

Installation Instructions

Ultra-Violet Air Purifier Residential/Commercial Duct Installation Applications - RX4000, RX4000B, RX1700



SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions such as changing lamps. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit or accessory, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves.

WARNING:

Before installing the RX4000, RX4000B, RX1700 or performing maintenance or service on the purifier, turn off main power switch to unit. Electrical shock can cause injury or death. There may be more than one disconnect switch.

WARNING:

Never expose eyes or skin to ultraviolet light from any source. The Purifier MUST be DISCONNECTED from power source before performing maintenance or service. Personal injury may result.

WARNING:

Do not touch Lamp glass without gloves. Reduced performance of Lamp may result. Clean Lamp after handling.

WARNING:

The UV Lamp contains a small quantity of mercury. If a Lamp breaks, clean and dispose of with care.

WARNING:

Use only specified replacement Lamps with your Purifier. Use of an incorrect Lamp can result in damage to the Purifier an/or Lamp.

GENERAL

The Partners Choice RX4000, RX4000B and the RX1700 residential ultra-violet air purifiers are designed to kill bacteria, viruses, odor causing mold and fungus as well as chemical odors and VOC's that may be transmitted through the air ducts of the HVAC equipment. The purifiers are installed in the return (preferred) or supply air plenum of the HVAC equipment. The ultra-violet band light inhibits and kills mold, fungus, bacteria, viruses and microbial growth on 100% of the air flowing through the 6" square aluminum tube.

Location

The preferred installation location for the purifier is in the return duct as the air will be treated before the filter and HVAC coil. If it is not possible to install in the return duct, it may be installed in the supply duct. The painted steel power supply Control Panel section of the purifier is installed on the outside of the duct.

Make sure site can be supplied with the necessary power requirements. The RX4000 and RX4000B have a power consumption of 35 watts, the RX1700 26 watts, and require a 110/220 v, 50-60 Hz power source. Insure that there is adequate clearance for service. If a humidifier is present, the air purifier should be installed in the air stream before the humidifier and the humidifier must be protected from UV rays.

NOTE: The Ballast for ALL models has been factory set at 110 Volts. If the power source is 220 Volt, the switch on the ballast must be changed to the 220 volt position, and the plug at the end of the wire set (RX4000) fit with a 110/220 volt adapter, or cut off and wired into the 220 volt circuit.

The operating temperature range is 40 to 150 F. Operating the models outside this range will result in decreased performance.

NOTE: The purifiers are NOT waterproof. If installing outdoors, the purifiers must be installed in a watertight enclosure.

RX4000, RX4000B INSTALLATION

IMPORTANT:

The RX4000B must be hardwired into the HVAC system in the same manner as the RX1700. Refer to the RX1700 for electrical connections.

The RX4000 is energized from a pressure differential caused by airflow through the duct. On variable speed fan applications, airflow at LOW setting may not be sufficient to energize the air purifier. The pressure switch is factory set to a differential of 0.03in. Ensure that there is a sufficient differential to activate the switch. As well, take into account that the differential will decrease as the air filter loads.

The RX4000 Control Panel MUST be installed in a Perfectly vertical (90 Degree) upright position for the air sensor to function properly. If the Bottom of the RX4000 is tilted INWARD, the switch may not release and the RX4000 will remain on. If necessary, apply the enclosed foam strip to the bottom of the RX4000 on top of the existing foam to shim the bottom outward, so that the RX4000 is at 90 degrees. The switch will function correctly even if the bottom of the RX4000 is angled outward.

If the RX4000 Control Panel is to be installed in a horizontal position, or the differential is not sufficient, the air sensor must be bypassed by disconnecting the two leads on the pressure switch and joining them together with a wire nut and wiring the RX4000 into the fan circuit.

