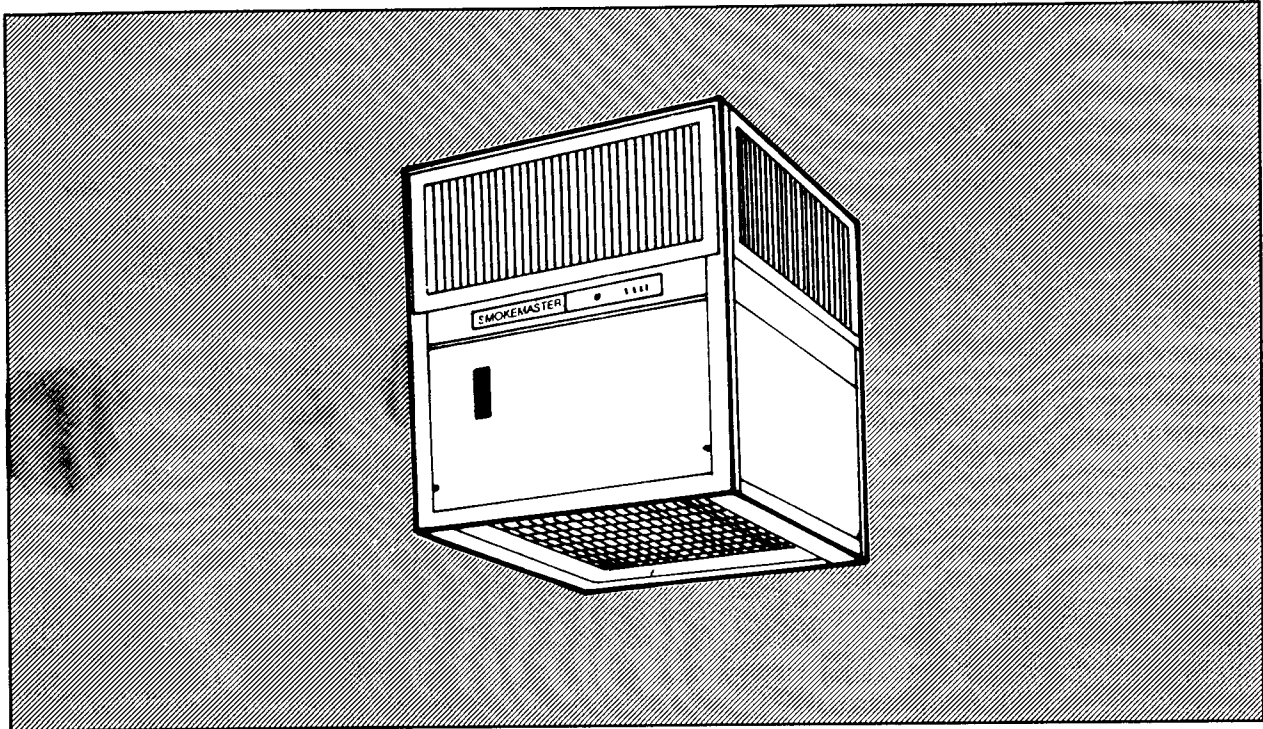


SMOKEMASTER[®]

F62B

INDUSTRIAL ELECTRONIC AIR CLEANER



THE F62B IS A SELF-CONTAINED ELECTRONIC AIR CLEANER FOR USE IN INDUSTRIAL APPLICATIONS. THE AIR CLEANER IS MOUNTED IN THE ROOM OR AREA WHERE THE AIR IS TO BE CLEANED. A 3-SPEED FAN CIRCULATES AIR THROUGH A PREFILTER, ELECTRONIC CELL, AND POSTFILTER. IT REMOVES AIRBORNE PARTICLES SUCH AS DUST, SOOT, SMOKE AND FUMES FROM THE AIR CIRCULATED THROUGH IT.

- Four direction "Coanda" airflow pattern creates air circulation zone for each air cleaner.
- 3-speed fan circulates up to 2500 cfm (4250 m³/hr)*.
- Simplified direct drive fan with sealed bearings reduce maintenance.
- Industrial rated power supply is in separate, sealed module with disconnect plug.
- Solid state, self-regulating power supply output is not affected by moderate fluctuations in line voltage.
- Interlock switches prevent operation when the access door is open, or when prefilter screen is removed.
- Electronic cells remove easily for cleaning.
- Adjustable discharge grilles direct airflow where needed.
- Performance indicator light gives operational status.
- Prefilter and postfilter are 1 inch (25.4 mm) thick.
- Test button diagnostics give status of collector section.
- Permanently lubricated ball bearing motor requires no maintenance.
- High voltage power supply uses voltage doubler to provide increased ionization voltage.
- Door latches open for access to cells and filters.

