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# RainSoft®

Water Treatment Systems

## AIRMASTER<sup>ULTRA</sup>



# Installation & Owners Manual

REV 11/23/04  
#LIT1000

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Congratulations! You now own the finest whole-house air treatment system available to homeowners.

To make operating and maintaining your unit as simple as possible, please read the contents of this Owner's Manual.

This unit was shipped from the factory ready for operation and will begin delivering cleaner, fresher air the instant your heating/cooling system is turned on.

This unit is designed to help remove household odors ranging from food, tobacco smoke, pets and other objectionable smells that may be present in your home.

To receive optimal benefit and performance from the unit, your furnace or air conditioner fan should be in the "ON" position at all times.

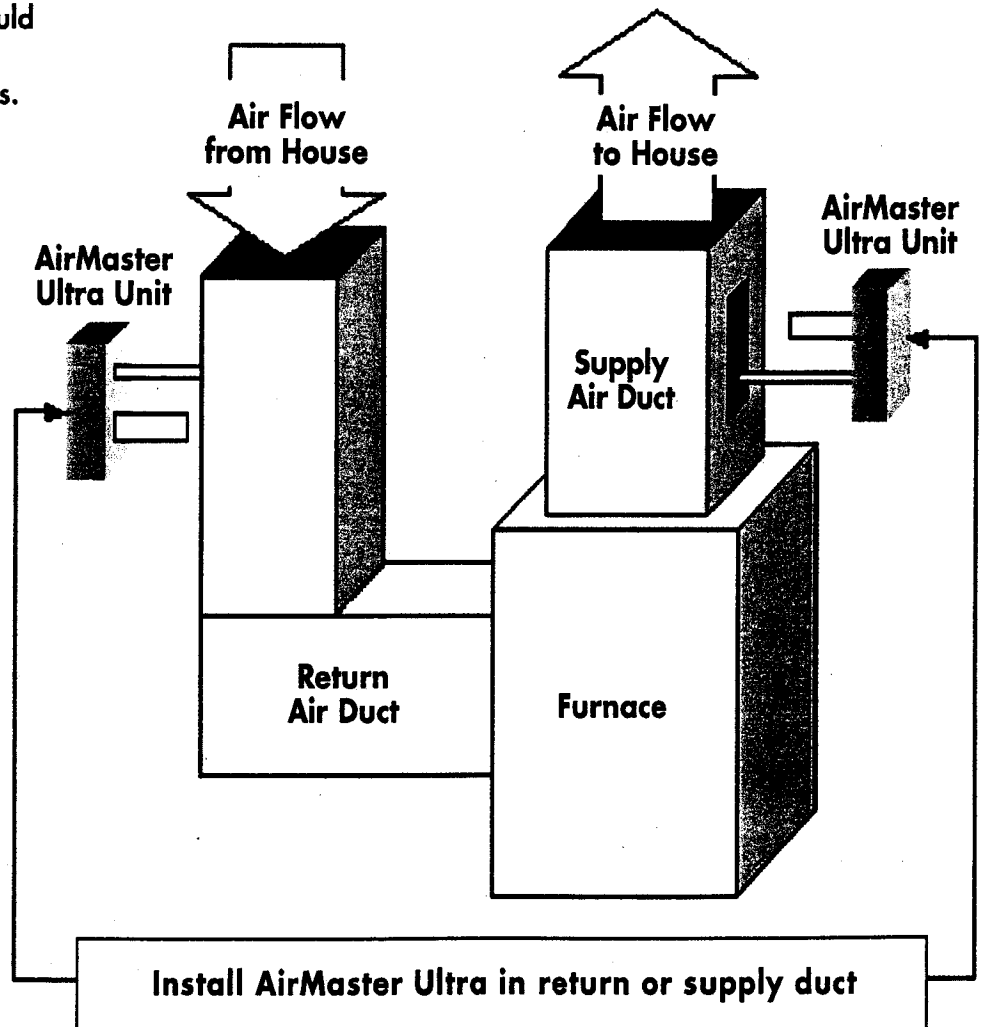
## **IMPORTANT SAFETY INSTRUCTIONS**

Always make sure the system is unplugged during installation or service procedures.

### **WARNING:**

The ultraviolet light produced by the UV lamps is harmful to the eyes. Do not look directly at the lamps. Should it become necessary to look at the lamps, use UV-protected sunglasses.

