

Aprilaire®

ELECTRONIC AIR CLEANER

SAFETY AND INSTALLATION MANUAL

MODEL 5000

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SAFETY INSTRUCTIONS

Read the safety and installation instructions carefully. They will help ensure a correct and SAFE installation of the Aprilaire® Electronic Air Cleaner.

WARNING:

- 120 Volts may cause serious injury from electrical shock. Disconnect power to the furnace/air handler before starting installation. Leave power disconnected until installation is completed.
- Arcing in electrical components may cause an explosion. Do not install unit where explosive gasses will be present.
- Sharp edges may cause injury from cuts. Use care when cutting and handling sheet metal.
- To reduce the risk of electrical shock, this equipment has a grounding-type (three prong) plug. This plug will fit only into a grounding-type power outlet. If the plug does not fit into the outlet, contact qualified personnel to install the proper outlet. Do not alter this plug in any way.
- To reduce the risk of electrical shock, locate product so that the power cord can be plugged into an electrical outlet without the use of an extension cord.

CAUTION:

- To prevent component failure, do not install the air cleaner on the warm air supply or in an area where the temperature may exceed 149° F. This may include areas above heat exchangers in downflow furnaces or above exhaust flues in lowboy furnace cold air returns.
- The air cleaner must be installed where the ambient air temperature remains between 32° F and 149° F [0° C and 65° C].
- Installation must conform to all applicable codes.
- Do not install an atomizing humidifier upstream of the air cleaner. Water or mist will cause power supply to shut down.

SPECIFICATIONS

Description	The Aprilaire Electronic Air Cleaner Model 5000 is an electronically enhanced "ElectraMedia" air cleaner.
Unit Dimensions	Overall Unit – 17 3/4" x 31 1/8" x 11 1/2"
Airflow Capacity	2000 cfm maximum
Input Voltage Requirements	120V AC ± 15%, 50/60 Hz Nom., Unit equipped with a 5 ft. grounded cord with plug.
Power Usage	Less than 50 watts with high voltage active.
Shipping Weight	35 lbs.

