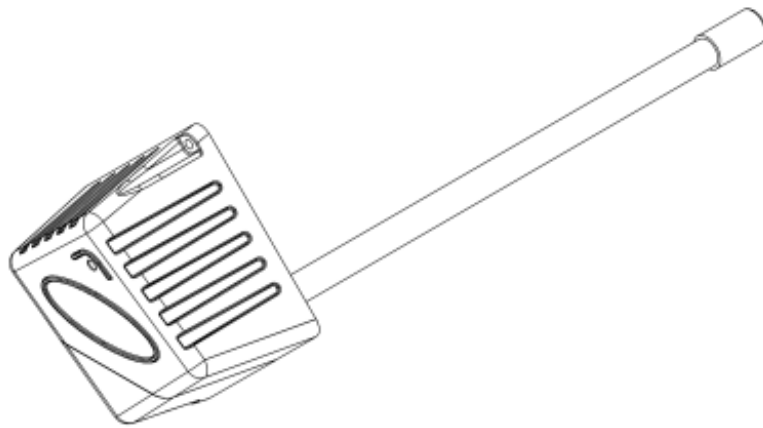




**CAP500 SERIES IN-LINE UNITS
MODELS: CAP500UVP AND CAP500UV
INSTRUCTION MANUAL**



Abatement Technologies, Inc./HVAC Products Division

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Abatement Technologies, Inc Central Air Purifier Series
Models: CAP500UVP and CAP500UV
Instruction Manual

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Note:

- 1. Read and follow all operating instructions before using the CAP500UVP or CAP500UV units.**
- 2. Save this manual for future reference.**

This manual provides important information on the installation and operation of the CAP500UVP and CAP500UV units. These instructions must be carefully followed in order to install and operate the units safely and correctly. If you have any questions, call Abatement Technologies at 800-634-9091 (US) or 905-871-4720 (Canada) for assistance.

General Information

The CAP500UVP and CAP500UV units are designed to treat the air that circulates through the heating, ventilation, and air conditioning (HVAC) system in homes and offices. The CAP500UV includes an ultraviolet germicidal irradiation (UV) lamp that inhibits the growth of bacteria and viruses. The CAP500UVP includes a UV/Photolysis (UVP) lamp that emits ultraviolet germicidal irradiation and creates a photolysis reaction. Photolysis is an oxidation process that neutralizes unpleasant odors and volatile organic compounds (VOC's). Both the CAP500UVP and CAP500UV include a UV or UVP lamp and a lamp end of service life indicator (LED light and electronic chirper) housed in a sealed main assembly that is designed to be mounted to a return air duct. A pre-fabricated metal plate is included for mounting the CAP500UVP or CAP500UV to ductboard surfaces.

Note: To maximize UV and UVP lamp life, the unit should be left “ON” (plugged-in), except when replacing the lamp.

Key Components and their Function – Refer to Figure A

- Main Assembly - sealed plastic unit that houses a UV or UVP lamp and all electrical components.
- LED Light - mounted in the main assembly and indicates the various operating conditions of the CAP500UVP or CAP500UV.
- Lamp Access Cover- provides access to the lamp, lamp connector, and reset button. The lamp access cover is secured to the main assembly with a screw.
- Ultraviolet Germicidal Irradiation (UV) Lamp - irradiates the air and inhibits the growth of bacteria and viruses.
- UVGI/Photolysis (UVP) Lamp - irradiates the air and neutralizes unpleasant odors and volatile organic compounds (VOC's).
- Lamp Connector- female socket which connects the 4 pin end of the UV or UVP lamp to the ballast.
- Safety Interlock - turns power to lamp “OFF” if lamp access cover is removed while unit is plugged in and energized. If the lamp access cover is removed without disconnecting the CAP500UVP or CAP500UV, the safety interlock shuts the power to the lamp “OFF” to prevent direct exposure to UV rays that can cause temporary or permanent loss of vision and severe skin burns.
- Power Cord - number 18-2 AWG, two-wire power cord.

Note: The housing of both the CAP500UVP and CAP500UV consists of a plastic base plate, main cover, and lamp access cover. The main cover is sealed to the base plate and is not removable. Do not try to separate these two components or permanent damage to the unit will result. Other than the lamp, there are no user serviceable components. The lamp access cover is held place with a screw and is therefore removable.

