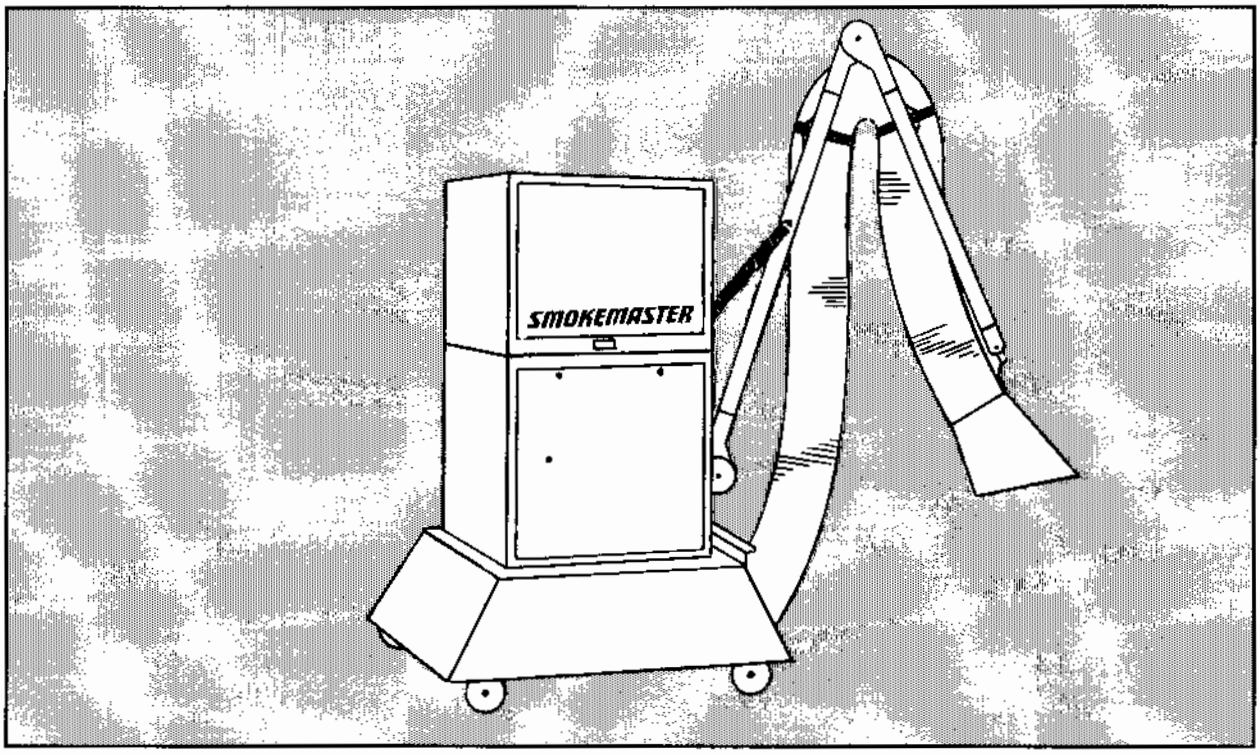
SMOKEMASTER ®
MODEL F33V

INDUSTRIAL ROLL-AROUND ELECTRONIC AIR CLEANER



THE F33V IS A SELF-CONTAINED ELECTRONIC AIR CLEANER FOR USE IN SOURCE CAPTURE APPLICATIONS IN INDUSTRY. THE AIR CLEANER IS DESIGNED FOR PORTABLE OPERATION ON ITS OWN CASTERS, ALLOWING THE AIR CLEANER TO BE MOVED TO THE SOURCE OF CONTAMINATION.

- Permanently lubricated ball bearing, one horsepower motor requires no maintenance.
- Unique roll-around feature allows movement of the air cleaner to the source of contamination.
- Performance indicator light gives operation status at a glance.
- Electronic cell, prefilter and postfilter are easily removed for cleaning.
- Solid state, high voltage power supply uses voltage doubler to provide increased ionization voltage.
- Built-in safety switches prevent operation when cell access doors are open.
- Blower constructed with sealed bearings for reduced maintenance.

