

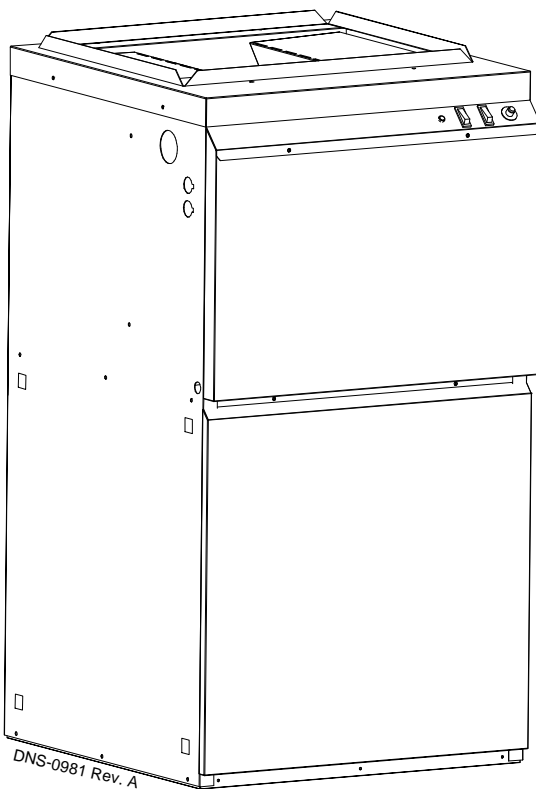
Installation Instructions and Homeowner's Manual

SUPREME

Fournaise électrique Electric Furnace

ALIMENTATION 240 VAC POWER SUPPLY

MULTI POSITION



INSTALLER / SERVICE TECHNICIAN:

USE THE INFORMATION IN THIS MANUAL FOR THE INSTALLATION AND SERVICING OF THE FURNACE AND KEEP THE DOCUMENT NEAR THE UNIT FOR FUTURE REFERENCE.

HOMEOWNER:

PLEASE KEEP THIS MANUAL NEAR THE FURNACE FOR FUTURE REFERENCE.

Models:

FEM10-M2301CM-B
FEM15-M2301CM-B
FEM18-M2301CM-B
FEM20-M2301CM-B
FEM23-M2301CM-B
FEM20-M2301DM-B
FEM23-M2301DM-B
FEM27-M2301DM-B



Caution: Do not tamper with the unit or its controls. Call a qualified service technician.

Manufactured by:

Industries Dettson inc.
3400 Industrial Boulevard
Sherbrooke, Quebec - Canada
J1L 1V8

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1.0 SAFETY

1.1 DANGER, WARNING AND CAUTION

The words **DANGER**, **WARNING** and **CAUTION** are used to identify the levels of seriousness of certain hazards. It is important that you understand their meaning. You will notice these words in the manual as follows:



DANGER

Immediate hazards which **WILL** result in death or serious bodily and/or material damage.



WARNING

Hazards or unsafe practices which **CAN** result in death or serious bodily and /or material damage.



CAUTION

Hazards or unsafe practices which **CAN** result in minor bodily and /or material damage.

1.2 IMPORTANT INFORMATION



WARNING

Non-observance of the safety regulations outlined in this manual will potentially lead to consequences resulting in death, serious bodily injury and/or property damage.



WARNING

Installation and repairs performed by unqualified persons can result in hazards to them and to others. Installations must conform to local codes or, in the absence of same, to codes of the country having jurisdiction.

The information contained in this manual is intended for use by a qualified technician, familiar with safety procedures and who is equipped with the proper tools and test instruments.

Failure to carefully read and follow all instructions in this manual can result in death, bodily injury and/or property damage.

- It is the homeowner's responsibility to engage a qualified technician for the installation and subsequent servicing of this furnace;
- Do not use this furnace if any part of it was under water. Call a qualified service technician immediately to assess the damage and to replace all critical parts that were in contact with water;
- Do not store gasoline or any other flammable substances, such as paper, carton, etc. near the furnace;
- Never block or otherwise obstruct the filter and/or return air openings;

- Ask the technician installing your furnace to show and explain to you the following items:
 - The main disconnect switch or circuit breaker;
 - The air filter and how to change it (check monthly and clean or replace if necessary);
- Before calling for service, be sure to have the information of section 5 of your manual close by in order to be able to provide the contractor with the required information, such as the model and serial numbers of the furnace.

IMPORTANT: All local and national code requirements governing the installation of central electric heating equipment, wiring and the flue connection **MUST** be followed. Some of the codes that may apply are:

ANSI/NFPA 70: National Electrical Code

CSA C22.1 or CSA C22.10: Canadian Electrical Code

Only the latest issues of these codes may be used, and are available from either:

The National Fire Protection Agency
1 Batterymarch Park
Quincy, MA 02269

or

The Canadian Standards Association
178 Rexdale Blvd.
Rexdale, Ontario M9W 1R3

1.3 DANGER OF FREEZING



CAUTION

If your furnace is shut down during the cold weather season, water pipes may freeze, burst and cause serious water damage. Turn off the water supply and bleed the pipes.

If the heater is left unattended during the cold weather season, take the following precautions:

- Close the main water valve in the house and purge the pipes if possible. Open all the faucets in the house;
- Ask someone to frequently check the house during the cold weather season to make sure that there is sufficient heat to prevent the pipes from freezing. Tell this person to call an emergency number if required.

2.0 INSTALLATION

This furnace is a true multi-position unit, in that it will function in an upflow, downflow or horizontal configuration to the left or the right. Only a few modifications are required during installation to change from one position to another. The unit is shipped in the upflow configuration and instructions as to how to change to the other positions are included in this manual.

The unit requires a 240VAC power supply to the control panel, thermostat hook-up as shown on the wiring diagram and suitable air ductwork.

2.1 POSITIONING THE FURNACE

WARNING

Fire and explosion hazard.

The furnace must be installed in a level position, never where it will slope toward the front.

Do not store or use gasoline or any other flammable substances near the furnace.

Non-observance of these instructions will potentially result in death, bodily injury and/or property damage.

CAUTION

This furnace is not watertight and is not designed for outdoor installation. It must be installed in such a manner as to protect its electrical components from water. Outdoor installation will lead to a hazardous electrical condition and to premature failure of the equipment.

