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Dallas, Texas USA

AIR CLEANERS/
FILTERS

HEALTHY CLIMATE®

504,745M
08/2003

**PUREAIR™ AIR PURIFICATION SYSTEM
PHOTOCATALYTIC OXIDATION TECHNOLOGY(PCO)**

INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR CASED PUREAIR™ MODELS PCO-12C-2, PCO-20C-2

General

The PureAir™ air purification system helps to significantly reduce levels of airborne volatile organic compounds, cooking odors, common household odors, airborne dust particles, mold spores, and pollen in residential spaces. The PureAir™ air purification system (**cased model**) includes a MERV 9 pleated filter, UVA lamps, and a metal insert that is coated with a titanium dioxide catalyst. As air enters the system, a percentage of airborne particles and bioaerosols, such as mold and bacteria, ranging in size down to .3 microns, are captured by the pleated filter. The smaller airborne particles, odors, and chemicals continue through the system. The UVA lamp activates the catalyst on the metal insert. The catalyst combines with water vapor in the air to form hydroxyl radicals that destroy a percentage of the remaining odors and chemicals.

In laboratory & field tests, we found greater than

(TVOC) within 24 hours of initial installation and operation of the PureAir™ air purification system. When the system is first started, it may take up to 48 hours to reduce the airborne chemicals that have built up in your home over a long period of time. After that period, there will be a balance between chemicals emitted inside your home and chemicals removed by your PureAir™ air purification system. Please refer to the included Homeowners IAQ guide for other measures to improve indoor air quality.

The PureAir™ air purification system is NOT intended to be used for removal of active mold growth or continuous source of high levels of chemicals in the air. For existing mold growth, the mold must be appropriately removed PRIOR to installation of your PureAir™ air purification system.

Shipping and Packing List

Package 1 of 1 contains:

- 1 - PureAir™ air purification system c/w:
 - 1 - Metal cabinet, including insulated door
 - 1 - One piece slide-in assembly (Metal Frame and ballasts, with associated wiring.)
 - 1 - MERV 9, 4" pleated filter
 - 4 - Installed UVA lamps (PCO-12C)
 - 6 - Installed UVA lamps (PCO-20C)
 - 1 - Separately wrapped titanium dioxide metal insert
- 1 - Power cord
- 1 - Installation and maintenance instructions
- 1 - Homeowners IAQ Guide
- 1 - Warranty certificate
- 1 - Registration card

Unique Supplies

- Cotton gloves and cloth (to remove finger prints from lamps.)
- Sealant: Aluminum foil duct tape or water based mastic. (NOT silicone)

▲ NOTICE

Possible odor emissions.

Odors may be present temporarily after initial start-up, painting, cleaning, remodeling, hobby activities or after lamp replacement.

Some occupants may notice irritation or discomfort during this period.

If irritation or discomfort persists longer than 48 hours, unplug the PCO device and contact your Lennox authorized dealer.

▲ WARNING

Electric shock hazard.

Can cause injury or death.

Disconnect all remote electrical power supplies before servicing.

Access panels must be in place during the appliance operation.



▲ WARNING

Risk of property damage, injury, or death.

Installation, adjustments, alterations, service and maintenance must be performed by a qualified service technician.

Dimensions/Specifications

DIMENSIONS:

Model PCO-12C: 29" L x 11 5/8" W x 19 1/2" H
(737mm x 295mm x 495mm)

Model PCO-20C: 29" L x 11 5/8" W x 23 7/8" H
(737mm x 295mm x 606mm)

WEIGHT:

Model PCO-12C: 54 lbs.(24 kg.) Installed
67 lbs.(30 kg.) Shipping

Model PCO-20C: 62 lbs.(28 kg.) Installed
76 lbs.(34 kg.) Shipping

ELECTRICAL:

Model PCO-12C: 120V, 1.6 Amps, 60Hz

Model PCO-20C: 120V, 2.4 Amps, 60Hz

Line Voltage: 108V-132V (If unit operates above 128V, a reduction in lamp life on the order of 10 - 15 may occur.)

