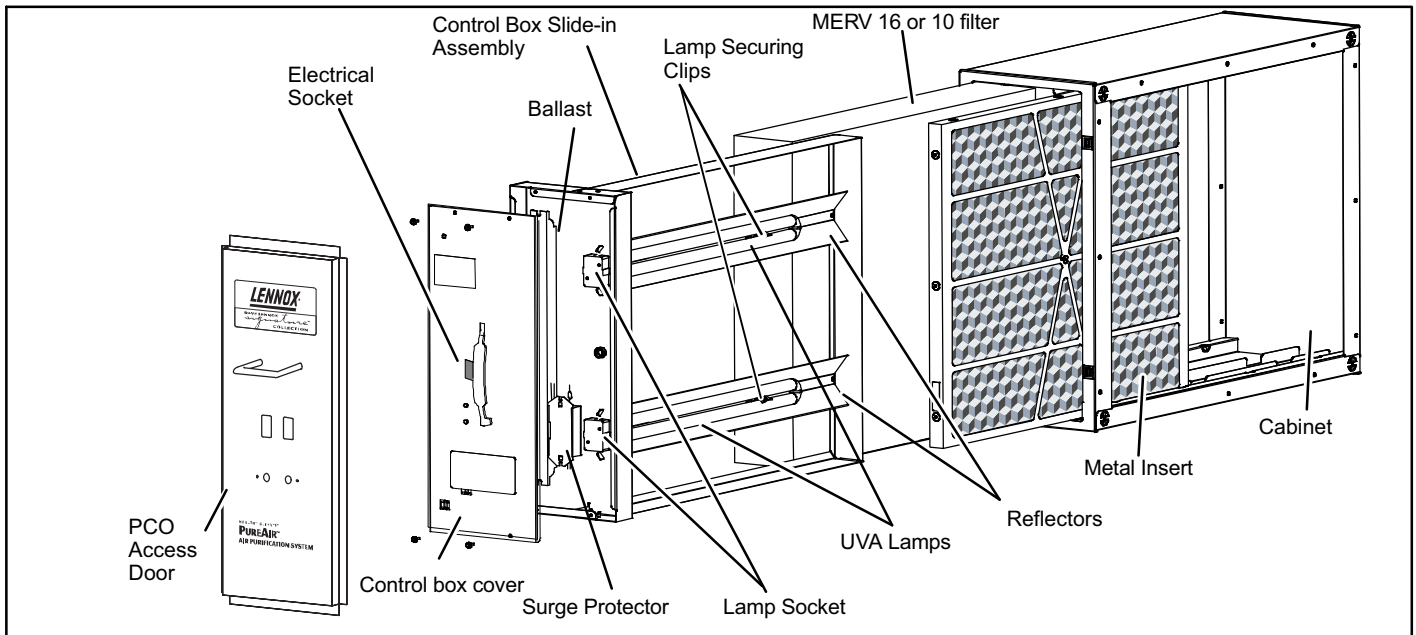


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# PUREAIR™ AIR PURIFICATION SYSTEM PHOTOCATALYTIC OXIDATION (PCO) TECHNOLOGY

## INSTALLATION INSTRUCTIONS FOR PUREAIR™ AIR PURIFICATION SYSTEM MODELS PCO-20C-6, PCO-12C-6

### Parts Identification



**Figure 1. PCO Parts Identification (Typical representation; some units may vary)**  
**RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE**

### Shipping & Packing List

Replacement part for the 1st generation PureAir™ PCO-20C and PCO-12C includes:

- Control box slide-in assembly (includes frame, ballasts and associated wiring)

### Shipping Damage

Check equipment for shipping damage. If damage is found, immediately contact last carrier.

### Installing the Slide-in assembly

- (See figure 1) Check lamps for proper seating in socket and that any foam packing has been removed.
- Slide the PCO-12C/20C assembly into cabinet, using the cabinet rails as a guide.

