



Installation, Operation and Maintenance Guide

Biotronic Powered Filtration Series

OUR MISSION

To design and build quality engineered air cleaning systems to provide indoor comfort, protect occupants, and ensure the reliability of critical systems and processes.

IMPORTANT

Save this Document for Future Reference & Warranty Information



Bioclimatic.com
351-JAN-2022

!IMPORTANT!

READ THIS BEFORE STARTING INSTALLATION.
DO NOT THROW AWAY THIS GUIDE.

For installation you **MUST**:

- Always disconnect power to the unit before handling any of the components.
 - DO NOT connect to the power before the installation is complete and personnel are aware of the imminent operation.
 - Carefully read this instruction booklet before beginning the installation.
 - Follow each installation or repair step exactly as shown and explained in this guide.
 - Observe all local, state, national and international electrical codes.
 - Pay close attention to all warnings and caution notices given in this guide.
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How to Contact Us: If you need help, please contact a Bioclimatic Air Systems Representative for technical assistance.

!CAUTION!

Do not touch while in operation shut off electricity before servicing!

This equipment should be inspected frequently and collected dirt removed from it regularly to prevent excessive accumulation that may result in flashover or risk of fire.

!MISE EN GARDE!

Ne touchez pas pendant le fonctionnement couper l'électricité avant l'entretien

Cet équipement doit être inspecté fréquemment et la saleté collectée doit être retirée régulièrement pour éviter toute accumulation excessive pouvant entraîner un court-circuit ou un risque d'incendie.

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01 INTRODUCTION

1.1 Disclaimer

These instructions are submitted with the implicit understanding that:

1. This manual is to guide the user of Bioclimatic equipment in the proper installation, operation and maintenance procedures to insure maximum equipment life with efficient operation.
2. The customer has assigned competent maintenance and operating personnel to the system described herein and will assume operational and maintenance responsibility upon start-up of the system.
3. The customer will read and thoroughly examine the foregoing instructions and will notify the seller of any points not fully understood, points of conflict or error.
4. The customer, in lieu of any notification to the contrary, has read and fully understands the operation of the system and is aware of the hazards of corrosion, abrasion and fire or explosion and shall take the necessary steps in the operation of equipment to control such hazards to the maximum extent possible.
5. Start-up assistance or field engineering service provided by B.A.S. shall in no way relieve the customer of responsibility for the proper operation of the system.



IMPORTANT: Any modifications to the unit by unauthorized personnel will void factory warranty. The unit must be installed in accordance with the manufacturer's instructions to preserve warranty.

1.2 Receiving

Products leaving the B.A.S. factory are inspected and in satisfactory operating condition. All equipment should be thoroughly inspected when received. Although all units are properly packaged, rough handling in transit can cause breakage. Any shortage or damage should be reported at once to the transportation company. Note the damage on the bill of lading before signing for the shipment. Any damages requiring the replacement of parts or equipment in whole must be requested promptly. Delayed notification will not extend the length of the warranty coverage period. **No equipment may be returned to Bioclimatic without written authorization. Returned equipment sent without authorization will be refused and returned to sender.**

All products are shipped F.O.B. (Ex Works, FCA) Bioclimatic warehouse. Responsibility for all equipment passes to the buyer at the time equipment is loaded onto the carrier's truck.

1.3 Storage

If the Biotronic filters are not installed upon delivery, it should be stored in a cool, dry, weather protected location. Do not stack any other equipment on top of the filters.

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1.4 Warranty

The seller warrants the equipment against defective workmanship and material for fifteen (15) months from date of factory shipment or one (1) year from commissioning, whichever occurs first. When using OEM replacement glass pads, the filter frame and power head shall carry a five year manufacturer's warranty from date of factory shipment. In the fulfillment of its warranty, the sole obligation of seller shall be to repair or replace, at its option, F.O.B. its factory, any part or parts which are returned F.O.B. its factory, shipping charges prepaid, and which after inspection by seller are found to be defective. Buyer shall notify seller of defect in writing, promptly upon discovery and within the warranty period. This warranty does not cover defects caused by corrosion or normal deterioration; it does not extend to consequential damage, loss or delay associated with a warranty defect; and it does not cover any cost of labor, travel, or other expense associated with the repair or replacement of defective parts. Seller assumes no liability for product loss or other claims whatsoever arising out of the use or application of the equipment in any operations, whether the machine is used alone or in conjoint use with other equipment or processes. Notwithstanding the foregoing, seller's warranty obligations with respect to any items not manufactured by seller shall not exceed the obligations undertaken by the manufacturer thereof under express warranty to the seller. This express warranty is in lieu of all other warranties of fitness of the machine for any particular purpose.

