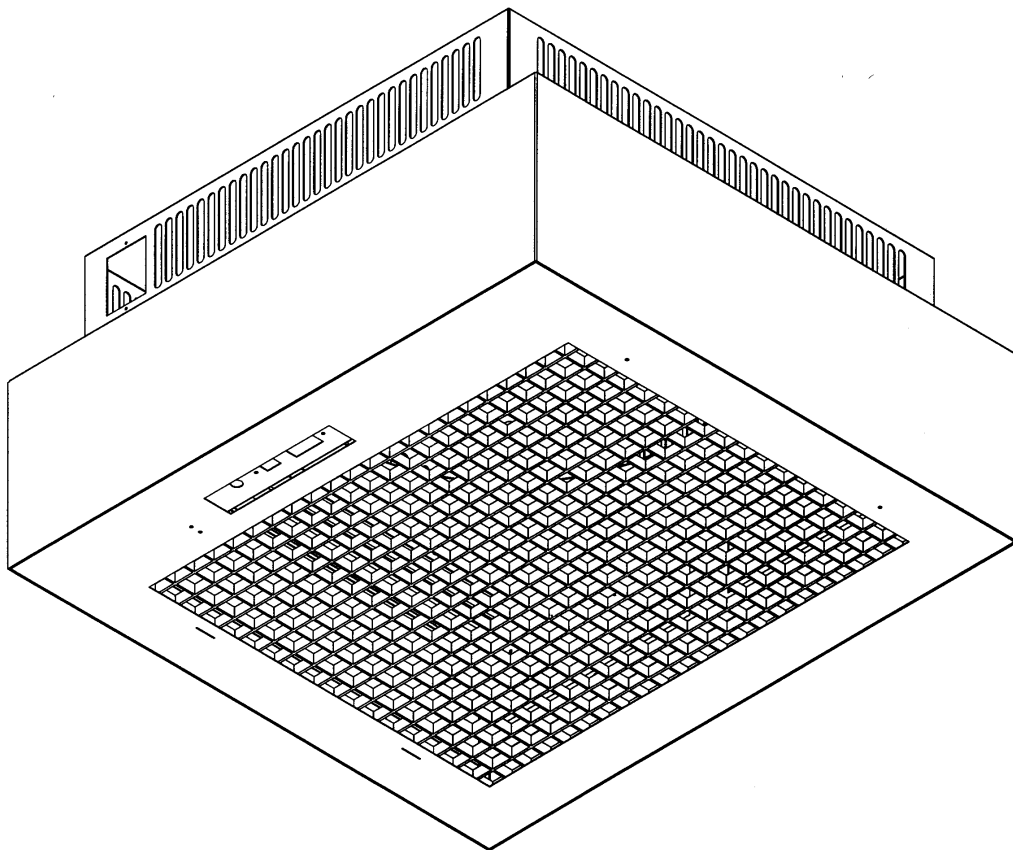


# **Five Seasons**

## **Operation And Maintenance Manual**

### **MODEL SSCB15 CEILING MOUNTED ELECTRONIC AIR CLEANER**

*IMPORTANT: PLEASE READ MANUAL BEFORE OPERATING UNIT*



**IMPORTANT:** Please read entire instructions before installing the Electronic Air Cleaner.

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## SAFETY CONSIDERATIONS

Read and follow instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage Air Cleaner.

Understand the signal words WARNING and CAUTION which are present in the Installation, Operation & Service Instructions.

WARNING and CAUTION signifies a hazard which could result in property damage, personal injury or death.

**Installation and servicing of Electronic Air Cleaners can be hazardous. Only trained and qualified service personnel should install, repair, or service Electronic Air Cleaners.**

**Untrained personnel can perform the basic maintenance functions of cleaning and replacing filters.**

**When working on air cleaning equipment, observe precautions in the manual, labels attached to the unit, and other safety precautions that may apply. Follow all safety codes. Wear safety glasses and work gloves.**

## WARNING

Before beginning any installation or modification, be certain that the main line electrical disconnect switch is in **OFF** position. Electric shock could result. Tag disconnect switch with suitable warning labels.

## WHAT THE ELECTRONIC AIR CLEANER DOES

Your High Efficiency Electronic Air Cleaner has been designed to remove tobacco smoke particles, cooking smoke and grease, atmospheric dust, coal dust, insecticide dust, mites, pollen, mold spores, fungi, bacteria, viruses and more down to 0.01 micron (0.01 micron = 1/2,540,000 of an inch).

