the side/rear of the unit.

Serial Number:

Serial Number Label



Location: Side of Unit

Meaning: This label contains a variety of information about the extraction unit, including.

- Company name, Address & Contact number
- Extractor model
- Unit serial number
- Operating voltage range
- Maximum current load
- Operating frequency
- Year of Manufacture
- Relevant approval markings/ logos

PLEASE NOTE: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment maybe compromised.

Before installation

3 01

Packaging Removal & Unit Placement

Before installation, check the extraction unit for damage. All packaging must be removed before the unit is connected to the power supply.

Please read all instructions in this manual before using this extractor.

1. Move the unit to the location where it is going to be installed and remove the outer packaging. **This unit should be installed in a well-ventilated area.**

Ensure that 500 mm space is available around any vented panels on the extractor to ensure adequate airflow.

Note: Do not use the two handles on the top of the lid to carry the complete unit. These handles are intended for lifting and transporting the unit lid only.

2. With the unit in position lock the 2 front castors.
3. Check the filter is located in its correct position before replacing the lid and securing the clips



Due to the weight of the extractor suitable lifting equipment should be used and with regard to appropriate safety precautions. (See Appendix for product weight details)



Do not block or cover the cooling vents on the unit, as this severely restricts airflow and may cause damage to the unit.



Under no circumstances should the exhaust outlet/s be covered as this will restrict the airflow and cause overheating.



Installation

4 01

Specification

Refer to section 08 01.


Connection to Power Supply

Please follow the above specification when selecting the power supply outlet for the 3D PrintPro 4 system, ensure the power supply is suitable before connecting the 3D PrintPro 4 system.

Check the Integrity of the electrical power cable, if the supply cord is damaged the extraction unit should not be connected to the mains. The supply cord should only be replaced by a BOFA engineer as an electrical safety test may be required after replacement.

The system **MUST** be connected to a properly earthed outlet.

If your 3D PrintPro 4 system was ordered with any optional extras please read section 4.03 before the power

 connection is made as additional connections may be required before power is connected to the extractor.



Connect the power cable to an isolated electrical supply.

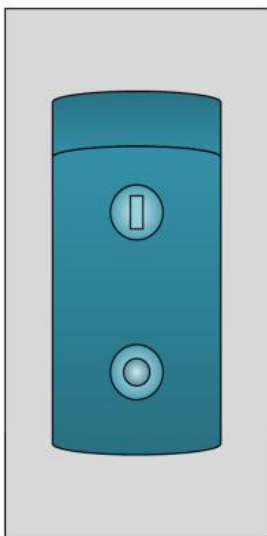
The mains socket should be installed near the extractor it should be easily accessible and able to be switched On/ Off. The cable run should be arranged so as not to create a trip hazard.

Operation

5 01

Turning extraction unit On

Press the main isolation switch to the "On" position (Refer to section 1 for switch location) by depressing the 'I' side of the switch.



Setting the desired airflow

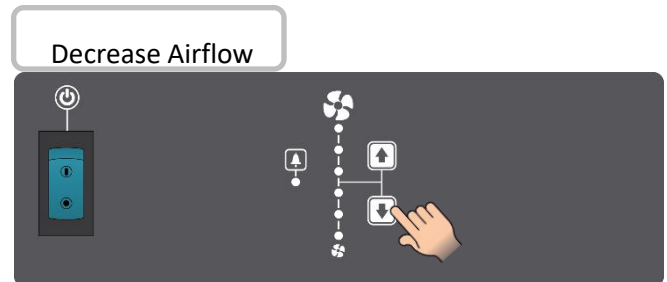
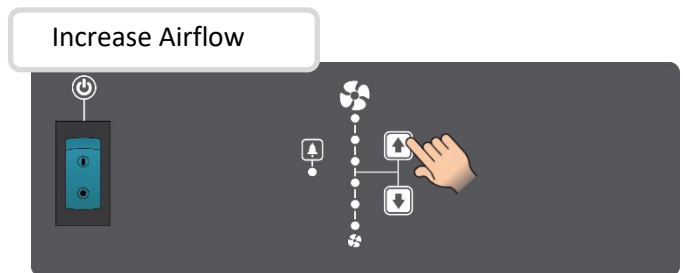
The extraction unit features manual flow control. This enables the user to set the required airflow rate. Over time as the filters begin to block the user should manually increase the motor speed to ensure the correct flow is maintained to compensate for any loss in performance caused by the added restriction of the partially blocked filters.