If the furnace is installed in a basement or on a dirt floor, in a crawl space for example, it is recommended to install the unit on a cement base 2.5 cm to 5.0 cm (1" to 2") thick.

The unit must be installed in an area where the ambient and return air temperatures are above 15°C (60°F). In addition, the heater should also be located close to the center of the air distribution system.

2.2 CLEARANCES TO COMBUSTIBLE MATERIAL

2.2.1. Heating unit

The furnace is approved for zero clearance to combustible material regardless of the heating capacity.

2.2.2. Supply air ducts

Ducts for furnaces with a heating capacity up to and including 20 kW, can be installed with a zero clearance to combustible material.

Ducts for furnaces of 23 kW or more must have a clearance of 25 mm (1") to combustible material for the first 0.9 m (36") of duct. Thereafter the clearance can be zero.

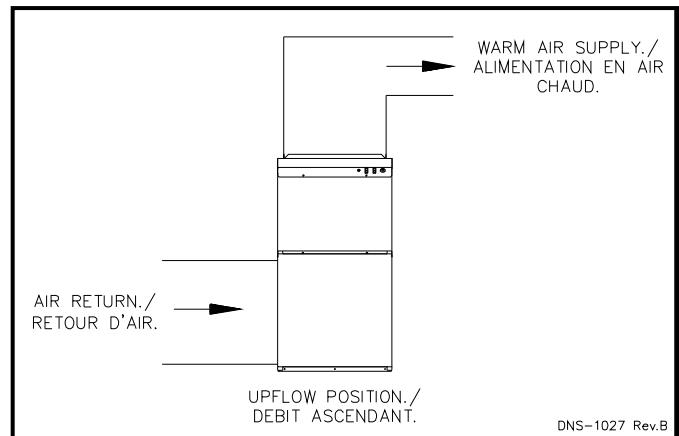
Units of 23 kW and up, installed in the downflow position must use a DFB-FEM downflow base, which is especially designed for this purpose. It ensures that the required clearances are being adhered to.

2.3 CONFIGURATIONS

2.3.1. Upflow installation

The return air opening may be located on either side of the furnace. Care should be taken not to damage the wires inside, while cutting the opening. Install the filter rack supplied with the unit according to the instructions provided with it. It is also recommended to install the blower door before handling or moving the unit. Refer to Figure 1 for additional details.

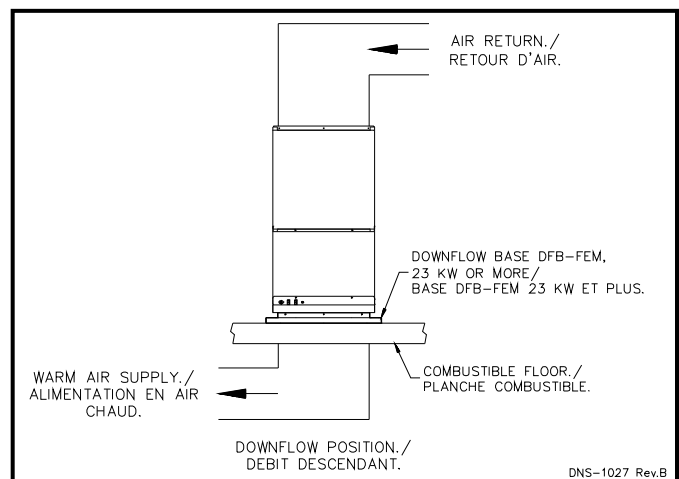
Figure 1: Upflow installation



2.3.2. Downflow installation

When the furnace is installed in the downflow position on a combustible floor, the clearances from combustibles must be adhered to. The downflow base DFB-FEM can be used to ensure these clearances. Refer to Figure 2 and the installation instructions provided with the base.

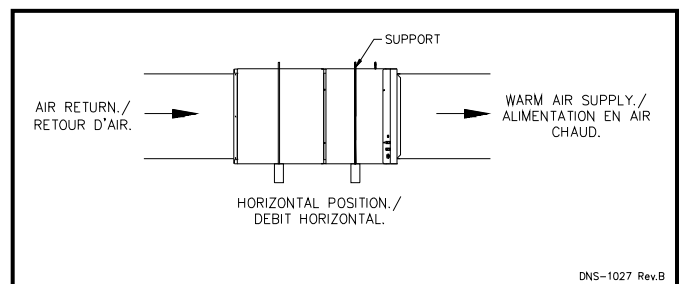
Figure 2: Downflow installation



2.3.3. Horizontal installation

When the furnace is installed in the horizontal position, either suspended or on a combustible floor with a choice of right or left discharge, the clearances from combustible material must be adhered to. Refer to Figure 3 for additional details.

Figure 3: Horizontal installation



2.4 ELECTRICAL SYSTEM

The **SUPREME** furnace is completely pre-wired and all field wiring must be connected to the terminal blocks on the unit. It requires a 240 volt, 2-wire power supply.

⚠ WARNING

Risk of fire.

The conductor sizing must conform to the last edition of the local or national codes.

Failure to follow this rule can result in death, bodily injury and/or property damage.

Power supply to the unit can be done using copper or aluminum wires. The wire size must be decided in accordance to unit power consumption, the over current protection type and capacity, the wire type and length, and the environment where the unit is installed. If an aluminum wire is used, other precautions must be taken to insure the conformity of the installation. In all cases, all the factors affecting the wire gauge must be considered and the installation codes followed.

The exterior of the unit must have an uninterrupted ground to minimize the risk of bodily harm. A ground terminal is supplied with the control box for that purpose.

In the event that wires inside the unit require replacement, these must be copper wires only with same temperature rating as originals.

2.5 INSTALLATION OF THE THERMOSTAT

A thermostat must be installed to control the temperature of the area to be heated. Follow the instructions supplied with the thermostat. Some thermostat need to connect the C terminal on the furnace and thermostat. Install the thermostat on an interior wall in a location where it will not be subject to direct sun light, lamps, air diffusers, fireplaces, etc. Seal openings in walls to avoid air currents that may influence the operation of the thermostat. Also refer to the wiring diagrams provided with the heating/air conditioning unit. The connections must be made as indicated on Figures 4 to 8 diagrams and on electrical diagram (Figure 10).

2.5.1. Anticipator adjustment (if required) on thermostat equipped with heat anticipator adjustment

Certain thermostats are equipped with a heat anticipator that must be adjusted according to the instructions supplied. This is to ensure that the heating mode is comfortable and economical.

