MICROCON® ExC
Instructions & Service Manual

OVERVIEW

The MICROCON® ExC is a ceiling mounted HEPA filter air purification device that can provide negative pressure as well as providing in-room air cleaning, dependent upon exhausting air or ducting it back into the room. The CFM capacity ranges between 150 to 350.

PLACEMENT

The ExC is designed to fit into any standard (nominal 24" x 24") T'bar ceiling grid. A roll of ¼ inch gasket material with a pressure sensitive adhesive (PSA) backing is included. This should be attached to the T'bar grid surface to provide a seal for the ExC within the grid. The ExC has four (4) wire support tabs screwed to the top of the plenum. These provide for attachment of wires, chain, cable, etc. to help support the added weight of the ExC, which is 35 pounds. These tabs are fastened to the top of the unit and shipped flat, but can be bent 90º with the help of a flat head screwdriver to extend the tab upwards.

Next, place the unit in the ceiling as you would position a ceiling tile.

CREATING NEGATIVE PRESSURE

To create negative pressure within a room, the unit can basically be placed in any ceiling location that makes it convenient for attachment to the nearest exhaust duct. The length of the duct run should not exceed 12 feet or the duct rise should not exceed 10 feet. The exhaust duct can also be connected to a direct outside exhaust vent. Since the exhaust air has been filtered, it is also possible to exhaust directly into a plenum area above the ceiling. Negative pressure will be achieved when more air is exhausted from the room than that which is being supplied. It is essential that the room be completely sealed in order for the room pressure differential to function properly. If ducted directly outside, it is advisable to place unit as close to an outside exhaust duct as possible. The longer the duct-run from the unit, and the more bends and turns in the duct, the higher the resistance and conversely the lower the exhaust volume.

CREATING IN-ROOM FILTRATION

The ExC can also be used to filter and supply clean air within a room. If used for this application, the clean air from the exhaust will be returned within the room through an exhaust register. The ideal placement would be above the area generating the most contamination. To prevent "short circuiting" of air (the clean air (*exhaust*) and dirty air (*return*) are in too close proximity to each other), the exhaust register should be placed at least 6 feet from the intake. Ideal placement is about 8 feet.

START-UP

Once the location for placement is established, and the 8-inch duct connection made to your exhaust system, the unit should be wired for electrical hook-up. A convenient electrical junction box is located at the top of the plenum. Power when wired to this box unit will deliver between 150 cfm at the low setting and 350 cfm at high. *Optional*: In the event you prefer to have the unit wired into a wall mounted electrical switch to allow for on/off operation without having to reach up to press the lighted button, this too can be done. Pre-setting the speed control will allow the unit to operate at the pre-determined setting whenever the wall switch is activated.

SPEED SETTING

The maximum capacity of the fan is obtained when the knob is in the position just to the right of having been turned on. Continually turning the knob in a clockwise direction will decrease the capacity. The panel mounted minihelic gauge will register pressure differential displayed in WG inches of water. The higher the fan setting, the higher the resistance reading will appear.

Adjust the volume of air to be exhausted until you achieve the negative pressure differential reading you require. The ExC can be left running on a constant speed. If your ExC is wired into the ACCUSTAT Room Pressure Monitor *(optional)*, the ACCUSTAT will monitor the room pressure and you can set your exhaust at the desired negative pressure reading. As long as it isn't running at the highest setting, the ACCUSTAT will automatically ramp up to the higher speed whenever the pre-set alarm setting on the ACCUSTAT is triggered *(see ACCUSTAT instructions)*. ACCUSTAT tie-in connector (if ordered) is located next to electrical connection box on top of the unit.

PRE-FILTER RENEWAL
(Replacement Part No.: PF-EXC002)

The pre-filter must be changed periodically *(Do not attempt to change filter when unit is operating)*. Filter performance can be determined by monitoring the minihelic gauge resistance reading. Usually an increased of .1" WG (above the initial pressure reading) signals a pre-filter replacement. Replacing the pre-filter will lower the resistance reading proportionally.

INSTALLING A NEW PRE-FILTER

As a safety precaution, a mask and latex gloves can be used when performing filter maintenance operation. From the downstream side of the filter, open the stainless steel perforated gate by pushing in the two button closures. The panel swings down. Place a large enough plastic bag over the stainless steel panel and drop the used filter into the bag. Seal the top of the bag with a twist tie and dispose of properly. Place a new pre-filter into the swing down door. Close door and secure with the two button latches.

REPLACING THE HEPA FILTER
(Replacement Part No.: HF-EXC002)

Note: Used HEPA filter – Treat as Contaminated Substance.

Open the stainless steel gate. It is recommended that the pre-filter be renewed whenever the HEPA is being changed. Remove the pre-filter *(see above)*. With proper maintenance (changing the pre-filters), the HEPA filter should last a minimum of 12-18 months. The HEPA is secured in place by four (4) hold down clamps, two are located on each long side of the HEPA filter. A 7/16-inch ratchet is the best tool to remove the fasteners. Remove all four fasteners; drop the HEPA filter straight down into a plastic bag. Tie off top of bag and dispose of properly. Replace the HEPA, being careful not to damage the filter's face. A protective piece of cardboard might afford protection when renewing filter. Replace clamping brackets and tighten nuts to allow about 50%-60% compression on gasket. *WARNING:* Do not over tighten clamping brackets otherwise filter and housing will be damaged. Replace pre-filter and close stainless steel gate.

CLEANING

It may be necessary to wipe the face of the stainless steel grille periodically due to dust being attracted by a static charge as it passes into the pre-filter. A good stainless cleaner or mild detergent will do the job. Neither the pre-filter nor the HEPA are designed to be cleaned. They <u>are not reusable</u> and must be disposed of when used. Do not get either filter wet when cleaning.

RETURNS TO THE FACTORY

Before shipping any component to the factory, a Return Material Authorization (RMA) Number must be issued for units under warranty. For units out of warranty, a written purchase order must be issued to Biological Controls prior to return. The factory will NOT accept and will refuse any merchandise returned without proper authorization. Factory is not responsible for any damage to or loss of merchandise during return shipping. DO NOT RETURN ANY CONTAMINATED FILTERS TO THE FACTORY.

Size: (W) 23.75 X (L) 23.75 X (H) 10.5 inches
Size: (W) 23.75 X (L) 23.75 X (H) 10.5 inches
Duct: 8-inch inlet with a 2-inch collar
Filter: Pre-filter, synthetic polyester
Filter: Final, HEPA 3" separatorless, 99.99% on .3 micron size particles
        DOP test. 100% waterproof filter media, glass microfiber
Cabinet: All aluminum construction internally insulated
Blower: Backward curved motorized impeller, maintenance-free
         Operation
Voltage: 115 V, 0.7 amps, 80 watts
Electrical Wiring: In accordance with the latest NEC standards
Airflow: 150 cfm to 340 cfm (delivered)
Speed Control: Variable electronic speed control
Protective Grill: Stainless steel perforated, swing down hinged door
Pressure Monitor: Minihelic pressure gauge
Controls: Lighted On/Off switch
Supports: Top mounted (4) securing clips for suspending
Weight: 37 lbs.

REV: 05/01/03