



USER MANUAL

BF840 Pure Path Room Filtration Module



Serial # : _____

Install date : ____/____/____



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UNPACKING

- 1) Carefully inspect the exterior of the shipping container before opening. If the crate is damaged and the product has sustained damage then immediately contact Mopec and the freight carrier. **Never discard the shipping container even if it is damaged beyond recognition.**
- 2) Have the delivery driver note any suspected damage on the Bill of Lading and sign it. Mopec will help assist in filing a claim for product repair and/or replacement.
- 3) Carefully open the containers and inspect the equipment for concealed damage. If visible damage is noticed (i.e. broken welds, dented stainless, scratches, etc.) follow through as noted above. Do not discard the shipping material. They are important in settling claims.

CAUTION: There are loose components in the packaging of your product. Be very careful in examining the packaging material as it may contain installation parts and/or product components.

INSPECTION

- 1) After carefully unpacking your Mopec Pure Path Room Filtration Module please inspect the items in the list below prior to installing the unit. The module should be thoroughly checked for loose screws, defects, or damage that may have occurred during shipping or packaging.

INTRODUCTION

The BF840 Room Filter is a heavy duty auxiliary air filtration unit designed to neutralize residual formalin fumes in the busiest of laboratories.

At peak workloads, many large facilities find themselves exceeding OSHA recommended exposure rates for formalin and are forced to temporarily shut down or operate at limited capacity. Equipped with two replaceable 40 lb. (18 kg) potassium permanganate and carbon mixed filters, the BF840 has the horsepower to rein in formalin overexposure and maintain a safe laboratory environment.

The BF840 is constructed all of stainless steel and is equipped with a 9' line cord with hospital grade plug. Casters enable easy positioning of the BF840 throughout any lab, allowing easy filtration of problem areas.

FEATURES

The BF840 Room Filtration Module

Dimensions: 30 1/2" Wide x 24 1/4" Deep x 23 1/4" Tall

Top: 18 Gauge, type 304 Stainless Steel with a # 4 Polished Finish

Door/Panels: 18 Gauge, type 304 Stainless Steel with a # 4 Polished Finish

Outer Case: 18 Gauge, Type 304 Stainless Steel with a # 4 Polished Finish

Electrical: 110v / 1ph / 60 Hz

Power: 9' Hospital Grade Line Cord

Filter Gauge: Pressure Differential

Filters: Pre-filter Material is Merv13 rated, and is 18" x 24" x 2"
Filter Media is Potassium Permanganate and charcoal Mix (50/50)

Casters: Four (4) 3" locking caster

OPERATION

The unit has a three-way switch, Hi, Off and Low.

Upon turning the unit on, the pressure gauge will read 0 as depicted in the picture below.



Through use, a slow steady deflection to the right will occur; this indicates the pre-filter filter is working. As the gauge approaches 2.0 in of water column the pre-filter filter needs to be changed.



This is a differential pressure gauge. From this point of calibration, a 100% blockage of the filters will yield a reading of .5 in of W.C. At that time the pre filters and other filter media should be changed.



AIR HANDLING

The BF840 had a 405CFM blower to draw the air thru the filters. The filter media should be changed when the Filter media is saturated and the presence of odors can be detected. See page 10 for instructions on how to evaluate the filters.

The unit filters should be kept away from walls and obstructions that might impede the air flow, a minimum of 12 inches should be kept between the pre-filter and a wall, desk or cabinet.

The design parameters are based on stringent ventilation requirements and ideal conditions. Personalized conditions and practices may warrant an increase or decrease of the ventilation. Although the Mopec Module can be the answer to formaldehyde exposure, Mopec cannot assume responsibility of exposure since good laboratory practices and room conditions are beyond Mopec's control.

CLEANING AND MAINTENANCE

DISINFECTING STAINLESS STEEL SURFACES

All stainless steel surfaces can be cleaned with soap and water, which will remove debris.

The stainless steel surfaces can be disinfected with a non-caustic disinfectant. We suggest using BE045 Path Cloud or BE047 Bench Wipe for cleaning purposes. We recommend you **NOT USE** a bleach solution to clean your unit. Bleach will eventually erode stainless steel if not thoroughly rinsed. **The use of chlorine bleach will VOID THE STAINLESS STEEL WARRANTY**

During the cleaning we suggest wiping the surface in the same direction as the satin finish which will help lift up dirt from the grain finish.

Most scratches can be removed simply by utilizing a "non-metallic" abrasive pad and rubbing in the same direction as the satin finish.

