



# **Challenger 3000 Parts Manual Rev. 3/95**

Liebert Corporation may make improvements and/or changes in the products described in the document at any time without notice. Part numbers and technical information are subject to change without prior notice.

Liebert Corporation assumes no responsibility and disclaims all liability for incidental or consequential damages resulting from use of this information from errors or omissions.

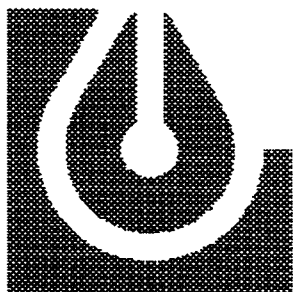
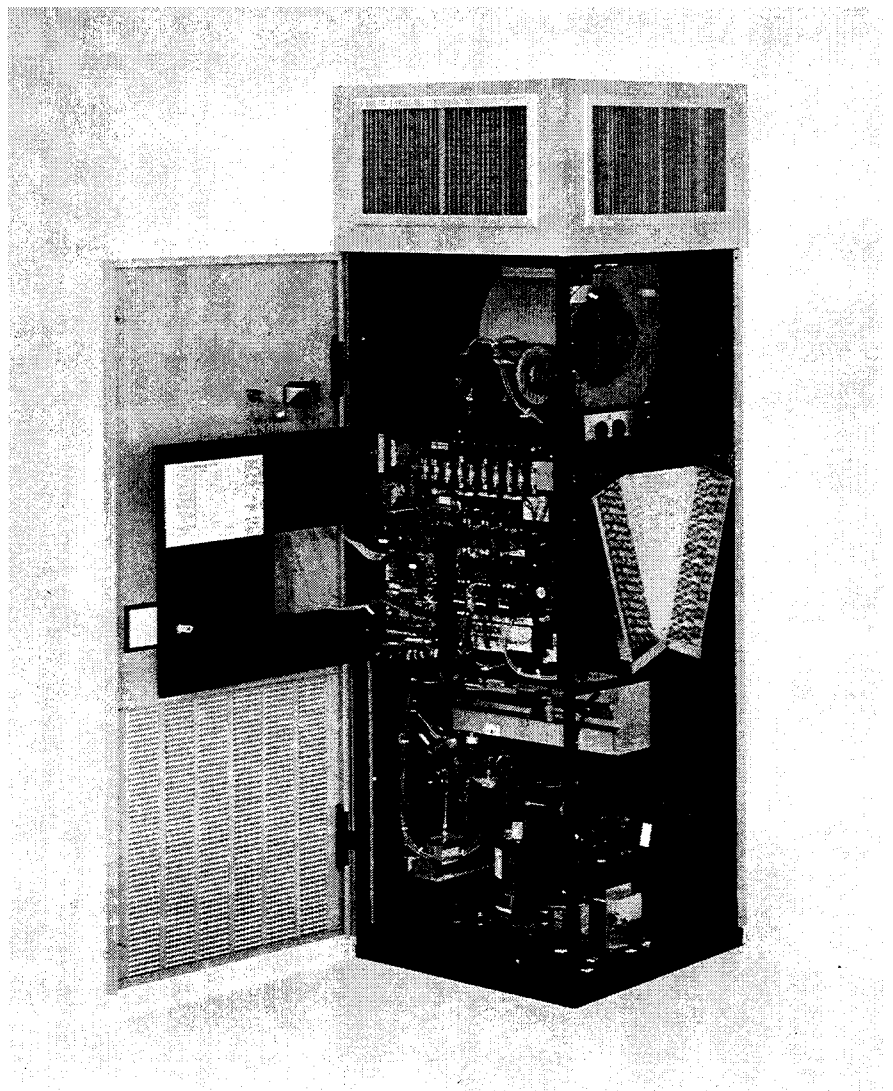
ENVIRONMENTAL CONTROL

# PARTS MANUAL



**Challenger 3000**

3 and 5 Tons



# Liebert

## MODEL NUMBER DESIGNATIONS

### BF042A — ASM

<b>B</b>	<b>F</b>	<b>042</b>	<b>A</b>	<b>A</b>	<b>SM</b>
Challenger 3000	E = Downflow with econ-o-coil	Nominal capacity in thousand BTUH	A = Air Cooled	A = 460/60/3-phase	SM = Standard Microprocessor
	F = Downflow		C = Chilled Water	B = 575/60/3-phase	AM = Advanced Microprocessor
	K = Upflow with econ-o-coil		E = Evaporator	C = 208/60/3-phase	AG = Advance Microprocessor w/graphics
	U = Upflow		G = Glycol Cooled	D = 230/60/3-phase	
			WG = Water Cooled/ Glycol Cooled	J = 200/50/3-phase	
				H = 230/50/3-phase	
				M = 380/415/50/3- phase	

**When ordering parts, have the unit  
Model Number and Serial Number  
available if at all possible.**

# Liebert

## Challenger 3000 Parts Manual

### Table of Contents

#### SECTION 1 - MAIN FAN (BLOWER)

Standard Blower .....	1-1
High Static Blower (Upflow Only).....	1-1
Standard Efficiency Motors - 60 Hz .....	1-1
Standard Efficiency Motors - 50 Hz .....	1-1
High Efficiency Motors - 60 Hz .....	1-2
Standard Blower Drive Package - 60 Hz .....	1-2
Standard Blower Drive Package - 50 Hz .....	1-2
High Static Blower Drive Package - 60 Hz .....	1-3
High Static Blower Drive Package - 50 Hz .....	1-3
Electric Panel Components .....	1-3

#### SECTION 2 - COMPRESSOR and REFRIGERANT VALVES

Compressor .....	2-1
Crankcase Heater.....	2-1
Refrigerant Valves, Etc. ....	2-1
Electric Panel Components .....	2-2

#### SECTION 3 - HUMIDIFIERS

##### Infrared Humidifier

Assembly .....	3-1
Lamb / Bulb.....	3-1
Fill Valve, Switches, and Pan .....	3-1
Electric Panel Components .....	3-1

##### Steam Generating Humidifier

Assembly .....	3-3
Bottle / Canister (with two "O"-Rings) .....	3-3
Valves and Controls.....	3-3
Printed Circuit Board and Resistor .....	3-3
Electric Panel Components .....	3-3

#### SECTION 4 - REHEATS

##### Electric Reheats

Assembly .....	4-1
Elements and Safety Stats .....	4-1
Standard Reheats Electric Panel Components .....	4-1
SCR Controlled Reheats Electric Panel Components .....	4-2

Hot Water Reheat .....	4-2
------------------------	-----

## SECTION 5 - FLUID VALVES

Water / Glycol Regulation Valve .....	5-1
Chilled Water / Econ-O-Coil Valve and Actuator .....	5-1
Accessories .....	5-1
Coaxial Condenser .....	5-1
Condensate Pump .....	5-1

## SECTION 6 - CONTROLS

### Disconnects

Standard Disconnects .....	6-1
Shunt Trip Disconnects .....	6-1

### Electronics

Standard Microprocessor (SM) .....	6-2
Advanced Microprocessor (AM) .....	6-2
Advanced Microprocessor with Graphics (AG) .....	6-2
Common Boards (All Models) .....	6-2
Safety Switches .....	6-2

## SECTION 7 - FILTERS and PANELS

Filters .....	7-1
---------------	-----

### Panels - Standard Gauge

Accent Panels .....	7-1
Side and Rear Panels .....	7-1

### Panels - Heavy Gauge

Accent Panels .....	7-1
Side and Rear Panels .....	7-1
Plenum Parts .....	7-4

Appendix A - Environmental Parts Order Form .....	A-1
---	-----

## FIGURES

Challenger 3000 Upflow Typical .....	iv
Challenger 3000 Downflow Typical .....	v
Standard Blower .....	1-4
High Static Blower .....	1-5
Compressor Upflow Models .....	2-2
Compressor Downflow Models .....	2-3
Infrared Humidifier .....	3-2
Steam Generating Humidifier .....	3-4
Electric Reheats .....	4-3
Coaxial Condensor and Valve .....	5-2
Standard Disconnect Handle .....	6-1
Electric Panel .....	6-3
Microprocessor .....	6-4
Sensors .....	6-5
Panels Upflow Models .....	7-2
Panels Downflow Models .....	7-3
Plenum .....	7-4

## **How To Use This Manual**

Refer to the inside front cover for a description of model numbers. As usual, ask your customers to provide the model number and serial number when ordering parts.

This manual includes part numbers for 50 Hz and 60 Hz models.

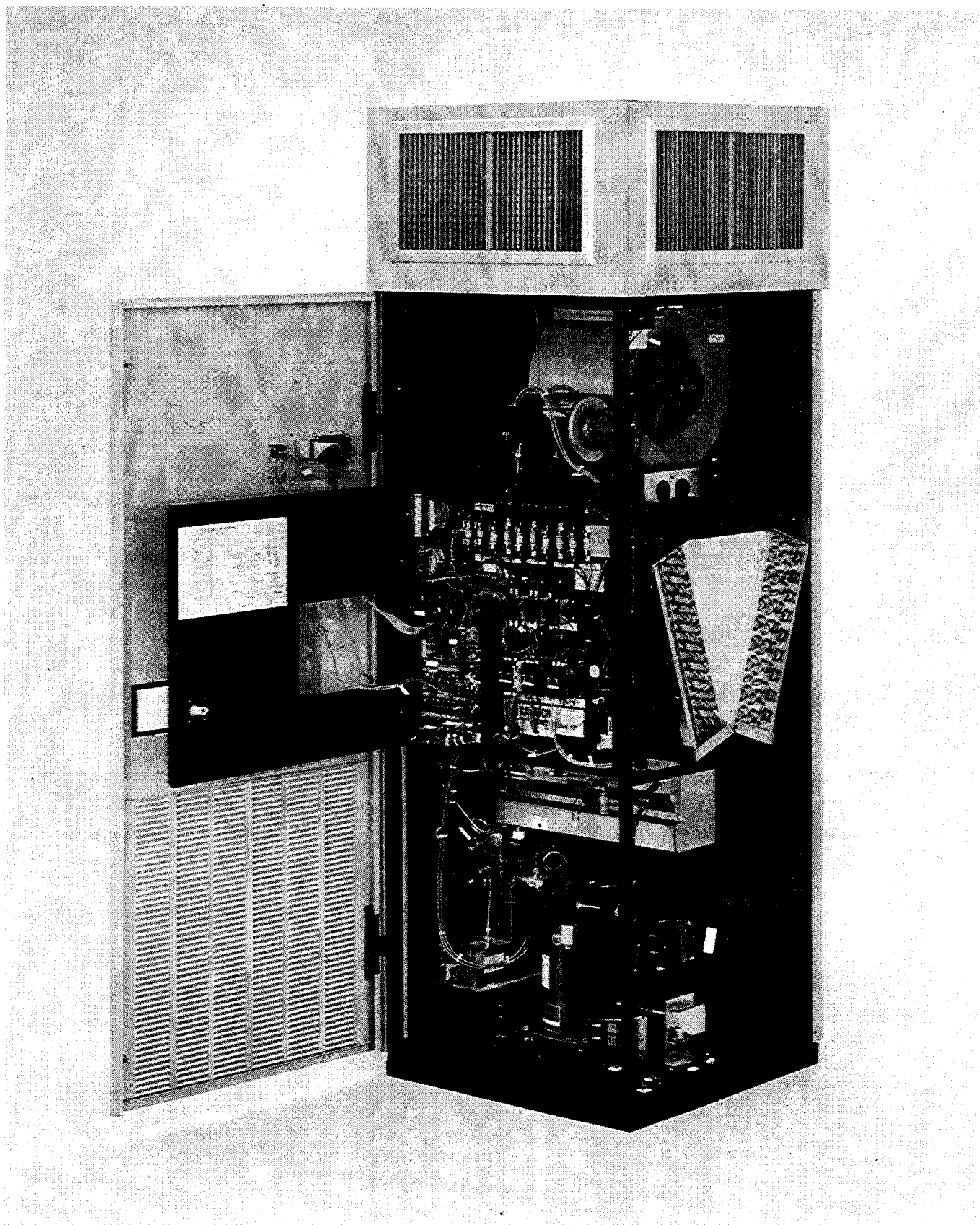
This manual is arranged so that each section identifies the parts needed to support a process on the Challenger 3000. For your convenience, the electrical components (fuses, etc.) for each process are grouped with the functional components (blowers, etc.).