*Three phase models are single speed.

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SPECIFICATIONS

IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED AND CALIBRATED UNDER CLOSELY CONTROLLED CONDITIONS, AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.

MODEL:

F62B Industrial Electronic Air Cleaner with Coanda 4-direction air pattern and capacity of 2500 cfm (4250 m³/hr.). Contains 2 electronic cells and 3-speed fan.

POWER SUPPLY:

Solid state heavy duty industrial rated in sealed module with disconnect plug

CELLS:

Two 38003 heavy duty industrial, 33 lbs. (15 kg) each

MOTOR:

3/4 hp high efficiency with sealed bearings

AMBIENT TEMPERATURE RATING:

Shipping and Storage: - 30°F to +150°F (- 34°C to +66°C)

Operating: - 40°F to 115°F (-40°C to 46°C)

WEIGHT:

Shipping: 280 lbs. (127 kg.)

Device: 225 lbs. (102 kg.)

Cell Weight: 33 lbs. (15 kg.) each

DIMENSIONS:

See Figure 1

CURRENT CONSUMPTION (60 Hz):

POWER \ SPEED	HIGH	MED	LOW
120V - 1Ø	7.7A	6.2A	5.2A
240V - 1Ø	4.0A	3.0A	2.8A
208V - 3Ø	4.4A	N/A	N/A
240V - 3Ø	3.8A	N/A	N/A
480V - 3Ø	1.9A	N/A	N/A

CAPACITY:

