

Installation and Operating Instructions


NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Installation and service of heating and air conditioning equipment can be hazardous due to system pressure and gas and electrical components. Only trained and qualified personnel should install, repair, or service heating and air conditioning equipment.

Untrained personnel can perform basic maintenance functions such as cleaning and replacing air filters. All other operations must be performed by trained service personnel. When working on heating and air conditioning equipment, observe precautions in the literature, tags, and labels attached to or shipped with the unit and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warning or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

It is important to recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage.

INTRODUCTION

The Model 31MF High-Efficiency Mechanical Air Cleaner is designed for installation in the return-air duct of any forced-air heating and/or cooling system. It is designed for use in systems with airflow up to 2000 cfm. For higher airflows, additional units may be required.

The Model 31MF is a mechanical air cleaner incorporating 78 sq ft of glass microfiber filter media to clean the air circulated through it with a low pressure drop. (See Table 1.)

INSTALLATION

Step 1—Install Air Cleaner Cabinet in Return-air System

CAUTION

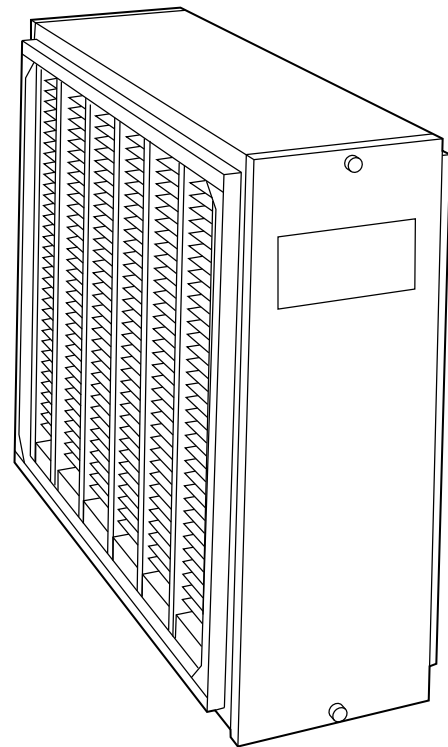
Turn OFF the electrical supply to the furnace before beginning installation.

1. Remove and discard existing furnace filter(s).
2. Referring to Fig. 2 and 3 for air cleaner dimensions and typical installations, determine best installation location of air cleaner.

NOTE: A 26-in. clearance must be allowed for removal of the media frame assembly from the air cleaner cabinet.

Table 1—Air Cleaner Resistance

RESISTANCE (IN. WC)	AIRFLOW (CFM)
0.03	600
0.05	800
0.07	1000
0.10	1200
0.13	1400
0.16	1600
0.20	1800
0.24	2000



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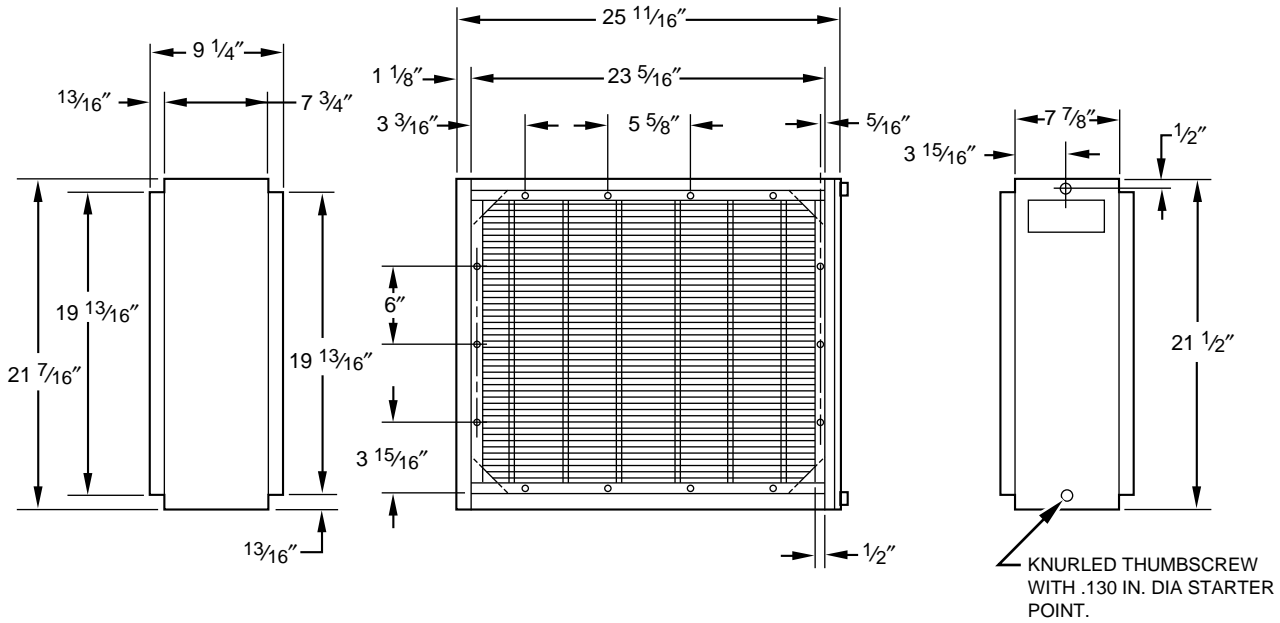
Fig. 1—Model 31MF Mechanical Air Cleaner

