

ZING 16 & 24

User Manual



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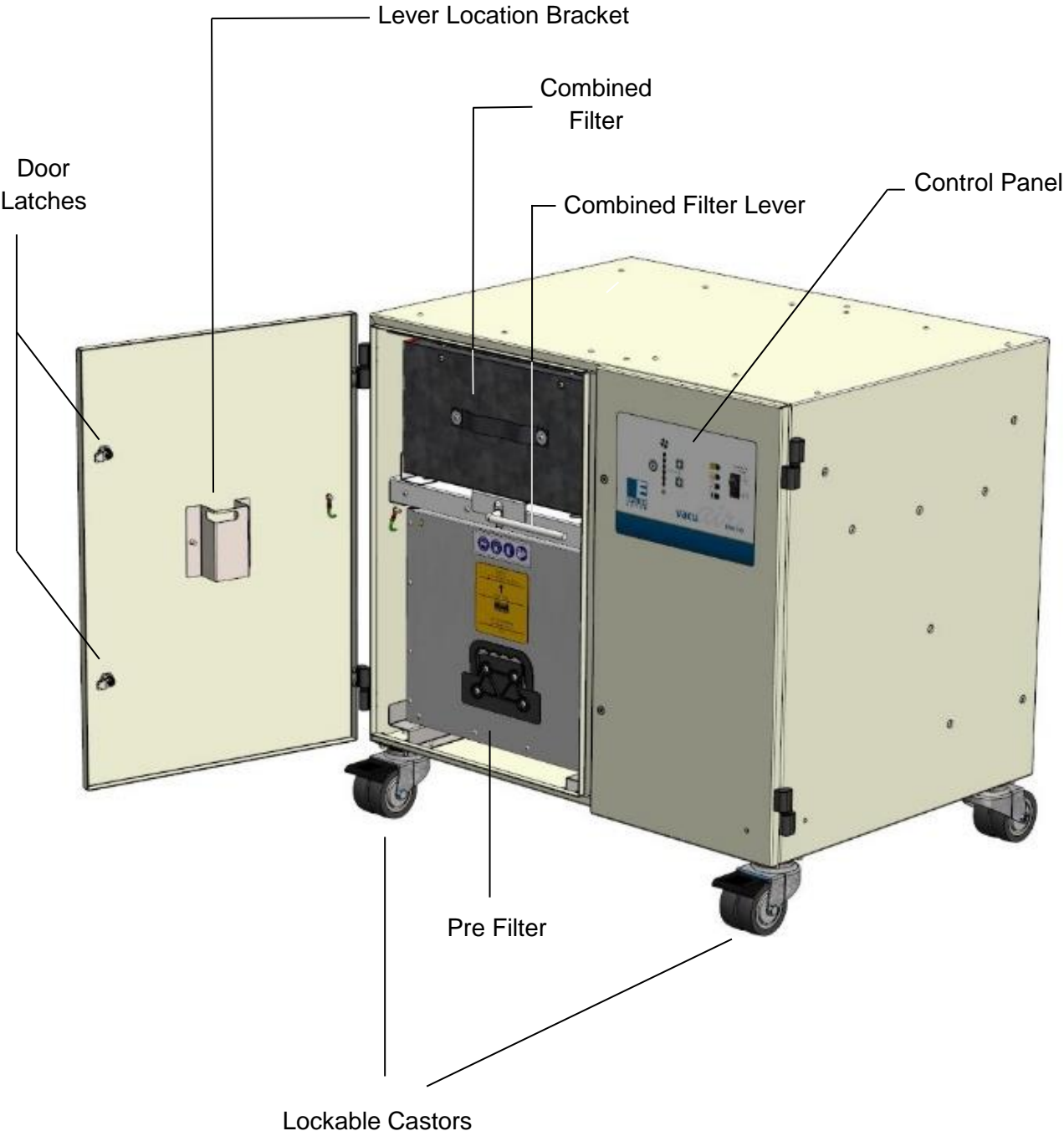
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- 8 01 ZING 16 & 24 Specifications

