



# OPERATION & MAINTENANCE MANUAL

## MODEL EPMR1000

### MOBILE PARTICULATE REMOVAL SYSTEM

### ELECTRONIC AIR CLEANER

*IMPORTANT: PLEASE READ MANUAL BEFORE OPERATING UNIT*



FOR TECHNICAL SUPPORT AND REPLACEMENT FILTERS CALL: 1-866-998-9909  
[sales@enviropurefx.com](mailto:sales@enviropurefx.com)

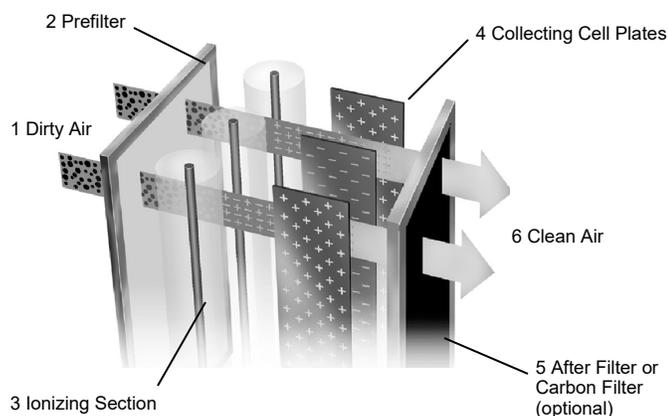
## INTRODUCTION

### DESCRIPTION

The EPFX1000 is a self-contained Electronic Air Cleaner comprised of a two-part collecting cell, an electrical compartment, two blower and motor assemblies, complete cabinet housing, a flex arm (direct capture system), prefilter and an after filter or optional carbon filter.

### HOW IT WORKS

The EPFX1000 Sourcer operates on the principle of "Electrostatic Precipitation". Airborne pollutants are drawn in through the direct capture arm and first pass through to the prefilter, where large particles are caught. Next, smaller particles move to a two-stage electrostatic collecting cell where they are given a powerful positive charge by the ionizing wires. Charged particles then move into the collecting area where they are attracted to a series of alternately charged and grounded plates. Pollutants are held on the plates like a magnet until washed away during cleaning. Clean air is then dispersed from the top of the unit.



### Electrostatic Precipitation

### MAJOR COMPONENTS

#### CABINET

The cabinet is built of heavy gauge steel finished in a scratch-resistant electrostatic powder coated finish. There is an access door (interlocked) on the unit to service the ionizer, cell and filters. There is a separate removable panel to access the motor/blower section.

#### PREFILTER

The washable prefilter, measuring 16 x 20 in. (40.6 x 50.8 cm), is constructed of multi-layers of aluminum mesh for maximum filtration of large particles.

#### AFTER FILTER

The after filter, measuring 16 x 20 in. (40.6 x 50.8 cm), is constructed of multi-layers of aluminum mesh for filtration of agglomerated dust, and to maintain back pressure.

#### COLLECTING CELL

The two part collecting cell includes support brackets, collecting plates, support tubing, insulators, end plates, spring contact, carrying handles, and separate ionizing section (ionizing wires, ionizing wire support).

#### MOTOR & BLOWER

Two AC motorized centrifugal impellers are utilized to draw air evenly across the face of the cell. The single inlet blower wheels are backward curved, measuring 9 in. diameter by 4 in. wide (22.9 x 10.2 cm). The energy efficient, ball bearing fan motors draw only 185 watts each.

#### ELECTRICAL COMPARTMENT

The removable power box contains the safety interlock, system and high voltage switches, high voltage power board and performance indicator light.

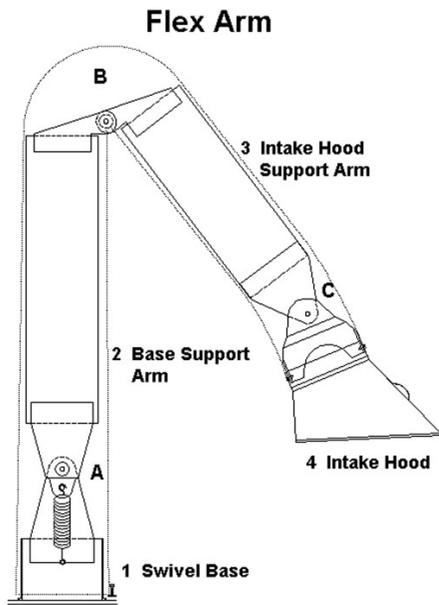
The power board is an open printed circuit board with an adjustable output. The direct current output is 10,000 volts @ 3.5 mA. The board is fused at 1.5 amps. A large value bleed off resistor allows the high voltage to dissipate from the cell when the unit has been turned off, to prevent shock.