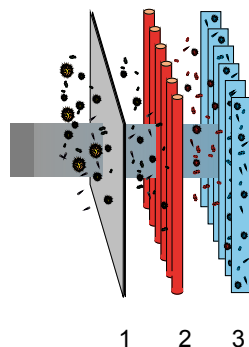
## BENEFITS

- Helps clear up a smokey environment quickly, so customers can dine more comfortably.
- Helps employees reduce suffering from irritated eyes, nasal congestion and respiratory problems that lead to absenteeism.
- Helps prevent damaging black and greasy particles from staining ceilings, walls and furnishings, reducing the amount of housekeeping and redecorating costs.
- Helps to lower energy bills by recycling air rather than exhausting expensive heated or cooled air.

## HOW IT WORKS

This Air Cleaner works on the principle of "Electrostatic Precipitation". Millions of airborne pollutants are drawn through the intake grill on the bottom of the Air Cleaner and first pass through a Prefilter which removes all large visible particles such as lint. 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 grounded plates. Pollutants are held in this section like a magnet until washed away during cleaning. Clean air is then dispersed from the side grills in four directions allowing superior air flow circulation.

## Electrostatic Precipitation

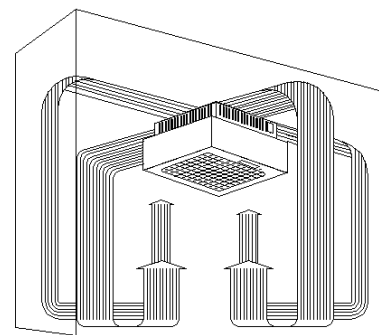


## 3 - Stage Electronic Air Cleaning Process:

- 1 - Prefilter Screen
- 2 - Charging Section
- 3 - Grounded Plates

## Coanda Air Flow

The Air Cleaner creates a circular air flow pattern which never allows air to rest at the ceiling.



## MAJOR COMPONENTS

### Description

The Electronic Air Cleaner is approximately 29½ x 27 x 14½ inches (75 x 68.6 x 37 cm). The unit is designed to be mounted to the ceiling. The steel cover and intake grill are hinged to allow easy access to the Collecting Cells and Power Box. The unit is rated up to 1300 CFM (2210 m<sup>3</sup>/hr).

### Cabinet

The cabinet is constructed of 20 gauge steel. The external parts have a tough powder-coated, scratch-resistant finish. The internal parts are galvanized steel. Access to the Collecting Cells, Power Box and Prefilters is made by lifting the cover, sliding towards the front and lowering.

The cover is interlocked to cut power to the unit when opened.

### Prefilters

The washable Prefilters measuring 12½ x 20 inches (31.75 x 50.8 cm) are constructed of multi-layers of aluminum mesh for maximum filtration of large particles.

### Collecting Cells

The dual voltage Collecting Cells are constructed of heavy gauge aluminum to resist rust and damage. The first stage, the ionizing section, is charged at approximately 7500 VDC. The collecting plates are alternately grounded and charged at 5000 VDC. The arrow on the Cell indicates the direction of air flow which must point up towards the fan motor.

### Motor & Fan Blade

The motor is 1/12 HP, 1050 RPM, 3 speed, controlled by a 3-position slide switch. The motor is thermally protected. The fan blade is aluminum, 18 inches (45.7 cm) with a 16° pitch.

## INSTALLATION

1. Read instructions carefully. Failure to do so may result in product damage or injury.
2. Make sure the sizing is correct for your application.
3. Installation should be done by a knowledgeable technician.
4. After installation, check out operation as provided in these instructions.

### Mounting

1. Remove the unit from the box with packing still on the unit and lay it on its back, grill side up.
2. Release the cover by sliding towards the front of the unit and lifting up.
3. Remove the "S" hook from each chain, tilt cover up, and release from back.
4. Holes are provided in the cabinet to accommodate 5/16 inch (8 mm) threaded rod. Threaded rod can be attached to angle iron, laid across the joists, and drilling holes through these supports. Pass threaded rod up through the supports and secure with two nuts and washers. This will allow adjustment of the unit so that it is flush with the underside of the ceiling.

**Leave enough room around the Air Cleaner for removal of Collecting Cells and Prefilters.**

5. Replace cover and chain.

Blower and Motor are hidden behind 4 directional discharge air grills.

Rear Hinges permit smooth release of cover for easy installation.

3-Speed Fan Control allows adjustment of air flow to activity level in room.

Hinged Cover provides convenient access to Grill, Prefilters and Collecting Cells. Safety interlock cuts power when cover is opened.



Heavy duty Collecting Cells (2) capture airborne pollutants and simply wash clean.

Washable, aluminum mesh Prefilters (2) catch lint and large particles before they enter collecting cells.

Removable Intake Grill for easy cleaning.

