



Heated Air Curtains

INSTALLATION & OPERATING INSTRUCTIONS & PARTS MANUAL

MODELS: E3606-1325HFD, E3609-1325HFD
 E3806-1325HFD, E3809-1325HFD
 E4206-1325HFD, E4209-1325HFD
 E4806-1325HFD, E4809-1325HFD
 E6006-2325HFD, E6009-2325HFD

READ CAREFULLY BEFORE ATTEMPTING TO ASSEMBLE, INSTALL, OPERATE, OR MAINTAIN THE PRODUCT DESCRIBED. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!

RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.



Figure 1

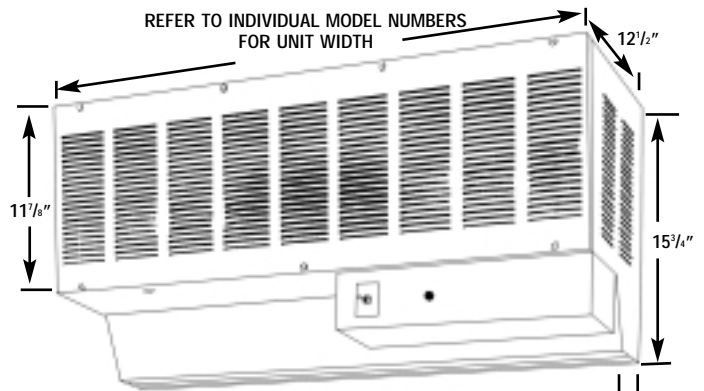


Figure 2 Dimensions

Note that all dimensions are the same on all environmental series units. Model number indicates width of unit. (Example: E4800 indicates a 48" wide unit.)

Description

Air curtains produce a wall of continuously flowing air that acts as a thermal barrier against outside air and provides protection against insects, dust, odor, fumes and other contaminant's. Maintains interior conditioned temperature by preventing heated or cooled air from escaping through open doorways.

Heated air curtains are engineered to treat incoming cold air at customers' entrance areas. Used over front door entrances, heated air curtains supplement existing heat to prevent infiltration of colder outside air. Heated units are not recommended for areas subject to high winds.

Specifications and Performance

MODEL NUMBER	HEATER VOLTAGE	MOTOR VOLTAGE	HEATER WATTS	HEATER BTU/HR	HEATER AMPS	CFM AT NOZZLE (HI/LOW)	MOTOR SIZE
E3606-1325HFD	208/3	208/3	6000	20,478	16.7	2025	1/4HP
E3609-1325HFD	208/3	208/3	9000	30,717	25.0	2025	1/4HP
E4206-1325HFD	208/3	208/3	6000	20,478	16.7	2360	1/4HP
E4209-1325HFD	208/3	208/3	9000	30,717	25.0	2360	1/4HP
E4806-1325HFD	208/3	208/3	6000	20,478	16.7	2700	1/4HP
E4809-1325HFD	208/3	208/3	9000	30,717	25.0	2700	1/4HP
E6006-2325HFD	208/3	208/3	6000	20,478	16.7	3375	1/4HP
E6009-2325HFD	208/3	208/3	9000	30,717	25.0	3375	1/4HP

Note: For multiple unit installations, recommended spacing between units should be a minimum of 3-inches and a maximum of 6-inches. Unit is allowed to extend beyond doorway width. Each unit must have individual power supply.

Unpacking

1. With packaged unit on the floor, carton arrows should point upward.
2. Carefully remove staples from top of carton and fold back sides.
3. Carefully remove cabinet from carton by lifting out unit using finger holes in styrofoam side inset and place on work surface.

CAUTION: Do not attempt to lift this air curtain by its louver or damage may result.

