Metcal BVX-100 Fume Extraction System





USER GUIDE

Precision Systems for the Electronics Bench

Metcal is an OK International Company

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METCAL BVX-100 USER GUIDE

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METCAL

Technical and Customer Services: Here To Help You
If you have difficulty setting up your system, diagnosing problems, or replacing any part, please give your local Metcal representative a call.

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System Overview

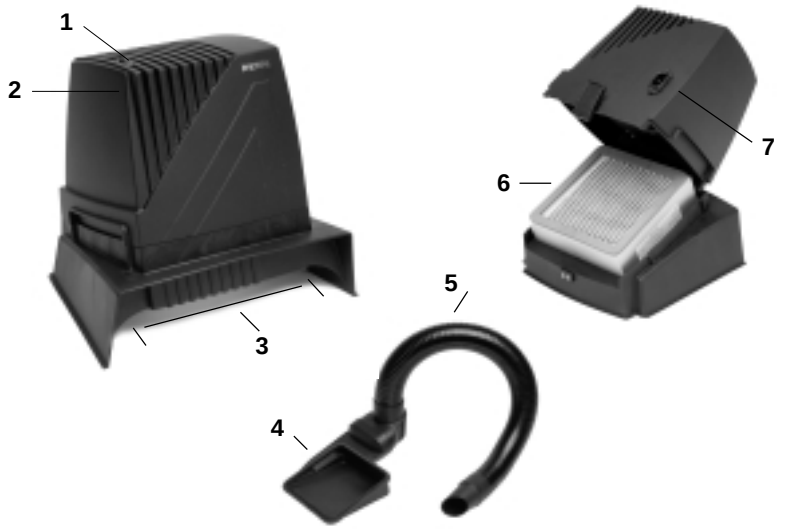
The BVX-100 fume extractor is a bench top fume extraction system specifically designed for portability and performance. This unit meets the needs of both single users and today's fast-paced, flexible manufacturing. The key benefits of this system compared to larger, multi-user machines include: no installation required, flexibility in operation (plenum or arm), a small footprint that allows bench top placement, quiet operation, bi-color LED light to indicate a blocked filter, 50 CFM (85 m^3/h) air flow - the same as the multi-user systems with 50mm arms, and ESD safe materials.

The BVX-100 consists of a 12" wide (300mm) plenum, with your choice of two, high-quality, filtration methods. For clean room quality filtration, use the 99.997% efficient HEPA filter. In addition, for light duty organic solvent and adhesive applications, a deep bed carbon filter is also available.

An under-bench mounting bracket, for use with the existing range of Metcal arms and nozzles, can be purchased when bench-top space is at a premium. Replacement arms, nozzles and filters are also available for the BVX-100.

BVX-100 System

1. On/Off Switch
2. Power on Light/Clogged Filter Indicator
3. Plenum *(the open portion of the system where fumes are absorbed)*
4. Adapter
5. Arm
6. Filter
7. Power Output



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System Set Up and Operation

Remove BVX-100 from packaging materials and place on workbench where fume extraction is necessary. Plug the power cord into the outlet on the back of the system. Plug the power cord into a grounded wall socket.

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

To power the system, click the power switch located on the top left of the unit to the "1" position. The LED light will illuminate green when system is "On." If you plan on using the unit with an arm, install the arm prior to powering the system (see Arm Operation for installation instructions).

Test the "Blocked Filter" LED Indicator to assure proper operation by blocking the front of the hose or plenum. If operating properly, the LED should change from green to orange. Once you are familiar with operating the system, you can choose your preference of plenum or arm operation.

Plenum Operation

Place the plenum in front of the work area where fume extraction is necessary. Plug the system in and click "On." Fumes will be absorbed collected through the opening at the bottom of the plenum. Impurities are then removed in the filter and clean air returned to the environment.

Arm Operation

If you need the flexibility to move the fume collection device to the source of the fumes, the BVX-100 easily converts for use with an arm. An arm and adapter come with the BVX-100 system for easy conversion to arm use. Make sure the system is "Off" and unplugged. Slide the adapter into the plenum until it stops and secure it to the top of the plenum with the lock. Insert the cuffed end of the arm into the adapter. Adjust the arm as needed.



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The BVX-100 can also be used with bench-mounted arms normally used with multi-user systems. Remove the arm and nozzle from the arm adaptor assembly. Insert the 50mm hose, supplied with the arm, into the arm adaptor assembly.



"Blocked Filter" LED Indicator

When the unit is operating properly, the LED indicator will illuminate green. If the HEPA or pre- filter becomes clogged, the LED light will change to orange, indicating the blocked filter. The pre-and/or main filter should be replaced until the light returns to green (see FILTRATION). The LED indicator will not turn orange when the gas filter is saturated. Pre-filters should be replaced three to five times as frequently as the HEPA filter. The gas filter life will be dependent upon the amount of gas vapor in the air stream.

"No Filter" Safety Interlock

The safety interlock is a switch that prevents the system from operating open. This safety feature keeps the blower from operating when the unit is open to replace filters, and it prevents the system from contamination if operation is attempted without a filter.