SPEED SETTING	cfm	m ³ /hr
HIGH	2500	4250
MED	2200	3750
LOW	1900	3225

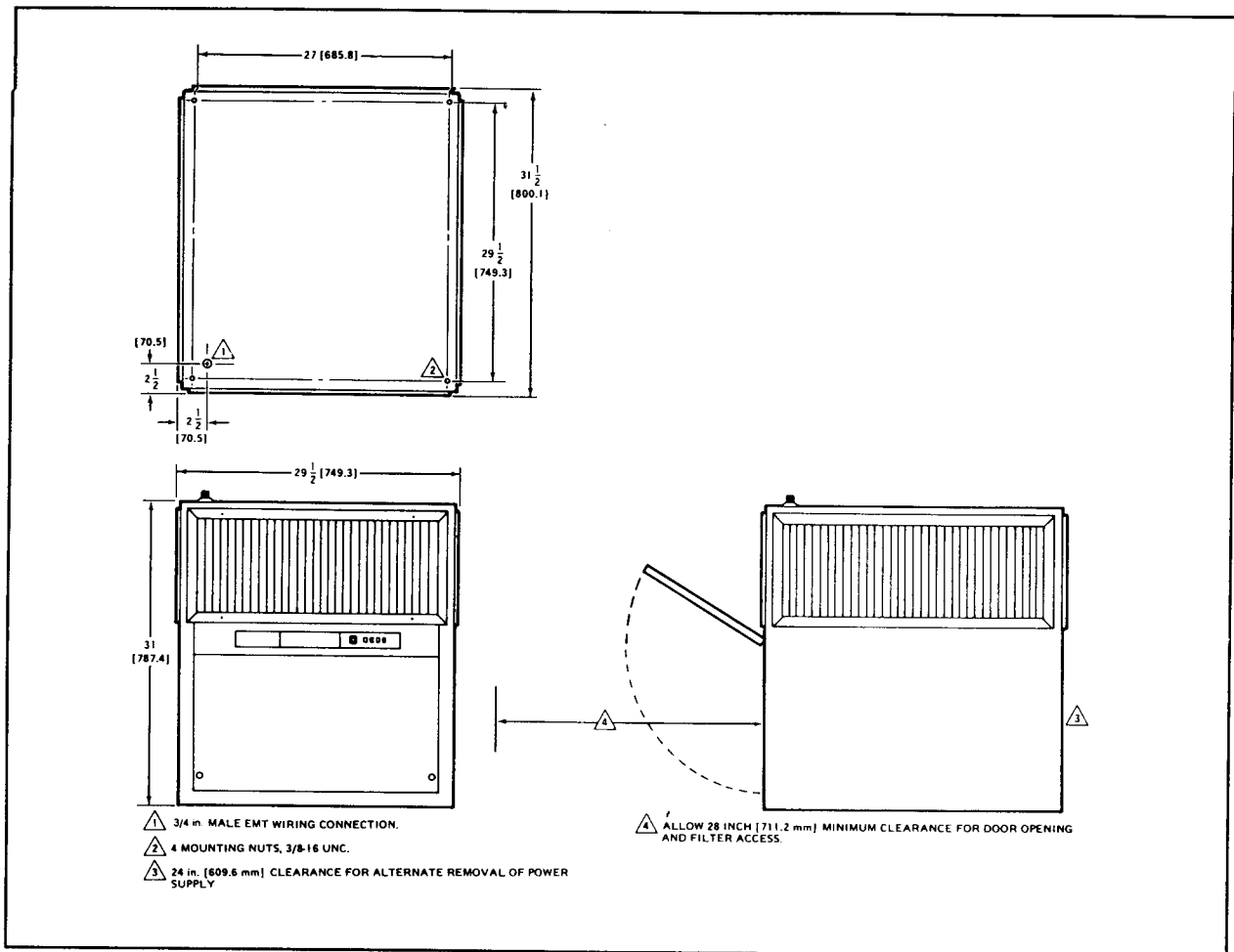


FIGURE 1 - F62B DIMENSIONS IN INCHES (mm SHOWN IN BRACKETS)

PLANNING THE INSTALLATION

WARNING

The F62B Industrial Electronic Air Cleaner is not explosion proof. It must not be installed where there is danger of vapor, gas, or dust explosion.

contaminants which may be allowed in the air. For example, common air contaminants in a welding shop are iron oxide and copper fumes. OSHA limits their time-weighted average concentration during an eight hour day to 10 mg/M³ and 0.1 mg/M³, respectively. For further information on specific contaminants and how to determine the legal condition of the air in an industrial setting, consult OSHA 2206, General Industry Standards.

INTRODUCTION

Clean air in industry creates safe and healthy working conditions. The requirements for clean air are based on the regulations of the Occupational Safety and Health Administration (OSHA) and the recommendations of the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE).

OSHA defines clean air by limiting the amounts of specific

The ASRAE Standard 62-81, Natural and Mechanical Ventilation, gives recommended quantities of ventilation air in terms of 100 percent outdoor air. The standard recommends as much as 35 cfm per person ventilation air in even relatively clean industrial environments such as light assembly areas. Process requirements may dictate even higher quantities of ventilation air. These recommended outdoor air quantities may be reduced if air cleaning is provided. However, the standard recommends that "in no case shall the outdoor air quantity be less than 5 cfm per person."

The reduction in outside ventilation air required represents the potential for savings through the use of clean recirculated air. This potential for savings can be achieved by a system that reduces particulate and gaseous contaminants to within the ASHRAE recommended limits.

At no time should the F62B industrial electronic air cleaner be installed where there is a potential for vapor, gas or dust explosion. Contact your Air Quality Engineering representative for assistance in the proper application of the F62B industrial electronic air cleaner.

SIZING

Sizing is determining how many air cleaning units are required to maintain a desired level of air quality. The process of sizing an application involves roughly figuring the number of air cleaners needed and then modifying the figures according to the specific characteristics of each application.

For ambient air cleaning, the estimated number of electronic air cleaners may be determined by the relationship of air volume to the needed air changes per hour.

An alternative method for calculating the estimated number of electronic air cleaners can be used if it is possible to measure the generation rate of the contaminants and the allowable level of contamination. To use either method of calculation, consult your Air Quality Engineering representative.

Regardless of the method used to calculate the number of units needed to produce clean air, the physical conditions of the space to be cleaned may either limit this number or demand that more units be installed. For ambient air cleaning it is important to establish a uniform airflow pattern throughout the entire space. Limitations to the calculated sizing may be a lack of space for mounting areas or the number of units may interrupt normal building operation; that is, a unit cannot be mounted where an overhead crane will smash into it or where stand mountings seriously interrupt building traffic patterns. The number of units required by air volume and air changes per hour might need to be increased when the shape of a structure is such that effective capturing and air distribution is not possible according to the sizing calculations.

