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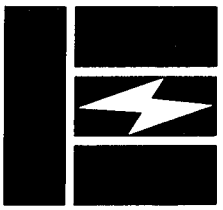


ELECTRONIC AIR CLEANER

OWNERS MANUAL

- *INSTALLATION*
- *OPERATION*
- *REPAIR PARTS*

Printed in U.S.A.

Owner's Manual 846-0284 B

INTRODUCTION

Please read instructions before installing and using your Electronic Air Cleaner. This will help you obtain the full benefit from the Electronic Air Cleaner you have selected. It will also help you avoid any needless service costs that result from causes we cannot control and cannot cover in our warranty.

If you plan to install this air cleaner yourself, you must realize that the improper use of any tool can be dangerous. Unless you are completely familiar with the necessary tools, equipment, utility connections and potential hazards involved, we ask that you contact a reliable heating and air conditioning dealer or other qualified installer.

BASIC TOOLS REQUIRED

Tin Snips
Screwdriver
Rule or Tape Measure

ADDITIONAL MATERIAL NEEDED

Line voltage (120 volt) wire. Provide enough to reach to junction box on air cleaner, in accordance with local code requirements.

TABLE OF CONTENTS

DID YOU GET THE RIGHT SIZE AIR CLEANER?

The 1000 CFM Unit is designed for heating or cooling blowers delivering 600 to 1200 cubic feet of air per minute (CFM) which is usually found in homes or apartments below 1200 sq. ft.

The 1400 CFM Unit is designed for heating or cooling blowers delivering 800 to 1600 cubic feet of air per minute (CFM) which is usually found in medium sized homes or apartments. The 2000 CFM Unit is capable of handling blowers delivering 1400 to 2200 CFM in larger living units. Before installing yourair cleaner make sure you have selected the proper size unit for your particular requirements.

CAUTION: The manufacturer will not assume any responsibility for component failures due to incorrect installation procedures.

RULES FOR SAFE INSTALLATION AND OPERATION

1. Read this Installation and Service Manual carefully. Failure to follow these rules and instructions could cause a malfunction of air cleaner or unsatisfactory service.
2. Check your local codes and utility requirements before installation. The installation must comply with their directives.
3. Before servicing always shut off electricity. This will prevent any electrical shocks.
4. Follow a regular service and maintenance schedule for efficient operation.

HOW YOUR AIR CLEANER WORKS

Dirt laden air flowing through the ducts (figure 1) first enters the pre-filters (A) where large particles (hair, lint, etc.) are trapped. Smaller particles (smoke, dust, pollen, etc.) pass through these pre-filters and enter the ionizing section (B). Here each tiny particle receives a positive electrical charge. These charged particles then enter the collecting section (C). This section consists of a series of aluminum plates. Alternate plates are charged positively.

The positive charge of the particles causes them to be repelled by the positive plates and attracted to the negative plates where they are collected . . . just as a magnet attracts iron filings. Thus, only cleaned-filtered air leaves the air cleaner and re-enters the supply duct system.

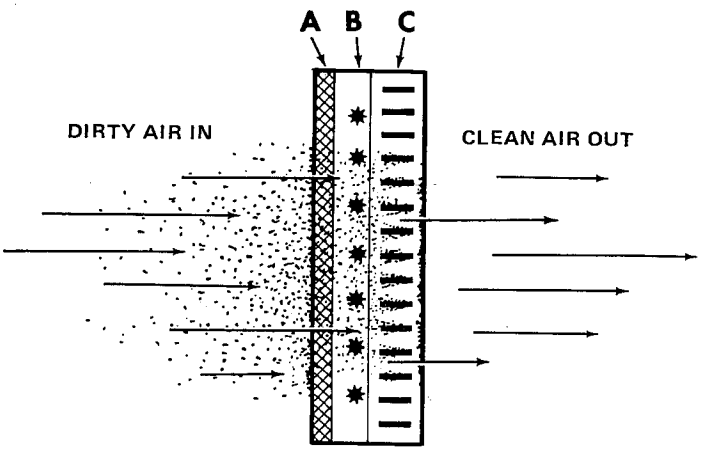


Figure 1

CONSTRUCTION OF YOUR AIR CLEANER

Not only is your air cleaner easy to install, it is also easy to operate and maintain. Its basic components, and their functions, are as follows: See Fig. 2.

Cabinet – mounts to existing ductwork and houses the collecting cells and screens.

Collecting Cells - are made in two sections on all units. These sections perform the actual collecting of dust, dirt, and other impurities from the air. They contain the ionizing and collection sections described above.

The cells must be installed with ionizing wires on the air intake side. Cells must be oriented with the handles and contact button (figure 2) toward the power pack.

Pre-filters – they serve as a pre-filter to trap large particles such as hair and lint before they can enter the cell sections.

Power Pack – contains the performance light and on-off switch as well as the solid state components that convert the 120 volt, AC power supply to the high-voltage, direct current required for the collecting cell.