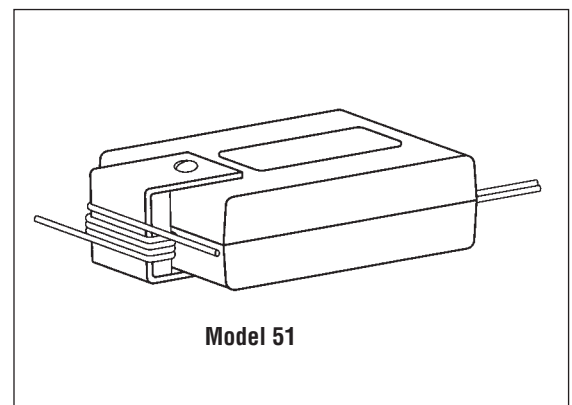
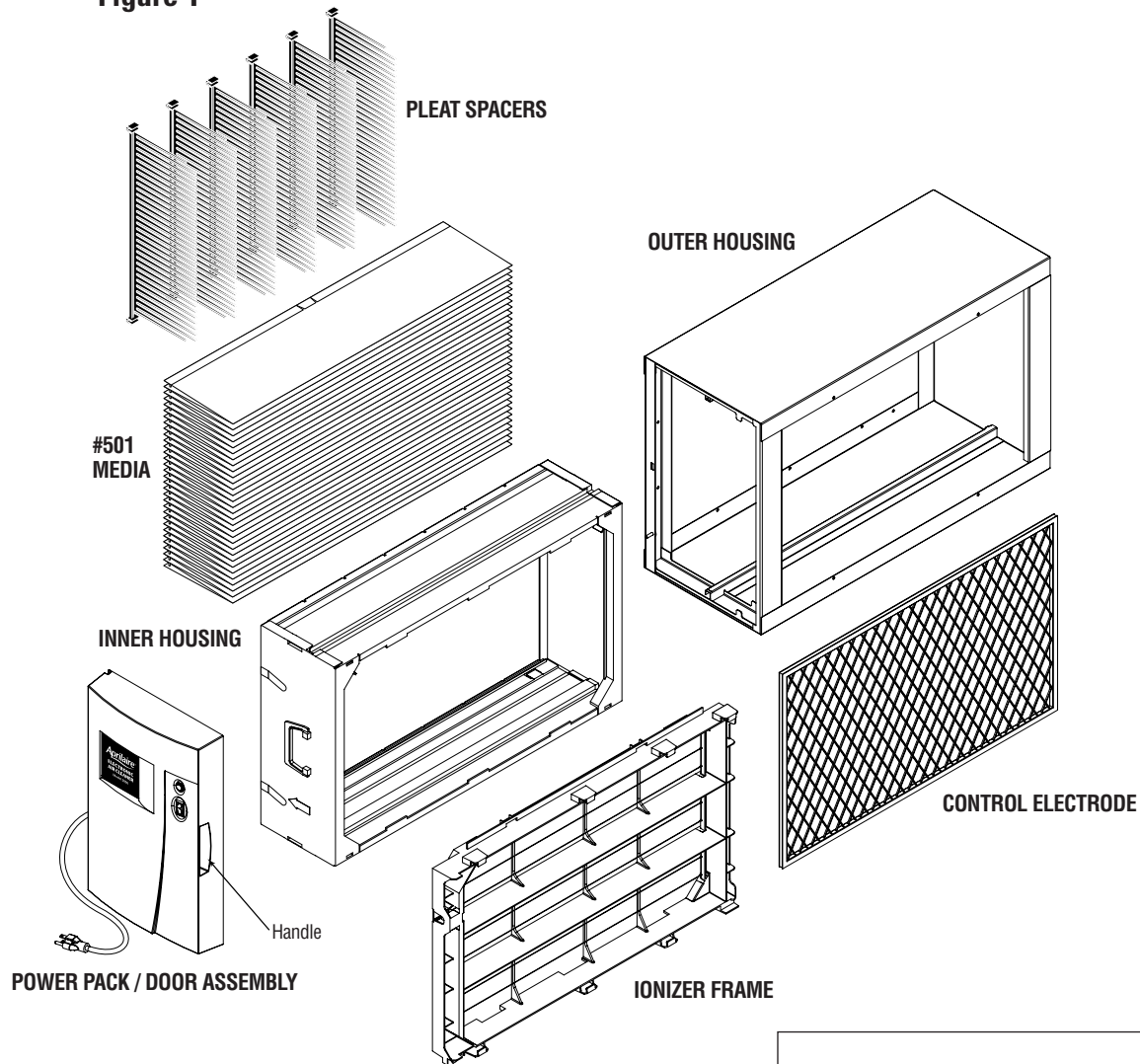
COMPONENTS

Aprilaire®

ELECTRONIC AIR CLEANER

MODEL 5000

Figure 1



INSTALLATION

Important

The Model 5000 Air Cleaner is designed for systems with airflow up to 2000 cfm. If the furnace has more than one return air inlet connection, install one air cleaner in each.

The air cleaner can be installed horizontally, vertically, or at an angle depending on furnace type. Figures 2, 3, and 4 show unit orientation in various types of applications. Note airflow direction arrows on inner assembly and outer housing.

Allow 29" clearance in front of the unit for media replacement (see Figure 5).

If a transition or offsets are required, minimize transition angles to reduce system pressure drop (see Figure 4). Figure 6 shows the air cleaner dimensions.