### Replacing the Slide-in assembly

## NOTICE

### Unpacking required.

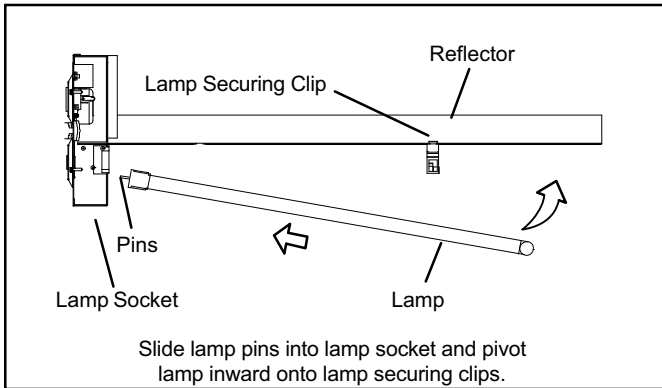
**Remove all protective packing material from the UVA lamps and the titanium dioxide metal insert. Packing material should be disposed of properly.**

Use cotton gloves or a cotton cloth to protect the lamps and your hands during unpacking and installation. Install lamps as follows:

- Unplug the power cord and remove the PCO access door.
- Slide out the old slide-in assembly.
- Remove the filter, insert and lamps.
- In the new slide-in assembly, install the first lamp (see figure 2) and insure the lamp is properly inserted in the lamp socket.



- If necessary, reseal lamp by gently engaging the pins in the socket and pivoting the lamp to engage the two securing clips mounted on the reflector.
- Gently pull on lamp to ensure that lamp securing clips are engaged.
- Repeat steps 4 through 6 to check installation for second lamp.



**Figure 2. Lamp Installation (Top View)**

## ⚠ CAUTION

**Lamps contain mercury. Ingestion of 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.**

- Slide the pleated filter into the new slide-in assembly. Verify proper air flow direction by matching the flow arrow on the filter with the Rating plate Air flow direction and Cabinet Airflow direction found inside the cabinet.
- Slide the metal insert into rails on the air outlet side of the slide-in assembly.
- Slide the slide-in assembly into the cabinet.
- Securely fasten the PCO access door using four (4) screws.
- Plug one end of the provided power cord into the receptacle on the PCO access door and the other end into a power receptacle.
- Look through the view port in the access door to check that the lamps are illuminated.

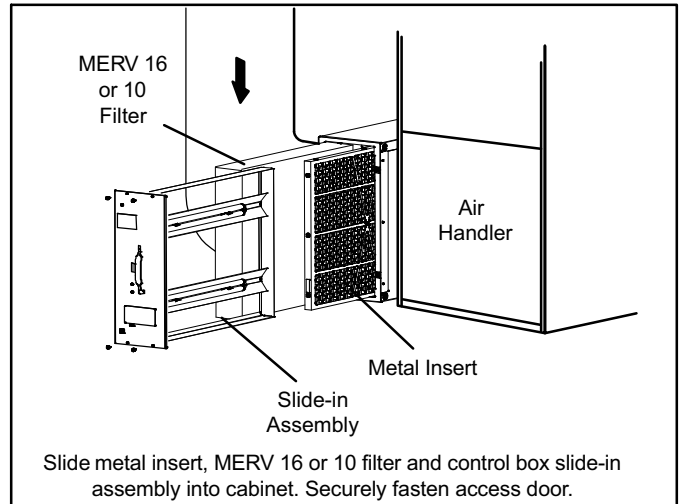
*NOTE - On initial start-up, the lamps may not reach full illumination for several minutes.*

## ⚠ CAUTION

**Ultraviolet (UVA) radiation risk. Prolonged exposure may cause skin or eye damage. Avoid prolonged (weeks) exposure to skin or eyes.**