Since most abrasive pads vary from one supply to another, we suggest rubbing the entire surface to blend the scratch and blend the balance of the surface.

Plexi-glass surfaces will scratch if cleaned with an unsuitable cleaner and improper cleaning. Many plastic cleaners are available and we suggest using one. Wipe dry with a clean, absorbent cloth or paper towel turning often

EVALUATING FILTERS FOR REPLACEMENT

The filters in your BF840 unit contain activated charcoal and alumina pellets impregnated with potassium permanganate, KMnO_4 , which is a fast oxidizer. Formaldehyde passing through the filter is converted to carbon dioxide and water.

The filter's life depends entirely on the amount of formaldehyde fumes passing through the filter.

The pellets are bright purple when new and become dark brown when spent. Once the inner part of the pellet is brown it is totally spent and must be replaced. This chemistry is very effective and essentially removes all formaldehyde if there is active KMnO_4 available. The efficiency drops off as the filter media approaches its maximum capacity. The last 15-20% capacity will exhibit some pass through of formaldehyde.

Health Hazard Data - Alumina Permanganate Filter Media

Effects of Exposure – The filter media is non-toxic upon oral, skin, and inhalation exposure and is non-irritant of the skin. Breathing of dust may cause sneezing. Skin may feel dry after contact. The filter media is an eye irritant.

PROCEDURE - EVALUATING FILTERS FOR REPLACEMENT

On one side of the filter there are four tabs which can be opened to allow pellets to be removed. (see photo)

Eye protection is recommended based on the above "Health Hazard Data".



The usefulness of the filter is approximately 80% diminished when the purple color first disappears from the core.

To determine when the KMnO_4 has been exhausted, remove a pellet slice it in half. Place the sliced pellet(s) on a paper towel and add a drops of water. The water running off the pellet(s) should be initially and then turn a deep iodine color. If no purple coloration is present, KMnO_4 is totally spent. [filter-evaluation](#)



and
few
purple
the

When the purple color first disappears from the core of the pellet as described above, the rate at which formaldehyde is removed from the air stream is slowed considerably.

PROCEDURE – SUMMARY OF EVALUATING FILTERS FOR REPLACEMENT

From a practical standpoint, it may be desirable to perform the tests on the preceding page more frequently during initial usage of the filters to determine when the purple first begins to disappear from the core of the sliced pellet. Based on these early observations, the user can establish a Replacement Testing Cycle with occasional re-checks for verification.

STAINLESS STEEL CARE AND MAINTENANCE

To maintain your stainless steel product, follow these four steps:

1) **Never, ever use wire brushes, Brillo, steel wool or abrasive cleansers (like Ajax or Comet).** If something needs to be aggressively cleaned only use a Scotch-brite pad or similar product and only scour with the "grain" of the stainless. As an example, please reference the photo on page 2 of this document. It is clear that a very abrasive product was used in an area on the unit and that did not follow the grain of the stainless. The effects of this scratching may diminish over time with proper care but the effects of this scouring are obvious. (The use of the Scotch-brite Pad following the grain over time may help scratches such as this). Depending on the surface finish of your stainless steel, abrasive cleaners can cause scratching. Duller finishes probably won't show scratching as much as mirror or highly polished finishes. When in doubt, test in a hidden spot, and also work from the least risky type of cleaning, (i.e. water) to the heavy duty stuff.

Do not use cleaners containing chlorine. While it may be second nature to bleach everything, stainless steel and chlorine do not mix well. Do not use bleach when cleaning stainless steel. Do not allow bleach or bleach water to sit for long periods. Bleach can eventually cause staining and pitting. Bleach stains are removed with stainless steel cleaning polish.

2) **Keep the surface clean of grime, tissue and particulates.** This can be accomplished by using the "Water Hand Spray Rinse" and use of cleaning products.

3) **Rinse the surface after using disinfectant.** In Pathology and other medical areas the act of disinfecting is desired. There are a number of ways to do this including using Mopec's Bench Spray & Wipe Disinfectant. Labs use any number of different products including 10% bleach or other disinfectant sprays and wipes. For the most part, each and every one of these has high salt contents and lower PH levels to aid with disinfection. Most disinfectants must be followed up with a water rinse to remove the salts that remain after these products dry. We advise to always follow up a disinfection cleaning with a thorough rinse of water. We advise not to use diluted bleach, if you must; we stress the importance of a thorough rinse of water after use. If not rinsed properly, these salts can become visible after the disinfectant dries. They can appear with a whitish characteristic or contain light lines of white with a grainy feel when you wipe your hand across the work surface. If these residues are not removed with a thorough water rinse and wipe down they will accumulate and eventually degrade the appearance and integrity of your stainless surface. Rust is a long term possibility if salts are allowed to remain on the work surfaces over time. Gritty, dirty water or residue from cleaning solutions left on a stainless steel surface can stain or damage the finish.

