



Installation and Operation Instructions

Unitary Kit for Small Air Handlers and UVC Kit for Air Handlers

Patents 5,334,347/ 5,817,276/ 5,866,076/ 6,245,293/ 6,267,924/ 6,280,686/ 6,313,470/ 6,372,186/
6,423,882/6,500,267/6,589,476/6,627,000/ 6,783,578/ 7,140,749/7,282,728/ 7,459,694 & others pending

Made in USA

NOTE: Read this entire instruction sheet before starting the installation.

IMPORTANT CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult your supplier or Steril-Aire for information or assistance.

Understand the signal words **DANGER**, **WARNING**, or **CAUTION**. These words are universally used for overall safety. **DANGER** identifies the most serious hazards which will result in severe personal injury or death. **WARNING** signifies hazards which could result in personal injury or death. **CAUTION** is used to identify unsafe practices resulting in minor personal injury or product and property damage.

⚠️ WARNING: Before performing maintenance or service on fixture, ensure unit is unplugged. Electrical shock can cause injury or death.

⚠️ CAUTIONS:

- Never expose eyes or skin to UVC light. Wear gloves, face shield/glasses (per ANSI Z87.1) and cover all exposed skin.
- Do not touch Emitter glass without gloves. Damage to Emitter may result. Oil from

fingerprints will permanently etch glass of Emitter and weaken structure. If necessary, clean Emitter using a Steril-Aire cleaning kit (isopropyl alcohol and a lint-free wipe may be substituted).

- Voltages outside of the range designed for the unit will void the warranty and do permanent damage to the entire unit.
- Emitter contains a small quantity of mercury. If an Emitter breaks, clean and dispose of with care.
- UVC energy may cause damage to non-metallic components except for UV-rated and HVAC-style drain pans. Select mounting locations that prevent exposure to vulnerable components. If mounting locations are limited, such components shall be protected with UV resistant material such as aluminum foil, aluminum duct tape, metallic shields, etc.
- The qualified installer must use factory kits and accessories when installing this product.

INSTALLATION & OPERATION

NOTE: ENSURE THAT EMITTER IS INSTALLED BEFORE POWER IS APPLIED. INSTALLING EMITTER AFTER POWER HAS BEEN APPLIED WILL TRIGGER THE “END-OF-LAMP-LIFE CIRCUIT” AND THE EMITTER MAY FAIL TO LIGHT. IF THIS HAPPENS, SHUT OFF POWER FOR 10 SECONDS AND THEN TURN POWER BACK ON. EMITTER WILL THEN LIGHT.

1. Consult all applicable codes before installing. Check fixture label(s) for the correct power requirements and supply the correct voltage

from a suitable, protected (fused), and grounded power source.

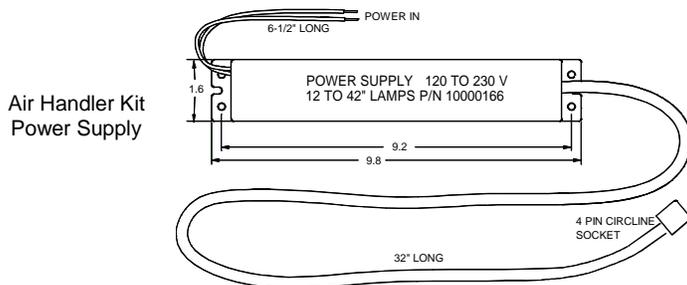
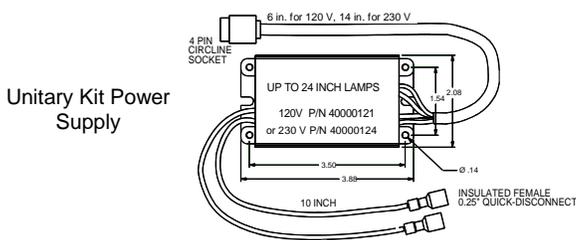
2. For unitary air conditioners and smaller air handler units, disconnect power from unit. For larger units, the Emitter access door or panel should be interlocked with the power source to turn Emitter(s) off when the system is opened. It should have signs (provided) in appropriate languages alerting maintenance personnel to

the possible hazard of looking at or exposing skin to UVC energy. Service accesses may be equipped with a glass or Lexan® window (viewport) to view Emitters. UVC energy does not penetrate common glass or Lexan®.