4. Unscrew six (6) knurled nuts and remove air intake grille. (See Figure 3.)

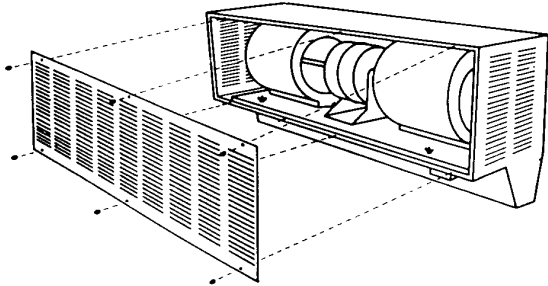


Figure 3 - Removing Air Intake Grille

WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions contact the manufacturer.
2. Before servicing or cleaning unit, switch power off at service panel and lock service panel to prevent power from being switched on accidentally.
3. Installation work and electrical wiring must be done by qualified persons in accordance with all applicable codes and standards, including fire rated construction.
4. When cutting or drilling into wall or ceiling, do not damage electrical wiring or other hidden utilities.
5. Make certain that the power source conforms to the electrical requirements of the unit. Disconnect power before installing or servicing. If the power disconnect is out of sight, lock it in the open position and tag it to prevent unexpected application of power. Failure to do so could result in fatal electrical shock.

WARNING: DO NOT DEPEND UPON A THERMOSTAT OR OTHER SWITCH AS THE SOLE MEANS OF DISCONNECTING POWER WHEN INSTALLING OR SERVICING THE UNIT. ALWAYS DISCONNECT POWER AT THE MAIN CIRCUIT BREAKER AS DESCRIBED ABOVE. FAILURE TO DO SO COULD RESULT IN FATAL ELECTRIC SHOCK.

5. Carefully disconnect motor electric cord and heater plug assembly and remove two wing nuts on blower base. (See Figure 4.)

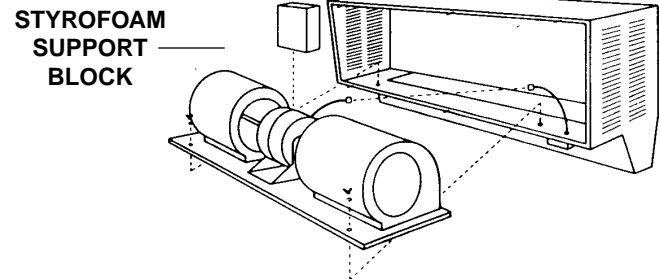


Figure 4 - Removing Motor/Blower Assembly

NOTE: Unit is shipped with styrofoam motor support block which must be discarded at this time.

6. To remove motor/blower assembly, lift from rear of motor housing to prevent damage and mis-alignment to shaft and blower wheels.

NOTE: After unpacking unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing or damaged parts.

General Safety Information

6. All wiring should be done by a qualified electrician, using copper wire only and in accordance with the National Electrical Code (NEC), all applicable code and ordinances, and all sections of this manual. Any variance voids the warranty and may create unsafe conditions.
7. Special attention must be given to any grounding information pertaining to this product. To prevent the risk of electrocution, the unit must be securely and adequately grounded. This should be accomplished by connecting a grounded conductor between the service panel and the grounding lug or green leadwire provided in the wiring compartment. To ensure a proper ground, the grounding means must be tested by a qualified electrician.
8. Do not insert fingers or foreign objects into the air curtain. Do not block or tamper with it in any manner while it is in operation. Do not touch it while in operation or just after it has been turned off, as some parts may be hot enough to cause injury.
9. This product must NOT be used in potentially dangerous locations such as flammable, explosive chemical laden, or wet atmospheres.
10. Do not attach ductwork to this product or attempt to use it as a make-up air heater. Such use voids the warranty and may create unsafe conditions.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT USE THIS AIR CURTAIN WITH ANY SOLID STATE SPEED CONTROL DEVICE.

Installation

1. Using template provided, determine mounting location.
2. Drill holes and attach mounting hardware (not included).

IMPORTANT: THE HARDWARE AND THE SUPPORTING STRUCTURE MUST BE CAPABLE OF SUPPORTING A MINIMUM 150 LB. LOAD.