POWER CONSUMPTION:

Model PCO-12C: 192 Watts

Model PCO-20C: 288 Watts

OPERATING ENVIRONMENT:

0°F - 140°F (-18°C - 60°C) Outside of duct.
10 -60 relative humidity. (PCO has optimal performance at 50 relative humidity.)

PLEATED FILTER EFFICIENCY:

Minimum Efficiency Rating Value - MERV 9. Tested to ASHRAE Standard 52.2.

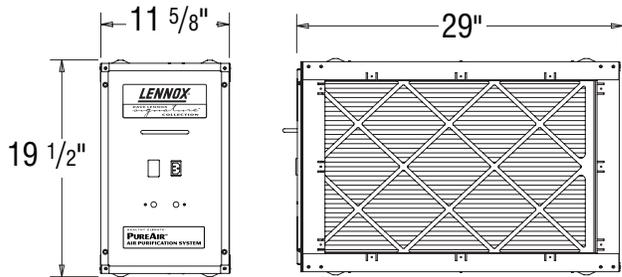


LISTINGS:

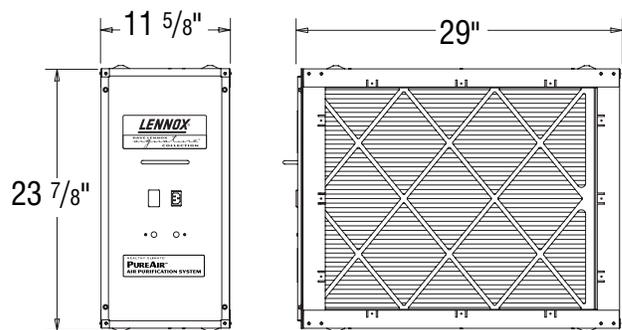
ETL Safety Listing Report #J99*9379-001,
Conforms to UL STD 1598, Certified to CSA STD C22.2 NO.250.0

Specifications subject to change without notice.

Model PCO-12C



Model PCO-20C



Approximate Air Flow Resistance

Capacity (Tons)	Flow Rate (CFM)	Pressure Drop (inches w.g.)	
		PCO-12C	PCO-20C
2	800	.08	.07
2.5	1000	.12	.09
3	1200	.16	.12
3.5	1400	*	.15
4	1600	*	.18
4.5	1800	*	.21
5	2000	*	.24

*Not Recommended. Excessive system pressure drop can damage your HVAC system and reduce its performance.

Installation

UNPACKING THE PCO-12C/20C (Fig. 1)

The MERV 9 pleated filter has been vapor barrier packaged. The metal insert has been vacuum packaged. **All protective wrapping MUST BE removed prior to installation and operation of system.**

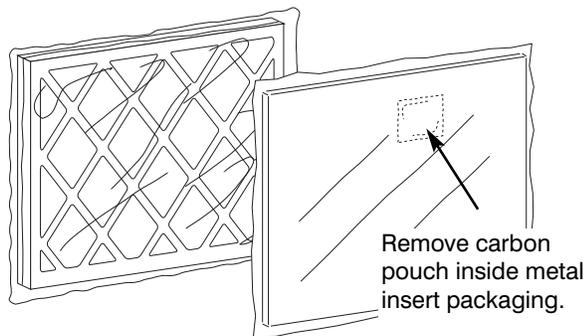


Fig. 1 Remove and discard all wrapping and packaging material prior to installation and operation of PCO-12C/20C.

CHECKING THE LAMPS (Fig. 2)

Lamps are factory installed as shown below. Make sure that the lamps have not become disengaged during shipping. Use cotton gloves or cloth to avoid fingerprints on the lamp.

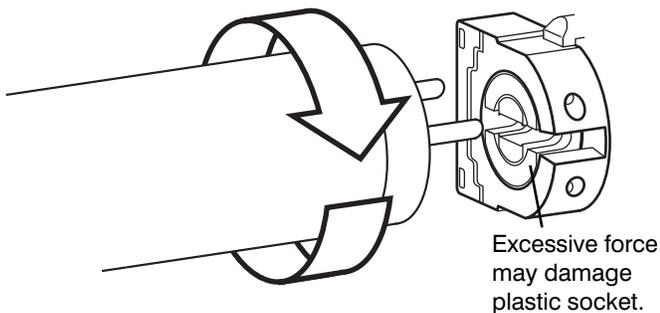


Fig.2 Verify proper installation of lamps.