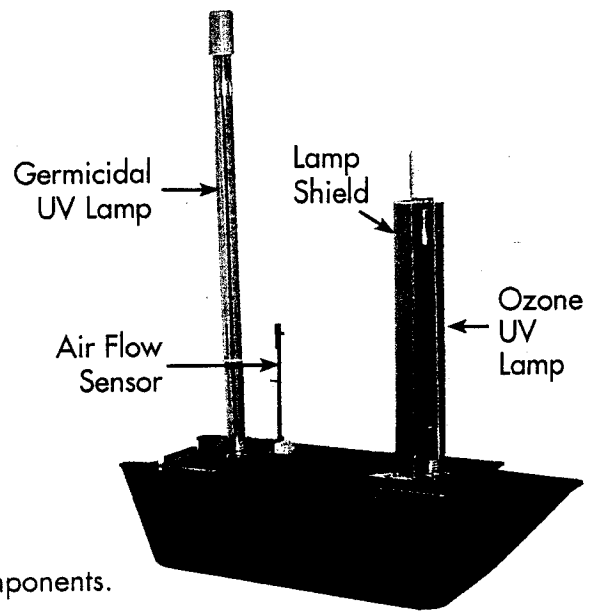
The AirMaster Ultra may be installed either in the main return duct or main supply duct as shown in the diagram. When installing on the supply side, locate it as far away from the heating source as practical while remaining in the main air stream.



# UNPACKING YOUR AIRMASTER ULTRA UNIT

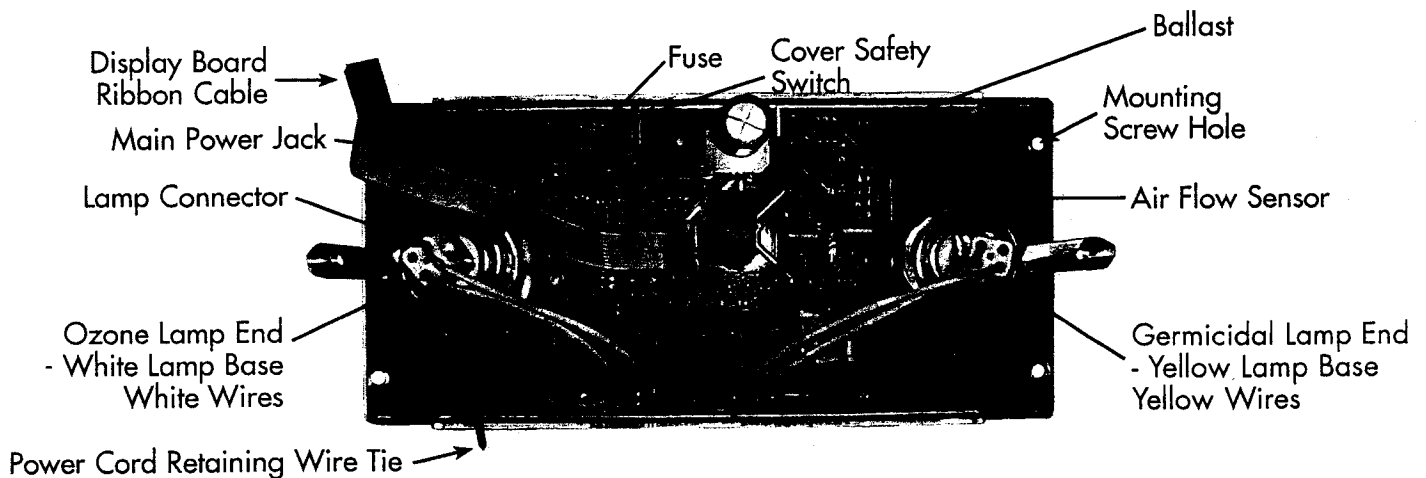
## Unpacking the Airmaster Ultra unit.

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 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. Check the parts list below to make sure you have all of the components.
  - One Airmaster Ultra air treatment system
    - Main chassis assembly
    - Cover
    - Two cover attachment screws
  - One wall-mount transformer
  - Four self-tapping screws
  - Installation/owners manual
  - Warranty card
  - Wiring to connect from transformer to unit (20', two-conductor cable with plug)
  - 2 crimp terminals
  - Wire tie