3. Using standard practices, remove a section of return-air duct to allow installation of air cleaner cabinet.
4. Install air cleaner in duct opening, providing an airtight seal to duct with necessary materials.

NOTE: For systems with right side return-air duct, rotate air cleaner 180° for proper installation. Remove and reinstall front access panel in an upright position. (See Fig. 3 for typical installations.)

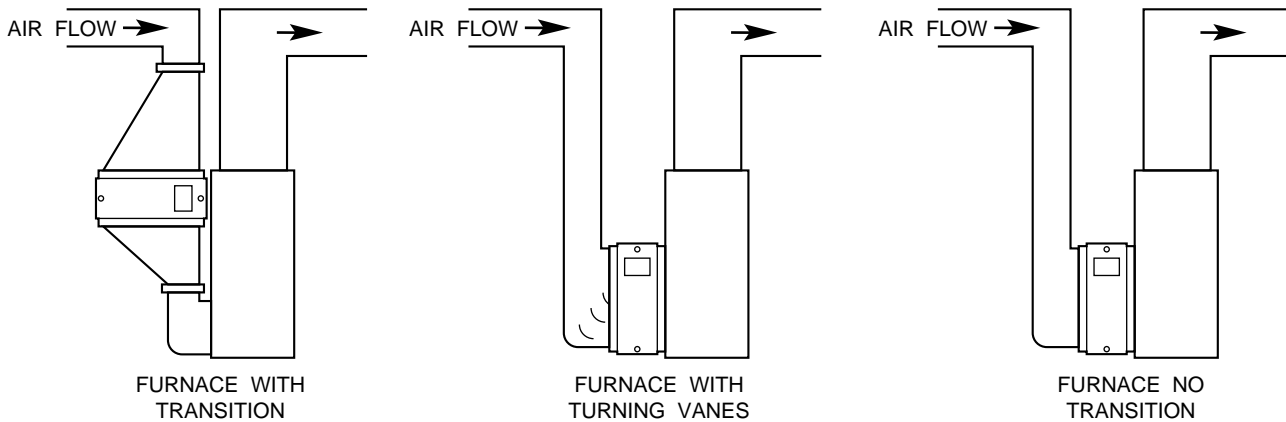
Step 2—Install Air Cleaner Filter Gage

Blower suction will create a slight vacuum so air will flow into the bottom of filter gage and through its chamber—lifting ball in gage. As filter media in air cleaner becomes dirty, the increase in



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Fig. 2—Dimensional Drawing



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Fig. 3—Typical Installations (Upflow Furnaces)

vacuum and resulting airflow will lift ball proportionally. When ball reaches top arrow, air cleaner media should be replaced.

The air cleaner filter gage should be installed in a convenient location on a vertical duct surface between air cleaner and furnace blower or in furnace casing of blower compartment.

1. Drill a 3/8-in. hole in duct work or casing. Place spring gage holder in hole. (See Fig. 4.)
2. Insert gage mounting stud through hole in condition indicator card and then in spring gage holder so stud projects into duct or casing. (See Fig. 4.)
3. Adjust airflow gage by rotating range adjustment plug until ball hovers at tip of lower arrow. (See Fig. 4.)

When air cleaner media begins to become clogged and dirty, ball will move up gage. When ball is in red range (shown on condition indicator card), air cleaner should be serviced.

Step 3—Install Filter Media in Air Cleaner Cabinet

NOTE: These instructions should also be followed when filter gage indicates filter media needs to be changed.

1. Loosen 2 thumb screws on front access panel and remove panel. Slide filter media frame assembly from air cleaner cabinet.

2. Remove filter media from carton. Ensure there are no holes or tears in filter media.
3. Grasp media pack with right hand, about 6 in. from closest end, with cardboard strips on top. Fan pleats open with other hand underneath and start 1 pleat in each slot of wire media frame, working from right to left. There are 37 pleats and 37 slots.
4. When all pleats are started, slide media pack endwise into the wire media frame until holes in cardboard end seals line up with holes in side frames. Make sure pleat ends are even. Press pleated paper down gently on all areas of wire frame. (See Fig. 5.)
5. Install plastic pleat spacers, being careful to insert 1 support finger between each pleat. Press pleat spacers down firmly to fully engage guide pin at each end. (See Fig. 6.)
6. Slide assembled media frame into air cleaner cabinet. Be sure airflow arrow on media frame is in same direction as arrow in cabinet. Plastic pleat spacers are always on downstream side of filter media. Attach outer cover and tighten thumb screws. (See Fig. 7.)