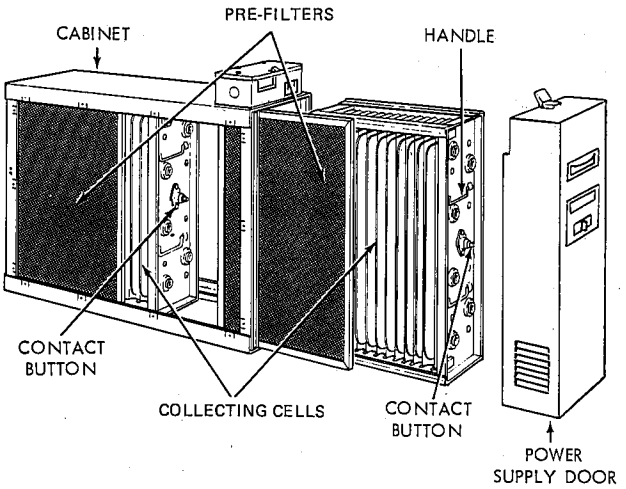


Figure 2

PREINSTALLATION

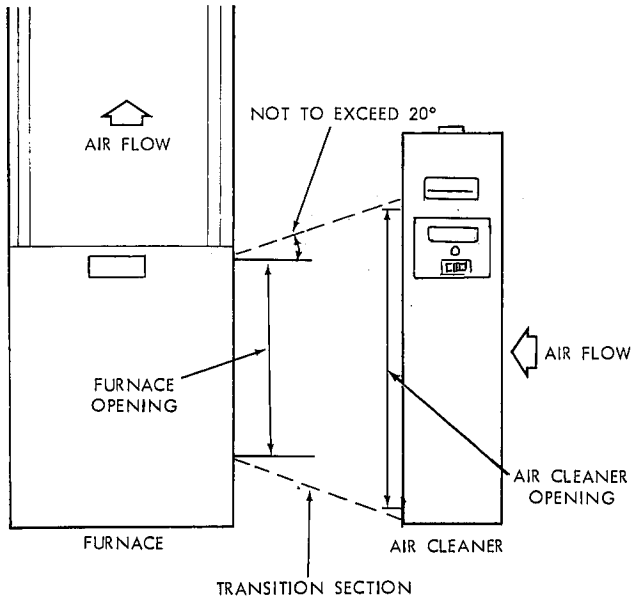


Figure 3

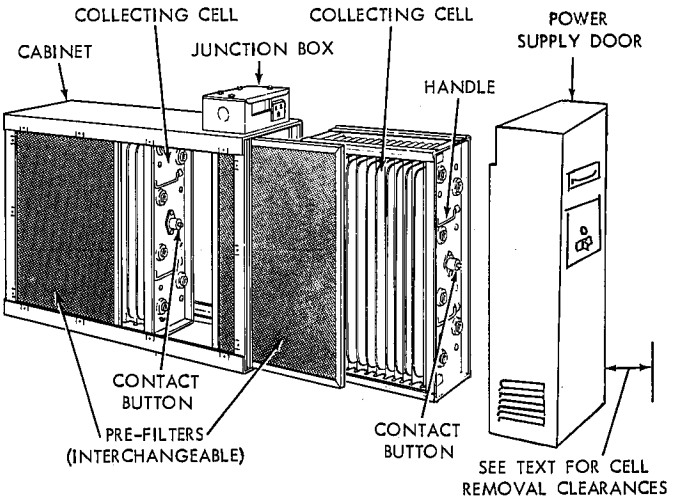


Figure 4

LOCATING THE AIR CLEANER

Your Electronic Air Cleaner must be mounted in the return air duct of a central forced-air system, on the air entering side of your furnace. (See figure 3 for example.)

Select a location that meets the following:

1. The face of the cell will be at a right angle to the air stream.
2. Allow the following clearances to permit removal of cells and pre-filters: (See figures 4 and 5)

   10C24M-39000 1000 CFM - 15 inches
   14C24M-39000 1400 CFM - 15 inches
   20C24M-39000 2000 CFM - 15 inches

   For complete dimension data refer to figure 5.
3. The air cleaner is not to be placed in the discharge of either the heating or cooling unit.

