



**Operating and Service Instructions Model
LAFC-RC2 Electrostatic & HEPA 120 V**



Self Contained – Flush Ceiling Mounted
Electronic Air Cleaner – Model LAFC-RC2-HEPA



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OWNER'S MANUAL

Introduction

Your LakeAir Model LAFC-RC2 is a self-contained ceiling mounted electronic air cleaner. Model LAFC-RC2-HEPA uses a high efficiency non-electric media. They are designed for installation in a standard T-Bar ceiling in the space occupied by a 2 x 4 drop ceiling panel. Each unit is equipped to deliver very high efficiency and trouble free operation.

Providing Clean Fresh Air

Each day an individual breathes in at least 16,000 quarts of air. That air is filled with particles of smoke, dust, pollen, microorganisms, and other pollutants. With your new LakeAir HEPA air Cleaner, you and your customers will breathe air which is relatively free of those pollutants. Today the emphasis is on health and well being, and by using your LAFC you will see a direct benefit to your business.

Energy Consumption Is Lower

The exhausting of polluted air to the outside is the most common solution to the removal of concentrations of polluted air. In doing so, however, you must also bring supplies of fresh air to take the place of the air ex-hausted. You must also heat or cool this air to make it comfortable for the occupants of the space involved. This can be expensive, but with your LakeAir brand Air Cleaner, you will drastically reduce the need for outside air by recirculating the indoor air and thereby reducing your heating and cooling costs.

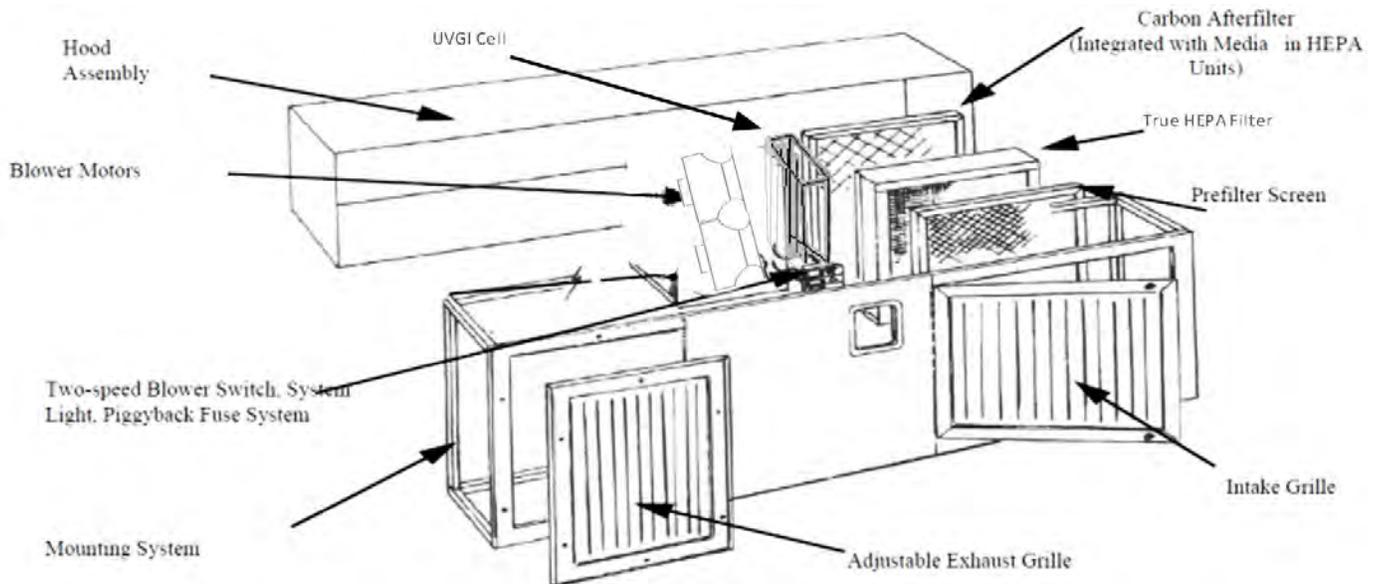
Recirculated Air for Comfort and Savings

With the use of your LakeAir brand Air Cleaner, you will find that bothersome smoke and other small particles which settle out on walls, curtains, glasses, bottles, mirrors, and other surfaces will be substantially reduced or eliminated, thus saving you costly maintenance and redecorating.



Easy access filter cell/HEPA filter in drop-down door.

COMPONENTS OF THE LAFC-RC2-HEPA & LAFC-RC2-HUV



Hood Assembly

The LAFC is fitted with a corrosion resistant galvanized steel hood which requires only 11.25" of space above the drop ceiling for installation.

Mounting System

The LAFC is equipped with a steel inner frame that has four drilled and tapped 1/4 x 20 holes for the provided eye bolts or for the use of threaded rod, to mount the unit to the superstructure above for a safe and secure installation HEPA LAFC units. **Intake Grille**

Grille

A fixed position intake grille allows for even distribution of the incoming air over the cleaning surface. The grille and the inner steel hinged frame swing open for easy access to the filter. **Pre filter Screen**

Screen

An aluminized pre filter screen is provided to collect large particles such as lint and hair. It is easily removed for cleaning with water and mild soap. This filter helps keep your electronic filter cell or HEPA media cleaner for a longer length of time.

Filtration Media

The LAFC-RC2 uses a commercial True HEPA filter to remove 99.97% of airborne particles. The Pre-Filter removes large items from the air stream and prolongs the life of the HRP filter. The Carbon filter removes odors and VOCs from the air stream. The filtration returns super clean air for you and the occupants of your establishment.