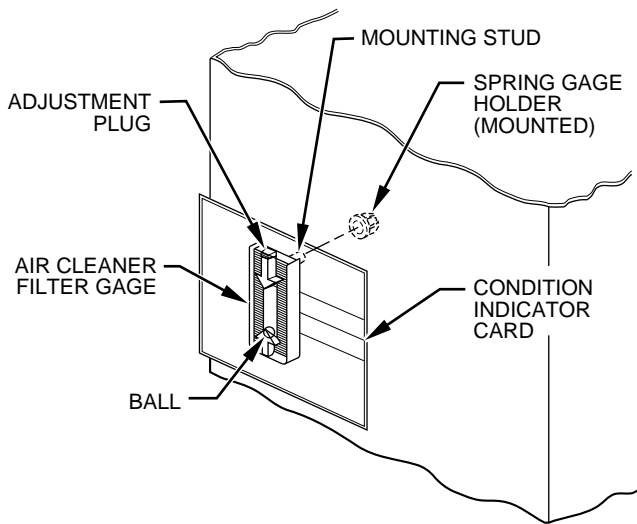


Fig. 4—Air Cleaner Filter Gage Assembly

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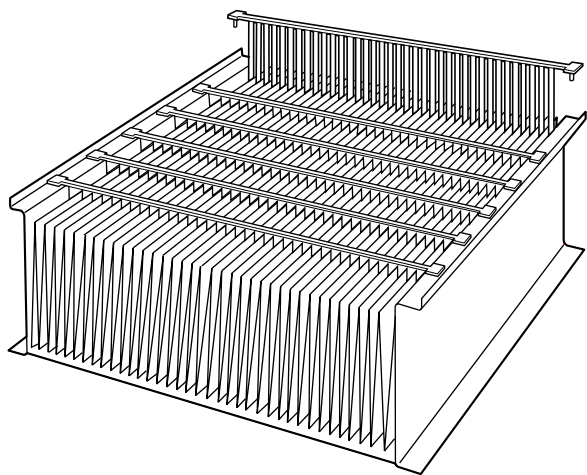


Fig. 6—Placement of Plastic Pleat Spacers

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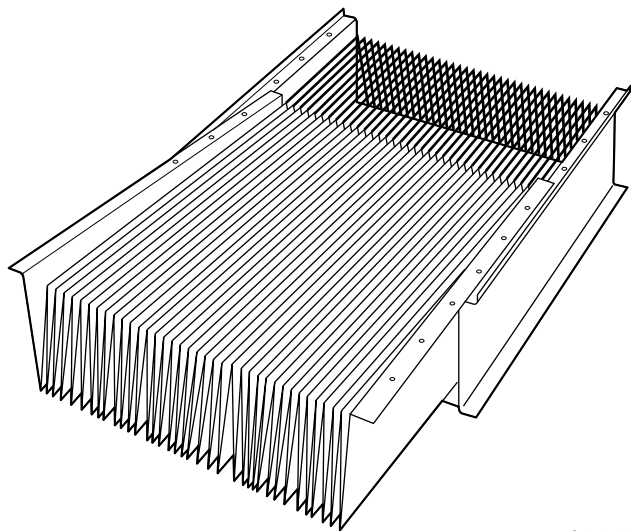


Fig. 5—Insertion of Pleated Media in Media Frame

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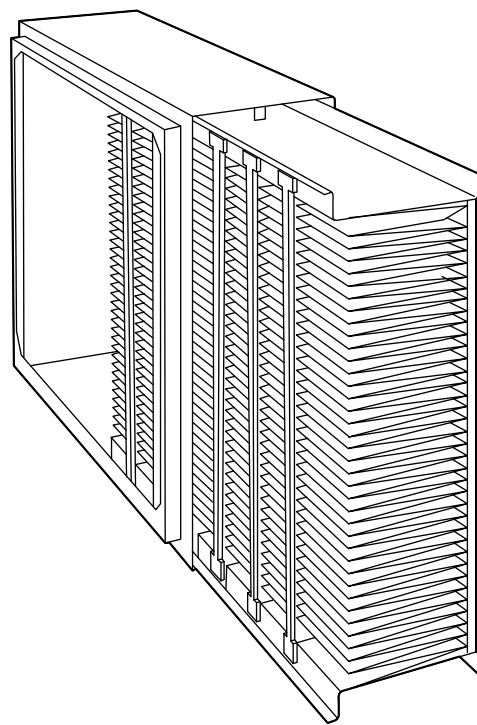


Fig. 7—Media Frame Positioning

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SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

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