Filtration

Metcal fume extraction products are designed to effectively remove and filter fumes generated on the electronics workbench. Two filter configurations are offered with the BVX-100.

For use in light to medium soldering and clean rooms, a 99.997% HEPA / activated carbon gas filtration main filter is recommended. For light duty organic solvent and adhesive applications, a deep bed, activated carbon filter is recommended. In both applications, a dual stage pre-filter is provided to retain the large particles that can reduce filter efficiency and life.

Filter Replacement

A clogged filter will reduce the performance of your system. The BVX-100 monitors the airflow of the system and the LED will change from green to orange when the filter is clogged. The unit will continue to operate, but failure to promptly replace the filter may result in premature failure of the system.

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Replacement of filters:

1. Turn the unit off.
2. Disconnect the power cord from the outlet on the system.
3. Unlatch the housing from the plenum (the latch is located on the back).
4. Remove housing off the plenum.
5. Replace the filter.
6. Replace housing on plenum and lock.
7. Reconnect power cord and turn system on.
8. If the LED is still orange, refer to Troubleshooting.

Filter Disposal

When used in soldering applications, the HEPA and pre-filters collect particles and may be disposed without restrictions. The filters have been EPA tested and certified non-hazardous waste for TCLP (Toxicity Characteristic Leaching Procedure) Test Method 1311 (Extraction) as defined by EPA standards.

The gas filters collect some organic materials and care in disposal may be required. The filters may contain toxic materials and inhalation of dust particulates or exposure to skin must be avoided. Please consult the MSDS's for the materials used at your facility and follow the prescribed handling instructions.

Maintenance and Safety

The BVX-100 is designed with low maintenance in mind. The housing is aluminum finished with high quality ESD safe powder coat paint. The plenum and arm are ESD safe plastic. Here are a few tips to keep your system running in top shape:

1. To clean, use a light wipe with a gentle cleaner to prevent build up of particulates and flux residue (be sure unit is turned off while cleaning).
2. 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.
3. Do not defeat the filter interlock switch. Running the system without a filter will allow particulates and flux residue to adhere to the blower and decrease the life of the system and increase the noise.
4. Be sure to handle the filters appropriately (See FILTRATION).
5. Do not lift system while operating

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Troubleshooting

Symptom	Possible Cause	Solution
LED does not illuminate	No power	Check electrical outlet for output Check On/Off switch Check power cords Check for main filter Check for safety interlock switch
LED orange	Blocked filter or air flow	Change filter *(See Replacement of Filters)* Note: change pre-filter first. If the LED is still orange, replace the main filter.
Little air flow	Air leak	Housing not installed correctly Arm adaptor not installed correctly
No air flow	Blower does not work Interlock switch open	No electrical power No filter installed Housing not closed correctly

Please call METCAL if:
If your system is still not working properly *or*
if the LED is green with no air flow.

Specifications

Static Pressure:	5 in H20 (1250 Pa)
Flow Rates:	50 CFM (85 m3/hr) w/HEPA filter
Noise Level:	< 55 dbA
Weight:	20 lbs. (9Kg)
Size H x W x D:	11.5” x 12” x 9” (29cm x 30cm x 23cm)
Voltage:	90 – 264 VAC
Frequency:	47 – 440 Hz
Power:	85 Watt

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Warranty

Metcal warrants the BVX-100 system, except consumables (e. g. arms, nozzles and filters), against any defects in materials or workmanship for one year from the date of purchase by original owner.

If the product should become defective within the warranty period, Metcal Inc., will repair or replace it free of charge at its sole option. The 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.

To return a failed unit for repair or replacement, follow the steps outlined below in Return Procedure. This offer does not apply to any previously opened, modified, repaired, altered, misused or damaged unit.

Return Procedure

USA

Call the Metcal RMA Department at 800-776-1778 to obtain a Returned Material Authorization (RMA) number. Please make sure the RMA number is clearly marked on all returning goods. Refer to the RMA number, assigned to the specific item, for correspondance regarding the return.

Ship materials, freight prepaid to:

Metcal
1530 O'Brien Drive
Menlo Park, CA 94025

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The BVX-100 Fume Extraction System

Parts, Replacement Filters and Accessories

Part No	Description
BVX-101	Bench Top, Single User, Arm/Plenum, Pre-HEPA-Gas, 100-240VAC
BVX-103	Bench Top, Single User, Arm/Plenum, Pre- Gas, 100-240VAC

Replacement Filters

FG-BVX	Deep Bed Gas Filter
FM-BVX	Main Filter (combined HEPA/Gas)
FP-BVX	Pre-Filter (Packs of 5)

Accessories

BVX-ADT	Replacement arm-to-plenum
BVX-ARM	Replacement flexible arm, ESD safe
BVX-BCK	Under bench mounting bracket
BVX-NOZ1	Nozzle, 40mm diameter

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METCAL

Precision Systems for the Electronics Bench

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