Quick disconnects on the board allow for easy removal for troubleshooting or repairs. **The Performance Indicator Light should be on during normal operation.** The light will flicker with arcing in the cell or extinguish if the cell, ionizer or power board is shorted.

**Certified for shock and electrical fire hazard only.**

#### ARM ASSEMBLY PROCEDURE

1. The swivel base assembly and base support arm (items 1 & 2) and the intake hood support arm



and intake hood (items 3 & 4) come assembled ready to attach to the unit. (See diagram on next page.)

2. Mount the swivel base assembly to top of air cleaner, placing the plastic gasket between the base and cabinet. Secure with the bolts and washers provided.
3. If required, slide the hose up the arm and tighten the 3 joints A, B and C, as well as the side screw on the intake hood. Test the arm to make sure it will stay in place when extended.
4. Slide the hose into place and clamp at the top section of the base and at the hood.

**The tension on the arm joints may have to be adjusted periodically to maintain the pressure on the friction washers and allow the arm to be extended properly.**

### MAINTENANCE SCHEDULE

The collecting cell, ionizer, prefilter and after filter must be cleaned on a regular basis for the unit to function at its peak efficiency. The frequency of cleaning will vary from one environment to another. For instance, in a welding shop you may be required to wash the cell every 3 days to 2 weeks depending on the work load of the unit.

Every environment will be different. Inspect the unit frequently until you determine the right washing schedule for your particular application.

If your unit is equipped with an **activated carbon filter** it will need to be refilled, depending on the

environment, every 3 - 6 months. Do not wash the carbon filter as this will render it useless.

### WASHING INSTRUCTIONS

#### CAUTION

Avoid washing the cell or ionizer with a high pressure cleaner as this may cause damage to the cell plates or fins.

#### CAUTION

The cell plates are sharp. Handle with care. Take care not to damage the cell by hitting the cell plates. The cell plate spacing is critical for proper operation of the unit.

1. Turn both the high voltage and system switches **OFF** and wait 15 seconds for high voltage to dissipate.
2. Open the cell access door and remove the collecting cell, ionizer, prefilter and after filter.
3. If the cell plates are heavily coated it may be necessary to spray the cells with hot water to remove the excess contaminate before applying detergent. Allow excess water to drain off the cell before applying detergent.
4. Place the cell and ionizer in a tub and spray completely with **DAX Detergent**, allowing detergent to run down both sides of the plates and ionizing fins. Let sit for 5 minutes.
5. Rinse the cell well with hot water (140°F / 60°C maximum).
6. If dirt remains on plates, let the cell soak in hot soapy water for 30 minutes, then repeat the washing instructions listed above. **Never use any instrument to clean the cell, as this may damage the ionizing wires or cell plates.**
7. An alternate method to clean the cell and ionizer is to soak them in a tub of DAX for 10-15 minutes. The DAX can be reused numerous times as long as the cell is kept from sitting in the sludge which will collect in the bottom of the tub. **Never allow the cell or ionizer to sit longer than 15 minutes in the DAX or they will discolour.** The tub should be covered when not in use to prevent evaporation.
8. Spray the prefilter and after filter with **DAX Detergent** and rinse well, applying water pressure against the air flow direction. This

pushes contaminate out of the filter instead of forcing it through the filter..

9. To dry the cell and ionizer, tilt on a 45° angle against wall with the direction arrow pointing sideways. Allow to dry completely for at least 8 - 10 hours.
10. When the cell, ionizer, prefilter and after filter are dry, install them back into the cabinet. **The arrow on the cell and ionizing section should point down toward the blowers. The spring contact should line up with the fibreboard on the back wall of the cabinet.** Close the door. If the cell arcs when the system and high voltage switches are turned on or if the performance indicator light does not come on, then the cells may still be wet. Allow more time for drying. You can leave the cell and ionizer in the unit, turn the system switch **ON** and leave the high voltage switch turned **OFF**.