Generally speaking, on a single stage thermostat, a reading of the current must be taken with an ammeter as follows:

1. Move the anticipator to its highest setting, rendering it ineffective.
2. Remove the wire from the "W1" terminal and connect an ammeter between the terminal and the wire.
3. Call for heat by raising the set point on the thermostat and allow the furnace to run for 3 to 4 minutes to reach its peak output.

4. Once the current has stabilized, a reading should be taken and the anticipator adjusted to that value. If longer heating cycles are desired, the anticipator can be set to a higher value

Figure 4: 1-stage thermostat, electric heating only

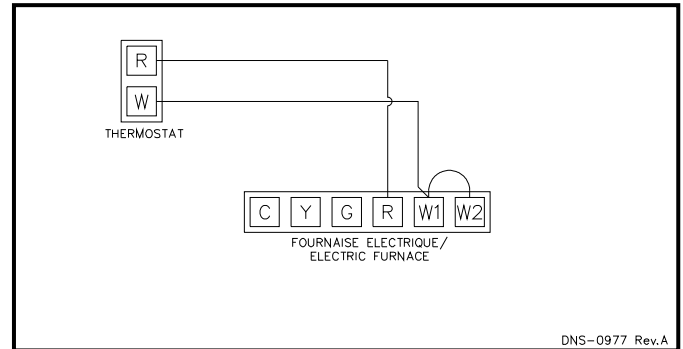


Figure 5: 2-stage thermostat, electric heating only

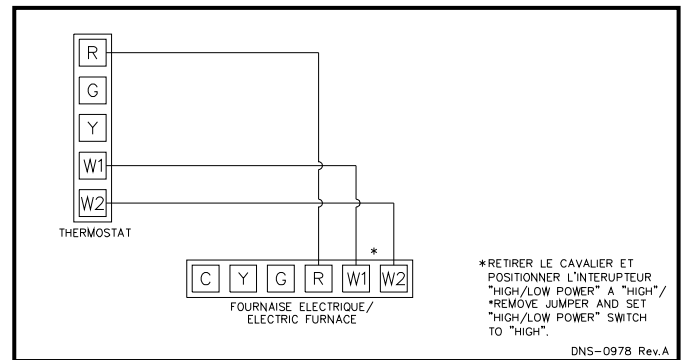


Figure 6: 1-stage thermostat with outdoor control for 2-stage function, electric heating only

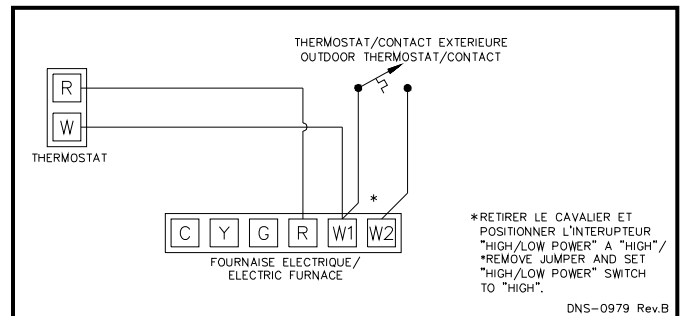


Figure 7: 1-stage thermostat, electric heat and cooling application

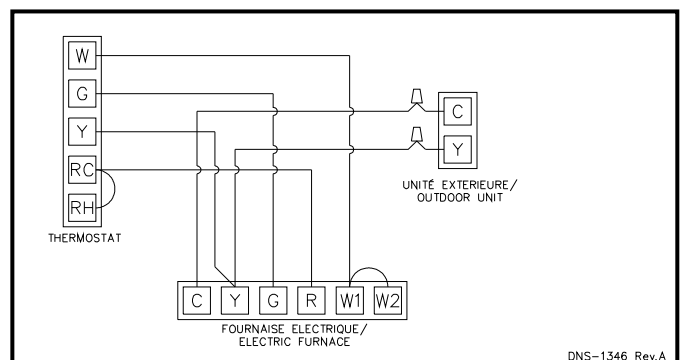
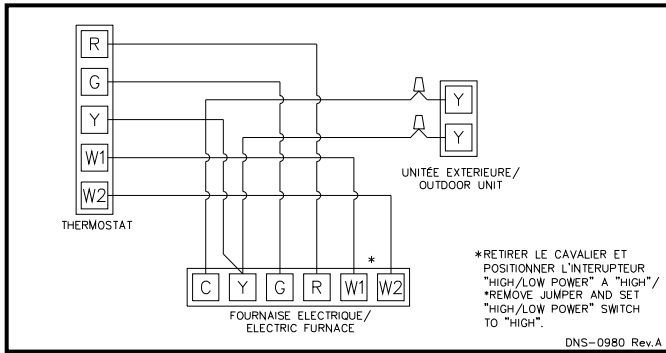


Figure 8: 2-stage thermostat, electric heating and air conditioning



2.5.2. Ducts and filters

The ducts must be sized such a way as to accommodate the specified airflow and the available static pressure. Refer to the applicable local and/or national installation codes.

Insulate the ducts that lead through non-heated areas. Use flexible supply and return air connectors to avoid the transmission of vibration. To make the unit run even quieter, the installer should:

1. Use two elbows between each outlet and the supply and return air plenum;
2. Cover the vertical sections of the supply and return air duct with soundproofing material;
3. Use baffles in short radius elbows;
4. Use flexible hangers to suspend the ducts.

The **SUPREME** furnace is equipped with a filter frame for the blower compartment. It must be installed on the outside of one of the three sides or the bottom of the furnace. Once the location of the installation has been determined, use the four square knockouts for ease of cutting the opening.

A heat pump or an air conditioner can be added to this furnace, in either the supply or return air duct. Carefully follow the instructions provided with these appliances to ensure proper installation and hook-up to the electric furnace. Refrigerant and drainage pipes must in no way hinder access to the furnace panels.

2.6 SUPPLY AIR ADJUSTMENTS

On units equipped with 4-speed blower motors, the supply air must be adjusted based on heating/air conditioning output and the static pressure of the duct system. For the desired airflow, refer to the Table 1 and 2, as well as the Tables 4 and 5 for the airflow based on static pressure.