## OPERATION & MAINTENANCE

### Wiring

#### WARNING

Electrical shock can cause injury or death. Be certain main line disconnect switch is off before wiring.

All wiring must comply with applicable codes and standards. See unit rating label for correct voltage and amperage.

1. A knockout is provided on top of the unit, adjacent to the wiring compartment. For convenience, a wall switch may be installed near the Air Cleaner, in series with the power source, to turn the unit on and off.
2. Remove the cover of the wiring compartment to locate the input leads and ground stud. The Air Cleaner must be grounded for proper operation and safety.
3. Once the unit is mounted and wired, the cover can be replaced on the hinge and the chain replaced on the "S" hooks. Close the cover by sliding it forward, lifting the cover over the front flange and sliding it back into place.

#### Operation Check

1. With the cover closed and in place, turn the system switch on.
2. Adjust the fan speed with the slide switch. Insure the unit functions on all speeds.
3. The Performance Indicator Light should be lit, which indicates the Power Board is functioning properly.

When the Air Cleaner is new it may arc or periodically make "snapping sounds". A slight odor of ozone may be noticeable. The arcing and odor are due to rough edges and burrs on the cells. These symptoms will disappear during the first few weeks of normal operation. The ozone levels are well below government standards for indoor air concentration.

#### Maintenance Schedule

The Collecting Cells and Prefilters 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. The following is an average wash cycle:

- Stores, Offices, Computer & Conference Rooms = **4 Weeks**
- Cafeterias, Restaurants, Lounges = **3-4 Weeks**
- Bars, Bingo halls = **1-3 Weeks**

#### Cleaning & Service

#### CAUTION

Make sure Air Cleaner switch is **OFF** before performing any maintenance or removing any components.

1. Turn off the system switch and wait 15 seconds for high voltage to dissipate.
2. Open the cover and cell access door and remove collecting cells and prefilters. **Cell plates are sharp. Handle with care.**
3. Place Cells in tub and spray completely with **DAX**

**Detergent**, allowing detergent to run down both sides of plates and ionizing wires. Let sit for 5 minutes. Rinse Cells well with hot water (140°F / 60°C maximum). Repeat washing process 3 times.

4. If dirt or nicotine remains on plates, let Cells soak in hot soapy water for 30 minutes. **Never use any instrument to clean the cell, as this may damage the ionizing wires or bend cell plates.**
5. Spray Prefilters with **DAX Detergent** and rinse well.
6. To dry cells, tilt on 45° angle against wall with arrows pointing sideways. Allow to dry completely for 10-24 hours. Place in sunlight for faster drying time.
7. When the Cells and Prefilters are dry, place them back into the unit. The arrow on the cell points up. The red fiberboard on the Cell should line up with the contacts in the cabinet. Close door and cover. If the Cells arc when the switch is turned on or if the Performance Indicator Light does not come on, then the Cells are still wet. Allow more time for drying.

#### CAUTION

Damage to Cells may occur if improperly handled or washed. Do not wash Cells in a dishwasher. Never use any object to clean between the cell plates, as this may cause damage to plates or ionizing wires. Never place cell in oven to dry. The edges of the cell may be sharp - handle with care.

The use of **DAX Detergent** is strongly 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. Any problem arising out of the use of another cleaning agent will void the warranty. Do not use detergents that are corrosive or abrasive or detergents containing chlorine or ammonia.

**DAX Detergent** is available in 1 gallon (4.54L) and 4.8 gallon (22L) containers as well as 45 gallon drums (204L).

#### Service Maintenance

1. Determine if the Air Cleaner is performing properly by seeing that:
  - System switch is **ON**
  - Performance indicator is **ON**
2. A simple test to check hi-voltage would be to blow dust or cigarette ash into the intake grill. An audible arc or snapping sound should be heard, ensuring good hi-voltage.
3. If in doubt, and if the Cells are not collecting any carbon or nicotine tars, then see "**Troubleshooting Guide**" or consult your installation dealer.

#### WARNING

Electronic Air Cleaners use high voltage (low amperage). Only trained personnel should perform service. Use caution. Electric shock can cause injury or death.

## SERVICE

### Adjusting High Voltage Output

In case of excessive arcing on a clean, dry Cell, there is an adjustable resistor mounted on the Power Board.

1. Turn off the system switch before opening the unit.
2. Remove the cover by slipping the "S" hook from the chain and letting the cover gently down.
3. Lift the cover up off the rear hinge.
4. Remove the power box cover.
5. With a small slot screwdriver, adjust "R-2" slightly clockwise to reduce voltage to the cell. Do not reduce the voltage too much or the efficiency of the air cleaner will be reduced.