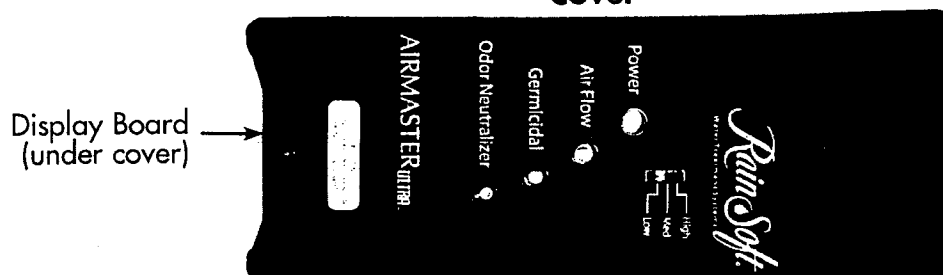


Side View

## Main Chassis Assembly with Cover Removed



## Cover



## AIRMASTER ULTRA 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 AirMaster Ultra.
  - 'Rectangle Installation Template' located on page 11.
  - 'Hole Saw Installation' located on page 12.
2. Center the installation template on the ductwork using tape. **Note: The installation template and unit must be mounted lengthwise and in direction of 'Airflow' so that the UV Germicidal Lamp is upstream and the UV Ozone Lamp is downstream.**
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.
4. Cut out openings in ductwork for the unit. See template for step and recommended tools.
5. Position AirMaster Ultra 'Main Chassis Assembly' into ductwork and secure with the self tapping screws provided, using a 5/16" nut driver.
6. Cut the two conductor power cord to length, strip ends back 3/8" and crimp on the two fork connectors provided.
7. Slide fork connectors under transformer screw-heads and tighten.
8. Insert the power cord through the cord retaining wire tie (located next to the ozone lamp). Plug power cord into the main power jack.
9. 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.**
10. Plug the display board ribbon cable into the display board, located under cover and secure cover to main chassis. Assemble using the two screws provided.
11. 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 'Odor Neutralizer' lights will turn off.**
12. Turn 'On' heating/cooling system and allow it to operate for five minutes, at this time all lights should illuminate.
13. Turn 'Off' heating/cooling system, the AirMaster Ultra will shut down within 5 to 30 seconds. After this time the 'Airflow' and 'Odor Neutralizer' lights will turn off. The 'Power' and 'Germicidal' lights will remain on when unit is not in operation.
14. The AirMaster Ultra is now ready for use.

**Note: Ozone air treatment occurs only when air is circulating through the heating/cooling system. For maximum effectiveness and continuous air purification, turn the thermostatic controller switch from the AUTO position to the ON position. The switch is located on the thermostat. Open windows or doors and dirty ductwork may diminish the unit's effectiveness.**

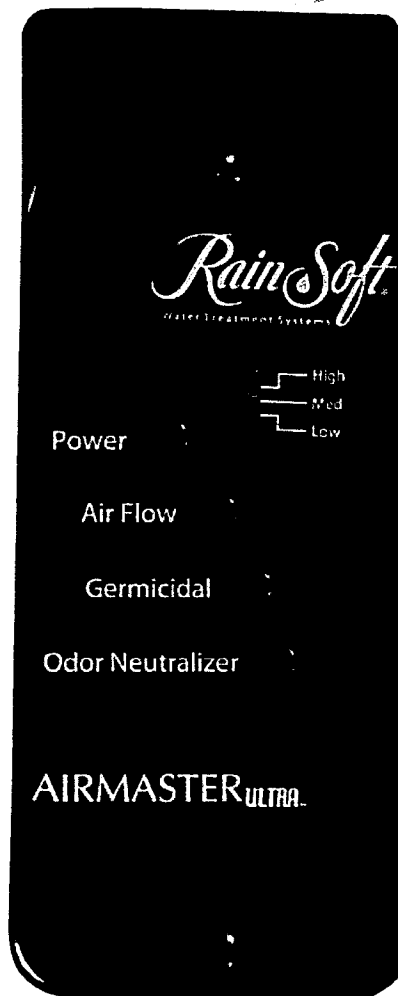
## ADJUSTING THE OZONE OUTPUT LEVEL

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 REQUIREMENTS**

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 screws 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 screws and plug the transformer into the wall outlet.

### **REPLACING THE LAMPS:** Recommended every 24 months

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

1. Unplug the transformer from the wall outlet.
2. Remove the two screws from the cover of the unit and remove the cover.
3. Disconnect the lamp connector from the end of a lamp.
4. Loosen the lamp lock nut from around the end of the lamp 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 screws.
13. Plug the transformer into the wall outlet.