Blower Motor

Your LAFC-RC2 is equipped with 2 powerful yet quiet motor-driven blowers. Each blower capable of 830 CFM. They are advanced design EC blowers and are controlled by a variable speed control that can be mounted on the unit or in a wall mount. This allows you to closely control the amount of noise that is produced by your LAFC-RC2

UVGI

LAFC-RC2-HUV units are equipped with a powerful UVC cell. The light emitted by this filter deactivates the DNA of Viruses, bacteria and other live matter in the air stream.

Adjustable Exhaust Grille

Large adjustable exhaust grille with individually adjustable vanes allows a variable air-flow to be presented to the room according to size and traffic pattern.

Safety Interlock System

Located in the channel behind the collecting cell, the micro-switch controlled interlock system will not allow operation of the LAFC without having the intake panel locked into place.

Variable Speed Control

The LAFC-RC2 is equipped with a variable speed control that can be mounted on the unit or at a wall switch. This allows a great range of air circulation and noise control.

System Light

The LakeAir LAFC is fitted with a system light which indicates when your air cleaner is in operation. Located below the three-position switch, the light will be lit when all system connections are activated.

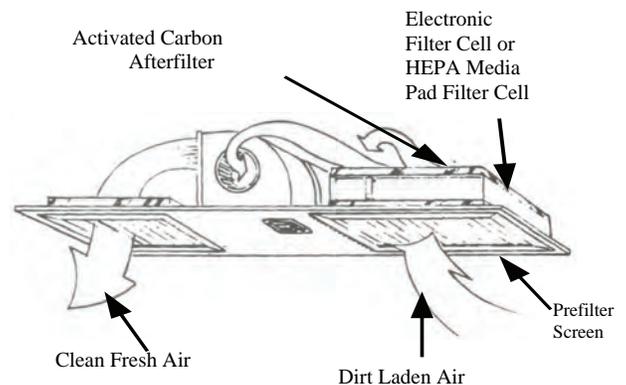
Piggyback Fuse System

The unit is provided with a fused circuit that protects valuable components in case of a power surge. An additional "piggyback" fuse is located in the fuse holder for easy access if it is needed.

HOW YOUR LakeAir MODEL LAFC WORKS

In business establishments or public buildings, millions of airborne particles are continually being circulated in the air you breathe. Your LakeAir Model LAFC Self Contained Flush Mounted Electronic Air Cleaner removes the smoke, dust, dirt, pollen, and other pollutants from the air with an electrostatic process which works this way:

1. The internal circulating blower mechanism draws the dirt laden air into the system where it first encounters the outer PREFILTER SCREEN.
2. The PREFILTER SCREEN collects the larger particles from the air and holds them on its intermeshed surface.
3. In electronic units, the air then passes into the ELECTRONIC FILTER CELL where it first meets the IONIZING SECTION with its many fine ion wires. These wires charge the airborne particles by exciting them with a high electrical charge. As the charged particles move along to the COLLECTING SECTION, they are trapped by the collector plates much like a magnet attracts and collects metal filings.
4. In HEPA LAFC units, the air is drawn through a high efficiency, commercial grade true HEPA mini pleat system. The harmful particles are held by the tightly knit material.
5. The ACTIVATED CARBON AFTER-FILTER, the final filter in the system, removes odors and freshens the air.
6. The cleaned and purified air is then returned to the room environment.



INSTALLATION INSTRUCTIONS

IT IS IMPORTANT TO READ THE FOLLOWING INSTRUCTIONS CAREFULLY. DAMAGE TO THE PRODUCT OR TO INSTALLER AND PROPERTY COULD RE-SULT IF INSTRUCTIONS ARE NOT FOLLOWED.

Important Safety Precautions

1. Do not connect the power source until after the unit is mounted. Shock and/or damage could result.
2. Be sure to shut the unit off prior to any service work.
3. Wear gloves to protect hands during installation as well as to keep the surface of air cleaner free from dirt and smudges.

Equipment Needed for Installation

1. Regular and Phillips Screwdrivers
2. Wire cutters
3. Pliers
4. Twelve gauge galvanized wire for hanging the wires from the true ceiling to the top of the unit (if threaded rod is to be used, it will replace the wire.).
5. Enough twelve or fourteen gauge electrical wire and conduit to reach the nearest switched circuit. (see Electrical Instructions)
6. Junction box fittings as required.

Items Supplied as Loose Parts

1. Four (4) black 1/4 x 20 eyebolts

Unpacking

1. Remove unit from carton and turn over so that grille surfaces are accessible.
2. Remove pre filter and collection cell or HEPA pad from unit through intake side of cleaner. This is accomplished by turning the access screws and lifting the hinged opening. The electronic filter cell is attached by a black grid cap connector on the side of the cell.
3. After removing the items in the previous step, close and lock the hinged intake panel.

Preparation for Mounting

The LAFC and HEPA LAFC are designed to fit into a T-bar drop ceiling. Remove as many of the 2 x 4 ceiling tiles as is necessary to safely and securely mount the air cleaner. The area between the true ceiling and the drop ceiling must be at least 11". There must be no duct work, pipes, or other obstructions to the area where the unit is to fit. Make sure that the spot chosen will be oriented for good air circulation. The exit grille can be adjusted for different airflow patterns by turning the individual vanes.