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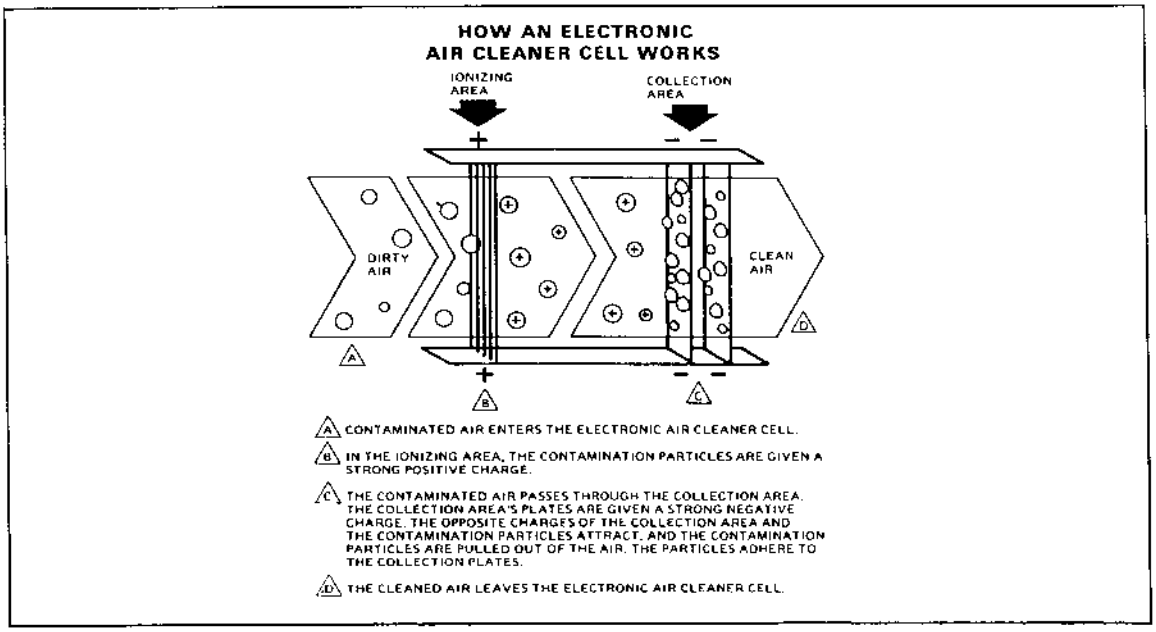
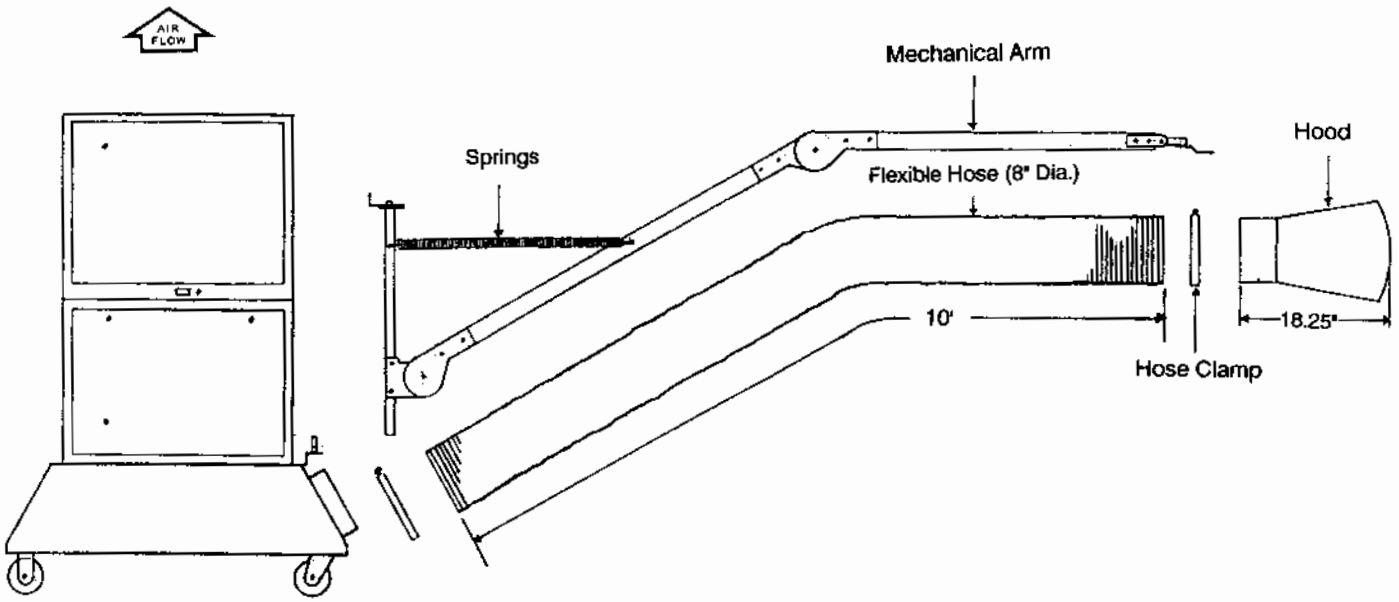
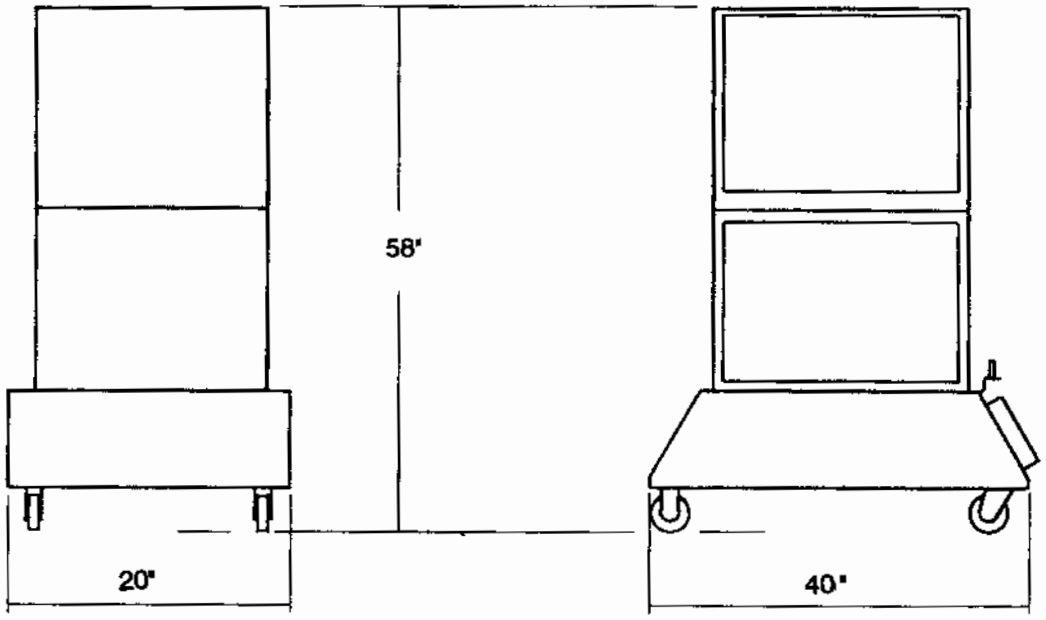
HOW AIRBORNE CONTAMINATION IS REMOVED ELECTRONICALLY

The industrial electronic air cleaner makes use of ELECTROSTATIC EFFECTS. This means that the industrial electronic air cleaner makes use of the fact that oppositely charged objects attract each other. As air passes through the ionizing part of the air cleaner, the particles in it are given a strong positive charge. The next area of the air cleaner, or collection area, has a number of plates that have a strong negative charge. The particles are removed from the air by being drawn to the collection plates.







METRIC CONVERSION	FORMULA
Ins. to mm	Ins. x 25.4
Lbs. to kgs.	Lbs. x .455
Ins. w.g. to kPa	Ins. w.g. x .2488
CFM to m^3/h	CFM x 1.6992
Ft^2 to m^2	Ft^2 x .0929

FIGURE 1 - F33V DIMENSIONS

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	F33V1003	F33V1011
FINISH	Industrial gray textured, baked enamel	Industrial gray textured, baked enamel
MOTOR	1 HP, TEFC, ball bearing, thermally protected	1 HP, TEFC, ball bearing, thermally protected
CAPACITY	1250 CFM	1250 CFM
ELECTRICAL RATINGS	120 Vac 60 Hz 14 amps 1 phase	208-240 Vac 60 Hz 7 amps 1 phase
INSTALLED WEIGHT	269.5 lbs.	269.5 lbs.
SHIPPING WEIGHT	319 lbs.	319 lbs.
TEMPERATURE (OPERATING)	40°F to 125°F	40°F to 125°F
CELL WEIGHT	33 lbs.	33 lbs.
CELL PLATE AREA	109 sq. ft.	109 sq. ft.

Dimensions--See Fig. 1, Page 3.

This unit is to be used exclusively for source control in industrial applications in California.

PLANNING THE INSTALLATION

WARNING

The F33V industrial roll-around electronic air cleaner is not explosion proof. It must not be located or used where there is any danger of gas, vapor, or dust explosion.

