



# BVX-200

## Fume Extraction System



Metcal BVX-200 System User Guide..... page 3

# Operations Manual & User Guide

Congratulations on your purchase of the Metcal BVX-200 Fume Extraction System. It is designed to protect your health from hazardous and irritating air pollution, you may have at your work area. It has been designed and manufactured to the highest quality standards. We appreciate your confidence and pledge the highest level of support and customer service to you.

*This document has been prepared to guide you with the setup, operation, and user maintenance of your system. We recommend that you review it to optimize performance and for your safety.*

**October 2003**

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## 1.0 Please Observe The Following

### 1.1 Emphasized Sections



#### **Warning!**

Refers to safety regulations and requires safety measures that protect the operator or other persons from injury.



#### **Caution!**

Emphasizes what must be done or avoided so that the unit or other property is not damaged.



#### **Notice:**

Gives recommendations for better handling of the unit during operation or adjustment as well as for service activities.

### 1.2 For Your Safety



#### **WARNING!**

For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility. Retain this manual for future reference.



#### **WARNING!**

Consult your “safety department” when using the unit on flammable gases. This unit is not explosion safe and can **only** be used for the extraction of vapors, which have concentration levels well below the lower explosive limits.



#### **WARNING!**

Do not use the Unit to extract corrosive substances.



#### **WARNING!**

Do not expose the connecting cable to heat, oil, or sharp edges.



#### **WARNING!**

Make sure the Unit stands stable and secure.



#### **WARNING!**

Use only original equipment filters.



#### **WARNING!**

Do not operate the Unit without filter inserts. Contaminants in the Extracted air will damage the blower.



#### **WARNING!**

Always disconnect the power supply before servicing the unit.

**WARNING!**

Never cover exhaust openings.

**WARNING!**

Never cover all air inlet openings simultaneously.

**Exception:** One opening sealed off for single station operation.

**WARNING!**

This system is equipped with automatic reset overload protection, which may cause the unit to restart automatically.

**WARNING!**

Observe general safety regulations for the handling of chemicals such as adhesives and sealants. Observe the manufacturer's instructions as stated in the Material Safety Data Sheet (MSDS).



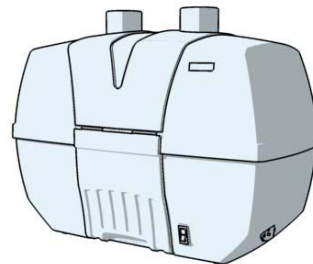
**While under warranty, the unit may be repaired only by an Authorized Metcal Service Representative.**

### 1.3 Unpacking and Inspection

Carefully unpack the Metcal Fume Extraction System and examine the items contained in the Carton. Inspect the unit for any damage that might have occurred in transit. If such damage is present, notify the carrier immediately. Claims for damage must be made by the consignee to the carrier and should be reported to the manufacturer.

### 1.4 Items supplied

- 1 Filter Unit with filters installed
- 1 Power Cord
- 1 Operating Manual



### 1.5 Features

- On/Off switch with “soft-start” feature
- Low noise level
- High suction force and airflow
- Compact and portable
- HEPA Efficiency at 99.95% (Model BVX-201)
- Deep-bed gas filter (Model BVX-203)
- Connects to 50mm(2”) or 63mm(2.5”) hoses or exhaust arms
- ESD safe housing
- UL & CSA listed, CE certified

## 1.6 Usage

The Metcal Fume Extraction System is a portable, two-station filtration system for the removal of fumes, light dust or vapors at the work place. The filter set supplied with the filter unit depends on the model ordered.