**A cell or ionizer placed in the air cleaner incorrectly can burn out the power board.**

9. The high voltage contact boards inside the cabinet need to be cleaned on a regular basis to insure a good contact with the cell and to prevent accumulation of contaminate behind the contact board. Clean the contact disc and surrounding red contact board with a dry cloth while the accumulation behind the contact can be removed with dry compressed air. Complete access to the back of the contact boards can be made by removing the small contact boards in the unit. The high voltage wires near the contact boards should be wiped when the contacts are cleaned and inspected annually by a qualified service technician for deterioration.

### WARNING

Wear protective goggles, dust mask and gloves when cleaning the inside of the cabinet. Always turn both the high voltage and system switches **OFF** and **UNPLUG** the unit before cleaning.

10. The accumulated contaminate under the cell should be removed at least twice a year with a vacuum. Dry compressed air can be used to remove the dust in the power box which houses the high voltage power supply. Do not apply air pressure too close to the components as this may damage them. Build up of contaminates on the blower wheel and housing can also be cleaned with dry compressed air.

## CLEANING AND SERVICE

The use of **DAX Detergent** is recommended for cleaning as it is a heavy duty solution used expressly for removal of accumulated pollutants on cell plates. If used as directed, **DAX** will not harm aluminum or steel if used as directed. Any problem arising out of the use of another cleaning agent will void the warranty.

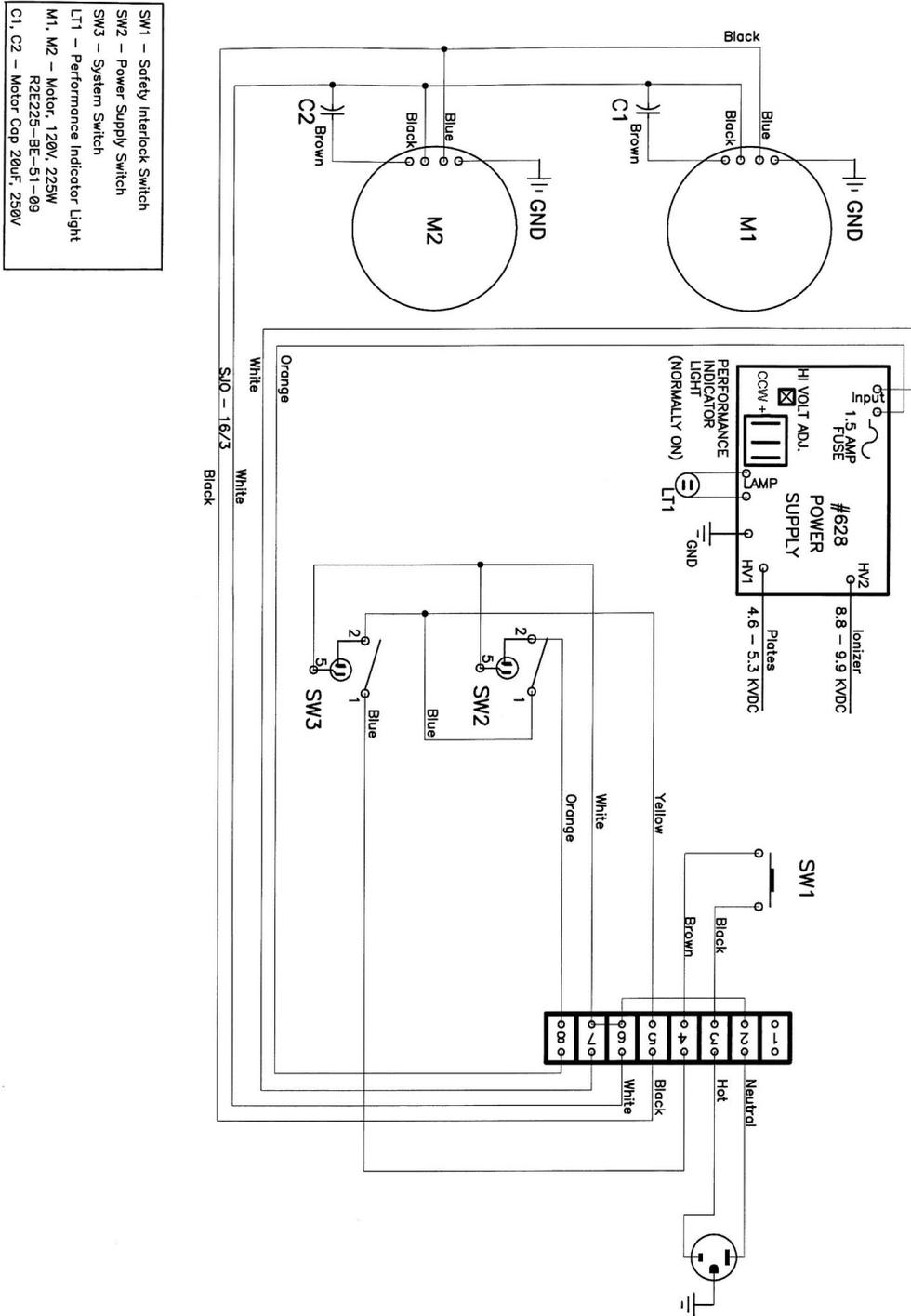
**DAX Detergent** is available in 1 gallon (4.5 L) and 4.4 gallon (20L) containers, as well as 45 gallon drums (205 L).