For the adjustment of the airflow on heating mode, to obtain the temperature rise described in the technical specification table (Table 3), the orange wire must be positioned on the terminal corresponding to the LOW, MED-LOW, MED-HIGH or HIGH blower speed. Blower speeds are adjusted in factory for 0.5 inch static pressure.

For the adjustment of the airflow on air-cooling mode, to obtain a sufficient airflow (350 to 450 CFM per Ton), the blue wire must be positioned on the terminal corresponding to the LOW, MED-LOW, MED-HIGH or HIGH blower speed.

Blower speeds are adjusted in factory for 0.5 inch static pressure.

Table 1: Supply air adjustment on heating mode

FURNACE	INPUT POWER KW	HP MOTOR	STATIC PRESSURE E (in. w.c)	RECOMMENDE D BLOWER SPEED
FEM10	10	1/3	0.2	LOW
			0.5	LOW
FEM15	15	1/3	0.2	MED-LOW
			0.5	MED-LOW
FEM18	18	1/3	0.2	MED-LOW
			0.5	MED-LOW
FEM20	20	1/3	0.2	MED-LOW
			0.5	MED-HIGH
FEM23	23	1/3	0.2	MED-HIGH
			0.5	MED-HIGH
FEM20	20	1.0	0.2	MED-LOW
			0.5	MED-LOW
FEM23	23	1.0	0.2	MED-LOW
			0.5	MED-LOW
FEM27	27	1.0	0.2	MED-LOW
			0.5	MED-LOW

Table 2: Supply air adjustment on air cooling mode

FURNACE	HP MOTOR	COOLING CAPACITY (0.5" w.c.)	RECOMMENDED BLOWER SPEED
FEM10, 15, 18, 20 and 23	1/3	1.5	LOW
		2.0	MED-LOW
		2.5	MED-HIGH
		3.0	HIGH
FEM20, 23 and 27	1.0	2.5	LOW
		3.0	MED-LOW
		3.5	MED-HIGH
		4.0	HIGH
		5.0	HIGH

If the heating and air-cooling speed are the same, the orange wire and the blue wire can be connected on the same terminal on the motor.

2.7 INSTALLATION OF ACCESSORIES

WARNING

Electrical shock hazard.

Turn OFF electrical power at the fuse box or service panel before making any electrical connections and ensure a proper ground connection is made before connecting line voltage.

Failure to do so can result in death or bodily injury.

2.7.1. Humidifier and electronic air cleaner

This unit is equipped with a 120 VAC terminal for the connection of accessories up to a maximum of 2 amps. To use this function, a 3-wire 120/240 VAC power supply is required on the unit. A humidifier and an electronic air cleaner can be wired to terminals "1" and "2" of the unit. Refer to the wiring diagrams in this manual. A field supplied 240/24 VAC transformer can be installed for accessories using 24 VAC. A separate power source must be used if the accessories draw more than 2 amps.

Certain accessories require control relays. A location has been set aside in the unit for the installation of relays: a 24 VAC (part number L01H009). In addition, a 24 VAC relay can be wired between terminals "W1" and "C" to be activated

during a call for heat. Refer to the wiring diagrams for the location of the relay (RAcc) on the control panel.

2.7.2. Use of a heat pump

When using a heat pump, a thermostat with dial fuel option or a fossil fuel kit is required that prevents the operation of the electric elements and the heat pump at the same time. Refer to the instructions provided with the thermostat or the "Fossil Fuel" kit for the proper wiring of the furnace and the heat pump.

The simultaneous operation of the electric elements and the heat pump will cause overheating of either unit. The safety controls of the appliances will shut down the elements or heat pump, since they are not designed to function in this fashion.

3.0 OPERATION

3.1 START-UP

Before starting up the unit, be sure to check that the following items are in compliance:

1. The electrical installation and ventilation;
2. The blower access door is in place and the blower rail locking screws are well tightened;
3. The blower speed adjustments for heating and air conditioning are appropriate and according to the specifications in this manual;
4. The thermostat of the room is in the heating mode and is set higher than the ambient temperature.

To start the unit, turn the main electrical switch on.

3.2 USE OF MANUAL FURNACE CONTROLS

When there is a demand for heat, the pilot light ("L-1") comes on. Refer to the wiring diagram.

When the "HI/LO" switch is put into the "LO" position, it will shut down approximately half the elements.

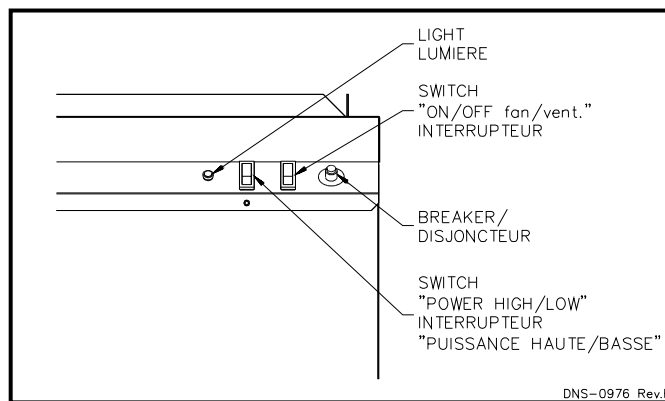
However, it is important to put the switch back to the "HI" position during the winter months to ensure adequate heating.

Also, this switch must remain in the "HI" position when a 2-stage or outdoor thermostat is used to control the electric elements of the second stage. Refer to the diagram in Section 1.5) above (Typical 24 VAC Wiring, Thermostat).

The "ON/OFF VENT/FAN" switch engages the blower in the continuous speed mode. This will filter the air and provide for better air distribution in the building.

The circuit breaker is there to protect the motor and control circuit conductors. If the unit does not function, press the circuit breaker button to see if it may have disengaged due to a power surge. If the breaker has to be pressed again, the unit must be checked by a qualified service technician.

Figure 8 : Manual Furnace Controls



3.3 OPERATING SEQUENCE

3.3.1. Heating mode

1. The thermostat closes the R-W1 circuit (24 VAC), thereby activating the first 22 VDC relay passing by a rectifier control. Without delay, the first heating element is activated and the blower starts at low speed. On 15 kw unit power and more, a second relay is activated after a 5 seconds delay to start one or two heating elements depends on the unit power.
2. The thermostat closes the R-W1 & W2 circuit (24 VAC), thereby activating another 22 VDC relay passing by a rectifier/timer with a 8 seconds delay (there is 2 relays for the 27 kw unit). The heating elements of the second stage are activated after the 8 seconds delay. The 24 VAC relay of the heating speed is also activated and heating blower speed start.

