507628-01
9/2016
Supersedes 8/2016

PHOTOCATALYTIC OXIDATION (PCO) ACCESSORY

INSTALLATION INSTRUCTIONS FOR HEALTHY CLIMATE® PCO ACCESSORY FOR LRP16 RESIDENTAL PACKAGE UNIT (Y7960)

THIS MANUAL MUST BE LEFT WITH THE HOMEOWNER FOR FUTURE REFERENCE

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

Shipping and Packing List

The Healthy Climate® PCO Accessory for LRP16 Residential Package unit includes the following:

- Ballast box (includes ballast and wire harness-PCO adaptor)
- Wire harness-PCO (24”)
- UVA lamp in box
- PCO cartridge
- UVA lampholder assembly
- Literature bag witch includes installation instructions, lampholder brass finger nuts (2), double loop zip-tie, D-grommet, ballast box securing screws and warranty.

Shipping Damage

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

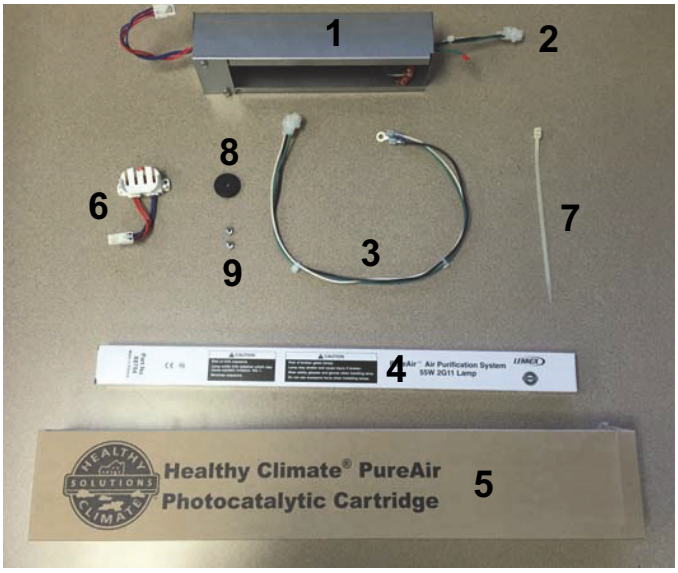
General Information

This product uses ***photocatalytic oxidation*** (PCO) technology to reduce levels of airborne volatile organic compounds, cooking odors, common household odors, airborne dust particles, mold spores and pollen. Each PCO accessory is powered via supplied wire harnesses by the LRP16 residential package unit 230VAC power supply.

Lab tests confirm a 50% reduction in ***total volatile organic compounds*** (TVOC) within the first 24 hours of initial operation of this product. It may take up to 48 hours after initial system start-up to reduce the airborne chemicals that have built up in a home over a long period of time.

For peak performance this product should be installed in a home with TVOC levels that are less than 1000 micro-gram / cubic meter. Home source removal and ventilation may be required to lower total volatile organic compounds to this level.

Up to a MERV 11 filter efficiency is compatible with this PCO accessory.



1. Ballast box and ballast
2. Harness-PCO adaptor
3. Harness-PCO
4. UVA lamp in box
5. PCO cartridge
6. UVA lampholder assembly
7. Double loop zip-tie
8. D-grommet
9. Ballast box securing screws
10. Lampholder brass finger nuts (not shown)

Figure 1. PCO Accessory Kit Parts Identification

0816
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NOTICE

Improper filtration or filtration maintenance will degrade PCO accessory performance.

PCO accessory requires high efficiency filtration between the return and the PCO accessory.

Up to a MERV 11 filter efficiency is compatible with this PCO accessory.

NOTICE

This PCO accessory for LRP16 is not compatible with filter kits 92M54 or 92M55.

Before PCO accessory installation, remove filters from filter rack. Empty filter rack can remain in place.