**LOCATION
AMBIENT CLEANING**

The air cleaner should be ceiling-mounted or suspended in the air near the center of the room or area to be cleaned. Air is drawn into the bottom of the F62B and discharged horizontally in four directions. Divide large rooms or buildings into sections and use an F62B in the center of each section.

The F62B should be installed above the contaminant source, as close to the contaminant source as practical. This is

especially important when the air cleaner is to be used for contaminant control where process heat lifts the contaminants. Hang the air cleaner as low as possible above the source. A flange or hood may be attached under the F62B to assist in capturing contaminants.

If the F62B is to be installed below the ceiling, make sure it is at least 14 in. [355.6 mm] from the ceiling. This is necessary to reduce staining of the ceiling by lingering smoky air. When the air cleaner is right against the ceiling, the air at the ceiling is moving too fast to deposit dirt particles. Over 14 in. [355.6 mm] from the ceiling, the effect is not a problem. But in the space between, slow moving, dirty air is drawn into the area of the discharge outlets and can stain a light colored ceiling.

The Coanda airflow of the F62B is independent of other air cleaners and room airflow patterns. However, the F62B should be installed so that it does not directly block established vents or duct grilles.

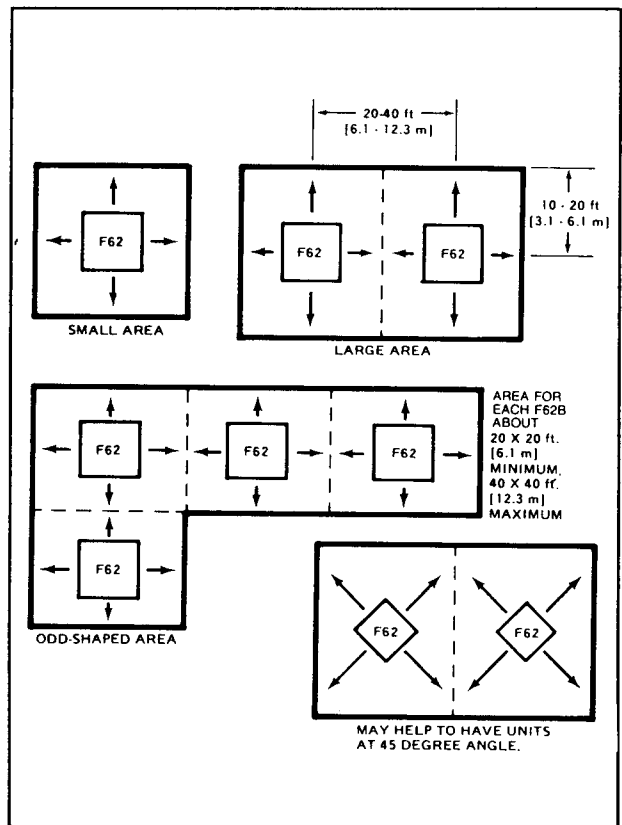


FIGURE 2 - MOUNT THE F62B IN THE CENTER OF THE AREA TO BE CLEANED

The basic principle of air cleaner location is to keep the F62B air cleaner out in the room, but generally close to the contaminant generation source. Don't "starve" it against the wall. The air cleaners must also be close enough to create air mixing between units; too few air cleaners for a given area can also leave areas of air stratification.

INSTALLATION

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check that the ratings given in the instructions and on the product are suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

CAUTION

1. Connect power source after mounting air cleaner to prevent electrical shock and equipment damage.
2. Motor is equipped with automatic thermal overload. Should motor become overloaded it will de-energize. However, it automatically energizes after sufficient cooling time (several minutes to an hour). Therefore, be sure to turn off air cleaner before servicing.
3. If air cleaner must be energized for electrical check, be extremely careful near moving parts.

UNPACKING

All components of the F62B are assembled and packed in one box. Check all air cleaner components carefully when unpacking. Remove all shipping cardboard and any cell retainers. Be sure to inspect all packing materials before discarding them.

CEILING MOUNTING

The mounting holes in the F62B are spaced 27 x 29-1/2 inches [685.8 x 749.3 mm] between centers in both directions. This makes it easy to fasten the air cleaner directly to the ceiling framework with 3/8-16 UNC bolts or threaded rods (obtain locally). Leave space for the power connection to run between the top of F62B and ceiling.