⚠ CAUTION

Lamps contain Mercury.

Ingestion or contact with mercury or mercury vapor is hazardous to your health.

Take care when handling lamps. If lamp is broken, avoid contact with mercury.

SELECTING A LOCATION (Fig. 3)

Install the PCO-12C/20C **ONLY** in the return air duct upstream of the supply blower. Allow approximately 30" of clearance in front of access door to slide out the PCO-12C/20C assembly. This provides easier access to change the pleated filter, metal insert, and UVA lamps.

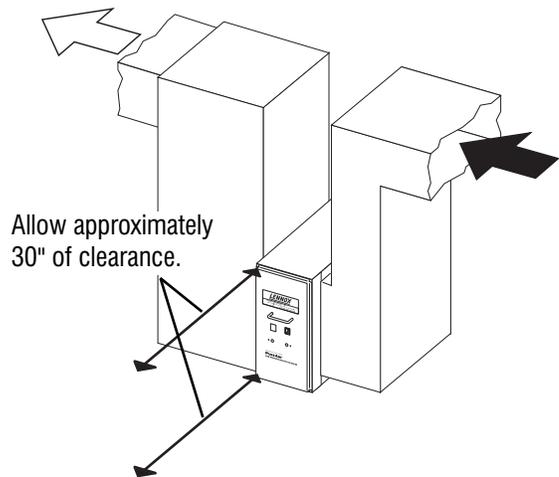


Fig.3 Install PCO-12C/20C in the return air duct.

⚠ CAUTION

Sharp edges hazard.

Equipment sharp edges can cause injuries.

Use protective gloves when grasping equipment edges.

⚠ NOTICE

Unpacking required.

Remove all protective packing material from the pleated filter and the titanium dioxide metal insert.

All packing material should be discarded properly in refuse containers.

⚠ NOTICE

Clean lamps prior to installation using a cotton cloth to remove dirt and fingerprints.

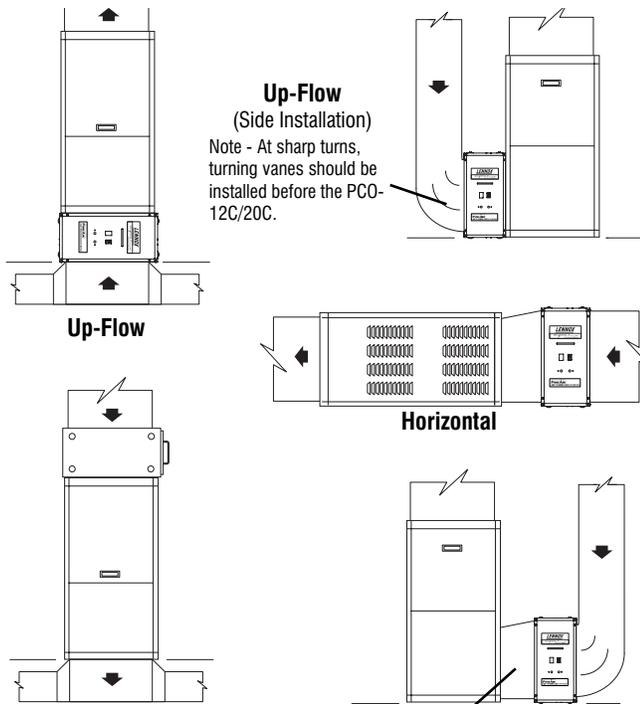
Failure to clean lamps could reduce the system's efficiency.

⚠ NOTICE

Intended for return air duct installation only.

Improper installation can damage HVAC system, PureAir™ or other equipment and may void warranty.

INSTALLATION EXAMPLES



Up-Flow
(Side Installation)
Note - At sharp turns, turning vanes should be installed before the PCO-12C/20C.