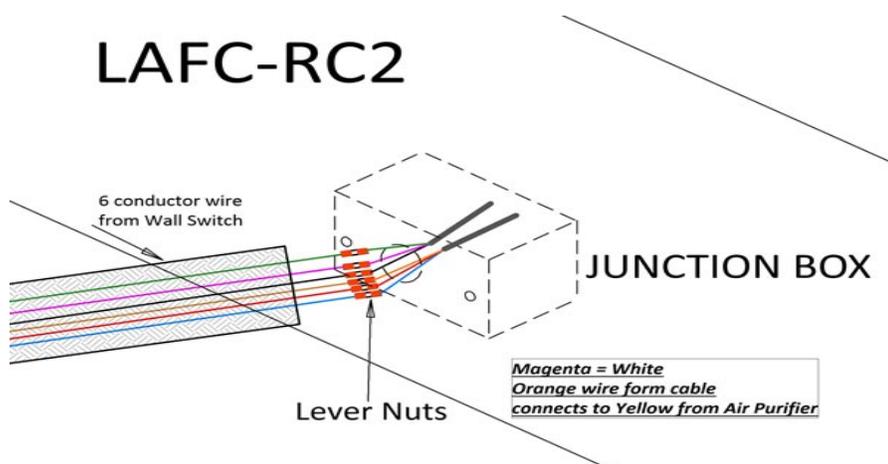
- Mounting**
1. Attach four (4) 12 gauge galvanized steel support wires to the true ceiling. Twist each wire at least four times to provide for safe support for the air cleaner. Make sure the free end of the wire extends far enough to adequately reach the eye bolts and be attached to them.
 2. Turn the air cleaner onto the grille portion so that the four holes are visible on the top portion of the unit. Attach the four eyebolts to the top by screwing them into the appropriate holes.
 3. Lift the air cleaner into place and rest on the T-Bar opening without putting weight upon the T-Bar grid work. The weight should be borne by the support wires with the T-Bar acting as holding receptacle for the unit facing. You should check the level of the unit to insure proper operation.

Wiring at Air Purifier

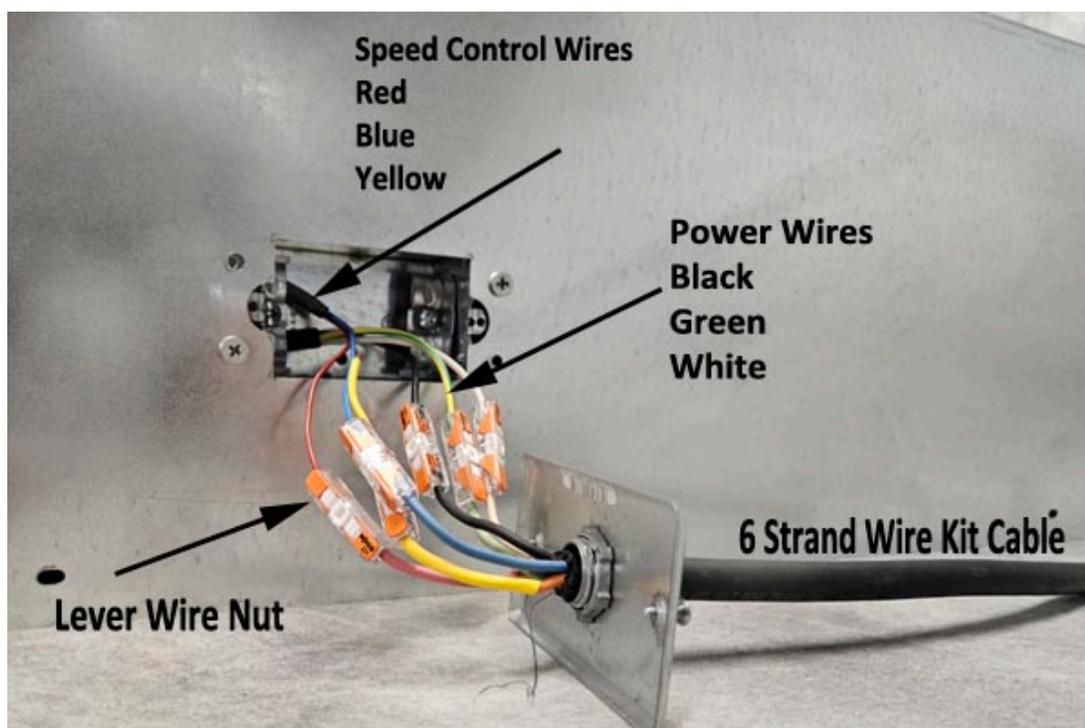
The LAFC-RC2 is controlled by a variable speed control potentiometer. **(Note the LAFC-RC2 must be wired with the potentiometer for the unit to operate properly. If the potentiometer is by-passed the unit warranty is voided)** The on board part of this wiring is held in a junction box on the side of the unit. This wire can be accessed by unscrewing to cover plate. There is a knock out for wire connection on the access plate.

The wire coming from the unit (unless ordered with on-board speed control) has 6 conductors.

All 6 wires from unit must be connected. The LINE (main power) must run through the potentiometer. The NEUTRAL and GROUND must be connected directly to the unit. The 3 speed control wires from from the unit must be connected to the potentiometer.