PCO accessory requires high efficiency filtration between the return and the PCO accessory

Specifications

Table 1. PCO-LRP16 Specifications

WEIGHT	ELECTRICAL
7 lbs.	230 V, 50/60 Hz, 0.24 Amps
POWER CONSUMPTION	
230VAC	58 Watts Nominal
OPERATING ENVIRONMENT	
0°F to 140°F outside of LRP16	
10 to 60% relative humidity	
(Optimal performance at 50% relative humidity)	
PLEATED FILTER EFFICIENCY (*FIELD SUPPLIED*)	
Recommended: Up to a MERV 11 filter efficiency is compatible with this PCO accessory.	
LISTING	
ETL safety listing report 3061144A. Conforms to UL STD 1598	
Certified to CSA STD C22.2 no. 250.0.	

⚠WARNING

Electric shock hazard.

Can cause injury or death.

Disconnect all electrical power supplies before servicing. Access panels must be in place during appliance operation.

⚠ CAUTION

Sharp edges hazard.

Sharp edges can cause injuries.

Use protective gloves when grasping equipment edges.

⚠ CAUTION

UVA Lamp contains mercury.

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

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

⚠ CAUTION

Personal Burn Hazard.

UVA lamp is very hot when illuminated.

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

Injury may result from contact with hot UVA lamp.

NOTICE

Possible odor emissions. Chemical reactions may cause temporary odors after initial start-up or after lamp replacement. Odor may also be present after paint, cleaning solutions or hobby materials have been used in the conditioned space.

Some occupants may experience irritation or discomfort during this period. If the irritation or discomfort lasts longer than 48 hours, the homeowner should be advised to contact a Lennox dealer.

NOTICE

This accessory is NOT intended to be used for removal of active mold growth or continuous sources of high levels of chemicals in the air.

For existing mold growth, the mold must be properly removed PRIOR to installation of the PCO accessory.

NOTICE

This accessory is intended for return air installation in an LRP16 residential package unit only.

Improper installation may damage the PCO accessory, HVAC system or other equipment and may also void warranty.

NOTICE

Oil on metal ducts may cause odors.

Use a mild soap and water solution to remove oils from transitions and duct surfaces prior to installation.

NOTICE

Do not use any form of silicone sealant.

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

Silicone will require time (about 48 hours) to dry and off-gas prior to turning on the PCO. Mastic is preferred as a duct sealant.

NOTICE

Unpacking required.

Remove all protective packing material from the UVA lamp (taped to the cabinet) and the titanium dioxide PCO cartridge.

Packing material should be disposed of properly.

NOTICE

UVA lamp life is shortened when lamp is turned off and on. Power to unit must remain on at all times.

Do not interlock lamp operation with air handler blower operation.

NOTICE

Do not wash UVA Lampholder / PCO cartridge. Soap and water will destroy the titanium dioxide catalyst that coats the cartridge surface.

Ballast Box Installation

Use the following procedure to install the sheet metal ballast box on the pre-installed bracket.

1. Shut off all electrical power to the unit before performing any accessory installation or maintenance procedures. Failure to do so could cause personal injury.
2. Remove upper access panel (for blower, ID coil).
3. Locate the ballast box and wire harness-adaptor in the installation kit (see figure 1 on page 1).
4. Ballast box is now ready to hang on bracket offset and securing tab (see figure 2).

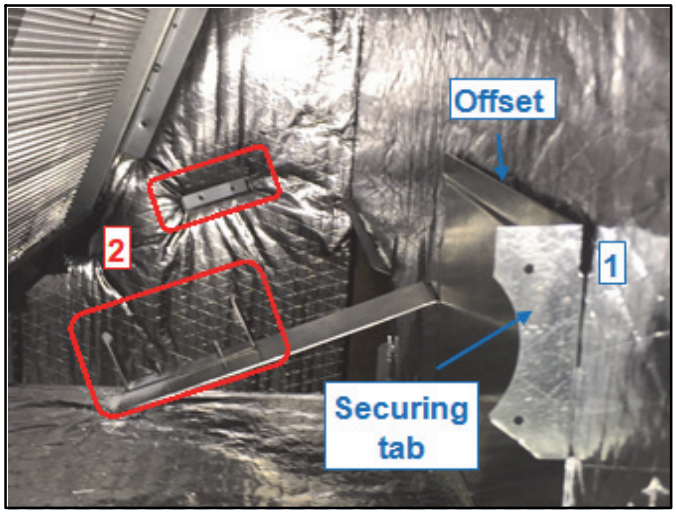


Figure 2. Ballast Box Support Bracket (1) and PCO Cartridge Support Clips (2)