There are no other representations, warranty of condition in any respects either expressed or implied, statutory, or otherwise in contract or tort, other than what is stated above.

This warranty will not apply if the seller's equipment has been damaged due to improper installation, alteration, abuse or misuse, accident, fire, flood, or act of God. Further, this warranty will not apply if repairs, replacements, or alterations are made by others without the seller's prior written authorization.

In the event the state in which the equipment is installed does not permit the limitation or exclusion of implied warranties or conditions under given circumstances, the provisions of this written warranty are in addition to and not a modification of the statutory warranties and other rights and remedies provided by such laws.

Any modification to original equipment by any company or person other than the manufacturer will serve to cancel and void all of the seller's liability under the manufacturer's warranty. Enclosures containing electronic components are normally sealed by the manufacturer to prevent unauthorized tampering or adjustments. Only authorized service provides may break seals to complete calibration or to trouble shoot the unit. Unauthorized tampering or breaking seals will release the seller from any future liability under the warranty.

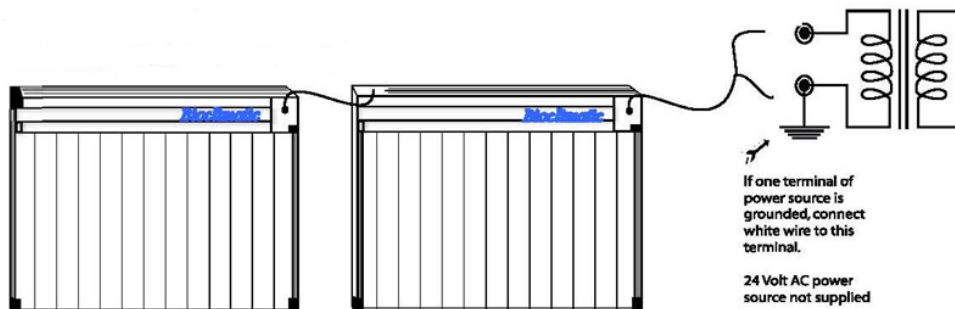
Disclaimer: The air purification technologies provided by Clean Air Group are intended to improve indoor air quality. They are not intended as a replacement for reasonable precautions aimed at preventing the transmission of contaminants, airborne or otherwise. All persons having access to the serviced premises should comply with applicable public health laws and guidelines issued by federal, state and local governments and health authorities such as the Centers for Disease Control and Prevention (CDC). Clean Air Group does not maintain that its products will protect people from all modes of transmission of bacteria, viruses or other contaminants, and excludes liability for loss or damage arising from any such claims or the consequences arising out of the application, use or misuse of its products.

02 PHYSICAL DESCRIPTION & THEORY OF OPERATION

Biotronic filters (models 2300, 2", and 1500, 1") have power requirements of 24VAC or 24VDC (max 30V). When energized the internal filter pads become electrically charged to present a strong attraction to small particles. The bus bar within each filter will maintain a constant pressurized contact on the carbon graphite strips which are laminated onto the interior glass fiber pad in order to provide assured electrical contact. Filters shall comply with UL Standard 900, Class 2.

03 OPERATION

Provide 24 volt power. Green LED power-on indicators will illuminate on each filter.



IMPORTANT

This unit is designed to operate from a supply of 24 Volts AC at 4.0 VA

DO NOT CONNECT TO 110 VOLTS AC POWER

Damage to the device may occur. Power adaptors or transformers are available from Bioclimatic or a local supplier.

