



A Donaldson Company

A WORLD LEADER IN FUME  
EXTRACTION TECHNOLOGY

# AD Nano

## USER MANUAL

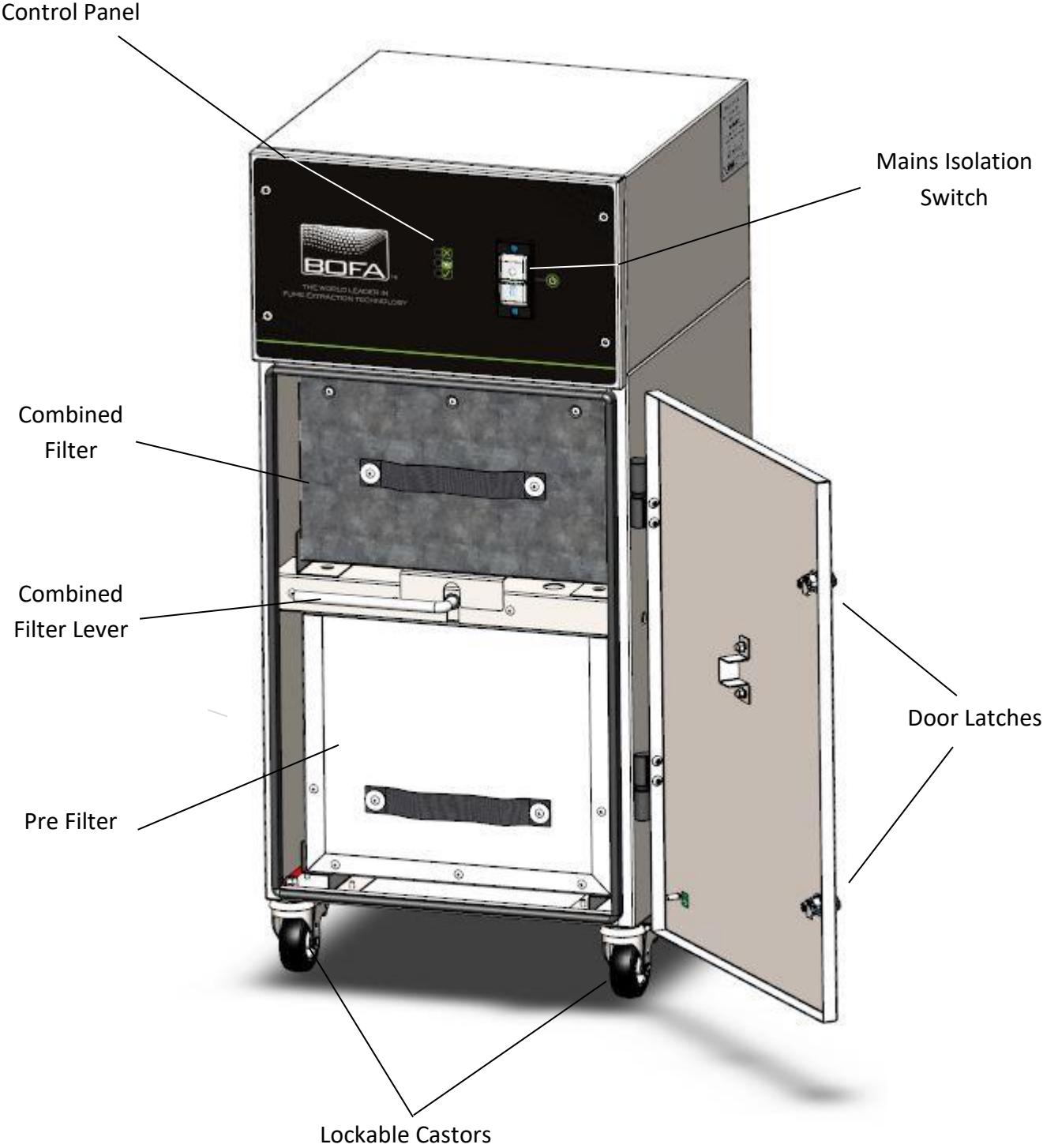