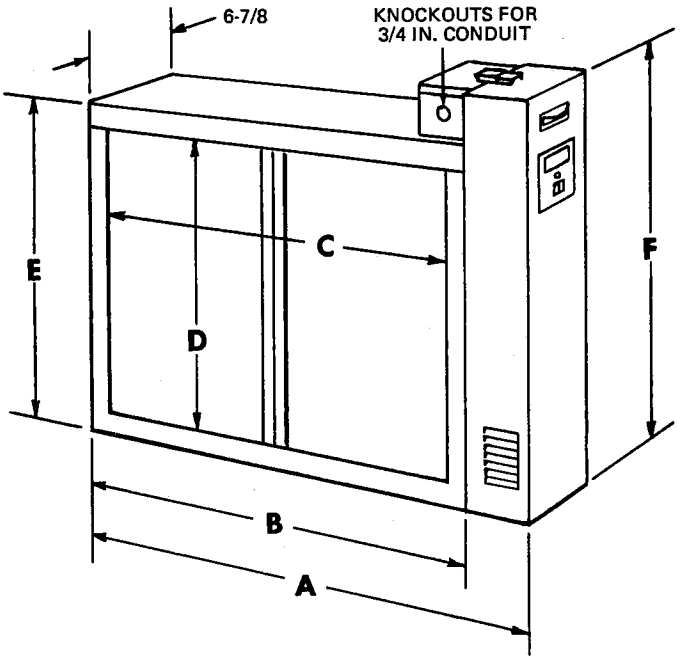
4. **IMPORTANT:** If atomizing (spray type) humidifier is used, it must be installed downstream from the air cleaner.

If furnace opening cannot be enlarged to required size, a transition sheet metal section must be used. Transition must be planned for each job. Reduction should not be more than 4 inches per lineal foot, approximately 20 angular degrees (figure 3).

DIRECTION OF AIR FLOW THROUGH THE AIR CLEANER

Your air cleaner is shipped from the factory with air flow from left-to-right. If this air flow is suitable for the installation, no further changes need to be made (figure 4). For right-to-left air flow, remove both pre-filters and cell sections. Turn cells upside down (with the same side facing the cabinet opening). This will locate the ionizing wires at the right, and both contact buttons and cell handles will be facing the power door. Air flow direction must agree with arrow embossed on end of collecting cells.

After installing the cell sections, install pre-filters in cabinet tracks on the right. This will again place the pre-filters on the intake side (on the same side as ionizing wires).



MODEL NO.	A	B	C	D	E	F
10C24M-39000	24¾	21⁵⁄₁₆	18¹¹⁄₁₆	13⁹⁄₁₆	16⁷⁄₁₆	19¹⁄₁₆
14C24M-39000	29¹¹⁄₁₆	26¼	23⅝	13⁹⁄₁₆	16⁷⁄₁₆	19¹⁄₁₆
20C24M-39000	29¹¹⁄₁₆	26¼	23⅝	17¾	20⅝	23⅜

Figure 5

TYPICAL MOUNTING POSITIONS

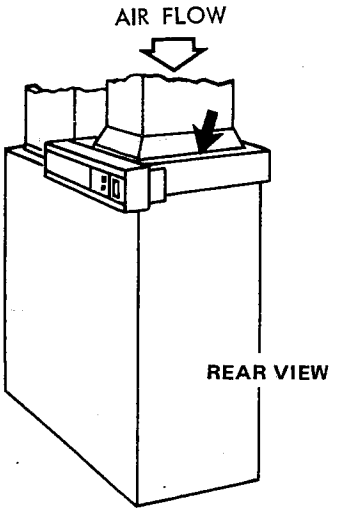


Figure 6

BASEMENT FURNACE (LOWBOY) (figure 6)

Cleaner is mounted horizontally in return plenum — just above the furnace.

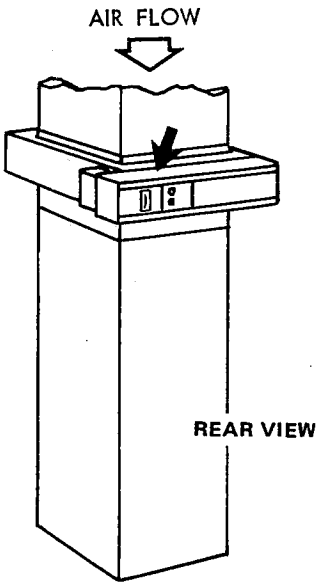


Figure 7

COUNTERFLOW FURNACE (figure 7)

Cleaner is mounted horizontally in return duct or plenum, just above furnace.

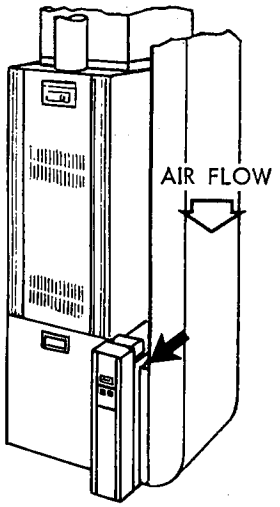


Figure 8

HIGHBOY FURNACE (figure 8)

Side installation. Cleaner is mounted vertically, where return enters side inlet of furnace.

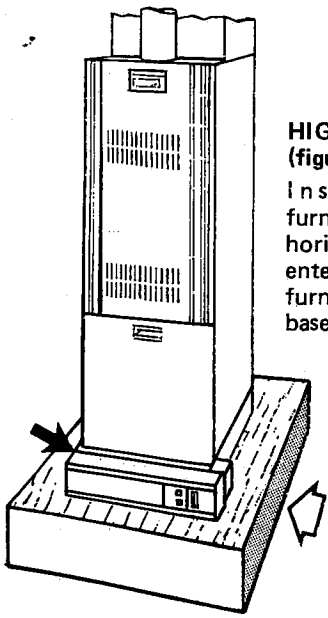


Figure 9

HIGHBOY FURNACE (figure 9)

Installation beneath furnace. Cleaner mounts horizontally, where return enters from below. Raise furnace and install beneath base.