The figures in each section are numbered such as 6A, 6B, etc., where the number is the section and the letter is the figure sequence within the section. A few items are identified on some figures. These item numbers are used in the Find Number (FN) column of the parts charts. When NS appears in the FN column it means Not Shown.

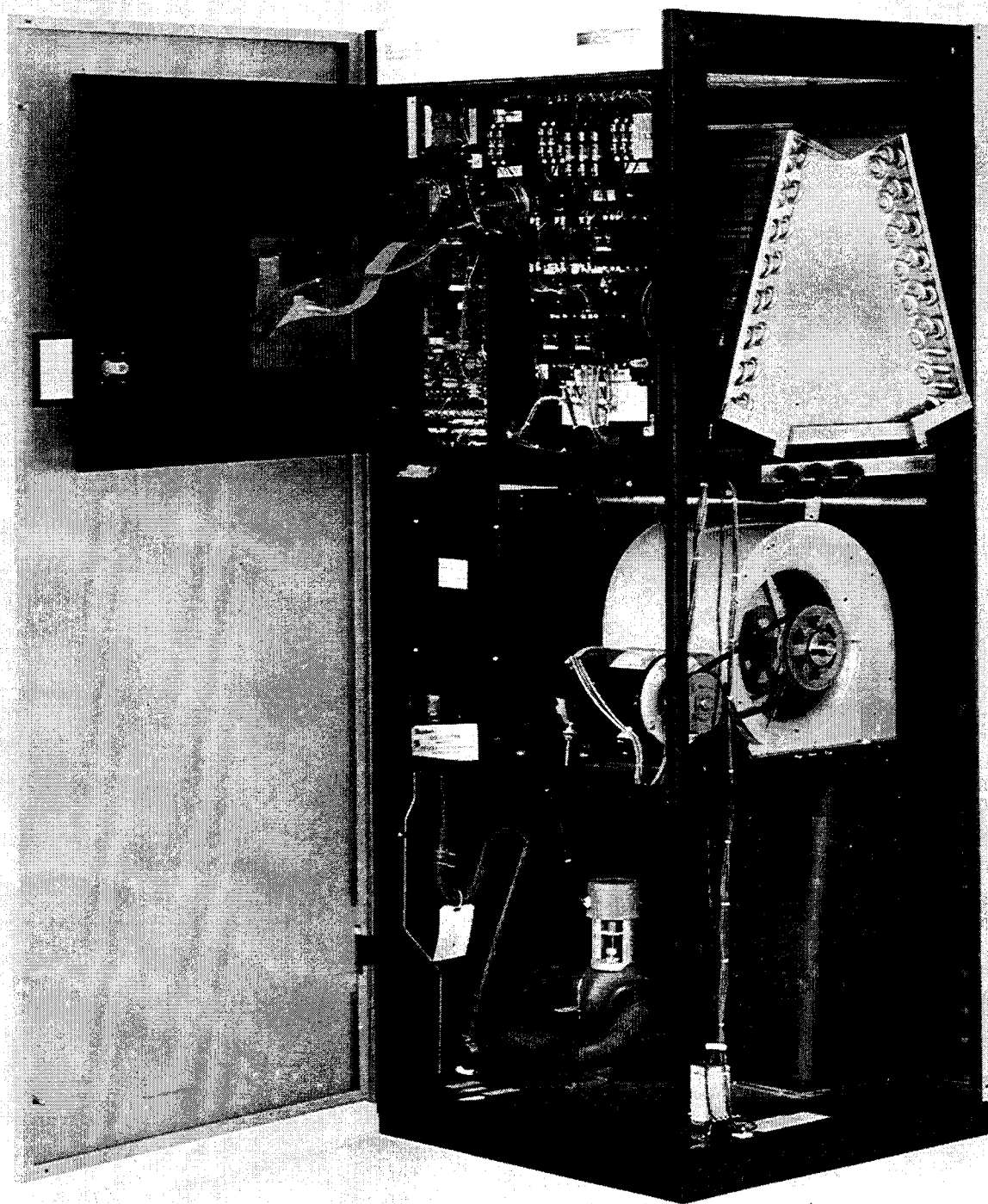
The quantity per assembly is shown in the Part Number column. A quantity of one (1) is assumed unless otherwise indicated.

The Recommended Spare Parts (RSP) column is left blank so that each office or parts coordinator can use it in their own preferred way. You can use a yes or no indication, or if yes, you can indicate quantities. In future editions, some recommendations will be included here based on parts records and comments from users of this manual.

The Environmental Parts Order Form is included at the back of this manual for your convenience.



Challenger 3000 Upflow Glycool Model  
with Infrared Humidifier, Electric Reheats, Condensate Pump, and Firestat



Challenger 3000 Downflow Chilled Water Model  
with Steam Generating Humidifier and Electric Reheats

## Section 1 MAIN FAN (BLOWER)

### Standard Blower

FN	Models	Description	Part No.	RSP
1A-1	All	Wheel and Housing	1A24383P1	
1A-2		Bearing	B-0040 (2)	
1A-3		Shaft	136968P1	
1A-4		Pulley	B13-0150	
1A-5		Pulley Bushing	B-0080	

### High Static Blower (Upflow Only)

FN	Models	Description	Part No.	RSP
1B-1	All	Wheel and Housing	136589P1	
1B-2		Bearing	1A16944P1 (2)	
1B-3		Shaft	136786P1	
1B-4		Pulley	136988P1	
1B-5		Pulley Bushing	B-0080	

### Standard Efficiency Motors - 60 Hz

FN	Standard	Hi Static	HP	Volts	Part No.	RSP
1A-6 or 1B-6	3 Ton	Not Used	0.75	208	B13-0260	
				230 to 460	B13-0270	
		3 Ton	1.0	208	B13-0290	
				230 to 460	B13-0300	
	5 Ton		1.5	208	B13-0320	
				230 to 460	B13-0330	
		575		B13-0340		
		5 Ton	2.0	208 to 460	B-022A	
	575			B-023A		
	Not Used		3.0	208 to 460	B-025A	
				575	B-026A	

### Standard Efficiency Motors - 50 Hz

FN	Standard	Hi Static	HP	Volts	Part No.	RSP
1A-6 or 1B-6	3 Ton	3 Ton	1.0	200	B-0900	
				230	B-1080	
				380 to 415	B-0900	
	1.5		200	B-0910		
			230	B-1090		
			380 to 415	B-0910		
	5 Ton	5 Ton	2.0	200	B-0920	
				230	B-1100	
				380 to 415	B-0920	

### High Efficiency Motors - 60 Hz

FN	Standard	Hi Static	HP	Volts	Part No.	RSP	
1A-6 or 1B-6	3 Ton	Not Used	0.75	208 to 460	1A21868P1		
		3 Ton	1.0	208	B-1720		
				230 to 460	B-1730		
	5 Ton		1.5	208	B-1740		
				230 to 460	B-1750		
				575	136746P3		
	5 Ton		2.0	208	B-1760		
				230 to 460	B-1770		
				575	136746P4		

### Standard Blower Drive Package - 60 Hz

FN	HP	Models	Description	Part No.	RSP
1A-7	0.75	All	Belt	B13-0190	
1A-8			Sheave	B13-0080	
1A-7	1.0		Belt	B13-0200	
1A-8			Sheave	B13-0110	
1A-7	1.5		Belt	B13-0210	
1A-8			Sheave	B13-0120	
1A-7	2.0		Belt	128179P1	
1A-8			Sheave	B-005A	

### Standard Blower Drive Package - 50 Hz

FN	HP	Models	Description	Part No.	RSP
1A-7	1.0	All	Belt	B13-0200	
1A-7	1.5 to 2.0		Belt	B13-0210	
1A-8	1.0		Sheave	B13-0120	
	1.5		Sheave	B-005A	
	2.0		Sheave	B-0660	

### High Static Blower Drive Package - 60 Hz

FN	HP	Models	Description	Part No.	RSP
1B-7	1.0	Upflow	Belt	B-1690	
1B-8			Sheave	B13-0110	
1B-7	1.5		Belt	B-1690	
1B-8			Sheave	B13-0120	
1B-7	2.0		Belt	B-1690	
1B-8			Sheave	B13-0120	
1B-7	3.0		Belt	136957P1	
1B-8			Sheave	136944P1	

### High Static Blower Drive Package - 50 Hz

FN	HP	Models	Description	Part No.	RSP
1B-7	1.0	Upflow	Belt	B-1690	
1B-8			Sheave	B13-0120	
1B-7	1.5		Belt	B-1690	
1B-8			Sheave	B-005A	
1B-7	2.0		Belt	B-1690	
1B-8			Sheave	B-0660	

### Electric Panel Components

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	50 and 60 Hz with Fuses	200 to 575	Contactor, 3 Pole	124501P1	
		200 to 230	Fuse, 15 Amp	E-2070 (3)	
		380 to 575	Fuse, 15 Amp	136821P12 (3)	
	50 Hz with Circuit Breakers	200 to 415	Contactor, 3 Pole	136221P1	
		200 to 415	Circuit Breaker, 16 Amp	136241P10	