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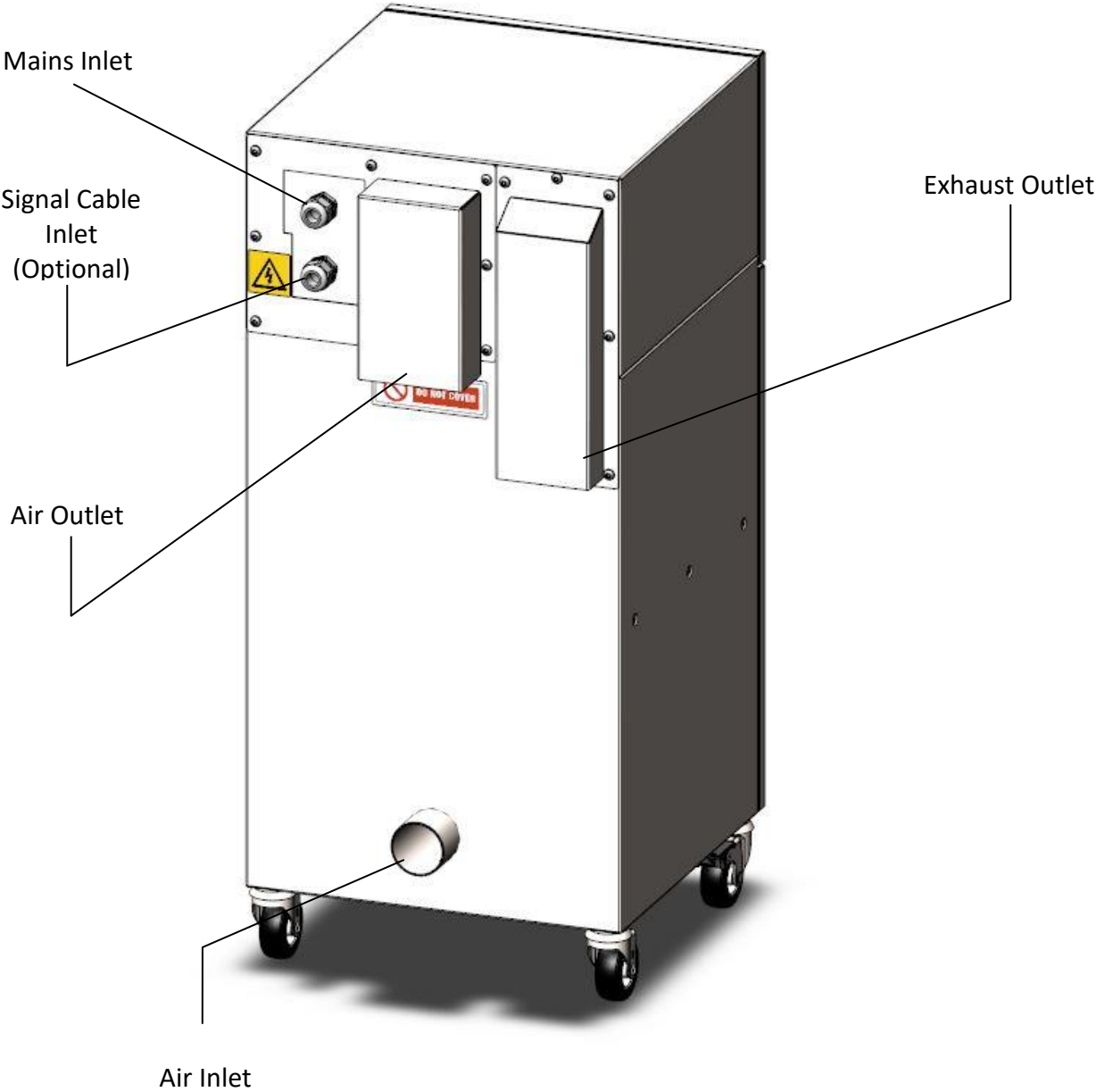
# Overview

