

SERVICE INDICATION	SERVICE CHECKS
ON/OFF switch "ON" Blower ON Operating Light ON	Unit functioning Normally
ON/OFF switch "ON" Blower ON Operating Light OFF	<ol style="list-style-type: none"> <li>1. <b>Power is not being supplied to air cleaner.</b> <ol style="list-style-type: none"> <li>A. Check fuse or circuit breaker.</li> <li>B. Ensure power pack is properly installed and latched.</li> </ol> </li> <li>2. <b>Collecting cell shorted - Turn power Off - Remove power pack - Remove collecting cells - Replace power pack - Restore power (ensure blower is operating).</b> <ol style="list-style-type: none"> <li>A. If Operating Light comes ON check cells for bent plates, loose ionizing wire(s) or cracked insulator(s).</li> <li>B. If Operating Light remains OFF, malfunction is in the power pack. (See power supply Checkout Procedure).</li> </ol> </li> </ol>
ON/OFF Switch "ON" Blower OFF Operating Light ON	<ol style="list-style-type: none"> <li>1. <b>Air flow sensor contaminated/misaligned</b> <ol style="list-style-type: none"> <li>A. Remove power pack and clear contamination inside black bushing around the small sensor element.</li> <li>B. Ensure small sensor element is centered in bushing.</li> </ol> </li> <li>2. <b>Air sensor left in bypassed condition after servicing.**</b></li> <li>3. <b>Faulty air flow sensor panel.</b></li> </ol>
Excessive arcing during normal operation - Operating Light may blink	<ol style="list-style-type: none"> <li>1. <b>Wet collecting cell.</b> <ol style="list-style-type: none"> <li>A. Allow cell(s) to dry after cleaning before applying power.</li> </ol> </li> <li>2. <b>Damaged collecting cell(s).</b> <ol style="list-style-type: none"> <li>A. Remove cell(s) and inspect for bent plates, loose ionizing wire(s), cracked insulator(s), etc.</li> </ol> </li> <li>3. <b>Collecting cells dirty.</b> <ol style="list-style-type: none"> <li>A. Clean cells as instructed in this manual.</li> </ol> </li> <li>4. <b>Faulty power supply (see power supply checkout procedure)</b></li> </ol>
<p><b>**NOTE:</b> Your air cleaner is equipped with an air flow sensor (switch) which turns the unit ON and OFF in response to the system blower. It may have been "wired out" during a service check and inadvertently left in this condition</p>	

# TECHNICAL REPAIR GUIDE

## ⚠ WARNING

Do not attempt repair of this unit unless you are familiar with the necessary tools, equipment, utility connections and potential hazards.

Repair should be performed only by a qualified service provider.

Failure to do so could result in reduced performance of the unit, serious personal injury or death.

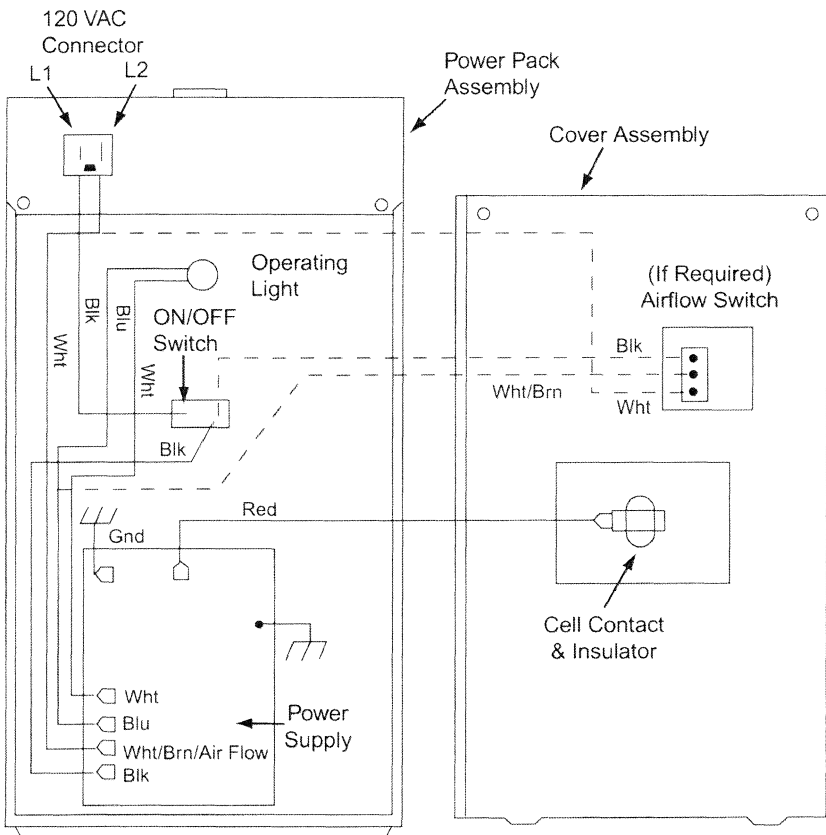
This guide contains service checks to assist service personnel in locating and correcting any malfunction that might occur to render the air cleaner ineffective or inoperative. The air cleaner has been designed with replaceable components, such as the high-voltage power supply and air flow switch. This allows the serviceman to replace a faulty component rather than attempt repairs of such components in the field.