5. Align ballast box with offset so the wire harness adaptor (black, white and green wires) are closest to you and open face of the ballast box faces the ballast support bracket.
6. The top open edge of the ballast box will hang on the offset and the securing tab with two screw holes will tuck inside the ballast box as it is rotated down onto bracket.
7. After rotating the ballast box into place, align the two screw holes in the ballast box with the two holes on the securing tab.
8. Use one kit provided #10-16 hex screws to secure the ballast box to the top support bracket screw hole.
9. Pass second provided hex screw through ground wire ring terminal and then use screw to secure ballast box in position through the lower screw hole.
10. Installed ballast box is shown in figure 3.

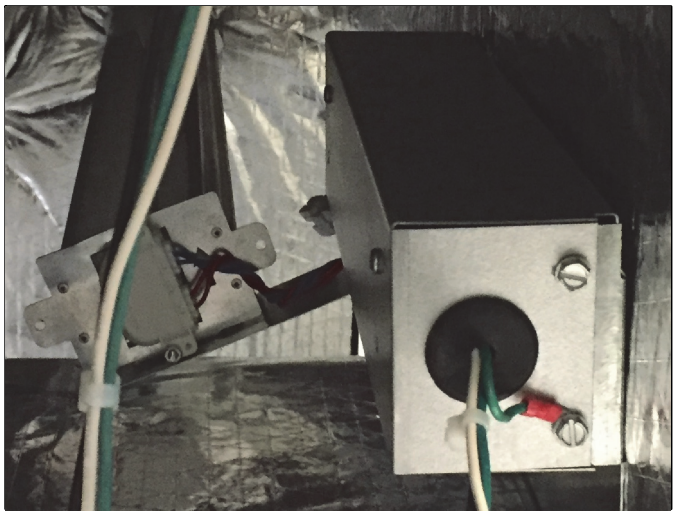


Figure 3. Installed Ballast Box and PCO Cartridge

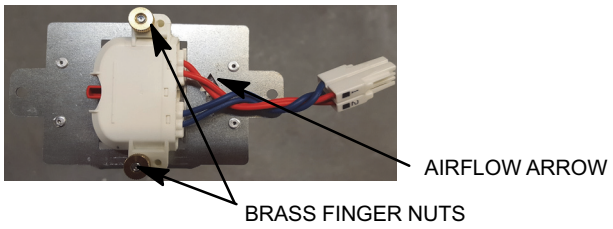
UVA Lamp Installation

Use cotton gloves or clean cotton cloth to protect the lamp and your hands during lamp unpacking and installation.

1. Locate PCO cartridge, UVA lamp box and UVA lampholder assembly in the installation kit (see figure 1).
2. Remove the PCO cartridge from the carton and remove protective film. Packaging must be removed prior to installation. Take care to prevent damage while removing from packaging and set aside.
3. Carefully remove UVA lamp from box.
4. Secure the UVA lampholder to the UVA lamp by sliding the UVA lamp pins into the slots. Proper connection (see figure 4) will make a snapping sound.

Figure 4. UVA Lamp Installed in Lampholder

5. Slide the UVA lamp and lampholder into the PCO cartridge. Note: Red button is on top and wires are on bottom when lampholder is in correct orientation (see figure 5).
6. Fasten the lampholder to the PCO cartridge using the kit provided brass finger nuts (see figure 5).



NOTE: Proper lampholder alignment will have red button on left and wires on right when airflow arrow is pointed upward.

Figure 5. Lampholder Secured to PCO Cartridge

7. Verify that the UVA lamp is secured by the metal UVA lamp clamp (see figure 6) located mid-way on the UVA lamp reflector.