1 01



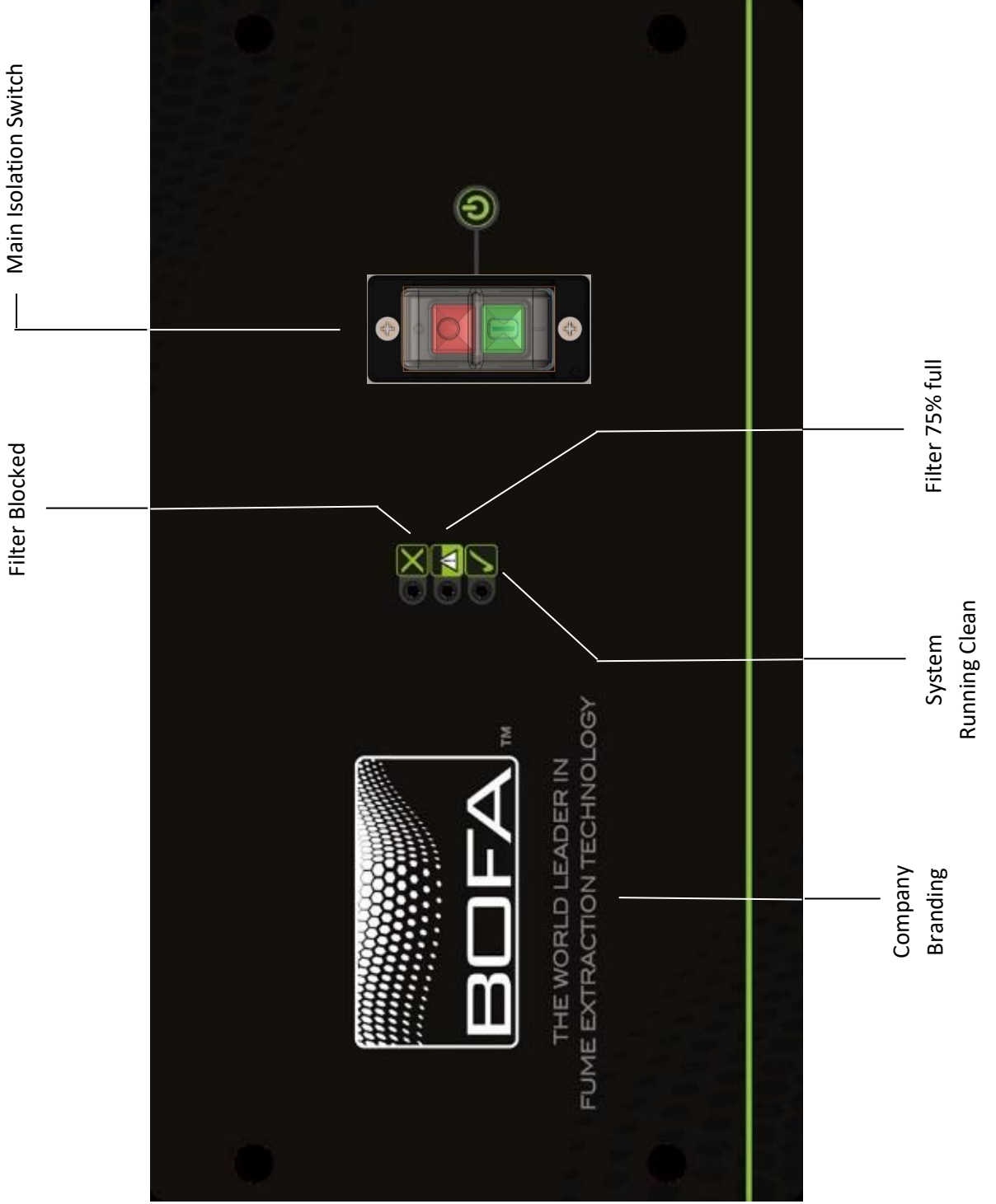
# Overview

1 02



# Overview

1 03



# Safety Instructions



## 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 AD Nano has been designed to meet the safety requirements of the Low Voltage Directive 2006/95/EC (previously numbered 73/23/EEC)

## 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 AD Nano 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 AD Nano 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.