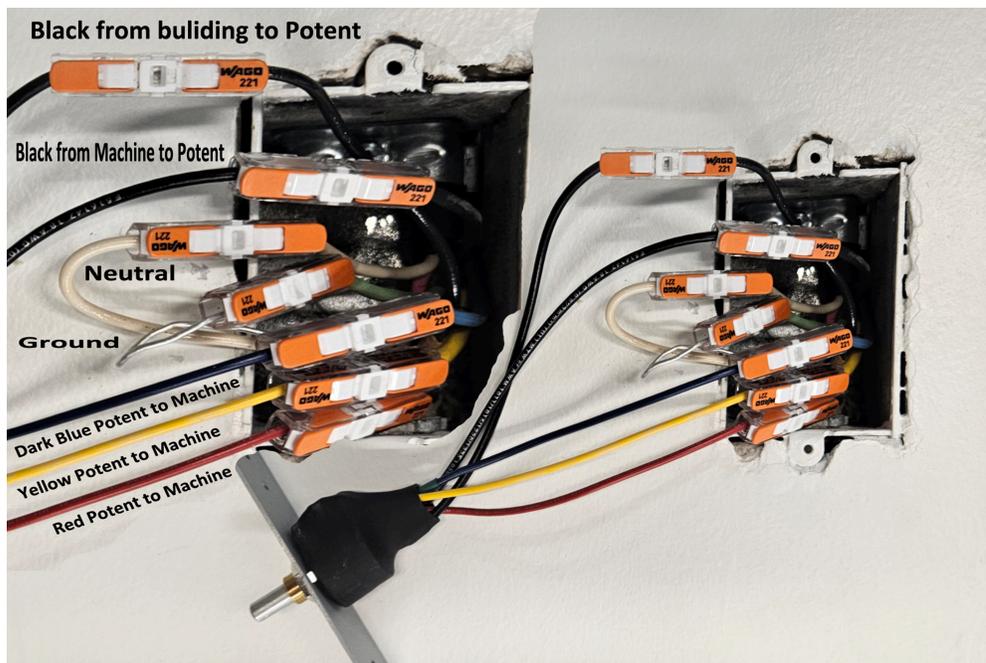
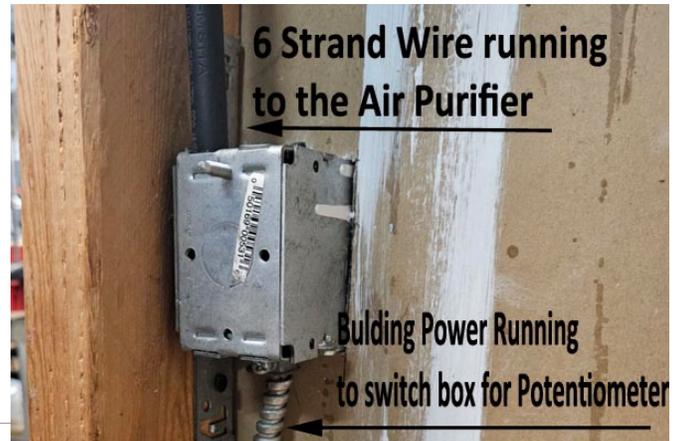
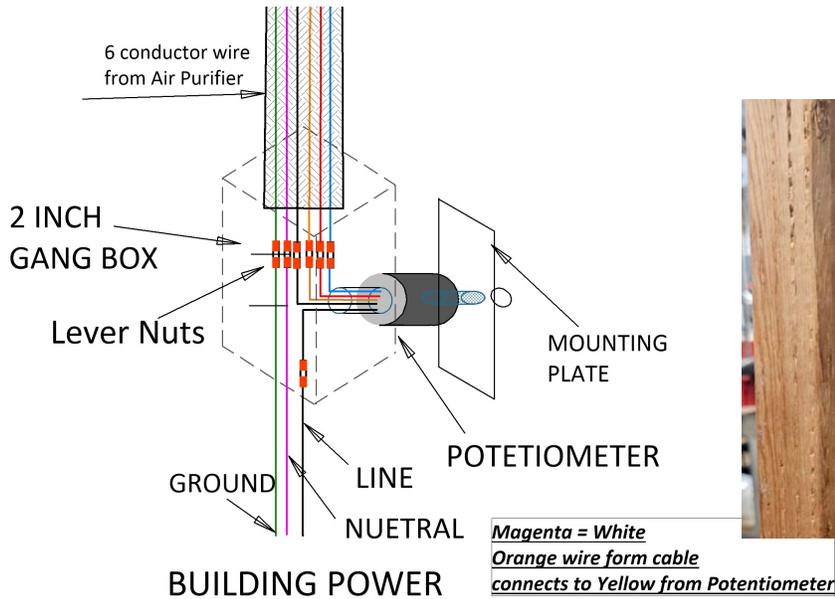


For more easy installation, you can buy a wiring kit (shown below) from LakeAir .



Wiring at Wall

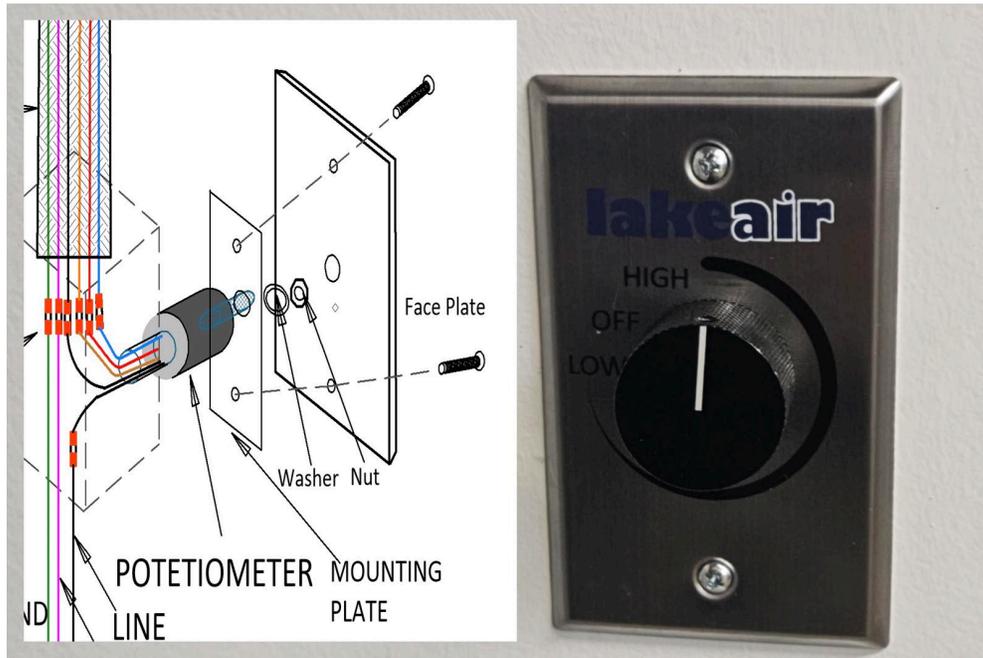
The power from the building should be run to a switch box . The LINE Runs through the potentiometer. The NEUTRAL and GROUND runs directly to the unit. The speed Control wires run from the potentiometer to the unit. See Images Below for clarification.