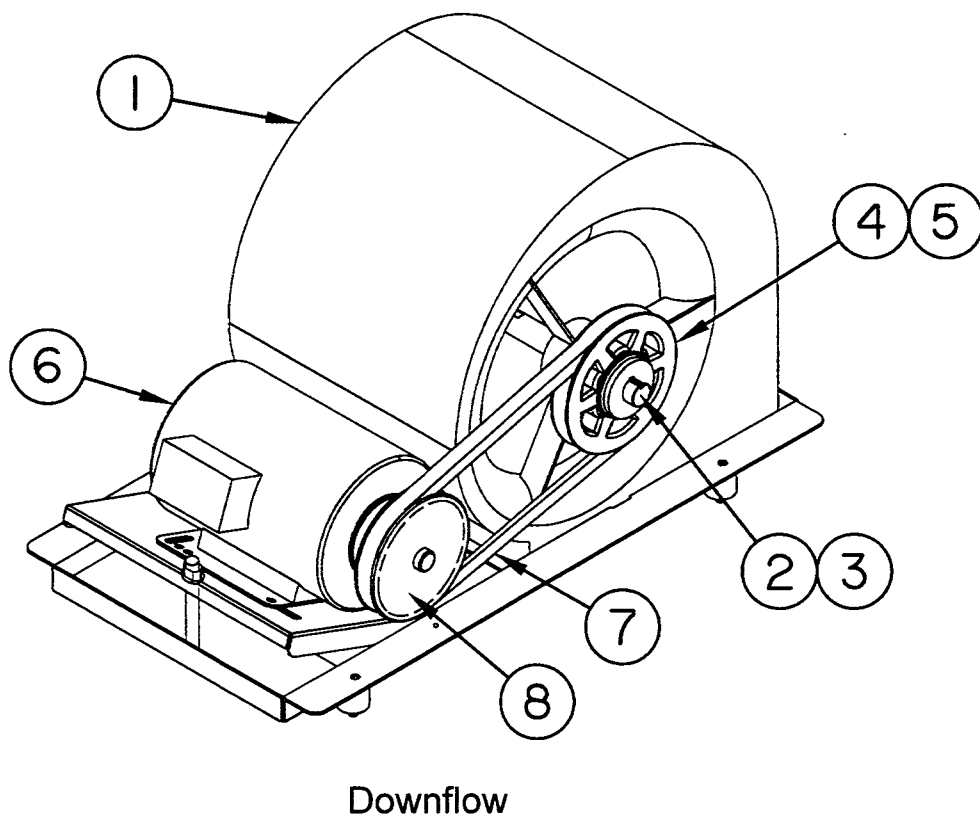
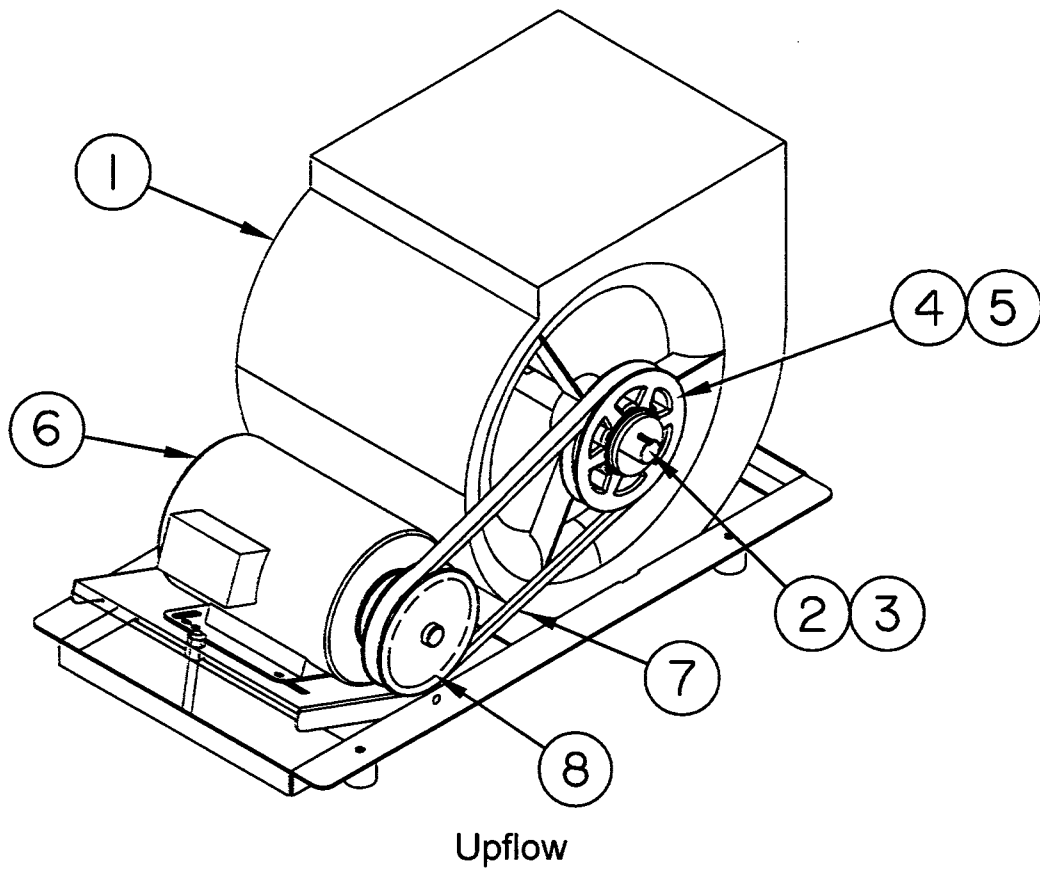
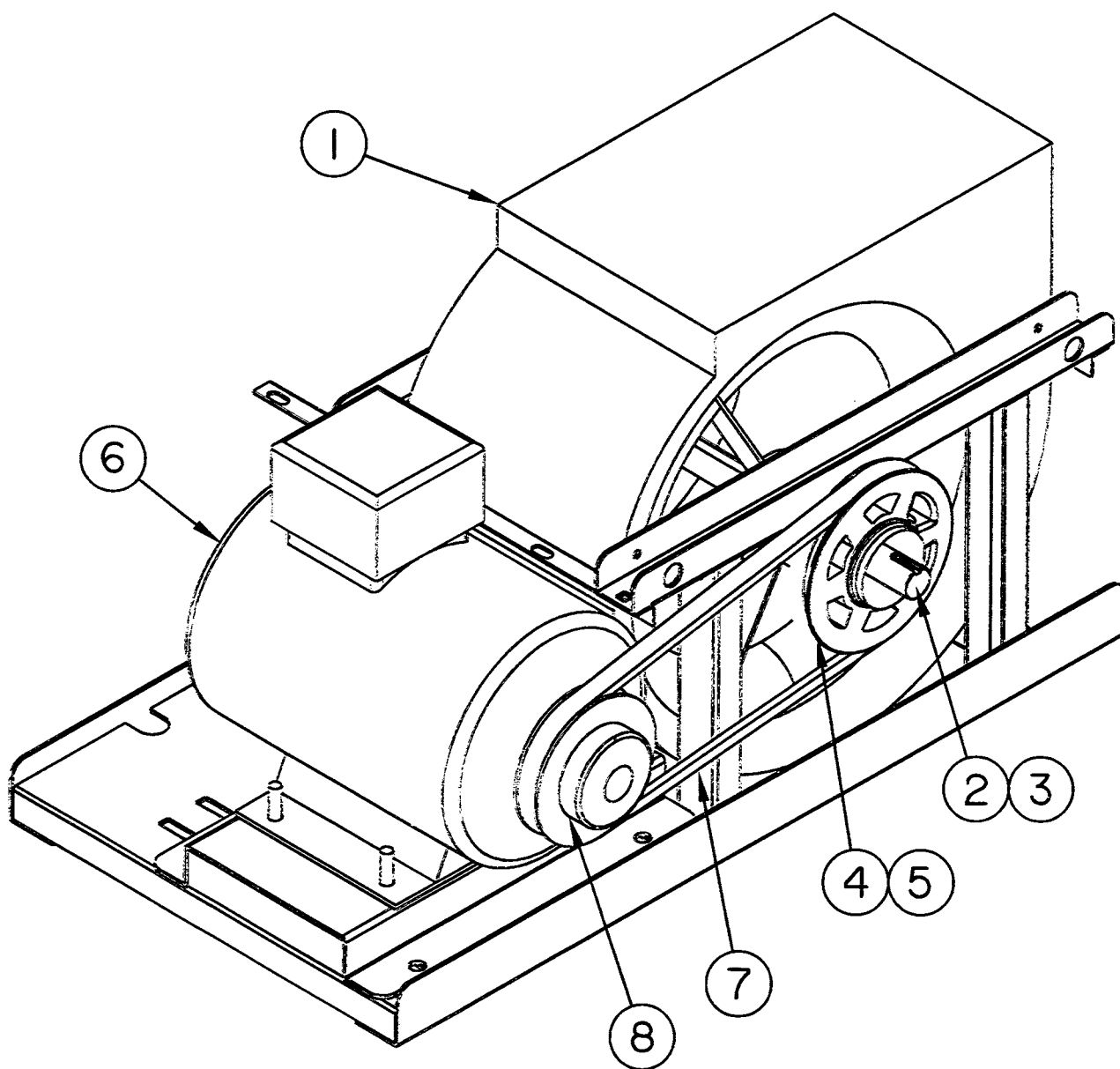


Figure 1A. Standard Blower



Upflow Only

Figure 1B. High Static Blower

## Section 2 COMPRESSOR and REFRIGERANT VALVES

### Compressor

FN	Frequency	Models	Volts	Part No.	RSP
2A-1	60 Hz	3 Ton	208/230	136964P1	
			460	136964P2	
		5 Ton	208/230	136963P1	
			460	136963P2	
			575	136963P3	
	50 Hz	3 Ton	200/230	136970P1	
			380/415	136970P2	
		5 Ton	200	136969P1	
			380/415	136969P2	

### Crankcase Heater

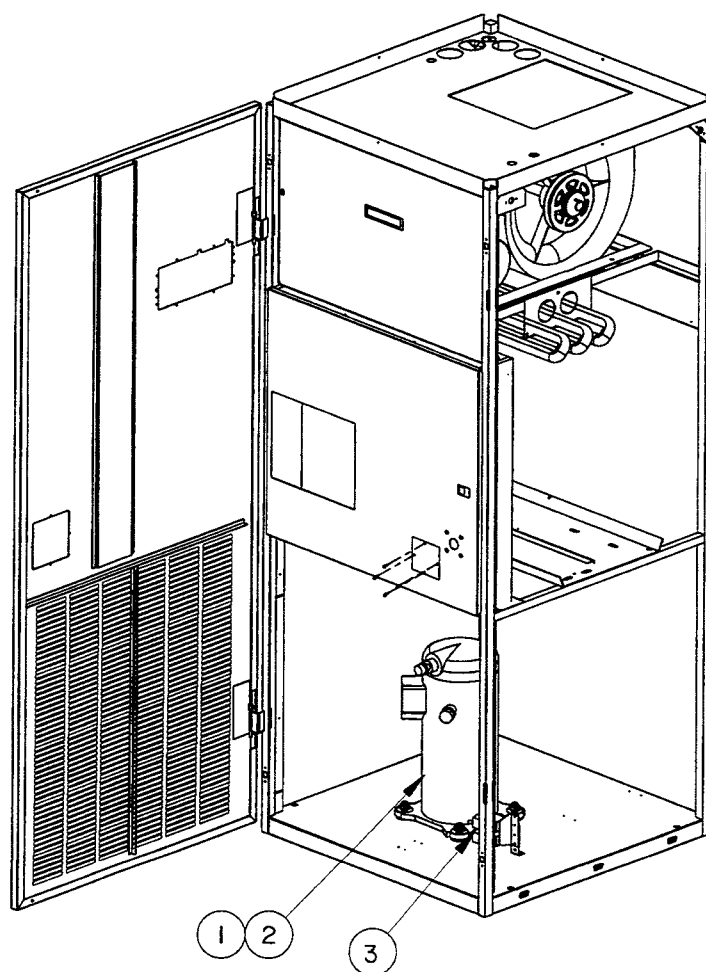
FN	Frequency	Models	Volts	Part No.	RSP
2A-2	50 and 60 Hz	3 Ton	200 to 230	132102P1	
			380 to 460	132102P2	
		5 Ton	200 to 230	134142P1	
			380/ to 460	134142P2	
			575	134142P3	

### Refrigerant Valves, Etc.

FN	Models	Description	Part No.	RSP
2A-3	Fan Speed Control	Pressures Switches (H/L Assy.)	1D14684P1	
	Lee-Temp and Water / Glycol	Pressures Switches (H/L Assy.)	1D16204P1	
NS	3 and 5 Ton	HGBP Valve	P-0180	
		HGBP Solenoid	P-0080	
		Roto-Lock, Suction	C-0480	
		Roto-Lock, Discharge	1C16925P1	
	3 Ton	Thermal Expansion Valve	128157P1	
		Sightglass	P-3870	
		Filter Drier	136782P1	
	Air Cooled	Check Valve	W-0091	
		Solenoid, Liquid Line	P-0070	
	5 Ton	Thermal Expansion Valve	128158P1	
		Sightglass	P-0050	
		Filter Drier	128177P1	
	Air Cooled	Check Valve	W-0090	
		Solenoid, Liquid Line	P-0080	