## BOFA Technical Service

If problems arise with your AD Nano unit or if it displays a fault code, please contact us:

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

## 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:

□	□	/	A	D	N	A	N	O	-	□	□	□	-	□	□	□	□
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

# Safety Instructions



## Warning and Information labels

The following listing details labels used on your AD Nano 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: Rear Exhaust

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

### Electrical Danger



Location: Electrical access panel, top half of unit.

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 Label



Location: Next to mains inlet.

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.

### Fire Risk Warning

In the very rare event that a burning ember or spark is drawn into the fume extraction unit, it may be possible that the filters will ignite.

Whilst any resultant fire would typically be retained within the fume extraction unit, the damage to the extractor would be significant.

It is therefore essential to minimise this risk by undertaking an appropriate assessment to determine:-

- a). Whether additional fire protection equipment should be installed.
- b). Appropriate maintenance procedures to prevent the risk of build-up of debris which could potentially combust.

This unit should not be used on processes where sparks could occur, with explosive dusts and gases, or with particulates which can be pyrophoric (can spontaneously ignite), without implementation of additional precautions.

It is essential that nozzles or other extraction/ fume capture devices and hoses/pipework are cleaned regularly to prevent the build-up of potentially ignitable debris.

## Before installation

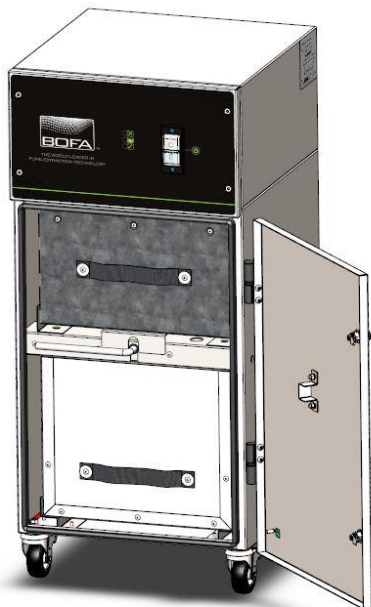
### 3<sub>01</sub>

#### Inner transit 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.**
2. Open the front door and remove the transit foam from the centre of the unit.

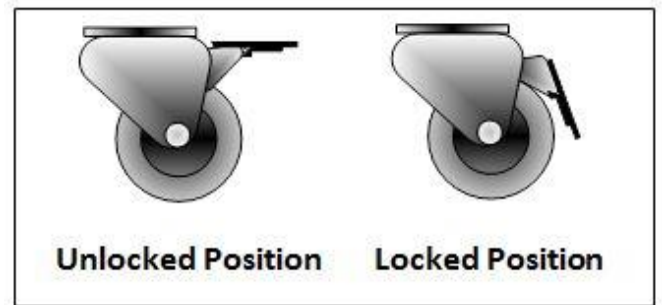


#### Caution

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)