3.3.2. Cooling mode

1. The thermostat closes the R-G circuit, thereby activating the 24 VAC R-1 relay. The blower starts up to cooling speed.
2. The thermostat closes the R-Y contact, thereby activating the compressor relay of the air conditioner.

3.3.3. Continuous Fan speed

The blower will also start up to cooling speed by way of the "Fan" switch on the thermostat.

3.4 AIRFLOW VERIFICATION

Verify the airflow by taking readings of the following points, while the elements are in the heating mode:

- a. Total amperage of all the heating elements;
- b. Voltage at the furnace;
- c. Supply air temperature. The point of the reading must not be affected by radiant heat from the elements;
- d. Return air temperature.

From these readings, one can arrive at an approximate calculation of the average airflow. To do that, the following formula should be used:


$$\text{Liter/s} = \frac{0.82 \times \text{amps.} \times \text{volts}}{\text{Diff. temperature } ^\circ\text{C}}$$

$$\text{CFM} = \frac{3.1 \times \text{amps.} \times \text{volts}}{\text{Diff. temperature } ^\circ\text{F}}$$

3.4.1. Supply Air Temperature Rise Test

1. Operate the unit at maximum power for at least 10 minutes;
2. Measure the air temperature in the return air plenum;
3. Measuring the air temperature in the largest trunk coming off the supply air plenum, just outside the range of radiant heat from the heat exchanger. 0.3 m (12") from the plenum of the main take-off is usually sufficient;
4. The temperature rise is calculated by subtracting the return air temperature from the supply air temperature.

If the temperature rise exceeds the temperature specified ($\pm 5^\circ\text{F}$) in Table 2, move the "AC/HP CFM ADJUST" black wire to high (HI) position. If the excessive temperature rise cannot be reduced by increasing fan speed, investigate for ductwork obstructions or dirty and improper air filter.

 **CAUTION**

It is important to check the airflow and to ascertain that the unit does not operate above the temperatures specified in the Technical Specifications (Table 2). This is particularly important if a cooling coil or a heat pump has been installed in the ducts.


Hi-Limit thermal protectors should never need to engage during the normal functioning of the appliance. They are strictly designed to engage during the improper functioning of the blower or when the filter was improperly maintained.

3.4.2. High limit verification

After operating the furnace for at least 15 minutes, restrict the return air supply by blocking the filters or the return air register and allow the furnace to shut off on High Limit. The electric heaters must deactivate themselves one by one before the warm air temperature exceeds 200°F

Remove the obstruction and the elements should restart after a few minutes.

4.0 MAINTENANCE

 **WARNING**

Electrical shock hazard.

Turn OFF power to the furnace before any disassembly or servicing.

Failure to do so can result in death, bodily injury and/or property damage.

Preventive maintenance is the best way to avoid unnecessary expense and inconvenience. Have your heating system inspected by a qualified service technician at regular intervals. Do not attempt to repair the furnace or its controls. Call a qualified service technician.

Before calling for repair service, check the following points:

1. Check fuses or the circuit breaker;
2. Check if the 15 A circuit breaker on the furnace is disengaged;
3. Set the thermostat higher than room temperature. If the unit does not start up, cut the power and call a qualified service technician.

When calling for service or ordering a replacement part, specify the model and serial number of your appliance.

4.1 AIR FILTER

The filter supplied with the unit is the disposable type and should be replaced twice a year. The presence of animal hair, dust, etc. may necessitate more frequent changes. Dirty filters have an adverse effect on the performance of the central heating system.

4.2 MOTOR LUBRICATION

Do not lubricate the blower motor, since it is permanently lubricated.

5.0 FURNACE INFORMATION

Model: _____ Serial number: _____

Furnace installation date: _____

Service telephone # - Day: _____ Night: _____

Dealer name and address: _____

START-UP RESULTS

Voltage: _____

Total current consumed by the elements: _____

Supply air temperature: _____

Return air temperature: _____

Supply air duct static pressure: _____

Return air duct static pressure: _____

Total pressure: _____

Calculated air flow: _____

Current consumed by the blower motor: _____

Current consumed by the accessories: _____

Table 3 : Technical specifications

RATINGS AND PERFORMANCE	FEMxx-M2301CM-B					FEMxx-M2301DM-B		
Power, total (Kw)	10	15	18	20	23	20	23	27
Power, first stage (Kw)	5	10	9	10	13	10	13	15
Net capacity (BTU/h)	34 120	51 180	61 420	68 240	78 480	68 240	78 480	92 130
Heating temperature rise range (F) ¹	40-50	45-60	50-75	55-75	60-80	55-75	60-80	60-80
ELECTRICAL SYSTEM								
Volts - Hertz - Phase	2 wires 240 - 60 - 1							
Electrical element #1 (Kw)	5	5	4	5	4	5	4	5
Electrical element #2 (Kw)	5	5	5	5	5	5	5	5
Electrical element #3 (Kw)		5	4	5	4	5	4	5
Electrical element #4 (Kw)			5	5	5	5	5	4
Electrical element #5 (Kw)					5		5	4
Electrical element #6 (Kw)								4
Blower motor Consumption (Amp. Max.)	3.3	3.3	3.3	3.3	3.3	6.9	6.9	6.9
Heating Elements Consumption (Amp)	41	61	74	82	94	82	94	111
Total Consumption (Amp)	44.3	64.3	77.3	85.3	97.3	88.9	100.9	117.9
Circuit Amperage (wire sizing) ²	55	80	97	107	122	111	126	147
Maximum size circuit breaker (Amp) ²	60	80	100	110	125	125	150	150
BLOWER DATA (factory adjusted to a static pressure of 0.5" W.C.)								
Blower speed at 0.50" W.C. static pressure	LOW	MED-LOW	MED-LOW	MED-HIGH	MED-HIGH	MED-LOW	MED-LOW	MED-LOW
Blower speed at 0.20" W.C. static pressure	LOW	MED-LOW	MED-LOW	MED-LOW	MED-HIGH	MED-LOW	MED-LOW	MED-LOW
Motor (HP) / number of speeds	1/3 HP / 4 speeds					1 HP / 4 speeds		
Nominal blower size (diam. X width)	10 x 8					12 x 10		
GENERAL INFORMATION								
Overall dimensions (width x depth x height)	20" x 20" x 36.5"							
Supply	15" x 18"							
Return	19" x 19"							
Filter quantity and size	(1) 20" x 20"							
Shipping weight	48 Kg / 105 lbs							
Maximum cooling capacity	3 tons					5 tons		
1) Select a blower speed that will generate the specified temperature rise								
2) Calculated on the basis of Norm C22.2 Nr. 236								