NOTE: All installation should be done to meet local building code.

3. Mount cabinet on wall and securely tighten hardware.
4. Replace motor/blower assembly in cabinet. Secure two wing nuts on blower base. Reconnect motor electric cord plug assembly & heater plug.
5. Replace intake grille with louvers facing down and refasten knurled nuts.

FIELD POWER WIRING

WARNING: ALL AIR CURTAINS SHOULD BE INSTALLED BY QUALIFIED PERSONNEL.

1. Before wiring be sure that available power supply, voltage, phase and frequency corresponds to that specified on heater rating plate. In addition, make certain that service capacity is sufficient to handle load imposed by the equipment.
2. Install all wiring, protection and grounding in accordance with the National Electrical Code (NEC) and all local requirements.

WARNING: THIS FAN HAS AN INTERNAL SELF RESETTING THERMAL OVERLOAD PROTECTOR. ALWAYS DISCONNECT FROM POWER SUPPLY BEFORE SERVICING.

3. Run proper size copper power supply conductors from the field power supply disconnects, (supplied by others) with insulation rated minimum 75°C (167.0°F). One set of conductors from 208VAC, 50/60Hz supply source shall be routed through the 3/4 inch conduit knockout, using a suitable knockout connected to the contactor contact terminals marked L1, L2, L3.
4. The heater control box must have an unbroken electrical ground to minimize personal injury if an electrical fault should occur.

FIELD CONTROL WIRING

Electric heater is equipped with a step-down transformer for 24V control circuit. Thermostat model number RSV-130-R-54 must be used to energize heater with the fan motor. Connect thermostat wiring from thermostat to control leads in heated air curtain control box by means of conduit or equivalent. A 1/2 inch knockout is provided. Class 1 wiring is required.

5. Replace heater control box cover.
6. Unit is ready for operation.
7. Restore power.

NOTE: Air curtain has high/low selector switch. See Operation section for proper setting instructions.

8. Upon completion of all installation, inspect unit for excessive vibration during operation. If excessive vibration is noticeable, disconnect power supply. Inspect mounting installation and refer to Troubleshooting Chart for probable cause.