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

3. With the unit in position lock the 2 front castors.



#### Caution

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



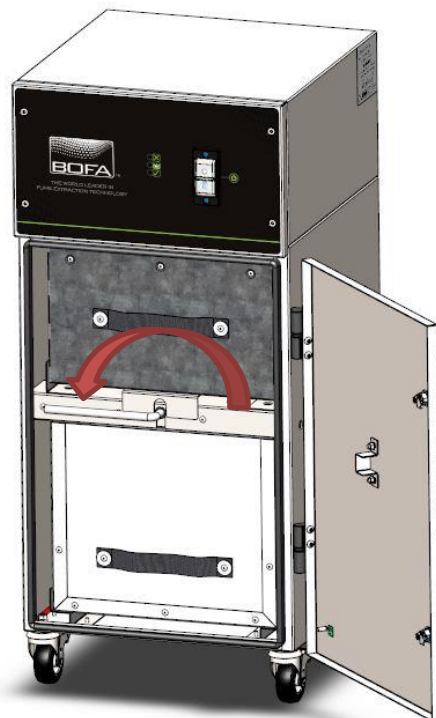
#### Caution

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



4. Check the filters are located in their correct position before closing the door and securing the door latches.

**Note: The unit will not operate correctly if the Combined filter has not been secured in place using the internal lever. (As detailed below)**





# Installation

## 4 01

### Specification

Dimensions: Height 797mm Depth 435mm Width 377mm

Weight:

Voltage: 115/230V

Frequency: 60Hz

Full load current: 230V:0.9A 110V: 1.2A

Power: 135W

Capacity:170m<sup>3</sup>/h

### Connection to Power Supply

Please follow the above specification when selecting the power supply outlet for the AD Nano system, ensure the power supply is suitable before connecting the AD Nano 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 AD Nano **MUST** be connected to a properly earthed outlet.

If your AD Nano system was ordered with any optional



extras please read section 4.02 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.

# Installation

## 4<sub>02</sub>

### Optional added features

The AD Nano can be configured to suit customer specification. These optional extras would be discussed, arranged and installed prior to delivery.

**(If unsure what features your system is equipped with please contact the seller with the unit serial number, (Refer to section 2 for location) who will be able to advise what specification has been supplied.**

### 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 operating voltage for this signal is between 12 & 24VDC. Only voltages within this range should be connected. Voltages connected outside of this range may cause irreversible damage to the internal control PCB.

**Red cable = V+**

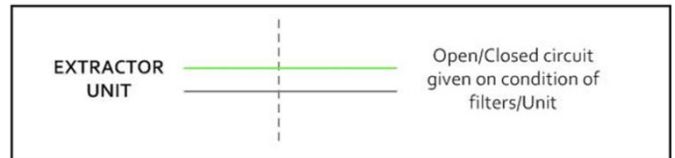
**Black cable = V-**

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.

### 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"



### 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. This feature is useful for engineers carrying out works/ tests on the extractor without the need for the laser / auxiliary signal being present.

## Operation

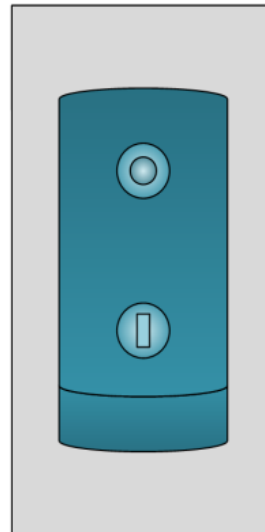
### 5<sub>01</sub>

#### Turning extraction unit On

Two different main Isolation switches are used on the AD Nano unit depending on which finish has been used. Please see the images below to identify the switch your AD Nano unit uses.

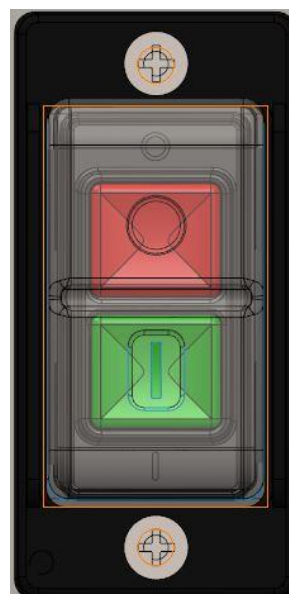
#### Powder Coated Version

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



#### Stainless Steel Version

The unit is turned on by pressing the green side 'I' of the switch and turned off by pressing the red side 'O' of the switch.