Table 4 : Airflow (CFM) - SUPREME with 1/3HP motor

Blower Speed	Static Pressure						
	0.1	0.2	0.3	0.4	0.5	0.6	0.7
LOW	715	700	690	675	660	650	635
MED-LOW	935	900	870	835	800	770	735
MED-HIGH	1090	1050	1010	970	930	890	850
HIGH	1285	1250	1220	1185	1150	1120	1085

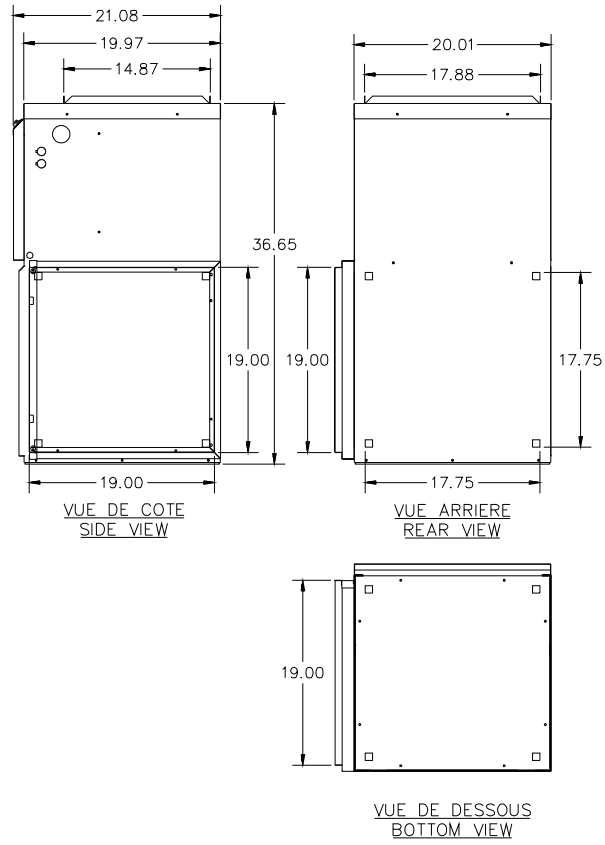
The airflow values are expressed in cubic feet per minute (CFM'), rounded to 5 CFM more or less. These readings were taken with the air filter installed.

Table 5 : Airflow (CFM) - SUPREME with 1HP motor

Blower Speed	Static Pressure						
	0.1	0.2	0.3	0.4	0.5	0.6	0.7
LOW	1035	1030	1030	1025	1020	1020	1015
MED-LOW	1315	1300	1285	1270	1255	1240	1225
MED-HIGH	1715	1650	1590	1525	1460	1400	1335
HIGH	1935	1900	1870	1835	1800	1770	1735

The airflow values are expressed in cubic feet per minute (CFM'), rounded to 5 CFM more or less. These readings were taken with the air filter installed.

Figure 9 : Furnace dimensions



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Figure 10 : Wiring diagram

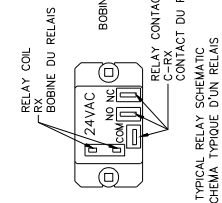
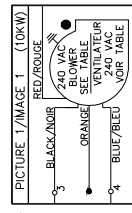
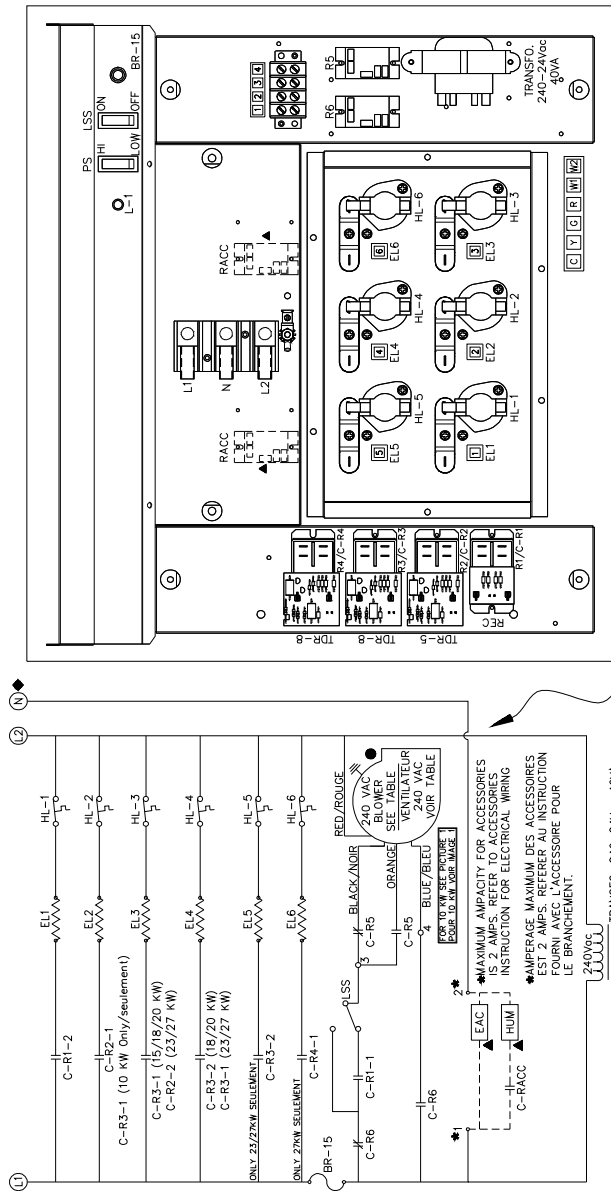
ELECTRICAL DIAGRAM (2 WIRES) / DIAGRAMME ELECTRIQUE (2 FILS)