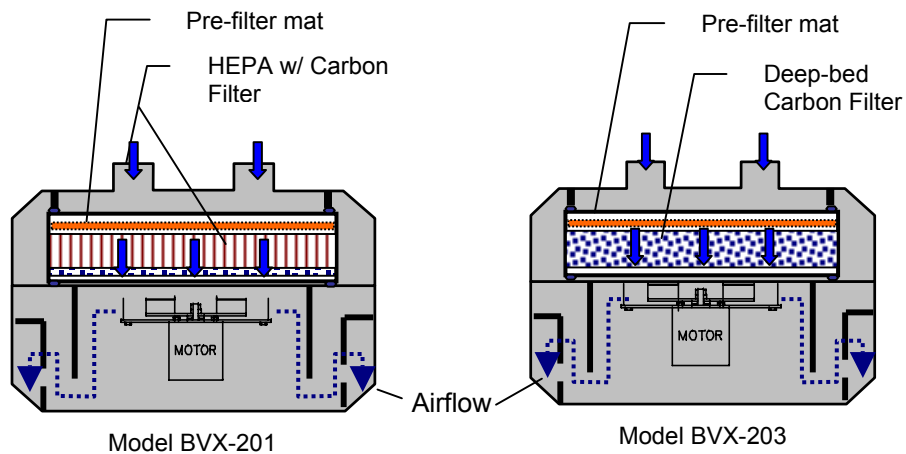
**Model BVX-201** supplied with a pre-filter and a main filter. The main-filter is a combo-filter consisting of a HEPA filter with an efficiency of 99.95% at 0.3 micron and an activated carbon filter. This model is designed for applications such as solder fumes from solder irons, solder pots, etc.

**Model BVX-203** supplied with a pre-filter and a deep-bed gas filter (activated carbon). This model is designed for applications such as cleaning with solvents, conformal coating, etc.



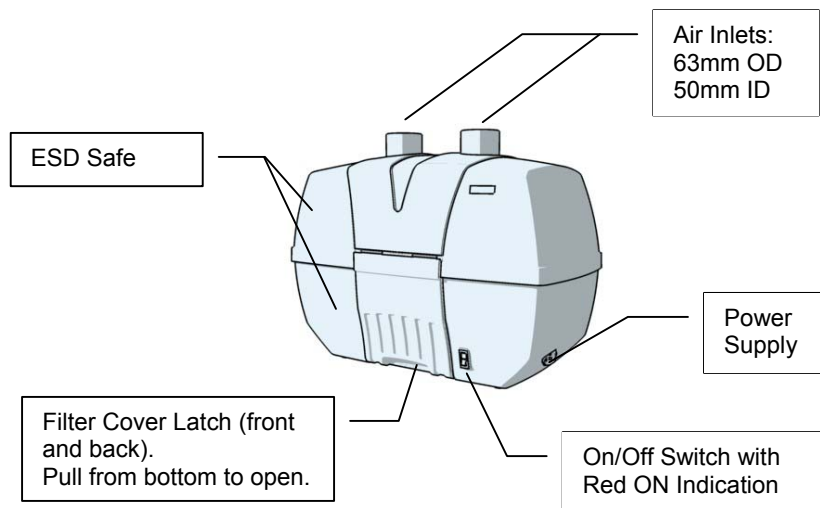
### WARNING!

Consult your "safety department" when using the unit on flammable gases. This unit is not explosion safe and only used for the extraction of vapors, which have concentration levels well below the lower explosive limits.



## 2.0 Description

### 2.1 Operating Elements and Construction



### 2.2 Theory of Operation

The efficient removal of hazardous fumes at your workplace is a two-step process: fume capture and filtration. The filter unit is supplied with a set of filters already installed.

To capture the fumes, Metcal recommends use of optional exhaust arms and accessories (purchased separately). The exhaust arms need to be set up properly (instruction supplied with exhaust arm) and the nozzle positioned in a way to optimize the fume capture.

Air extracted from your work area will be purified when passing through the filters inside the unit and then is returned into your work area.

Contact your local Metcal representative if there are any questions regarding the proper selection of filters for your application.

### 3.0 Technical Data

Max. airflow, free blowing.....	250m <sup>3</sup> /h (150cfm)
Flow rate.....	2 x 75 m <sup>3</sup> /h (45cfm)
Static pressure.....	850 Pa (3.5"WC)
Noise level (approx.) .....	< 55dBA
Voltage .....	100 – 240 VAC, 1 phase
Frequency.....	50-60 Hz
Motor rating .....	85 Watts
Safety compliance .....	UL, CSA, CE
Dimensions W/D/Hmm .....	508 x 254 x 388
Dimensions W/D/H in. ....	20" x 10" x 15.3"
Weight (approx.) .....	20 lbs. / 9 kg

### 4.0 Installation

Remove Metcal Fume Extraction System from packing materials and place on the floor under workbench or near your work area where fume extraction is required. Make sure you have access to the unit for filter maintenance.

Connect the unit power cord into the outlet on the side of the system. Plug the power cord into a grounded wall socket.



