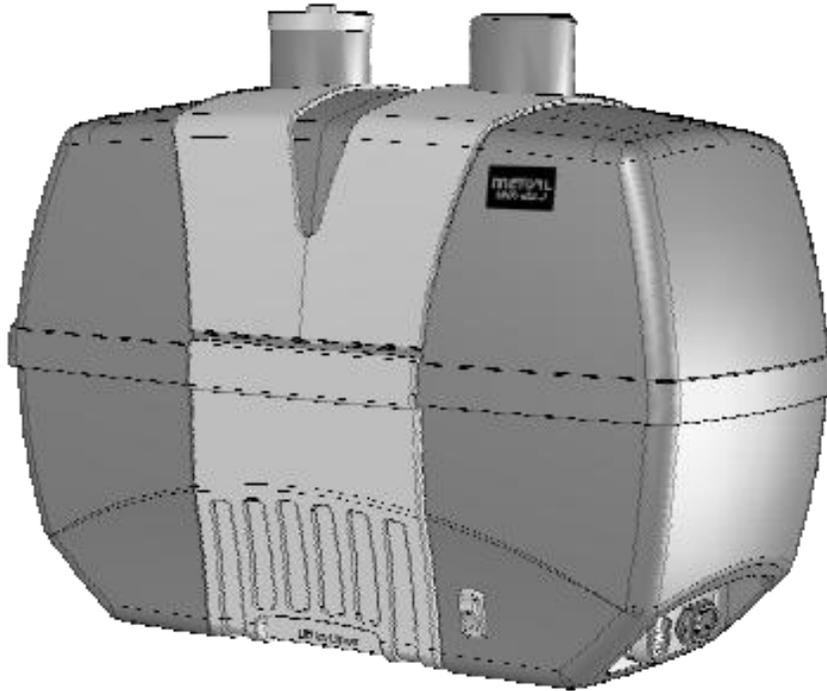


BVX-200



Operations Manual & User Guide

Congratulations on your purchase of the 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.

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1. 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

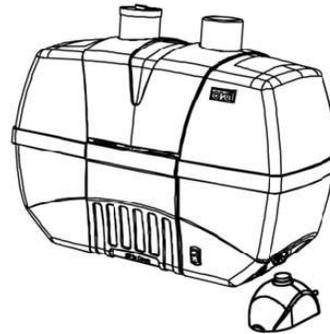
Carefully unpack the Fume Extraction System and examine the items contained in the Carton. Inspect the unit for any damage that might have occurred in transit. If such damage is present, notify the carrier immediately. Claims for damage must be made by the consignee to the carrier and should be reported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

1.4. Items supplied

- 1 Filter Unit with filters installed
- 1 Remote start/stop switch
- 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
- Audible filter block indicator
- HEPA Efficiency at 99.97% (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 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.

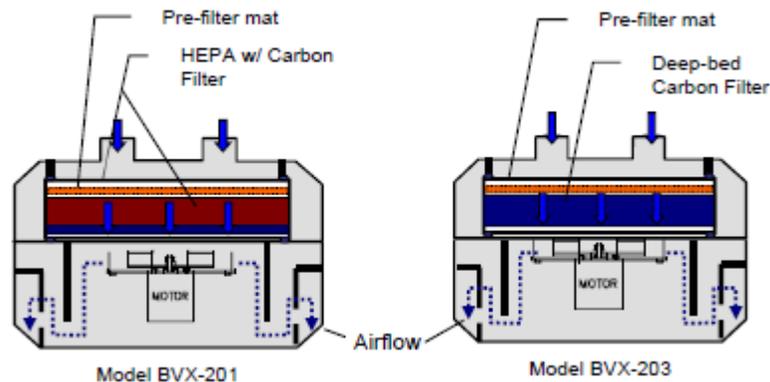
Model BVX-201 supplied with a pre-filter and a main filter. The main-filter is a combo-filter consisting of a HEPA filter with an efficiency of 99.97% at 0.3 micron and an activated carbon filter. This model is designed for applications such as solder fumes from solder irons, solder pots, etc.

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.



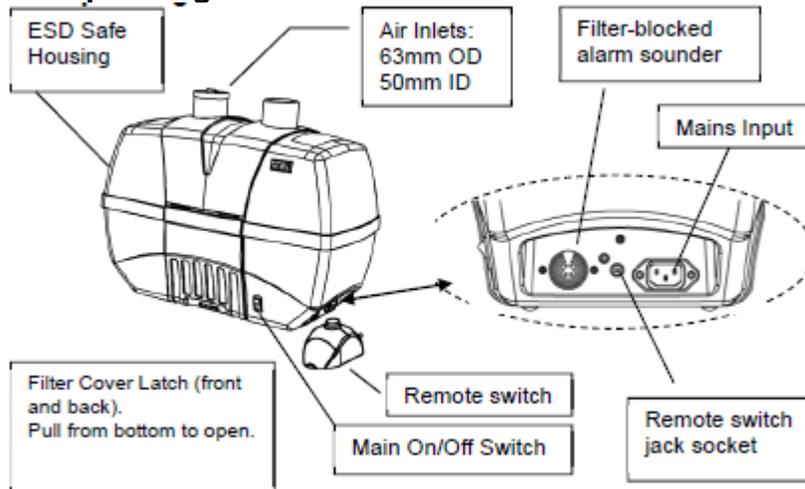
WARNING!

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. 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.

When the filters are blocked, an alarm will start to sound. See section 5.4 for filter replacement procedures.