## NOTICE

**MERV 16 cannot tolerate direct exposure to UVA light. Filters are protected by factory-installed reflectors.**



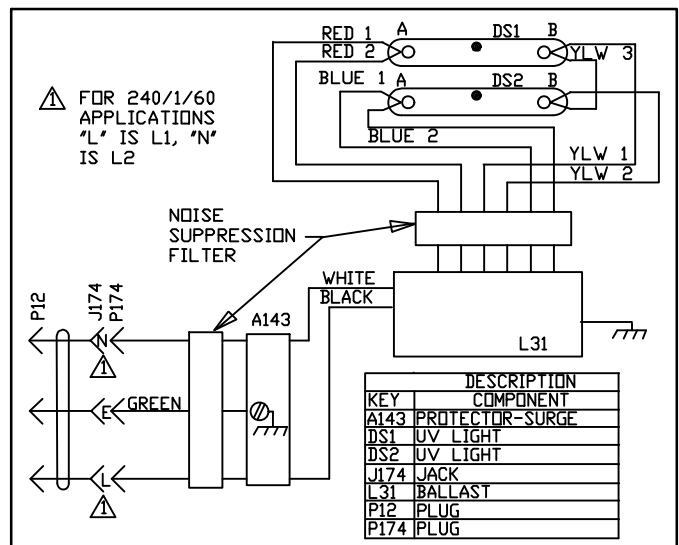
**Figure 3. Installing Filter and Metal Insert**

### Wiring

The PCO shall be wired in accordance with national and local codes.

## NOTICE

**UVA lamp life is shortened when lamps are turned off and on. Power to PCO unit must remain on at all times. Do not interlock lamp operation with air handler blower operation.**



**Figure 4. Wiring Schematic**

## Operation

1. Check to ensure that access door is securely in place.

## WARNING

**Risk of carbon monoxide poisoning.**

**Can cause injury or death.**

**Do not operate system unless access door is in place and properly secured. Operation of this equipment without the PCO access door in place may cause exhaust fumes to be drawn into occupied spaces.**

2. Lamps should remain illuminated continuously except during service and maintenance.
3. For optimal odor control, air handler blower should remain on continuously (thermostat fan setting in ON position, rather than AUTO).

If air handler does not provide a continuous low blower speed option, an additional blower relay should be installed. Use Lennox part number 45H03. Phone Lennox Application Department at 1-800-453-6669 for wiring information. Lennox units which include the SureLight® integrated control do not require the use of an additional relay.

*NOTE - Continuous fan operation may result in higher humidity. If humidity levels are uncomfortably high, fan setting should be switched to AUTO during cooling operation.*

## Filter, Insert and Lamp Replacement

The PCO MERV 16 or 10 filter, metal insert and UVA lamps require annual replacement. More frequent replacement may be required in applications with heavier dust or dirt loads or if you notice a reduction in odor-removal efficiency. An annual maintenance kit, which includes a replacement MERV 16 or 10 filter, a replacement metal insert and two replacement UVA lamps, is available through Lennox. See "Annual Maintenance Kit" (Page 4) for applicable kit part number.

## WARNING

**Electric shock hazard.**

**Can cause injury or death.**

**Disconnect all electrical power supplies before servicing.**

## CAUTION

**Personal Burn Hazard.**

**Lamps become very hot when illuminated.**

**Allow lamps to cool for 10 minutes before removing lamp from socket.**

**Injury may result from contact with hot lamps.**

1. Unpack the replacement MERV 16 or 10 filter, UVA lamps and metal insert which are provided in the Re-

placement Kit. Remove all protective wrapping materials.

2. Unplug the power cord and remove the PCO access door.
3. Slide out the control box slide-in assembly and remove the existing MERV 16 or 10 filter.
4. Remove the existing metal insert from the cabinet. Place old insert and used filter in plastic bag for removal from property.

## NOTICE

**Do not wash metal insert. Soap and water will destroy the titanium dioxide catalyst that coats the insert surface.**

5. Pivot the lamp away from the reflector until lamp is released from the securing clips. Gently pull lamp out of the lamp socket taking care not to break the lamp.
6. Wipe down reflectors using cotton cloth to remove finger prints and contaminants.
7. Remove one replacement lamp from the box. Position the lamp with the pin end closest to the lamp socket. While engaging the pins in the socket, pivot the lamp so that the securing clips on the reflector lock into the open space in the middle of the lamp. See figure 2.
8. **Gently pull on lamp to ensure that lamp securing clips are engaged.**
9. Repeat steps 7 and 8 to replace second lamp.
10. Check air flow direction of the MERV 16 or 10 filter and insert replacement filter into the control box slide-in assembly.
11. Check air flow direction of the replacement metal insert and slide the metal insert into the cabinet.
12. Slide control box slide-in assembly back into PCO cabinet.
13. Securely fasten access door and reconnect power cord.
14. Look through the view port in the access door to check that the lamps are illuminated.

