



A Donaldson Company

A WORLD LEADER IN FUME  
EXTRACTION TECHNOLOGY

# MAXIMIZING THE CAPABILITIES OF YOUR BOFA EXTRACTION SYSTEMS

A guide to efficient system set up  
and effective filter maintenance



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## WELCOME

BOFA portable extraction and filtration systems have the capability to turn the dirty, potentially toxic, harmful fume and particulate created by many manufacturing processes, into cleaner air than we breathe outside.

The reasons for investing in fume and dust extraction include:

- ✓ helping comply with legislation
- ✓ helping protect the health and safety of your work force
- ✓ keeping your application running, with minimal downtime

To get the most efficient extraction from your system, you must ensure it is:

- ✓ set up correctly
- ✓ running at optimum performance
- ✓ regularly maintained

This guide gives you access to all the essential information to ensure you have the best chance of achieving this through the correct system set up and carrying out appropriate preventative maintenance on your filters.

**If you have any questions or would like further advice,  
please contact your sales representative.**

# SYSTEM SET UP

## CHOOSE THE RIGHT SYSTEM

It is vital that the right system is selected for your specific process. Involve the right people to configure your systems by taking into consideration:

- the host system
- manufacturing process
- the effect of the process on the material being worked
- line speed
- running time
- airflow
- mass of airborne particulate being generated

All of the above points are set in the context of relevant occupational exposure limits to set the performance standards for effective, compliant extraction performance.

Could you make the process more efficient? With the correct accessories, you can achieve closer extraction and extend filter life.

There may also be a requirement to install an inline filter, for processes that present risk of fire, generate particularly small particle sizes, or high amounts of dust and particulate.

## CORRECT INSTALLATION

Having a clean, professional installation ensures you are getting the optimal extraction and filtration rate.

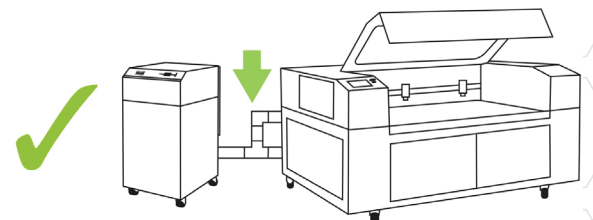
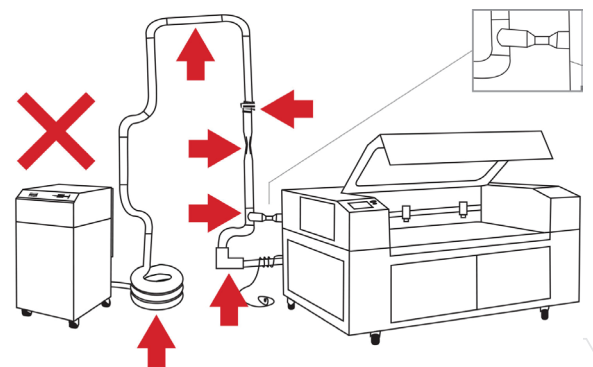
Poor installation can lead to:

- the extractor being in a constant state of restriction
- shortened component life
- quicker filter blockage
- increased wear and tear on the extraction system while it works harder
- higher running costs
- shorter service intervals
- unnecessary safety hazards

For more advice on quality installation practice, contact your BOFA sales representative.

### DID YOU KNOW?

Shorter pipework can help reduce bends and restrictions, reducing the airflow requirement and extending filter life.



## REVIEW ANY CHANGES

It is important to review your fume extraction set up if you have any changes in process, materials, personnel using the equipment, or the general work environment.

Failure to consider the effect on extraction when changing an application process might place stress on filter lifecycles and any change can lead to faster saturation of filtration media which, if not addressed, can increase workplace exposure levels to airborne contaminants, and result in blocked filters and unplanned production downtime.

The best advice when considering a change of process is always to consult your sales representative in advance so that system configuration can be checked.