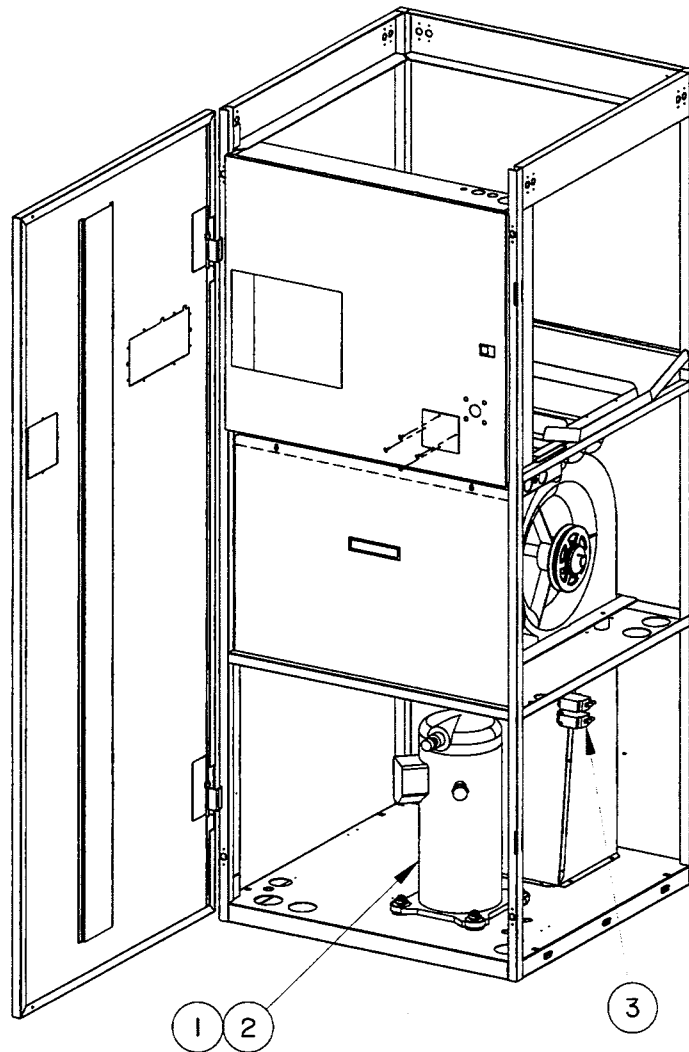
## Electric Panel Components

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	All WG, G	All	Relay, R2	E03-0170	
	All G		Relay, R5	E03-0170	
	50 and 60 Hz with Fuses	All	Contactor	123273P1	
	3 Ton	200 to 230	Fuse, 25 Amp	E-2080 (3)	
	5 Ton	200 to 230	Fuse, 30 Amp	E-2090 (3)	
	3 and 5 Ton	380 to 575	Fuse, 17.5 Amp	136821P13 (3)	
	50 Hz with Circuit Breakers	All	Contactor	136233P1	
	3 Ton	200 to 230	Circuit Breaker, 25 Amp	136241P13	
	5 Ton	200 to 230	Circuit Breaker, 30 Amp	136241P12	
	3 and 5 Ton	380 to 575	Circuit Breaker, 17.5 Amp	136241P10	



Upflow Model

Figure 2A. Compressor



Downflow Model

Figure 2A. Compressor (continued)

## Section 3 HUMIDIFIERS

### INFRARED HUMIDIFIER

#### Assembly

FN	Models	Volts	Part No.	RSP
3A-1	3 and 5 Ton All Models 50 and 60 Hz	200/208	136771G1	
		230	136771G2	
		380/415	136771G5	
		460	136771G3	
		575	136771G4	

#### Lamp / Bulb

FN	Models	Unit Volts	Bulb Volts	Part No.	RSP
3A-2	3 and 5 Ton All Models 50 and 60 Hz	200/208	208	H-002A (3)	
		230	240	H-0020 (3)	
		380/415	240	H-0020 (3)	
		460	277	H13-0010 (3)	
		575	208	H-002A (3)	

#### Fill Valve, Switches, and Pan

FN	Models	Volts	Description	Part No.	RSP
3A-3	All	All	Fill Valve	P-5590	
3A-4			Safety Switch (Top)	R13-0090	
3A-5			Safety Under Pan	H-0450	
3A-6			Pan	136618G1	
NS	AM, AG Controls	All	Float Switch	1A18660P1	

#### Electric Panel Components

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	50 and 60 Hz with Fuses	200 to 460	Contactor, 3 pole	E-0110	
		575	Contactor, 3 pole	E-011B	
		200/208	Fuse, 20 Amp	E-1230 (3)	
		230	Fuse, 15 Amp	E-2070 (3)	
		380 to 460	Fuse, 15 Amp	136821P12 (3)	
		575	Fuse, 15 Amp	136821P12 (2)	
	50 Hz with Circuit Breakers	200 to 415	Contactor, 3 pole	136222P1	
		200	Circuit Breaker, 20 Amp	136241P11	
		230 to 415	Circuit Breaker, 16 Amp	136241P10	

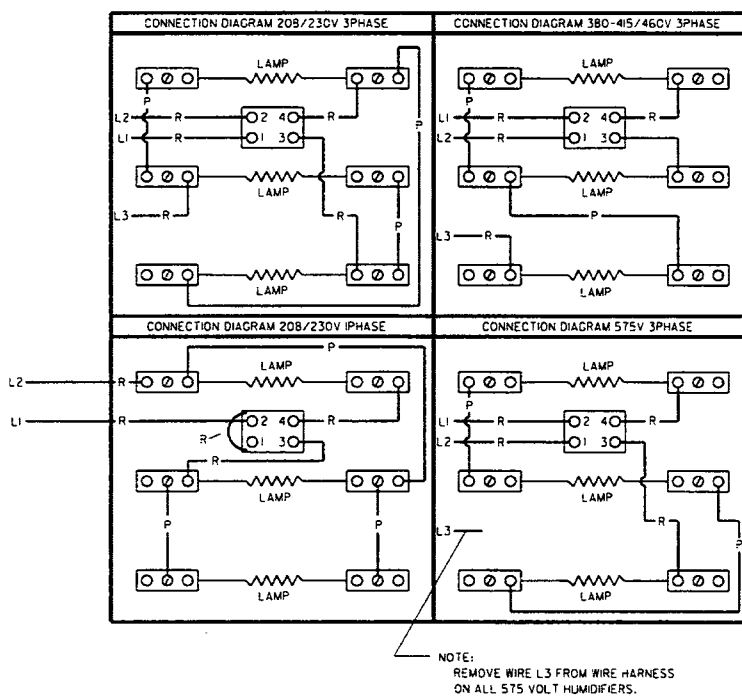
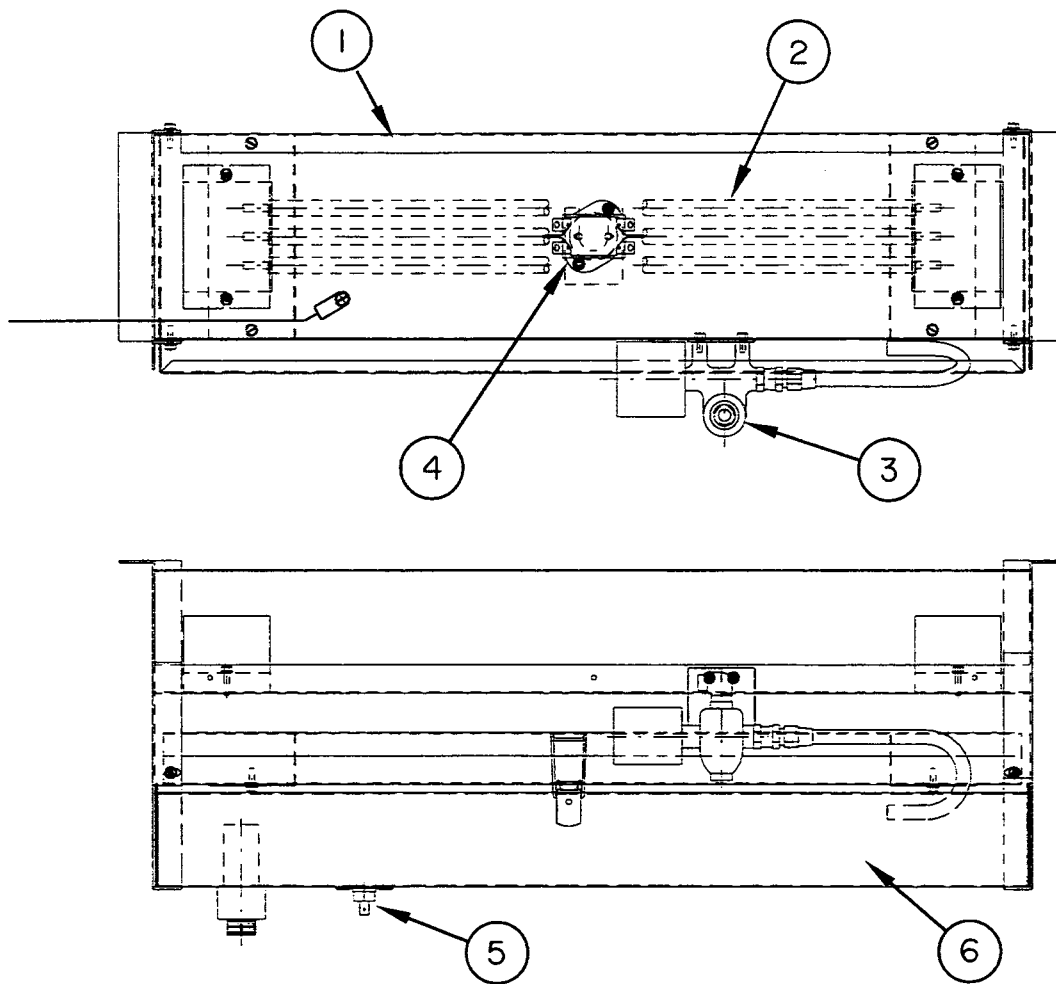


Figure 3A. Infrared Humidifier

# STEAM GENERATING HUMIDIFIER

## Assembly

FN	Models	Volts	Part No.	RSP
3B-1	All	200 to 460	136555G1	

## Bottle / Canister (with two "O"- Rings)

FN	Models	Volts	Part No.	RSP
3B-2	All	200 to 460	136798P1	

## Valves and Controls

FN	Models	Volts	Description	Part No.	RSP
3B-3	All	All	Drain Valve	127992P1	
3B-4			Fill Valve (with strainer)	136812P1	
3B-5			Strainer Screen	136813P1	
3B-6			Canister Fill Interface	136956P1	
3B-7			Relay	E03-0170	

## Printed Circuit Board and Resistor

FN	Models	Volts	Description	Part No.	RSP
3B-8	All	All	Circuit Board	136971P1	
3B-9	All	200	Resistor, 150 K $\Omega$	31-0031500	
		208	Resistor, 158 K $\Omega$	31-0031580	
		230	Resistor, 174 K $\Omega$	31-0031740	
		380/415	Resistor, 294 K $\Omega$	133158P1	
		460	Resistor, 348 K $\Omega$	128583P2	

## Electric Panel Components

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	50 and 60 Hz with Fuses	All	Contactor	124501P1	
		200/208	Fuse, 17.5 Amp	E-2740 (3)	
		230	Fuse, 15 Amp	E-2070 (3)	
		380 to 575	Fuse, 15 Amp	136821P12 (3)	
	50 Hz with Circuit Breakers	All	Contactor	136221P1	
		All	Circuit Breaker, 16 Amp	136241P10	

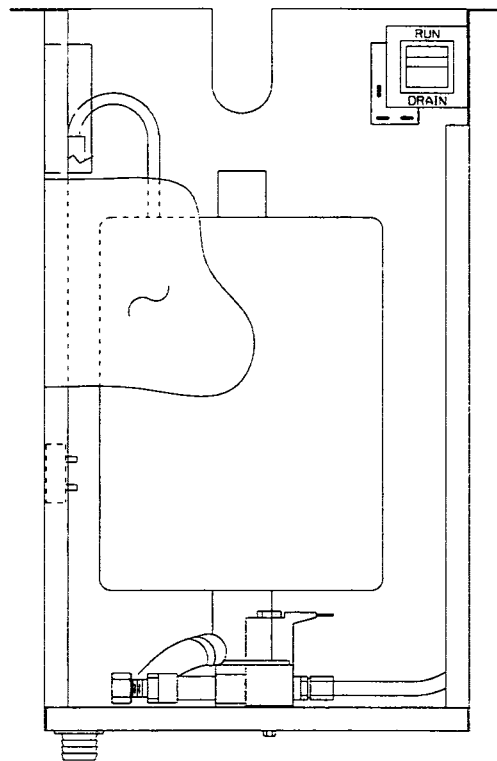
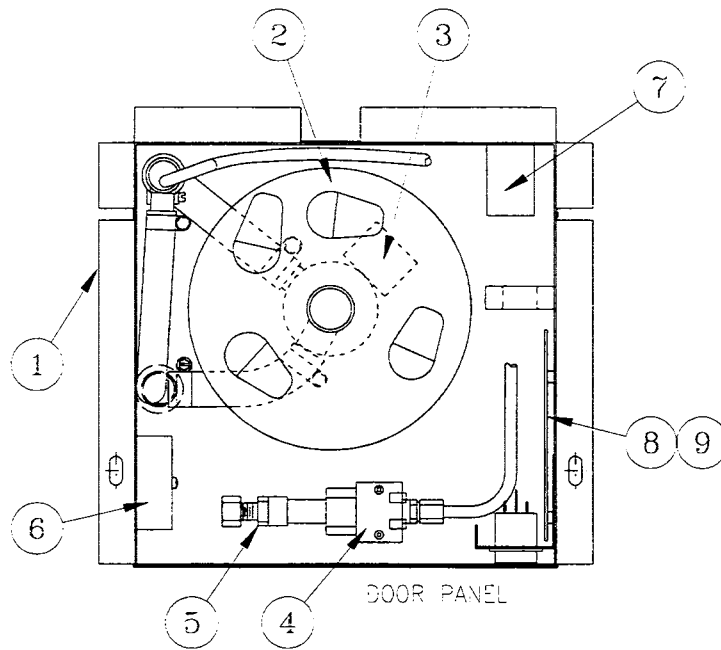