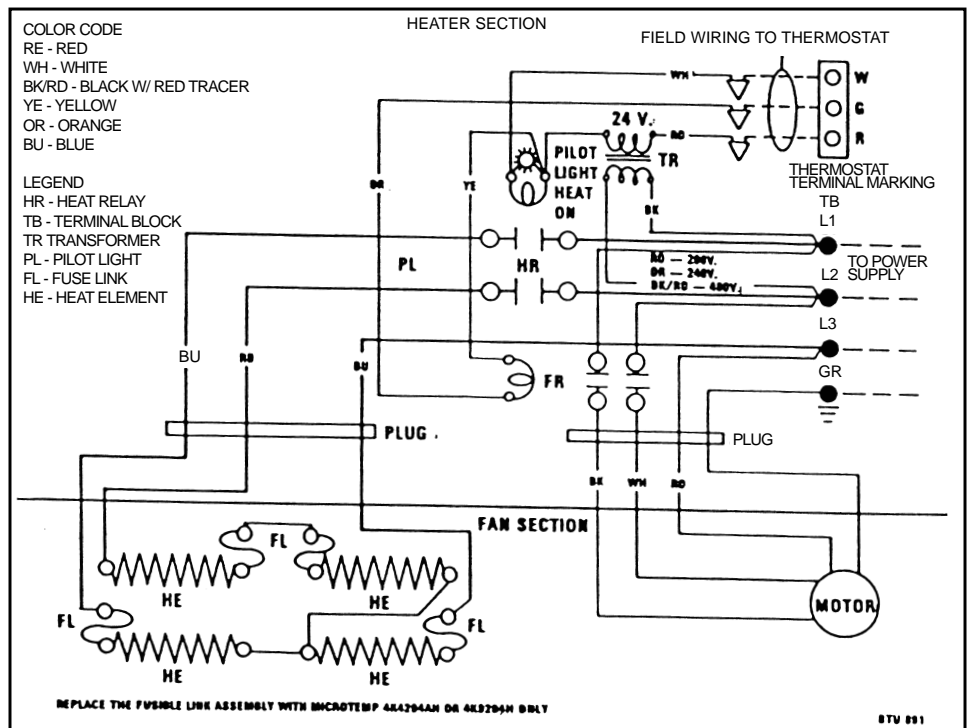


Figure 5 - Wiring Diagram

Operation

1. After power has been connected to unit, fans will start in either preset (high/low) speed selection.
2. Air velocity is controlled by selection of high or low speed indicator. This feature allows the setting of air velocity to individual desired performance and energy efficiency.
3. Air direction at outlet can be controlled by adjustable vanes at the nozzle which compensates for possible draft conditions.

NOTE: Air direction settings shown in Figures 6 & 7.

NOTE: Cold air will try to escape near floor level. Warm air will try to penetrate curtain near top of doorway. Air flow can be controlled by direction of nozzle louvers and by high/low settings.

4. For multiple unit applications (wide openings), mount units a minimum of 3" apart to allow for proper air intake and discharge.

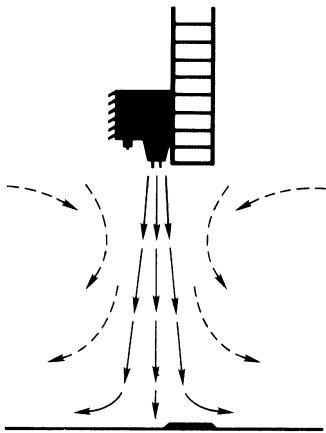


Figure 6 - Desired Air Flow Adjustment for Temperature and Humidity Control.

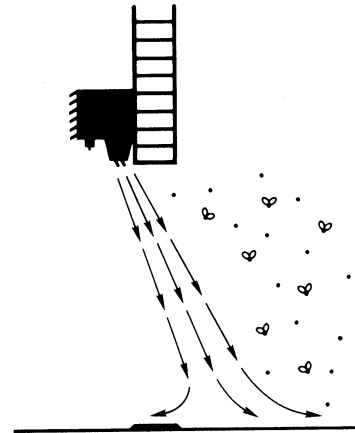


Figure 7 - Desired Air Flow Adjustment for Insect and Dust Control.

Maintenance

WARNING: ALL ELECTRIC POWER MUST BE DISCONNECTED WHEN INSTALLING OR SERVICING THIS EQUIPMENT. MORE THAN ONE DISCONNECT SWITCH MAY BE REQUIRED TO REMOVE POWER FROM THE UNIT.

LUBRICATION

Ball bearings are permanently lubricated and require no further lubrication.

CLEANING

1. The air door cabinet may be wiped off with a damp cloth. Do not allow motor to get wet. Do not use solvents or harsh detergents.

NOTE: Keep air intake louvers clear of dirt and dust accumulation which could affect performance.

2. Check blower wheels for accumulated dirt twice a year and clean. If disassembly is required, see GENERAL SERVICING section.

GENERAL SERVICING

WARNING: IF SERVICING IS REQUIRED, IT SHOULD BE DONE BY QUALIFIED PERSONS ONLY.

WARNING: ALWAYS DISCONNECT POWER SUPPLY BEFORE SERVICING.

1. To remove motor/blower heater assembly, repeat Steps 4, 5 and 6 in Unpacking section.
2. Place motor/blower assembly on workbench.
3. To replace blower wheel, remove the three slotted hex head screws on outer blower ring assembly (See Figure 8, Replacement Parts Illustration.) The wheel is held onto shaft by two hex head screws.

NOTE: To re-assemble repeat steps 4 & 5 in installation section page 3.