Electrical and Safety Requirements

1. The CAP500UVP and CAP500UV require a minimum of 110 volts AC, 60 HZ to operate properly; however, for maximum performance, the units require 115 volts AC. Make certain that an extension cord does not reduce power to less than 110 volts. Use of a voltmeter to confirm adequate voltage is recommended.
2. Try to avoid the use of an extension cord; however, if it is necessary to use one, it must be the number 16-2 AWG type. Use of a larger numerical gauge (lower capacity wire) extension cord will not satisfy amperage requirements of unit and may result in electrical hazards, personal injury and/or damage to the electrical components. The cord must be in good condition and should not exceed a total of 10 feet in length. Use of an excessive length of extension cord can cause failure of the electrical components.
3. Check condition of power cords prior to use. Damaged cords can cause fatal electric shock and/or electrical component failure.
4. Power cords should never be exposed to water, heat, sharp or abrasive objects; in addition, they should never be kinked or crushed.
5. Check to ensure that any circuit to which a CAP500UVP or CAP500UV unit is connected is protected by at least a 15 ampere circuit breaker.
6. For maximum safety, the units should be connected to a properly grounded outlet equipped with a ground fault circuit interrupt device (GFCI). A GFCI will trip the circuit and stop the flow of electricity if leakage of current is detected.

CAUTION: To reduce risk of electrical shock, do not expose the CAP500UVP or CAP500UV to water. Do not touch the electrical outlet or power cord(s) with wet hands or while standing on a wet or damp surface.

WARNING: Risk of electrical shock! Can cause injury or death! Always disconnect the CAP500UVP or CAP500UV from the power source before replacing the lamp.

Warning: This equipment is not classified as “intrinsically safe” and should not be used in the following potentially hazardous locations as defined by the Underwriters Laboratories: Class I Division 1, Class I Division 2, Class I Zone 0, Class I Zone 1, Class I Zone 2, Class II Division 1, Class II Division 2, Class III Division 1, Class III Division 2. Refer to the UL web site: <http://www.ul.com/hazloc/define.htm>.

Before Installing the CAP500UVP or CAP500UV

Note: The CAP500UVP and the CAP500UV are designed for indoor use only.

- Since the units do not remove existing dust and dirt from the air ducts, furnace blower, and evaporator coil, these major HVAC components should be thoroughly cleaned using source-removal techniques before installation.

WARNING: Neither the CAP500UVP nor the CAP500UV should be installed in the line of sight of any inlet/outlet grilles or openings. The UV and UVP lamps produce intense ultraviolet light and heat. Direct contact with ultraviolet light and/or lamp can cause temporary or permanent loss of vision and severe skin burns. Never look at a UV lamp while it is illuminated. NEVER OPERATE THE CAP500UVP OR CAP500UV OUTSIDE THE DUCT.

Lamp should be allowed to cool for 15 minutes after unit is disconnected from power source before being replaced.

Installation

- The CAP500UVP must be installed in the **return air duct**, upstream of the furnace blower compartment. The CAP500UV can be installed: (a) above the air conditioning cooling coils, (b) below the coils, **provided the**

condensate drain pan is made from a UV-resistant material, or (c) in the return air duct, upstream of the furnace blower compartment. Refer to Figure B.

Note: The person installing the CAP500UVP or CAP500UV must be a licensed and trained HVAC technician.

Warning: Check to ensure that the unit is disconnected from electrical power source during the installation process. Risk of electrical shock! Can cause serious injury or death! Always turn the electrical power switches and circuit breakers for furnace/air conditioning unit(s) “OFF” before installing the CAP500UVP or CAP500UV.

Caution: When installing the CAP500UVP or CAP500UV always wear the proper personal protective equipment (particularly eye and hand protection) in accordance with federal, state, and employer regulations. Be extremely careful when handling sheet metal during installation because serious injury could result from coming in contact with sharp edges.

Caution: Do not install the CAP500UVP or CAP500UV within 3 feet of any HVAC system components (including filters) which are not resistant to ultraviolet light. Exposure to UV light causes degradation (such as cracking, discoloration and in some cases, complete deterioration) of such components.