Figure 3B. Steam Generating Humidifier



## Section 4 REHEATS

### ELECTRIC REHEATS

#### Assembly

FN	Models	Volts	Part No.	RSP
4A-1	3 Ton 50 and 60 Hz	200/208	136744G1	
		230	136744G2	
		380	136744G3	
		460	136744G4	
	5 Ton 50 and 60 Hz	200/208	136744G6	
		230	136744G7	
		380	136744G8	
		460	136744G9	
		575	136744G10	

#### Elements and Safety Stats

FN	Models	Volts	
4A-2	3 Ton 50 and 60 Hz	200/208	136742P1
		230 to 415	136742P2
		460	136742P4
	5 Ton 50 and 60 Hz	200/208	136742P6
		230 to 415	136742P7
		460	136742P9
		575	136742P10
4A-3	All	Safety Stat	136965P1



Element changes.

136742P1 to 148366P1  
 136742P2 to 148366P2  
 136742P4 to 148366P4  
 136742P6 to 148366P6  
 136742P7 to 148366P7  
 136742P9 to 148366P9  
 136742P10 to 148366P10

#### Standard Reheats Electric Panel Components

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	50 and 60 Hz with Fuses	All	Contactor, 2 pole	E-011A (3)	
		200 to 230	Contactor, 3 pole	E-0110	
		3 Ton	Fuse, 35 Amp	E-1200 (3)	
			Fuse, 20 Amp	136821P14 (3)	
			Fuse, 15 Amp	136821P12 (3)	
		5 Ton	Fuse, 50 Amp	E-3060 (3)	
			Fuse, 30 Amp	136821P16 (3)	
			Fuse, 25 Amp	136821P15 (3)	
			Fuse, 20 Amp	136821P14 (3)	
	50 Hz with Circuit Breakers	200 to 415	Contactor, 2 pole	136222P1 (3)	
		200 to 230	Contactor, 3 pole	136223P1	
		3 Ton	Circuit Breaker, 32 Amp	136241P13	
			Circuit Breaker, 20 Amp	136241P11	
		5 Ton	Circuit Breaker, 50 Amp	136241P15	
			Circuit Breaker, 32 Amp	136241P13	

## SCR Controlled Reheats Electric Panel Components

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	All	All	SCR Control	139170G1	
	50 and 60 Hz with Fuses	All	Contactor, 3 pole	E-0110	
		3 Ton	200 to 230	Fuse, 40 Amp	136300P1(3)
			380 to 415	Fuse, 20 Amp	136821P14 (3)
			460	Fuse, 15 Amp	136821P12 (3)
		5 Ton	200 to 230	Fuse, 60 Amp	136302P1 (3)
			380 to 415	Fuse, 30 Amp	136821P16 (3)
			460	Fuse, 25 Amp	136821P15 (3)
	50 Hz with Circuit Breakers	200 to 230	Contactor, 3 pole	136223P1	
			380 To 415	Contactor, 3 pole	136222P1
		3 Ton	200 to 230	Circuit Breaker, 32 Amp	136241P13
			380 to 415	Circuit Breaker, 20 Amp	136241P11
		5 Ton	200 to 230	Circuit Breaker, 50 Amp	136241P15
			380 to 415	Circuit Breaker, 32 Amp	136241P13

## HOT WATER REHEAT

FN	Models	Volts	Description	Part No.	RSP
NS	All	All	Solenoid Valve	1A23985P1	

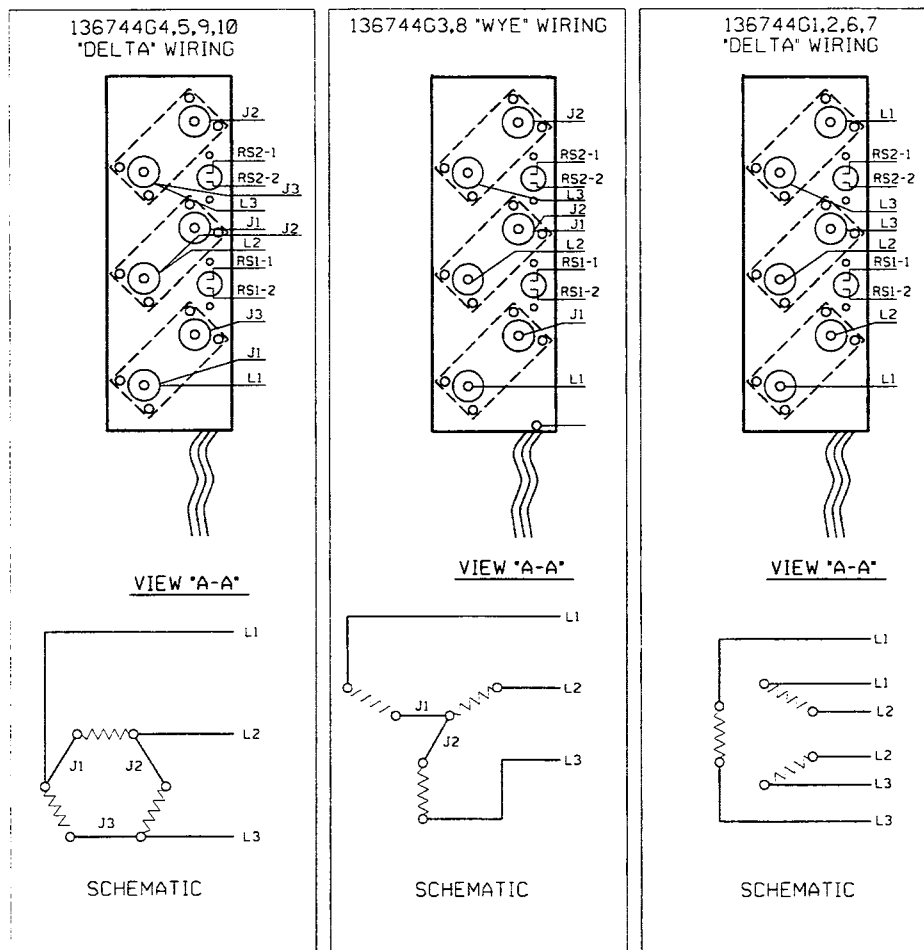
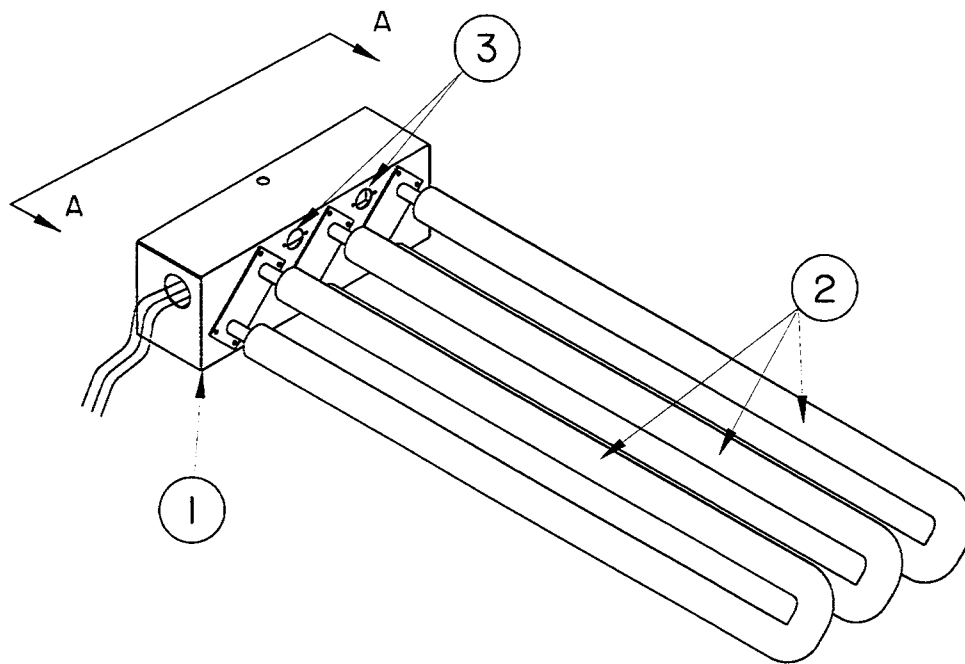


Figure 4A. Electric Reheats

## Section 5 FLUID VALVES

### Water / Glycol Regulation Valve

FN	Models	Pressure	Design	Part No.	RSP
5A-1	3 Ton	Standard	2-Way	127170P3	
			3-Way	131854P2	
		High	2-Way	P-026A	
			3-Way	P-4760	
	5 Ton	Standard	2-Way	131852P1	
			3-Way	131853P1	
		High	2-Way	P-311A	
			3-Way	P-311B	

### Chilled Water / Econ-O-Coil Valve and Actuator

FN	Models	Pressure	Design	Part No.	RSP
NS	3 and 5 Ton	Standard	2-Way	123622P1	
			3-Way	123623P1	
		High	2-Way	1C23805P3	
			3-Way	1C23806P3	
NS	All	Actuator		128121G1	

### Accessories

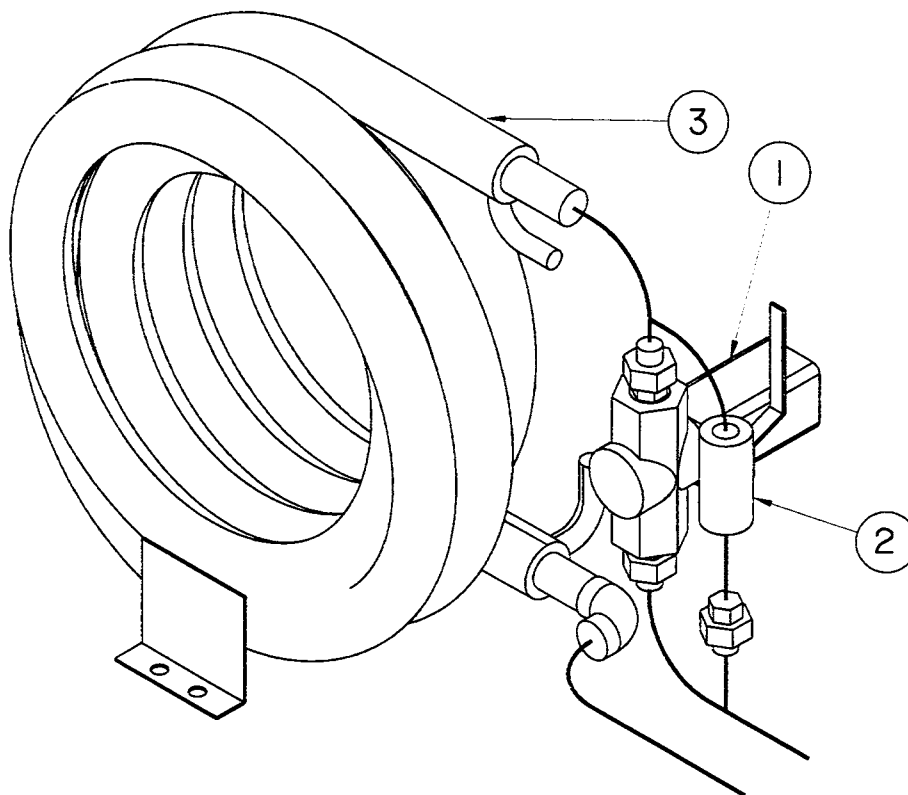
FN	Models	Description	Part No.	RSP
5A-2	2-Way	Bypass Valve (Standard)	1C14431P4	
NS	3-Way	Flow Switch (Optional)	P-4120	