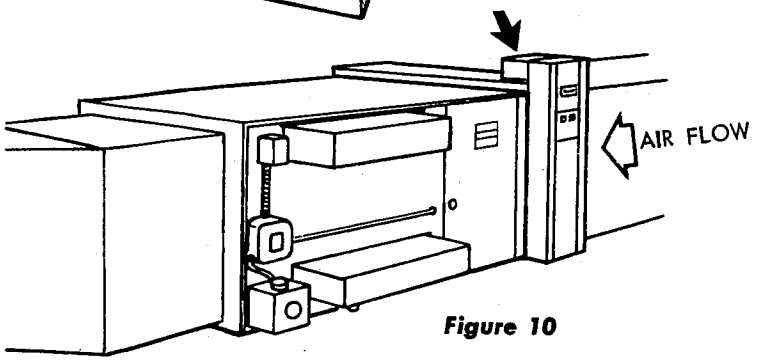


Figure 10

HORIZONTAL FURNACE (figure 10)

Cleaner is mounted vertically in the return duct, near furnace.

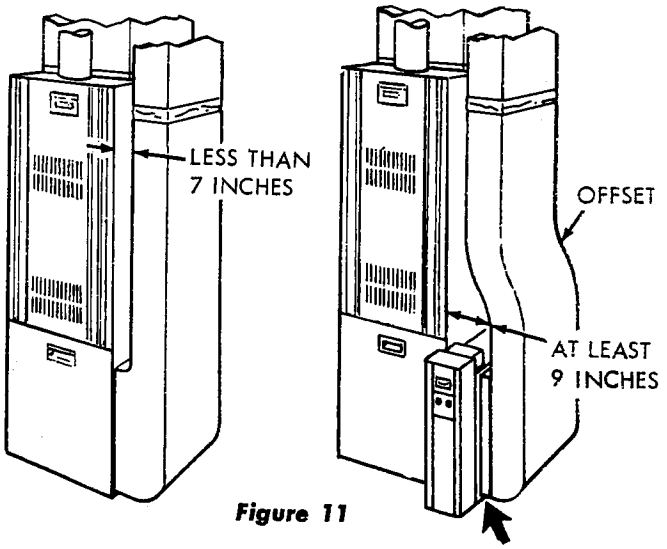


Figure 11

INSTALLING OFFSET (figure 11)
Typical use of duct offset to match air cleaner opening.

If duct connection to furnace allows less than nine inches for mounting the air cleaner, shorten the lateral trunk, or attach an offset fitting to the elbow (figure 11).