Be sure that you select a strong structural part of the ceiling. Do not fasten the F62B to a false ceiling or to plaster or plasterboard. In some cases, it may be necessary to construct some type of framing strong enough to support the weight of the F62B.

The F62B may also be mounted using 3/8-16 UNC threaded steel rods available in many hardware stores. Four steel rods will be required.

WIRING

All wiring must comply with applicable codes and ordinances. Wire the F62B using the junction box and conduit as indicated in Figures 3 & 4. The power source must be compatible with model ordered.

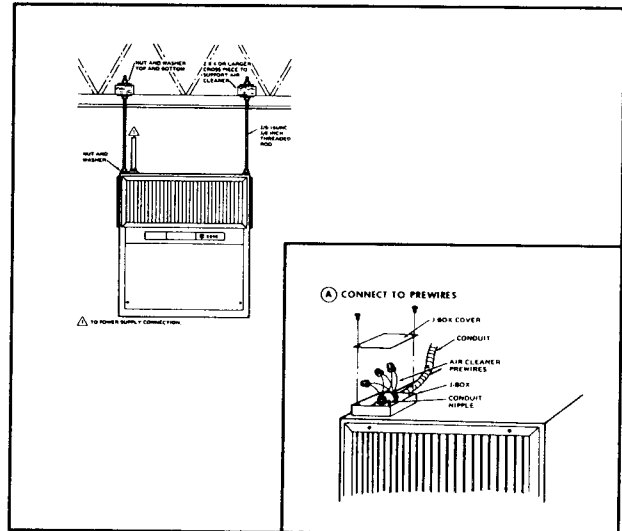


FIGURE 3 - F62B CEILING MOUNTING AND WIRING

It is recommended that No. 14 wire be used to complete the wiring from the junction box to the external power source. However, be certain to comply with local codes. A green wire lead is provided in the wiring box for a grounding connection. (Figures 3 & 4.) Proper grounding of this device is mandatory for proper operation and safety.

Connect power supply using method below:

1. Attach junction box (J-box not included) to conduit nipple on top of air cleaner with nut (Figure 3).
2. Run conduit from power supply to J-box. Fish wires to J-box.
3. Connect leadwires with solderless connectors. See Figure 4. Attach cover to J-box.

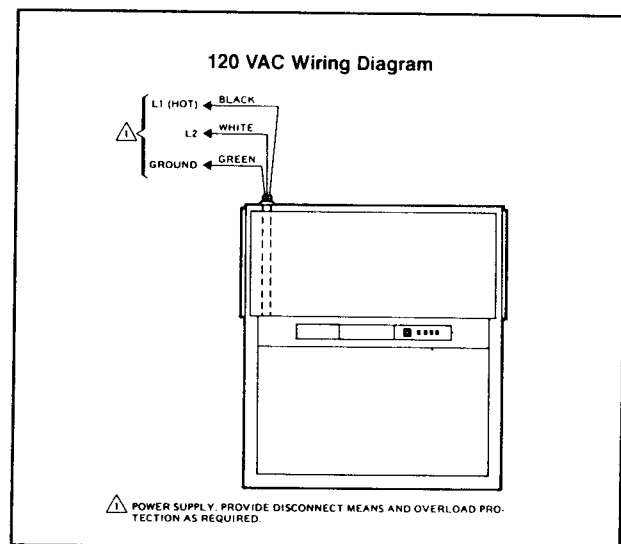


FIGURE 4 - WIRING HOOKUP TO F62B AIR CLEANER

OPERATION AND CHECKOUT

CHECKOUT

Before operating the F62B, check out the installation using the following procedures:

1. Observe that the air cleaner is oriented for good air circulation where it will not interfere with personnel and material traffic. Keep out of fire lanes and away from overhead cranes.
2. Note that the access door can be easily opened.
3. Check that the F62B is securely mounted overhead.

4. Check that the electronic cells are correctly oriented; the airflow arrows are pointing toward the fan and the handles are near the access door.