Down-Flow: Note - Due to flue location on some down-flow furnaces, the front of PCO-12C/20C must be installed to side or rear of furnace cabinet. If installed in a confined space, service clearance may be restricted.

Typical Transition: If furnace opening does not match up to the PCO opening, a sheet metal transition should be used. Transition must be planned for each job. Reduction should not be more than 4 inches per linear foot, approximately 20 angular degrees.

INSTALLING THE CABINET

Oil on metal ducts can cause odors. Wash all new transitions and duct surfaces with mild soap and water to remove oils prior to installation. Connect the PCO-12C/20C cabinet to the return air side of the air handling unit with *field provided* sheet metal screws, rivets, or appropriate method. Be sure to orient cabinet to airflow direction as indicated on label inside cabinet. Fasten return air duct to other side of PCO-12C/20C cabinet. Seal all joints between the cabinet, air handling unit, and ducting with aluminum foil tape or water based mastic. Ducts and air handler(s) should be sealed to prevent contamination from unconditioned spaces (such as basements, garages, or attics).

Optionally, the cabinet can be strap-mounted from the ceiling. When drilling screw holes in the cabinet for straps, be sure to locate them where they do not interfere with the insertion of the PCO-12C/20C assembly.

⚠ CAUTION

Ultraviolet (UV-A) radiation risk.
Prolonged exposure may cause skin or eye damage.
Avoid prolonged (weeks) exposure to skin or eyes.

INSTALLING THE CABINET (Cont'd)

High Humidity Environments: Wrapping cabinet with 2" foil faced insulation (foil on the outside) around the case (excluding the insulated door) will prevent condensation on the sides of the PureAir™ case.

INSTALLING THE ASSEMBLY (Fig. 4)

1. Check lamps for proper seating in sockets.
2. Slide the PCO-12C/20C assembly into cabinet, using the cabinet rails as a guide.
3. Slide the pleated filter into the rails on the air inlet side of the PCO-12C/20C assembly. Verify proper air flow direction through pleated filter.
4. Slide metal insert into rails downstream of UVA lamps so that 1/2" flange is toward back of cabinet.
5. Install access door using provided screws. Be sure unused plug opening is covered with black hole plug.
6. Plug one end of provided power cord into receptacle on PCO-12C/20C and the other end into a 120V power receptacle.
7. Verify that the lamps are illuminated.

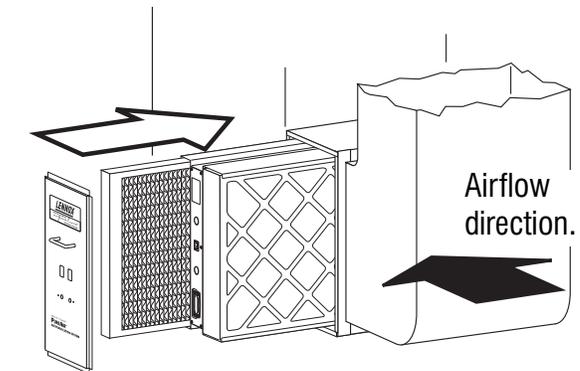


Fig. 4 Slide PCO-12C/20C assembly with provided pleated filter and metal insert into the PCO-12C/20C cabinet.

⚠ NOTICE

Do not use any form of silicone sealant.

Use of silicone-based products will reduce the effectiveness or damage the titanium dioxide coatings.

⚠ NOTICE

Oil on metal ducts can cause odors

Wash all new transitions and duct surfaces with mild soap and water to remove oils prior to installation.