INSTALLATION

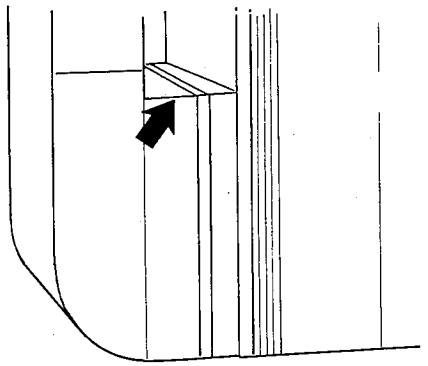


Figure 12

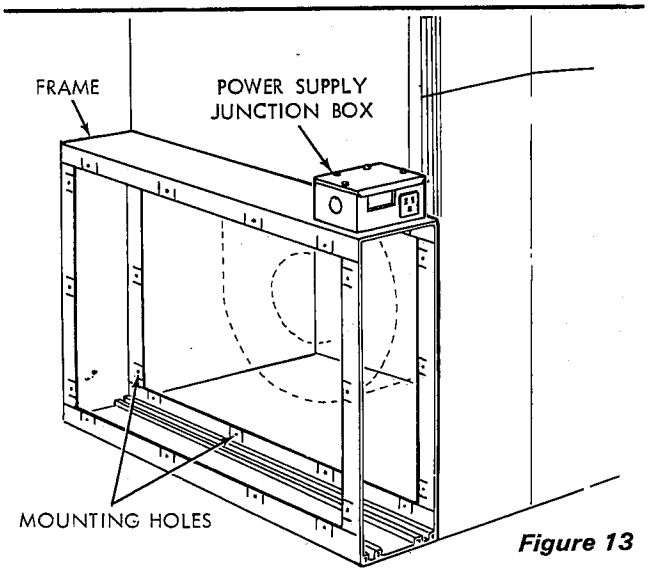


Figure 13

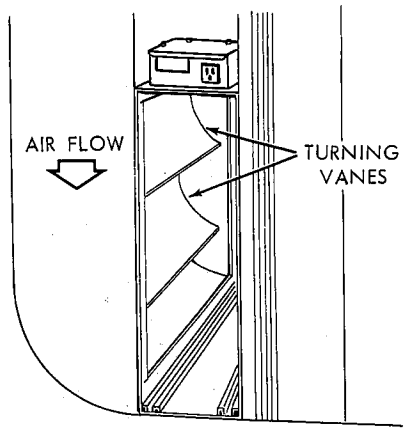


Figure 14

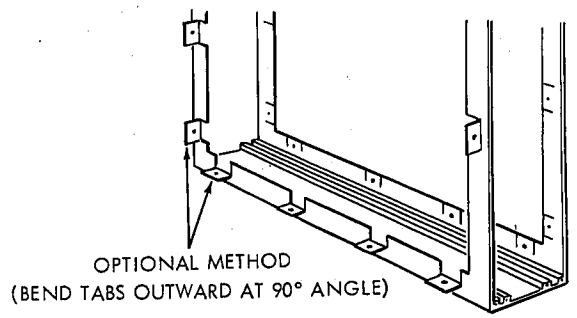


Figure 15

REMOVE OLD FILTER AND DISCARD (figure 12)

NOTE: this filter may be mounted in the furnace compartment.

CLEAN BLOWER COMPARTMENT

NOTE: It is suggested that the furnace blower compartment, blower and blower housing be cleaned to ensure clean air circulation.

INSTALLATION

The following is a typical installation of the air cleaner on a "High-boy" furnace (figure8).

1. Place the air cleaner on the floor. Stand it upright with the power door facing you (figure 4). If a horizontal installation is being planned, lay the air cleaner on its side, this will help you to visualize the relative location of all parts.

   Allow ample space for wiring and servicing the power supply junction box (figure 13).

2. Release the latch, remove the power pack (by grasping handle and pulling door away from cabinet) and set it aside (figure 4). Remove the collecting cells and pre-filters. Set pre-filters and cells aside in a safe location until the cabinet is installed.

3. Set the cabinet next to the furnace at selected location. If necessary, enlarge the opening in the furnace (if possible) to match the opening in the cabinet.

   If the furnace opening cannot be enlarged, a transition fitting should be used (figure 3).

   The cabinet can be attached directly (figure 13), or a starting collar can first be fitted to the furnace inlet. A butt or slip joint can be used. Securely attach the cabinet to furnace inlet, using at least two of the mounting holes on each side of the cabinet.

4. Using butt joint, attach ductwork (normally an elbow) to the upstream side of air cleaner cabinet. (Note the use of the sheet metal turning vanes inside the elbow. (figure 14) Although not necessary they will improve air distribution over the face of the cells.)

   NOTE: An optional method of attaching ductwork to cabinet is to modify the cabinet (figure 15) by bending the tabs outward at a 90° angle and attaching ductwork to tabs.

   Transition Fittings

   If the air duct does not fit the cabinet opening, a transition fitting should be used. Gradual transitions are preferred for greatest cleaning efficiency. Not more than four inches per lineal foot (approximately 20° angle) should be allowed (figure 3).

5. Connect the vertical duct section to the elbow. Wedge a wood block between floor and elbow for support (figure 16).

6. Seal all joints in the return air system, downstream from the air cleaner, with duct tape to prevent dust from entering the cleaned airstream. Tape is usually applied on the outside of ducts, but may also be applied on the inside, or both

7. WIRING

CAUTION: Electrical power to furnace shall be turned off or disconnected at the circuit breaker.

After the cabinet has been installed the air cleaner is ready for wiring. The air cleaner must be wired to a **120-volt AC, 60-cycle power source.**

With air flow monitor installed in the power pack, the electronic air cleaner can be wired directly to a 120-volt AC, 60-cycle power source per Figure 17.

8. With the cabinet installed, re-install pre-filters and collecting cells (Fig. 18).

NOTE: The contact button and handles on the cell must be facing you and ionizing wires must be on the air intake side.

Install the power pack as follows: Engage the lip on lower inside edge of door in the flange on cabinet and carefully close the door, making sure that the two electrical connector prongs on the door enter the slots in the socket on cabinet. When the door isfully in place,engage the latch and snap it closed.