Overview



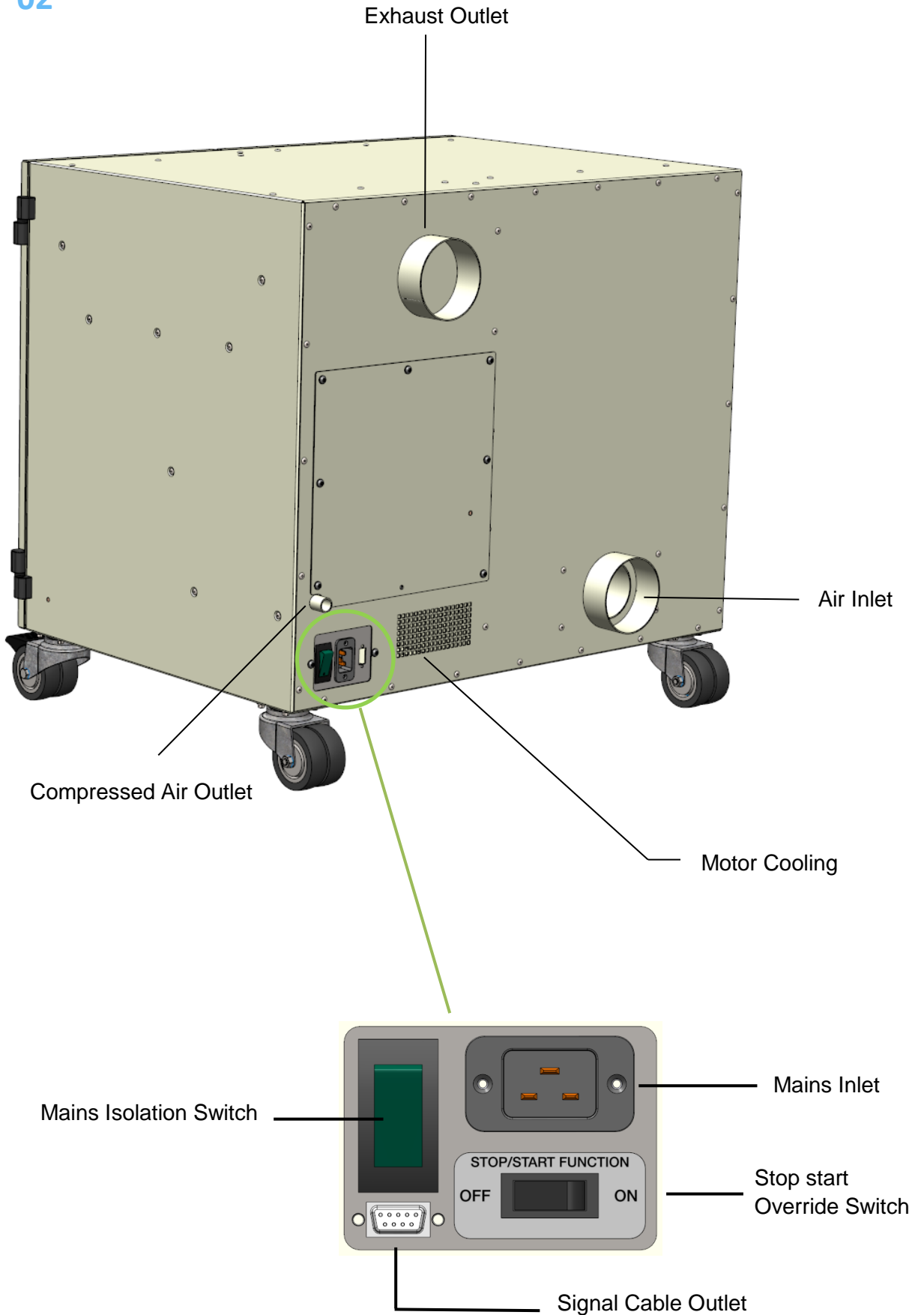
01



Overview

1

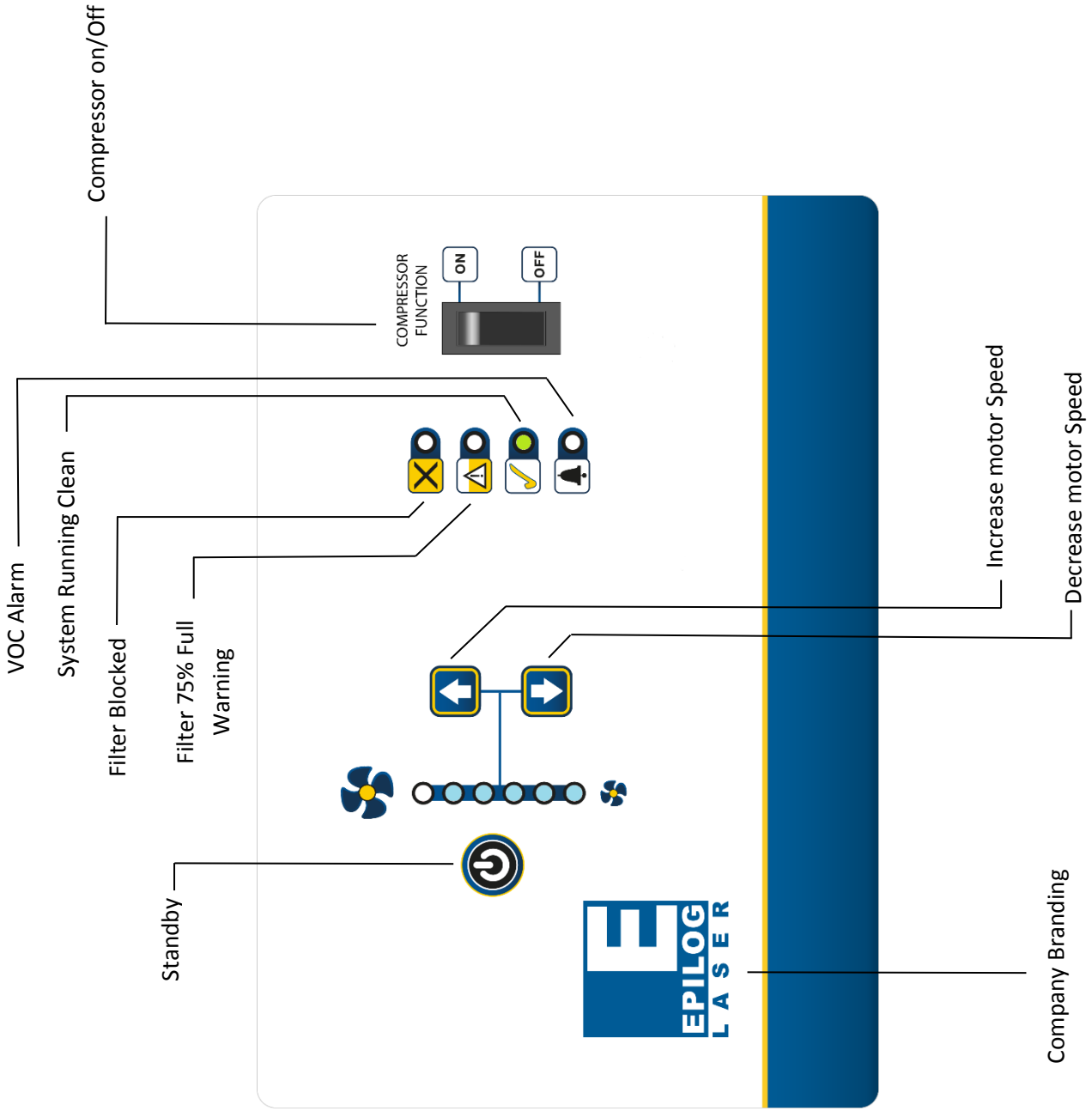
02



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 Zing 16 & 24 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 Zing 16 & 24 systems 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 lasered, 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 gas filter fitted in the Zing 16 & 24 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 Zing 16 & 24, please refer to the troubleshooting guide section 8 of this manual. If the problem is still not resolved, please:

- Visit our website at www.bofa.co.uk for on-line help.
- Or contact the helpline on **+44 (0) 1202 699444**, Mon-Fri, 9am-5pm.
Email: 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:

□	□	/	Z	I	N	G	1	6	-	□	□	□	□	□
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Safety Instructions



Warning and Information labels

The following listing details labels used on your Zing 16 & 24 units.

Goggles, Gloves & Mask Label



Location: Front face of both filters

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

Do Not Cover Label



Location: Rear lower access panel.