5. Observe that the prefilter and postfilter screens are properly in place.

6. Adjust discharge grille to direct airflow as desired.

7. Clean up the inside of the cabinet, the outside of the cabinet, and the installation area.

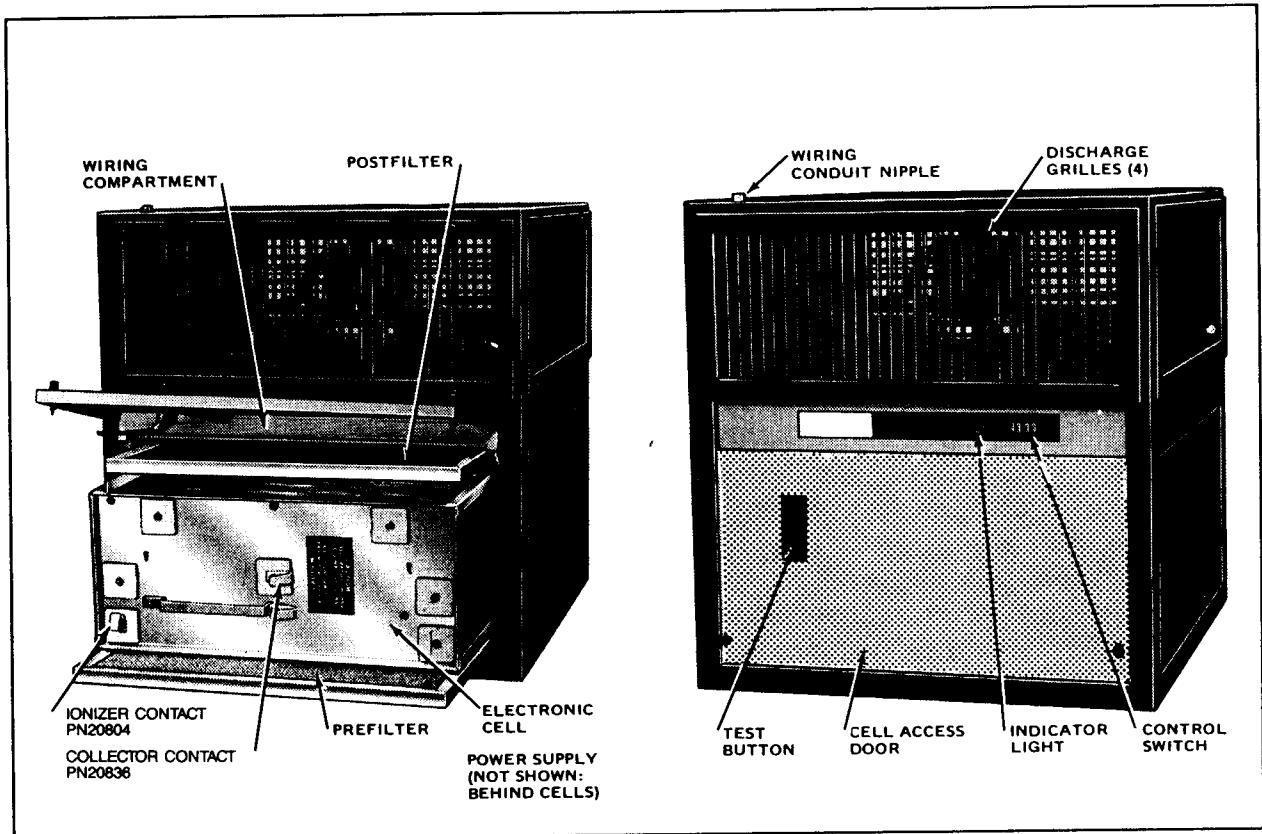


FIGURE 5 - F62B COMPONENTS

OPERATION

When the electronic air cleaner is energized, the fan produces an airflow velocity which conveys contaminated air into the air cleaner inlet. Particles that are too small to be caught by the prefilter screen are given an intense electrical charge in the ionizing section of the electronic cell. As the air carries these charged particles into the collecting section of the electronic cell, they are hurled against metal plates by the force of a powerful electrical field. These particles cling to the metal plates and the air passes through a postfilter screen, the fan compartment, and re-enters the building space as cleaned air.

Start up the air cleaner with the access door properly closed. Turn air cleaner on by pressing control switch for LOW, MED, or HIGH fan speed. Check for the following:

1. The fan should be providing a strong discharge.
2. The performance indicator light should be on when the fan is running.
3. Opening the access door should stop the fan and turn off the performance indicator light. Do not place a ladder against the air cleaner when it is mounted overhead in order to gain access to the air cleaner interior.

NOTE: If the F62B does not appear to operate correctly, refer to ELECTRICAL TROUBLESHOOTING SECTION.