Figure 2

Upflow "Highboy" - Closet Installation
(Bottom Return)

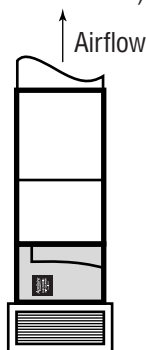


Figure 5

Figure 3

Horizontal Installation



Figure 5

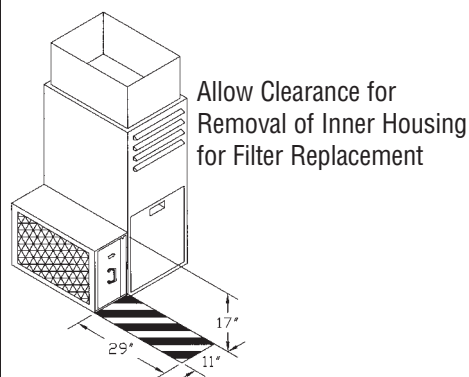


Figure 4

Upflow "Highboy" - Side Return Installations

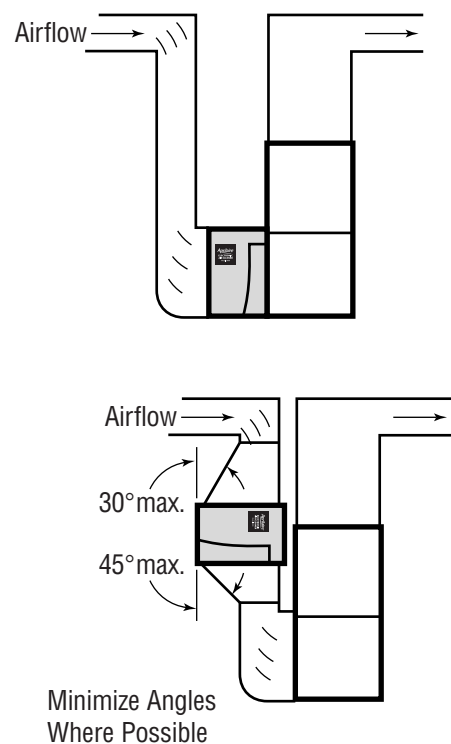
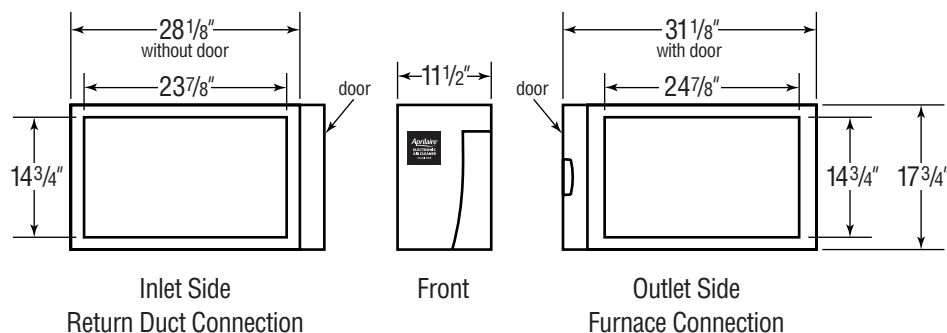


Figure 6



APPLICATIONS WITH A HUMIDIFIER

An Aprilaire® Automatic Humidifier can be mounted upstream from the air cleaner.

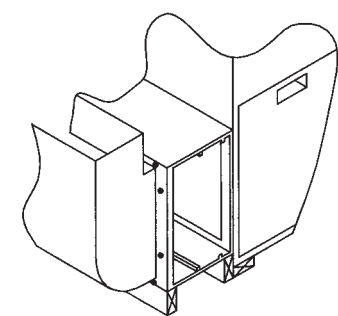
CAUTION: Do not install an atomizing humidifier upstream from the air cleaner.

INSTALLATION PROCEDURE

Warning: 120 Volts may cause serious injury from electrical shock.
Leave power disconnected until installation is completed.