INTRODUCTION

Clean air is the subject of numerous laws and regulations. Typical requirements in the United States are those put out by the Occupational Safety and Health Administration (OSHA). Private groups, such as the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), have also published numerous recommendations.

Normally, clean air is defined in regulations and recommendations as air having a limited amount of contaminant in it, commonly expressed as parts per million, or milligrams per cubic meter. Approved counteractions are intended to lower or eliminate the amount of contaminants in the air. One of the more common methods of achieving this goal is through the use of electronic air cleaners.

At no time should an electronic air cleaner be placed where there is a potential for explosion due to the presence of explosive dusts, gases, or vapors. Contact the nearest Smokemaster representative for assistance in determining the correct application of an electronic air cleaner.

SIZING

Sizing is the process of determining the amount of air cleaning necessary in any given application. Since the F33V is a source capture air cleaner, the sizing process is relatively simple--provide one source capture hood per contaminant source.

LOCATION

For most efficient operation, the F33V source capture hood should be placed as close to the contaminant source as possible. The maximum distance between the contaminant producer and the source capture hood should not exceed 18 in. Therefore, in locating the F33V, be sure that the mechanical arm is capable of extending the source capture hood to within 18 inches of the contaminant source.

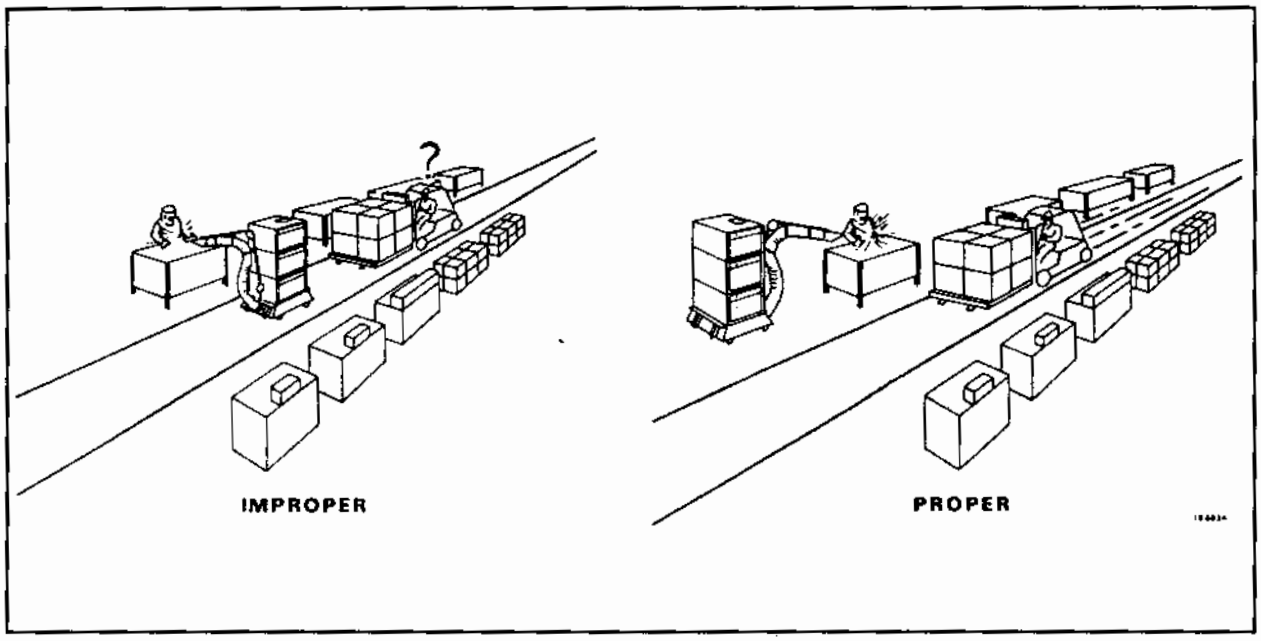


FIGURE 2 - EXAMPLES OF PROPER AND IMPROPER F33V LOCATION

ASSEMBLY

WHEN ASSEMBLING THIS PRODUCT

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.

2. Check the electrical ratings given on the air cleaner schematic to the power source to insure compatability.

3. After assembly is complete, check out the product operation as provided in these instructions.

CAUTION

1. Do NOT connect the power source until the air cleaner is completely assembled.
2. If the air cleaner must be turned on for an electrical check, be extremely careful in avoiding electrical shock. Also, take care to avoid the air cleaner's moving parts.

UNPACKING

The F33V is shipped completely assembled except for the mechanical arm. The mechanical arm assembly is packaged in a separate box. Remove all shipping cardboard and banding. Be sure to inspect the packaging material before discarding it.

ASSEMBLING THE F33V

Tools needed:

1. Standard screw driver
2. Phillips screw driver
3. 7/16" wrench

Step 1

Remove the two phillips screws and lock washers from the side of the F33V. Set the support tube on the arm assembly onto the 7/8" pin on the cart. Fasten the support bracket of the arm to the F33V cabinet using the two phillips 1/4 - 20 screws and lock washers.

Step 2

Mount the hood to the end swivel bracket of the arm using the two 1/4 - 20 hex head bolts and 1/4 - 20 nuts.

Step 3

Attach the two counterbalance springs from the studs on the 1" x 2" aluminum tube to the studs on the 1" square support tube.

Step 4

Slip hose and clamp over the opening flange on the roll-around cart. Slip end of hose and second clamp over the hood flange 3" to 4" and tighten clamp.

Step 5

Tie hose to the mechanical arm using the two nylon belts provided.

WIRING

The F33V has no special wiring requirements. It comes equipped with a 10' power cord and plug. The power source must be compatible with the voltage and frequency of the F33V. The rating on the F33V is located on the schematic on the inside of the cell access door. Route the power cord so that it is out of the way of the building's occupants. Do not use an extension cord.

CHECKOUT AND OPERATION

CHECKOUT

1. Check that the prefilter, postfilter, and cell are correctly oriented; see air flow arrows on the cell and filters.

2. Check that tension on the arm joints is correct so that the arm maintains proper position. If not, readjust the tension adjustment screws (two adjustment screws).

3. Be sure that the source capture hood can be placed within 18" of the contamination.

4. Be sure the air cleaner is not in the way of people, equipment, or material movement.

5. Do not place the air cleaner in fire lanes, or where it may impede emergency movement.

OPERATION

When the electronic air cleaner is energized, the blower produces an airflow velocity which draws the contaminated air into the source capture hood. Particles that are too small to be caught by the prefilter are given an intense electrical charge in the ionizing section of the electronic cell; they are hurled against the metal plates by the force of a powerful electrical field. These particles cling to the metal plates and the air passes through a post filter, the blower compartment, and reenters the building space as cleaned air.