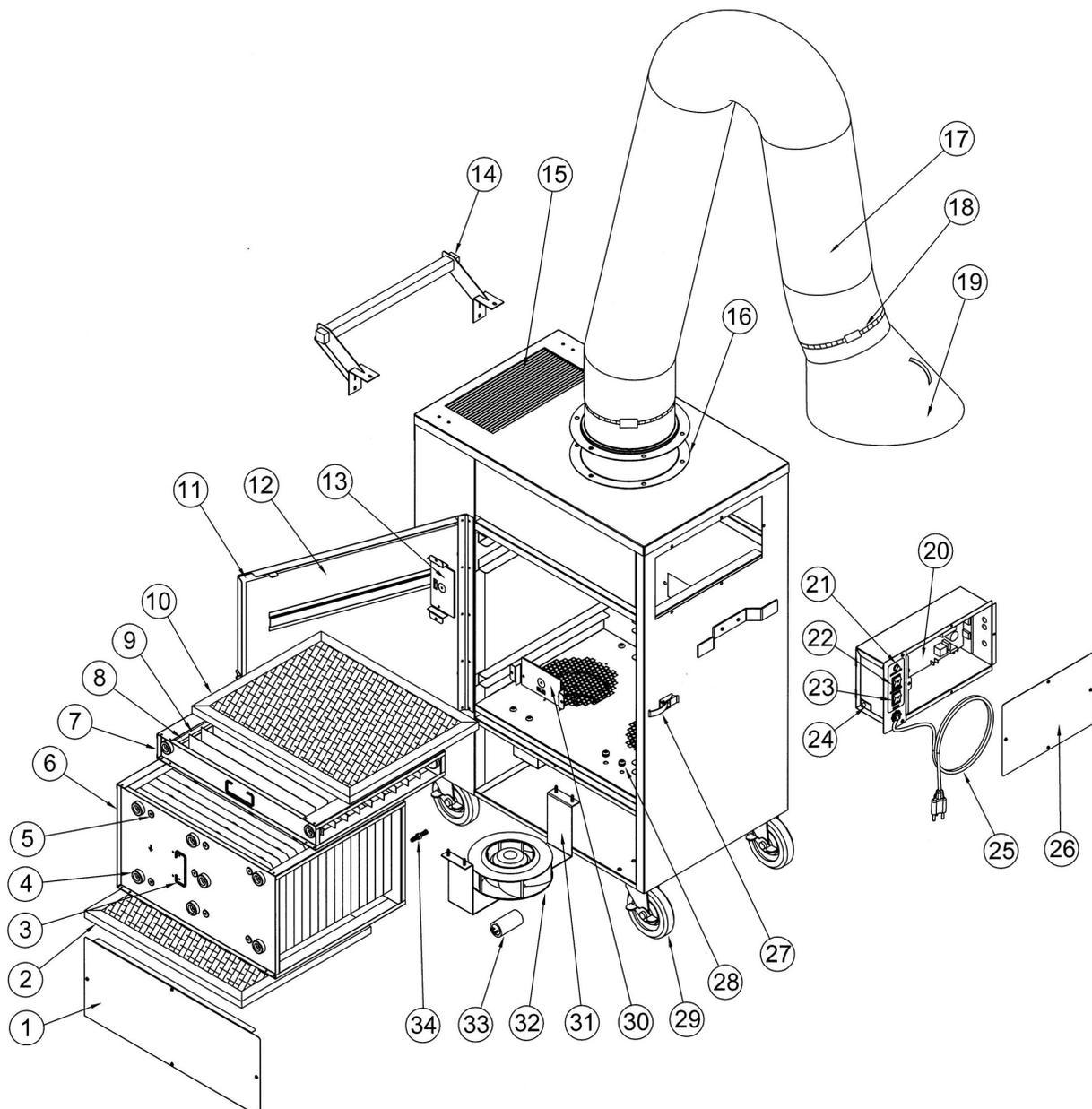
## SERVICE MAINTENANCE

1. Determine if the air cleaner is performing properly by seeing that:
  - System switch is **ON**
  - High voltage switch is **ON**
  - Performance indicator light is **ON**
2. The performance indicator light, when lit, shows that the power board is functioning properly and should be lit during normal operation. The light will flicker with arcing in the cell or extinguish if the cell, ionizer or power board is shorted.
3. If the performance indicator light fails to light, check the cell to ensure it has been installed properly.
4. If the light still does not come on remove the cell and ionizer and close the door. Turn the unit on. If the light now comes on inspect the cell or ionizer for damage or water. Check the high voltage wires for deterioration. **Do not run the unit for more than 1 minute with the cell and ionizer removed.** If the light still is not on then the problem could be in the light or the power board. Check the fuse on the power board for continuity.
5. A simple test to ensure that the cell is in correctly and there is high voltage to the cell is to take a long plastic handle screwdriver and short the cell between the frame of air cleaner and bolt head on the porcelain insulators. Check both the cell and ionizer for a spark. The system and high voltage switches should be **ON**. Be sure to activate the safety interlock switch before checking voltage. **CAUTION: You are dealing with high voltage.**
6. If in doubt and if cell is not collecting any carbon, tars or body shop dust, then consult your dealer or factory service center. The installing dealer should have sufficient knowledge to determine any problems.

## Removing Power Box From Air Cleaner

Before removing the power box from the air cleaner unplug the unit. Remove the power box cover and disconnect the two high voltage wires from the power board. Disconnect the motor wires from the terminal block and ground stud. Push the wires out of the plastic bushing. Remove the screws holding the power box to the enclosure. Pull the box out from the right side first and carefully remove the left side taking care not to damage the plunger on the interlock switch.