# 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 stainless steel units should be cleaned with a proprietary stainless steel cleaner, in accordance with the manufacturer's user instructions.

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.

## Fire Risk Warning

In the very rare event that a burning ember or spark is drawn into the fume extraction unit, it may be possible that the filters will ignite.

Whilst any resultant fire would typically be retained within the fume extraction unit, the damage to the extractor would be significant.

It is therefore essential to minimise this risk by undertaking an appropriate assessment to determine:-

- a) Whether additional fire protection equipment should be installed.
- b) Appropriate maintenance procedures to prevent the risk of build-up of debris which could potentially combust

This unit should not be used on processes where sparks could occur, with explosive dusts and gases, or with particulates which can be pyrophoric (can spontaneously ignite), without implementation of additional precautions.

It is essential that nozzles or other extraction/ fume capture devices and hoses/pipework are cleaned regularly to prevent the build-up of potentially ignitable debris

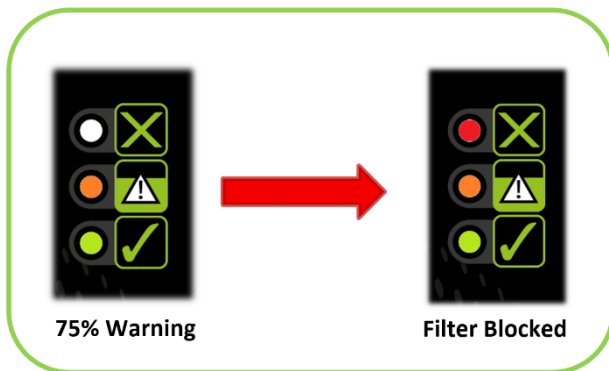
# Maintenance

## 6<sub>02</sub>

### Filter Replacement

During use, the AD Nano alerts the user when its filter needs replacing. As the filter becomes 75% full, the orange LED will glow as well as the green 'Clean Running' LED. When the Filter becomes full and needs to be replaced both the red LED to the left of the 'X' symbol, the 75% orange LED and the green LED will glow.

The filters now need to be replaced.



**Goggles, gloves and masks must be worn when changing filters.**

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

1. Isolate the electrical supply to the unit.
2. Open the door of the unit.
3. Remove the lower (pre filter) from the base.
4. Vacuum out any dust in the base.
5. Fit new filter.
6. Close door and fasten the latches.
7. Reconnect the power supply.

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

1. Isolate the electrical supply to the extractor
2. Open the door of the unit.
3. Remove the upper (combined) filter.
4. Fit new filter.
5. Close the door and fasten the latches.
6. Reconnect the power supply.

# Replacement Parts



## Consumable Spares

The AD Nano extraction system contains two filters. These should be replaced when instructed to do so by the AD Nano 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:	
Pre Filter	
Date	Engineer

Unit Serial Number:	
Combined Filter	
Date	Engineer

## Filter disposal

The AD Nano 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



## Unit: AD Nano

Capacity: 170m<sup>3</sup>/h

Weight: 40Kg

Motor: Centrifugal Fan

Output: 135w

Electrical supply: 115/230V

Hertz: 50/60Hz

Full Load Current: 230V: 0.9A 115V: 1.2A

Noise Level: Below 60dB (A)

(at typical operating speed)

## Size:

	Metric (mm)	Imperial (inches)
Height	797	31.4
Depth	435	17.2
Width	377	14.9

## Filters:

Filter Type	Surface area/Weight	Efficiency
Pre Filter	6.0 m <sup>2</sup>	F8
Combined Filter	6.8kg	99.997 % @ 0.5 micron
Gas Filter	6.8kg	Activated impregnated carbon.

## Environmental operating range:

Temperature: +5°C to + 40°C

Humidity: Max 80% RH up to 31°C

Max 50% RH at 40°C

## Contact Information

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