4) **All stainless steel products should be protected by a polish.** As a prime example before any product leaves Mopec it is coated with WD-40 as a protecting coating for the stainless. Mopec offers a Stainless Steel Cleaner and Polish in both wipe and spray. These Mopec products will not only deep clean your stainless but will also protect their finish from chemical, low PH and salt and keep the finish looking like new.

Decal

Mopec advises that if the technicians are not taking the proper precautions when using the Decal solution the possibility of two things will occur, a brown or rust ring where the Decal resides along with a milky white substance on the surface. (As an example, reference the below photos to see the rust rings.) Decal is very harsh, even the fumes can and will cause staining on stainless steel. One thing that you might want to consider doing is to place the Decal container you currently use inside a plastic base that will help catch drips that might occur. Clean and rinse your station after every use of Decal solution.

Rust

Rust can and will occur on stainless if it is not maintained properly. The most common cause of rust is from using metal or stainless racks that are not made of 304 stainless. This is referred to as "transfer rust". Leaving of salts from cleaners or disinfectants can and will lead to possible rust areas in the long term. Always rinse all disinfectants before they dry. Decal solutions and even fumes are very aggressive and can cause rust if not cleaned up and used properly around stainless. Formalin use has not been shown to cause rust in any way.

Conclusions & Suggestions

We are confident and can assure you that if you institute the suggestions detailed above that your Mopec Grossing station will look as it did the day it arrived.

Do not assume it's the cleaner. If you do have some spotting or staining, and you've followed all of the suggestions, it may not be the cleaner. Water, especially hard water, can leave spotting and staining on stainless steel surfaces. Hard water can leave mineral deposits, resulting in whitish-colored spots and streaks. Remove hard water stains with vinegar or with stainless steel cleaning polish. Prevent hard water stains by towel-drying after every wash. Do not allow soaps and cleaners to dry on surfaces. The chemicals in many soaps and cleaners can cause staining. Never use corrosive cleaners such as mineral spirits. Use stainless steel cleaning polish and a non-abrasive scrub pad to remove dried cleaner stains. Baking soda mixed with liquid dish soap can make a good paste to gently rub on stains. Be sure to rinse the stainless steel surface thoroughly, and towel dry. If stains remain Mopec recommends trying a stainless steel cleaner and polisher. Barkeeper's Friend is a good powder formula that can clean without scratching. Be sure to follow the directions, rinse thoroughly, and towel dry. These methods should help remove any discoloration.

Fingerprints and Stains – The most common surface contaminants that occur from normal use are fingerprints and mild stains. These usually affect only appearance so fortunately they do not have an effect on corrosion resistance. They can easily be removed by a variety of simple cleaning methods. The most troublesome marks to remove from the surface of smooth polished or bright finished stainless steel are fingerprints; fortunately they can be removed with a common glass cleaner or by gently rubbing with a paste of soda ash (sodium carbonate) and water which would be applied with a soft cloth. Again, it is best to follow with a warm water rinse.

Clean Water and Wipe – The method that will do an adequate job and is the simplest, safest and the least costly is the best method. There is no surface coating to wear off of stainless steels so the surface will thrive with frequent cleaning. The first choice to clean mild stains and loose dirt and soil should always be a soft cloth and clean, warm water. Rinsing with clean water and wiping the surface dry will finish the process and eliminate the possibility of water stains.

Solvent Cleaning – To remove oils, greases and fresh fingerprints that have not had time to oxidize or decompose, use a solvent that does not contain chlorine. There are many organic cleaners on the market today that optimize safety attributes and clean ability. Spray or vapor methods or by wiping with clothes containing solvents can also clean surfaces. The wiping technique will sometimes leave the surface streaked.

Scratch Repair

A surface scratch can be repaired using the following technique. Completely removing the scratch will depend on how severe it is. Use 120 grit emery cloth or paper and firm pressure to sand the scratch. Sanding must always go in the direction of the grain. Sand in a perfectly straight line, avoiding the natural tendency to sand in an arc. Sand the surface until the scratch is gone. Polish using a very fine grade of 3M scotch-brite pads. Use the same motions as with sanding. Polish the surface until the original finish is restored.