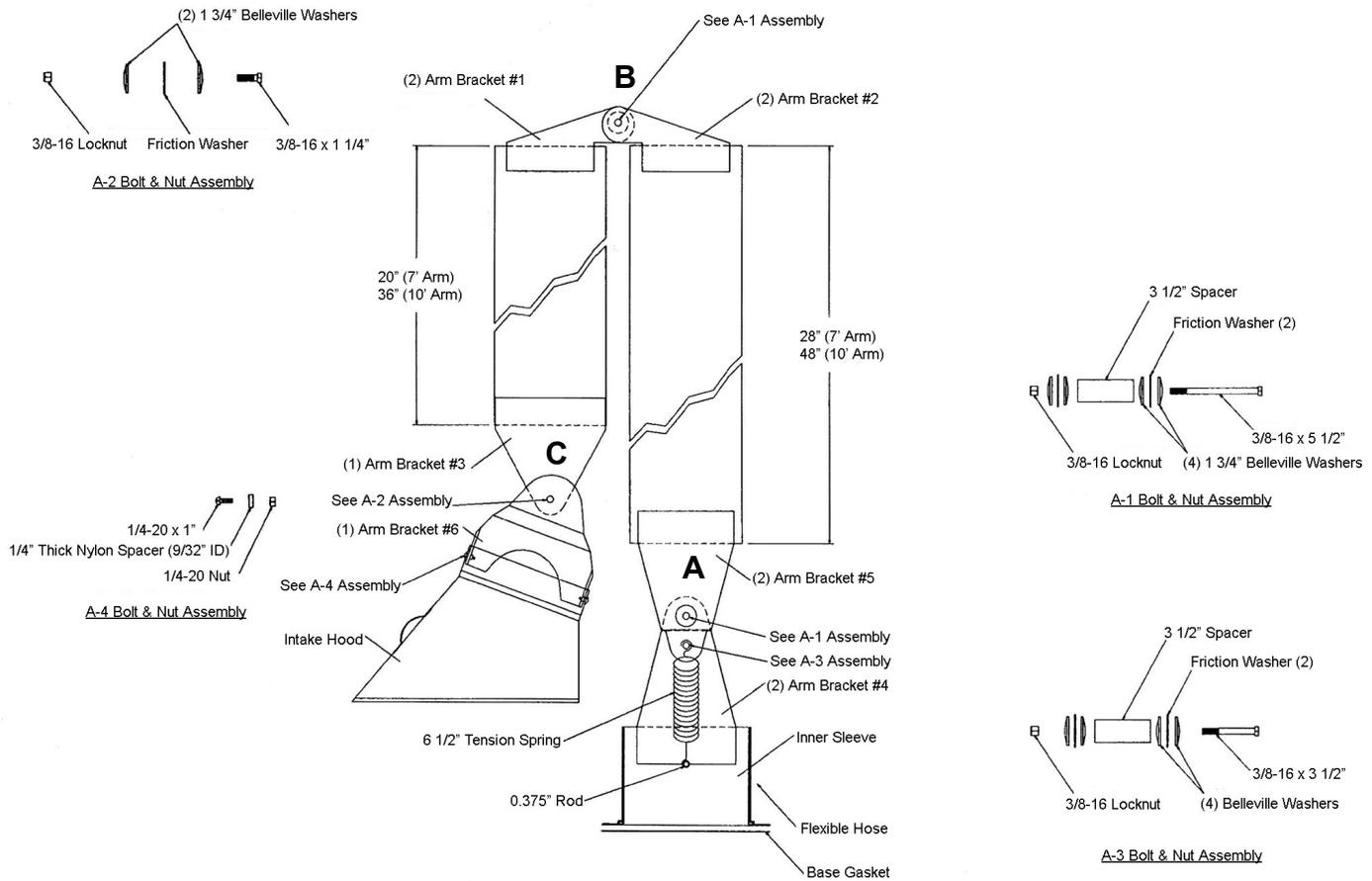




#	Part #	Description
1	I3-0630	Motor Access Panel
2, 10	IS-0855	Prefilter/After Filter (20 x 16 x 1") (50.8 x 40.6 x 2.5 cm)
3	IS-0444	Cell Handle
4	IS-0406	Porcelain Cell Insulator
5	IS-0405	Hexagon Cell Bolts 5/16"
6	I3-0400	Collecting Cell (Complete)
7	I3-0441	Ionizing Section Cell (Complete)
8	IS-0411	Brass Ionizing Tube
9	IS-0443	Ionizing Wire c/w Spring & Hook (16 1/2") (41.9 cm)
11	I3-0634	Cell Door Seal (1/4 x 3/4 x 61.5") (.64 x 1.9 x 156.2 cm) (1/4 x 3/8 x 21") (.64 x .95 x 53.3 cm)
12	I3-0632	Cell Access Door
13	I3-0609	Ionizer Contact Board (No Wire)
14	I3-0633	Push Handle
15	I3-0616	Top Exhaust Grill (12.25" x 6") (31.1 x 15.2 cm)
16	IS-0648	Flex Arm Base Plastic Gasket
17	IS-0642	Flex Arm Hose Only, for 7 Ft. Arm
18	IS-0644	Clamp For Flex Arm Hose
19	IS-0690	Scoop or Intake Hood