Start up the air cleaner with the cell access door properly closed. Put the rocker switch in the "on "position. Check for the following:

1. The blower should be providing a strong discharge air flow out the top of the air cleaner.

2. The performance indicator light on the top of the air cleaner should be on when the blower is on.

3. Push the test button to momentarily short out the collector section of the electronic cell Arcing indicates that the cell is properly energized. NOTE: Arcing produces a snapping noise which should be heard every time the test button is pushed.

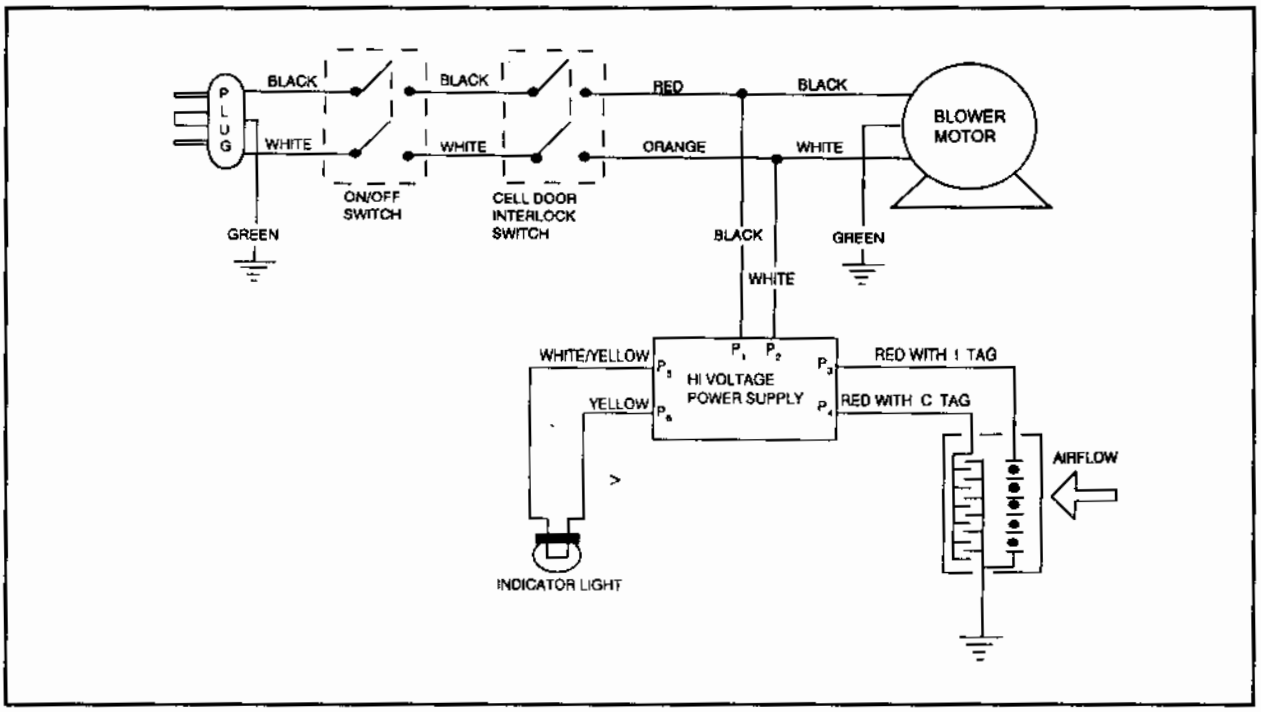


FIGURE 3 - SCHEMATIC FOR F33V AIR CLEANER

SERVICE

CLEANING THE ELECTRONIC AIR CLEANER
The F33V 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 F33V to receive periodic maintenance. Periodic maintenance means cleaning the electronic cell 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 the alkaline detergent solution proves inadequate because of excessive buildup of captured contaminants, the use of physical force (such as high pressure air, water, or steam) or an acid detergent solution may be required. See Page 9 instructions.

CAUTION

1. Be extremely careful when working with the F33V cell and filters. The edges of the cell, the filters, the collection plates, and the ionizing wires of the cell may be sharp.

2. When cleaning the cell 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.

3. Electronic air cleaners and their components are susceptible to damage. Take care when working with them to avoid equipment damage.

CLEANING THE PRE/POST FILTERS
Remove the pre/post filters, and shake out or vacuum the accumulated contaminants. The pre/post filters can also be soaked in the alkaline detergent solution, or use a high-pressure water, air, or steam cleaning on them.

NOTE: If the pre/post filters need washing, wash them after the cell has been washed. The lint residue from the pre/post filters will contaminate the wash water and can deposit inside the cell. Dispose of the wash water.

THE ALKALINE DETERGENT SOLUTION CLEANING METHOD

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

1. Provide a container large enough to hold the electronic cell to be cleaned.
2. Fill the container sufficiently with detergent and hot water to cover the electronic cell.
3. Soak the cell in the solution for about 15 minutes. The solution should be agitated in some way such as sloshing the cell or stirring the solution.
4. Remove the cell from the alkaline cleaning solution and place it in another container of hot water (150°F to 170°F [66°C to 77°C]) for rinsing. The cell should be rinsed for 5 to 10 minutes.

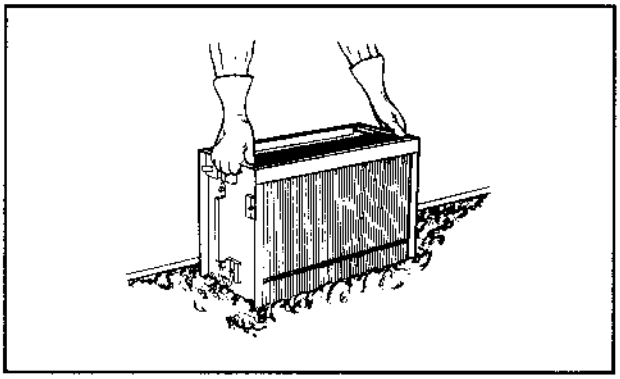


FIGURE 4 - WHEN SOAKING THE CELL, AGITATE THE WATER

5. Remove the cell from the rinse water. Allow the cell to drain and dry before energizing it.

STAINING
Occasionally after the soaking process, the cell or pre/post filters may seem stained. If the stain is black or very dark, it is probably detergent residue and should be rinsed off at once. Detergent residue may affect the electronic air cleaner's efficiency.

If yellowing appears, it is probably staining. The acid detergent will remove the yellowing. However, it should be noted that the yellowing does not affect air cleaner's efficiency.

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 detergents have been tested and proven to be corrosive. They will decrease the life of the cell. 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 detergents *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.