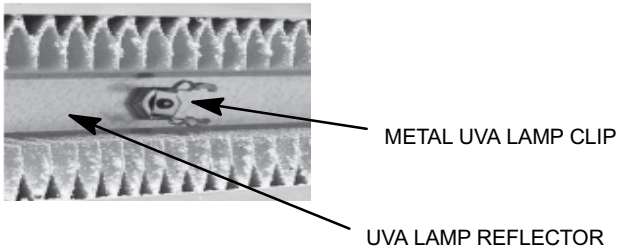


Figure 6. UVA Lamp Clip

8. The PCO cartridge is assembled and ready for installation.

PCO Cartridge Installation

1. Align PCO cartridge with support clip on the back compressor wall (see figure 2 on page 3) with the lampholder end closest to you and the airflow arrow pointing upward.
2. First press the cartridge into the back support clip and then secure the PCO cartridge in the clip on the support bracket. Figure 7 shows the properly installed PCO cartridge.
3. Connect UVA lampholder 4-wire (red/blue) female connector to male 4-wire connector coming from ballast (see figure 7, upper right) by grasping each connector half, aligning halves and pushing them together. Wire positions are numbered to aid in proper connector alignment.
4. Lamp operation will be verified once wiring is complete.

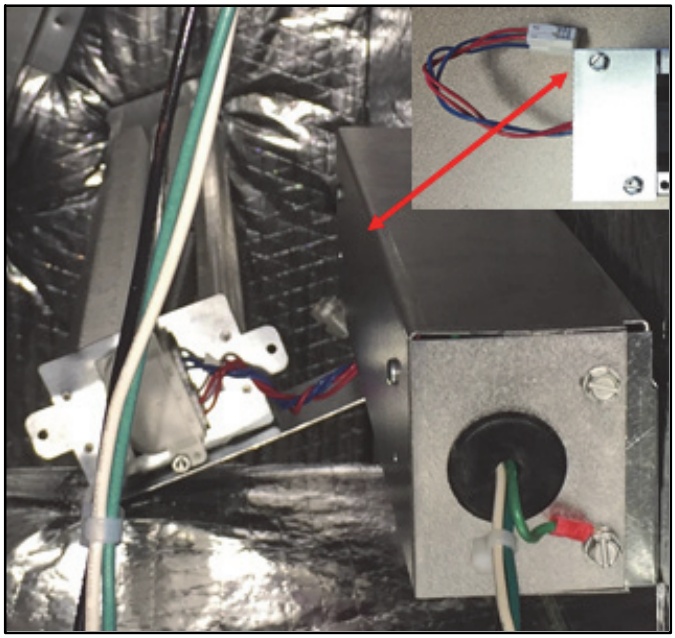


Figure 7. Secure and Wired PCO Cartridge

Electrical

1. Locate the double loop zip-tie and grommet in the installation kit (see figure 1 on page 1).
2. Locate and remove PCO wire harness hanging on the outdoor fan wall behind blower housing after fan wall

and held in place by a twist-lock wire-tie. Re-fasten twist-lock wire-tie (see figure 8).

Figure 8. PCO Wire Harness in Wire-Tie

3. Cut wire harness free from zip-tie.
4. Route wire harness around evaporator coil towards coil cutoff plate knockout.
5. Feed wire harness through coil cutoff plate knockout (see figure 9). *Note: Knockout sheet metal will have sharp edges. Protect hands and care for wires while feeding though hole.*
6. Align taped wire section with knockout and install split grommet in knockout (see figure 9).
7. Connect 3-wire PCO wire harness connector to ballast 3-wire connector matching each wire color (see figure 10).