FIG. 16

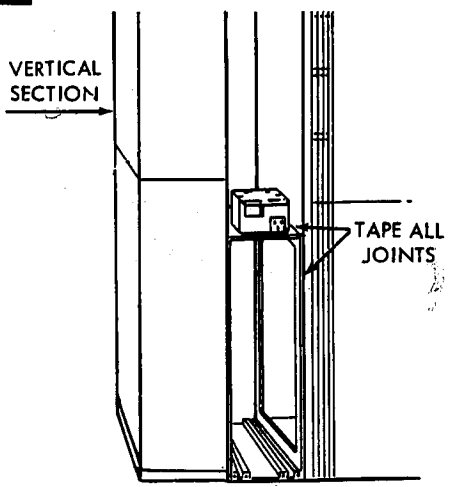


FIG. 17

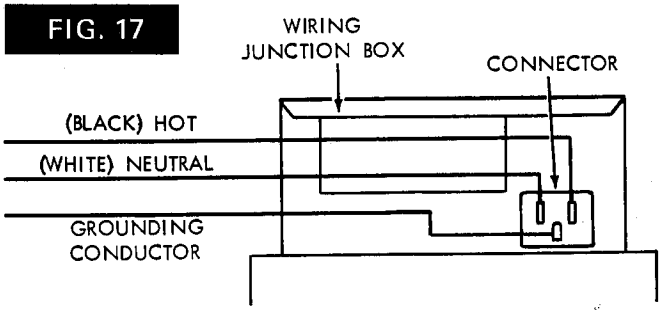
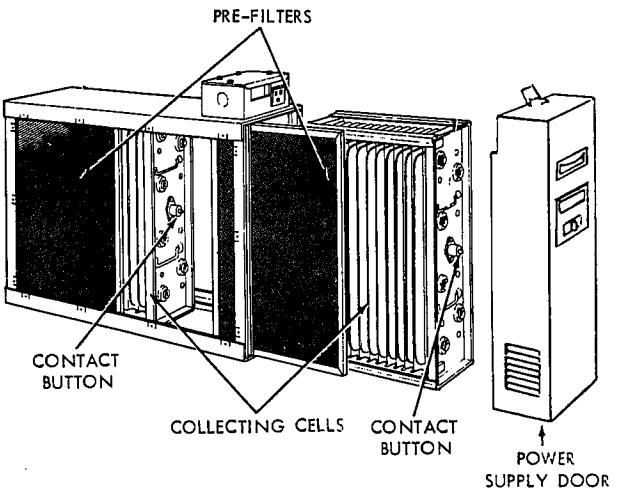


FIG. 18



OPERATION

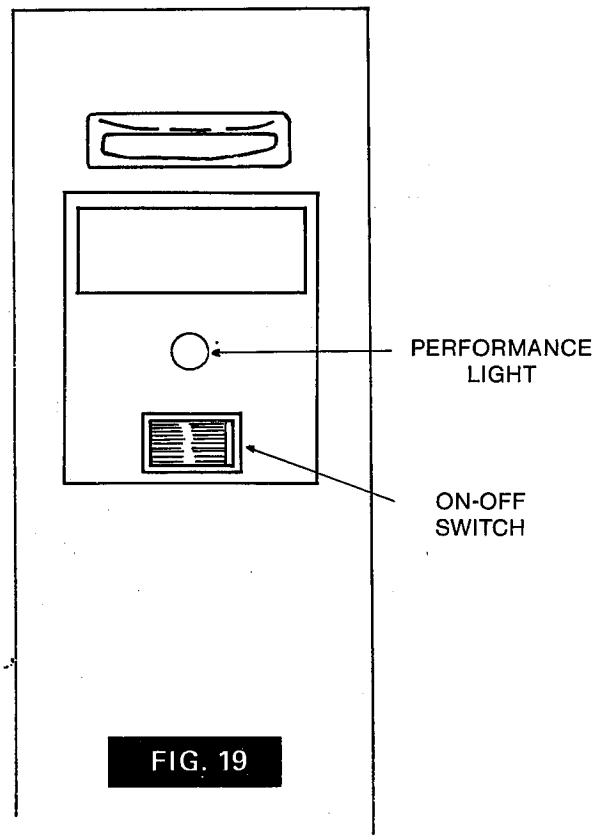


FIG. 19

1. With the 120 VAC power turned on at the circuit breaker for the furnace, push the air cleaner ON-OFF switch to the on position (figure 19).
2. With the furnace blower running, the air cleaner will be operating. An arcing or "snapping" sound will often be heard. This will occur occasionally, however the unit is operating properly.
3. The performance light should be on. When out, the performance light signifies that the cells need washing, or that trouble exists in the unit.

   If, after washing the cells, the performance light stays off, the cell could be improperly placed in the cabinet, or needs servicing.

   NOTE: An occasional flicker of the light accompanied by harmless sparking or snapping noise may occur occasionally. It is caused by trapping large particles of dirt. If arcing is continuous, the cells should be washed.
4. The air cleaner is equipped with an air flow switch (Key 16) which turns the unit "On" or "Off" as the furnace fan cycles. It may be "wired out" to leave the unit "On" continuously for service checks. Refer to Tech Sheet Publication 846-0540. NOTE: When the furnace is "Off" an occasional flicker of the operation light may be observed because of drafts within the ductwork.