You do not have to use the LakeAir Wiring Kit, Low voltage speed control is often hooked up using thermostat wire. Be sure to use a heavy enough gauge wire for the air purifier (maximum 4.4 amps per unit)

Face Plate

The potentiometer should be attached to the mounting plate. There is an alignment hole in the mounting plate. Secure the potentiometer to the mounting plate using the lock washer and nut. The Face plate can then be attached with the screws included, through both the face plate to the switch bo



Wiring with on board Potentiometer

If you ordered your unit with the potentiometer mounted in the unit you need only hook up the building power to the unit. The wires coming from the unit will be power wires and they need to be connected to line, neutral and ground from the buildings power.

Reassembly

1. With the unit now in place, loosen the 1/4 turn screws on the intake grille and allow the hinged portion to drop down.
2. Replace the pre filter screen, electronic cell, and carbon after filter, making sure to connect the grid cap connector to the cell.
3. Close and lock the entire hinged panel into place.

1. Check all electrical connections and make sure they are tight and properly connected.
2. Electronic cell is in place and properly oriented so that the airflow arrow points in the direction of the airflow or the HEPA Media pad is properly oriented so that black carbon filter material is facing toward the ceiling.
3. Turn the unit on and check to see that it runs properly at all speeds. In addition, make sure the light goes on when the unit is in operation. (*note that the blower may take up to 20 seconds to start*)
4. Open the intake grille section and check to see that the unit shuts off completely. Re-engage the panel and make sure unit turns on by watching light.

If for any reason the unit does not appear to work correctly, refer to the Troubleshooting Guide for assistance.

GENERAL INFORMATION:

Application

The Model LAFC-RC2 should be mounted in the room or area where the air is to be cleaned. Removal of such pollutants as tobacco smoke and viruses from the air in areas like conference rooms, lounges, schools, offices and the like is the goal of the unit. The LAFC provides its own air circulation and as such can be used for most applications requiring particulate removal.

Under no circumstances should the electronic Model LAFC-RC2-S be used in an atmosphere containing combustible gases or vapors. These applications are best served by the model HEPA LAFC.

MAINTENANCE

Washing the Electronic Cells and Pre filter

In order for your LakeAir Model LAFC to maintain peak operating efficiency, the pre filter screen and the electronic cells must be washed regularly. The frequency of this cleaning will depend on the atmosphere in which the units are operating. Recommendations for cleaning frequency can be obtained from your local LakeAir representative. The best way to clean the cells is by soaking them in hot water with LA-99 cell cleaning detergent (other methods can be used if time is a restraint).

1. Following the cell cleaner manufacture's instructions, add LA-99 cell cleaning solution or other detergent to hot water in an appropriate container such as a stationary tub.
2. Immerse the cell in the water and soak for 5 to 10 minutes. Then remove the cell and rinse with clean water, making sure to remove all residue from the cell surface.
3. Check cells for broken ion wires or bent plates and repair or replace if necessary.
4. Make sure the cell is completely dry before placing it back into the air cleaner.
5. Remove lint and other dirt from the pre filter by vacuuming or washing it in a mild detergent solution.

MAINTENANCE Continued

CAUTION: Care should be taken when handling the LAFC cells and filters

1. Edges may be sharp on the collection plates as well as the area near the ionizing wires .
2. Be sure to wear appropriate gloves and goggles when dealing with a chemical of any kind, Contact with the skin is not recommended.
3. Electronic air cleaners and their component are susceptible to damage. Take care when working with them to avoid equipment damage.

Replacing the HEPA Media Pad

The HEPA Media pad cannot be cleaned and MUST BE REPLACED every 9-12 months. Failure to replace a heavily loaded filter can cause undue stress on the blower motors due to the reduced airflow and will void warranty. Contact your local LakeAir dealer to purchase replacement filters.

Service

Should your LakeAir LAFC malfunction, there are several simple checks which you can use to check the performance before a service person need be called.

1. Check to see if the fuse on the unit is tripped which would indicate electrical interruption to the unit. Correct by replacing fuse. If the circuit breaker or service box fuse is blown, that too will need replacement.
2. Be sure the electronic cell is in place and that the access door is locked down. Failure to have this done will cause the safety interlock to override the circuit.
3. If the operating light is not lit after checking these things, a service person should be consulted.