IMPORTANT: NOTE POSITION OR WHEELS TO PREVENT RUBBING WHEN REPLACED.

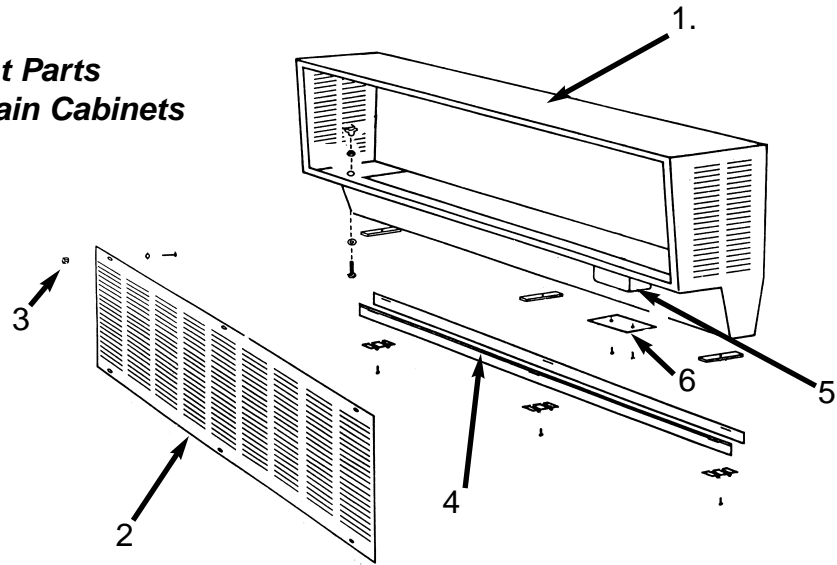
4. To remove motor:
 - a. Remove blower wheels. (See Step 3 above.)
 - b. Remove blower scroll (six hex head screws).
 - c. Unscrew and remove motor mounts.
5. Replace motor/blower assembly