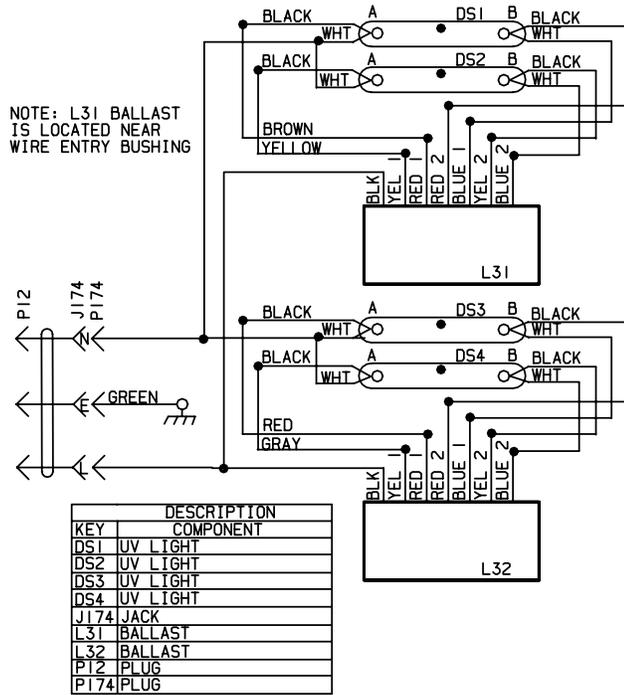
Installation

WIRING INSTRUCTIONS (See wiring diagrams)

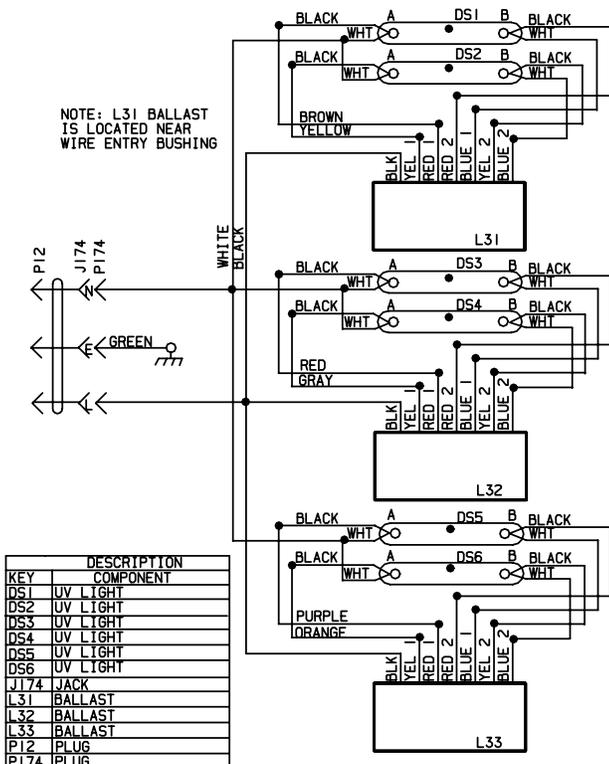
The PCO-12C/20C must be wired in accordance with national and local codes.

IMPORTANT: To ensure UVA lamps life, power **MUST** remain on to PCO-12C/20C at all times. **Do not interlock with air handler blower.**

MODEL PCO-12C WIRING DIAGRAM



MODEL PCO-20C WIRING DIAGRAM



Operation

1. Door on unit must be secured in place prior to operation.
2. Lamps to remain illuminated continuously except during service and maintenance.
3. For optimal odor control, fan should remain on continuously (i.e. run with thermostat fan setting in the "ON" position, not the "Auto" position.) Running fan continuously during cooling operation may result in higher humidity. If this occurs, set thermostat in the "Auto" position during cooling operation.
4. For those air handlers that do not have a continuous "Low Fan Speed" mode, an additional blower relay will need to be installed. Use Lennox blower relay part number 45H03. Lennox utilizing the Lennox Surelight™ heating control do not require the use of an additional blower relay.



⚠ WARNING

Electric shock hazard.
Can cause injury or death.
Disconnect all remote electrical power supplies before servicing.
Access panels must be in place during the appliance operation.



⚠ WARNING

Risk of Carbon Monoxide poisoning.
Can cause injury or death.
Do not operate without access panel in place. Operation of this equipment without the access panel in place may cause gas fumes from the heating system to be drawn into occupied spaces.

Maintenance

The PCO-12C/20C has three components that will require maintenance: MERV 9 pleated filter, metal insert, and UVA lamps. (For replacement part numbers refer to Replacement Parts section in these instructions. PCO-12C/20C performance will be dramatically reduced if the required maintenance is not performed on these three components.)