### Removing The Power Box

1. Shut off main breaker or switch.
2. Remove the cover as described previously.
3. Open power box cover.
4. Disconnect the following wires:
  - Terminal Block -Red, blue or yellow, black and white leads from motor  
-Supply line leads
  - Power Board -Orange or grey leads on HV1 and HV2
5. Remove the two nuts holding the power box to the cell section.

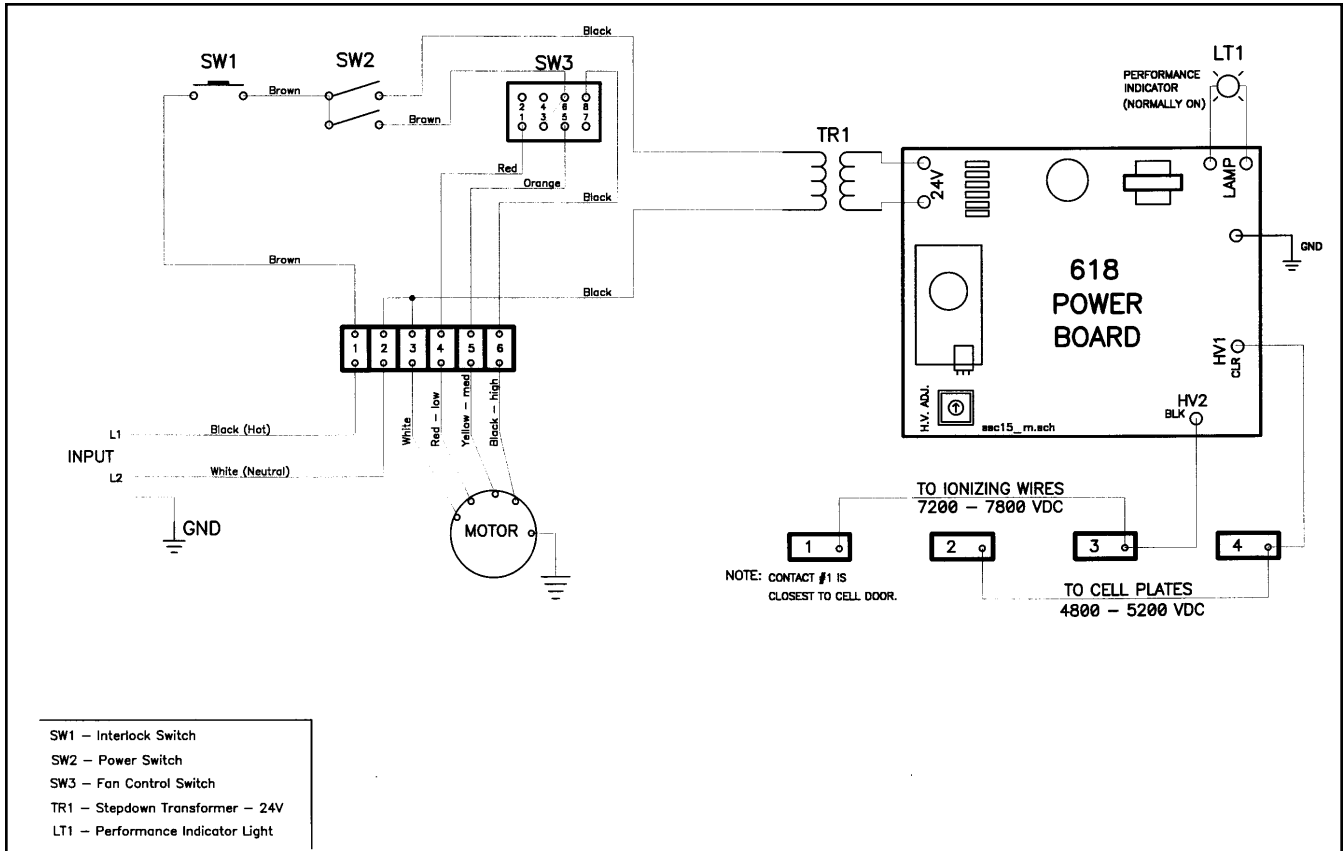
## TECHNICAL DATA

Dimensions	Length	29.5 in	75.0 cm
	Width	27.0 in	68.6 cm
	Height	14.5 in	37.0 cm
Weight		95.0 lbs	43.0 kg
Input Voltage		120 V 60 Hz 220 V 60 Hz 220-240 V 50 Hz	
Power Consumption (max)		350 Watts	
Air Flow	High	1300 CFM	2210 m <sup>3</sup> /hr
	Medium	1050 CFM	1785 m <sup>3</sup> /hr
	Low	750 CFM	1275 m <sup>3</sup> /hr
Motor		1/12 HP	