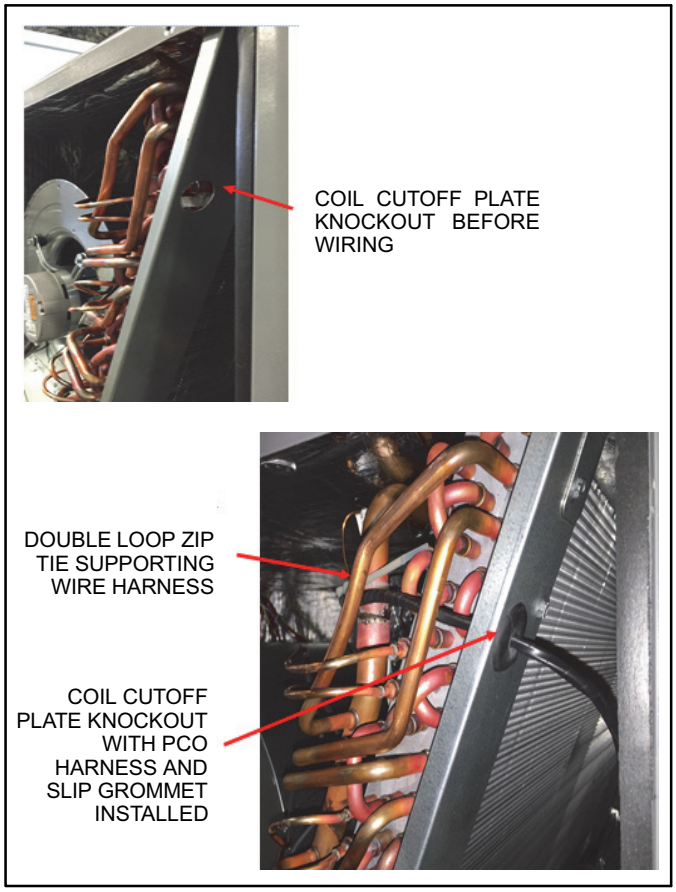


Figure 9. Coil Cutoff Plate Knockout

8. Use double loop zip tie to hang wire harness from coil as shown in figure 11. Connect first loop around coil and zip tie. Use remaining loop to locate and retain the wire harness in position without contacting copper tubing.