04 INSTALLATION & MAINTENANCE

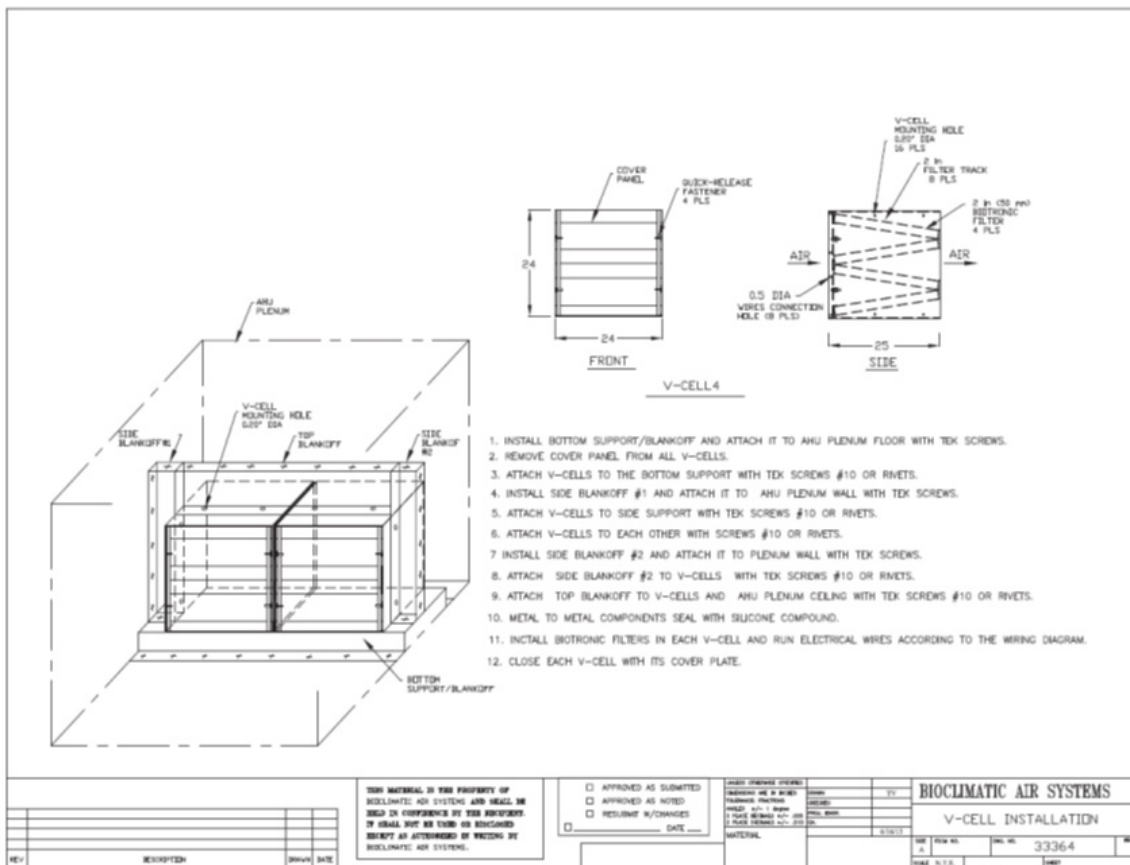
Biotronic filters are sized to match conventional filters and accordingly fit in standard filter racks. Each filter includes a connecting wire to “daisy chain” neighboring filters in each horizontal filter bank.

4.1 For installation in standard filter racks (flat or V-bank arrangements):

- a. Install filters individually. The wiring with the first filter (innermost filter in a side access housing) is not used.
- b. Plug the next filter into the receptacle of the first filter (located next to the LED power indicator).
- c. Keep any wire leads tucked away and protected from incidental damage.

4.2 For installation in V-Cell housings (provided by BAS; 2” deep filters only):

- a. Plug the next filter into the receptacle of the first filter (located next to the LED power indicator).
- b. V-cells are utilized for best filter efficiencies and minimal air bypass. Individual filter support housings hold four (4) individual 2” deep Biotronic filters. Systems typically require multiple V-cells based on the airflow. These should be installed to best match the AHU or plenum internal cross-section dimensions and as detailed in Drawing 33364 below.



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4.3 Keep any wire leads tucked away and protected from incidental damage.

4.4 Record initial air pressure drop across the Biotronic filter bank. If applicable set the Photohelic gauge for this clean APD.

4.5 Filter Pad Replacement:

- a. Bioclimatic recommends the replacement of the internal filter pads when the APD reaches two times the initial pressure drop, and not to exceed maximum of 2.0" w.c.



WARNING: DO NOT ATTEMPT TO REPLACE ANYTHING WHILE POWER TO THE SYSTEM IS ON. DISCONNECT ALL POWER BEFORE SERVICING ANY UNIT.

- b. The filters may appear loaded due to a darkened color but pressure drop is the correct method for determining the life of the filter. [Cleaning the filters is not recommended due to the potential for damage and costs. The replacement pads are inexpensive; total cost of ownership is likely reduced by pad replacement, not more frequent cleaning.]

Note: Biotronic filters have high dust holding capacity and typically require infrequent service as compared to passive, conventional air filters. Premature replacement will cause unnecessary expense.

- c. Remove each filter, carefully disconnecting the power wire for each filter in turn.
- d. The filter frame is not replaced.
 - 1. For the 1" thick (Model 1500) filter unsnap the round plastic fasteners on each corner, remove the mesh cover, and replace internal the media pads. Two internal pads are replaceable (one with the nested black wires and one without).
 - 2. For the 2" thick (Model 2300) filter unsnap the four round plugs on the label side of the filter only. Two internal pads are replaceable (one with the nested black wires and one without).
 - 3. Be sure the internal buss bar contacts the internal wires in the pads; rotate the media as necessary for proper alignment.
- e. Do not immerse the frame with its power head in water. The frame can be cleaned with a damp cloth as needed.
- f. Reinstall in reverse order.