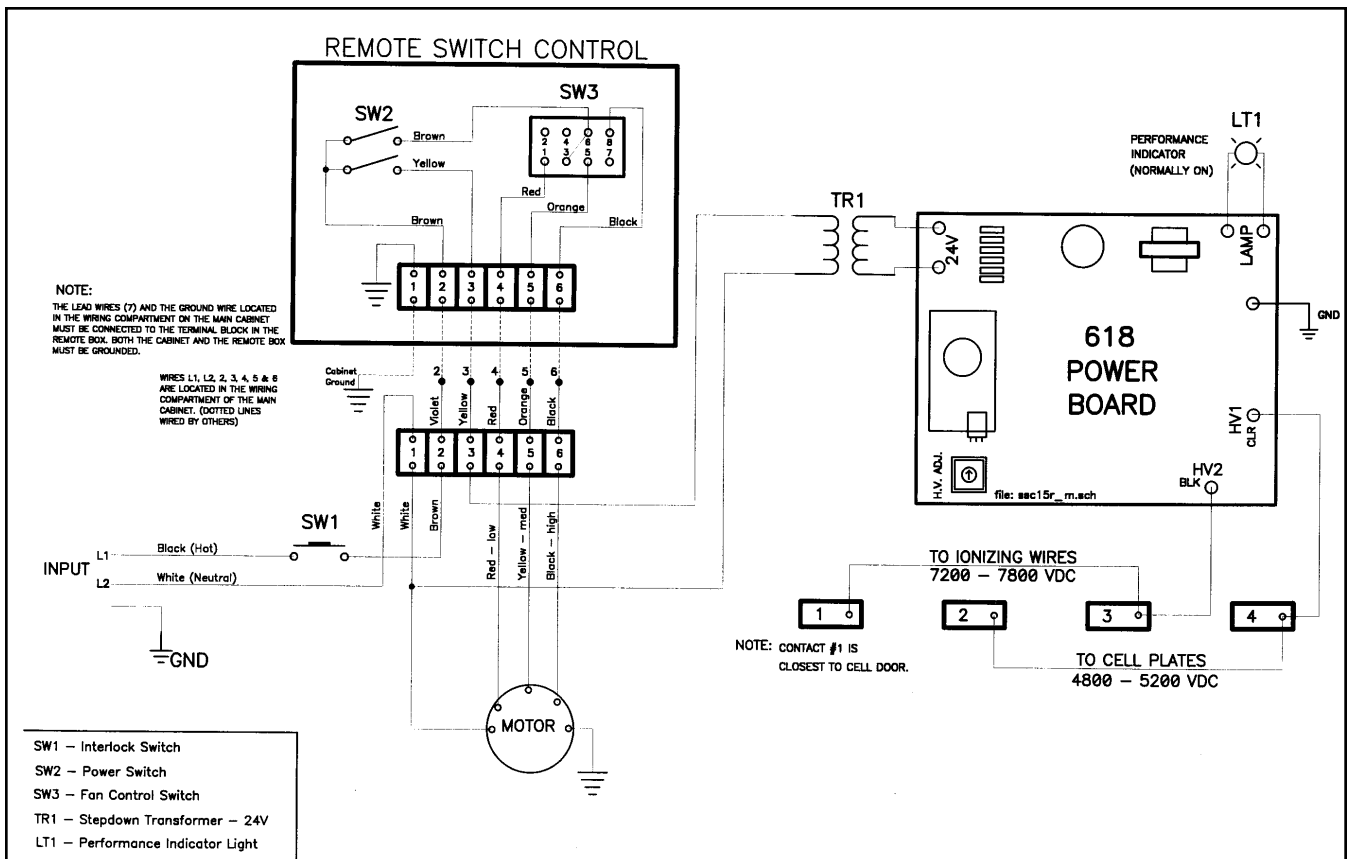
## TROUBLESHOOTING GUIDE

PROBLEM:	CHECK:
Unit Does Not Operate	<ol style="list-style-type: none"> <li>1. Main breaker is <b>ON</b> or voltage is supplied to unit.</li> <li>2. Main supply fuse or breaker is not tripped.</li> <li>3. Unit cover is completely closed and locked into place.</li> <li>4. Power switch is <b>ON</b>.</li> </ol>
Performance Indicator Light Is Not Lit	<ol style="list-style-type: none"> <li>1. System switch is <b>ON</b>.</li> <li>2. Remove Cells, close access door and turn unit <b>ON</b>. If Performance Indicator is still off, problem is in the power box. If light comes on with no cells, then there is a short circuit in the cells. Place one cell in the unit, close access door and turn unit <b>ON</b>. If the light comes on, check the other cell by the same method. When it has been determined which cell is the problem, look for bent plates, broken ionizing wires or burnt insulators or if cell is completely dry after washing.</li> </ol>
Performance Indicator Light Is Lit, Fan Not Working	<ol style="list-style-type: none"> <li>1. Fan control switch is in proper position.</li> <li>2. Motor leads are connected to terminal block.</li> </ol>
Cells Arcing Excessively	<ol style="list-style-type: none"> <li>1. Cells are completely dry after washing.</li> <li>2. Cell plates are not bent or spaced too close.</li> <li>3. Cell insulators are not cracked, broken or burnt.</li> <li>4. Cell is dirty and needs cleaning.</li> <li>5. Broken ionizing wires.</li> </ol>