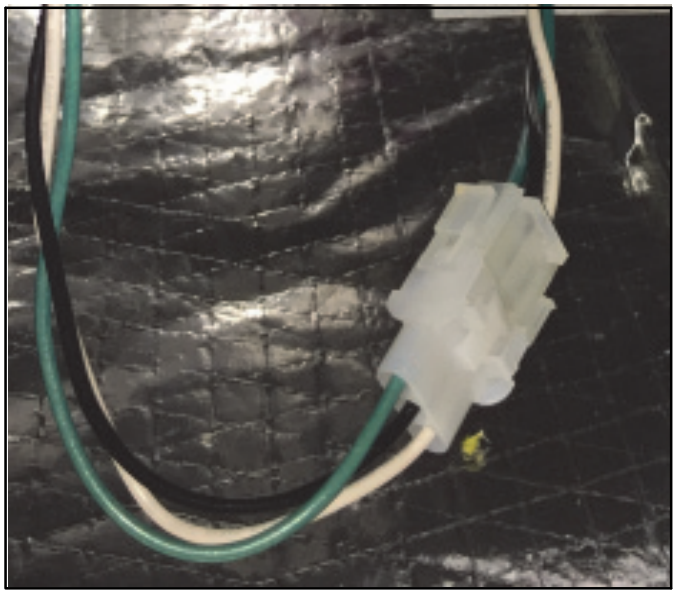


Figure 10. 3-Wire PCO Harness and Ballast Connector

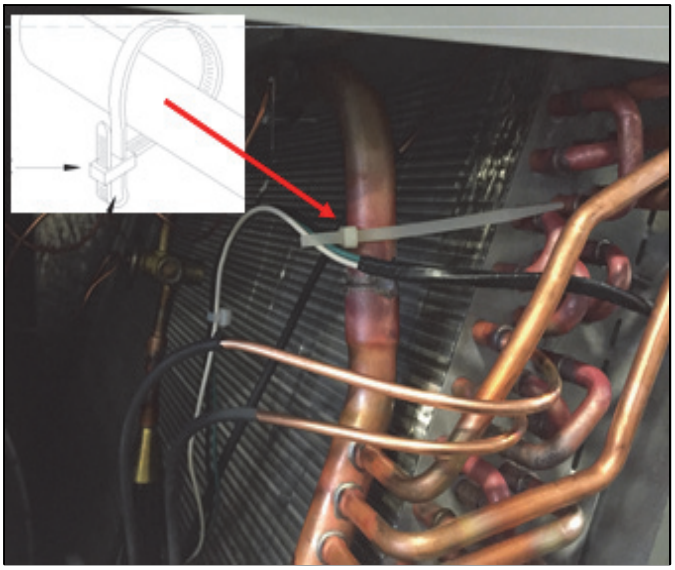


Figure 11. Double Loop Zip Tie Location

9. Remaining wire harness, without extra shielding, should not be in direct contact with any refrigerant lines.
10. Locate the Harness-PCO in the installation kit (see figure 1).
11. Remove control access panel and locate unused 3-wire connector secured to wire loop on left side inside control compartment (see figure 12).

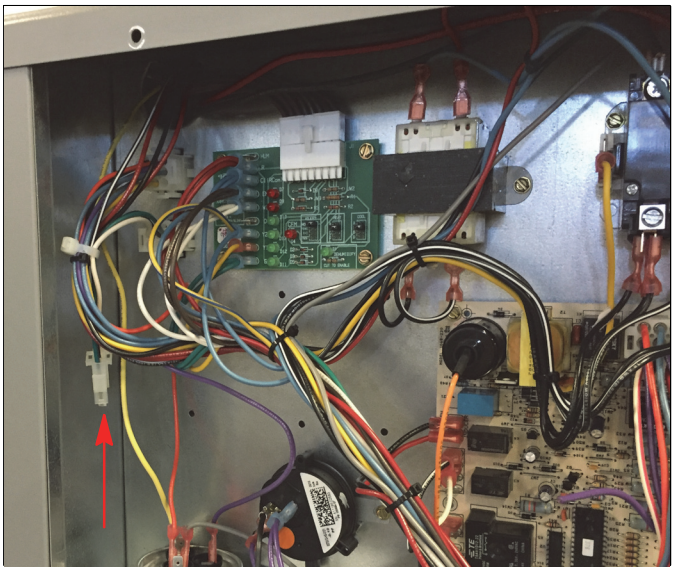


Figure 12. Control Panel 3-Wire Connector

12. Connect wire harness from kit to connector in figure 11 and route wire harness as shown to L1 and L2 terminals (see figure 13). Connect ground wire to either location shown.