AIR FLOW ADJ. HEAT MODE (ORANGE WIRE) / AJUSTEMENT D'AIR EN CHAUFFAGE (FIL ORANGE)	UNIT POWER / PUISSANCE	MOTOR / MOTEUR	STATIC PRESSURE / PRESSION STATIQUE	BLOWER SPEED / VITESSE MOTEUR
FEM10	10 KW	1/3 HP	0.2 w.c.	LOW
FEM15	15 KW	1/3 HP	0.2 w.c.	MED-LOW
FEM18	18 KW	1/3 HP	0.2 w.c.	MED-LOW
FEM20	20 KW	1/3 HP	0.2 w.c.	MED-LOW
FEM23	23 KW	1/3 HP	0.2 w.c.	MED-HIGH
FEM20	20 KW	1.0 HP	0.2 w.c.	MED-LOW
FEM23	23 KW	1.0 HP	0.2 w.c.	MED-LOW
FEM27	27 KW	1.0 HP	0.2 w.c.	MED-LOW

AIR FLOW ADJ. COOLING MODE (BLUE WIRE) / AJUSTEMENT D'AIR EN CLIMATISATION (FIL BLEU)	COOLING CAPACITY / PUISS. CLIMATISATION (0.5 W.C.)	MOTOR / MOTEUR	BLOWER SPEED / VITESSE MOTEUR
FEM10, 15, 18, 20 AND 23	1.5	1/3 HP	LOW
	2.0		MED-LOW
	2.5		MED-HIGH
	3.0		HIGH
FEM20, 23 AND 27	3.0	1.0 HP	MED-LOW
	3.5		MED-HIGH
	4.0		HIGH
	5.0		HIGH

REFER ALSO TO INSTRUCTION MANUAL / REFERER AUSSI AU MANUEL D'INSTRUCTION

- EL: ELECTRIC ELEMENT/ELEMENT ELECTRIQUE
- R: RELAY COIL/BOBINE DU RELAIS
- C-R: RELAY CONTACT/CONTACT DU RELAIS
- RACC: ACCESSORIES RELAY COIL / BOBINE DE RELAIS D'ACCESSOIRES (FIELD SUPPLIED/Fourni SUR PLACE)
- C-RACC: ACCESSOIRES RELAY CONTACT / CONTACT DU RELAIS D'ACCESSOIRES (FIELD SUPPLIED/Fourni SUR PLACE)
- REC: RECTIFIER 22 VDC/22 VDC REDRESSEUR
- TDR-5 OR TDR-8: TIME DELAY RECTIFIER 5 SEC OR 8 SEC / REDRESSEUR TEMPORISATEUR 5 SEC OU 8 SEC
- LSS: LOW SPEED BLOWER SWITCH / INTERRUPTEUR BASSE VITESSE DU VENTILATEUR.
- EAC: ELECTRIC AIR CLEANER WITH FLOW SWITCH / FILTRE A AIR ELECTRONIQUE AVEC INTERRUPTEUR DE DEBIT
- HUM: HUMIDIFIER/HUMIDIFICATEUR
- PS: HIGH/LOW POWER SWITCH / INTERRUPTEUR HAUTE/BASSE PUISSANCE
- L-1: HEAT DEMAND LIGHT / LUMIERE DEMANDE DE CHAUFFAGE
- BR-15: 15 AMPS BREAKER / DISJONCTEUR 15 AMPS
- : FACTORY WIRING/CABLAGE EN USINE
- : FIELD SUPPLY WIRING/CABLAGE SUR PLACE
- ◆: USE NEUTRAL ONLY IF ELECTRIC POWER FOR ACCESSORIES (TERMINALS 1 & 2) IS REQUIRED/UTILISER LE NEUTRE SEULEMENT SI L'ALIMENTATION ELECTRIQUE POUR ACCESSOIRES (BORNES 1 & 2) EST REQUISE
- : R4 USED ON 27KW ONLY / R4 UTILISE SUR 27KW SEULEMENT



CUT FOR TDR-8 / COUPER POUR TDR-8

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Figure 11 : PARTS LIST, Supreme with 1/3 HP and 1 HP motor: FEMxx-M2301CM-B or FEMxx-M2301DM-B

