

AirWaves

Air Purification System

O₃/UV

Installation & Operation Manual



ClearWater Tech, LLC.
Integrated Ozone Systems

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IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

- 1) **Read and follow all instructions.**
- 2) **Save these instructions.**
- 3) **Always be sure the unit is unplugged during installation or service procedures.**
- 4) **The ultraviolet light produced by the UV lamps is harmful to your eyes. Do not look directly at the lamps. Should it become necessary to view the lamps, use UV-protected sunglasses.**

UNPACKING THE UNIT

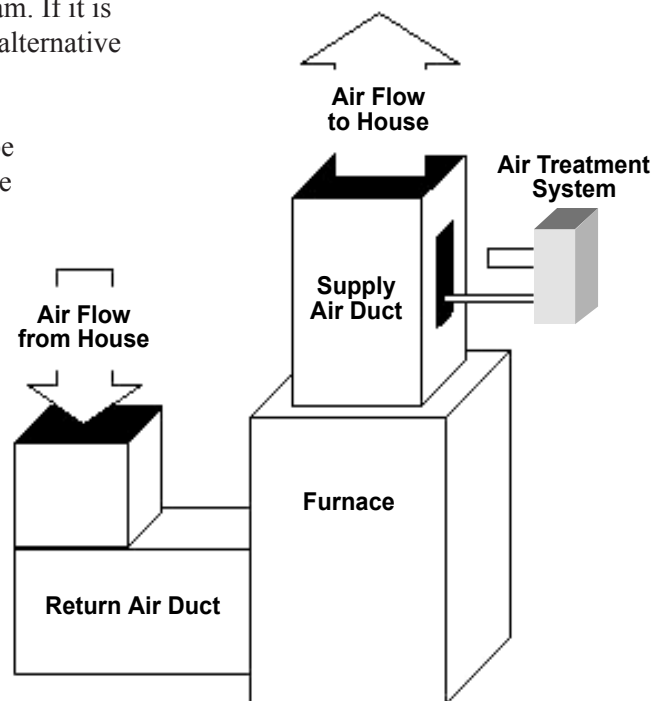
- 1) Each Airwaves Air Purifier unit is shipped complete and ready to install.
- 2) Carefully remove unit from packaging. Make sure not to handle the lamps with bare hands, as oils from the hands can create “hot spots” which reduce lamp life. If you should accidentally touch a lamp, wipe it off with a soft cloth dampened with rubbing alcohol. Lamps are fragile and proper care must be taken when removing any packaging that is placed around them.

PREPARE TO INSTALL

- Your HVAC system may have accumulated molds and/or other contaminants in and around the central air handler and in the duct work. Therefore it is recommended the AirWaves unit be installed *supply side* of the air handler, keeping it as far from the heating/cooling source as possible while still in the main air stream. If it is not practical to install the unit on the supply side, it is an acceptable alternative to install the unit on the return side.

- Do not locate the unit within 20” of any plastic material that will be directly exposed to the UV light, such as a return side humidifier. The UV light will degrade many plastic materials over time.

- It is recommended that installation and start-up be performed with *no air flowing* through the HVAC system. Once installed and ready for operation, the air purification process occurs only when air is circulating through the HVAC system.



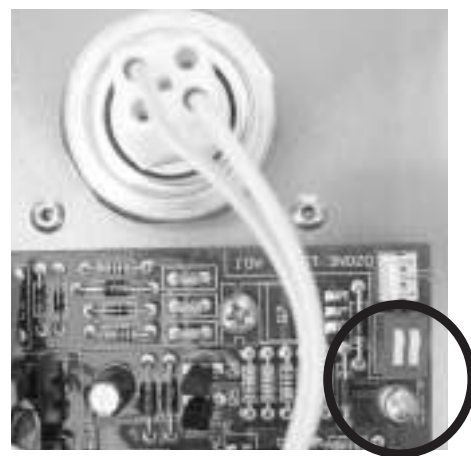
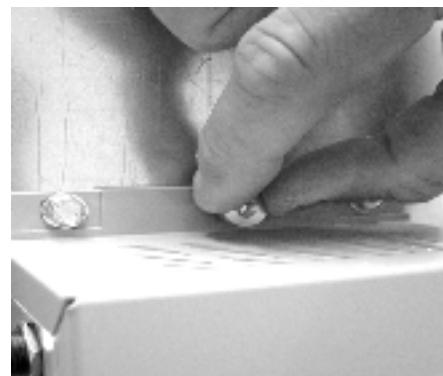
SETTING THE OUTPUT LEVEL

The AirWaves unit will be more effective in higher humidity climates, less so in drier environments. The amount of power used will depend on homeowner preference. If odors persist on the default “LOW” factory setting, increase the setting one step at a time until odors are controlled. A small percentage of individuals are extremely sensitive to ozone odor. If the unit is set higher than the default “LOW” factory setting and the homeowner notices ozone odor, reduce the setting a step at a time until the ozone odor ceases to be noticeable.

NOTE: AirWaves comes factory preset to LOW output. The output may be changed to MEDIUM, HIGH or BOOST with two switches on the main circuit board.

1. Remove brass thumb nut and cover.
2. Set the two switches according to the diagram for desired output level. The factory setting (**LOW**) has the two white tabs pushed down in the “OPEN” position (located closest to the "Ozone" L.E.D). The different output settings are shown in the table below:

LOW		MEDIUM		HIGH		BOOST	
1	2	1	2	1	2	1	2
OPEN		OPEN		OPEN		OPEN	



Switches shown in factory default LOW setting – OPEN/OPEN.

- Boost – 100% (10W, equivalent to .19ppm ozone 3” from lamp at 278cu.ft/min, 51-60% relative humidity, 70-75° F). Boost level is appropriate for larger homes (2,500-3,000 sq. ft), heavy tobacco smoke throughout the home and moderate household odors.
- High – 75%. High setting is appropriate for average-size homes with pets, heavy tobacco throughout the home and moderate household odors.
- Medium – 50%. Medium setting is appropriate for average-size homes with pets, tobacco odor primarily in one or two rooms and low household odors.
- Low – 25%. Low setting is appropriate for average-size homes with no pets, no tobacco odors, and low household odors (cooking, etc.)

3. Replace unit cover and brass thumb nuts.

INSTALLATION

Installation Method 1 : Hole Saw



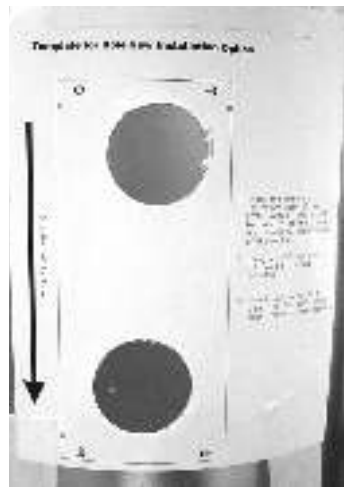
Tools Required: 2 1/4" hole saw, 5/16" nut driver.

Materials: 4 self-tapping mounting screws (supplied), hole saw mounting template (supplied), duct or other adhesive tape.

1. Place and tape hole saw template on duct work in desired location. NOTE: Be sure that the direction of air flow in the duct matches the airflow arrow on the template.



2. Drill two 2 1/4" holes as seen below.



3. Remove the paper template. Carefully position the AirWaves unit with bulbs extending into the duct work through the two 2 1/4" holes.

NOTE: If duct work is covered with insulation, use duct tape or foil tape to hold insulation out of way of air vents on either end of AirWaves unit.



INSTALLATION (continued)

4. Insert and tighten self-tapping mounting screws supplied, with a 5/16" nut driver. Check to make sure that there is a good seal around the entire unit after tightening the four screws.



5. Slide crimp-on spades onto ends of low-voltage two-conductor gray power cord, crimp in place as shown to the left.
6. Slide spade connectors under power adapter screw heads and tighten.



7. Plug power adapter into nearest AC outlet (non-switched!)

NOTE: If supplied power cord is too short, use an extension cord between nearest AC receptacle and the adapter, or splice additional two-conductor wire onto low-voltage power cord.



8. Plug low-voltage power cord into AirWaves unit.

NOTE: There should be no air flow through the HVAC system at this time.

For the first 30-60 seconds all four lights will be lit, as shown on the right. If no lights are lit, double-check all power connections. If you can verify that AC power is on and that the power adapter is providing 24Volts AC to the AirWaves unit, return unit to dealer for service. If some but not all lights light (check carefully as lights are inside the unit case and may not be visible from all viewing angles), return unit to dealer for service.



After 30-60 seconds, the Air Flow and Ozone lights will go out and the main power and germicidal lamp will remain on, as shown on the left.

The AirWaves unit automatically operates when air is flowing through the HVAC.



9. Turn on the home HVAC system. Verify that the Air Flow and Ozone lamp lights up. The AirWaves unit is fully operational.

Installation Method 2 : Tin Snips



Tools Required: Tin snips, 5/16" nut driver, marking pen.

Materials: 4 self-tapping mounting screws (supplied), tin snips mounting template (supplied), duct or other adhesive tape.

1. Cut out the center rectangle of template.
2. Place and tape tin snip template on duct work in desired location and mark with a marking pen, as shown on right.



3. Using tin snips and following supplied template, cut rectangular mounting hole in duct work.

NOTE: If duct work is covered with insulation, use duct tape or foil tape to hold insulation out of way of air vents on either end of AirWaves unit.

4. Position the AirWaves unit with bulbs extending into the duct work, as shown on right. Drive in the four self-tapping screws. Make sure there is a good seal around the entire unit.
5. Follow steps 5 through 9 for Installation Method 1: Hole Saw.

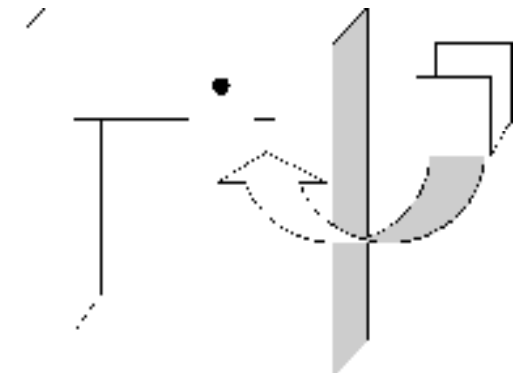


INSTALLATION NOTE:

Installing AirWaves in Duct Board

Duct board is usually found in cold-weather regions because of its higher R-value and air-tightness than metal duct work. Duct board will typically be 1", 1.5" or 2" in thickness. Duct board is easy to cut, but doesn't provide material to screw the AirWaves mounting screws into. An easy solution is to use light gauge sheet metal, or preformed U-channel or C-channel material to create mounting hardware that you can drill and screw into.

Using strip steel or aluminum, make 4 U-channels, slip over ductboard cut in order to provide material to screw AirWaves mounting screws into.



MAINTENANCE

This maintenance schedule is only a guideline, determined by average conditions; actual conditions will dictate the frequency of cleaning and/or replacement of lamps.

NOTE: Do not touch the lamps with bare hands, as oils from the hands can create “hot spots” which reduce lamp life. Handle either by the lamp end caps or use a soft cloth. If you should accidentally touch a lamp, wipe it off with a soft cloth dampened with rubbing alcohol.

Cleaning the Lamps

Recommended Interval: 12 months

- 1) Disconnect power to AirWaves unit.
- 2) Remove cover and brass thumb nuts.
- 3) Remove lamps. Refer to "Lamp Removal and Replacement."
- 4) Clean lamps. Using a soft cloth dampened with rubbing alcohol, wipe down the unit and the lamps. If there is a large buildup of dust particles, you may wish to use a can of air to blow the majority of dirt off first.
- 5) Replace lamps and cover. Refer to "Lamp Removal and Replacement."
- 6) Replace cover and secure with brass thumb nuts.
- 7) Reconnect power to AirWaves unit.

Replacing the Lamps

Recommended Interval: 24 to 36 months (24 months if operated continuously, 36 months if operated intermittently)

NOTE: Use only manufacturer-approved, exact replacement lamps. Standard off-the-shelf lamps are not compatible with the AirWaves unit and will void the manufacturer warranty.

- 1) Disconnect power to AirWaves unit.
- 2) Remove cover and brass thumb nuts.
- 3) Remove and replace lamps. Refer to "Lamp Removal and Replacement."
- 4) Replace the cover and secure with brass thumb nuts.
- 5) Reconnect power to the AirWaves unit.

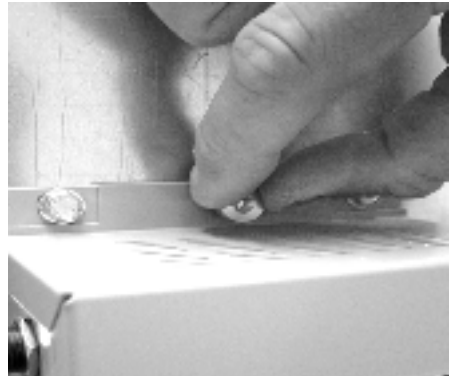
MAINTENANCE (continued)

Lamp Removal and Replacement

Tools required: Small-medium Channellock or Slip-joint pliers

Materials: replacement lamps as needed

1 Remove brass thumb nuts and unit cover.



2. Remove electrical connector.



3. Using Channellocks or slip-joint pliers, carefully loosen the retainer nut and remove it. Save the retainer nut.

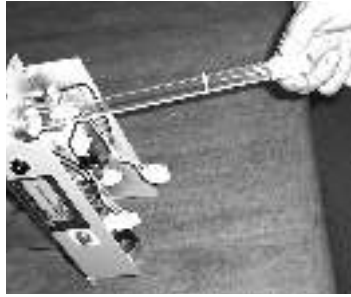


4. Remove retainer ring.



MAINTENANCE (continued)

5. Carefully remove lamp and gently roll the black rubber ring off of lamp end. Save the rubber ring.



8. Replace retainer ring.



6. Unpack replacement lamp and replace the black rubber ring so that the surface of the ring is flush with the lamp base.



9. Replace retainer nut and finger tighten.



7. Insert new lamp into socket.



10. Replace electrical connector. Be sure that the two pins on the lamp match up with the two wires on the electrical connection. If they do not match up, the lamp will not turn on.



11. Replace cover and secure with brass thumb nuts.

TROUBLESHOOTING

“Main Power” LED does not light

- 1) Check to see if AC adapter is properly plugged into wall outlet and into power jack on unit.
- 2) If cord is properly connected, test wall outlet with AC tester to make certain it is functioning properly.
- 3) If outlet is ok, contact your dealer.

“Air Flow” LED does not light

- 1) Check HVAC system for proper air flow to unit.
- 2) If there is air flow and “Air Flow ” LED does not light, the air flow sensor may not be functioning correctly. Check air flow sensor for excessive dirt buildup or fouling. Contact your dealer.
- 3) If there is no air flow and the “Air Flow” LED stays on, the air flow sensor may not be functioning correctly. Check air flow sensor for excessive dirt buildup or fouling. Contact your dealer.

“Germicidal” or “Ozone” lamp does not light

- 1) Check to see that the lamp connector is firmly attached to the pins on the end of the lamp.
(See "Lamp Removal and Replacement", Step 10.)
- 2) If lamp does not light, replace lamp. (See "Lamp Removal and Replacement.")

AirWaves Three-Year Limited Warranty

Warranty

ClearWater Tech, LLC (“CWT”) warrants the AirWaves™ air purification unit against defects in materials and craftsmanship for a period of one (1) year, commencing on the date of original shipment from CWT, in addition CWT also warrants the ballast printed circuit board, air flow sensor printed circuit board and power supply of the AirWaves™ air purification unit against defects in materials and workmanship for a period of three (3) years from the date of installation, with the following exceptions: 1) The warranty period shall begin on the installation date if the installation is performed within 90 days of the original shipment from CWT; 2) The warranty period shall begin on the date of the bill of sale to the end user if the installation date is more than 90 days after the original shipment date. To validate warranty, a warranty card accompanied by a copy of the bill of sale, must be returned to CWT and must include the following information; End users name, complete address, phone number, date of installation, model of unit and serial number, and the name of the company where the unit was originally purchased.

Repairs and replacement parts provided under this warranty shall carry only the unexpired portion of this warranty or 90 days, whichever is longer.

Item Excluded from the Warranty

This warranty does not extend to any product or part in which the factory assigned serial number has been removed or which has been damaged or rendered defective as a result of:

- An accident, misuse, alteration, or abuse
- An act of God such as flood, earthquake, hurricane, lightning, or any other disaster resulting from forces of nature
- Normal Wear and Tear
- Operation outside the usage parameters stated in the product’s user’s manual
- Service or modification not authorized by CWT
- Damage which may occur during shipping; such as broken lamps

Disclaimer of Incidental and Consequential Damages

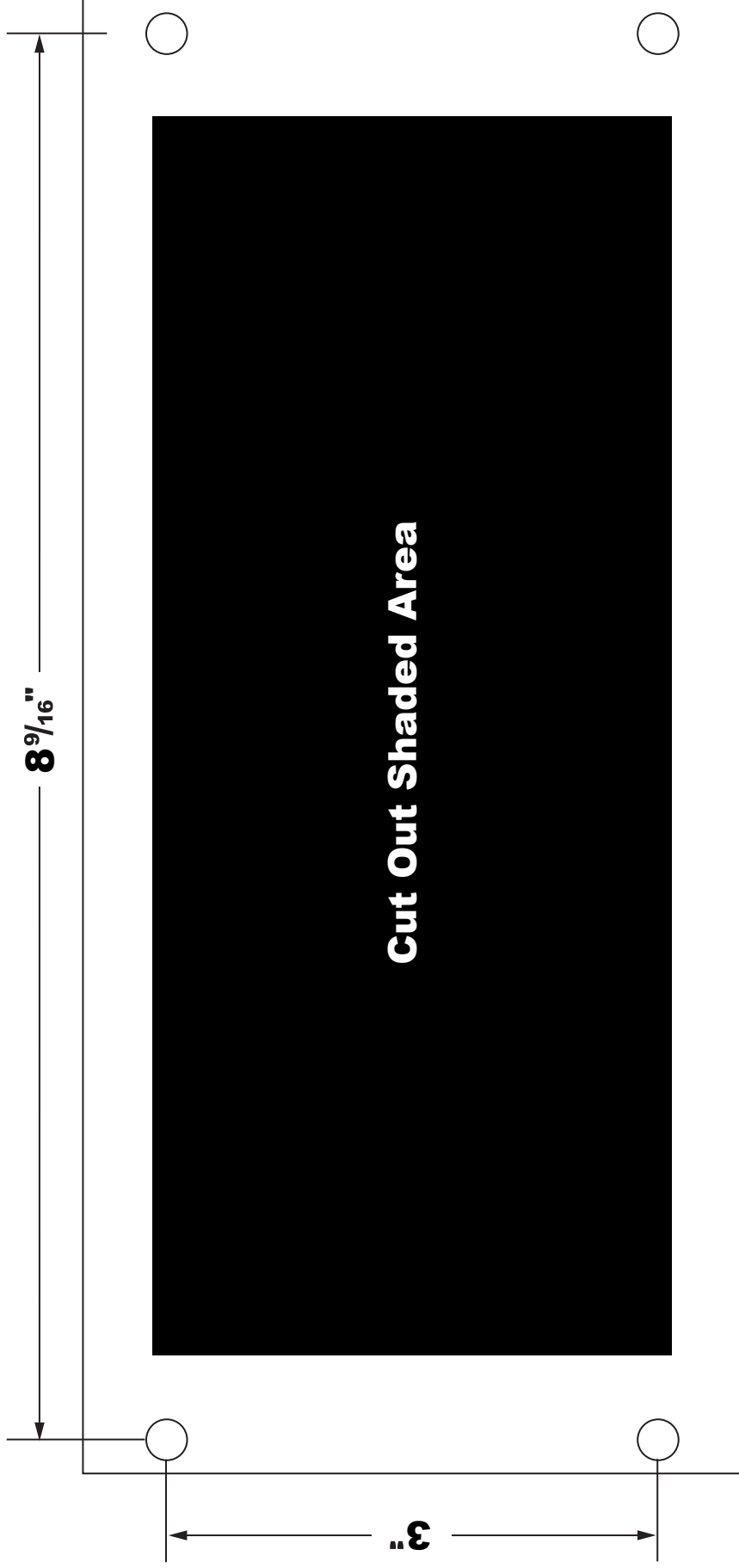
No responsibility is assumed by CWT for any incidental or consequential damages; this includes any damage to another product, products or property resulting from such a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply.

Legal Remedies of Purchaser

This warranty gives specific legal rights, which may vary from state to state.

This Statement of Warranty Supersedes All Others Provided At Any Other Time.

Figure 1
Zephyr INSTALLATION TEMPLATE

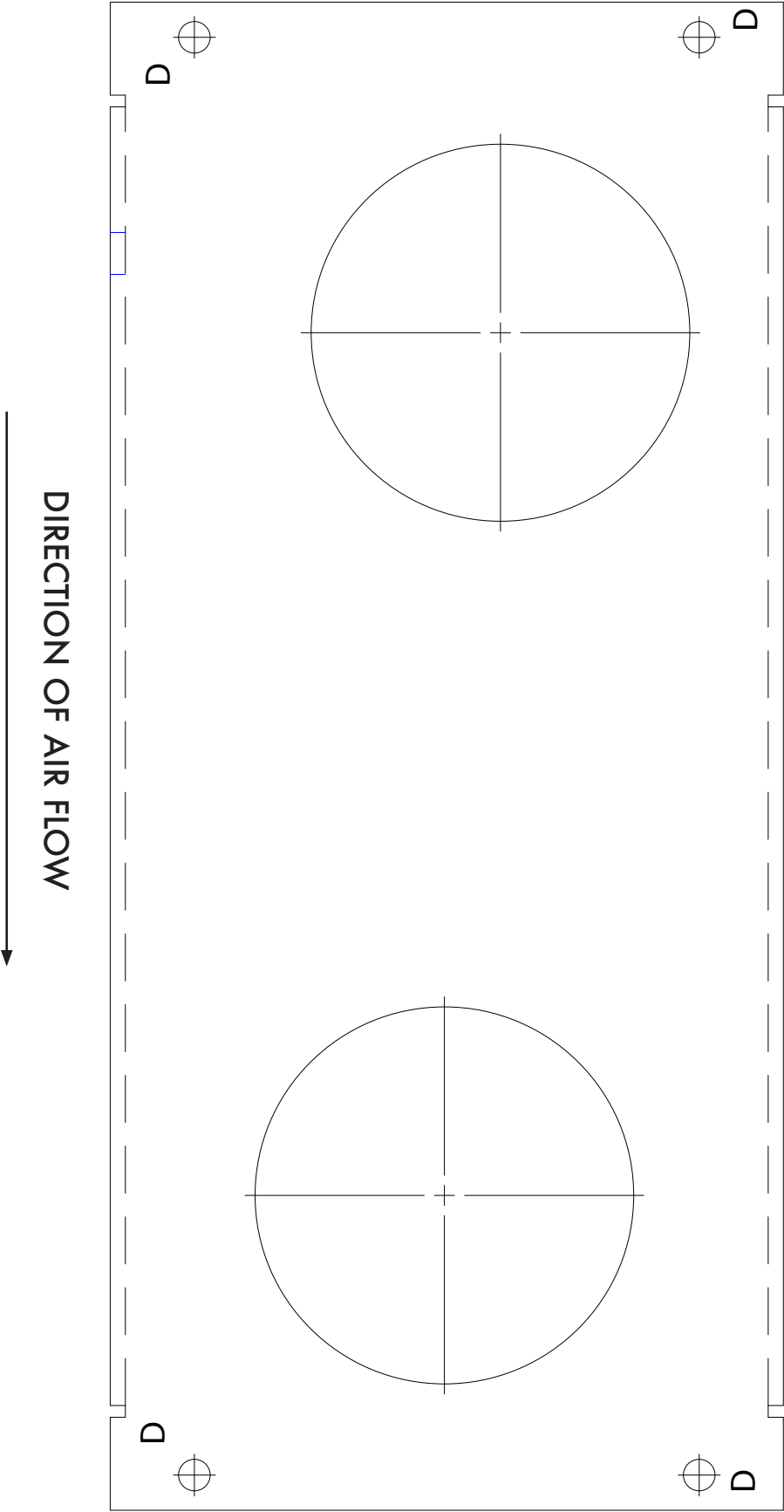


- 1) Cut out shaded area of template.
- 2) Place the template on the supply path of the HVAC system and trace the hole pattern for the unit and mark centers for mounting screws. Unit should be oriented so that lamps are parallel to the direction of the air flow.
- 3) Drill 9/64" holes for sheet metal screws and cut opening for the unit.
- 4) Attach unit to air duct using the four sheet metal screws provided.

Drill one 9/64" hole at each of these locations



Hole Saw Installation Template



- 1.** Place the template on the supply path of the HVAC system. Unit should be oriented so that lamps line up with direction of air flow.
- 2.** Using 2 1/4" hole saw, drill holes at centers as indicated.
- 3.** Attach unit to air duct using the four self-tapping sheet metal screws provided.