MAINTENANCE

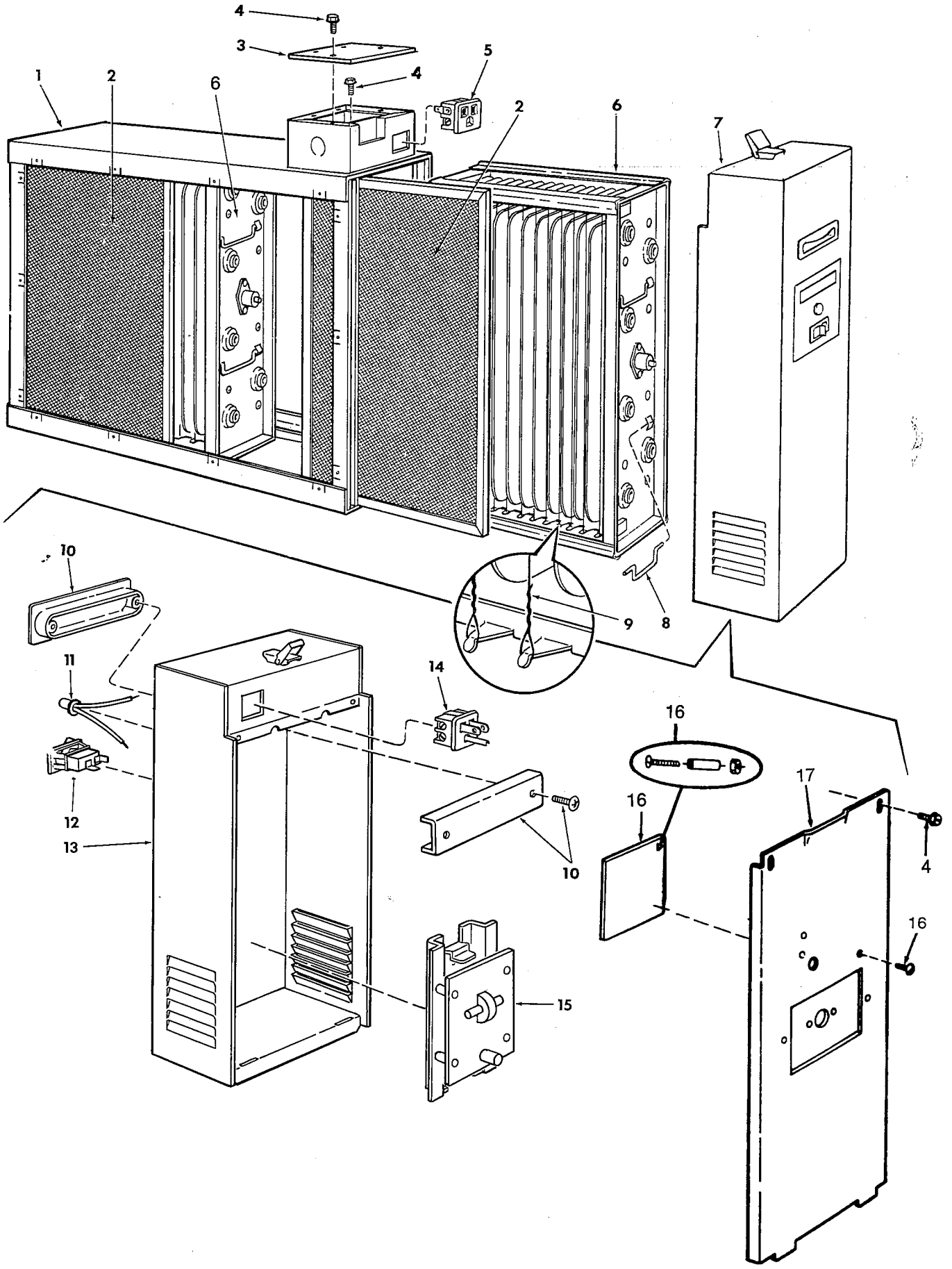
CLEANING

For maximum efficiency, your air cleaner should be inspected at least once a month and cleaned when necessary.

1. Push the ON-OFF switch on power pack to the off position (figure 19). Wait 15 seconds and both the power pack and the collecting cell will be automatically discharged.
2. Release the latch by turning the handle and pull the door straight away from cabinet at the top. Then lift it out of ledge at bottom edge of cabinet. Set the power pack door aside.
3. Remove the cells and pre-filters from the cabinet. Cells and pre-filters should be given a thorough detergent washing (using an automatic dishwasher type detergent). Follow with a thorough rinsing until cells are clean.
4. **NOTE:** Using a damp cloth and exercising care, wipe each ionizing wire clean. The ionizing wires become coated and they must also be cleaned properly to ensure trouble free problems.
5. Wait approximately 2 hours for rinse water to stop dripping from the cells, then re-install the cells into the cabinet. Caution should be exercised to replace cells correctly. Shake excess water from the pre-filters, then re-install them into the cabinet.
6. Replace the power pack. Push ON-OFF switch on power pack to the on position. Turn the furnace fan on. A moderate amount of arcing and "snapping" may occur when the fan starts. This arcing will not damage the cells. If the noise is objectionable, push the ON-OFF switch to the off position and allow additional time for the cells and screens to dry.

REPAIR PARTS

ELECTRONIC AIR CLEANERS



Always Order by Part Number — not by Key Number.