A first sign of a change in process causing a problem can be a smell coming from the unit's exhaust. This is a strong indication that the system is not adequately removing potentially harmful emissions or that the carbon in the filter has become saturated. Replacing the filter under these circumstances will not solve the underlying problem.

## INTELLIGENT OPERATING SYSTEM (iQ)

At the heart of many BOFA extractors is the award-winning Intelligent Operating System (iQ). Designed to meet the need for reduced ownership costs by maximizing productivity through minimal maintenance downtime, iQ is easy to use, and the at-a-glance status gives you assurance that the system is running correctly.



Designed for global use, it is simple to install and displays easy-to-read, real-time information so you can be confident they are getting the best from the system at all times.



- ✓ Clear graphical user interface (GUI) display with internationally recognized icons. Displays real-time information to enable optimum efficiency during installation and operation.
- ✓ Independent filter monitoring system helps achieve efficient maintenance planning and filter change, ensuring the correct filter is changed at the correct time.
- ✓ Data download / upload capability allows remote access to system data for immediate fault diagnosis and issue resolution. Custom configuration files can be uploaded.
- ✓ System critical alarms present visual, audible and electrical signal warnings for quick and accurate diagnosis of faults, leading to minimized product downtime.

If you are not certain you are getting the most out of the iQ functionality, contact your sales representative or attend a free BOFA Academy online training module:

[bofainternational.com/bofa-academy](http://bofainternational.com/bofa-academy)




## GET THE RIGHT AIR FLOW



- **Automatic flow control** allows the operator to preset the correct airflow rates for the specific application and the unit will maintain the airflow consistently. 
- Once the fume has been captured, it is transported through pipework at a high enough velocity to constantly keep the particulate in the air stream. This prevents any build up of dust that could settle and cause blockages within the pipework and which may decrease the performance of the extraction system.
- Once the airflow is set, it will be maintained throughout the life of the filters.
- **Reverse flow air technology** causes a fall in velocity and air direction change. Larger particulate falls out of the airstream into the dropout chamber. 
- Contaminated air entering the dropout chamber is pulled vertically through the filters.
- The result is enhanced filter performance and prolonged filter life.

### Three-stage filtration *(check the datasheet for your specific product to determine if it has three-stage filtration)*

BOFA's three-stage filtration will help you optimize your return on investment and help support the lowest possible operating cost.

- **Range of pre-filters** – to capture larger dust and particulate and protect the more expensive HEPA filter from premature blocking.

BOFA's patented DeepPleat DUO offers market-leading capacities and is designed to optimize performance and maximize filter life, making it the longest-lasting pre-filter available. With an impressive surface area above the chamber to deal with high volume and variety of particulate, it incorporates a massive drop-out chamber within the filter and a sealed deep pleat layer of F8 media which, thanks to its innovative design, can create an effective filtration area up to 30 sq. meters. It has a specially moulded grommet style gasket for easy and safe installation and replacement. 

- **High-efficiency particulate air (HEPA) filter** – to filter 99.997% of particles @ 0.3 microns 
- **Advanced carbon filter technology** – for safe capture and removal of hazardous fumes and odors. Gas absorption will depend on temperature, humidity and contamination levels, but, typically, the carbon will absorb about a quarter of its own weight in gas-state chemicals. 

## REGULAR SERVICING

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- General maintenance is required for all process machinery, to ensure you are running an efficient, cost-effective manufacturing process. This includes your extraction systems.
- In many countries this is a legal requirement and must be carried out by a competent engineer.
- Refer to your local regulatory body for specific guidelines for your country.

# FILTER MAINTENANCE

BOFA's unique filtration systems are designed to meet or exceed airborne emissions standards and optimize productivity while lowering the overall cost of ownership.

The combination of pre-filtration systems and high efficiency particle filters enables capture of 99.997% of particles at 0.3 micron in size. This ensures that clean air is maintained in the workplace, while patented innovations such as the DeepPleat DUO, coupled with reverse flow air technology, optimize filter lifetime and lower the overall cost of ownership.