3. Technical Data

Max. airflow, free blowing	250m ³ /h (150cfm)
Flow rate	2 x 75 m ³ /h (45cfm)
Static pressure	850 Pa (3.5"WC)
Noise level (approx.)	< 55dBA
Voltage	100 – 240 VAC, 1 phase
Frequency	50-60 Hz
Power	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. Installation

Remove the 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. Maintenance and Cleaning

5.1. Filter Unit - Maintenance and Safety

The 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 buildup 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, potential 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. When the filters are blocked, an alarm will start to sound. See section 5.4 for filter replacement procedures.



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 main filters annually as a minimum. Regular changing of the pre-filter will prolong the life of the main filter (HEPA/Carbon). Use only original replacement filters.

Model BVX-203

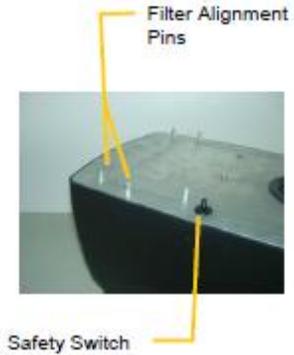
This model features a deep-bed gas filter, which generally does not clog and reduce airflow as common with HEPA filters. Replace both filters, pre-filter and carbon filter as soon as odors become noticeable.



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 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.



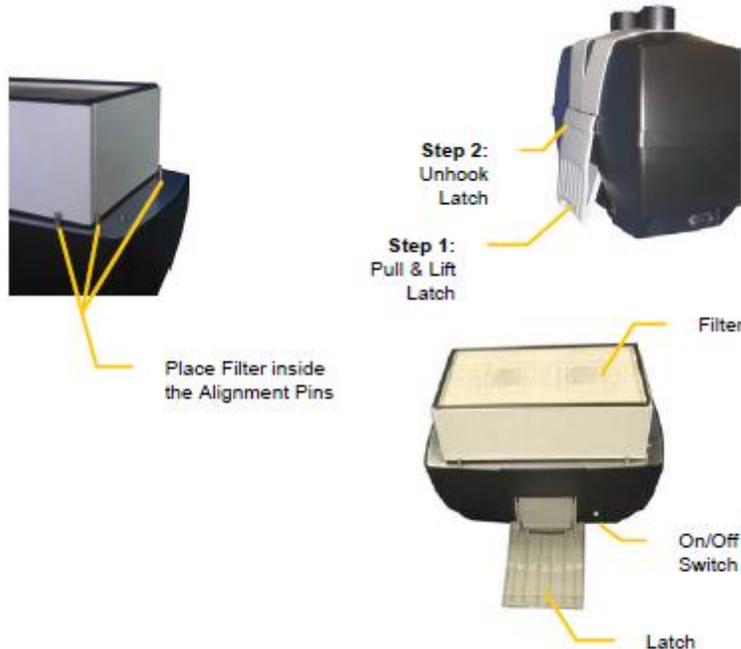
Caution!

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. 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
Audible alarm activating	High ambient Temperature	Please refer to calibration procedure 6.1

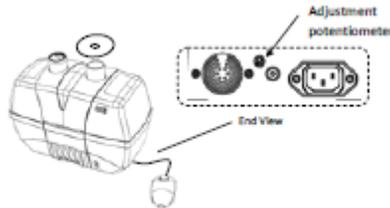
The BVX-200 filter-block alarm is factory calibrated to a specific temperature setting and will, for most users, require no adjustment. However, users in warmer climates may need to adjust the BVX-200 temperature setting to prevent false alarms.

1. Assemble the BVX-200 as per the User Guide. Both the remote switch the main power switch should be in the 'Off' position.
2. Switch On the main unit and press the remote switch. The remote switch LED will light when powered. The unit will run and you will hear the alarm sound momentarily but then stop while the motor continues to run. Allow the motor to run for at least 10 minutes to attain normal operating temperature.
3. With one inlet port already blocked, place a block plate with a 6mm Ø hole over the other air inlet and listen for the alarm tone. If heard, go to next step; if not, remove the plastic blanking-plug and turn the potentiometer counterclockwise until the alarm tone is heard.
4. Replace the 6mm Ø hole blank with a 15mm Ø one. If the alarm still sounds, gently adjust the potentiometer by turning screwdriver clockwise until the alarm can no longer be heard. Refit the blanking plug once the correct setting is obtained.



To make your own block-plates:

- A standard CD has a 15mm Ø hole at its center.
- A paper hole-punch may be used on stiff card to make a hole that is approximately 6mm.



7. Part Numbers

7.1. Filter Units

BVX-201	Filter Unit for 2 Station, Pre / HEPA / Gas
BVX-201-KIT	Filter Unit with 2 x 1.5m arms, Pre / HEPA/ Gas
BVX-201-KIT1	Filter Unit with 2 x .75m arms, Bench bracket and 1.8m connecting hose, Pre / HEPA/ Gas
BVX-203	Filter Unit for 2 Station, Pre / Deep Bed Gas

7.2. Replacement Filters

	Model BVX-201	Model BVX-203
FP-BVX200 , Pre-Filter (Pack of 5)	yes	yes
FG-BVX200 , Deep-Bed Gas Filter	no	yes
FM-BVX200 Main Filter, HEPA 99.97% / 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, 1500mm (59") x 50mm (2"), ESD Safe
BVX-ARM	Exhaust Arm, flexible, 750mm (29.5") x 50mm (2"), ESD Safe.
BVX-TB01	Table Bracket with 2 each C-Clamps
BVX-CH01	Connection Hose, 1.8m (6') x 50mm (2")
BVX-CH02	Connection Hose, 3.6m (12') x 50mm (2")

8. WARRANTY

Metcalf 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, Metcalf 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.