### Coaxial Condenser

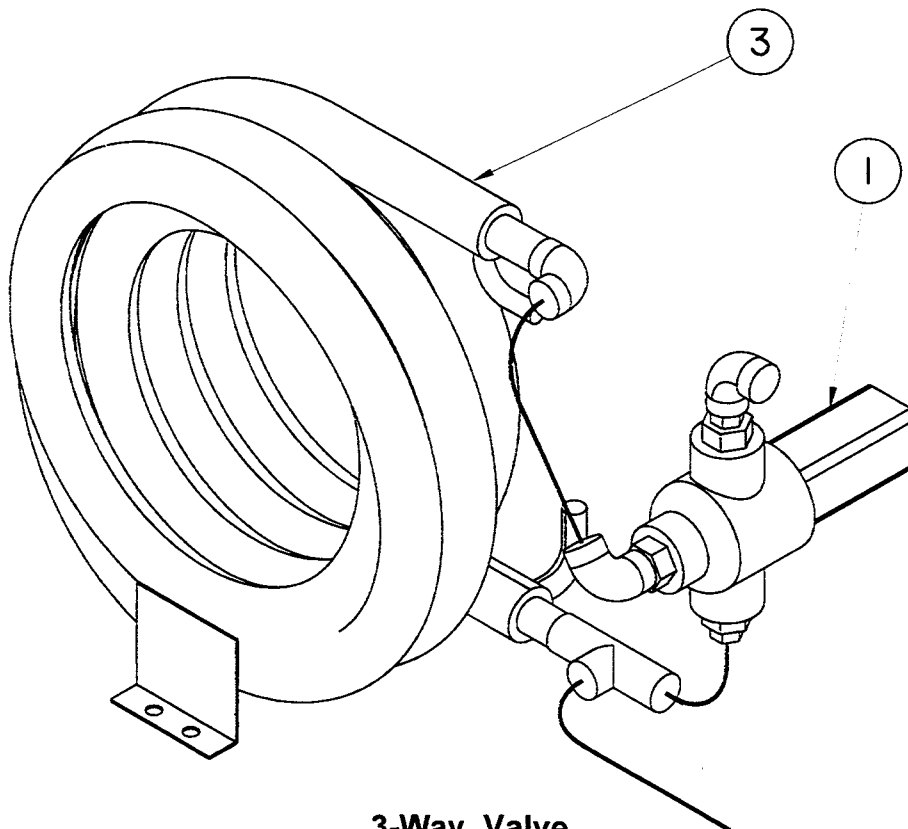
FN	Models	Part No.	RSP
5A-3	3 Ton	1C21115P1	
	5 Ton	128159P1	

### Condensate Pump

FN	Models	Volts	Description	Part No.	RSP
NS	3 and 5 Ton	200 to 230	Pump	X-015A	
		380 to 460	Pump	1C19034P1	
		575	Pump	X-015A	
			Transformer	021-1224	



**2-Way Valve**



**3-Way Valve**

**Figure 5A. Coaxial Condenser and Valve**



## Section 6 CONTROLS

### DISCONNECTS

#### Standard Disconnects

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	3 Ton	All	Disconnect, 60 Amp	1C18351P2	
	5 Ton	200 to 230	Disconnect, 100 Amp	1C18351P1	
		380 to 575	Disconnect, 60 Amp	1C18351P2	
NS	All	All	Locking Collar	1C18354P1	
NS			Shaft Extension	1A18353P1	
6A-1			Handle	1C18352P1	
6A-2			Label	4D10624	
6A-3			Bezel	S-6210	
6A-4			Screws (4)	S30-0070	

#### Shunt Trip Disconnects

FN	Models	Volts	Description	Part No.	RSP
See Figure 6B	3 and 5 Ton	200 to 230	Disconnect, 100 Amp	E02-2890	
		380 to 460	Disconnect, 100 Amp	E02-2880	
		575	Disconnect, 100 Amp	E02-2910	
NS		All	Locking Handle	E-288A	
NS			Locking Door Ring	E-288B	

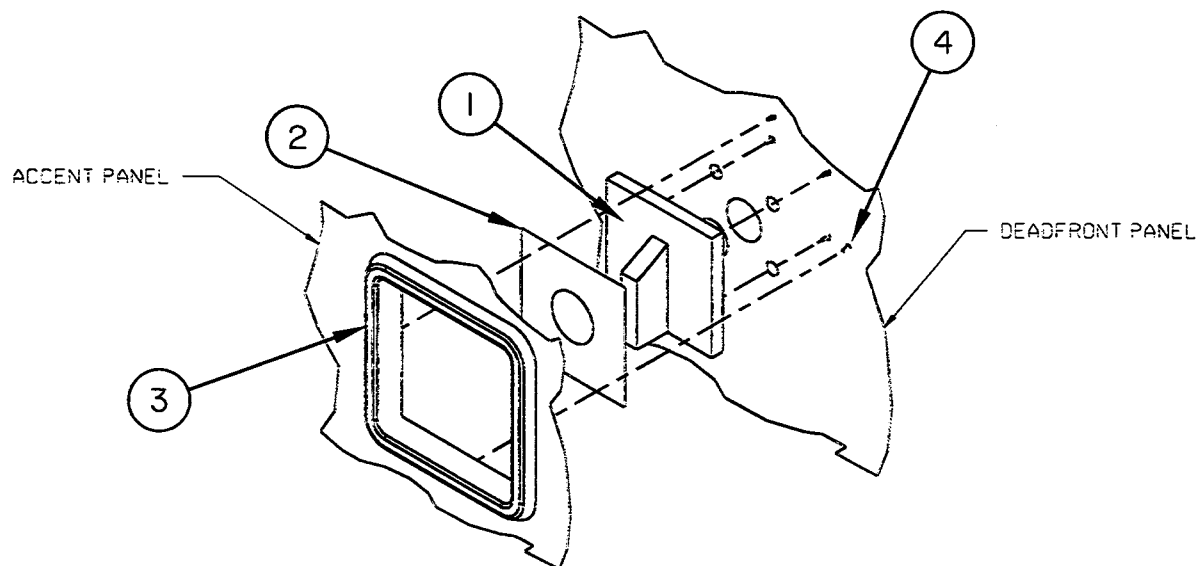


Figure 6A. Standard Disconnect Handle

## ELECTRONICS

### Standard Microprocessor (SM)

FN	Models	Description	Part No.	RSP
6C-1	DX	Control Board	4D14331G1	
	CW	Control Board	4D14331G3	
6C-2	English	Display	135687G1	
	French	Display	135687G2	
	Spanish	Display	135687G3	
6C-3	All	On Switch (with light)	140589P1	
6D-2	Glycol	Comparator Circuit	4C14431G1	
6D-3	Glycol	Glycol / Return Air Sensor	020-0433 (2)	
NS	Optional	Sequential Auto Restart Relay	E-3530	

### Advanced Microprocessor (AM)

FN	Models	Description	Part No.	RSP
6C-4	DX	Control Board	4D14571G3	
	CW	Control Board	4D14571G1	
6C-5	Downflow	Display	139145G2	
	Upflow	Display	139145G3	
6C-6	Glycol	Glycol Sensor	020-0433	

### Advanced Microprocessor with Graphics (AG)

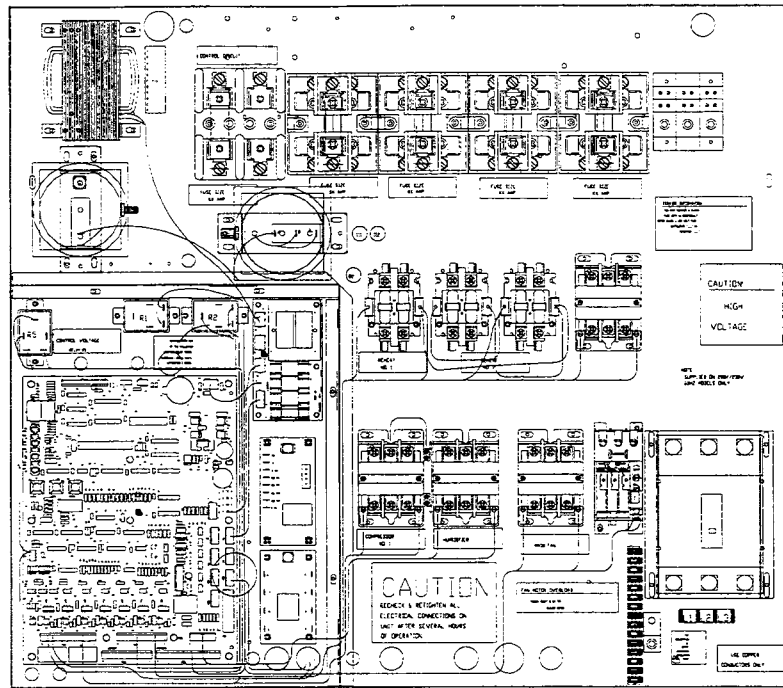
FN	Models	Description	Part No.	RSP
6C-4	DX	Control Board	4D14571G4	
	CW	Control Board	4D14571G2	
6C-5	All	Display	139140G1	
6C-6	Glycol	Glycol Sensor	020-0433	

### Common Boards (All Models)

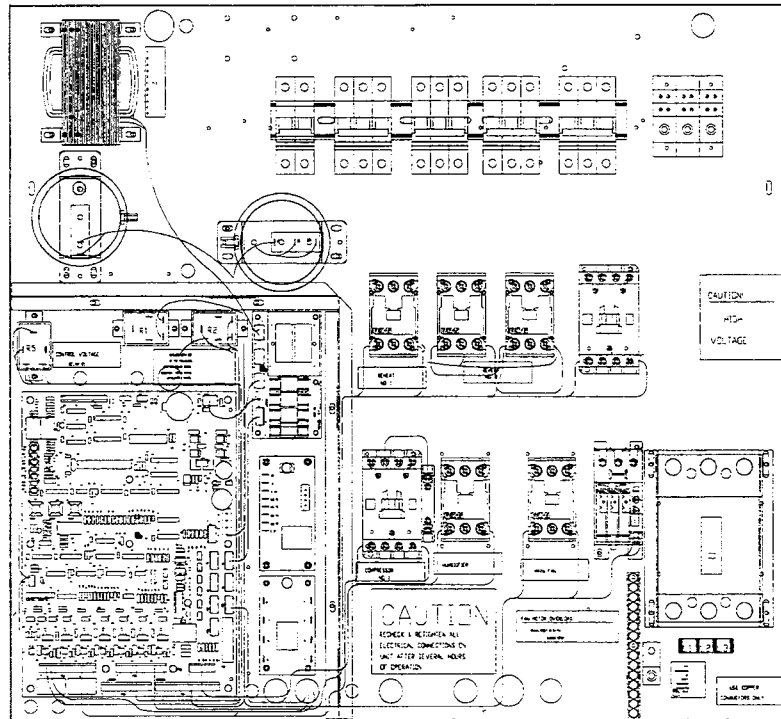
FN	Models	Description	Part No.	RSP
6D-1	All	T/H Sensors	4C13121G2	
See Figure 6B	All	Iso Transformer / Fuse Blocks	4C14651G1	
	60 Hz	Fuse, 4 Amp	135409P2 (4)	
	50 Hz	Fuse, 6 Amp	135409P3 (4)	
	All	Lithium Battery, 3V	1C14652P1	

### Safety Switches

FN	Models	Description	Part No.	RSP
See Fig. 6B	All	Filter Clog Switch	E-043C	
		Air Sail Switch	B02-0190	
6D-4	Optional	Firestat	E-2305	
NS		Smoke Detector Control	124502P1	
		Smoke Detector Sensor	128203P1	
		Smoke Detector Base	128204P1	