## HOW OFTEN SHOULD A FILTER BE CHANGED?

There are lots of factors governing filter life, for example, what the process is, what type of machine, what the hours of operation are and what materials are being used. The general guidelines to follow are:

### ✓ **When it is full**

If the extractor filter light illuminates, first change the pre-filter. If it is still illuminated, then change the combined filter. BOFA units with iQ technology will give you independent filter monitoring to report on the status of both the pre-filter and combined (main) filter so you know specifically which filter needs changing. Remote data analysis helps plan maintenance and filter changes.

If there is an odor detected or the VOC alarm signals, then the carbon could be saturated. If this happens, you must replace the combined filter.

OR

### ✓ **Every 12 months**

Assuming they are stored in a clean, dry place, BOFA combined filters have a shelf life of one year. It is assumed that they will be in use for a year after this at most.

You may not need to change all of your filters at the same time. But you should consider how much filter life remains and have preventative maintenance procedures in place.

## WHY SHOULD YOU CHANGE A FILTER WHEN IT BECOMES BLOCKED?

- Risk of damage to the filter and other filters
- Health and safety integrity and legislative compliance
- Reduction in airflow
- Premature blocking of HEPA
- Stress on extractor components
- Reduced performance
- Safe use of your filters and their replacement

## BOFA RECOMMENDS

### ✓ **Implement a filter maintenance schedule**

Having a robust filter maintenance process in place will help ensure that the integrity of all filters in your system is protected at all times.

- Have you increased usage?
- Have you changed the process?
- Has the system efficiency changed?
- Have you ensured the system settings are running most efficiently to make the filters last longer?

You will find short videos on how to change filters in several popular BOFA systems on our portal: [bofainternational.com/us/portal/videos/](http://bofainternational.com/us/portal/videos/) .

### ✓ **Use genuine BOFA filters**

- Ensures optimal effective filtration
  - BOFA's filters have been specifically designed to work with the extractor they reside in. Many factors including face velocity, pressure drop, residency time and structural integrity are incorporated into the design of BOFA filters. Imitation filters are unlikely to have gone through this same design process, which can lead to reduced filter efficiency or even filter rupture.
- Avoids unnecessary expense that may be incurred through purchasing inferior imitations, which may also invalidate the warranty
  - Imitation or cheap filters are likely to be poor quality and may cause harmful fume to be released into the working environment, presenting a real risk to equipment, processes and people. With BOFA filters, particulate is effectively captured from the working area helping ensure you minimize system downtime.
- Protection of the extraction system and other filters
  - You should only use BOFA filters in BOFA extraction systems as they are made to the very highest standards – they are designed to plug and play for hassle-free extraction.

### ✓ **Do not attempt to clean filters**

- This is expressly not recommended. BOFA filters are designed to perform at an optimum level and, once full, will not be efficient. They cannot be cleaned or reused because the regeneration process will reduce the effectiveness and damage the filters. It would also be necessary to dismantle the filters to access the filter media, which will further compromise its performance.

Used filters must be disposed of accordingly.

### ✓ **Optimize your freight costs**

- Make the most of what you spend on freight costs by ordering a supply of filters to have in stock and available when your filters need changing.

## DISPOSING OF FILTERS

***You must check your specific national/local guidelines.***

Please note that BOFA Americas, Inc is unable to provide disposal guidance for used filters or filtration materials. Characterization of used filters must be completed by the end-user in accordance with national/local regulations. Such characterization must consider contaminants collected on the filter.

## OTHER ESSENTIAL INFORMATION

### **What rating do BOFA filters carry?**

BOFA pre-filters are rated using the internationally recognized standard ISO16890. The original standard was EN779, and most of our pre-filters were rated to F8.

HEPA filters are batch tested to capture 99.997% of particles @ 0.3microns