The extractor and all pipe work must be fully installed and connected before the airflow is set.

To set the airflow

Press the Up arrow button to increase airflow and press the down arrow button to decrease airflow. The level of airflow is indicated by the vertical row of six blue LEDs to the right of the mains isolation switch. As the airflow increases, more blue LEDs light up and the opposite for decreasing the airflow.



Maintenance



Maintenance UK

It is a legal requirement, under regulation 9 of the COSHH regulations that all local exhaust ventilation systems are thoroughly examined and tested at least once every 14 months (typically carried out annually). The approved code of practice recommends that a visual check should be carried out at least once a week.

COSHH requires the annual inspection and testing to be carried out by a competent person and specifies that documentation results are recorded in a log.

Contact the seller for more information about inspection and certification.

Maintenance General

User maintenance is limited to cleaning the unit and filter replacement, only the manufacturers trained maintenance technicians are authorised to carry out component testing and replacement. Unauthorised work or the use of unauthorised replacement filters may result in a potentially dangerous situation and/or damage to the extractor unit and will invalidate the manufacturer's warranty.

Cleaning the unit

The powder coat finish can be cleaned with a damp cloth and non-aggressive detergent, do not use an abrasive cleaning product as this will damage the finish.

The cooling inlets and outlets should be cleaned once a year to prevent build-up of dust and overheating of the unit.

Filter Information

A log of filter changes should be maintained by the user. The filters require attention when the display shows the configuration shown on the next page or when the extractor no longer removes fume efficiently.

It is recommended that a spare set of filters are kept on site to avoid prolonged unit unavailability. Part numbers for replacement filters can be found on the filters fitted in your system.

To prevent overheating, units should not be run with a blocked filter condition, or with dust obstruction of Inlets / Outlets.

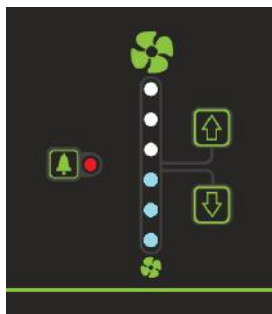
Maintenance

6 02

Filter Replacement

Refer to section 2 02 for PPE requirements.

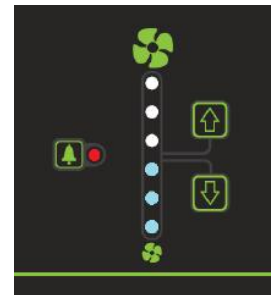
During use, the system will alert the user when its filter needs replacing. When the filter needs to be changed, the LED to the right of the bell symbol will flash red.



VOC option

The unit also has an option for a VOC (Volatile Organic Compound) alarm option installed, the extractor will monitor and detect the level of VOC particles in the air. If the VOC level rises above a pre-set level then the LED to the right of the bell symbol will flash red. This requires the replacement of the filter.

VOC
Alarm



To remove and replace the filter follow the procedure detailed below.

1. Isolate the electrical supply to the extractor
2. Undo the four clips on the sides of the unit and remove the lid using the two handles on the top of the lid.
3. Using the two strap handles on the sides of the filter, lift the filter out of the unit. Once removed it is recommend that the used filters are bagged and sealed.
4. Lower the new filter into position. Replace the lid, and fasten the four clips.



Note: The filter MUST be fitted when the extractor is in use.

Remote Stop/Start feature

Enables the extraction unit to be remotely turned On / Off via an external signal.

Note: Care must be taken to ensure that the system is correctly wired in order for the extraction unit to function correctly.