For stubborn spots, stains, light discoloration, water marking or light rust staining use a mild, non-scratching cream or polish. Apply with soft cloth or soft sponge and rinse off residues with clean water and dry. Avoid cleaning pastes with abrasive additions. Suitable cream cleansers are available with soft calcium carbonate additions, or with the addition of citric acid. Do not use chloride or acidic solutions. Nylon abrasive pads should be adequate for dealing with most deposits (DO NOT USE STEEL WOOL OR BRILLO PADS). If a more severe treatment is needed to mask coarse scratches or physical damage on a surface, use the finest abrasive medium consistent with covering the damage marks. With directional brushed and polished finishes, align and blend the new "scratch pattern" with the original finish, checking that the resulting finish is aesthetically acceptable. Silicon carbide media may be used, especially for the final stages of finishing. Avoid using hard objects such as knife blades and certain abrasive/souring agents as it is possible to introduce surface scuffs and scratches. Scratching is particularly noticeable on sink drainer areas. These are usually superficial and can be removed with proprietary stainless steel cleaners or, alternatively, with a car paint restorer, such as 'T-cut'. Rust marks or staining on stainless steels is unlikely to be the result of corrosion to the stainless steel itself (similar marks may also be found on porcelain and plastic sinks). These marks are likely to result from small particles of carbon steel from wire wool.

GENERAL PRECAUTIONS

Introduction of liquid into the unit will create a shock hazard for operators and personnel in the area. In addition will void any associated warranty of the motor and filter unit.

Operation, use and maintenance of this unit not in accordance with this manual might damage unit for which Mopec will not be responsible.

Replaceable filter elements, both Pre-filter BF023, BF021 Potassium Permanganate and BF014 Combination Media filter are to be replaced by the customer at their own cost.

Unit should not be operated with panels removed or doors open.

USER PARTS

Replacement parts are available from Mopec The can be ordered by contacting Mopec at 800-362-8491.

Due to the many configurations your unit may not have some of the parts listed below:

MERV 13 PRE FILTER	BF023 (REQUIRES 2 PER UNIT)
POTASSIUM PERMANGANATE	BF021 (REQUIRES 2 PER UNIT)
CARBON AND POTASSIUM PERMANGANATE	BF014 (REQUIRES 2 PER UNIT)

PREVENTITIVE MAINTENANCE CHECKS

Procedure:

1. Visually check the exterior of equipment for any signs of damage.
2. Visually check the condition of the power cord and plug(s) for cracks, cuts, bare or broken wires and signs of excessive heat (discoloration).
3. Verify correct operation of unit including all controls, buttons, displays and indicators when applicable.
4. Clean exterior of unit.
5. Complete paper work of inspection and file in appropriate file for future reference. Complete and affix an inspection sticker, when applicable.
6. Return the unit to service.

LIMITED WARRANTY

Products manufactured by Mopec will be free from defects in material and workmanship and conform to Mopec's description or specifications. If a warranty claim is made within one (1) year from the earlier of the date of acceptance/first beneficial use, the defective or nonconforming Product or Part thereof will be repaired or (at Mopec's option) replaced free of charge, FCA Mopec's dock. All warranty claims must be in writing and received by Mopec within the warranty period. The warranty is not transferable (other than to customers of Mopec's authorized Distributors), and will not apply unless the Equipment has been properly installed, maintained and operated in accordance with all instructions; and does not apply to defects, nonconformities or other failure due to Equipment misuse, abuse, modifications, or other causes outside Mopec's control. If a warranty claim is made in writing within the warranty period, the defective or nonconforming Equipment (or Part thereof) will be repaired or (at Mopec's option) replaced free of charge, FCA Mopec's dock.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THE WARRANTY AS SET FORTH HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

To the extent that Mopec is acting as a supplier of Products manufactured by a third party, the Products will be warranted only to the extent that they are warranted by their manufacturers and Buyer (or its customer) agrees to look solely to the Product manufacturer for all warranty claims.

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SAFETY LABELS

BEFORE SERVICING THE UNIT LOOK FOR AND HEED THE FOLLOWING LABEL



TROUBLE SHOOTING

Problem

Possible Solution

My Unit does not turn on

Assure your facility circuit breaker has not been tripped.

Assure unit is plugged in.

Assure Switch is turned on

My unit does not remove odors

Assure your facility circuit breaker has not been tripped.

Assure unit is plugged in.

Check Gauge for level

Assure Switch is turned on

Assure Pre- filter is not blocked

Assure Combination Media filter is not clogged

My unit will not roll

Assure foot brake is released on all the casters



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