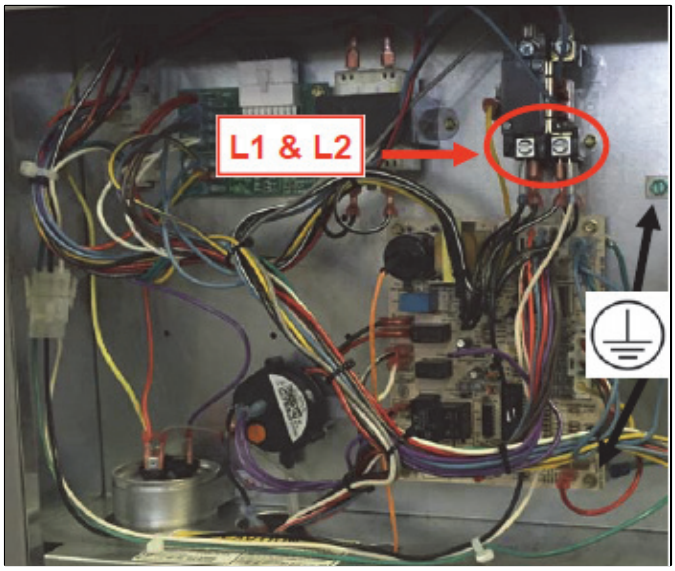


Figure 13. Control Panel Wiring Route

13. Replace upper access and control access panels.

Operation

NOTICE

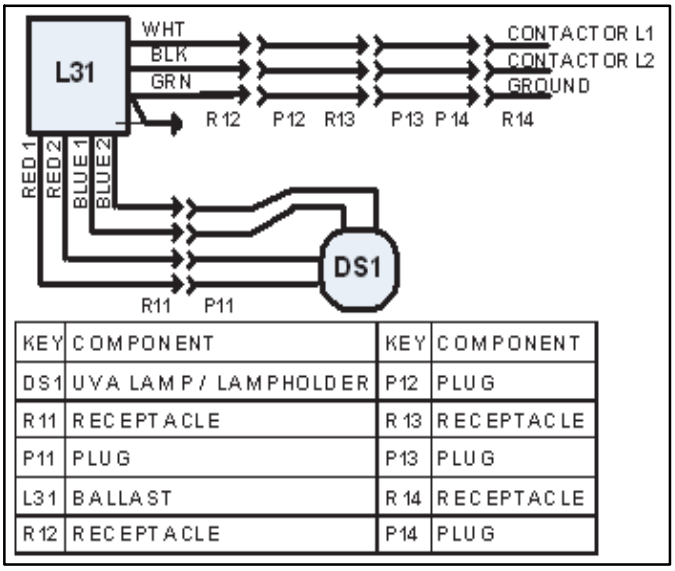
If the system has been operated for a period of time without the UVA lamp being illuminated, an odor may occur when lamp is illuminated. This odor is considered typical and should dissipate within 12 hours of full operation. If the odor does not subside after 48 hours of operation, instruct the homeowner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

1. Check to ensure that access panels are securely in place.
2. Lamp 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).

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.*

Wiring

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



KEY	COMPONENT	KEY	COMPONENT
DS1	UVA LAMP / LAMPHOLDER	P12	PLUG
R11	RECEPTACLE	R13	RECEPTACLE
P11	PLUG	P13	PLUG
L31	BALLAST	R14	RECEPTACLE
R12	RECEPTACLE	P14	PLUG

Figure 14. Wiring Schematic

PCO Cartridge and UVA Lamp Replacement

The Healthy Climate® PCO cartridge and UVA lamp require annual replacement. An annual maintenance kit is available that includes the PCO cartridge and UVA lamp. More frequent replacement may be required in applications with heavier dust or dirt loads or in applications where a lower MERV filter is installed before the Healthy Climate® PCO cartridge.

The field supplied filter should be changed at least annually, or according to the manufacturers recommended replacement cycle.

Removing and Installing UVA Lamp and PCO Cartridge

1. Shut off all electrical power to the unit before performing any accessory installation or maintenance procedures. Failure to do so could cause personal injury.
2. Remove upper access panel (for blower, ID coil).
3. Disconnect UVA lampholder connector (red/blue wires) from ballast.
4. Slide out the PCO cartridge from the bracket support clip and then slide PCO cartridge out from back clip (figure 2 on page 3).
5. Remove both brass finger nuts that secure the UVA lampholder to the PCO cartridge.
6. Slide out UVA lamp PCO cartridge.
7. Push the red button on UVA lampholder and gently slide off lampholder from UVA lamp (do not dispose of UVA lampholder).
8. Properly dispose of UVA lamp and air filter
9. Reinstall according to lamp and PCO cartridge installation instructions on pages 3 and 4.

Proper Clean-Up of Broken UVA Lamp

If UVA 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 and seal before disposal in accordance with instructions provided by local waste management office.
- Do not use a vacuum cleaner. Do not incinerate.

Maintenance Kit

The annual maintenance kit includes the PCO cartridge and UVA lamp. The catalog number for the maintenance kit is Y7972.