All electronic air cleaners undergo a process known as “arcing” from time to time. It is a snapping noise that comes from the electronic cell when very large particles enter into the collection cell or when the cells are wet or extremely dirty. If an unusual amount of arcing persists, check the collecting cells for broken wires, bent plates, or to see if they are very dirty. If arcing still occurs, check with your service person or dealer.

Constant Arcing

From time to time it is possible to come across a situation where the electrostatic cell arcs continuously. In most case this is a dirty cell. However it is possible that a deposit may build up on a cell plate that is not easily removed by cleaning. In some cases a micro-bur can work itself up from the metal of the cell plate. IF this happens you will need to remove the deposit or bur. This can be done easily by first locating the plate where the deposit has formed. After you have determined where the arcing is occurring, the deposit can be removed with a common emery board. Lightly sand the edge of the cell plate in the area where the arcing is occurring. It may take a couple tries to fully remove the bur. If you would like to view a video on the topic you can find it @ https://www.youtube.com/watch?v=a6Hinf_GNHs&t=6s

Filter cleaning and replacement recommendations.

Filter and Bulbs listing

Filter / Kit	Part#	Replace/Clean
Standard HEPA filter	# 499081	Annually
UVGI HEPA Filter	N/A	Annually
MERV 15 Media Filter	# 499097	Annually
Pre Filter	# 490051	Annually
Standard Carbon Filter	# 499039	3 months
Cannablend Filter	# 499169	3 months
Electrostatic Filter Cell	# 101107	3 months
UVGI Carbon Filter Kit	N/A	6 months
UVGI Bulb Kit	# 400210	Annually

Note:

HEPA and Media filters should be replaced more often in smoking areas

Carbon filters should be replaced when odors re-appear

Electrostatic filter cell should be inspected to see when dirty

NEVER OPERATE UVGI WITHOUT CARBON FILTERS

LakeAir MODEL LAFC TROUBLESHOOTING GUIDE AND CHART

WARNING!!! The following instructions are intended for qualified service personnel only. Dangerous line voltage circuits are exposed during these procedures. Disconnect power at fuse before servicing the unit. Trouble shooting the LAFC can be accomplished with minimal tools and by following the directions given below in the two sections of Troubleshooting Guide. The first section deals with checks on determining the cause of a malfunction in your LAFC, and the second section explains how to find a faulty component, or how to determine that a specific component is functioning properly.