Preparation RX4000, RX4000B

1. Turn off all power to HVAC equipment.
2. Remove the Purifier from its packaging.
3. Remove the UV lamp from the packaging material. The lamp is fragile, use extreme care. Do not touch the glass on the lamp with bare hands. Use the enclosed gloves when handling the lamp. Handle lamp from the ceramic ends.
4. Position lamp inside the aluminum tube. Route 4- pronged end of lamp through clamp. Clamp is tightened by moving lever perpendicular to the clamp.
5. Connect the female plug to the lamp. The plug fits in one direction only. If the plug will not connect to the lamp, turn the plug 90 degrees.

6. The 6" square aluminum tube can be rotated in 90 degree increments in order for the backplate and Control Panel front cover to face upward. To rotate the aluminum tube, open the front cover of the purifier. Loosen the hex head nut. Grasp the aluminum tube and rotate it in 90 degree segments. The tube will lock at each 90 degree segment. When the correct rotation is found, tighten the hex nut.
7. Install the turbulator (square aluminum cap) on the end of the aluminum tube facing the air flow. Fasten with screws provided.
8. Ultra-violet light may damage certain plastics and exposed non-UVC protected wires. If any plastic or wires are within the light exposure area, wrap exposed plastic and wiring with aluminum tape or metal conduit.
9. **RX4000 Only**, The vacuum sensor tube is located on the backplate of the RX4000 inside a 90 degree chrome elbow. The end of the tube must face away from the airflow. If an adjustment is necessary, loosen the nut inside the control panel that holds the elbow. Rotate elbow so that it will face away from the airflow. Tighten the nut.

Return or Supply Air Plenum Installation

Perform the following to install the RX4000, RX4000B:

1. Cut a 6.5in by 10-in. rectangular hole in the ductwork at the installation location.
2. Place the Purifier in ductwork in correct position. Mark the 8 mounting holes on the ductwork. Remove the Purifier.
3. Drill 8 mounting holes marked in Step 2 (size for no. 8 sheet metal screws).
4. Place the Purifier inside hole in ductwork. Mount to ductwork with eight no. 8 sheet metal screws provided.
5. **RX4000**: Plug in the power cord. If outlet is connected to a light switch, make sure switch is on. **RX4000B**: See RX1700 instructions

OPERATION- RX4000 ONLY

The RX4000 has an on-off switch and a circuit breaker located at the bottom of the front cover. To operate, press the switch to the "on" position. The switch has a light to indicate that there is power. If there is no indicator light on, check the outlet for power, and check the RX4000 circuit breaker. Start the HVAC fan. The RX4000 detects airflow with the vacuum sensor. The RX4000 will only operate when the fan is on (airflow through plenum) and there is a pressure differential of at least 0.04 in.

LED Indicators There are 4 LED indicators on the front panel. When the RX4000 is plugged in and the on/off switch is "on", the "Power" LED will be lit. If the "Sensor" LED does not come on when the fan is energized, either the pressure switch is defective, or there is not enough of a pressure differential in the duct to "pull in" the diaphragm. When the pressure switch energizes, the "Sensor On" LED light will be lit.

The Blue LED indicates that the UV Lamp is on; the Green LED indicates that the Ballast is functioning. If the Ballast (Green) LED is on, and the Lamp (Blue) LED is off, the UV lamp is not functioning. If both LED lights are off, the ballast is not functioning.

RX1700 INSTALLATION

1. Turn off all power to HVAC equipment.
2. Remove the RX1700 from its packaging.
3. Remove the lamp from the packaging material. The lamp is fragile, use extreme care. Do not touch the glass on the lamp with bare hands. Use the enclosed gloves when handling the lamp. Handle lamp from the ceramic ends.
4. Position lamp inside the aluminum tube. Route 4-pronged end of lamp through clamp. Clamp is tightened by moving lever perpendicular to the clamp.
5. Connect the female plug to the lamp. The plug fits in one direction only. If the plug will not connect to the lamp, turn the plug 90 degrees.
6. The 6" square aluminum tube can be rotated in 90 degree increments in order for the backplate and Control Panel front cover to face upward. To rotate the aluminum tube, open the front cover of the purifier. Loosen the hex head nut. Grasp the aluminum tube and rotate it in 90 degree segments. The tube will lock at each 90 degree segment. When the correct rotation is found, tighten the hex nut.
7. Install the turbulator (square aluminum cap) on the end of the aluminum tube facing the air flow. Fasten with screws provided.
8. Ultra-violet light may damage certain plastics and exposed non-UVC protected wires. If any plastic or wires are within the light exposure area, wrap exposed plastic and wiring with aluminum tape or metal conduit.