Note: Both the CAP500UVP and CAP500UV can be installed in the horizontal or vertical position. The unit should be positioned so that the lamp can be easily accessed.

Mounting the CAP500UVP or CAP500UV to galvanized steel duct:

1. Drill a 1" hole in the duct for the lamp. **If installing a CAP500UV above or below the coils, be careful not to drill through the coils.**
2. Take the template (refer to Figure D) and position the drawn lamp hole over the hole drilled in the duct. Drill the other three mounting holes in the duct using the drill sizes specified by the template.
3. Remove the lamp access cover from the main assembly.
4. Position the CAP500UVP or CAP500UV against the duct so that the mounting holes in the unit and duct are aligned.
5. Securely fasten the unit to the duct using three zip screws and a hand screwdriver.
6. Remove the UVP or UV lamp from the corrugated tube that is packed inside the CAP500UVP or CAP500UV carton. Grasp the ceramic section of lamp at the 4 pin end and place the other end into the duct. **Do not touch the glass section of the lamp with bare hands because skin oils will reduce the effectiveness of the lamp.**
7. Plug the 4 pin end of the lamp into the lamp connector. The 4 pins at the end of the lamp form a rectangular pattern and will fit into the connector in two directions.
8. Position the lamp so that the raised ring on its ceramic base fits flush against the main assembly.
9. Slide the lamp access cover back onto the main assembly and secure it in place with its mounting screw.
Note: The lamp access cover must be in its proper position on the main assembly and secured in place or the lamp will not illuminate.
10. Plug the unit into a 110 volt AC electrical outlet. The LED light will glow “amber” for 4-5 seconds then glow “green”. This indicates normal operation.
11. Turn the circuit breakers and electrical power switches for furnace/air conditioning unit(s) “ON”.

Mounting the CAP500UVP or CAP500UV to ductboard:

1. Hold the ductboard mounting plate firmly in both hands and place a thumb on each pre-punched retention tab. Press on the tabs and bend them in an outward direction until they are at a 90° angle to the plane of the mounting plate. Refer to Figure C.
2. Place the face of the mounting plate over the section of ductboard that the unit will be fastened to and trace around the rectangular opening in the plate.
3. Remove the mounting plate and carefully cut out the traced area. Be sure to wear the proper hand protection when cutting out the traced area.
4. Place the mounting plate against the ductboard so that the bent tabs are inside the opening. Bend both tabs until they are flush against the inside surface of the ductboard. This will ensure that the mounting plate fits tight against the ductboard and will properly support the CAP500UVP or CAP500UV.

5. Remove the lamp access cover from the main assembly.
6. Position the CAP500UVP or CAP500UV against the mounting plate so that the holes in the unit and plate are aligned.
7. Securely fasten the unit to the mounting plate using three zip screws and a hand screwdriver.
8. Remove the UVP or UV lamp from the corrugated tube that is packed inside the CAP500UVP or CAP500UV carton. Grasp the ceramic section of lamp at the 4 pin end and place the other end into the duct. **Do not touch the glass section of the lamp with bare hands because skin oils will reduce the effectiveness of the lamp.**
9. Plug the 4 pin end of the lamp into the lamp connector. The 4 pins at the end of the lamp form a rectangular pattern and will fit into the connector in two directions.
10. Position the lamp so that the raised ring on its ceramic base fits flush against the main assembly.
11. Slide the lamp access cover back onto the main assembly and secure it in place with its mounting screw.
Note: The lamp access cover must be in its proper position on the main assembly and secured in place or the lamp will not illuminate.
12. Plug the unit into a 110 volt AC electrical outlet. The LED light will glow “amber” for 4-5 seconds then glow “green”. This indicates normal operation.
13. Turn the circuit breakers and electrical power switches for furnace/air conditioning unit(s) “ON”.

Lamp Replacement

Warning: Always disconnect the CAP500UVP or CAP500UV from the power source before replacing the lamp. The UV and UVP lamps produce intense ultraviolet light and heat. Direct contact with ultraviolet light and lamp can cause temporary or permanent loss of vision and severe skin burns. Never look at a UV lamp while it is illuminated. Lamp should be allowed to cool for 15 minutes after unit is disconnected from power source before being replaced.