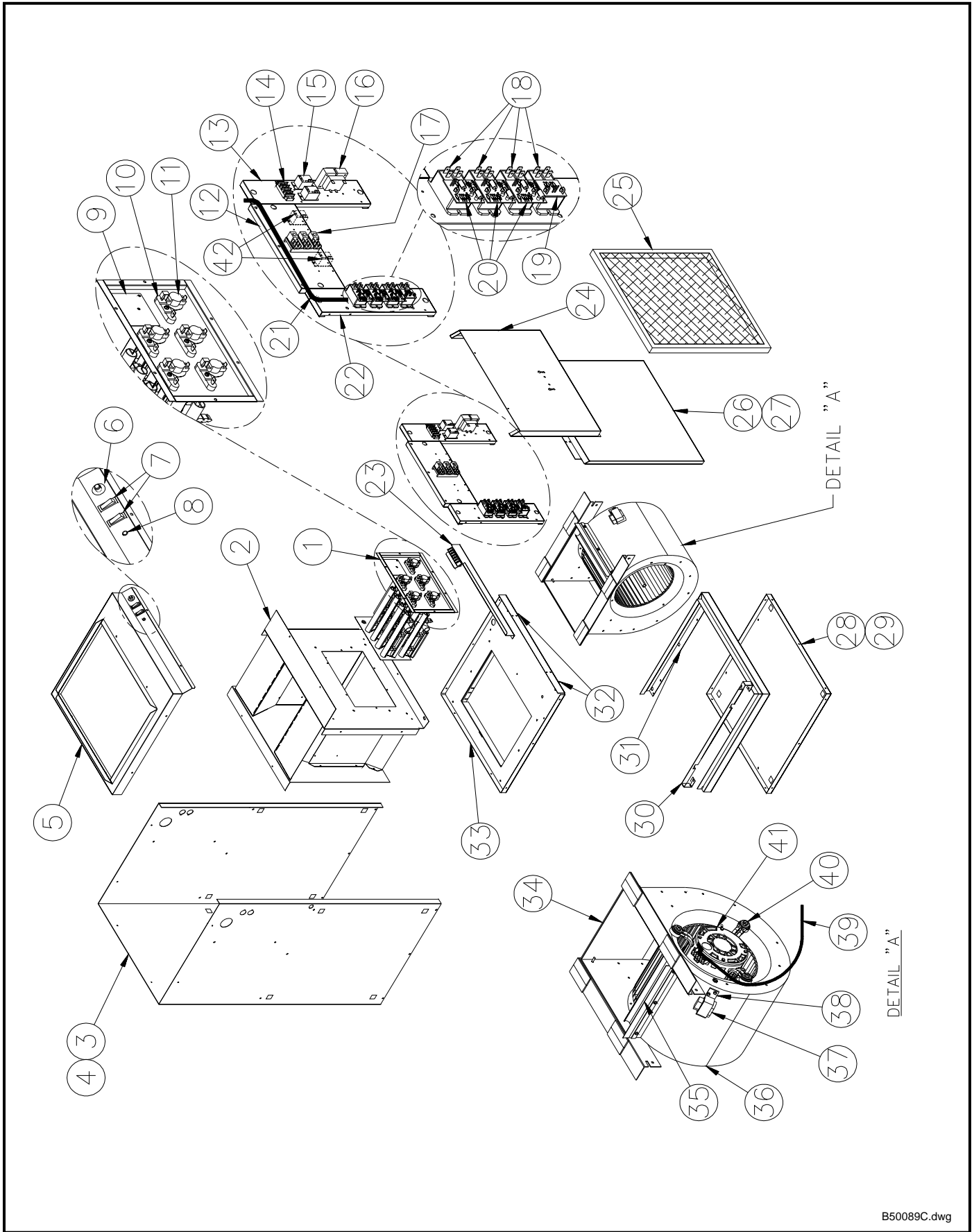


Table 6: PARTS LIST, Supreme with 1/3 HP and 1 HP motor: FEMxx-M2301CM-B or FEMxx-M2301DM-B

ITEM	PART #	DESCRIPTION	COMMENTS
1A	B03274-01	HEATING ELEMENT PLATE ASSEMBLY FEM-10kW (1/3 HP)	Item 11 included
1B	B03275-01	HEATING ELEMENT PLATE ASSEMBLY FEM-15kW (1/3 HP)	Item 11 included
1C	B03276-01	HEATING ELEMENT PLATE ASSEMBLY FEM-18kW (1/3 HP)	Item 11 included
1D	B03276-02	HEATING ELEMENT PLATE ASSEMBLY FEM-20kW (1/3 HP / 1 HP)	Item 11 included
1E	B03277-01	HEATING ELEMENT PLATE ASSEMBLY FEM-23kW (1/3 HP)	Item 11 included
1F	B03317-01	HEATING ELEMENT PLATE ASSEMBLY FEM-23kW (1 HP)	Item 11 included
1G	B03314-01	HEATING ELEMENT PLATE ASSEMBLY FEM-27kW (1 HP)	Item 11 included
2A	B03273	FRONT DIVIDER ASSEMBLY (1/3 HP)	
2B	B03313	FRONT DIVIDER ASSEMBLY (1 HP)	
3	B03260	CASING ASSEMBLY	Item 4 included
4	B03302	CASING INSULATION	
5	B03263	TOP PANEL ASSEMBLY	Items 6, 7 & 8 included
6	L01J001	CIRCUIT BREAKER 15 AMP	
7	L07F015	ROCKER SWITCH SPDT	
8	L01L006	PILOT LIGHT	
9	B03286	HEATING ELEMENT COVER	
10A	L99H008	HEATING ELEMENT 5kW	
10B	L99H009	HEATING ELEMENT 4 Kw	
11A	R02N015	THERMODISK L150-55F	10 to 23kW - 1/3 HP
11B	R02N019	THERMODISK L140-55F	23 to 27kW - 1.0 HP
12	B03288	MOUNTING PLATE FOR ELECTRICAL, TOP	
13	B03289	MOUNTING PLATE FOR ELECTRICAL, SIDE	
14	L05F004	TERMINAL STRIP, 4-POSITION	
15	L01H009	RELAY SPDT 24 VAC	
16	L01F010	TRANSFORMER 208-240-24 Volts	
17	L99F001	TERMINAL BLOCK	
18	L01H030	SEQUENCER	Please refer to Table 4, p. 20
19	R99G006	RECTIFIER CONTROL	
20	R99G007	RECTIFIER/TIMER CONTROL	
21A	B03618	WIRES KIT	10 to 23kW
21B	B03619	WIRES KIT	27 Kw
22	B03528	MOUNTING PLATE FOR ELECTRICAL, SIDE	
23	B03265	TERMINAL BLOCK SUPPORT ASSEMBLY	
24	B03280	DOOR, ELECTRICAL COMPARTMENT	
25	Z04F004	PAPER FILTER 20 x 20 x 1	
26	B03257-01	DOOR, BLOWER COMPARTMENT	Item 23 included
27	B02293-22	BLOWER DOOR INSULATION	
28	B03258	FLOOR	Item 25 included
29	B02293-21	FLOOR INSULATION	
30	B03299	FILTER RACK ACCESS	
31	B03298	FILTER RACK U-FRAME	
32	B30513	BLOWER RAIL	
33	B03264	DIVIDER	Item 28 included
34A	B03301-03	REPLACEMENT BLOWER ASSEMBLY (1/3 HP)	Items 31, 32, 34 & 38 included
34B	B03318-03	REPLACEMENT BLOWER ASSEMBLY (1 HP)	Items 31, 32, 34 & 38 included
35A	B01291-04	SEAL STRIP (1/3 HP)	
35B	B01291-01	SEAL STRIP 1 1/2" x 13 1/8" (1 HP)	
36A	B03720-02	BLOWER 100-8R (1/3 HP)	
36B	B03720-05	BLOWER 120-10T (1 HP)	
37A	L011001	CAPACITOR 5 MF (1/3 HP)	
37B	L011003	CAPACITOR 10 MF (1 HP)	
38	B01024	CAPACITOR SUPPORT	
39	B03508	BLOWER ELECTRICAL HARNESS	
40A	B01888	MOTOR SUPPORT BAND AND LEGS (1/3 HP)	
40B	B01889	MOTOR SUPPORT BAND AND LEGS (1 HP)	
41A	L06G013	MOTOR 1/3 HP 240 V	
41B	L06K005	MOTOR 1.0 HP 240 V	
42	L01H009	ACCESSORY RELAY 24 VAC	Optional

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