Figure 2. RX4000

Return or Supply Air Plenum Installation

Perform the following to install the RX1700:

1. Cut a 6.5in by 8-in. rectangular hole in the ductwork at the installation location.
2. Place the RX1700 in ductwork in correct position. Mark the 6 mounting holes on the ductwork. Remove the RX1700.
3. Drill 6 mounting holes marked in Step 2 (size for no. 8 sheet metal screws).
4. Place the RX1700 inside hole in ductwork. Mount to ductwork with 6 no. 8 sheet metal screws provided.
NOTE: The Ballast for ALL of the models has been factory set at 110 Volts. If the power source is 220 Volt, the switch on the ballast must be changed to the 220 volt position.
5. R1700, RX4000B. Connect the 110 or 220 volt line as per code to the HVAC EAC terminals or to the blower control. A current sensing relay or pressure switch may be necessary. Check with the equipment manufacturer.
6. Open cover of the purifier. Secure the line conduit through the purifier knock-out provided next to the power switch with the appropriate cable connector

OPERATION-RX1700, RX4000B

The RX1700 has an on-off switch and a circuit breaker located at the bottom of the front cover. To operate, press the switch to the "on" position. The switch has a light to indicate that there is power. If there is no indicator light on, check the electrical outlet for power, and check the Purifier circuit breaker. Start the HVAC fan. The 2 LED lights will come on.

LED Indicators

The Blue LED indicates that the UV Lamp is on; the Green LED indicates that the Ballast is functioning. If the Ballast (Green) LED is on, and the Lamp (Blue) LED is off, the UV lamp is not functioning. If both LED lights are off, the ballast is not functioning.