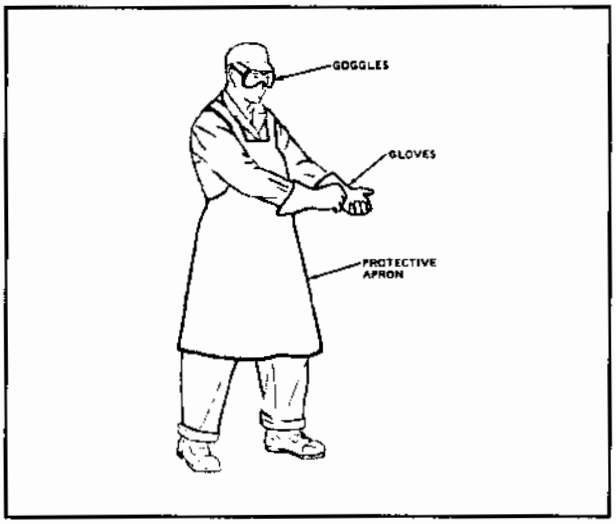


FIGURE 5 - BE SURE TO WEAR THE PROPER EQUIPMENT FOR WORKING WITH DETERGENT SOLUTIONS

NOTE: Be sure to provide adequate ventilation when using acid detergents.

After the cleaning process is completed, the soak water must be neutralized according to the U.S. Environmental Protection Agency, and state and local pollution control guidelines and requirements. Soda ash is one neutralizer.

1. Use a polyethylene or Type 316 stainless steel container large enough to hold the electronic cell. Other types of containers should be avoided since the acid detergent may react with the container material.

2. Following the instructions for temperature of the water and amount of acid detergent used, prepare the cleaning solution. The amount of detergent and the soaking time will be determined by the amount of contaminants captured by the cell and the difficulty encountered in removing the buildup. The usual mix for acid solution is 2 oz. of acid detergent to 1 gal. of water (59.2 ML to 3.8 L).

NOTE: It is recommended that acid cleaning of any electronic air cleaner cell containing metal oxide contaminants be performed with room temperature or cold water. NEVER add acid detergent to hot water.

3. Be sure to observe the cleaning operation when the cell is placed in the acid detergent solution. The amount of acid detergent should be reduced if less than 30 seconds pass before large amounts of bubbles are released. The cell should NOT remain in the acid detergent solution more than 30 seconds after vigorous reaction begins. It is a good idea to remove the cell and inspect the cleaning action of the acid detergent solution. If contaminant deposits remain, the cell can be returned to the solution.

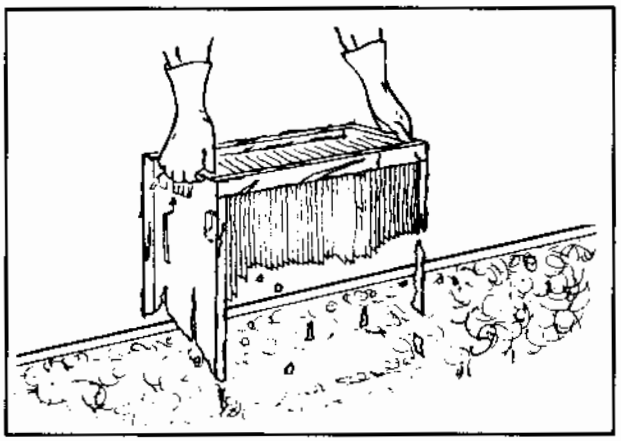


FIGURE 6 - TOO MUCH TIME IN ACID SOLUTION WILL HARM THE ELECTRONIC CELL

IMPORTANT

After the contaminants are removed by the acid detergent solution, any further time the cell remains in the solution serves only to decrease its life.

4. After removing the cell from the acid detergent solution, rinse it thoroughly for at least 5 minutes.

5. Allow the cell to drain and dry before energizing it.

PHYSICAL FORCE METHODS

The following physical force methods may be needed to clean some contaminants from the F33 cell. See Figure 7. DO NOT use physical force methods on the filter screens.

1. <u>High Pressure Air or Water</u>

Either of these methods should prove to be adequate. However, care should be taken to avoid damage to the electronic cell.

NOTE: Using any caustic detergent with high pressure is dangerous.

If a detergent is required with the high pressure water, an alkaline detergent should be used if allowed by the high pressure equipment manufacturer. DO NOT use an acid detergent except when allowed by the equipment manufacturer.

2. <u>Steam</u>

Extreme care must be exercised when steam cleaning to avoid warping or bending the collector plates of the electronic cell or any other damage to the cell. Remember that the cell will be hot after steam cleaning and that care must be taken to avoid burns.

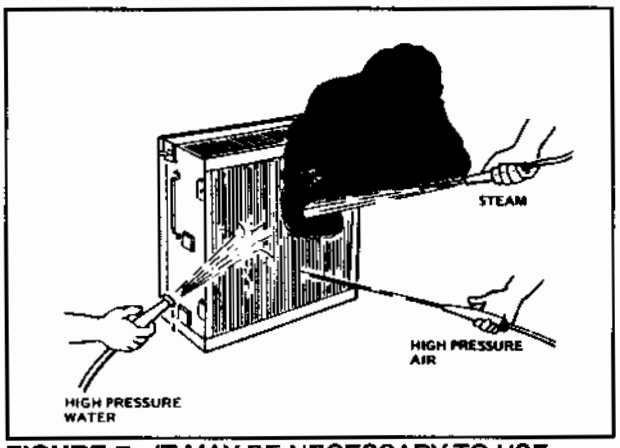


FIGURE 7 - IT MAY BE NECESSARY TO USE PHYSICAL FORCE METHODS TO REMOVE COLLECTED CONTAMINANTS

CONTAMINANTS AND CLEANING PROCEDURES

The following is a selective listing of contaminants captured by electronic air cleaners. This listing gives the appropriate cleaning procedure for various types of contaminants found on electronic air cleaner collector plates and prefilters.

