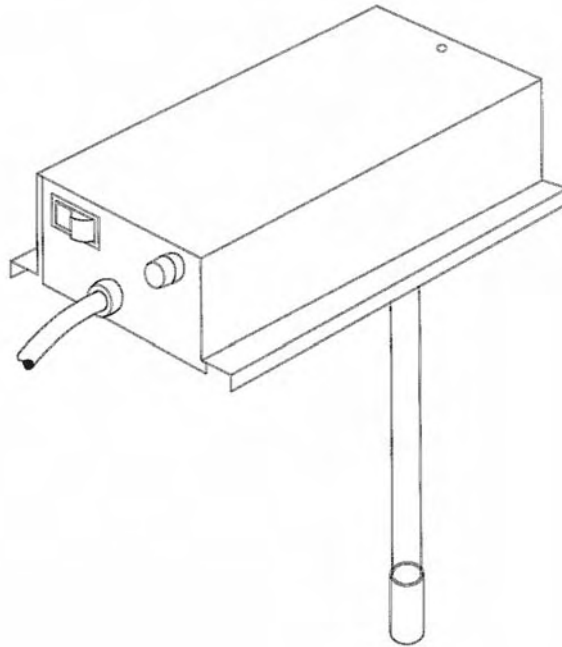




**CAP300 SERIES IN-LINE UNITS
MODELS: CAP300UVP AND CAP300UV
INSTRUCTION MANUAL**



Abatement Technologies, Inc./HVAC Products Division

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Abatement Technologies, Inc Central Air Purifier Series

Models: CAP300UVP and CAP300UV

Instruction Manual

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Note:

- 1. Read and understand all operating instructions before using the CAP300UVP or CAP300UV units.**
- 2. Save this manual for future reference.**

This manual provides important information on the installation and operation of the CAP300UVP and CAP300UV 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 CAP300UVP and CAP300UV units are designed to treat the air that circulates through the heating, ventilation, and air conditioning (HVAC) system in homes and offices. The CAP300UV includes an ultraviolet germicidal irradiation (UVGI) bulb that breaks down bacteria, molds, and viruses. The CAP300UVP includes a UVGI/Photolysis (UVGI/P) bulb that emits UVGI and creates a photolysis reaction. Photolysis is an oxidation process that neutralizes unpleasant odors and volatile organic compounds (VOC's). Both the CAP300UVP and CAP300UV include a UVGI or UVGI/P bulb, and a sturdy metal housing which has pre-punched screw holes for mounting the unit to a return air duct. An optional mounting kit (part # CAP310MP) is available for mounting the CAP300UVP or CAP300UV to ductboard surfaces.

Note: To maximize UVGI and UVGI/P bulb life, the unit's power switch should be left in the "ON" position, except when replacing the bulb or servicing the unit.

Key Components and their Function – Refer to Figure A

- Housing- holds a UVGI or UVGI/Photolysis bulb in place inside air duct.
- Metal cover- fits over the housing and protects the units' electrical components.
- Ultraviolet Germicidal Irradiation (UVGI) bulb - assembly is installed inside the housing of the CAP300UV. This bulb irradiates filtered air and breaks down bacteria, molds and viruses.
- UVGI/Photolysis (UVGI/P) bulb - assembly is installed inside the CAP300UVP housing. This bulb emits UVGI and also creates a photolysis reaction.
- Bulb connector- female socket which connects the ballast to the 4 pin end of UVGI or UVGI/P bulb.
- Sight Glass - provides a means of checking the status of bulb. The circular sight glass is mounted to the metal cover.
- Power Switch – rocker-arm style ON/OFF power switch which illuminates when it is in the "ON" position.

- Fuse - 250 volt, 3 amp fuse which protects the unit's electrical components in case of an electrical power surge or internal short circuit.
- Interlock Switch - turns power to unit "OFF" if metal cover is removed while Power Switch is in the "ON" position. If the metal cover for the housing is removed without turning power to the CAP300UVP or CAP300UV "OFF", the interlock switch shuts the power "OFF" and prevents anyone from direct exposure to UVGI rays that can cause temporary or permanent loss of vision and severe skin burns.
- Power Cord - number 18-3 AWG, three-wire power cord with ground pin.

Electrical Requirements

1. The CAP300UVP and CAP300UV 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 any extension cord(s) used do not reduce power to less than 110 volts. Use of a voltmeter to confirm adequate voltage is recommended. For maximum safety, the units should be connected to a 3 prong, 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.
2. Power cords should never be exposed to water, heat, sharp or abrasive objects; in addition, they should never be kinked or crushed. Always replace damaged power cords immediately.
3. Extension cords used for CAP300UVP and CAP300UV must be the number 18-3 AWG, three-wire type. **NOTE: Use of larger numerical gauge (lower capacity wire) power cord(s) will not satisfy amperage requirements of units and may result in electrical hazards, personal injury and/or damage to the electrical components. The cords must be in good condition, in continuous lengths (no splicing) and should not exceed a total of 100 feet in length. Use of too much cord can cause overheating of the electrical components.**

CAUTION: To avoid damage to the CAP300UVP and CAP300UV electrical system, do not connect or disconnect unit to power source unless the unit's power switch is in the "OFF" position.

CAUTION: To reduce risk of electrical shock do not expose the CAP300UVP or CAP300UV to water. Do not touch the electrical outlet or power cord(s) with wet hands or while standing on a wet surface.

WARNING: Risk of electrical shock! Can cause injury or death. Always turn the CAP300UVP or CAP300UV "OFF" and disconnect it from the power source before replacing the bulb or servicing the unit.

Before Installing the CAP300UVP or CAP300UV

Note: The CAP300UVP and the CAP300UV are designed for indoor use only.

- Since the units cannot 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 CAP300UVP nor the CAP300UV should be installed in the line of sight of any inlet/outlet grilles or openings. The UVGI and UVGI/Photolysis bulbs produce intense ultraviolet light and heat. Direct contact with ultraviolet light and bulb can cause temporary or permanent loss of vision and severe skin burns. Never look at a UV lamp while it is illuminated. Bulb should be allowed to cool for 15 minutes after being turned “OFF” before being replaced or cleaned. Never operate the CAP300UVP or CAP300UV outside the duct.

Installation

- The CAP300UVP must be installed in the return air duct, upstream of the furnace blower compartment. The CAP300UV 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 CAP300UVP or CAP300UV must be a licensed and trained HVAC technician.

Warning: Check to ensure that: a) the Power Switch for the CAP300UVP or CAP300UV is turned “OFF”, and b) the unit is disconnected from electrical power source during 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 CAP300UVP or CAP300UV.

Caution: When installing the CAP300UVP or CAP300UV 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 CAP300UVP or CAP300UV 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, etc) of such components.

Note: Both the CAP300UVP and CAP300UV can be installed in the horizontal or vertical position. The unit should be positioned so that the power switch, sight glass, bulb, and fuse can be easily accessed.

Mounting the CAP300UVP or CAP300UV to galvanized steel duct:

1. Remove the two screws that secure the metal cover to the housing of the unit.
2. Drill a 1” hole in the duct for the bulb. **If installing above or below the coils be careful not to drill through the coils.**

3. Remove the UVGI or UVGI/P bulb from the corrugated tube that is packed inside the CAP300UVP or CAP300UV carton. Grasp the ceramic section of bulb (opposite the 4 pin end) and gently insert it into the one inch opening in the housing until the 4 pin end of bulb plugs into the connector. **Do not touch the glass section of the bulb with bare hands because skin oils will reduce the effectiveness of the bulb.**
4. Place the bulb through the 1" hole in the duct and position the housing against the duct surface. Secure the housing to the duct with the sheet metal screws provided with unit.
5. Position a 5/16" drill bit over the sight glass opening in housing and drill a hole through the duct.
6. Re-attach the metal cover to the housing of the unit with the two screws.
7. Connect the CAP300UVP or CAP300UV to a 110 volt AC electrical outlet and turn the power switch to the "ON" position. Turn the circuit breakers and electrical power switches for furnace/air conditioning unit(s) "ON".

Mounting the CAP300UVP or CAP300UV to ductboard:

Note: An optional ductboard mounting kit (part # CAP310MP) is available. The kit contains a mounting plate, faceplate, bolts, flat washers and wing nuts. See Figure C

1. Place the mounting plate over the section of ductboard to which the CAP300UVP or CAP300UV will be attached.
2. Trace around the inside opening in the mounting plate and the opening for the sight glass.
3. Remove the mounting plate and carefully cut out the opening for the CAP300UVP or CAP300UV housing. The traced opening for the sight glass can be drilled with a 1/2" bit. Check to ensure that the sight glass opening is clear of any ductboard material.
4. Position the mounting plate over the openings in the ductboard and check to ensure that the housing and sight glass openings in both the plate and duct are properly aligned.
5. Place the 1 1/2" bolts (from the mounting kit) over the four holes in the mounting plate and push them through the ductboard.
6. Reach inside the ductboard and place flat washers over the bolts. Secure the mounting plate to the ductboard with wing nuts.
7. Remove the two screws that secure the metal cover of the CAP300UVP or CAP300UV to the housing of the unit.
8. Place the CAP300UVP or CAP300UV over the faceplate. Check to ensure that the screw, bulb and sight glass openings in both the housing and faceplate are properly aligned. Place a piece of duct tape over the housing/faceplate assembly to ensure that the screw, bulb and sight glass openings remain aligned until this assembly is secured to the mounting plate.
9. Position the CAP300UVP or CAP300UV housing/faceplate assembly over the mounting plate. Check to ensure that the openings for the screws and sight glass in both the faceplate and mounting plate are properly aligned.
10. Secure the housing/faceplate assembly to the mounting plate with the sheet metal screws provided with unit.
11. Remove the two thumbscrews that secure the bulb connector to the housing, and remove the connector from the mounting bolts.
12. Remove the UVGI or UVGI/P bulb from the corrugated tube that is packed inside the

CAP300UVP or CAP300UV carton. Grasp the ceramic section of bulb at the 4 pin end and gently insert bulb into the one inch opening in the housing. **Do not touch the glass section of the bulb with bare hands because skin oils will reduce the effectiveness of the bulb.** Plug the 4 pin end of bulb into the connector and re-position the bulb connector on its mounting bolts.

13. Secure the bulb connector to the housing with the two thumbscrews.
14. Re-attach the metal cover to the housing of the unit with the two screws.
15. Connect the CAP300UPV or CAP300UV to a 110 volt AC electrical outlet and turn the power switch to the "ON" position. Turn the circuit breakers and electrical power switches for furnace/air conditioning unit(s) "ON".

Bulb Replacement

The UVGI and UVGI/P bulbs each have a rated service life of approximately 1 year, provided they are **not**: a) dropped or otherwise damaged, and b) turned "ON" and "OFF" more than once every 8 hours. As stated previously, to maximize UVGI and UVGI/P bulb life, the unit's power switch should be left in the "ON" position, except when replacing the bulb or servicing the unit. If the CAP300UVP and CAP300UV are used in the recommended manner, bulb life will closely approximate 1 year.

The sight glass provides a means of checking the status of the bulb. If a glow is not present when looking into the sight glass while the power switch is "ON", the bulb probably needs to be replaced.

Note: Bulb should be replaced once each year.

To Replace the Bulb proceed as follows:

Warning: Always turn the CAP300UVP or CAP300UV "OFF" and disconnect it from the power source before replacing the bulb or servicing the unit. The UVGI and UVGI/P bulbs produce intense ultraviolet light and heat. Direct contact with ultraviolet light and bulb can cause temporary or permanent loss of vision and severe skin burns. Never look at a UV lamp while it is illuminated. Bulb should be allowed to cool for 15 minutes after being turned "OFF" before being replaced or cleaned.

1. Remove the two screws that secure the metal cover to the housing of the unit.
2. Remove the two thumbscrews that secure the bulb connector to the housing, and remove the connector from the mounting bolts.
3. Unplug the connector from the bulb and dispose of the burned-out bulb.
4. Grasp the ceramic section of a new bulb at the 4 pin end and gently insert bulb into the one inch opening in the housing. **Do not touch the glass section of the bulb with bare hands because skin oils will reduce the effectiveness of the bulb.** Plug the 4 pin end of bulb into the connector and re-position the bulb connector on its mounting bolts.
5. Secure the bulb connector to the housing with the two thumbscrews.
6. Re-attach the metal cover to the housing of the unit with the two screws.
7. Connect the CAP300UPV or CAP300UV to a 110 volt AC electrical outlet and turn the power switch to the "ON" position.

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 |
|---|---|--|
| Unit won't start when power switch is turned "ON" | Power Cord. | Check all connections and condition of cord. Do not operate unit with damaged power or extension cords. |
| | Tripped circuit breaker. | Reset building breaker. |
| | Tripped GFCI. | Reset GFCI at power source. |
| Bulb doesn't glow. | Electrical connection. | Check connection between bulb and ballast. |
| | Burned-out bulb. | Refer to the section entitled "Bulb Replacement". |
| | Burned-out ballast or interlock switch. | Call Abatement Technologies Technical Dept for assistance. |

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.

Care of the Unit

Warning: Both the UVGI and UVGI/P bulbs get extremely hot during operation. Unit must be turned "OFF" for at least 15 minutes before replacing or cleaning bulb. Touching the bulb immediately after turning unit "OFF" will result in severe skin burns.

The CAP300UVP and CAP300UV metal cover is made from pre-painted aluminum and should be cleaned with a damp cloth. Do not use harsh chemicals or solvents to clean the unit. Inspect the UVGI or UVGI/P bulb every six months. If the bulb is soiled, clean the glass surface with a cotton ball and alcohol.

Limited Warranty

Abatement Technologies, Inc (ATI) warrants that goods sold to the original user shall be free from defects in material and workmanship for a period of 3 years, except such as are commercially acceptable. The warranty on lamps is 1 year from purchase date. This warranty does not include useful filter life. **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: CAP300UVP & CAP300UV KEY COMPONENTS

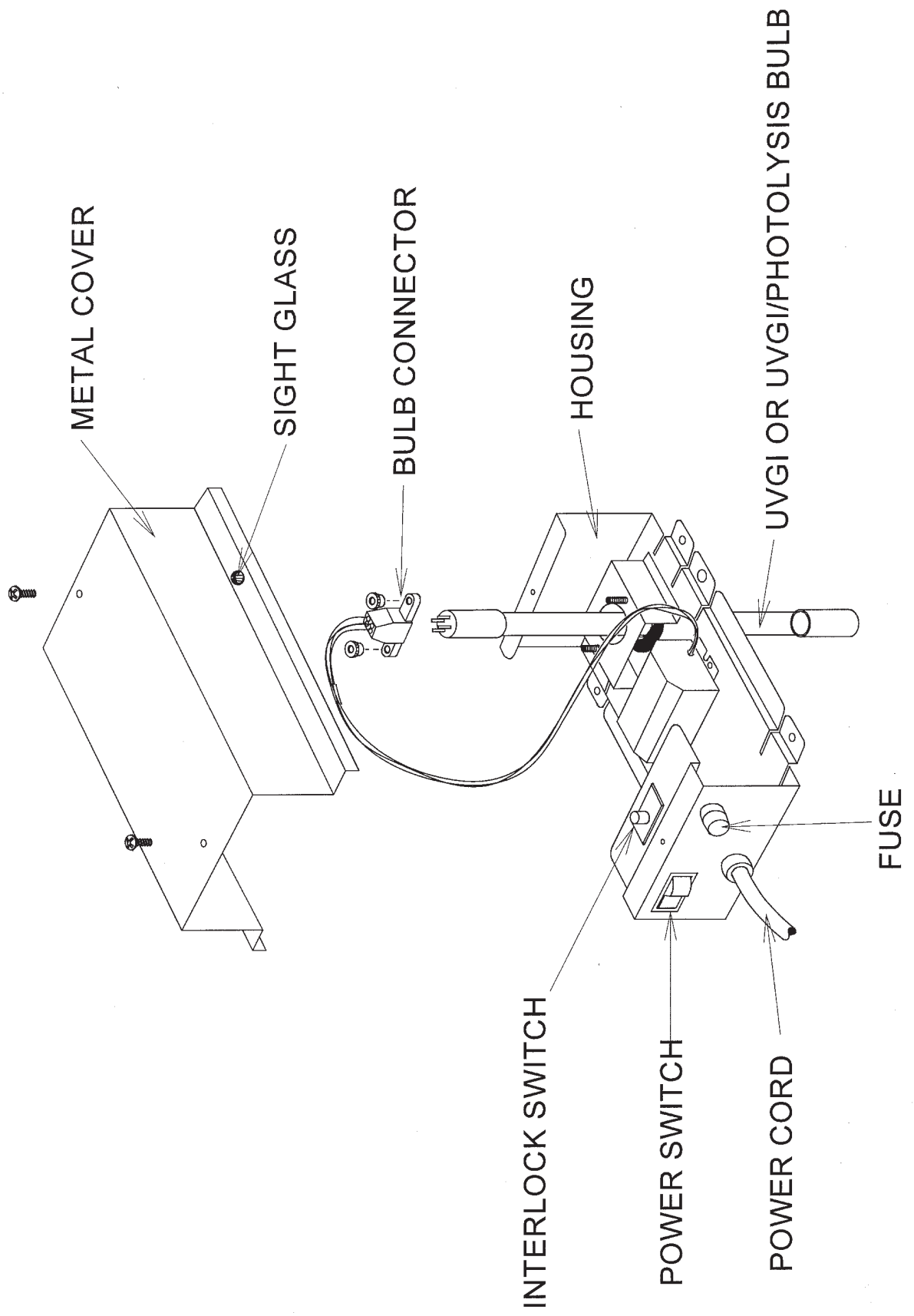


FIGURE B: INSTALLATION LOCATION

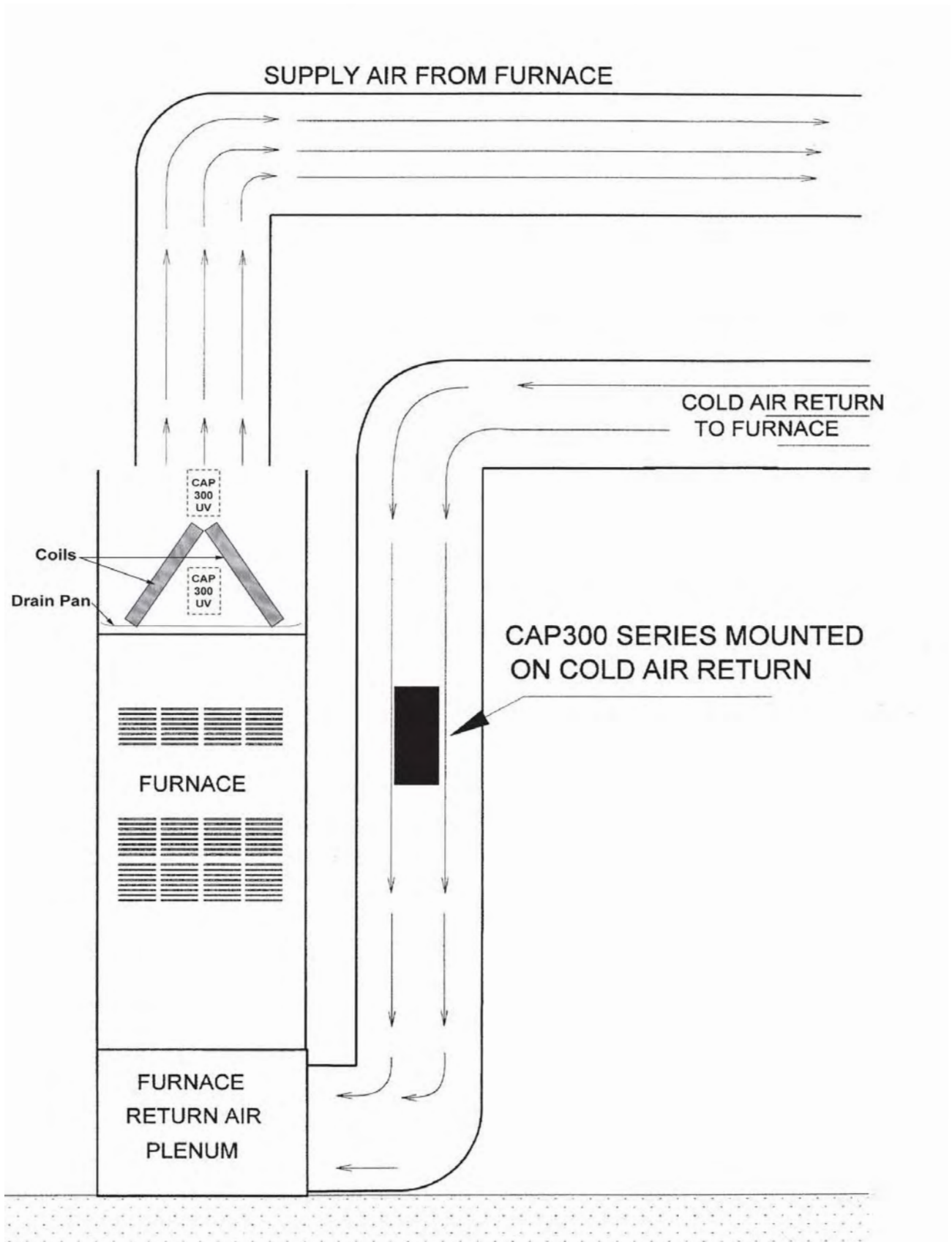


FIGURE C: CAP300UVP & CAP300UV OPTIONAL DUCTBOARD MOUNTING KIT