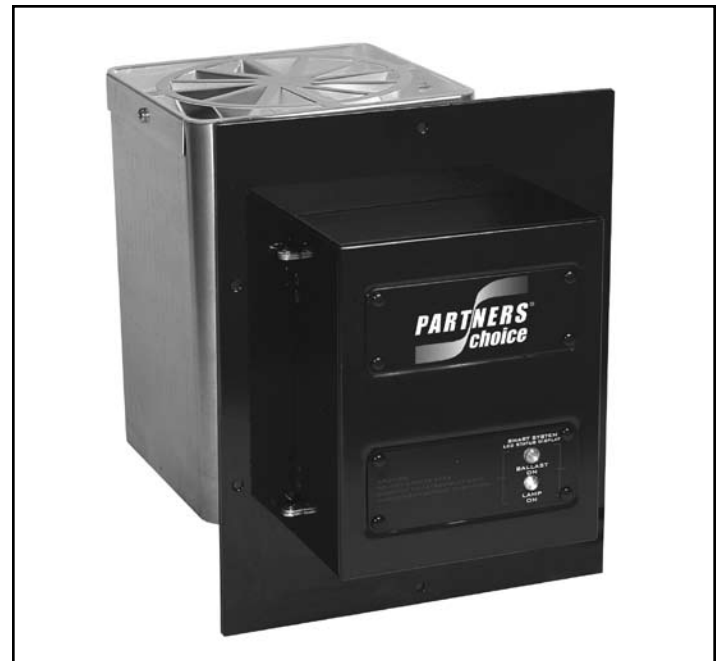


Figure 1. RX1700

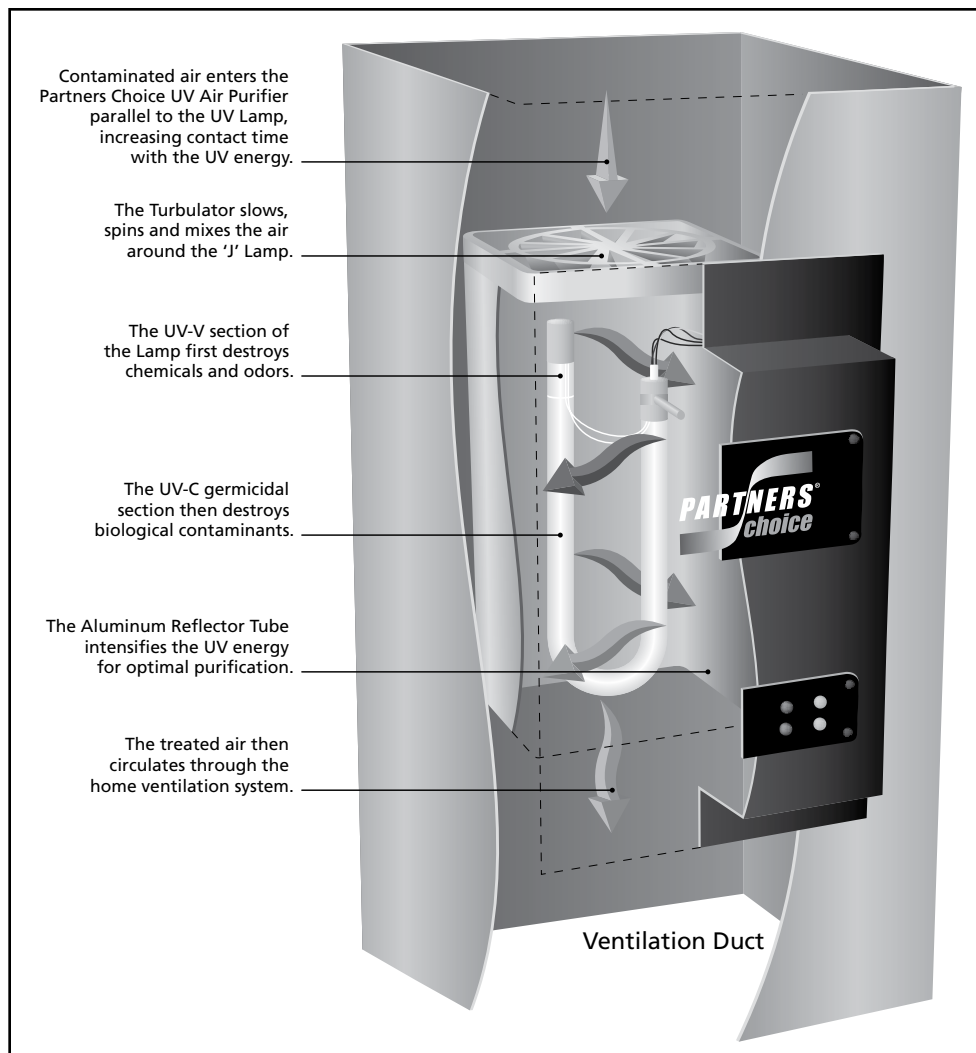


Figure 3. RX1700

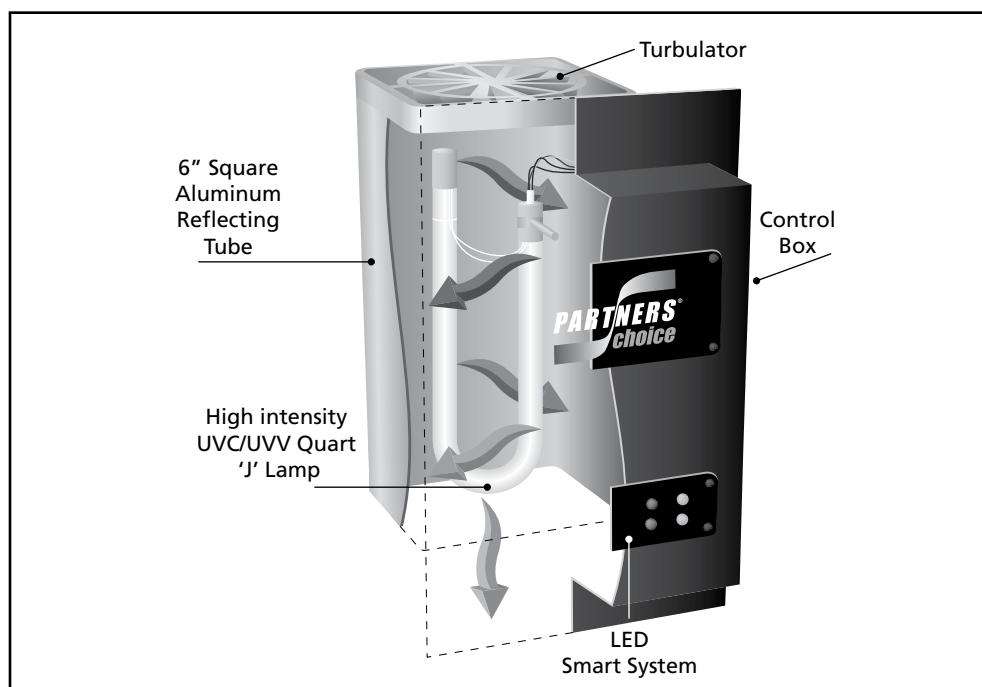


Figure 4. RX1700

**RX4000, RX4000B, RX1700 AIR PURIFIER
LIMITED PARTS AND LAMP WARRANTY**

FIVE-YEAR WARRANTY — Except for the UV Lamps and Ballasts, this Partner's Choice product is warranted to be free from defects in material and workmanship under normal use and maintenance for a period of five years from the date of original installation. A new or remanufactured part to replace the defective part will be provided without charge for the part itself, through a qualified servicing Partners Choice dealer or distributor, PROVIDED the defective part is returned to our distributor. The replacement part assumes the unused portion of the warranty.

12,000 HOUR COMMERCIAL LAMP WARRANTY — The Partners Choice Ultra-Violet Lamps are warranted to be free from defects and operate for 12,000 hours after installation, under normal use and maintenance in a commercial application. A new lamp to replace the defective lamp will be provided without charge for the part itself, through a qualified servicing Partners Choice dealer or distributor, PROVIDED the defective part is returned to our distributor. The replacement part assumes the unused portion of the warranty.

THREE-YEAR RESIDENTIAL LAMP WARRANTY — The Partners Choice Ultra-Violet Lamps are warranted to be free from defects and operate for Three (3) years after installation, under normal use and maintenance in a residential application. A new lamp to replace the defective lamp will be provided without charge for the part itself, through a qualified servicing Partners Choice dealer or distributor, PROVIDED the defective part is returned to our distributor. The replacement part assumes the unused portion of the warranty.

THREE-YEAR BALLAST WARRANTY — The Partners Choice Electronic Ballasts are warranted to be free from defects and operate for Three (3) years after installation, under normal use and maintenance in a residential or commercial application. A new ballast to replace the defective ballast will be provided without charge for the part itself, through a qualified servicing Partners Choice dealer or distributor, PROVIDED the defective part is returned to our distributor. The replacement part assumes the unused portion of the warranty.

THIS WARRANTY DOES NOT INCLUDE ANY ADDITIONAL LABOR ALLOWANCE OR OTHER COSTS incurred for diagnosis, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts. SUCH COSTS MAY BE COVERED BY a separate warranty provided by the installer.

LIMITATIONS OF WARRANTIES — ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

PARTNERS CHOICE WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual.
2. Damage or repairs required as a consequence of faulty installation or application by others.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage or repairs needed as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration, or improper operations.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of Partners Choice.
6. Parts not supplied or designated by Partners Choice.
7. Partners Choice products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

Model No: _____

Unit Serial No (from inside of cover). _____

Date of Installation: _____

Installed by: _____

Name of Owner: _____

Address of Installation: _____

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