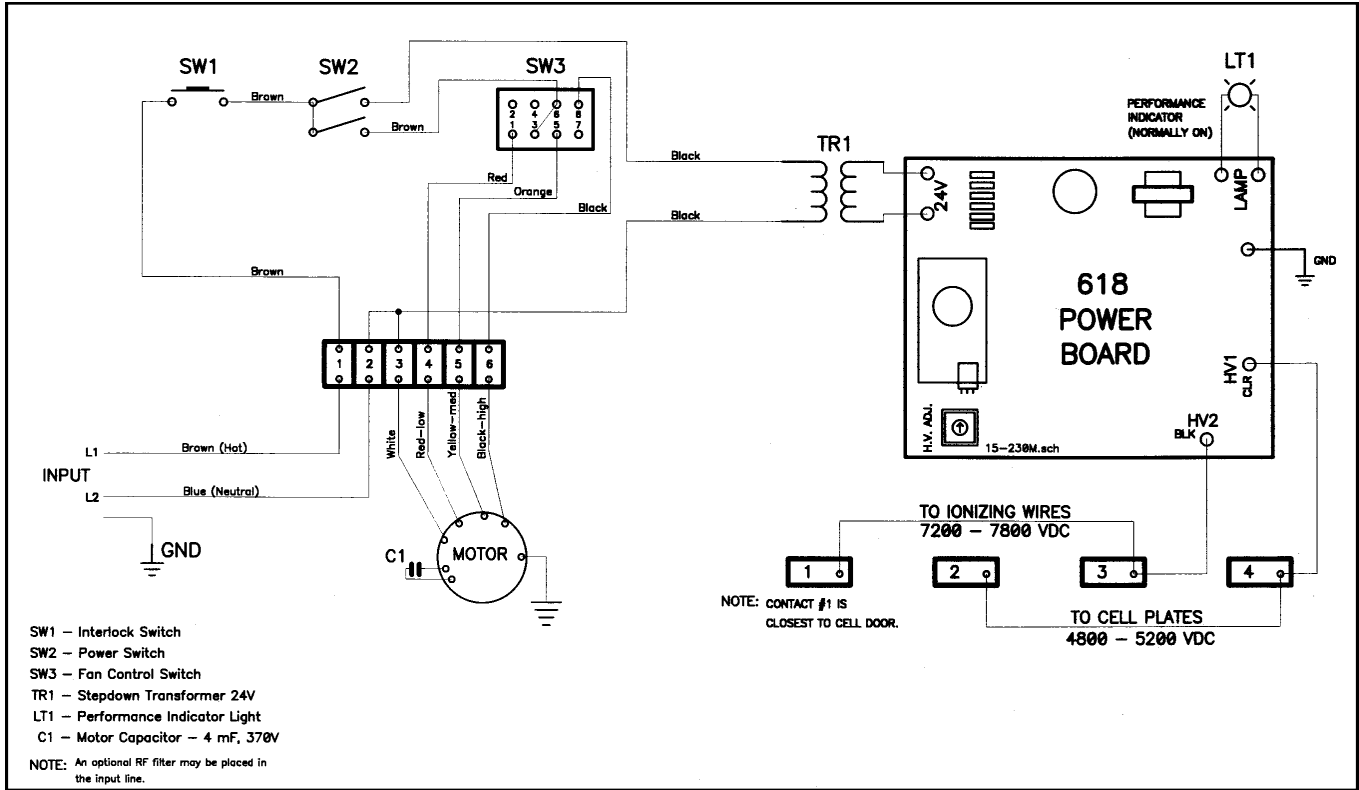
# Electrical Schematic - A - 120 Volt