KEY NO.	PART NUMBERS			DESCRIPTION
	MODEL 10C24M-39000	MODEL 14C24M-39000 3C567	MODEL 20C24M-39000 3C568	
1.	F808-0635	F808-0570	F808-0568	Cabinet
2.	F825-0431	F825-0432	F825-0338	Pre-filter (2 req'd.)
3.	F838-0072	F838-0072	F838-0072	Cover
4.	–	–	–	*Screw, No. 6 x 3/8 Type B Hex Hd.
5.	F818-0053	F818-0053	F818-0053	Connector, Female
6.	F811-0398	F811-0397	F811-0319	Cell Assembly (Includes Key Nos. 9 & 10) (2 req'd.)
7.	F858-0844	F858-0785	F858-0786	Power Pack Assembly
8.	F832-0039	F832-0039	F832-0039	Handle, Cell (2 req'd.)
9.	F843-0484	F843-0484	F843-0500	Ionizing Wire
10.	F832-0030	F832-0030	F832-0030	Handle
11.	F844-0130	F844-0130	F844-0131	Light
12.	F876-0202	F876-0202	F876-0202	Switch
13.	F858-0737	F858-0737	F858-0736	Cabinet, Power Door
14.	F827-0026	F827-0026	F827-0026	Connector, Male
15.	F858-0903	F858-0903	F858-0903	Power Supply
16.	F859-0274	F859-0274	F859-0274	Air Flow Switch (Includes Mtg. Hardware)
17.	F820-0098	F820-0098	F820-0220	Cover, Power Pack
†	F825-0466	●F825-0467	●F825-0469	Charcoal Filter (w/Clips)
†	F825-0474	●F825-0475	●F825-0477	Charcoal Filter (w/o Clips)
†	846-0284	846-0284	846-0284	Owner's Manual

* Standard Hardware Item – May Be Purchased Locally.
● Two (2) Required
† Not Shown

SPECIFICATIONS	AIR CLEANER MODEL NUMBERS		
	10C24M-39000	14C24M-39000	20C24M-39000
RATED CAPACITY	1000 CFM	1400 CFM	2000 CFM
MAX. PRESSURE DROP	.08 IN. W.G.	.08 IN. W.G.	.09 IN. W.G.
CELL WEIGHT	(2) 7 LBS. EACH	(2) 9 LBS. EACH	(2) 11 LBS. EACH
POWER PACK WEIGHT	8 LBS.	8 LBS.	9 LBS.
UNIT WEIGHT	34 LBS.	41 LBS.	44 LBS.
POWER CONSUMPTION	40 WATTS (MAX)	40 WATTS (MAX)	40 WATTS (MAX)
ELECTRICAL INPUT	120 V. 60 Hz.	120 V. 60 Hz.	120 V. 60 Hz.
ELECTRICAL OUTPUT	1.0 MA @ 6400 VDC (NOM)	1.2 MA @ 6400 VDC (NOM)	1.7 MA @ 6400 VDC (NOM)
MAX. OZONE OUTPUT	.05 PPM	.05 PPM	.05 PPM
TEMPERATURE RATING	40° F. TO 125°F.	40°F. TO 125°F.	40°F. TO 125°F.

WARRANTY TO CONSUMER - PURCHASER

EMERSON
Electronic Air Cleaners
LIMITED WARRANTY

This type White/Rodgers electronic air cleaner is warranted to the consumer against defects in materials and workmanship for 24 months from date of installation. The electronic air cleaner must be installed by a competent heating and/or air-conditioning contractor in accordance with White/Rodgers installation instructions, operated within the unit's listed capacity, and not moved from the original installation site. NO OTHER WARRANTY, WRITTEN OR ORAL, APPLIES. No employee, agent, dealer, or other person is authorized to give any warranty on behalf of White/Rodgers.

If service is required it must be performed by a competent heating and/or air-conditioning contractor (preferably the installing contractor). White/Rodgers liability is limited to replacement of defective parts and does not include the cost of labor, other expenses in servicing the unit, or incidental or consequential damages. SOME STATES DO NOT NOT ALLOW THE EXCLUSION OR LIMITATIONS ON THE LENGTH OF WARRANTY ON INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

If the installing dealer or contractor fails to render performance under the terms of this Limited Warranty within a reasonable time, then contact in writing:

WHITE-RODGERS Division of Emerson Electric Co., 9797 Reavis Road, St. Louis, MO 63123, (314) 577-1300

The consumer may be asked to return the air cleaner or part (s) claimed to be defective to White-Rodgers, 303 North Industrial Park Rd., Harrison, Arkansas 72601 or nearest distributor point, at the expense of the consumer. The consumer will be expected to supply information on serial number, date of installation, name of installing dealer, and model number of the unit involved.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM PROVINCE TO PROVINCE.

WHITE-RODGERS

White-Rodgers Division, Emerson Electric Co.
9797 Reavis Road, St. Louis, MO 63123
(314) 577-1300