3. If applicable, remove outer cover of unitary air conditioner or air handler.
4. UVC energy may damage some plastics except HVAC-style drain pans. Wrap suspect items with aluminum tape; use metallic conduit or use other appropriate shielding where these items may be in "line of sight" of the UVC energy.
6. Determine location of the Emitter. *(Many types of unitary air conditioners have a removable shroud/heating coil assembly that may adequately accommodate the Emitter.)* The Emitter shall:
 - Be at least 1" away from the heating coil.
 - Not make contact with the blower.
 - Provide direct light onto the cooling coil and drain pan.
 - Be positioned so there is no direct, visible light from outside of the unitary air conditioner. A baffle may be installed to provide any needed light blockage.

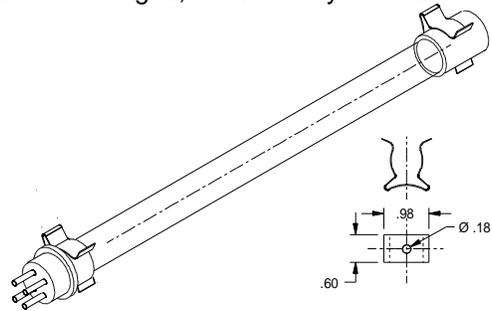
CAUTION: Do not drill into coil, refrigerant lines or other mechanical equipment.

7. Determine an appropriate flat-surfaced location for mounting the power supply with the provided screws. Make sure that the power supply's lead socket (with extension cord, if applicable) can reach the pins of the Emitter and that its wires can reach the power source; mount the power supply.

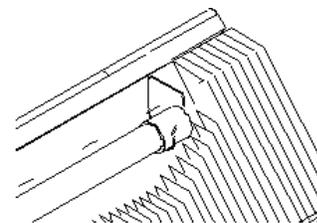
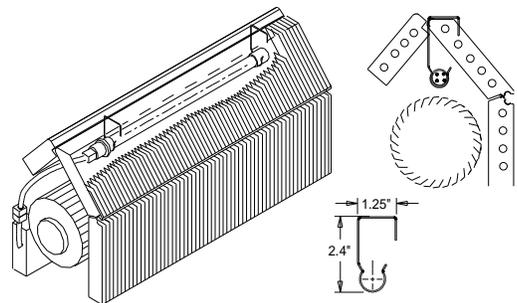


8. Based on the mounting option selected, use the following instructions for installation. Install the Mounting Bracket(s) and Emitter.

- **Spring Clips:** Mount clips on existing panel facing the coil. The clips should be attached to the Emitter on both ceramic ends. If the spring clips must contact the Emitter glass, 3 wraps of electrical tape are recommended at the points of contact to prevent the spring clips from damaging the Emitter wires along the lamp. If the wires running the length of the lamp have been damaged, the warranty is void.



Short Hooks: Remove spine/top plate between the two upper coils. Cut spine/top plate in order to accommodate the support wire. Insert the short hooks over the top of the cooling coils such that its right angle leg slides between the fins of the front coil (see below). Ensure that Emitter ceramic ends rest on the Short Hooks (see below).

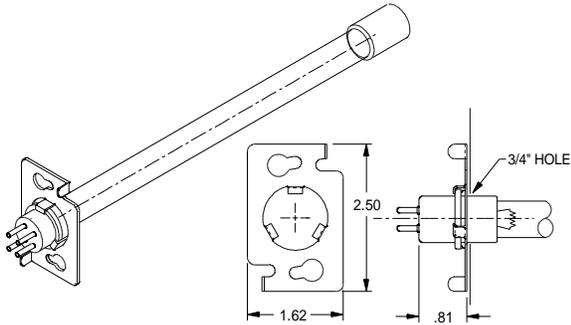


Reinstall the spine/top plate pieces. In some cases, one Short Hook may be sufficient where