All voltage measurements indicated can be made with a high voltage D.C. probe and a general purpose volt ohm meter. For example: Simpson 260 or equivalent.

For test purposes, the air flow switch may be "wired out" of the system. This will eliminate the need for air flow across the sensing thermistor to energize the power supply (see Fig 23).

NOTE: All tests to be performed with the Ozone Reduction Jumper intact.

NOTE: When servicing the power pack components, all wiring must be routed to factory specifications.



### Power Supply Specifications

The solid-state power supply is not designed for individual component part replacement and must be replaced as a complete "snap-in" unit.

Input voltage: 120 VAC 60 Hz.  
Output to light: 1.5 to 2.5 VDC  
H.V. Output: 6450 VDC (nom)

### Collecting Cell Specifications

1000 cfm - 1.0 Ma @ 6450VDC  
1400 cfm - 1.2 Ma @ 6450 VDC  
1600 cfm - 1.5 Ma @ 6450 VDC  
2000 cfm - 1.7 Ma @ 6450 VDC

Figure 22

## POWER SUPPLY CHECKOUT PROCEDURE

1. Turn power switch to the "OFF" position and remove the power pack from cabinet.
2. If air flow switch is installed, locate air flow switch and remove power pack cover. If air flow switch is not installed, go to step 4.
3. Disconnect the three-pin plastic connector and jumper the two female pins (white wire to white-brown wire) as shown in Fig. 23.

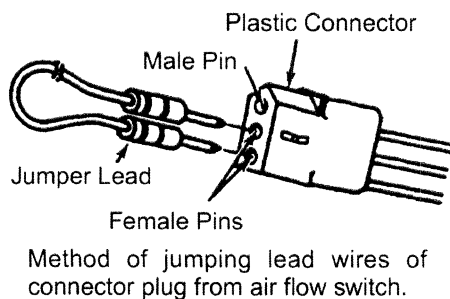


Figure 23

4. Place power pack on a well insulated workbench. Connect meter negative (-) lead to the sheet metal chassis and the high voltage probe to high voltage contact on back cover of power pack. Connect AC power to power pack using an extension cord and turn power switch to the "ON" position. **Keep hands and tools away from high voltage contact.**
5. If Operating Light comes ON and output voltage is between 6100 and 6800 VDC, power supply is good.
6. If voltage is good but Operating Light does not come on, replace Operating Light.

## CELL TEST

1. Place collecting cell on a well insulated workbench with the cell contact button pointing upward.
2. Select a power pack (with air flow switch bypassed and ozone reduction jumper intact) that reads between 6100 and 6800 VDC at the cell contact with no cell attached.
3. Place power pack on top of collecting cell ensuring that there is proper contact between the cell contact on the power pack contact.

4. Using a standard extension cord, apply 120 VAC to power pack. Turn power switch to "ON" position.
5. Connect meter negative (-) lead to metal frame of collecting cell. Use high voltage probe to measure voltage at collecting cell ionizer or cell plates. Voltage should be 6100 to 6800 VDC.

**NOTE:** A new "out-of-box" cell may cause the voltage to be lower than normal for a short period of time. To obtain a more accurate measurement, "age" the cell by applying high voltage to the cell for 15 to 30 minutes.

6. If voltage is below 6100 VDC, check cell for foreign objects, bowed/bent/loose plates, broken ionizing wires or cracked insulators. Wash cells if required. If Operating Light remains OFF, replace collecting cell.