With Fuses



With Circuit Breakers

Figure 6B. Electrical Panel

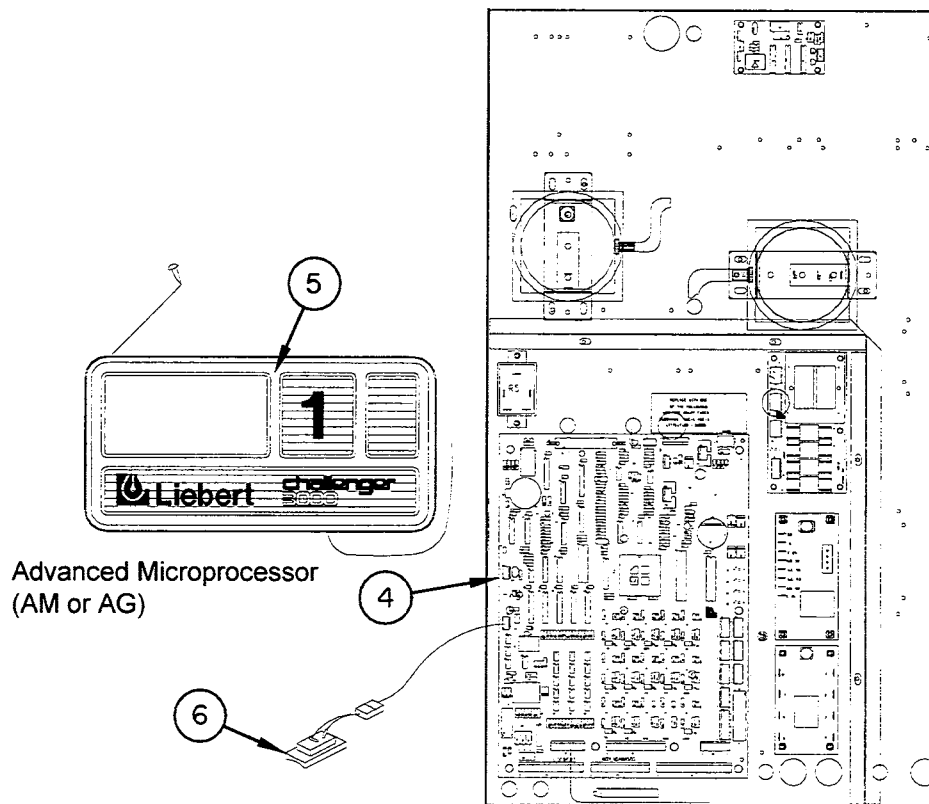
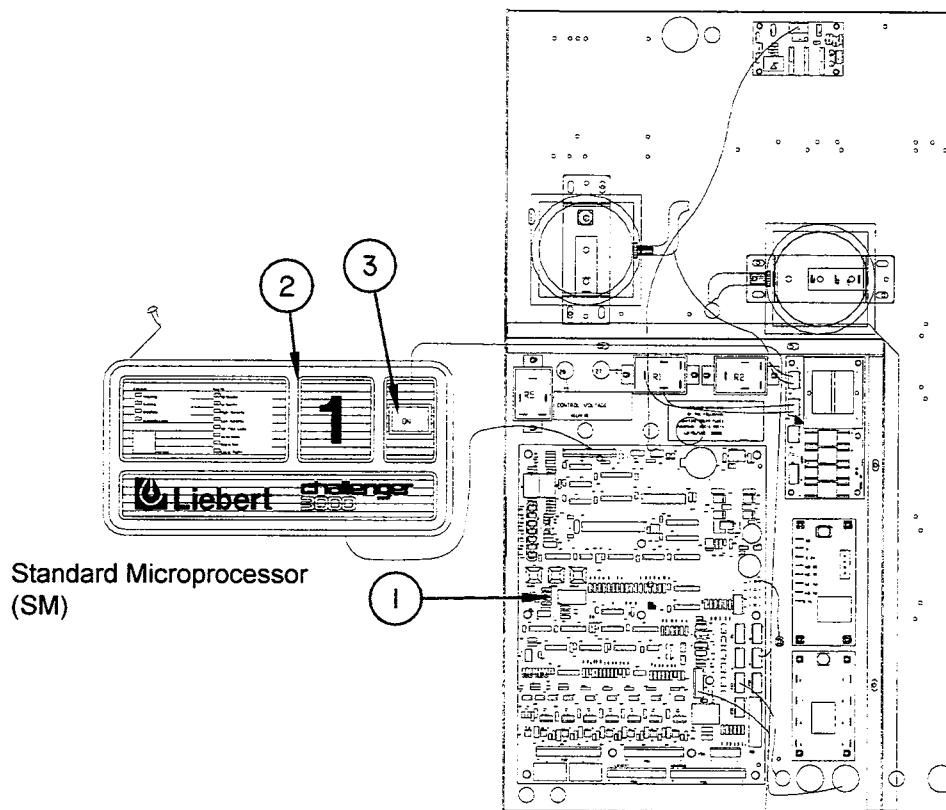


Figure 6C. Microprocessor

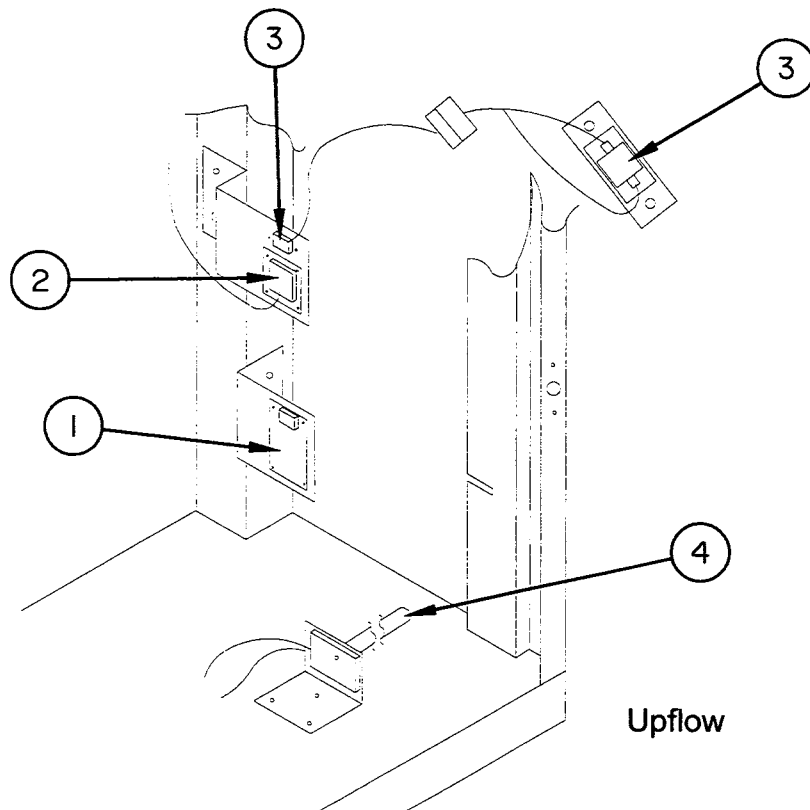
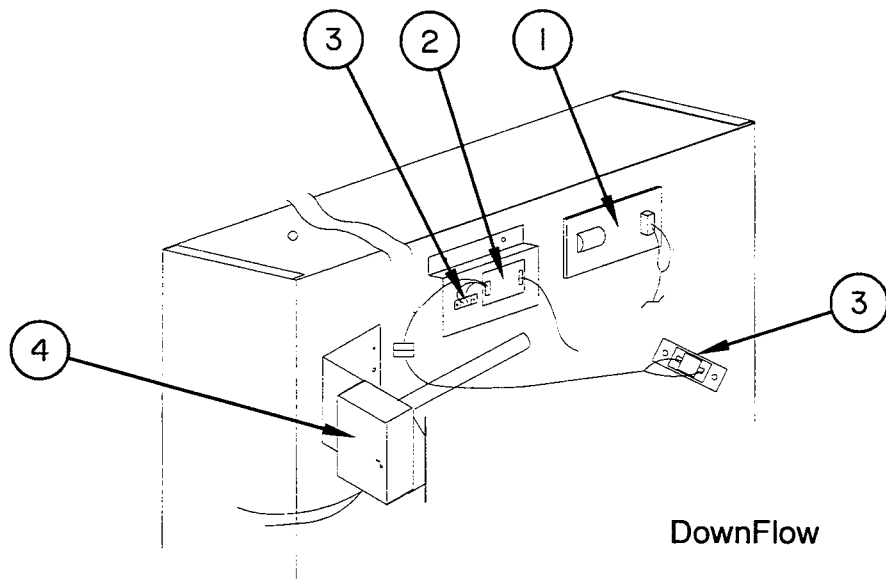


Figure 6D. Sensors

---

## Section 7 FILTERS and PANELS

### FILTERS

FN	Size (in.)	Efficiency	Part No.	RSP
	2 x 28.5 x 29.5	20%	136550P3	
	4 x 28.5 x 29.5	20%	136550P1	
	4 x 28.5 x 29.5	30%	136550P2	
	4 x 28.5 x 29.5	60 - 65%	136550P4	

### PANELS - STANDARD GAUGE (use panel wrench S-0320)

#### Accent Panels (front)

FN	Models	Return	Disconnect	Part No.	RSP
7A-1	Upflow	Front	Yes	136636G1	
			No	136636G2	
		Rear	Yes	136636G3	
			No	136636G4	
	Downflow	Top	Yes	136520G1	
			No	136520G2	

#### Side and Rear Panels

FN	Models	Return	Panel Location	Part No.	RSP
7A-2	All	All	Side	136608P1	
7A-3	Upflow	Front	Rear	136607P1	
		Rear	Rear	136607G2	
	Downflow	Top	Rear	136607P1	

### PANELS - HEAVY GAUGE (use panel wrench S-0320)

#### Accent Panels (front)

FN	Models	Return	Disconnect	Part No.	RSP
7A-1	Upflow	Front	Yes	136682G1	
			No	136682G2	
		Rear	Yes	136682G3	
			No	136682G4	
	Downflow	Top	Yes	136683G1	
			No	136683G2	

#### Side and Rear Panels

N	Models	Return	Panel Location	Part No.	RSP
7A-2	All	All	Side	136684P1	
7A-3	Upflow	Front	Rear	136685P1	
		Rear	Rear	136685G2	
	Downflow	Top	Rear	136685P1	