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

Electrical Danger



Location: Rear upper & lower access panels and front small door panel & right hand door.

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

Warning Label



Location: Bottom right of large front door panel.

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

Serial Number Label



Location: Bottom left side of back panel.

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 could be significant.

It is therefore essential to minimise the possibility of this occurring by undertaking an appropriate Risk 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 01

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.

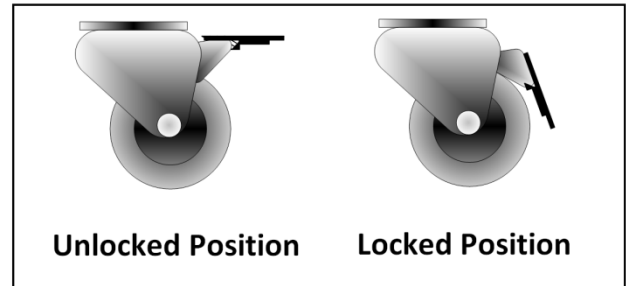


Caution

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.

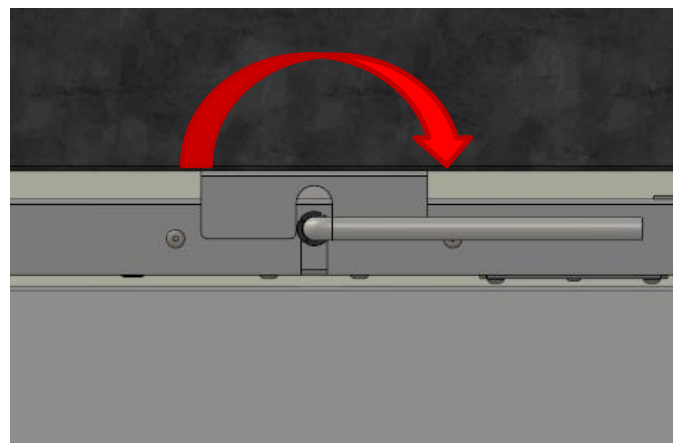
Caution



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 door will not close fully if the Combined filter has not been secured in place using the internal lever. (As detailed below)



Installation

4 01

The Zing 16 & 24 have been designed to remove and filter fume containing potentially hazardous particulate and gases generated during manufacturing processes. Such hazardous substances are captured within a multistage filtration system after which the cleaned air is returned to the workplace.

Fume Capture Methods

The fume is normally captured by 1 of 3 methods.

- Flexible arm/ Nozzle
- Enclosures
- Cabinets

General Guidelines for a successful installation

- Keep duct run length to a minimum
- Avoid sharp bends / turns in the ductwork
- Avoid multiple bends / turns in the ductwork
- Use a larger diameter duct where able
- Position the capture device as close as possible to the marking point. (if used on high speed lines, position the capture device slightly downstream)

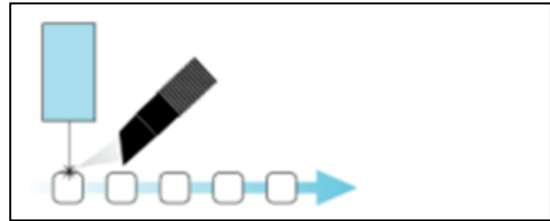
Flexible Arm & Nozzle Extraction

The stay put arm should be mounted as close as possible to the marking point using the horseshoe clips. Unscrew the push fit connector from the other side of the flexible hose. Cut the flexible hose to suit the distance back to the extractor connection and push onto the extractor inlet.

Purge air should be kept to a minimum, where possible, to prevent the fume being blown away from the nozzle. High speed bottling lines may need bigger scoops or nozzles both sides of the bottles because of the turbulence caused by the speed of the bottles.

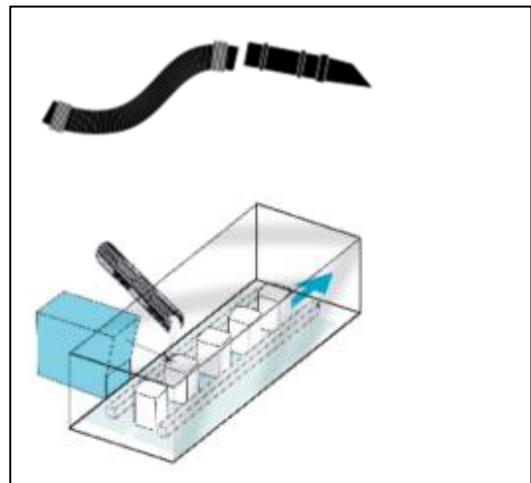
Moving products

For applications where the product to be marked is moving past the stationary laser head the capture nozzle should be positioned as close as possible to the marking area on the side the product is moving towards.