Troubleshooting Chart

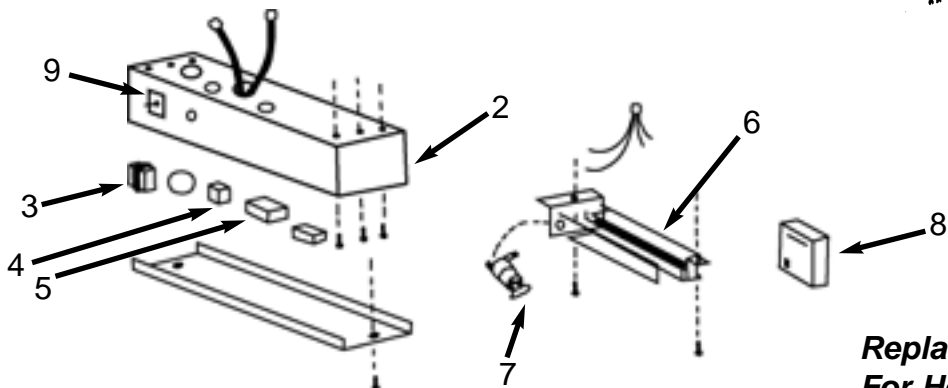
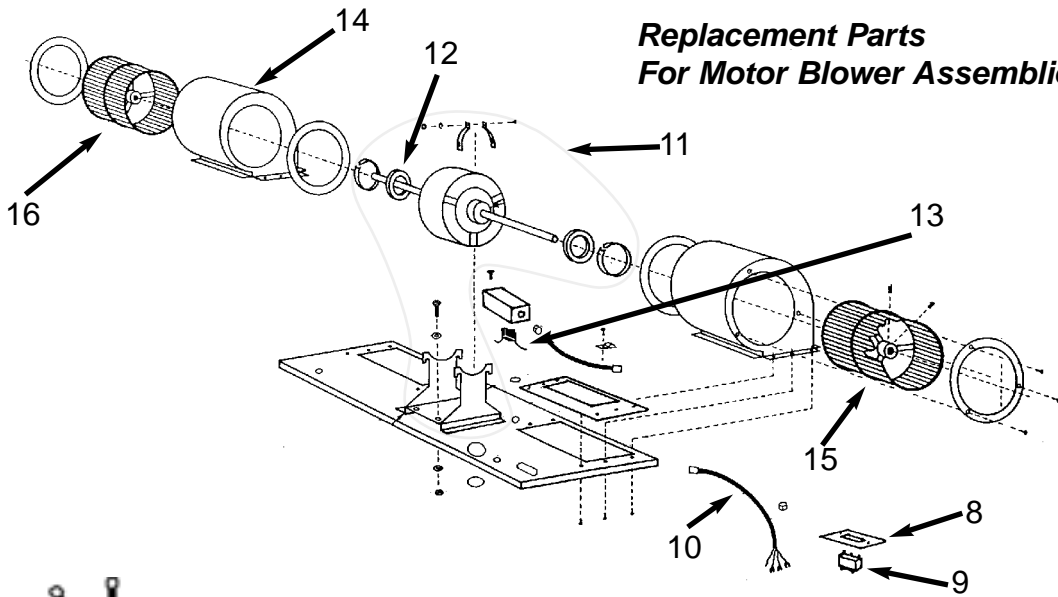
SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Fan inoperative	<ol style="list-style-type: none"> 1. Blown fuse or open circuit breaker. 2. Electricity turned off. 3. Loose cord connection. 4. Defective capacitor or motor. 	<ol style="list-style-type: none"> 1. Replace fuse or reset circuit breaker. 2. Contact local power company. 3. Re-check all connections. 4. Replace.
Excessive noise	<ol style="list-style-type: none"> 1. Wheel rubbing on housing. 2. Motor base or blower not securely anchored. 3. Defective motor bearings. 	<ol style="list-style-type: none"> 1. Center wheel. 2. Tighten mounting bolts. 3. Replace motor.
Insufficient air flow	<ol style="list-style-type: none"> 1. Improper voltage. 2. Outlet louvers closed. 3. Intakes obstructed. 4. Dirty blower wheels. 5. Motor rotating in reverse direction. 	<ol style="list-style-type: none"> 1. Reconnect to proper voltage. 2. Open. 3. Remove any obstruction. 4. Clean. 5. Reverse red and black power leads.
Fans cut out on thermal overload (self-resets)	<ol style="list-style-type: none"> 1. Low voltage. 2. Obstruction to blower wheel. 	<ol style="list-style-type: none"> 1. Verify correct wire size. 2. Remove obstruction.
No heat	<ol style="list-style-type: none"> 1. Fuse link open. 2. Heater element broken 3. Control Transformer 	<ol style="list-style-type: none"> 1. Replace with 4K4204H or 4K9204H. 2. Replace with proper Ga. and watts. 3. Replace with proper item.

* 120-220 volt models only.

**Replacement Parts
For Air Curtain Cabinets**



**Replacement Parts
For Motor Blower Assemblies (7)**



**Replacement Parts
For Heater Units**

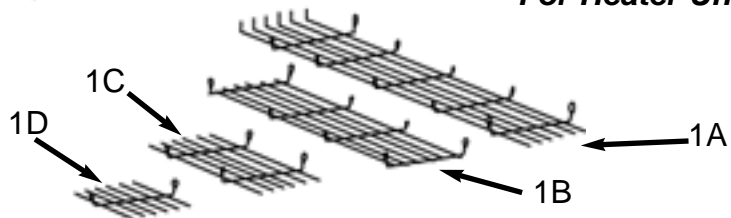


Figure 8 - Replacement Parts.