# AIRMASTER ULTRA PARTS LIST

<u>ITEM#</u>	<u>DESCRIPTION</u>	<u>PART#</u>
1	AirMaster Ultra Assembly .....	65052
2	AirMaster Ultra Ozone Lamp .....	65501
3	AirMaster Ultra Germicidal Lamp.....	65048
4	AirMaster Ultra Fuse .....	65005
5	AirMaster Ultra Flow Sensor .....	65061
6	AirMaster Ultra Ballast (Board) .....	65062
7	AirMaster Ultra Transformer .....	65000
8	AirMaster Ultra Display (Board).....	65063
9	AirMaster Ultra Ribbon Cable .....	65064

## SPECIFICATIONS

### Ozone Lamp

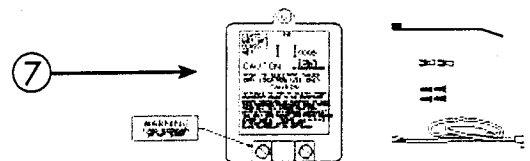
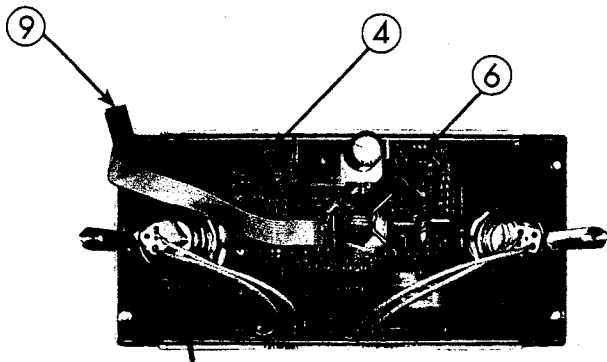
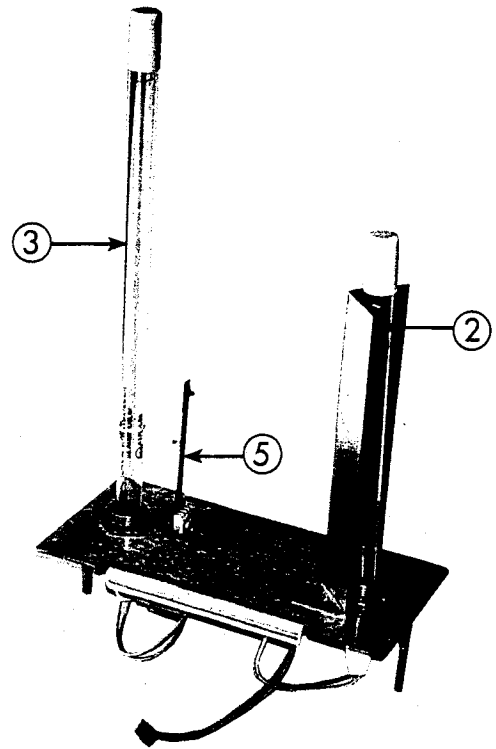
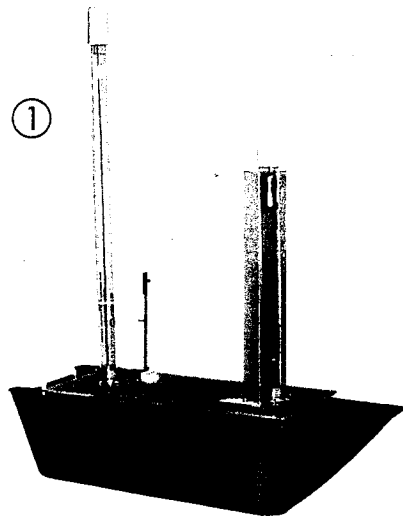
Ozone lamp is 185 nm, cold cathode. Average life is 20,000 hours.

### Germicidal Lamp

Germicidal lamp is 254 nm, hot filament. Average life is 20,000 hours.

### Input

24 Vac, 60 Hz, 50VA



# **TROUBLESHOOTING GUIDE**

## **SYMPTOM**

## **SOLUTION**

**No power**

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.

**If unit still does not function**

If there is power to the wall outlet, remove cover from the Airmaster Ultra unit, unplug the power cord from the power jack on the AirMaster 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).

If unit is still not working, remove cover from the AirMaster unit and check the fuse on the circuit board. If fuse is blown, replace (Item # 4, Page 8).

Check the power light. If light is still not on, replace the ballast. (Item # 6, Page 8).

**For the following tests make sure there is no air flow across unit.**

**Air flow test**

Unplug the power cord from the power jack for 1 to 2 minutes. Plug the power cord back into the power jack. The 'Air Flow' light will illuminate for 30 to 120 seconds. After the light turns off, start the heating/cooling system. The 'Air Flow' light should illuminate within 30 seconds. If not, replace the air flow sensor (Item # 5, Page 8). If that does not work, replace the ballast. (Item # 6, Page 8).

**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).

**If above testing does not work, contact your local RainSoft Dealer.**