#	Part #	Description
20	IS-052D	Industrial Power Board
21	C5-0113	Performance Indicator (Red, Neon)
22, 23	R1-0205	On/Off Switch, Orange
24	C5-0202	Safety Interlock Switch (White, Push-Button Type)
25	IS-062D	Power Cord
26	I3-0631	Power Box Panel
27	I3-0635	Door Latch
28	79-0705	Rubber Motor Bracket Isolator
29	IS-0610	Caster 5"
30	I3-0609	Cell Contact Board (No Wire)
31	I3-0709	Motor Bracket
32	I3-070D	Motor and Blower Assembly
33	W5-0701	Motor Capacitor (20 µF)
34	IS-0409	Spring Contact
N/S	IS-0591	1.5 Amp Fuse
N/S	I3-0607	Cell or Ionizer Contact Board c/w HV Wire (35") (88.9 cm)
N/S	IS-0856	Carbon Filter c/w Carbon
	IS-0640	Flex Arm Complete, 7 Ft.

### EXPLODED VIEW AND PARTS LIST



DESCRIPTION	QUANTITY	SECTION
Swivel Base Assembly	1	A
Base Support	1	A-B
Intake Hood Support	1	B-C
Intake Hood	1	C
Vinyl Edging	1	C
Type 100 Hose	1	A-C
Hose Clamps	2	A+C
Base Gasket	1	A
3/8-16 x 1 in. Bolt & Split Washer	6	A
Tension Springs 6-1/2 in.	2	A
Rod 3/8 in.	1	A
1/4-20 x 1 in. Bolt	2	C
1/4-20 Nut	2	C
Spacer (Nylon) 1/4 in.	2	C
Spacer (Steel) 3-1/2 in.	2	A+B
Bolt 3/8-16 x 5-1/2 in.	2	A+B
3/8-16 Lock Nuts	3	A+B+C
3/8-16 x 1-1/4 in. Bolt	1	C
2 in. dia. Friction Washer	5	A+B+C
1-3/4 in. dia. Belleville Washers	10	A+B+C

**SELF SUPPORTING ARM PARTS LIST**

## LIMITED ONE YEAR WARRANTY

This EnviroPureFX product is warranted to the original owner to be free from electrical and mechanical defects in material and workmanship, under normal use and maintenance, within its listed capacity, for a period of one (1) year from the date of original purchase; except however, for the prefilters, after filters, carbon filters or ionizing wires, which may have to be replaced from time to time. This EnviroPureFX product must not have been moved from the site of original installation. A new or remanufactured part to replace the defective part will be provided without charge for the part itself, through EnviroPureFX, provided the defective part is returned to EnviroPureFX **prepaid**, together with the **serial number, date of installation, and proof of purchase**. Defective parts must be packaged well and depending on the part, may require images emailed to EnviroPureFX prior to shipping, to confirm condition of parts. If goods arrive damaged due to improper packaging, warranty will be void. The replacement part assumes the unused portion of the warranty. Failing this, EnviroPureFX will guarantee the unit for a period of twelve (12) months from the date of manufacture, according to the manufacturer's records.

**THIS WARRANTY DOES NOT INCLUDE ANY ADDITIONAL LABOR ALLOWANCE OR OTHER COSTS** incurred for diagnosis, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the dealer.

**LIMITATIONS OF WARRANTY** - All implied warranties (including implied warranties of merchantability) are hereby limited in duration to the period for which the limited warranty is given. The expressed warranties made in this warranty are exclusive and may not be altered, enlarged, or changed by any distributor, dealer or other person whatsoever.

**ENVIROPUREFX will not be responsible for:**

1. Normal maintenance as outlined in the Operation & Maintenance Manual including cleaning of electronic collecting cells and/or replacement of prefilters and carbon filters.
2. Damage or repairs required as a consequence of faulty installation or application by others.
3. Damage or repairs needed as a consequence of any misapplication, negligent handling, improper servicing, unauthorized alteration, or improper operations.
4. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of EnviroPureFX.
6. Parts not supplied or designated by EnviroPureFX.
7. EnviroPureFX products installed outside the continental Canada, U.S.A., Alaska, and Hawaii.
8. Any personal injury, special indirect or consequential property or commercial damage of any nature whatsoever.

Model No.	Serial No.
Date of Purchase	Dealer Name
Owner's Company Name & Address	

RETAIN THIS CERTIFICATE WITH YOUR VALUABLE DOCUMENTS



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