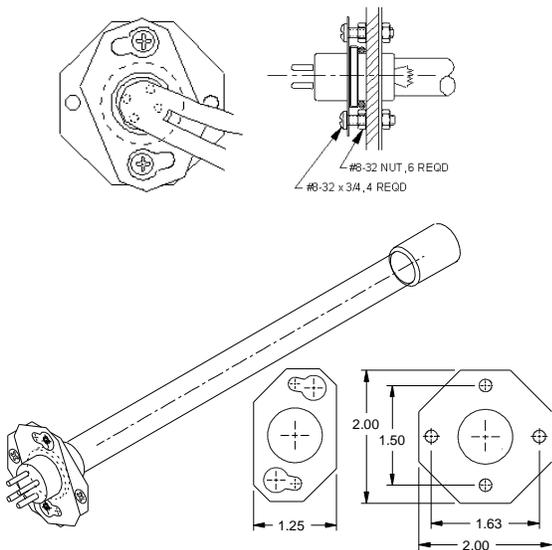
the collared Emitter end can rest in a 13/16" or 7/8" hole drilled on a panel between the coils and blower wheel on the end of unit (see photo below).



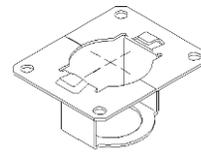
- **Flat Plate Lamp Holder (for metal):** Connect the socket from the power supply or extension cord to the Emitter pins. Plug power supply's power cord into outlet. Reconnect power and replace outer cover of the unit. Refer to the images below for guidance.



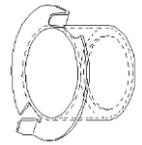
- **Flat Plate Lamp Holder (for plastic)** Make a 3/4" hole in the plastic external housing or internal plastic plate in the unit.



- **Insert Lamp Holder:** Drill 1-1/4" hole on a panel to accommodate component A and secure A with screws. Slide Emitter partially through A. Slide component B (collared end first) onto power supply's cord or extension cord and install cord onto Emitter pins (see Photo 1). Slide Emitter and component B through A, and twist and lock B under A's tabs (see Photo 2).



Component A



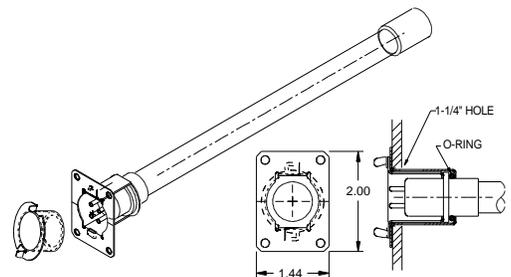
Component B



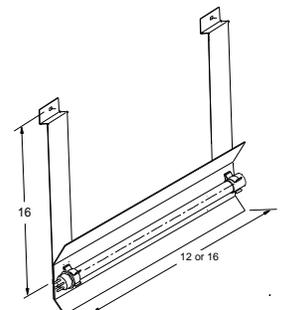
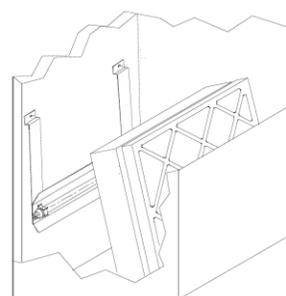
Photo 1



Photo 2



- **U Bracket:** Connect the socket from the power supply to the Emitter. Snap the Emitter's ceramic ends into the spring clips of the U Bracket. Lower the bracket and Emitter into the desired space until the Emitter is appropriately facing the cooling coil. Affix the bracket's straps onto the mounting surface with the provided hex screws.



9. Connect the socket from the power supply or extension cord to the Emitter pins.
10. Complete all power connections.

11. Reconnect power to the air conditioner. The Emitter should emit a bright blue hue, indicating that it is working properly.
12. Replace outer cover of air conditioner.

MAINTENANCE

Emitters need to be periodically replaced to maintain design output. The change-out basis depends upon the application, number of times switched on/off per day, and the hours of operation. Emitters are to be replaced when output falls to 50% of initial output (or

as specified) by actual radiometer measurements. A Steril-Aire UVC Radiometer Kit may be used for such measurements. If a radiometer is unavailable, Emitters should be replaced after 9,000 hours of use.