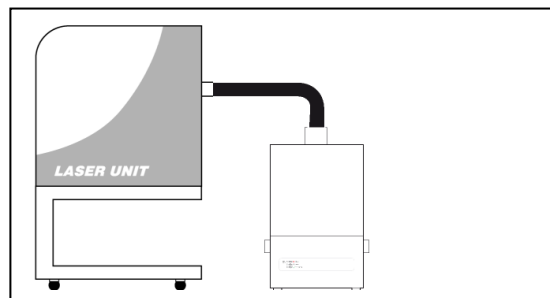
Enclosures

The extraction hose and nozzle can be attached to the enclosure surrounding the marking zone provided that the extraction point is within 50-75mm of the marking point.



Cabinets

Cabinets normally have a 75mm or 100mm spigot for fume extraction. For best performance use the same diameter hose as the spigot and reduce at the extractor end if necessary. **Keep the hose run as short as possible.**



Connection to extraction unit

All ductwork should be installed and connected to the extraction unit before the system is turned on.

Exhausting filtered air outside

If requested your extraction unit will have been fitted with an exhaust outlet spigot. This provides a connection point for exhaust pipework to be fitted. It is important to keep any ducting to a minimum, in order to reduce back pressure within the system.

Installation

4 02

Specification Zing 16 & 24

Weight: 82Kg

Voltage: 115-230V

Frequency: 50/60Hz

Full load current: 10.0A 12.5A (Compressor Installed)

Power: 1100w

Capacity: 380m³/h

Connection to Power Supply

Please follow the above specification when selecting the power supply outlet for the Zing 16 & 24, ensure the power supply is suitable before connecting the extraction 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 Zing 16 & 24 **MUST** be connected to a properly earthed outlet.



If your Zing 16 or Zing 24 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.

Installation

4 03

Added features

The Zing 16 & 24 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.

This feature can be configured in 3 ways

- Volt free input – Open / Closed contacts
- Override – Stop / Start feature switched off

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

Volt free input

This configuration requires the Black & Red cores of the signal cable (see section 1 for location) to be connected together, in order to start the extractor.

When the 2 cables are connected together the motor will start and maintain the set flow rate (see section 5 for how to set the flow)

when the 2 cables are disconnected the motor will slow down and come to a stop.

The extractor will need to be turned on and be out of standby mode (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.