CONTAMINANT	CLEANING PROCEDURE[a]
Animal Hair	Alkaline Solution
Cabosil	Alkaline Solution High Pressure Air
Carbon (carbon black, soot, lamp black, graphite, charcoal dust, etc.)	Alkaline Solution High Pressure Air High Pressure Water
Cooking Oils Veg. (soybean, peanut, etc.) Animal (lard, butter, etc.)	Alkaline Solution Steam
Cotton Fibers	Alkaline Solution
Dust (silicon dioxide and calcium carbonate and mineral type compounds)	Alkaline Solution
Flour Dust	Alkaline Solution
Linseed Oil	Alkaline Solution
Lubricants	Alkaline Solution High Pressure Water
Metal Oxides	Acid Solution
Metals	Acid Solution
Mineral Oil (petroleum base, diesters, and silicone)	Alkaline Solution High Pressure Water
Paper Products	Alkaline Solution
Paint Oil Base Water Base	 Alkaline Solution Alkaline Solution
Pine Tar Resins	Alkaline Solution Steam
Polyethylene	Alkaline Solution
Polyphenyleneoxide	Alkaline Solution
Polypropylene	Alkaline Solution

(continued next column)

CONTAMINANT	CLEANING PROCEDURE[a]
Rubber Molding Accelerators	Alkaline Solution
Soaps	Alkaline Solution
Sodium Chloride	Alkaline Solution
Sugar (includes molasses)	Alkaline Solution Steam
Talc	High Pressure Air Alkaline Solution
Tobacco Tars and Smoke	Alkaline Solution
Varnishes	Alkaline Solution
Waxes (all types)	Alkaline Solution Steam
Welding Fumes	Acid Solution
Wood Products	Alkaline Solution

[a]Cleaning procedures are listed in order of preference.

REPLACING THE CELLS

Before replacing the electronic cells, be sure to visually check the electronic cell for bent or damaged collector plates or broken ionizing wires.

Bent or warped collector plates may be bent back into shape.

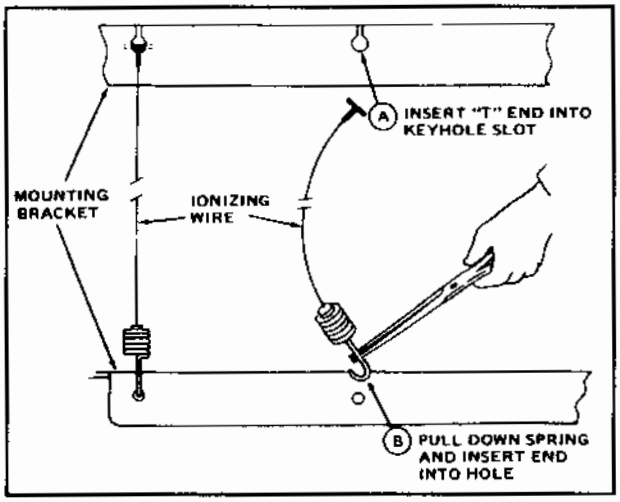


FIGURE 8 - REPLACING IONIZING WIRES

Broken or damaged ionizing wires must be replaced for top efficiency. Remove all parts of the broken or damaged wire. Replacement wires come cut to length and ready for installation. Remember, when replacing the ionizing wires, to:

1. Use care to avoid damage to the spring connector or other parts of the cell during installation.
2. Hook "T" end of the ionizing wire in keyhole slot at one end of the cell.
3. Pull down spring with a needlenose pliers and insert hook into hole.

Before replacing the cell, it might be a good idea to check it for a short circuit. This is done by using an ohmmeter to check the resistance between the frame of the cell and both the ionizer and collector contacts. In each case, the resistance should be infinite.

Note that the electronic air cleaner has a cell key preventing the electronic cell from being replaced the wrong way. If the cell seems to be stuck when it is replaced, or resists, check to be sure that the cell is being replaced the right way. If excessive force is used, the cell or unit could be damaged.

If cells are placed into the air cleaner unit while wet, the indicator light will not come on until the cells are dry.

TROUBLESHOOTING

CAUTION

1. During troubleshooting, dangerous line voltage circuits are exposed. Use extreme care to avoid electrical shock or equipment damage.
2. Although not normally lethal, the high voltage output of the electronic air cleaner power supply can produce a painful shock. Use caution.
3. To prevent injuries from the motor and blower, always turn the electronic air cleaner off using the control switch before opening the access covers.
4. To insure against unintentional blower operation during troubleshooting, remove the blower drive belt. Beware of motor sheave rotation while conducting troubleshooting procedures.
5. DO NOT place any heavy object, such as a ladder, against the F33.

Most of the troubleshooting steps can be performed by observing the performance indicator light and by pushing the test button.

Troubleshooting can be done with only a few tools:
- Test Meter -- Simpson 248 Hi Voltage meter or equivalent.
- Neon test lamp for line voltage.
- Screwdrivers -- long shank with plastic or rubber handles.
- Needlenose or longnose pliers -- for replacing ionizing wires.

Before troubleshooting the F33, study the flow chart in Figure 9. The boxes in the chart describe actions to take when troubleshooting the F33. In between the boxes are possible responses of the F33 to these specific actions. Note that the flow chart branches into three problem areas:

1. Fan motor
2. Ionizer circuitry
3. Collector output voltage

To complete the troubleshooting procedure, read the following information which describes how to perform the actions called for in the boxes of the flow chart.

TROUBLESHOOTING PROCEDURE

The following procedure has been designed to speed troubleshooting and insure the quick detection and proper repair of any malfunction in the electronic air cleaner.