1. Remove air cleaner power pack/door assembly and pull inner assembly out of the outer housing.
2. Remove media carton from the inner housing.
3. Turn off furnace/air handler.
4. On retrofit applications, remove existing filter, discard it, and thoroughly clean the blower and blower compartment.
5. With airflow label in proper orientation, attach outer housing to furnace/air handler system. Seal inlet and discharge connections with caulk or mastic and provide support for the housing as required (See Figure 7). See Figures 2 through 4 for typical system types.
6. Install the media using the instructions on the media carton.
7. Check to make sure that the ionizer frame is properly inserted into the inner housing and that the control electrode is inserted fully into the ionizer frame.
8. Insert the inner assembly into the outer housing and replace the door.
9. Press the power cord into the slot in the side of the power pack/door assembly so that it is directed towards the outlet. See Figure 8.
10. Install a single outlet receptacle to the furnace/air handler cabinet which conforms to NEC standards as well as all applicable local codes, using 1 of the 2 options below:
 Figure 9- Use the furnace/air handler EAC terminals to wire the outlet. Figure 10- If EAC terminals are not available use the Model 51 (supplied) to wire the outlet and refer to the instructions provided with the Model 51.
 The outlet must only energize when the system blower is on. **IMPORTANT:** Identify the outlet for **"EAC USE ONLY"**
11. Return power to the furnace/air handler.
12. Plug the Aprilaire Air Cleaner power cord into the outlet installed in step 10.
13. Check for proper operation when the furnace is run through heating and cooling cycles.
14. Provide owner's manual and warranty card to homeowner after explaining operation of unit.

Figure 7



Support Air Cleaner to Prevent Torque on Outer Housing.

Figure 8

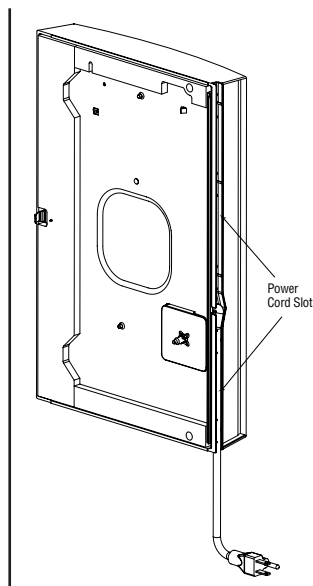


Figure 9

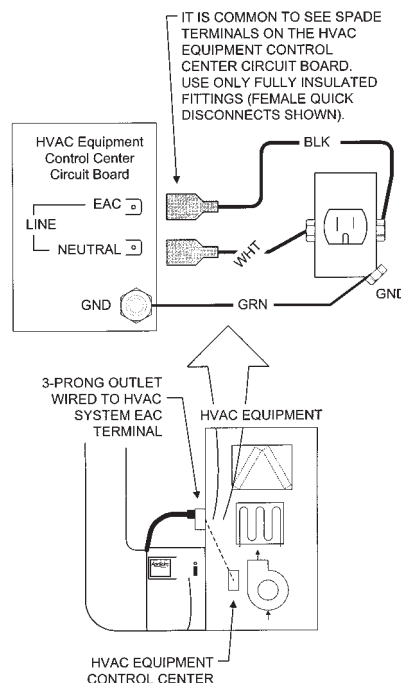
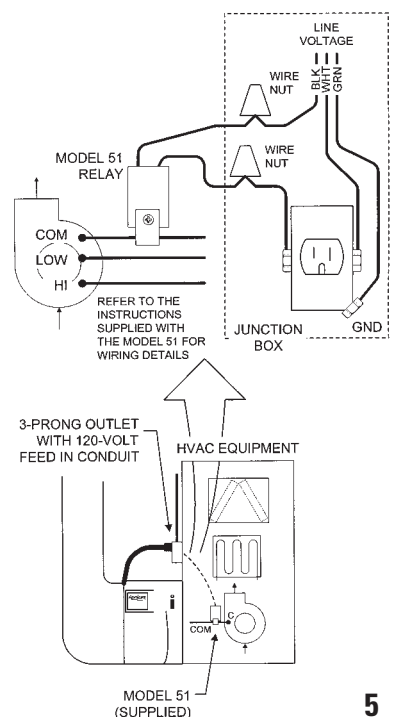


Figure 10



OPERATING INSTRUCTIONS

The inner housing assembly must be installed and the power pack/door assembly to the air cleaner must be fully closed.