DC Voltage input

This configuration requires the Black & Red cores of the signal cable (Refer to section 1 for location) to be connected to a known and tested DC power supply, in order to start the extractor. The signal needs to be connected to a double insulated DC power supply.

The operating voltage for this signal is 24VDC. Only this voltage should be connected. Voltages connected outside of this range may cause irreversible damage to the relay.

Red cable = V+
Black cable = V-

When the extractor is provided with the correct DC voltage the motor will start and maintain the set flow rate (Refer to section 5 for how to set the flow) when the DC voltage is removed the motor will slow down and come to a stop.

The extractor will need to be turned on (See section 5 for turning the extractor on) in order for this feature to operate.

Override

Enables the extractor to operate fully with or without either DC voltage input or the Volt free input.

The override feature can be toggled On / Off by a switch mounted on the internal motor access panel (see below for switch location)

Switch in "On" position

In this position the extractor will require a start signal (either Voltage input or Volt free, depending on the requested specification) to enable the motor within the extraction unit.

Switch in "Off" position

In this position the extractor motor will run without the requirement for an external start signal.

Filter Blocked / System Fail Signal

With this option the extraction system will output a signal to alert the user when the extractor has failed or when the filters are blocked.

This feature will not directly stop the extractor from running correctly, but if fitted this feature should be terminated correctly before power is applied to the extraction system.

Connection specification

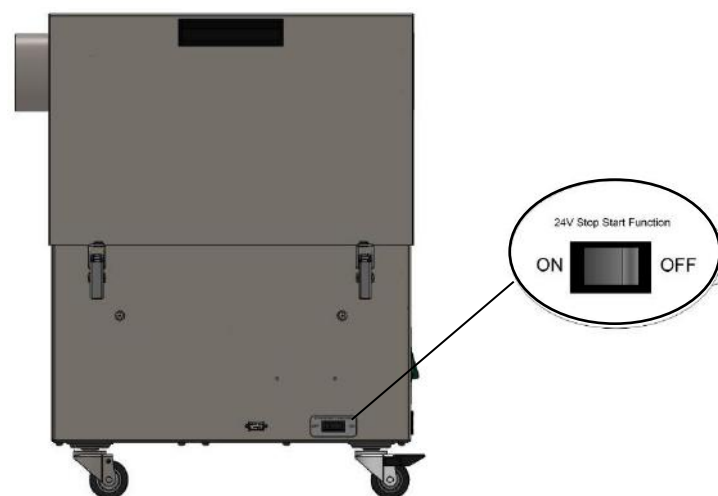
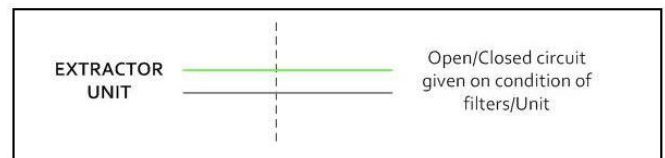
This signal is available via the Green and White cores of the signal cable. The system will provide a volt free Open / Closed signal that can be connected to an external interface, beacon or warning device following the specification below. The signal needs to be connected to a double insulated DC power supply.

- **Maximum input voltage: 24V AC**
- **Maximum current load: 3A @ AC**
OR
- **Maximum input voltage: 24V DC**
- **Maximum input load: 3A @ DC**

Filter Signal

When the filters become blocked or the system develops a fault the connection between the Green & White cables will become "Open"

When the extraction system is running normally the connection between the Green & White cables will become "Closed"



Replacement Parts



Consumable Spares

The extraction system contains a combined filter. These should be replaced when instructed to do so by the 3D PrintPro4 system (see section 6 for replacing the filters)

To maintain performance it is important that the filters are replaced with identical BOFA filters. To re-order please refer to the Filter number printed on the filter installed in your extraction unit.

Maintenance Protocol

Users can record changes in filter change intervals on the table below.

Unit Serial Number:	
Universal Combined Filter	
Date	Engineer

Filter disposal

The Universal Combined filter is manufactured from non-toxic materials. Filters are not re-usable, cleaning used filters is not recommended. The method of disposal of the used filters depends on the material deposited on them.