The UV and UVP lamps have an expected useful service life of approximately 1 year (8,800 hours), provided they are **not**: (a) dropped or otherwise damaged, and (b) turned “ON” and “OFF” frequently (every day). As stated previously, to maximize UV and UVP lamp life, the unit should be left “ON” (plugged-in), except when replacing the lamp.

After approximately 1 year of use the LED light will begin to flash and glow “amber” and the unit will emit a chirping sound every second. This indicates that the lamp needs to be replaced.

Note: To mute the chirping sound prior to changing the lamp: (1) remove the lamp access cover, (2) press the reset button until the chirping stops and the LED light stops flashing, (3) slide the access cover back onto the main assembly and (4) secure it in place with its mounting screw. Do not touch the lamp or remove it from its position inside the duct!

To replace the lamp proceed as follows:

1. Unplug the unit and wait at least 15 minutes to allow the lamp to cool.
2. Remove the lamp access cover from the main assembly and wait at least 15 seconds before proceeding to step 3.
3. Grasp the ceramic base of the lamp and remove the connector.
4. Dispose of the expired lamp properly - **refer to the note at the end of this section.**
5. Grasp the ceramic section of a new lamp at the 4 pin end and place the other end into the duct. **Do not touch the glass section of the lamp with bare hands because skin oils will reduce the effectiveness of the lamp.**
6. Plug the 4 pin end of the lamp into the lamp connector. The 4 pins at the end of the lamp form a rectangular pattern and will fit into the connector in two directions.
7. Position the lamp so that the raised ring on its ceramic base fits flush against the main assembly.
8. Plug the unit into a 110 volt AC electrical outlet. The LED light will glow “amber” and the chirping sound will resume.
9. Press and hold the reset button; the chirping will stop immediately and the LED light will glow “green” after approximately 4-5 seconds, indicating normal operation. Release the reset button.
10. Slide the lamp access cover back onto the main assembly and secure it in place with its mounting screw.

Note: The UV and UVP lamps contain mercury. Do not place used lamps in the trash. Contact the local waste disposal authority for instructions on the proper disposal of UV lamps. Refer to the website: <http://www.nema.org/lamprecycle/> for more information regarding the recycling of spent mercury-containing lamps.

Troubleshooting Guide

Problem	Possible Cause	Solution
LED light doesn't glow when unit is plugged in.	Electrical connection.	Make sure unit is plugged into power source.
	Tripped circuit breaker.	Reset building breaker.
	Tripped GFCI	Reset GFCI at power source.
	Electrical problem.	Call Abatement Technologies.
Unit chirps & LED glows "amber"	Lamp service life expired.	Replace lamp – refer to Lamp Replacement section.
Unit chirps & LED glows "red"	Lamp failure.	Replace lamp – refer to Lamp Replacement section.
	Electrical component malfunction.	Replace unit.

Note: If there is an interruption in the power supply, the unit will return to normal operation when power is restored.

Note: If the unit does not turn "ON" or malfunctions after carefully following the Troubleshooting Guide, call Abatement Technologies service department at 800-634-9091 (U.S.) or 905-871-4720 (Canada) for assistance.

Limited Warranty

The CAP500UVP and CAP500UV units (excluding the lamps) are covered by a lifetime warranty, against defects in materials and workmanship. The lamps are warranted for 1 year from the date of purchase. **ATI does not warrant that the goods sold are merchantable or fit for any particular purpose. ATI makes no warranties other than as stated in this paragraph. All other warranties, guaranties, or representations, express or implied, by operation of law or otherwise, are expressly disclaimed.** Goods found by ATI to be defective or not to conform to specification shall upon return be replaced or repaired by ATI without any additional charges, or, at ATI's option, ATI may refund the purchase price of such goods. ATI will pay return transportation charges on returned goods not exceeding the transportation charges applicable to shipment from original destination unless the returned goods are free from defect and conform to specifications. Returned goods which are found by ATI to be free from defect and to conform to specifications shall be held for Purchaser's shipping instructions, which instructions Purchaser shall furnish promptly upon request. **ATI's liability shall in no event extend beyond replacement, repair or refund of the purchase price and ATI shall not be liable under any circumstances for special, contingent or consequential damages, nor for loss, damages, or expenses directly or indirectly arising from the use of the goods, including without limitation, warehousing, labor, handling and service charges, die, equipment, or machine breakage, nor for costs, lost profits or loss of good will. The use of substitute, non-ATI parts and/or filters, in any ATI product, voids all warranties and performance claims. The remedies set forth herein are exclusive.**

For warranty information and assistance contact Abatement Technologies' Customer Service Department at 800-634-9091 (U.S.) or 905-871-4720 (Canada.)

Figure A: CAP500UV and CAP500UVP Key Components

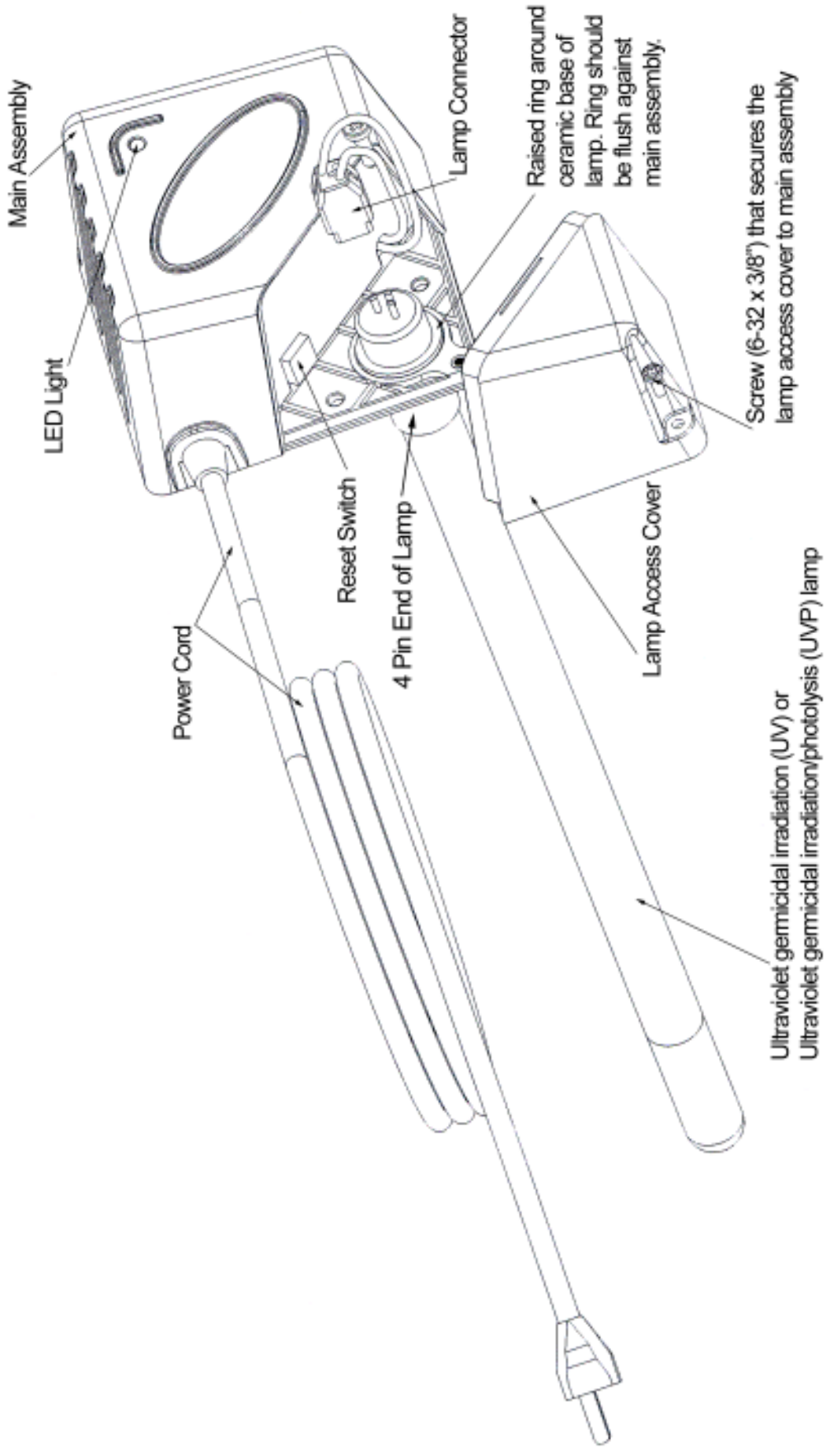


Figure B: Installation Location

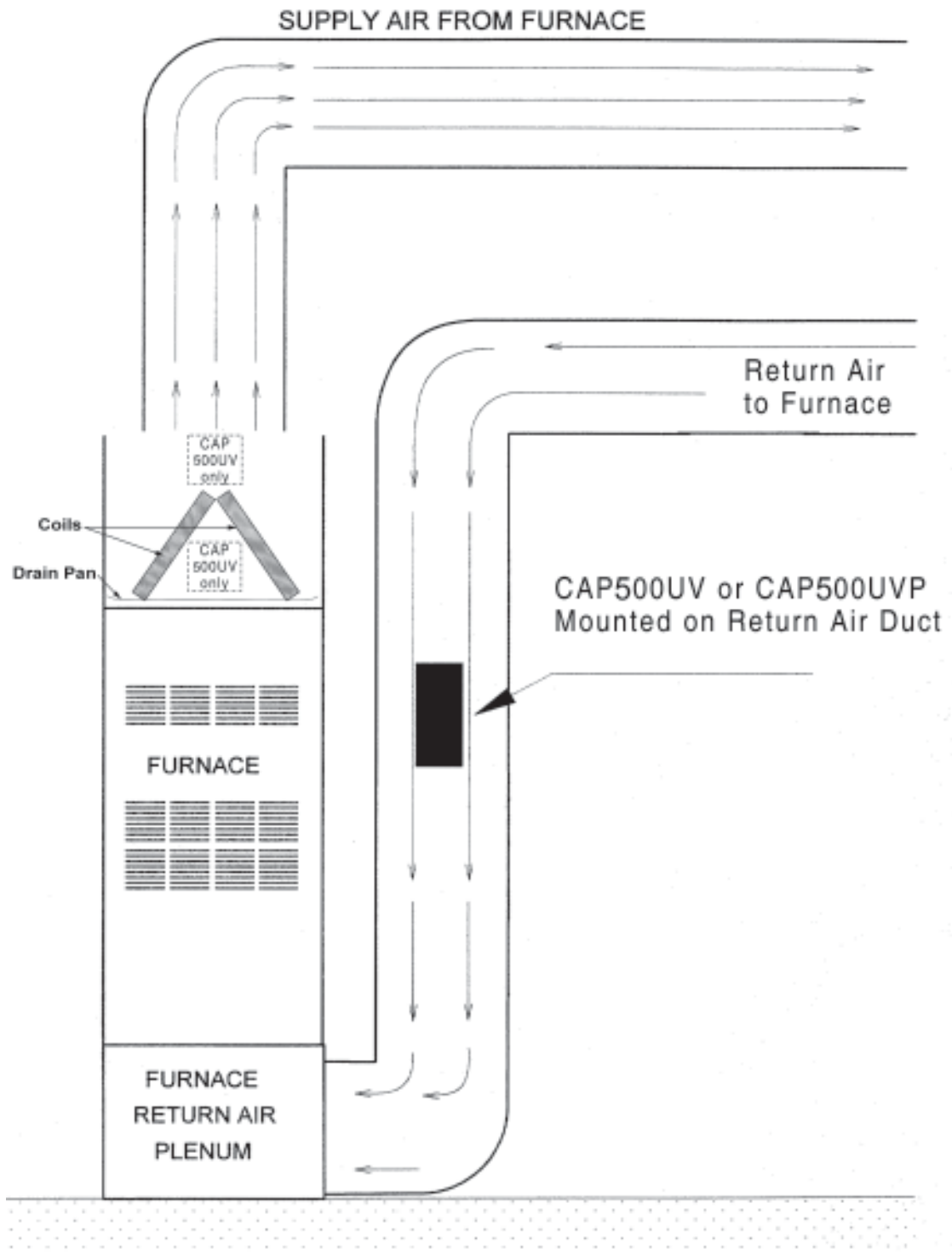


Figure C: Ductboard Mounting Plate