## AIR FLOW MONITOR TEST

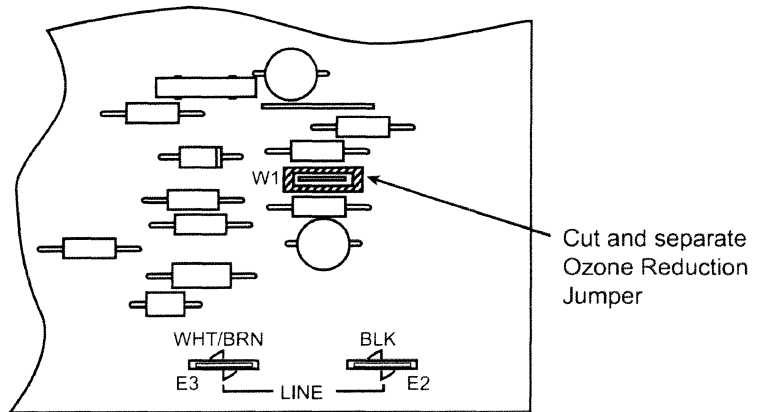
1. Connect a multimeter set to read 120 VAC to power supply terminals marked "LINE."
2. Connect 120 VAC to power pack plug, turn power switch "ON."
3. Blow on thermistor at air flow monitor. 120 VAC should appear at multimeter. Stop blowing and voltage should disappear in 10 - 15 seconds.
4. If voltage did not appear (Step 3), disconnect power to power pack. Locate air flow switch and remove power pack cover. Disconnect the three-pin plastic connector. Jumper the two female pins (white wire to white-brown wire) as shown in Fig. 23. Reconnect power to power pack. Turn power switch "ON."
  - A. If 120 VAC appears at multimeter, replace air flow monitor.
  - B. If 120 VAC does not appear on multimeter, problem is other than air flow monitor. Recheck all primary wiring.

**NOTE:** The air flow monitor is designed to operate in the temperature range of 65° to 120° F. Operation outside this range is not recommended.

## OZONE REDUCTION

All electronic air cleaners typically produce a small amount of ozone that is within established limits. Some customers may notice an odor especially at high altitudes or low air flow rates.

This power supply has a "hairpin" shaped jumper wire labeled W1 (see Fig 24) that can be cut and separated in case of such complaints. This will cause the power supply to limit the maximum operating power to a lower level.



Ozone Reduction Jumper

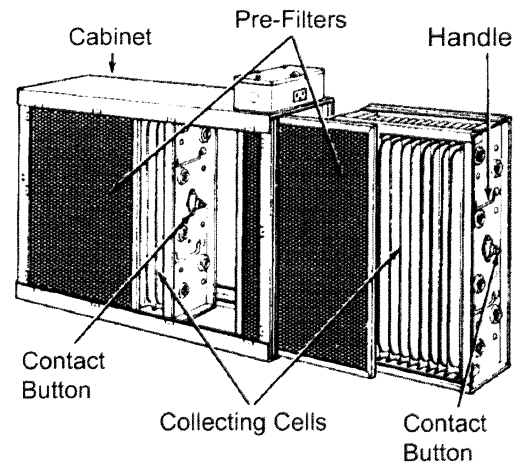
Figure 24

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## ELECTRONIC AIR CLEANER RETROFIT (ACR) KITS

### INSTALLATION

1. Remove the two pre-filters from the package and insert into cabinet tracks opposite the furnace. These will be used to catch the larger particles that are in the air stream before entering the collecting cell.
2. Insert the two collecting cells into the cabinet behind the pre-filters. Be sure ionizing wires are directly behind the pre-filters so the particles can be charged as soon as the air leaves the pre-filters.
3. Remove cover plate on the power supply junction box and remove the knockout needed to bring the wire to the female receptacle.
4. Position receptacle with ground in the down position as shown in Fig 17 (page 7) and pull wires through the receptacle locator on the junction box. Snap the receptacle into the hole until secure.
5. Connect ground wire from receptacle and ground wire in kit to cabinet with rivet and washer as follows:
  - a) Place washer on rivet
  - b) Place terminal from ground wire on rivet
  - c) Place terminal from receptacle ground wire on rivet
  - d) Insert rivet in hole in junction box and secure.



### WIRING

5. For wiring installation (see page 7) and follow all wiring instructions 7, 8 and 9.
6. Install the power pack (see page 7) instruction 11.
7. For operation (see page 8 – Operation).