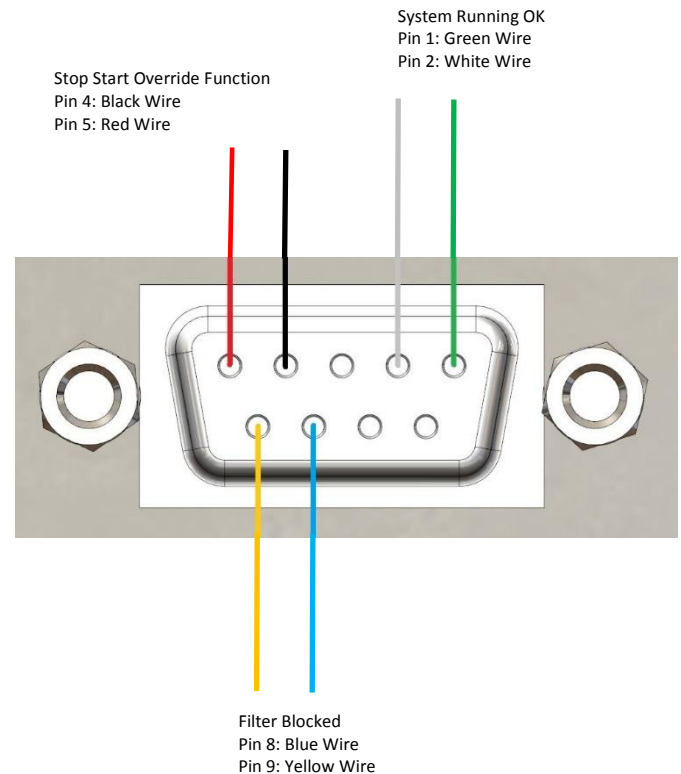
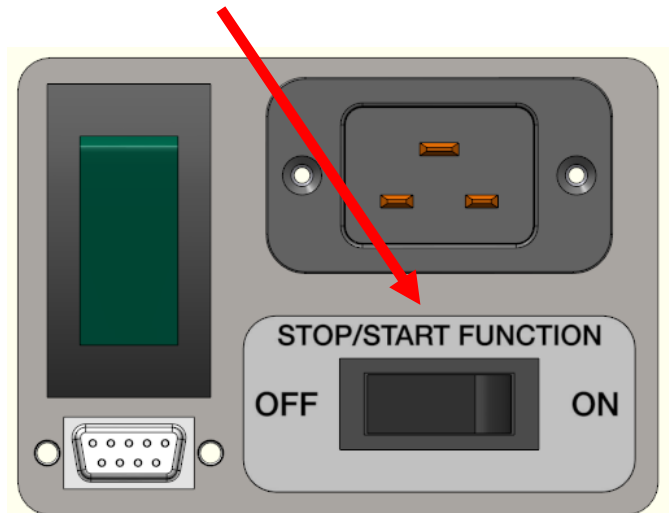
The override feature can be toggled On / Off by a switch mounted on the internal motor access panel (see below for switch location)

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



Installation

4 04

Filter Blocked / System Fail Signal

With this option the Zing 16 & 24 systems 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 system.

Connection specification

This signal is available via the Green and White cores of the signal cable. The Zing 16 & 24 systems will provide a volt free Open / Closed signal that can be connected to an external interface, beacon or warning device following the specification below.

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

Filter Signal Configuration

This is done as configured below

- **Separated signal**

Separated Signal

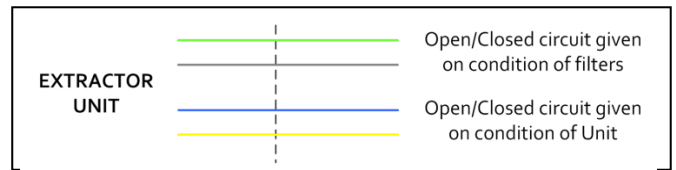
With this configuration the Filter blocked & System fail signals will be separated to give 2 individual signals.

When the filters become blocked the connection between the Green & White cables will become "Open"

If the system develops a fault (Refer to section 8 for Troubleshooting & Error codes) the connection between the Blue & Yellow cables will become "Open"

When the extraction system is running normally the connection between the (Green / White) & (Blue / Yellow) cables will become "Closed"

Separated Signal



Compressor option

If a compressor has been fitted to the extraction unit, connect the compressor hose, to the extractor compressor outlet (Refer to section 1 for location) and connect the opposite end to the laser. Refer to laser installation instructions. A water trap should be fitted to the Laser end of the pipework.

Operation



Turning extraction unit On

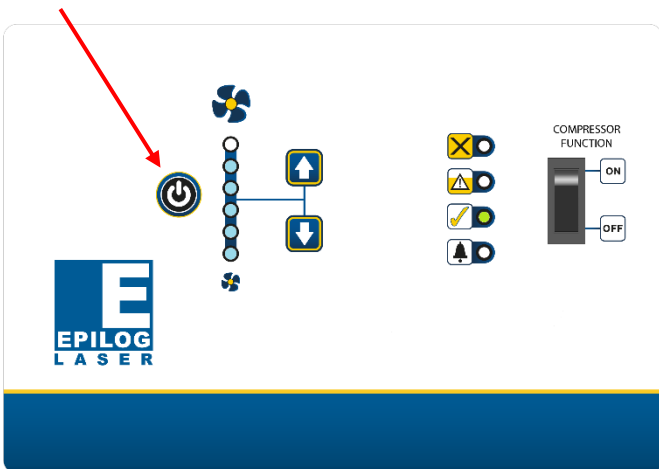
There are 2 stages to powering up your extraction unit. Firstly the main isolation switch must be switched to the "On" position (Refer to section 1 for switch location) by depressing the Green side / (I) of the switch. This will place the extraction unit in Standby mode, indicated by the front panel power button glowing Red. If the Zing 16 & 24 has a powder coated finish then the top side of the switch should be depressed to power the unit.