*NOTE - On initial start-up, the lamps may not reach full illumination for several minutes.*

## CAUTION

**Ultraviolet (UVA) radiation risk.**

**Prolonged exposure may cause skin or eye damage.**

**Avoid prolonged (weeks) exposure to skin or eyes.**

## NOTICE

**If the system has been operated for a period of time without the lamps being illuminated, an odor may occur when lamps are illuminated. This odor is considered typical and should dissipate within 12 hours of full operation. If the odor does not subside after 48 hours of operation, instruct the homeowner to unplug the PCO unit and contact a Lennox dealer.**

## ! CAUTION

### LAMPS CONTAIN MERCURY.

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

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

## NOTICE

Hg -- Lamps contain mercury.

Manage in accord with disposal laws.

Refer to [www.lamprecycle.org](http://www.lamprecycle.org) or call 1-800-9LENNOX.

### Proper Clean-Up of Broken UVA Lamps

If a lamp is broken, it must be disposed of properly.

- Wear protective gloves, eye wear and mask.
- Sweep broken glass and debris into a plastic bag. Seal the bag and dispose of according to instructions given by local waste management office.
- **Do not use a vacuum cleaner. Do not incinerate.**

### Troubleshooting Flow Chart

See figure 5 (Page 5) for the troubleshooting flow chart.

### Annual Maintenance Kits

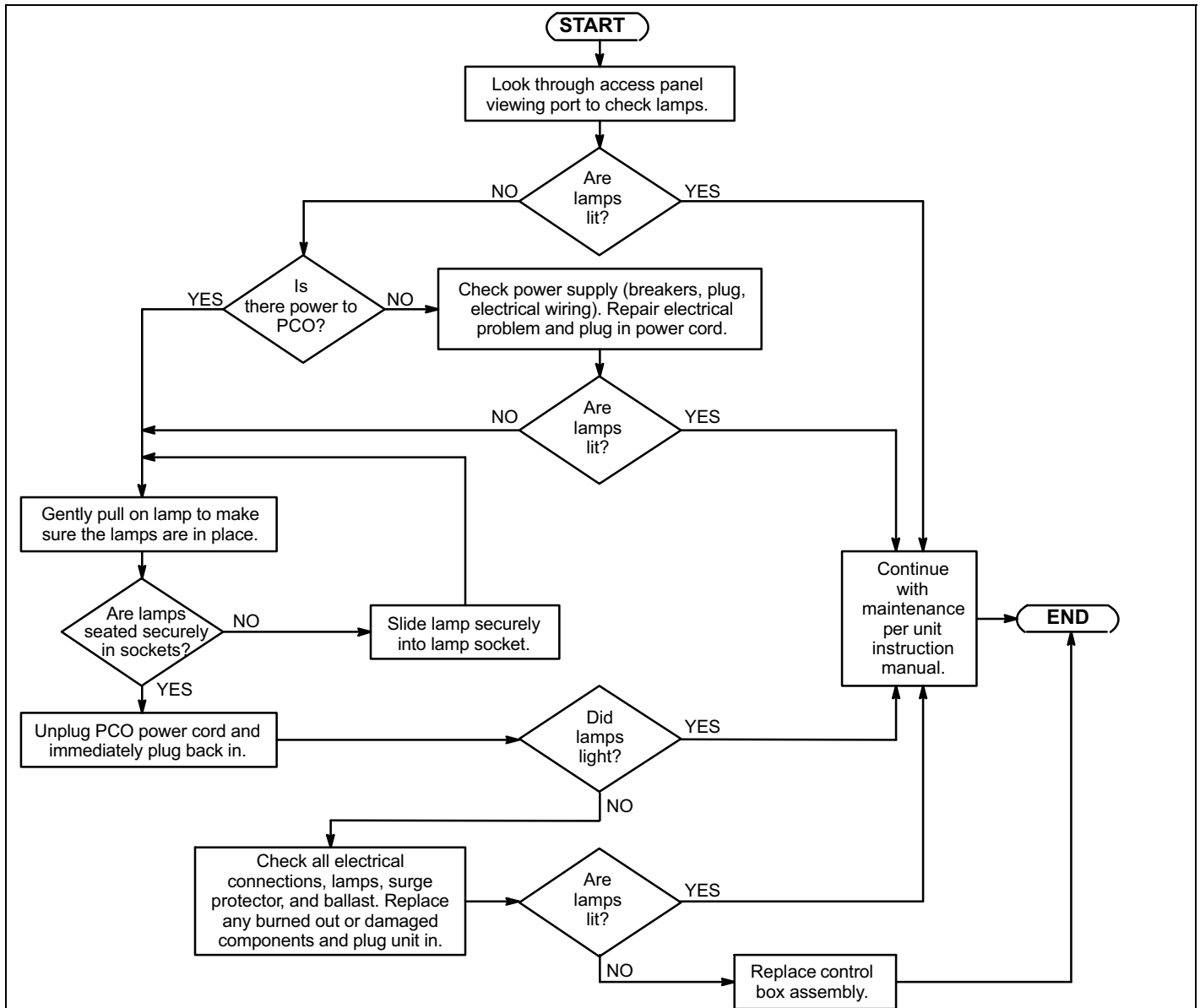
The Annual Maintenance Kits include one MERV 16 or 10 filter, one metal insert and two lamps. Kit part numbers are as follows:

Part Description	Part Number	
	PCO-20C-6	PCO-12C-6
Annual Maintenance Kit MERV 16 filter	Y4591	Y4592
Annual Maintenance Kit MERV 10 filter	Y4593	Y4594

### Replacement Parts

Replacement parts are available through Lennox, see figure 1 (Page 1) for parts arrangement. Part description and numbers are as follows:

Part Description	Part Number	
	PCO-20C-6	PCO-12C-6
UVA Lamp	X8794	X8794
MERV 16 filter	X6669	X6666
MERV 10 filter	X6667	X6664
Lamp Securing Clip	X8927	X8927
Metal Insert	75X66	75X73
Power Cord (120VAC)	49M48	49M48
Power Cord (230VAC)	91X44	91X44
Control Box Assembly, includes * items	X90W57	X90W58
*Electrical Socket	75X77	75X77
*Lamp Socket	X8799	X8799
*Ballast	X8798	X8798
*Surge Protector	X8928	X8928



**Voltage Readings for Troubleshooting**

**SPM: Surge Protection Module  
Part number X8928**

All voltages are AC, reference to earth ground (Green wire/terminal), at 75°F. All readings should be taken with lamps securely installed in sockets and circuit connections made.

	STEP	INPUT/OUTPUT	WIRE/TERM COLOR	NORMAL READING	SERVICE ACTION (See wiring diagram, Figure 4, Page 2)
SPM	1	INPUT	BLACK	≥105	Replace input power connection or socket if less than 105 VAC.
			WHITE	≤2	Replace SPM if greater than 2VAC.
	2	OUTPUT	BLACK	≥105	Replace SPM if less than 105VAC.
			WHITE	≤2	Replace SPM if greater than 2VAC.
3	INPUT	BLACK	>105	Replace SPM if less than 105 VAC.	
		WHITE	≤2	Replace SPM if greater than 2VAC.	
BALLAST	4	OUTPUT	RED	≥60	Replace ballast if less than 60VAC.
			RED	≥60	Replace ballast if less than 60VAC.
			YELLOW	≥110	Replace ballast if less than 110VAC.
			YELLOW	≥110	Replace ballast if less than 110VAC.
			BLUE	≥200	Replace ballast if less than 200VAC.
			BLUE	≥200	Replace ballast if less than 200VAC.

**Figure 5. Troubleshooting Flow Chart**