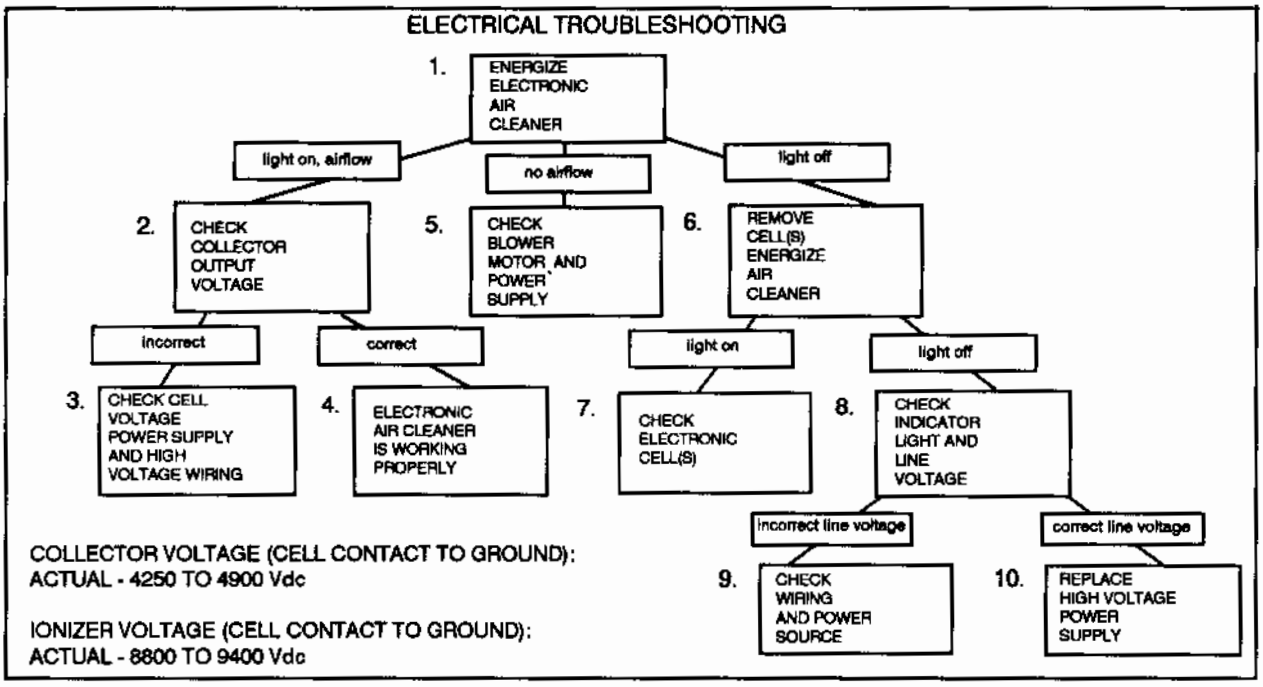


FIGURE 9 - F33 TROUBLESHOOTING FLOW CHART

DIAGNOSTIC CHECKS

1. ENERGIZE THE ELECTRONIC AIR CLEANER

a. Be sure the electronic cells are properly installed with the airflow arrow pointing toward the fan blower. The cells should be clean and dry. (Though wet cells may be placed in the air cleaner, it will not operate until the cells are dry.)

b. Be sure the filters are installed correctly.

c. Close the access door properly, and turn the air cleaner control switch ON.

d. Go to Step 2, if there is airflow and the light is ON.

e. Go to Step 5, if there is NO airflow.

f. Go to Step 6, if the light is OFF.

2. CHECK COLLECTOR OUTPUT VOLTAGE AND CELLS

Two Options:

Method 1

a. With air cleaner turned on, push test button to momentarily short out the collector section of the electronic cells.

b. Arcing (snapping noise) indicates that the electronic air cleaner is working properly.

c. If no arcing noise is heard go to Step 3.

Method 2

a. Open the access door to the electronic cells.

b. Actuate the interlock safety switch with the power switch on. The belt should be removed from the motor to stop airflow.

c. Using a voltmeter, measure the voltage from the collector contact to ground. See Figure 11.

d. Actual collector output voltage should be about 4600 Vdc. A voltage measurement taken with a meter could range from 3950 Vdc to 4800 Vdc.

e. Using a voltmeter, measure the voltage from the ionizer contact to ground. See Figure 11.

f. Actual ionizer output voltage should be about 9200 Vdc. A voltage measurement taken with a meter could range from 8400 Vdc to 9600 Vdc.

3. CHECK HIGH VOLTAGE OUTPUT AND POWER SUPPLY

a. Turn the electronic air cleaner OFF, and release the interlock safety switch. Bleed the electronic cells by placing a screwdriver across the ionzer contact to ground and the collector contact to ground. See Figure 11.

b. Remove the electronic cells and actuate the interlock safety switch with the power switch on. Removing the belt from the motor will stop airflow.

c. Using a voltmeter, measure the voltage from the collector contact to ground. See Figure 10.

d. Actual collector output voltage should be about 4700 Vdc. A voltage measurement taken with a meter could range from 4250 Vdc to 4900 Vdc.

e. Using a voltmeter, measure the voltage from the ionizer contact to ground. See Figure 11.

f. Actual ionizer output voltage should be about 9400 Vdc. A voltage measurement taken with a meter could range from 8600 Vdc to 9600 Vdc.

g. If the voltage measurements are correct, check the electronic cells as described in Step 7.

h. If the voltage measurements are incorrect, check the high voltage wiring to the power supply as detailed in Step 9.

4. ELECTRONIC AIR CLEANER IS WORKING PROPERLY

a. Release the actuated interlock safety switch.

b. Read the SERVICE section to find out how to clean the cells, if necessary.

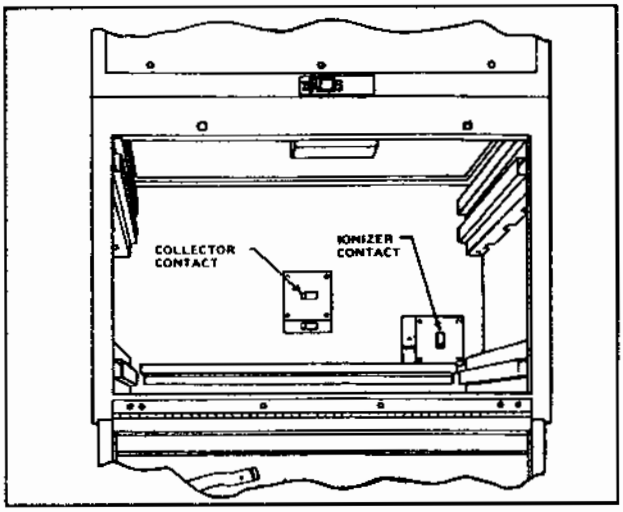


FIGURE 10 - MEASURING POINTS FOR INPUT VOLTAGES

5. CHECK BLOWER, MOTOR AND POWER SUPPLY

CAUTION

1. Be sure that the electronic air cleaner is turned OFF before connecting or disconnecting any component.
2. Dangerous line voltage circuits are exposed. Use care to avoid electrical shock or equipment damage.

a. Turn the electronic air cleaner OFF and open the access cover to the fan and motor.

b. Examine the motor for physical damage. Make sure the motor can rotate freely. Replace or repair worn out or damaged parts as necessary.

c. Actuate the interlock safety switch and measure the motor voltages.

d. If the voltage measured complies with the model requirements, check the motor capacitor, motor wiring, and fan motor.

6. REMOVE CELLS, ENERGIZE ELECTRONIC AIR CLEANER

a. Turn OFF the electronic air cleaner and open the access door to the electronic cells.

b. Bleed the electronic cells as in Step 3.a. Remove the electronic cells.

c. Close the access door and turn the electronic air cleaner ON.

7. CHECK ELECTRONIC CELL

a. Turn OFF the electronic air cleaner.

b. Visually inspect the electronic cell for bent collector plates. Bent collector plates may be straightened with a needlenose pliers. If the cell is damaged too badly, replace it.

c. Remove dirt accumulated on the insulators and on the ionizer and collector contact tabs. See Figure 11.

d. Make sure the cell contact tabs are making good contact with the air cleaner contacts.

e. Replace any broken or damaged ionizing wires (see SERVICE section).

f. Use an ohmmeter to check resistance between the outside frame of the electronic cell and both the ionizer and collector contacts. In both cases, the resistance should be infinite because it is an open circuit.