To start the extraction unit press the front panel power button (refer to section 1 for switch location) the button will change from Red to Green indicating the extraction unit is now fully On.

It is recommended that the rear isolation switch is left in the On position and the front standby switch is used to toggle the extractor On / Off.

Standby



Setting the desired airflow

The Zing 16 & 24 feature automatic flow control. This enables the user to set the required airflow rate. Over time as the filters begin to block the motor will automatically begin to increase in speed to compensate for any loss in performance caused by the added restriction of the partially blocked filters.

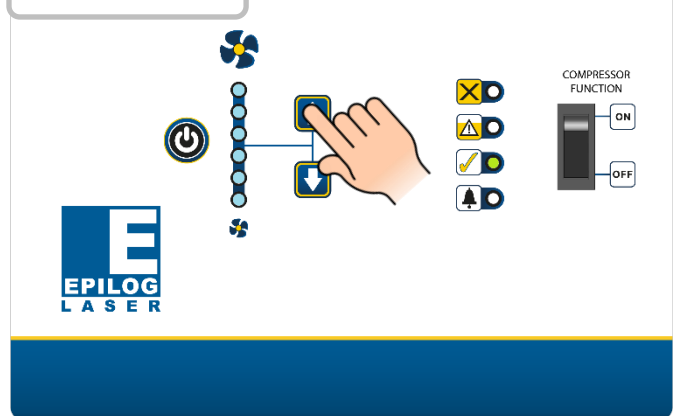


The extractor and all pipe work must be fully installed and connected before the airflow is set.

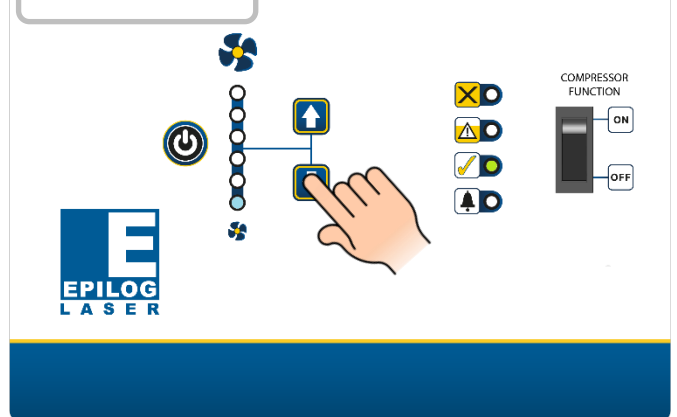
To set the airflow

Hold down the Up and Down arrows on the front panel for 5 seconds. The green LED will now start to flash, indicating that the machine is now in set mode. You can now increase or decrease the flow by holding down either the up or down arrow. The flow is indicated by a row of six blue LED's on the front panel, 6 being full speed and 1 being the lowest. Set the airflow on the lowest of the 6 LED's but still ensure that all of the fume is being removed. This will vary from application to application. Once you have set your speed, leave the controls for 10-20 seconds and the machine will return to operation mode. (This setup procedure should be carried out with all the ductwork connected and (if fitted) the stop/start signal present).

Increase Airflow



Decrease 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.

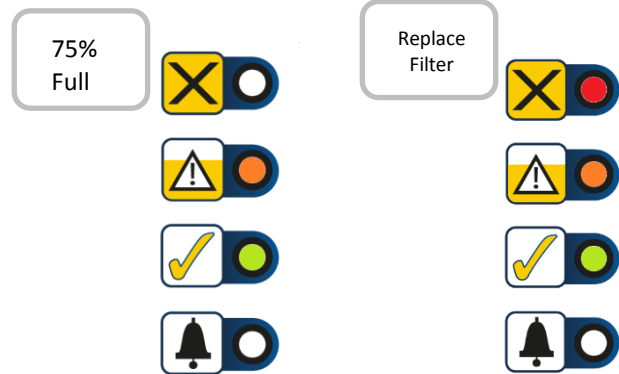
Cleaning the unit

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.