SERVICE

CLEANING THE ELECTRONIC AIR CLEANER

The F62B is used to remove a variety of contaminants from the air. In the process of cleaning the air, however, parts of the air cleaner will become dirty and the cleaning efficiency will be lowered.

In order to maintain a high standard of reliability and efficiency, it is necessary for the F62B to receive periodic maintenance. Periodic maintenance means cleaning the collector cells and inspecting the electronic air cleaner, both visibly and with instruments. Service will be required if the air cleaner seems damaged or appears to be performing at substandard efficiency.

Air Quality Engineering, Inc. recommends regular cleaning and the use of an alkaline detergent solution. The exact scheduling is a matter of experience, since each air cleaning situation varies. Actual experience may dictate a greater or lesser period between cleanings.

If, because of excessive buildup of captured contaminants, the alkaline detergent solution proves inadequate, the use of physical force (such as high pressure air, water, or steam) or an acid detergent solution may be required.

CAUTION

1. Be extremely careful when working with F62B cells and filters. The edges of the cells and filters, and the collection plates and ionizing wires of the cell may be sharp.
2. When cleaning the cells and filters, be sure to wear appropriate protective gear, especially goggles and gloves. Skin contact with either alkaline or acid detergent solution should be avoided.

REMOVING THE ELECTRONIC CELLS AND PRE/POST FILTERS

Before the electronic cells and pre/post filters can be cleaned, they must be removed from the F62B. Be careful NOT to place a ladder or other heavy item against the F62B unit, cells or pre/post filters. Electronic air cleaners and their components are susceptible to damage.

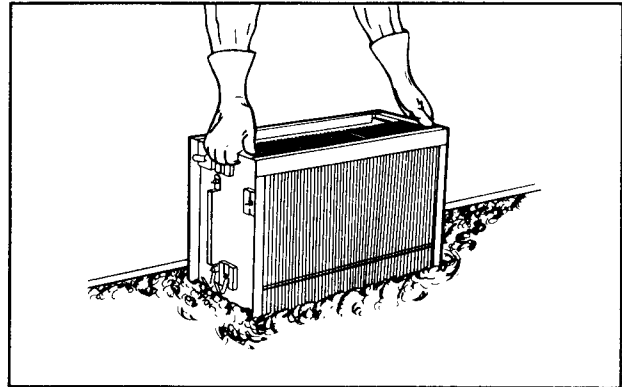
CLEANING THE PRE/POST FILTERS

The pre/post filters on an F62B do require cleaning. The procedure is simple. Remove the pre/post filter and shake the accumulated contaminants from it. If this does not seem adequate, a vacuum can be used, or the pre/post filter can be soaked in the alkaline detergent solution. DO NOT soak the pre/post filter in an acid detergent solution. Physical force methods could also harm the pre/post filters.

THE ALKALINE DETERGENT SOLUTION CLEANING METHOD

NOTE: Be careful to avoid prolonged skin contact with the solution. DO NOT SPLASH SOLUTION IN THE EYES.

1. Provide a container large enough to hold the electronic cells to be cleaned.
2. Fill the container sufficiently with detergent and hot water to cover the electronic cell.
3. Soak the cells in the solution for about 15 minutes. The solution should be agitated in some way, such as sloshing the cells or stirring the solution.



WHEN SOAKING THE CELL, AGITATE THE WATER

4. Remove the cells from the alkaline cleaning solution and place them in another container of hot water (150°F to 170°F [66°C to 77°C]) for rinsing. The cells should be rinsed for 5 to 10 minutes.
5. Remove the cells from the rinse water. Allow the cells to drain and dry before energizing them.

The collection plates of the electronic cells **MUST** be checked for any detergent residue. If there is any residue remaining, rinse it off, since it may affect the efficiency of the electronic air cleaner.

THE ACID DETERGENT METHOD

Air Quality Engineering, Inc. does sell an acid detergent, however, acid cleaners should be used only after alkaline detergents have proven inadequate. Acid cleaners have been tested and proven to be corrosive. They will decrease the life of cells. If an acid detergent solution is used, be sure to use a weak mixture. DO NOT place pre/post filters in an acid detergent solution.

IMPORTANT

Acid cleaners MUST be properly handled. Refer to the label on the acid detergent used. This means wearing protective clothing, rubber gloves and goggles, and reading all precautions on the label of the detergent used. If contact is made in the eyes, flush with large amounts of water and consult a physician.