MERV 9 PLEATED FILTER

The pleated filter should be replaced every 12 months. More frequent filter changes may be required in situations with high dust or dirt loads.

1. Unplug the power cord and remove the access door.
2. Partially slide out the PCO-12C/20C assembly.
3. Remove the pleated filter and replace with the same MERV 9 filter. (Performance of PCO-12C/20C will be dramatically affected if improper filter is installed.)
4. Slide assembly back into cabinet and install access door.
5. Reconnect power cord.
6. Verify that the lamps are illuminated.

METAL INSERT & LAMP REPLACEMENT

Replace metal insert and lamps* every 24 months. Replace insert more frequently if you notice a significant drop in odor removal efficiency.

If you find that you need to replace the insert more frequently than every 24 months, consider source reduction and/or ventilation to reduce the levels of contaminants in your home (see Homeowners IAQ Guide for additional recommendations).

* Lamps will continue to glow at the end of the 24 months. However, their output efficiency will have degraded to the point that they must be replaced to assure effective performance of your PureAir™ unit.

1. Unplug the power cord and remove the access door.
2. Slide out PCO-12C/20C assembly.
3. Remove metal insert.
4. Twist/rotate each lamp approximately 1/4 turn to remove from sockets.
5. Install new lamps making sure to snap them completely into the sockets and twist/rotate lamp approximately 1/4 turn. Use gloves or cloth to avoid fingerprints on lamps. (See page 3.)

METAL INSERT/LAMP REPLACEMENT(Cont'd)

6. Install new metal insert.
7. Slide assembly back into cabinet and install access door.
8. Reconnect power cord.
9. Verify that the lamps are illuminated.

Note: DO NOT WASH metal insert. Washing will destroy the titanium dioxide catalyst that coats the insert surface.

Note: If the system has been operated for a period of time without the lamp(s) being illuminated (such as at startup or with a failed lamp), an odor may occur when lamps are (re)started. This symptom is considered to be typical and should only be temporary. In the event that an odor does occur, it should subside and dissipate within 12 hours of full operation. If this odor persists longer than 48 hours, you should unplug the PCO and contact your Lennox authorized dealer.

CAUTION

Ultraviolet (UV-A) radiation risk.

Prolonged exposure may cause skin or eye damage.
Avoid prolonged (weeks) exposure to skin or eyes.

NOTICE

Clean lamps prior to installation using a cotton cloth to remove dirt and fingerprints.

Failure to clean lamps could reduce the system's efficiency.

CAUTION

Lamps contain Mercury.

Ingestion or contact with mercury or mercury vapor is hazardous to your health.

Take care when handling lamps. If lamp breaks, avoid contact with mercury.

Maintenance

LAMP CHECKOUT (Does not illuminate.)

1. Check power cord for 120V power.
2. Unplug power cord and remove access door.
3. Slide out assembly and remove pleated filter or metal insert.
4. Check lamps for proper connection in sockets.
5. Exchange non-working lamp with one of the working lamps. If the new lamp operates normally, replace defective lamp.
6. If steps 1 through 5 pass inspection then the ballast may be at fault. Ballast must be replaced with an approved ballast by a qualified service technician.

LAMP DISPOSAL

Hg-LAMP CONTAINS MERCURY.

Manage in accord with disposal laws.

Refer to www.lamprecycle.org or call 1-800-9-LENNOX.

CAUTION

Lamps contain Mercury.

Ingestion or contact with mercury or mercury vapor is hazardous to your health.

Take care when handling lamps. If lamp breaks, avoid contact with mercury.

Replacement Parts

No.	Description	PCO-12C-2	PCO-20C-2
	Complete PureAir™ System	75X69	75X61
1	Cabinet	75X72	75X65
2	Assembly	75X70	75X62
3	Access Door	93X39	75X64
4	Electrical Socket	75X77	75X77
5	UVA Lamp	10M35(4)	10M35(6)
6	Lamp Socket	49M00	49M00
7	Ballast	56M12	56M12
8	Titanium dioxide coated metal insert	75X73	75X66
9	MERV 9 pleated filter	75X74	75X67
	Power Cord (Not Shown)	49M48	49M48

Contact your local Lennox dealer to order replacement parts.