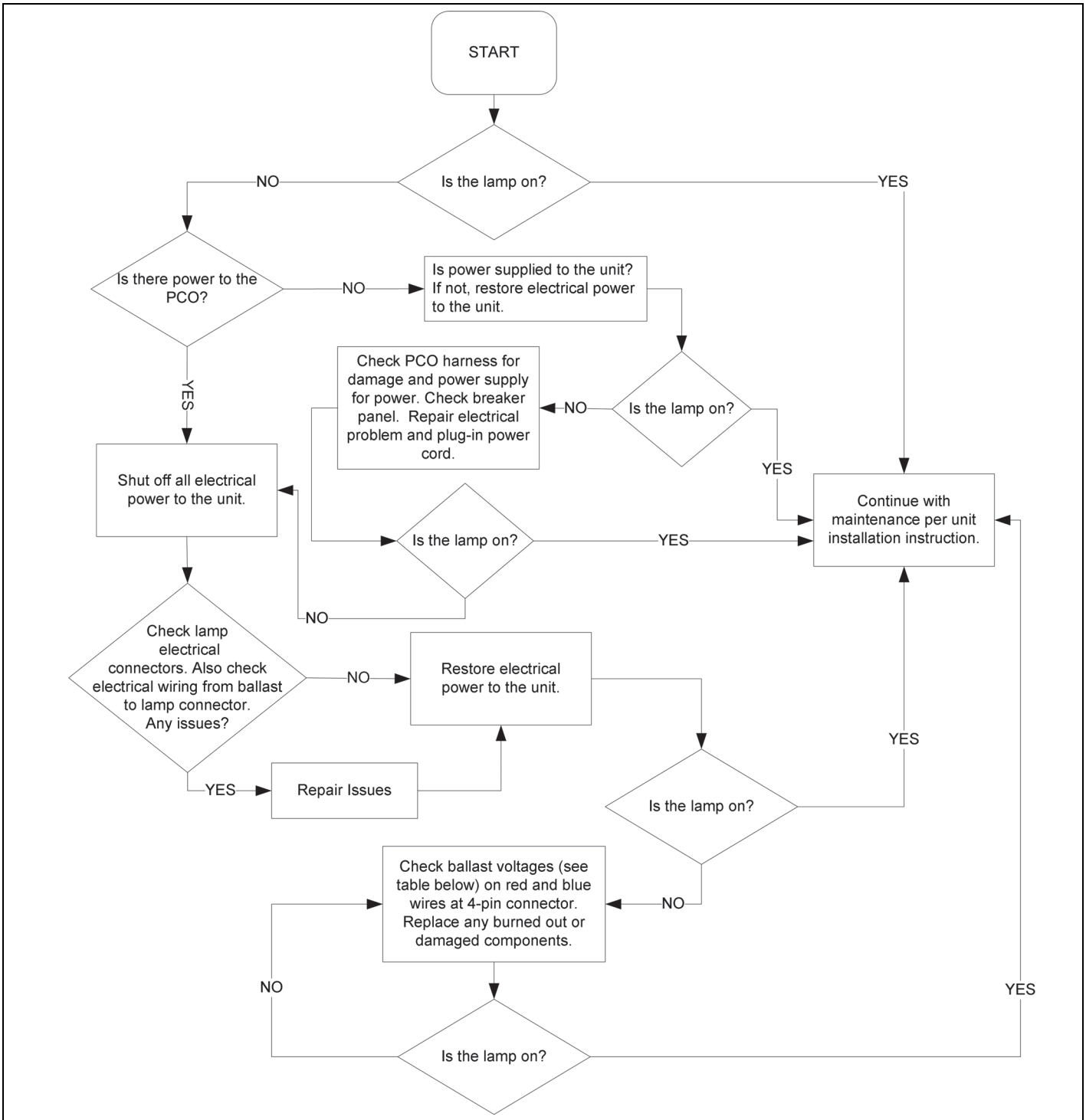
Replacement Parts

Replacement parts are available through Lennox, see figure 1 on page 1 for PCO accessory parts. Part description and catalog numbers are as follows:

Table 2. Parts

Part Description	Catalog Number
UVA lamp	X8794
PCO cartridge	Y6607
Lampholder assembly	Y6622
Ballast assembly	Y6620
Harness-PCO adapter	Y7973
Harness-PCO	Y7974

Troubleshooting Flow Chart



	INPUT/OUTPUT	WIRE/TERM COLOR	NORMAL READING	SERVICE ACTION
BALLAST	OUTPUT	RED	≥60	Replace ballast if less than 60VAC.
		RED	≥60	Replace ballast if less than 60VAC.
		BLUE	≥200	Replace ballast if less than 200VAC.
		BLUE	≥200	Replace ballast if less than 200VAC.

Figure 15. Troubleshooting Flow Chart