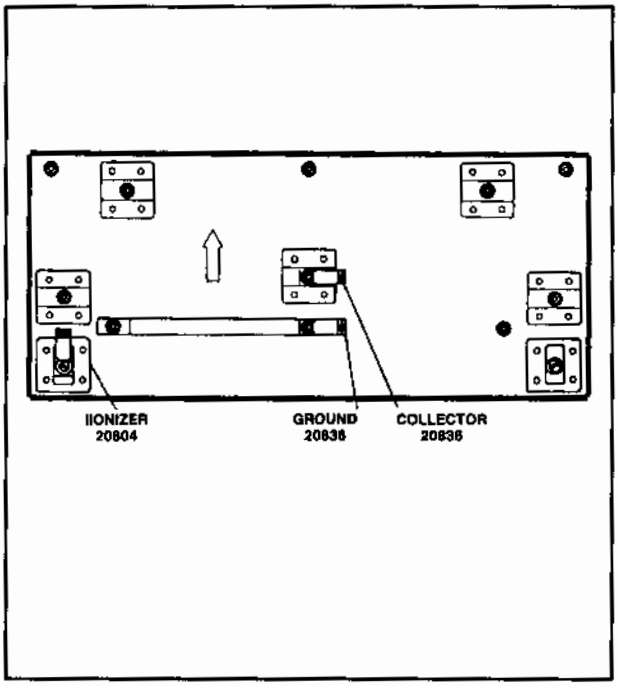


FIGURE 11 - CELL INSULATORS AND CONTACTS

8. CHECK INDICATOR LIGHT AND LINE VOLTAGE

a. Turn the electronic air cleaner OFF and remove blower access cover to gain access to the indicator light.

b. Actuate the interlock safety switch and turn the electronic air cleaner ON.

c. Use a voltmeter to measure the voltage across the indicator light terminals. If the voltage is about 120 Vac, replace the indicator light.

d. If the indicator light voltage is incorrect, use a voltmeter to check the power supply input voltage at terminals P_1 and P_2 on the power supply.

e. If the power supply input voltage is INCORRECT, go to Step 9.

f. If the power supply input voltage is CORRECT, the power supply is bad; go to Step 10.

9. CHECK WIRING AND POWER SOURCE

a. Place voltmeter probes across terminals L_1 and L_2. If no voltage, then check power source wiring, fuses, and circuit breakers.

b. If there is voltage at terminals L_1 and L_2, then check the wiring from L_1 and L_2 to the ON - OFF and interlock switches.

10. REPLACEMENT OF HIGH VOLTAGE POWER SUPPLY

a. Turn OFF the electronic air cleaner; disconnect power at the fuse or circuit breaker.

b. Remove power supply access cover.

c. Unplug the 6 wires from the power supply.

d. Remove the 4 screws holding the power supply.

e. Install the new power supply and 4 screws.

f. Reconnect the 6 wires from the air cleaner to the power supply.

Black to P_1
White to P_2
Yellow to P_5
Yellow to P_6
Pink with C tag to P_4
Pink with I tag to P_3

g. Replace the blower cover.

h. Turn electronic air cleaner ON. Check that the indicator light is ON and the test button is working.

PARTS LIST

NO.	DESCRIPTION	PART NO.	
		F33V1003	F33V1011
1	On/Off Switch	10140	10140
2	Electronic Cell	38003	38003
3	Motor TEFC 1 HP	40013	40013
4	Interlock Switch	10079	10079
5	Interlock Switch w/Blade	10176	10176
6	Exhaust Grille	30530	30530
7	Blower	37020	37020
8	Belt	30234	30234
9	Indicator Light	10097	10097
10	Power Supply	07098	07100
11	Pre/Post Filter (24.1" x 13.4" x1")	41075	41075
12	Motor Sheave	30557	30557
13	Blower Sheave	30019	30019
14	Hood	05356	05356
15	Hose, 8" diameter x 10'	30021	30021
16	Mechanical Arm	05391	05391
17	Strap	30513	30513
18	Casters, Swivel	30041	30041
19	Hose Clamp	30033	30033
20	Springs	30512	30512
21	Acid Detergent	45013	45013
22	Polyethylene Industrial Wash Container with Lid	30183	30183
23	Ionizing Wire	38005	38005

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CERTIFICATE OF WARRANTY
3 YEAR LIMITED WARRANTY

Air Quality Engineering, Inc. warrants to the original purchaser, subject to the conditions below, that should the product covered by this warranty ("Product") fail to perform by reason of improper workmanship or material, Air Quality Engineering, Inc. ("AQE") will, during the period of three (3) years from the date of original purchase, either, (i) replace the Product or (ii) provide all necessary parts to repair the Product, without charge. The decision to replace the Product, or the necessary parts, shall rest solely with AQE. This 3 year limited warranty does not apply to aluminum pre/postfilters. Air Quality Engineering, Inc., will replace without charge, the aluminum pre/postfilters during the period of (thirty) 30 days from the date of original purchase, if the aluminum pre/postfilters fail to perform by reason of improper workmanship or material; this warranty is valid only under the following conditions:

CONDITIONS

1. REGISTRATION: The purchaser's completion and mailing of the Registration Card to Air Quality Engineering, Inc., 3340 Winpark Drive, Minneapolis, Minnesota, 55427, within 30 days of original purchase.

2. AUTHORIZATION: The purchaser will contact Air Quality Engineering, Inc., (612) 544-4426, for authorization and returned goods number (RTA) and shipping address. AQE will direct the purchaser to either return the necessary parts, or the Product, at AQE's option.

3. PROPER DELIVERY: The shipping, freight prepaid, or delivery of the parts or the Product, to Air Quality Engineering, Inc., in either its original carton, or in a carton assuring similar protection of the Product, with returned goods number (RTA) clearly displayed on outside of carton.

4. UNAUTHORIZED REPAIR: A showing by the original purchaser that the Product has not been altered, repaired or serviced by anyone other than an authorized service technician using genuine AQE parts.

5. UNAUTHORIZED PARTS: A showing by the original purchaser that the Product has had only genuine Air Quality Engineering, Inc. parts and filters used in its operation and maintenance.

6. SERIAL NUMBER INTACT: A showing by the original purchaser that the Serial Number has not been altered or removed.

7. MISUSE: A showing by the original purchaser that the Product has not been involved in an accident, freight damaged, misused, abused or operated contrary to the instructions contained in the Owner's Manual.

Air Quality Engineering, Inc.'s sole responsibility shall be to repair or replace the Product within the terms stated above. AQE shall not be liable for any consequential damages resulting from any breach of warranty, express or implied, applicable to this product. Some states do not allow the exclusion or limitation of consequential damages, so this limitation may not apply to you.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED BEYOND THE THREE YEAR DURATION OF THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the abvove limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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