For your guidance

Deposit	EWC Listing*	Comment
Non Hazardous	15 02 03	Can be disposed of as non-hazardous waste.
Hazardous	15 02 02M	The type of hazard needs to be identified and the associated risks defined. The thresholds for these risks can then be compared with the amount of material in the filters to see if they fall into the hazardous category, if so, the filters will need to be disposed of in line with the local/national regulations.

*European Waste Catalogue

System Specifications

Spares parts list available upon request



Unit: 3D PrintPro4

Capacity: 300m³/h

Weight: 51Kg (112.4lbs)

Motor: Centrifugal Fan

Output: 1100w

Electrical supply: 115-230V

Hertz: 50/60Hz

Full Load Current: 12.5A

No of phases: 1

Noise Level: Below 68dB (A)
(at typical operating speed)

Size:

	Metric (mm)	Imperial (inches)
Height	625	24.6
Depth	475	18.7
Width	350	13.7

Filters:

Filter Type	Surface area	Efficiency
Combined Filter	0.13m ²	99.997@ 0.3micron

Environmental operating range:

Temperature: +5°C to + 40°C

Humidity: Max 80% RH up to 31°C
Max 50% RH at 40°C

Wiring schematic available upon request

Contact Information

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Local Exhaust Ventilation System - **Inspection Record**

Health & Safety at Work Act 1974 - Control of Substances Hazardous to Health - Regulation 9 (2002)
Thorough Examination and Testing of Local Exhaust Ventilation Systems

Company:	System Designation:	System Installation Date:
Designated Person:		

Inspection and Maintenance Schedules

1. Daily checks
2. Weekly inspection of process enclosure, extract offtake, hose/ducting and extract/filtration unit.
3. Monthly inspection of process enclosure, extract offtake, hose/ducting and extract/filtration unit.
4. Yearly inspection / testing

**Process enclosure, extract offtake(s), hose/ducting and extract/filtration unit.
Inspection and Maintenance Record**

1. Daily inspection

Inspection of the process to ensure extract devices/nozzles/enclosures/hoses are in place and correctly positioned. Examination of the extractor to ensure it is running. This to be carried out by the operator. Daily inspection not recorded.

2. Weekly Inspection

Weekly inspection by supervisor of physical condition of extract devices/nozzles/enclosures/hoses and extraction unit for damage, change (parts added or removed) and correct operation etc. Check also that daily inspections have been completed. Tick boxes to confirm system ok / change. Add details of any changes. Report changes to Engineering Manager. Record any remedial actions taken.

Week number	Date	System ok	System Change	Details of change / repairs etc	Initial
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

**Process enclosure, extract offtake, hose/ducting and extract/filtration unit.
Inspection and Maintenance Record**

2. Weekly Inspection

. . . . Continued

Weekly inspection by supervisor of physical condition of extract devices/nozzles/enclosures/hoses and extraction unit for damage, change (parts added or removed) and correct operation etc. Check also that daily inspections have been completed. Tick boxes to confirm system ok / change. Add details of any changes. Report changes to Engineering Manager. Record any remedial actions taken.

Week number	Date	System ok	System Change	Details of change / repairs etc	Initial
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					

**Process enclosure, extract offtake, hose/ducting and extract/filtration unit.
Inspection and Maintenance Record**

3. Monthly Inspection

In addition to weekly checks. Disconnect hoses and check for blockage and smooth operation of fan, signs of dust or vapour / gas / odour carry over. Tick boxes to confirm system ok / change. Add details of any changes. Report changes to Engineering Manager. Record any remedial actions taken.

Month number	Date	System ok	System Change	Details of change / repairs etc	Initial
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

4. Yearly Inspection

Annual service To include all regular checks together with inspection of filter condition and replacement where necessary, motor and electrical checks,	Comments	Signature of Supervisor: Date:
Annual Thorough Inspection and Testing of LEV System in accordance with C.O.S.H.H. Regulation 9 (max interval 14 months) including reporting.	Comments	Signature of Supervisor: Date: