

Qualitair

Air Treatment System

Installation & Operation Manual

The LeverEdge

www.theleveredge.com

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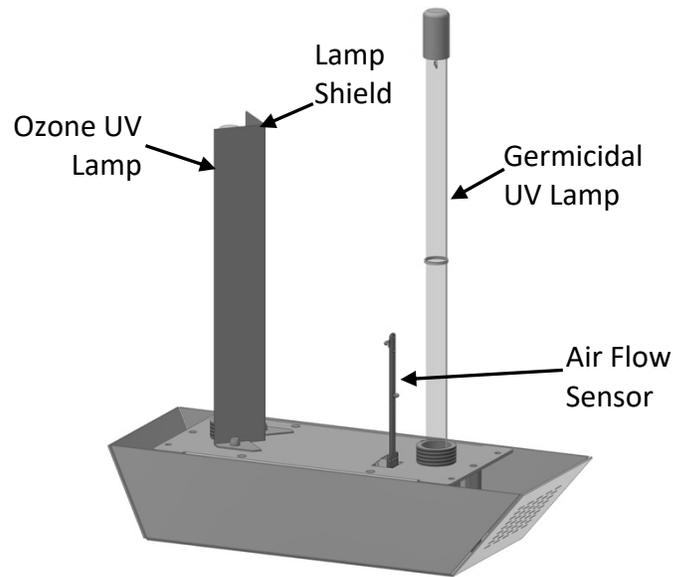
Important Safety Instructions

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

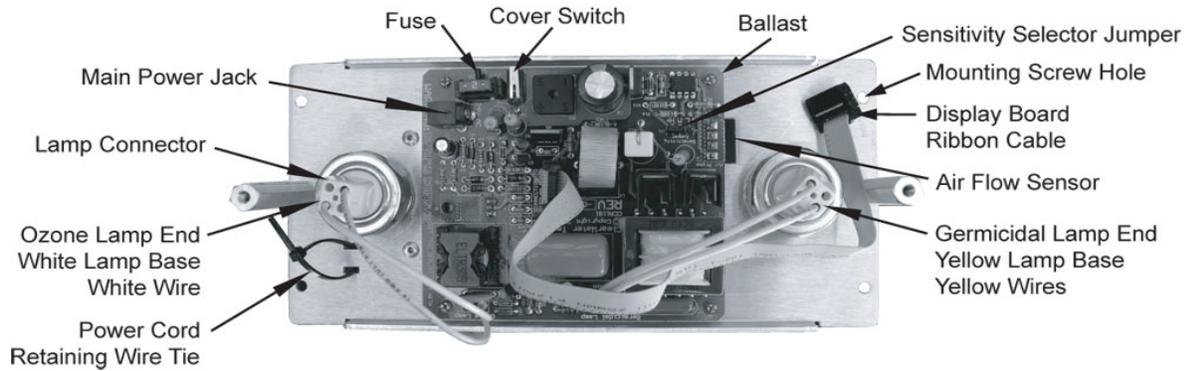
1. Read and follow all instructions.
2. Save these instructions.
3. Always be sure the unit is unplugged during installation or service procedures.
4. The ultraviolet light produced by the UV lamps is harmful to your eyes. Do not look directly at the lamps. Should it become necessary to view the lamps,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

Unpacking the Qualitair Unit

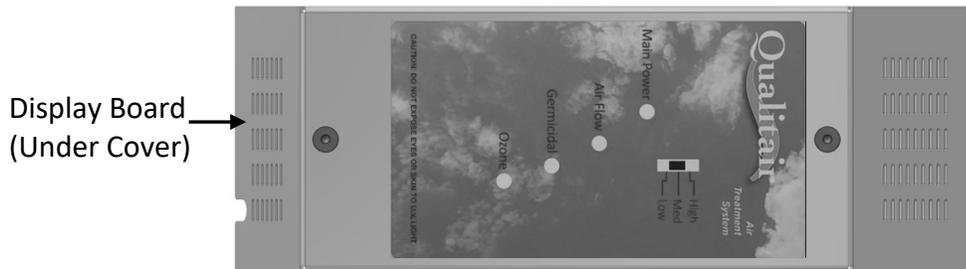
1. Each unit is shipped with the cover separated from the main chassis assembly. This allows for the main chassis assembly to be ready for installation.
2. Carefully remove unit from the package. The lamps are fragile and proper care must be taken when removing the packaging that is placed around them.
3. Do not touch the lamps with your bare hands, as oils from your hands can create “hot spots” which reduce the lamp life. In case of contact with the lamp, wipe the lamp clean with a soft cloth dampened with rubbing alcohol.
4. In addition to this manual, check the parts list below to make sure you have all the following:
 - One Qualitair air treatment system
 - Main chassis assembly
 - Cover
 - Two cover attachment thumb nuts
 - One wall-mount transformer
 - Four self-tapping screws
 - Wiring to connect from transformer to unit (two-conductor cable with plug)
 - 2 crimp terminals
 - Wire tie



Main Chassis Assembly with Cover Removed

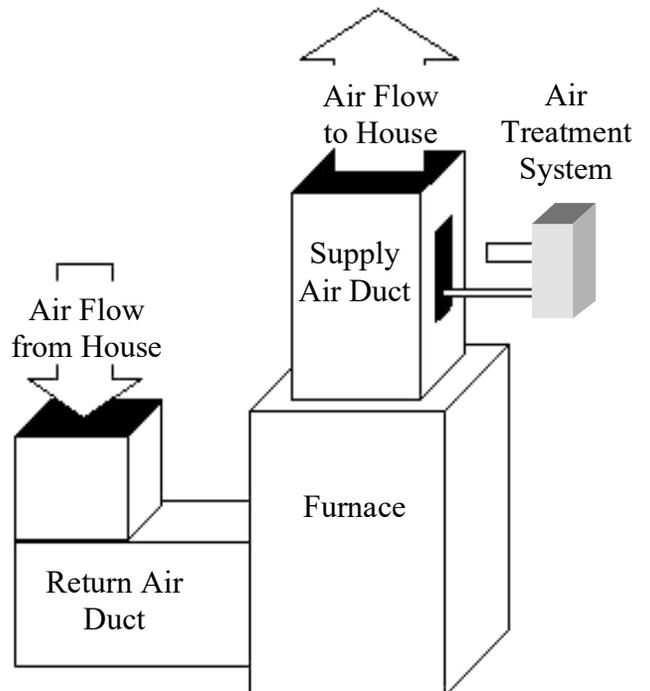


Cover



Preparing 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 Qualitair 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.



Important Information Regarding the Installation of this Product

There are several configurations and many types of installations for Qualitair systems.

The Qualitair can be installed in either the return or supply duct, and in some cases, modifications to the incompatible material can be made. It is important that the below guidelines are followed to prevent applications that may cause damage to the structure.

1. The installation must prevent UV damage of surrounding surfaces within the sphere of influence of the UV lamp. UV light will oxidize anything it comes in contact with that is not UV resistant.

The only surfaces that the UV light should be exposed to are inside of the ductwork (sheet metal, fiberglass, or UV protected material). If there are surfaces within the ductwork that will be exposed to the UV light that are not UV resistant i.e. plastic or wiring, they should be shielded to prevent long-term deterioration. In some cases, installation of foil tape on the exposed surfaces can act as a reflective surface, resistant to UV oxidation.

2. UV light should never penetrate into the living area. Any light that penetrates into the living area is an extreme hazard, potentially causing damage to the eyes of anyone who is exposed to the UV light—especially small children!

If the Qualitair is installed near a register, it must be installed in such a way as to prevent any direct exposure from the UV light into the living area. This will also prevent any UV damage to flooring, upholstery, etc.

If the UV light is penetrating into the living area, the installation of a deflector or filter material is necessary. This will stop the UV light from shining onto surfaces outside of the ductwork.

3. Never install a Qualitair in a furnace or air-handler. The Qualitair is designed to be installed in the ductwork only. Mounting a Qualitair through the side wall of any manufactured HVAC unit may void the warranty. (UV light will damage circuit boards, wiring, etc.)
4. If it is necessary to extend the wire to the transformer, use a minimum 18 AWG wire. The total run of wire from the transformer to the Qualitair should not exceed 50 feet. Using an extension cord with the transformer is not recommended.
5. The Qualitair must be installed in the airflow stream. Installing the Qualitair out of the airflow stream may cause an inoperative flow sensor.

Please contact Technical Support for additional information on the installation of Qualitair systems.

Qualitair Installation

While performing installation procedures all power to the unit must be ‘Off’ and there must be no airflow through the heating/cooling system.

1. One of two templates may be used for installation of the Qualitair.
 - a. ‘Rectangle Installation Template’ located on page 10.
 - b. ‘Hole Saw Installation’ located on page 11.
2. Center the installation template on the ductwork using tape. **Note: The installation template and unit must be mounted lengthwise on the duct.**
3. **Rectangle Installation Template:** Trace the cut-out hole pattern on to the ductwork and mark holes for the four mounting screws. **Hole Saw Installation Template:** Mark holes for the four mounting screws and two lamp holes.
4. Cut out openings in ductwork for the unit. See template for more detailed instructions and recommended tools.
5. Choose high, medium, or low sensitivity using the sensitivity selection jumper. Refer to page 5 for detailed instructions.
6. Position Qualitair ‘Main Chassis Assembly’ into ductwork and secure with the self-tapping screws provided, using a 5/16” nut driver.
7. Cut the two-conductor power cord to length, strip ends back 3/8” and crimp on the two fork connectors provided.
8. Slide fork connectors under the outside transformer screw-heads and tighten. (see picture to the right)
9. Insert the power cord through the cord retaining wire tie (located next to the ozone lamp). Plug power cord into the main power jack.
10. Allow for a service loop in the power cord between the wire tie and the main power jack. Then draw the wire tie tight around the power cord.
Note: Cut off any excess of the wire tie with side cutters. Do not cut the power cord.
11. Plug the display board ribbon cable into the display board, located under cover and secure cover to main chassis. Assemble using the two thumb nuts provided.
12. Plug the transformer into a non-switched 120 VAC outlet. **Note: All lights will remain on for 30 to 120 seconds. After this time, the ‘Airflow’ and ‘Ozone’ lights will turn off. If the unit does not turn off, you may need to lower the sensitivity setting. Refer to Choosing the Appropriate Sensitivity, page 5, and adjust the sensitivity accordingly.**
13. Turn ‘On’ heating/cooling system and allow it to operate for five minutes, at this time all lights should illuminate. If the unit does not turn on, you may need to increase the sensitivity setting. Refer to Choosing the Appropriate Sensitivity, page 5, and adjust the sensitivity accordingly.
14. Turn ‘Off’ heating/cooling system; the Qualitair will shut down within 5 to 30 seconds. After this time the ‘Airflow’ and ‘Ozone’ lights will turn off. The ‘Power’ and ‘Germicidal’ lights will remain on when unit is not in operation.
15. The Qualitair is now ready for use.
16. **Note: Ozone air treatment occurs only when air is circulating through the heating/cooling system. For maximum effectiveness and continuous air purification, turn the thermostat “fan” controller switch from the AUTO position to the ON position. Open windows or doors and dirty ductwork may diminish the unit’s effectiveness.**



Choosing the Appropriate Sensitivity

The Qualitair is designed with an installer selected air flow probe sensitivity jumper, to provide proper operation with a wide range of residential air handlers.

There are three different settings. Out of the box, the unit will be set to have high sensitivity.

- High (H*) – Default setting. Use in most homes of average size.
- Medium (M) – Use in homes with larger heating/cooling systems, especially when unit is installed in an environment, such as an attic, that will exceed 110°F.
- Low (L) – Use in large homes with multiple heating/cooling zones, especially when unit is installed in an environment, such as an attic, that will exceed 110°F.

Note: The sensitivity is intended to be set during installation, though it can be changed after installation.

If the unit is installed but does not shut down within 1 minute of the heating/cooling system turning ‘Off’, the sensitivity setting should be lowered one step.

If the heating/cooling system is ‘Off’ and the sensitivity setting has been moved all the way to low and after 1 minute the unit remains ‘On’, this means there is at least 150 ft/min of natural air circulating in your duct. The ozone lamp can safely remain on, and the unit will provide continuous sanitation and odor removal.

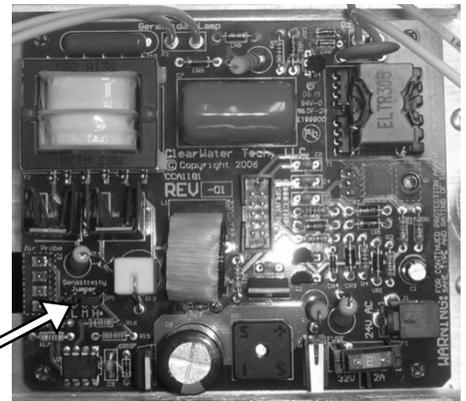
Setting the Sensitivity of the Qualitair

Warning: Components near sensitivity jumper may be hot immediately after operation. Use tool to move jumper or unplug unit and wait for unit to cool before adjusting.

To access the jumper, the cover must be removed.

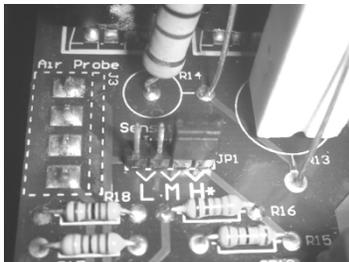
The sensitivity jumper is located and labeled on the board near the germicidal lamp (yellow base), as shown in the picture.

The three settings, High (H*), Medium (M), and Low (L), are selected by moving the jumper onto the two pins indicated by that setting, as seen below.

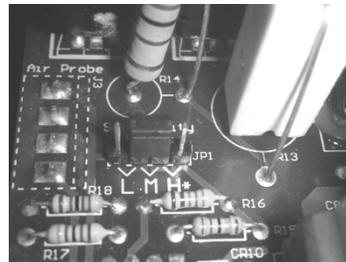


Sensitivity Jumper

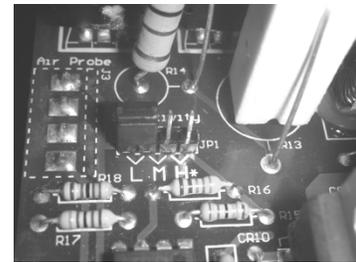
High Sensitivity Setting



Medium Sensitivity Setting



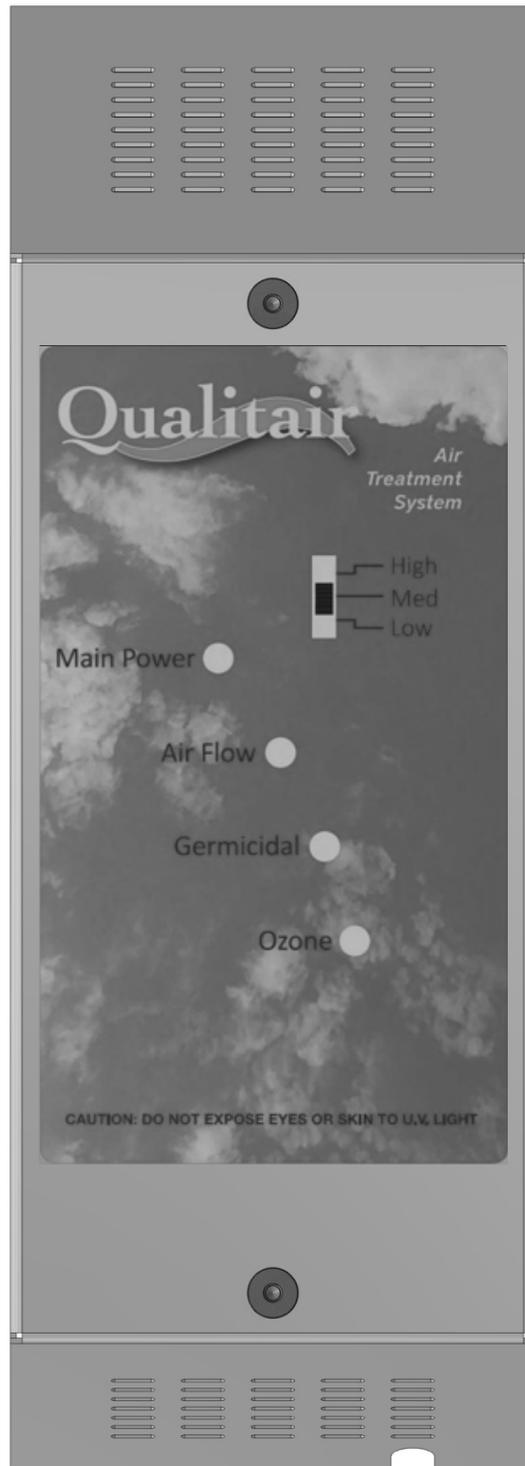
Low Sensitivity Setting



Adjusting the Ozone Output Level

The slide switch on the cover is used to adjust the ozone output level. The settings are low, med and high.

- **LOW** – Use in an average-sized home with no pets, no tobacco smoke odors and minimum household odors.
- **MEDIUM** – Use in an average-sized home with pets, confined tobacco smoke odors and minimum household odors.
- **HIGH** – Use in an average-sized home with pets, heavy tobacco smoke odors throughout the home and moderate household odors.



Maintenance

The lamp cleaning schedule is determined by air quality. The recommended cleaning interval is every 12 months. The lamp replacement schedule is based on running time. The recommended replacement interval is 24 months. Note: Do not touch the lamps with bare hands. Oils from the hands can create “hot spots” which reduce the lamp life. Handle by either the end caps or use a soft cloth. In case of contact with the lamp, wipe the lamp clean with a soft cloth dampened with rubbing alcohol.

CLEANING THE LAMPS: Recommended every 12 months

1. Unplug the transformer from the wall outlet.
2. Remove the two thumb nuts from the cover of the unit and remove the cover.
3. Remove the four sheet metal mounting screws from air duct.
4. Carefully remove the unit from the air duct.
5. 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 compressed air first to remove the majority of the dirt.
6. Carefully replace unit into air duct.
7. Replace sheet metal screws, the cover, the two thumb nuts and plug the transformer into the wall outlet.

REPLACING THE LAMPS: Recommended every 24 months

NOTE: Use only LeverEdge approved lamps for replacement. Standard off-the-shelf lamps are not compatible with your Qualitair unit.

1. Unplug the transformer from the wall outlet.
2. Remove the two thumb nuts from the cover of the unit and remove the cover.
3. Disconnect the lamp connector from the end of the lamp.
4. Loosen the lamp lock nut from around the end of the lamp on the inside of the unit by turning it counterclockwise and remove (pliers may be required).
5. Remove the metal washer.
6. Remove lamp by grasping the rubber bushing around the end of the lamp. With a gentle rocking motion, loosen the bushing from its seat and carefully slide it straight out.
7. Remove the rubber bushing from the old lamp and install it on the new lamp.
8. Slide the new lamp back into the lamp opening. Handle lamp by the end cap(s).
9. Re-install the metal washer and lamp lock nut. Carefully tighten the lamp lock nut.
10. Reconnect the lamp connector to the end of the lamp.
11. Repeat steps #3 to #10 when replacing the other lamp.
12. Replace the cover and secure it with the two thumb nuts.
13. Plug the transformer into the wall outlet.

Qualitair Parts List

Part Description	Part Number
Qualitair Assembly	HVAC513
Qualitair Ozone Lamp	LAHV90L
Qualitair Germicidal Lamp	LAHV91
Qualitair Fuse	FUS66
Qualitair Airflow Sensor	CCA1182SA
Qualitair Ballast Circuit Board	CCA1181SA
Qualitair Power Transformer	PS801SA
Qualitair Display Board	CCA1096SA
Qualitair Ribbon Cable	CABLE002

Specifications

Ozone Lamp: 185 nm UV, cold cathode.

Ozone Lamp Life: Average life is 20,000 hours.

Germicidal Lamp: 254 nm UV, hot filament.

Germicidal Lamp Life: Average life is 20,000 hours.

Input: 24 Vac, 60 Hz, 50VA

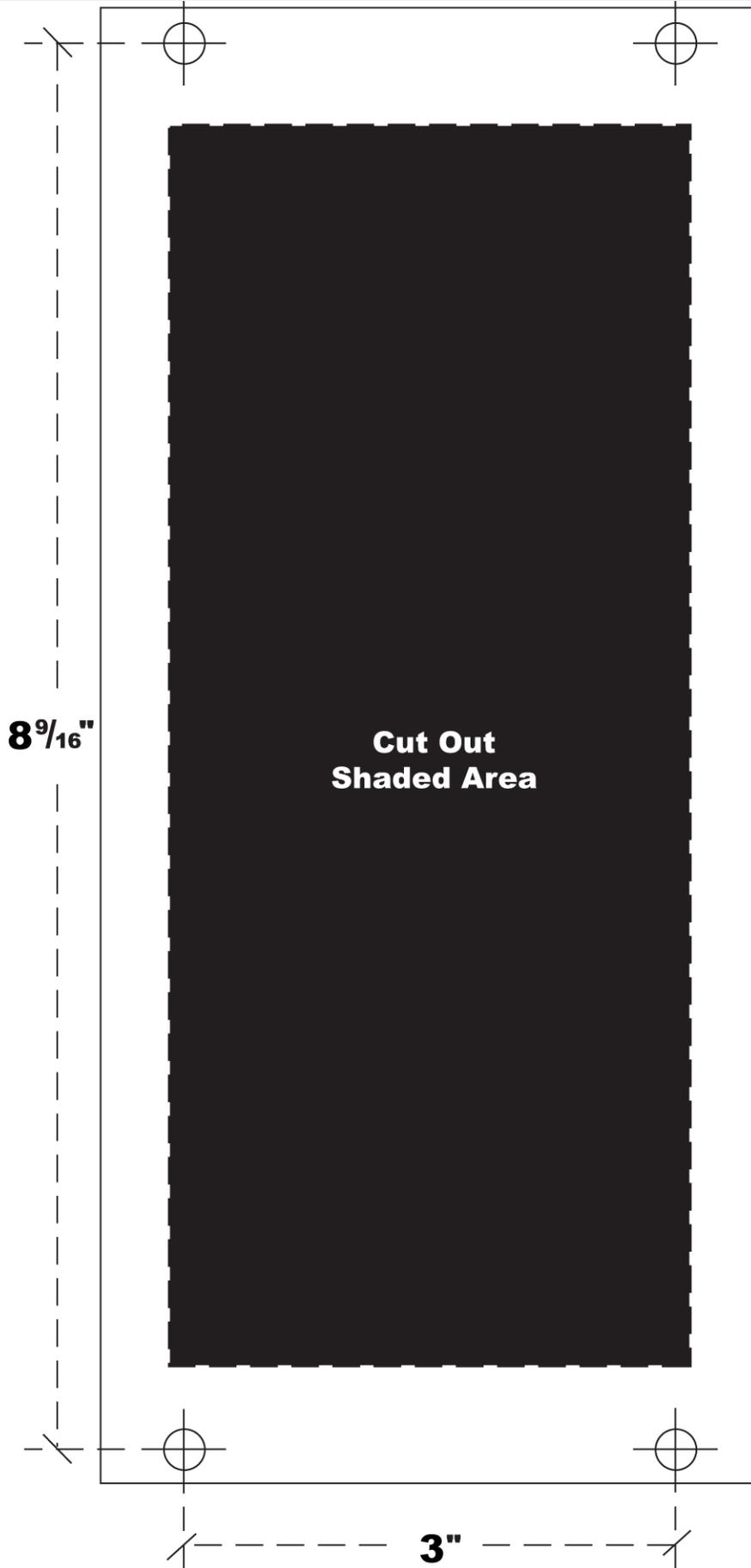
Troubleshooting Guide

Symptom	Solution
No power	Verify cover is properly mounted (unit will not function without cover installed.) Verify that the transformer is properly plugged into wall outlet and the power cord into the power jack on unit. If the cord is properly connected, test the wall outlet with AC tester to make certain it is functioning properly. If not working, consult an electrician.
Unit does not function	<p>If there is power to the wall outlet, remove cover from the Qualitair unit; unplug the power cord from the power jack on the Qualitair unit. Using a voltmeter, measure the AC voltage from the transformer. Make sure the voltage is 21 to 26 volts. If not, replace the transformer. (Item #7, Page 8).</p> <p>If unit is still not working, remove cover from the Qualitair unit and check the fuse on the circuit board. If fuse is blown, replace (Item #4, Page 8).</p> <p>Check the power light. If light is still not 'On', replace the ballast (Item #6, Page 8).</p>
Ozone lamp does not turn "ON" when heating/cooling system turns "ON"	Increase the sensitivity as described on page 5, Choosing the Appropriate Sensitivity. Make sure the unit is in the airflow.
Testing the lamps	Testing the lamps requires the heating/cooling system to be running. If ozone lamp is not lit, replace (Item # 2, Page 8). If the germicidal lamp is not lit, replace (Item # 3, Page 8). If this does not work, replace the ballast (Item # 6, Page 8).
Ozone lamp does not turn "OFF" when heating/cooling system turns "OFF"	Lower the sensitivity as described on page 5, Choosing the Appropriate Sensitivity. If the unit is already on Low sensitivity, there is an airflow of at least 150 ft/min in the duct, which is enough air flow to safely operate the ozone lamp. This natural circulation will allow the unit to continuously clean the air in your home.

Qualitair Lifetime Limited Warranty

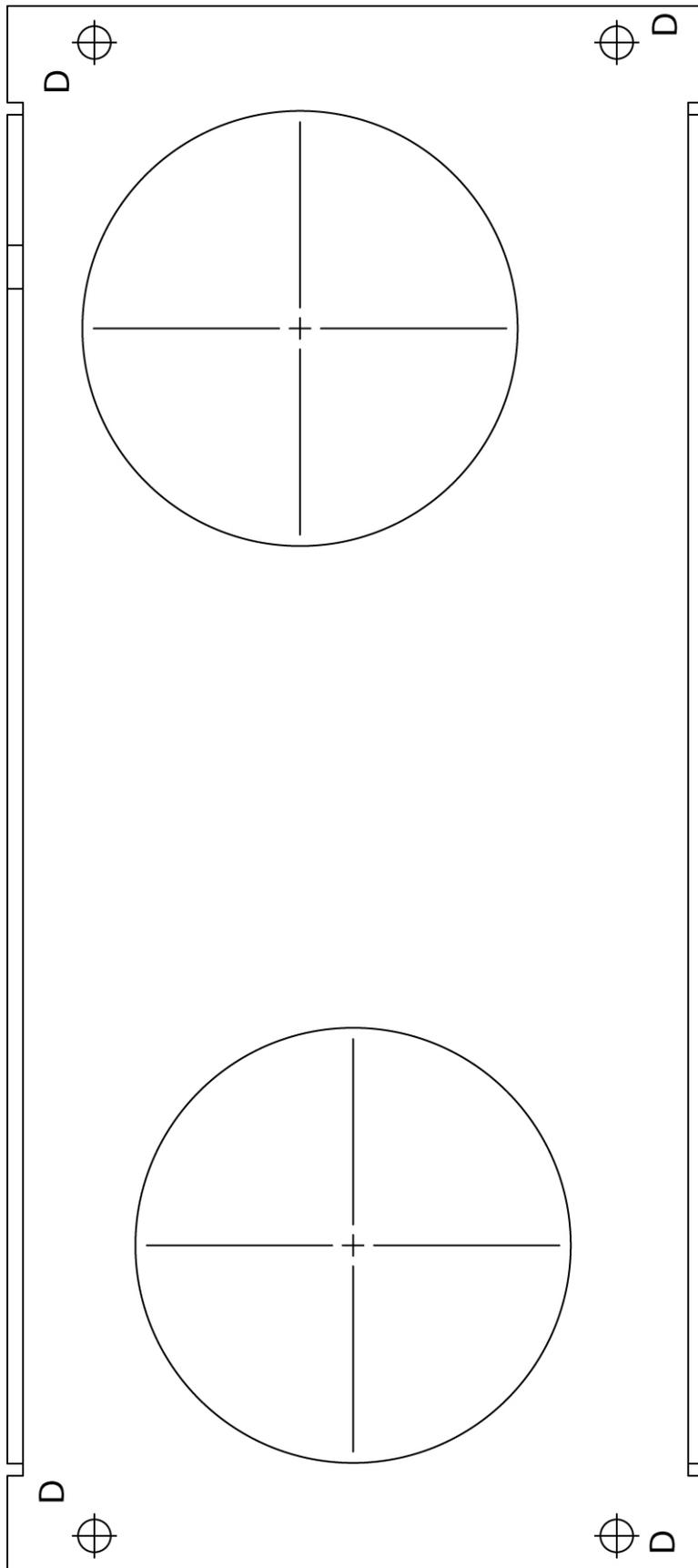
This LeverEdge/Qualitair Air Treatment System is covered by The LeverEdge Lifetime Limited Warranty. Please see the LeverEdge Lifetime Limited Warranty for full terms and conditions. Broken lamps in shipping, handling or installation are not covered.

Rectangle Installation Template



1. Cut out shaded area.
2. Place template on the ductwork of the HVAC system. Trace hole pattern and mark the four mounting holes on ductwork.
3. Cut out the traced hole opening on ductwork with tin snips.
4. Attach unit to air duct using the four self-tapping screws provided.

Hole Saw Installation Template



1. Place the template on the ductwork of the HVAC system. The unit should be mounted lengthwise on the duct.
2. Using a 2 ½" hole saw, drill holes at centers as indicated.
3. Mark the four mounting holes on the ductwork. Attach the unit to the ductwork using the four self-tapping screws provided.