#### **Warning!**

**To provide protection against the risk of electrical shock, connect to properly grounded outlets only.**

Connect the unit to exhaust arms (optional) per installation instructions.

To power up system, depress the power switch, located on the bottom right of the unit. (Red indicates "Power On" position) Operator can expect a delay of a few seconds before hearing fan running. This is due to a built-in motor "Soft-start feature".

Position the exhaust arms to optimize the fume capture.

Follow maintenance procedures below.

## 5.0 Maintenance and Cleaning

### 5.1 Filter Unit - Maintenance and Safety

The Metcal Fume Extraction System is designed with low maintenance in mind. The housing is ESD safe plastic. Here are a few tips to keep your system running in top shape:

To clean, use a light wipe with a gentle cleaner to prevent build up of particulate and flux residue (be sure unit is turned off while cleaning).



Do not block the exhaust outlets; this will cause the operating temperature of the system to rise, potentially damaging the unit, and drop in performance.



Do not defeat the filter interlock switch. Running the system without a filter will allow particulate and flux residue to adhere to the blower and decrease the life of the system and increase noise.



**Do not lift system while operating**



Be sure to handle filters with care.

### 5.2 Filter Replacement Timing

#### Model BVX-201

When fumes are filtered inside the unit, the particulates captured will start clogging the filter over time. The coarse particles are collected in the pre-filter while fine particles will be collected in the HEPA filter. The clogging will result in a reduction of the airflow, which may reduce the amount of fumes extracted from the work area. This condition may not necessarily require filter replacement. One step is to move the optional extraction arms closer to application if possible. If the fumes are not extracted any longer to previous satisfaction level, filter replacement is required.

Initially replace the pre-filter only. If this step does not sufficiently improve the airflow, then replace the main filter (HEPA/Carbon).



**Warning! Do not attempt to clean filters. Attempted cleaning can damage filters and cause potential risk to health and equipment.**




**Notice:** Metcal recommends replacement of filters annually as a minimum. Use only original Metcal replacement filters.



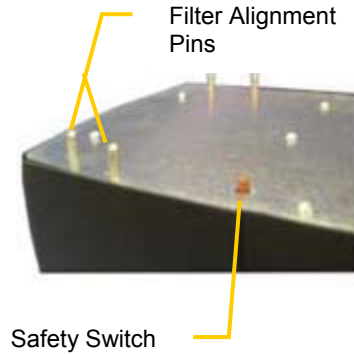
### Model BVX-203


This model features a deep-bed gas filter, which generally does not clog and reduce airflow as common with HEPA filters. Replace both filters, pre-filter and carbon filter as soon as odors become noticeable.

 **Notice:** Replace filters at least every 6 months, as most gas-phase filter media achieve saturation by adsorbing moisture from ambient air. **Use only original Metcal replacement filters.**

### 5.3 Safety Interlock

The safety switch is an interlock which turns off the fan when the main filter is removed and when the fan inlet opening is exposed. The safety switch also prevents the system from operating without filters in which case the impurities would contaminate the internal unit.




 **WARNING!** Do not bypass safety interlock. Bypassing safety interlock could result in injury to persons.

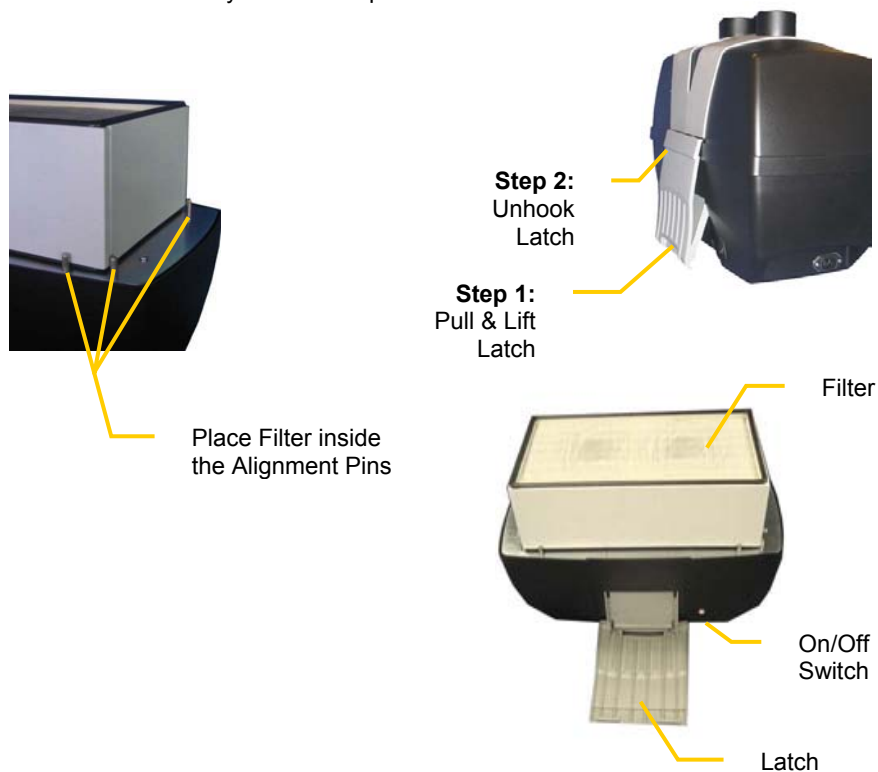
## 5.4 Filter Replacement Procedure:

1. Turn unit off.
2. Disconnect the power cord.
3. Unlatch the filter cover (see illustration on right).
4. Remove filter cover.
5. Replace the filters. (Pre-filter/main filter). Ensure to place main filter inside the alignment pins so that interlock switch is depressed.
6. Replace filter cover and ensure proper fit on bottom housing. Hook both latches into filter cover and press down carefully.

**! Caution!** *Do not use force. If latches do not close, check proper seating of filter cover on bottom housing.*

7. Reconnect power cord and turn system on.
8. If unit does not operate, refer to troubleshooting section.

 **Notice:** Always use new replacement filters!



## 5.5 Filter Disposal

The gas filter collects some organic materials and care in disposal may be required. The filter may contain toxic materials and inhalation of dust particles or exposure to skin must be avoided. Please consult the MSDS Sheets for the material used at your facility and follow the prescribed handling instructions.

## 6.0 Troubleshooting

Problem	Possibly Cause	Check and Correction
No air flow	No Power	Check On/Off Switch Check power outlet Check power cord Check for filter Check safety interlock switch
Little air flow	Air leak	Check hose/arm for leaks Check hose/arm for proper installation Check hose/arm for partial clogging

## 7.0 Part Numbers

### 7.1 Filter Units

**BVX-201** .....Filter Unit for 2 Station, Pre / HEPA / Gas

**BVX-203** .....Filter Unit for 2 Station, Pre / Deep Bed Gas

7.2 Replacement Filters	Model BVX-201	Model BVX-203
<b>FP-BVX200</b> ..... Pre-Filter (Pack of 5)	yes	yes
<b>FG-BVX200</b> ..... Deep-Bed Gas Filter	no	yes
<b>FM-BVX200</b> Main Filter, HEPA 99.95% / Carbon	yes	no

### 7.3 Optional Kits and Accessories

**BVX-ARM-K1** .. Kit consisting of BVX-ARM, BVX-CH01, BVX-TB01

**BVX-ARML**..... Exhaust Arm, flexible, 1220mm (48") x 50mm (2"), ESD Safe

**BVX-ARM**..... Exhaust Arm, flexible, 710mm (28") x 50mm (2"), ESD Safe.

**BVX-TB01** ..... Table Bracket with 2 each C-Clamps

**BVX-CH01** ..... Connection Hose, 1800mm (6') x 50mm (2")

**BVX-CH02** ..... Connection Hose, 3600mm (12') x 50mm (2")

## **8.0 WARRANTY**

Please visit OK International's Metcal products web page where you will find available information on systems, accessories, technical notes, and more. You may also contact your local Metcal representative for pricing and availability.

OK International warrants the BVX-200 Series against any defects in materials or workmanship for one (1) year from the date of purchase by the original owner. This Warranty excludes normal maintenance and shall not apply to any opened, misused, abused, altered or damaged items. If the product should become defective within the warranty period, OK International will repair or replace it free of charge at its sole option. The repaired or replacement item(s) will be shipped, freight prepaid, to the original purchaser. The warranty period will start from the date of purchase. If the date of purchase cannot be substantiated the date of manufacture will be used as the start of the warranty period.

For the repair or return of a unit a Return Material Authorization Number (RMA #) needs to be obtained.