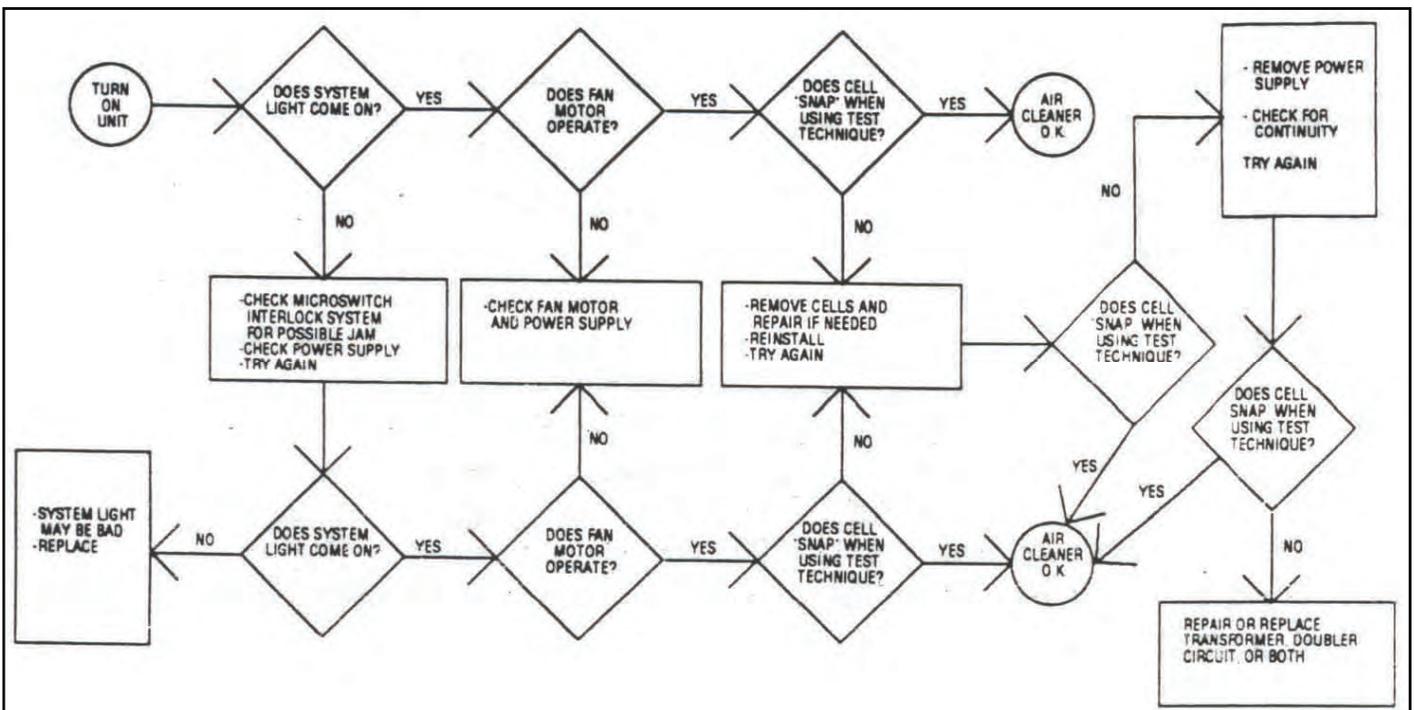
Diagnostic Checks

LakeAir MODEL LAFC TROUBLESHOOTING GUIDE AND CHART

1. Powering up the LAFC

- a. Make sure the prefilter screen and electronic filter are clean, dry, and properly + installed in the air cleaner.
- b. Turn on the LAFC and check to make sure all systems are in proper working order. In each case, the system light should be on and the fan should run.
 - If the light does not come on, check the microswitch interlock for free movement as well at the power source for correct input.
 - If the fan does not come on, check the fan motor, wiring to the motor, and the power source.
 - If both the system light and the fan motor operate, go to step 2.
- c. **Test Technique**
 - a. With the air cleaner turned on, use a long shank insulated screw driver to penetrate the pre filter screen and make contact with the electronic cell. A definite “snapping” sound and arcing should occur if the cell is properly energized.
 - b. If no arcing is heard, check for continuity through the collector cell, then check for failure of the cell due to broken wires, cracked insulators, bent plates; and following that, a possible failure in the voltage doubler or transformer.
- d. **Cell Check**
 - a. To remove the electronic cell from the unit, loosen the two quarter turn fasteners and allow the hinged intake to drop into place. Remove the grid cap connector from the cell and take the cell and pre filter from the unit.
 - b. Close the hinged intake and check to see if the system light and the fan operate. If they do, check the cell for a short circuit.
 - c. Replace the cell. If the Test Technique still does not produce a “snap” or arcing, go to step 4.
- e. **Check Power Supply**
 - a. Remove the power supply from the LAFC cabinet and check for continuity through the circuit.
 - b. Check continuity through the switch and go back through to the power source until the problem can be located.
 - c. Replace the power supply into the cabinet and check for correct line voltage by powering up the system and using a voltmeter to measure the input voltage at the transformer.
 - d. If voltage is correct (about 120V AC), then continue to check voltage at the secondary side of the transformer (2000V AC), and finally at the output (grid cap connector) which should yield about 6000V DC.
 - e. Any variation from these voltages could indicate a component failure where replacement may be required.