05 TROUBLESHOOTING

Testing for high voltage:

- a.** Filters have very high voltages (8Kva or more). Amperage is very low (.2) but there is still a shock hazard, so protective clothing and footwear is required.
- b.** Confirm the filter being tested has power. The green LED light should be on.
- c.** Insert the metal tip of the probe through the filter diamond mesh into the glass pad until the end of the tip makes contact with one of the graphite filaments. When you have firm contact, move the probe so part of the metal tip touches the diamond mesh and then break the contact with the mesh. When you break the contact, you should see electrical arcing from the mesh to the probe. If you see arcing, the filament is live and functioning correctly.
- d.** Repeat step 3 with every filament.
- e.** If you find one or two filaments not working, then something is blocking the transfer of voltage from the power bar at the top of the filter to the filaments. The metal portion of the power bar must make contact with every filament. You may need to adjust the media or bar to ensure this happens.
- f.** If none of the filaments are working, disconnect power to the filter and open it. Check to be sure the high voltage lead is properly connected to the power bar. Also check to be sure the ground wire is in place and secured to the side of the filter firmly with a screw.

06 PRODUCT NUMBERS*

Biotronic Power
12x24
14x25
14x30
16x20
16x24
16x25
20x24
20x25
24x24

- All other industry sizes
Exact, oversized and metric

*If your specific model is not listed please contact the factory at:
1-800-394-3458 for operating instructions, safety information and
replacement parts or service.

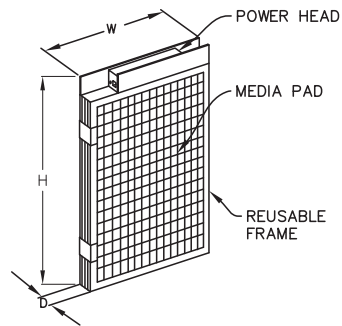
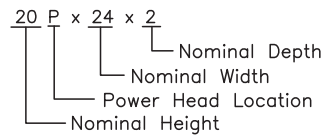
07 APPENDICES

Biotronic

High Efficiency Air Filter

Product Data

MODEL DESIGNATION



RATED FILTER FACE VELOCITY (FPM)	NOMINAL SIZE (INCHES) (H X W X D)	ACTUAL SIZE (INCHES) (H X W X D)	RATED INITIAL RESISTANCE (in. W.G.)	RECOMENDED FINAL RESISTANCE (in. W.G.)	POWER CONSUMPTION (Watts)	APPARENT POWER (VA)
500	25 x 25 x 2	24.38 x 24.38 x 1.81	0.5	1.0	2	1.5
	24 x 24 x 2	23.38 x 23.38 x 1.81	0.5	1.0	2	1.5
	20 x 20 x 2	19.38 x 19.38 x 1.81	0.5	1.0	2	1.5
	20 x 24 x 2	19.38 x 23.38 x 1.81	0.5	1.0	2	1.5
	20 x 25 x 2	19.38 x 24.38 x 1.81	0.5	1.0	2	1.5
	18 x 20 x 2	17.38 x 19.38 x 1.81	0.5	1.0	2	1.5
	16 x 25 x 2	15.38 x 24.38 x 1.81	0.5	1.0	2	1.5
	16 x 24 x 2	15.38 x 23.38 x 1.81	0.5	1.0	2	1.5
	12 x 24 x 2	11.38 x 23.38 x 1.81	0.5	1.0	2	1.5
	10 x 20 x 2	9.38 x 19.38 x 1.81	0.5	1.0	2	1.5
	24 x 20 x 2	23.38 x 19.38 x 1.81	0.5	1.0	2	1.5
	25 x 20 x 2	24.38 x 19.38 x 1.81	0.5	1.0	2	1.5
	20 x 18 x 2	19.38 x 17.38 x 1.81	0.5	1.0	2	1.5
	25 x 16 x 2	24.38 x 15.38 x 1.81	0.5	1.0	2	1.5
	24 x 16 x 2	23.38 x 15.38 x 1.81	0.5	1.0	2	1.5
24 x 12 x 2	23.38 x 11.38 x 1.81	0.5	1.0	2	1.5	
20 x 10 x 2	19.38 x 9.38 x 1.81	0.5	1.0	2	1.5	