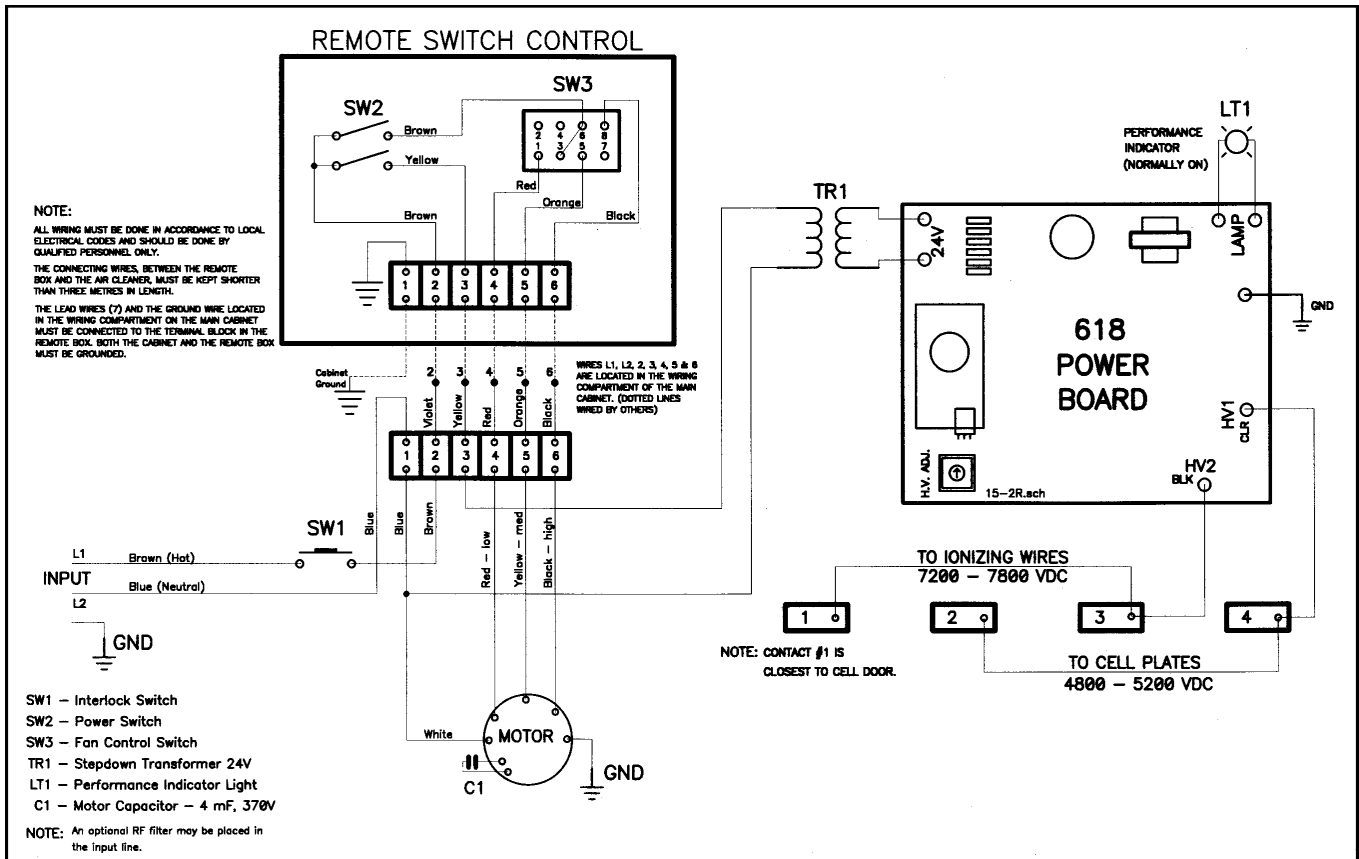
# Electrical Schematic - B - with Wired Remote - 120 Volt