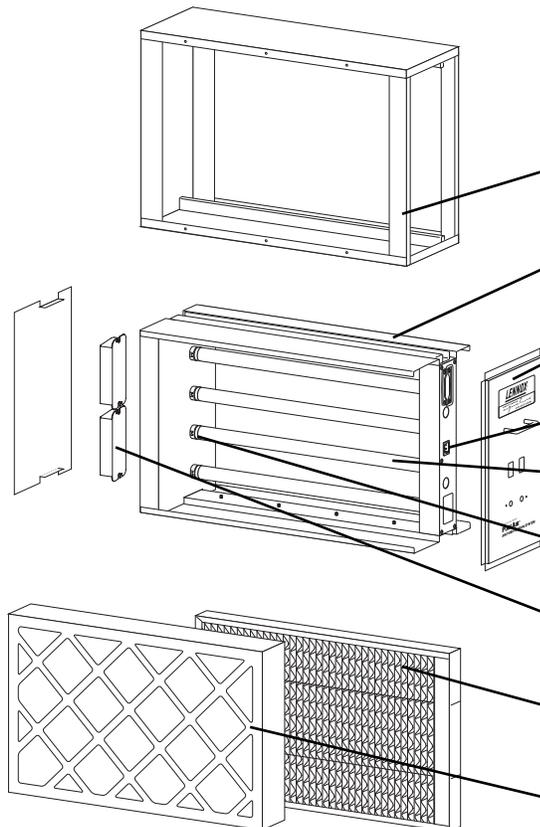
For the Lennox dealer nearest you, dial 1-800-9-LENNOX.

Visit us at <http://www.Lennox.com>

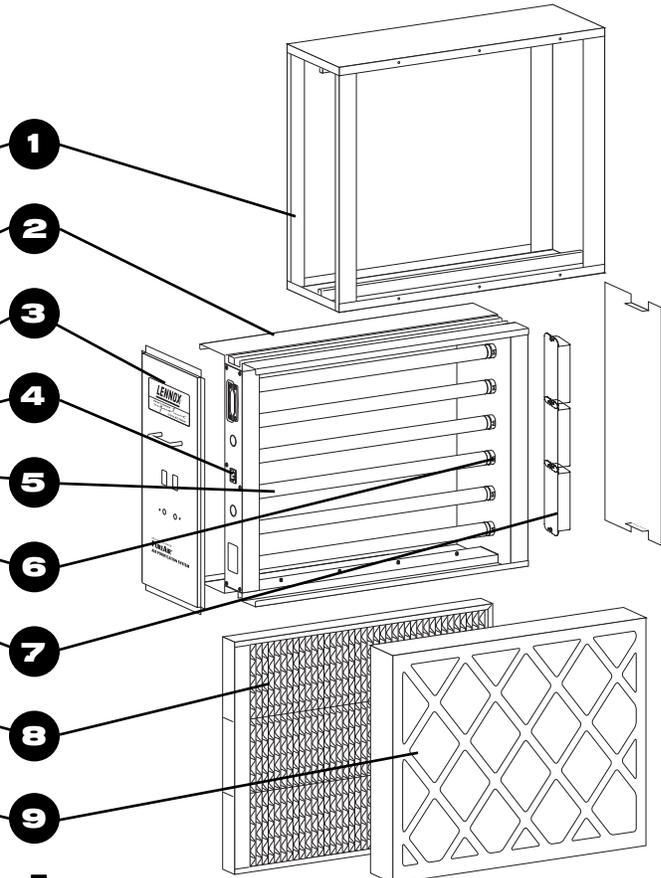
PROPER CLEAN-UP TECHNIQUE IN CASE OF LAMP BREAKAGE

- Wear protective gloves, eyewear and mask.
- Sweep the broken glass and debris into a plastic bag, seal the bag, and dispose of properly. Contact your local waste management office for proper disposal.
- Do not use a vacuum cleaner. Do not incinerate.

Model PCO-12C Exploded View



Model PCO-20C Exploded View



Service Flow Chart PCO-C