Replacement Parts List For Air Curtain Cabinets

Key No.	Description	Part Numbers for Cabinets (length)				
		36"	38"	42"	48"	60"
1	Cabinet box assembly	ACCA36A	ACCA38A	ACCA42A	ACCA48A	ACCA60A
2	Cabinet Intake Grille	API3685	API3885	API4285	API4885	API6085
3	Cabinet Intake grill knurled nut	AP0002	AP0002	AP0002	AP0002	AP0002
4	Cabinet louver kit	ACL36	ACL38	ACL42	ACL48	ACL60
5	Electric box	ACEB	ACEB	ACEB	ACEB	ACEB
6	Electric box cover	ACFPSPC	ACFPSPC	ACFPSPC	ACFPSPC	ACFPSPC

Replacement Parts For 120 Volt Single Phase Motor Blower Assemblies

Key No.	Description	Part Numbers
		1/4HP
7	Motor/Blower Assembly	
	120V 1-ph	ACMB125
	220V 1-ph	ACMB225
	208-230/460V 3-ph	ACMB325
8	Switch plate cover	ACFPSH
9	Rocker switch	C1220
10	Cord, female plug	ACW316
11	Motor Assembly	
	120V 1-ph	ACM1025
	220V 1-ph	ACM2025
	208-230/460V 3-ph	ACM3025
12	Resilient motor ring kit	AP058
13	Capacitor	ACCP1025
14	Blower housing	ACBH67
15	Blower wheel-right	ACBW67R
16	Blower wheel-left	ACBW67L

Replacement Parts List For Heater Units

REF. NO.	DESCRIPTION	REPLACEMENT PARTS FOR 208V 3-PH HEATERS		QTY.
		6 KW	9 KW	
1	Wire Guards			
A.	18"	APG0018	APG0018	-
B.	12"	APG0012	APG0012	-
C.	6"	APG0006	APG0006	-
D.	2"	APG0002	APG0002	-
2	Heater Control Box	APHC208-3	APHC208-3	1
3	Heater Transformer	AP0018	AP0018	1
4	Heater Fan Relay	AP0020	AP0020	1
5	Heater Contactor	AP0021	AP0021	1
6	Heater Element Set	APHE06208-3	APHE09208-3	1
7	Heater Coil Fuse Link	AP0016	AP0016	4
8	Wall Thermostat	AP364860-T	AP364860-T	1

LIMITED WARRANTY

All products manufactured by Marley Engineered Products are warranted against defects in workmanship and materials for eighteen months from date of installation. This warranty does not apply to damage from accident, misuse, or alteration; nor where the connected voltage is more than 5% above the nameplate voltage; nor to equipment improperly installed or wired or maintained in violation of the product's installation instructions. All claims for warranty work must be accompanied by proof of the date of installation.

The customer shall be responsible for all costs incurred in the removal or reinstallation of products, including labor costs, and shipping costs incurred to return products to Marley Engineered Products Service Center. Within the limitations of this warranty, inoperative units should be returned to the nearest Marley authorized service center or the Marley Engineered Products Service Center, and we will repair or replace, at our option, at no charge to you with return freight paid by Marley. It is agreed that such repair or replacement is the exclusive remedy available from Marley Engineered Products.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID EXPRESSED WARRANTIES ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS AGREEMENT. MARLEY ENGINEERED PRODUCTS SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES ARISING WITH RESPECT TO THE PRODUCT, WHETHER BASED UPON NEGLIGENCE, TORT, STRICT LIABILITY, OR CONTRACT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For the address of your nearest authorized service center, contact Marley Engineered Products in Bennettsville, SC, at 1-800-642-4328. Merchandise returned to the factory must be accompanied by a return authorization and service identification tag, both available from Marley Engineered Products. When requesting return authorization, include all catalog numbers shown on the products.

HOW TO ORDER REPAIR PARTS

In order to obtain any needed repair or replacement parts, warranty service or technical information, please contact Marley Engineered Products Service Center toll-free by calling 1-800-642-HEAT.



SPX Corporation
470 Beauty Spot Rd. East
Bennettsville, SC 29512 USA

ECR 35189

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Part No. 5200-2420-001