# Electrical Schematic - A - 220 - 240 Volt



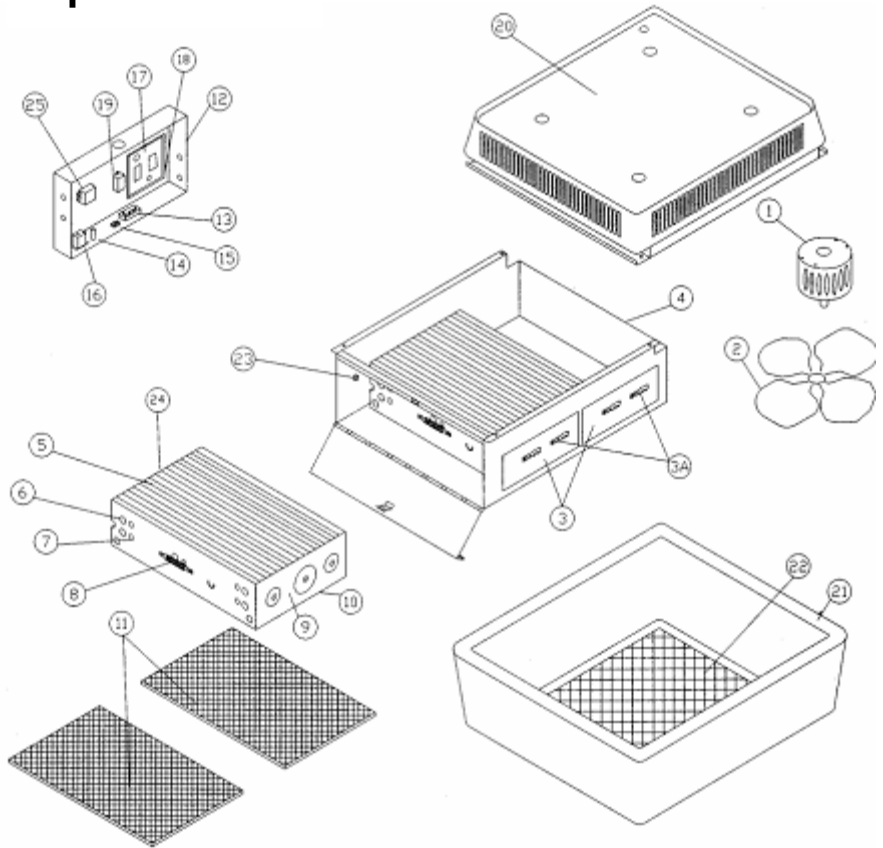
# Electrical Schematic - B - with Wired Remote - 220 - 240 Volt



# Exploded View

ITEM	SSC-15 PARTS DESCRIPTION	PART NUMBER
1	Fan Motor *	1503
2	Fan Blade	1504
3	Hi-Voltage Contact Board c/w 2 Contacts (26.6 x 10.6 cm)	1509
3A	Copper Contact	1025
4	Cell Section	---
5	Ionizing Wire c/w Spring & Hook (42 cm) For Fibre Top Cell	1843A
6	Ionizing Wire c/w Spring & Hook (43 cm) **	1843B
7	Ionizing Wire c/w Spring & Hook (44 cm) ***	1843C
8	Round End Plate Insulator	1041
7	Cell End Plate Screws	1047
8	Cell Handle (Plastic)	1048
9	Cell Top c/w Fibreboard & Contacts **	1847
9	Cell Top c/w Fibreboard & Contacts ***	1847-5
10	Collecting Cell	1545
11	Prefilter (50.8 x 31.8 cm)	1555
12	Power Box	---
13	3 Position Slide Switch c/w Housing and Slider	849-0219 (CE)
14	Performance Indicator Light	50-1013A
15	On/Off Rocker Switch	58-1021
16	Safety Interlock Switch (White, Push Button Type)	0702
16	Safety Interlock Switch (F-8A/Double Pole)	808-0203 (CE)
17	Power Board Only	1812
18	Power Board Fibreboard	1009
19	24V Transformer *	1013
20	Cabinet Assembly	---
21	Cover Assembly	---
22	Intake Grill	1507
23	Cell Guide	---
24	Cell Bottom Channel	1850
25	ULF Filter	CS-0510 (CE)

\* Part Number will differ based on voltage of Country  
 \*\* For Cells With 5 End Plate Insulators  
 \*\*\* For Cells With 7 End Plate Insulators



## LIMITED ONE YEAR WARRANTY

Your Electronic Air Cleaner is guaranteed for one (1) year from the date of original purchase, against electrical and mechanical defects in material and workmanship, under normal use and maintenance, which will be repaired or replaced without charge, upon inspection by an authorized service center. The warranty does not include the prefilter.

This guarantee is in lieu of any other warranty, either expressed or implied.

FIVE SEASONS COMFORT LIMITED will not be responsible for:

1. Normal maintenance as outlined in the Operation & Maintenance Manual including cleaning of electronic collecting cells.
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 FIVE SEASONS COMFORT LIMITED.
6. Parts not supplied or designated by FIVE SEASONS COMFORT LIMITED.
7. FIVE SEASONS COMFORT LIMITED 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.

If warranty service is required, send the part(s) prepaid to your dealer or nearest authorized service center, with a **proof of purchase**. Ensure that sufficient packing material is used. If part(s) arrive damaged due to improper packaging, warranty will be void. Please enclose a note explaining the nature of your difficulty.

Model No.

Serial No.

Date of Purchase

Dealer Name

Owner's Company Name & Address

RETAIN THIS CERTIFICATE WITH YOUR VALUABLE DOCUMENTS

## Five Seasons Comfort Limited

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