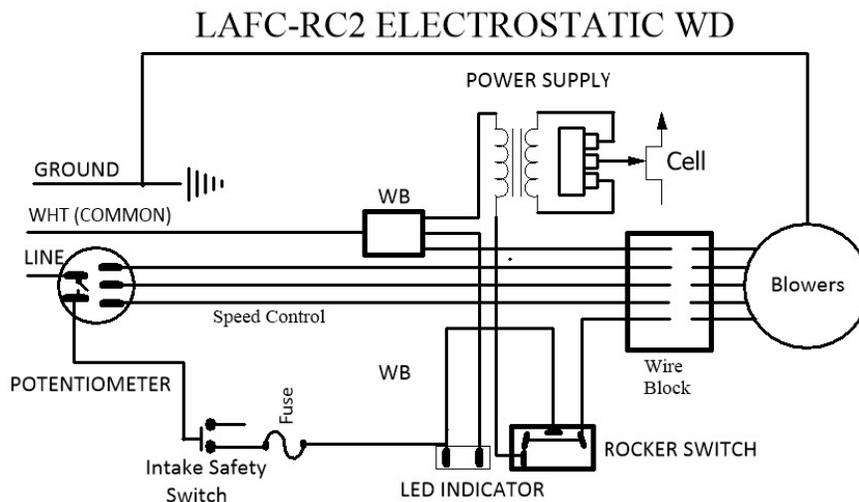
TROUBLE SHOOTING FLOWCHART



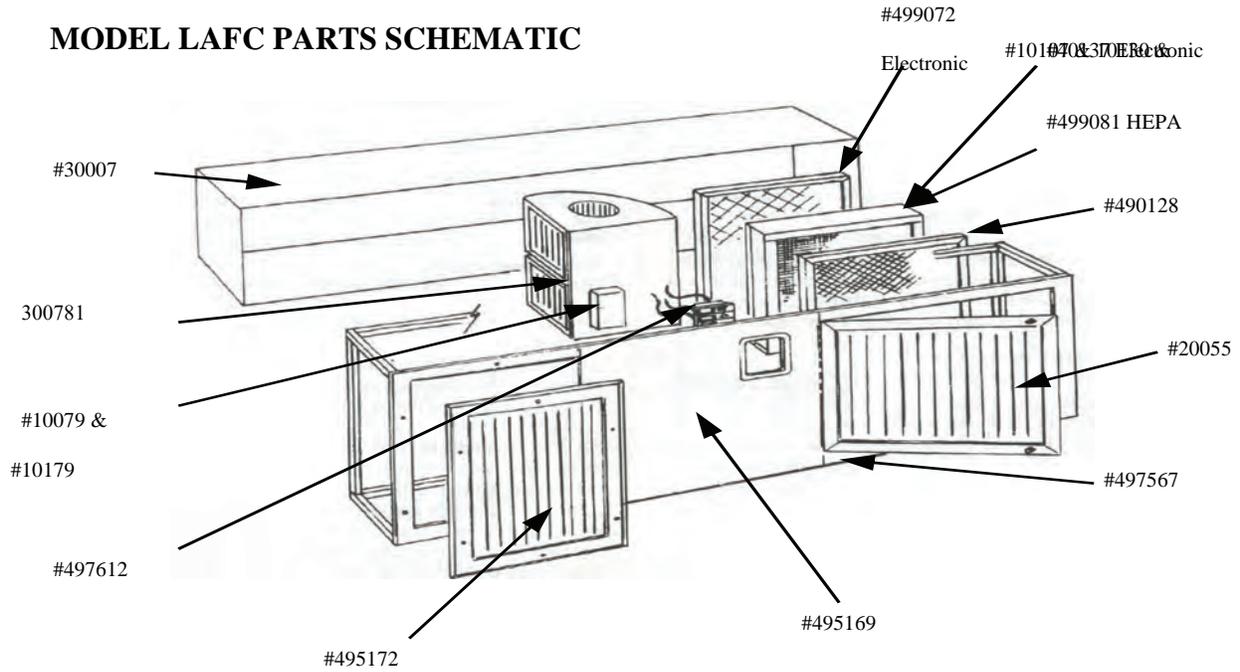
Specifications

Capacity.....	300-1500 cfm
Standard HEPA Filter.	4.5 inch mini pleat
UVGI HEPA Filter.....	2.4 inch mini pleat
HEPA Efficiency.....	99.97% to 0.3 micron
Electrostatic Precipitator	4.5 inch / 5kv
Cell Collection Area.....	5000 sq. inches
Electrostatic Efficiency.....	97% to 0.1 micron
MERV 15 Media	High Capacity 4 inch Mini Pleat
MERV 15 Efficiency	95% to .3 micron
UVGI.....	+1000 μJcm^2 UVC dose
Lamp Life	9000 hours / 1 Year
Blower Life Expectancy.....	60,000 hours
Carbon Filter.....	2 chamber / 1050 gram
inches Unit size.....	26 x 22 x 14
Shipping size.....	24 x 16 x 40
Unit weight.....	60 lbs.
Shipping weight.....	75 lbs.
Power usage.....	200 - 400 watts
Sound level.....	38- 65dB(A)
Power.....	120v, AC/60Hz/ 3.5 amps
Variable speed control.....	Low to Turbo
Cabinet finishes.....	Black & White
Warranty.....	7 Year Limited

Wiring Diagram



MODEL LAFC PARTS SCHEMATIC



Part#	Description	Quantity Used
#30007	LAFC Hood Assembly	1
#495169	Instrument Panel	1
#40137	Ceramic Stand-off Kit (Electronic Only)	1
#480029	Electrical Schematic Label	1
#490128	Prefilter Screen	1
#497567	Safety Interlock Micro-switch	1
#300781	Motor/Blower 120V(2-HEPA)	1
#371922	Potentiometer Assembly	1
#497612	Off/On Rocker Switch	1
#497547	Fuses	1
#499039	Carbon Filter	1
#499081	HEPA Filter	1

Other parts in the LAFC assembly can be obtained by calling or writing to RK Ventures, Inc. Customer Service Department.

RK Ventures Inc
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Racine WI 53404

Phone 800-558-9436
Fax 262-632-3144
Email sales@lakeair.com
www.lakeair.com

LakeAir ELECTRONIC AIR CLEANERS 7 YEAR LIMITED WARRANTY

The LakeAir WM-RC2 Air Purifier is warranted by RK Ventures Inc. to the original purchaser to be free from defects in material and workmanship under normal use and service for a period of seven years from the date of purchase. The blowers of the LakeAir MAX Guard is warranted for (1) year from the date of purchase to the original purchaser. A extended blower warranty is available for purchase and extends the warranty to 7 years. LakeAir's liability is to be limited to repairing or replacing such products during the warranty period at its option, providing the product is sent prepaid to RK Ventures, Inc. or an Authorized Service Center and is deemed to be defective in part or portion to the satisfaction of RK Ventures, Inc.

This warranty is in lieu of any other warranty expressed or implied and of all other obligations or liabilities in connection with the sale of the described LakeAir Electronic Air Cleaner. In no case will any claim for consequential damages or labor expenses be allowed. This warranty does not apply to a LakeAir Electronic or any part thereof which has not been operated in accordance with the operating instructions herein contained; where components or other accessories not compatible with the LakeAir Electronic Air Cleaner have been used or attached to it; which has been subject to accident, unauthorized alteration, abuse, damage by flood, fire or acts of nature.

User's Responsibility:

1. To operate and maintain according to instructions.
2. Regularly replace filters and cleaning of the unit including electrostatic filters. Failure to replace filters or clean the unit will void the warranty.
3. Use product controls in accordance with owner manual and maintain them or warranty will be voided.
4. Provide adequate electrical service, within voltage ratings that are indicated on the unit rating plate. Provide electrical protection devices to protect unit from voltage surges. Failure to provide proper electrical service or safety devices will result in warranty being void.

Damage not covered by Warranty:

5. Damage occurring during transportation or resulting from improper handling is not covered by the warranty.
6. Damage due to accident, alteration or tampering is not covered by the warranty
7. Misapplication of the product or use for purposes other than cleaning ambient air will void all warranties.

Customer Service

It is very important that our customers receive good support for any issues related to our products. If you have questions or need support it can be found in many ways.

Email:

Email support can be obtained by sending an email to sales@lakeair.com. We try to answer all email support matters within 12 hours. If emails are sent during regular business hours 8:00 AM - 6:00 PM CST replies should be much sooner.

Phone:

Customer Service phone support can be reached at 800-558-9436. Phone support is normally available Monday - Saturday 8:00 AM - 6:00 PM CST.

Website Chat:

website chat support can be reached found on our website at the bottom right of any page. Chat support is normally available Monday - Saturday 8:00 AM - 6:00 PM CST and Sundays 12:00 noon to 6:00 PM CST.

Customer Text Support:

Customer Text Support can be reached at 862-319-1118. Textsupport is normally available Monday - Saturday 8:00 AM - 6:00 PM CST and Sundays 12:00 noon to 6:00 PM CST.