The unit should be plugged in and the power switch on the air cleaner door turned on. There are no other controls or settings required.

When the system blower turns on, the air cleaner will turn on and a green light located on the air cleaner door will turn on. After the system blower has turned off, the green light will turn off.

TROUBLE SHOOTING GUIDE

When the air cleaner is operating correctly and the following conditions are met, the green light on the door will be on:

- The air cleaner is correctly assembled and installed.
- The power pack/door assembly is fully closed.
- The unit is plugged into an EAC controlled 120 VAC outlet.
- The switch is in the ON position.
- The furnace/air handler blower is running.

If those conditions are met and the green light does not come on, the air cleaner circuit is not being activated. If the green light blinks at approximately one-minute intervals, the air cleaner circuitry is attempting to turn on, but is quickly turning off due to either an over-current condition or because arcing is occurring between components. Check the inner assembly as follows:

1. Turn the furnace/air handler blower off.
2. Turn the air cleaner off.
3. Unplug the air cleaner.
4. Open the power pack/door assembly.
5. Remove the inner housing assembly.
6. Inspect components to ensure the following:
 - a. All components must be dry.
 - b. The ionizer frame-grounding clip must be in contact with the pre-filter. See Figure 11.

Figure 11

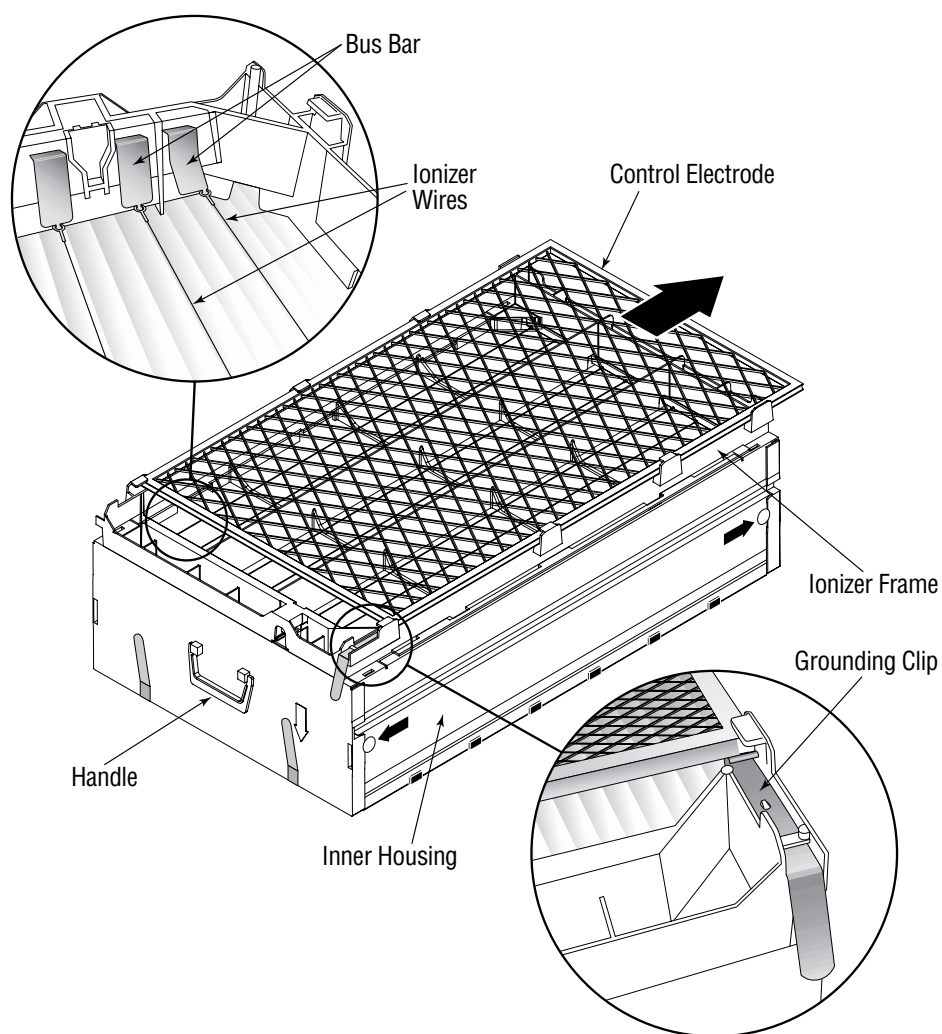
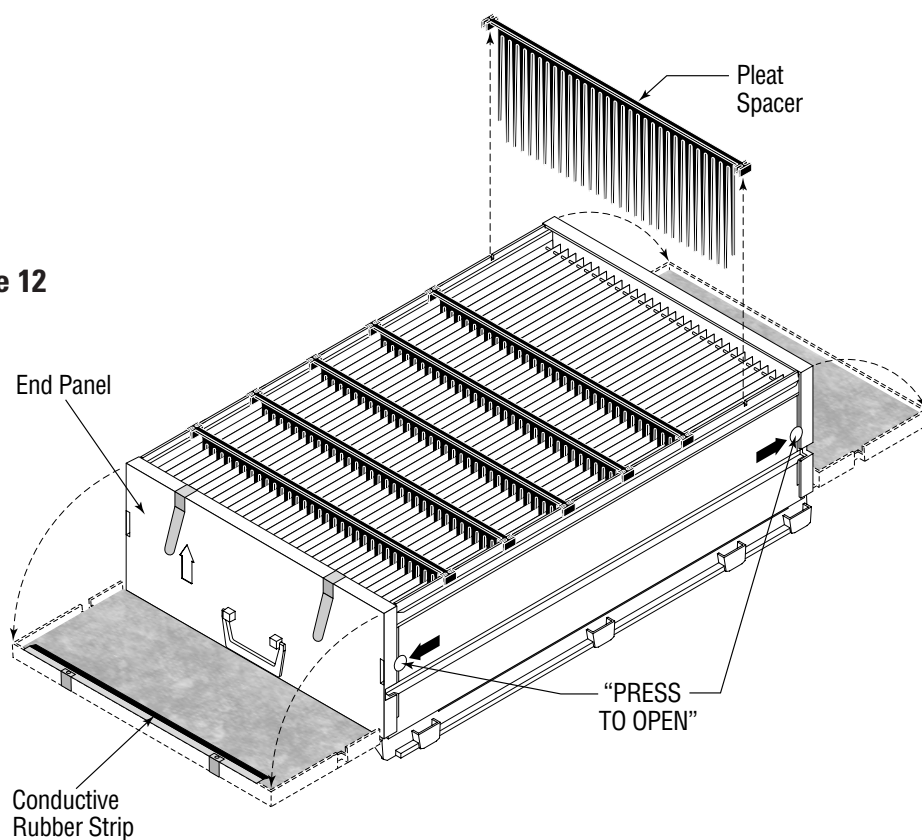


Figure 12



6. Inspect components to ensure the following (continued):
 - c. The conductive rubber strip must be in contact with the conductive-coated tips of the media. See Figure 12.
 - d. The nine ionizing wires must be clean, straight, and hooked onto the bus bar at one end and the ionizer frame at the other. See Figure 11.
 - e. The control electrode must be properly inserted in the ionizer frame.
 - f. There must be no debris bridging the gap between the ionizing wires and any other component.
7. If a Model 51 is used:
 - a. Measure the current for the wire under the bracket - this must be 4 amps or more.
 - b. Ensure the Model 51 is at least 4" away from any transformer.
8. Re-install the inner housing assembly and close the power pack/door assembly.
9. Plug in the unit and turn it on.
10. Turn on the furnace/air handler blower.
11. After the blower starts, check unit for proper operation.



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