Monitoring Filter Status

The Zing 16 & 24 system monitors the condition of the filters. The system will warn the user when one of the two filters is 75% full, and will therefore need replacing soon. This is indicated by the 'Caution' LED on the control panel glowing amber. When the filters become completely blocked, the 'X' Led will glow red as well as the green and amber LEDs.



A log of the changes should be maintained by the user. The filters require attention when the display shows the configuration above 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 could be significant.

It is therefore essential to minimise the possibility of this occurring by undertaking an appropriate Risk assessment to determine:-

- Whether additional fire protection equipment should be installed.
- 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 02

Filter Replacement

During use, the Zing 16 & 24 systems will indicate how full its filters are through green, amber and red LEDs. Green meaning that the system has no problems, amber warning the user that a filter will need replacing soon.

The Combined or the Pre filters need replacing when the LED to the right of the 'X' Icon will glow red as shown below.

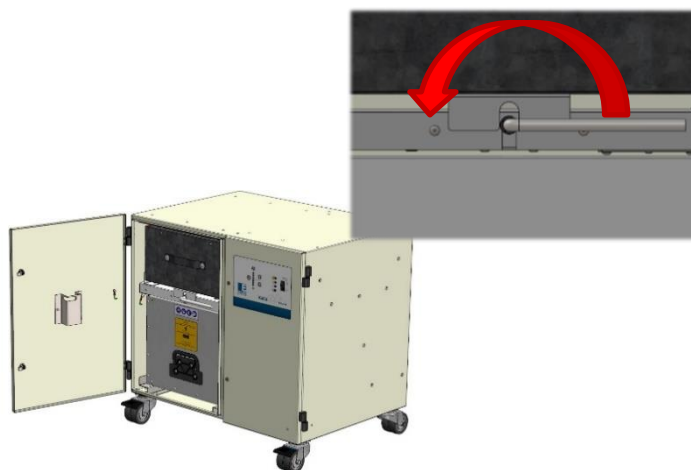


To remove and replace the Pre filter follow the procedure detailed below.

1. Isolate the electrical supply to the extractor
2. Undo the catches on the front of the unit and open the left hand door.
3. The Pre filter is the lower of the 2 filters (refer to section 1 for filter location) using the handle on the front of the filter, pull it out of the unit.
4. Once removed it is recommend that the used filters are bagged and sealed.
5. Slide the new filter into position making sure it is pushed all the way in and is located correctly on the spigot in the back of the unit.
6. Close the door and fasten the 2 latches.

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

1. Isolate the electrical supply to the extractor
2. Undo the catches on the front of the unit and open the left hand door.
3. The Combined filter is the higher of the 2 filters (refer to section 1 for filter location) rotate the lever below the filter through 180° to lower the combined filter.
4. Using the handle on the front of the filter, pull it out of the unit being careful to support it as it comes free as it is heavy.
5. Once removed it is recommend that the used filters are bagged and sealed.
6. Slide the new filter into position making sure it is pushed in all the way.
7. Rotate the lever back through 180° to raise the filter into position.
8. Close the door and fasten the 2 latches
9. Reconnect the power supply



Both filters MUST be fitted when the extractor is in use

Replacement Parts



Consumable Spares

The Zing 16 & 24 extraction systems contain a pre filter and a combined filter. These should be replaced when instructed to do so by the Zing 16 & 24 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		Combined filter	
Date	Engineer	Date	Engineer

Filter disposal

The Pre and Combined filters are 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: Zing 16 & 24

Capacity: 380m³/h (224cfm)

Weight: 82Kg (180 lbs)

Motor: Centrifugal Fan

Output: 1100w

Electrical supply: 115-230V

Hertz: 50/60Hz

Full Load Current: 10.0 A (No Compressor)

12.5A (Compressor Installed)

Noise Level: Below 60dB (A)

(at typical operating speed)

Filters:

Filter Type	Surface area	Efficiency
Pre filter	12.0m ²	95% @ 0.9micron
Combined filter	3.0m ²	99.997% @ 0.3micron

Combined Filter (Gas section)

Filter Type	Carbon type	Amount
Combined filter (Gas)	Activated carbon	15kgs

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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