TROUBLESHOOTING

Symptom	Possible Causes	Corrective Action
Emitter does not light	Momentary loss of power	<u>Reset Power</u> Turn off power for 10 Seconds, and then turn power on.
	Poor connection	Check connection to Emitter. Check wiring connections. Reset Power.
	Incorrect wiring	Inspect circuit to wiring diagram.
	Dirty pins	Clean pins. Reset Power.
	System malfunction	Check system components, interlock door switches, relays, motion detectors, etc.
	Emitter reaching end of life	Replace with new Emitter. Reset Power.
	Defective Power supply	Replace Power Supply.
Low Radiometer Reading or Visibly Weak Emitter Light	Dirty Emitter or Radiometer	Clean Emitter. Clean Radiometer lens.
	Bad Wiring	Check wiring to Emitter.
	Emitter reaching end of life	Replace Emitter.
	Emitter too Cold	If emitter is at or below 35°F (1°C), Emitter is too cold to operate properly.
Red/Orange Emitter	Emitter reaching end of life	Replace Emitter.

REPLACEMENT OF EMITTERS

1. Turn off power to the kit.
2. Carefully pull and slide out the Emitter from the black shrink wrap. Carefully remove Emitter. **DO NOT CUT THE BLACK SHRINK WRAP.**
3. Single Ended Emitters must be installed with silicone grease applied to the female lead socket. Without silicone grease moisture can enter the socket and damage the socket, voiding the warranty.
4. Using a new Emitter and grasping only the ceramic ends, align the Emitter pins with the slots on the inside of the black shrink wrap and carefully push the pins into the slots until seated. The Emitter is now safely locked into place.
5. Once the kit is powered, the Emitter should emit a bright blue hue.

SPARE OR REPLACEMENT PARTS

DESCRIPTION	PART No's
Power Supply	
Unitary Kit for Small Air Handlers Replacement Power Supply 110 V	40000121
Unitary Kit for Small Air Handlers Replacement PS 208/230 V	40000124
UVC Kit Air Handlers Power Supply Replacement 110-230 V	10000166
Mounting Replacement Parts	
Spring Clips Kit	90000832
Short Hooks Kit	11002209
Flat Plate Lamp Holder Kit (for metal)	90000222
Flat Plate Lamp Holder Kit (for plastic)	90000220
Insert Lamp Holder Kit	11005004
U-Bracket 16" Kit	40000133
Emitter Extension Wires for Unitary Kits for Small Air Handlers and Air Handler Kits	
11" Emitter Ext. Wire	50000111-11
32" Emitter Ext. Wire	50000111-32
EMITTERS for Unitary Kits for Small Air Handlers	
RGTS 7.5 HO - 7.5" Replacement Emitter for Unitary Kit	22000500
RGTS 10 HO - 10" Replacement Emitter for Unitary Kit	22000400
RGTS 16 HO - 16" Replacement Emitter for Unitary Kit	22000300
RGTS 20 HO - 20" Replacement Emitter for Unitary Kit	22000100
RGTS 24 HO - 24" Replacement Emitter for Unitary Kit	22000200
EMITTERS for Air Handler Kits	
GTS 12 VO - 12" Replacement Emitter for Air Handler Kit	21000700
GTS 16 VO - 16" Replacement Emitter for Air Handler Kit	21000100
GTS 20 VO - 20" Replacement Emitter for Air Handler Kit	21000200
GTS 24 VO - 24" Replacement Emitter for Air Handler Kit	21000300
GTS 30 VO - 30" Replacement Emitter for Air Handler Kit	21000400
GTS 36 VO - 36" Replacement Emitter for Air Handler Kit	21000500
GTS 42 VO - 42" Replacement Emitter for Air Handler Kit	21000600

Thank you for choosing Steril-Aire, #1 "UVC for HVAC" solution provider worldwide. Please contact your local supplier or Steril-Aire directly if we can provide any further information or service. Call **1-800-2-STERIL** or visit www.steril-aire.com. Your satisfaction is very important to us.

The health aspects associated with the use of this product and its ability to aid in disinfection of environment air have not been investigated by UL.