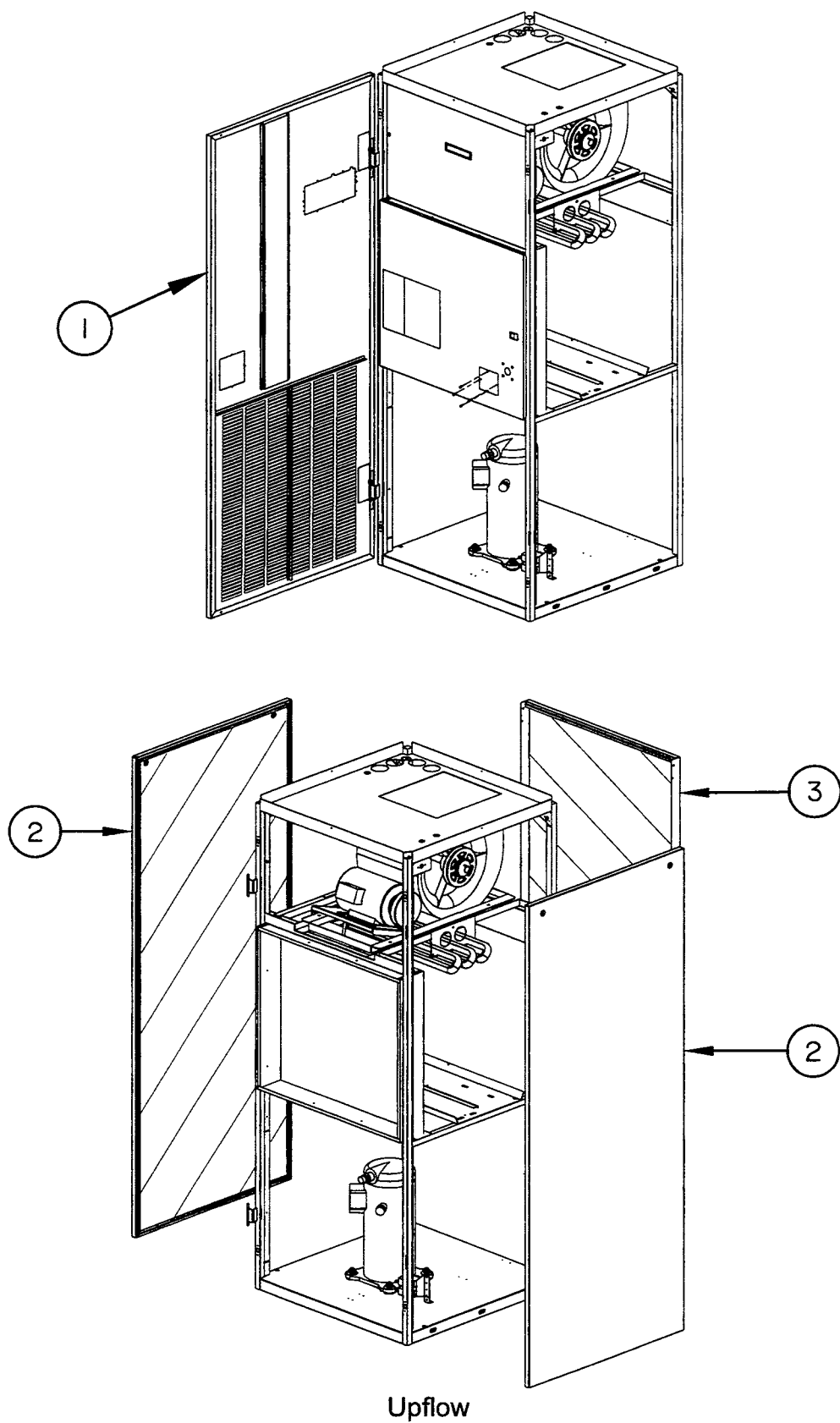


Figure 7A. Panels

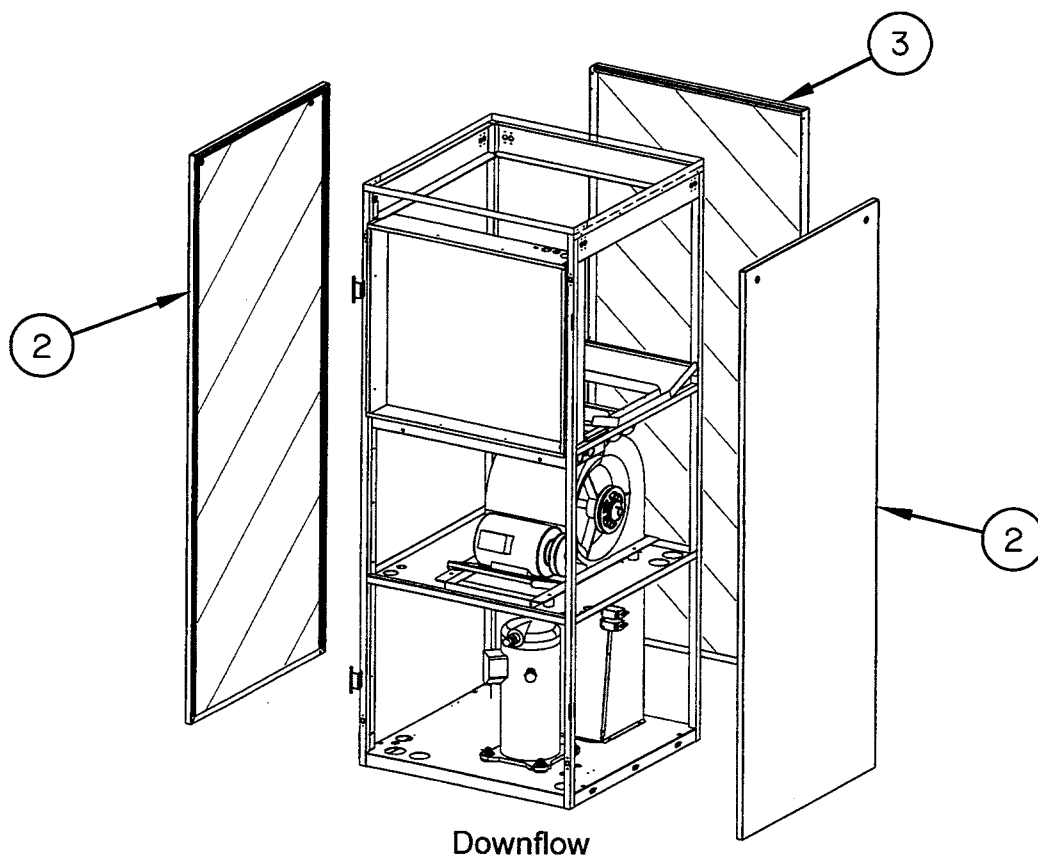
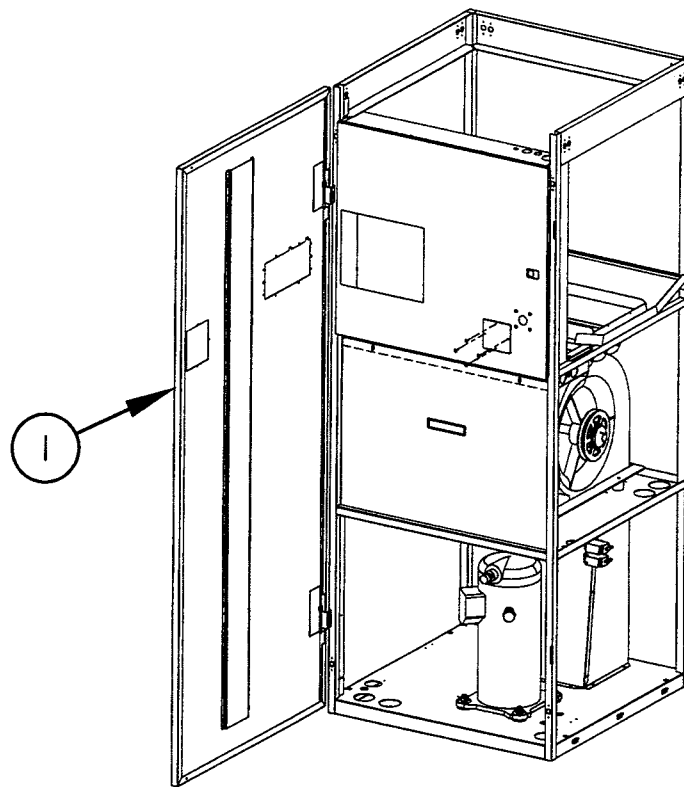


Figure 7A. Panels (continued)

## Plenum Parts

FN	Model	Panel Type	Description	Part No.	RSP
7B-1	Upflow	Solid	Front and Rear Panel	136582P1	
7B-2			Right and Left Panel	136581P1	
7B-3		For Grille	Front and Rear Panel	136582P2	
7B-4			Right and Left Panel	136581P2	
7B-5		N/A	Discharge Grille	Q-0170	
7B-6		N/A	Top Panel	136584P1	
NS		N/A	Duct Collar (2)	136583P1	

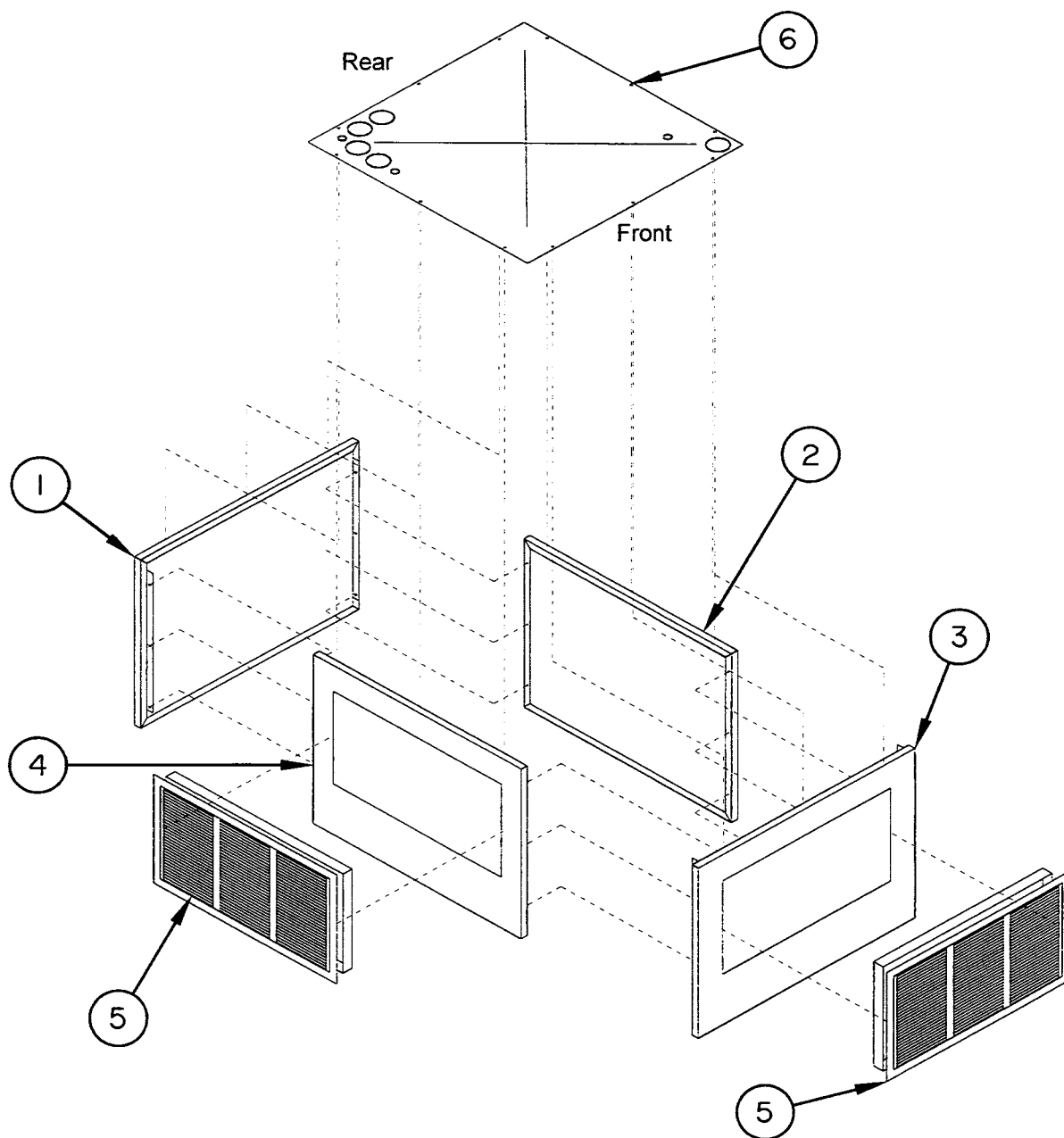


Figure 7B. Plenum







World Headquarters

**Liebert Corporation**

1050 Dearborn Drive, P.O. Box 29186

Columbus OH 43229

Telephone: 1-800-877-9222

Facsimile: 614-841-6022

Liebert Europe

Globe Park

Marlow

Bucks SL7 14G

United Kingdom

Telephone: 44-628-403-200

Facsimile : 44-628-403-293

While every precaution has been taken to ensure accuracy and completeness in this manual, Liebert Corporation assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

© 1995 Liebert Corporation

All rights reserved throughout the world.

Specifications subject to change without notice.

® Liebert and the Liebert logo are registered trademarks of Liebert Corporation. All names referred to are trademarks or registered trademarks of their respective owners.

Printed in U.S.A.

SL-11940 (3/95) (50/60)



SL-11940