



# Challenger 1 Parts Manual

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# **Spare Parts Book**

# **Liebert Challenger Systems**

**Air Cooled**

**Water Cooled**

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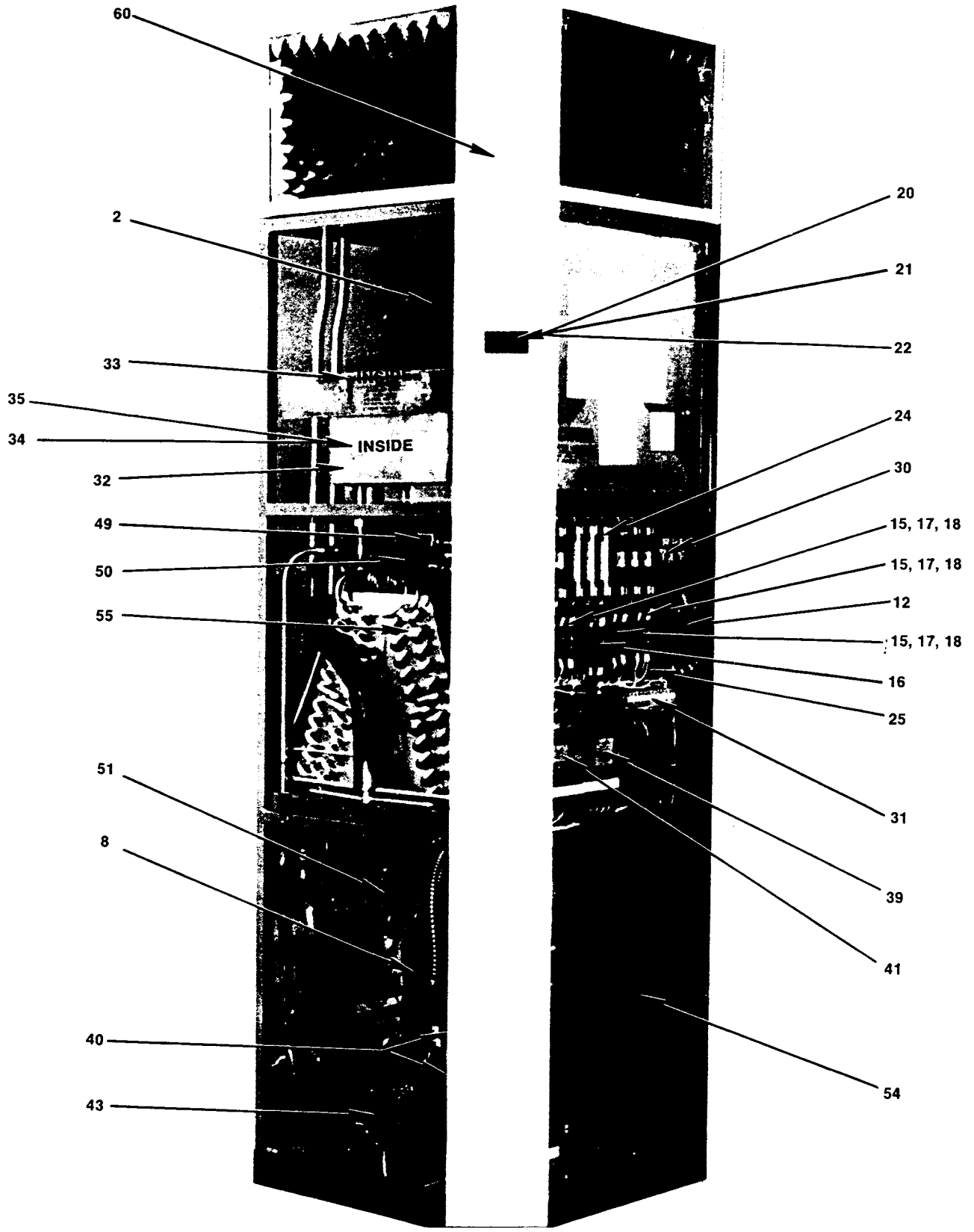
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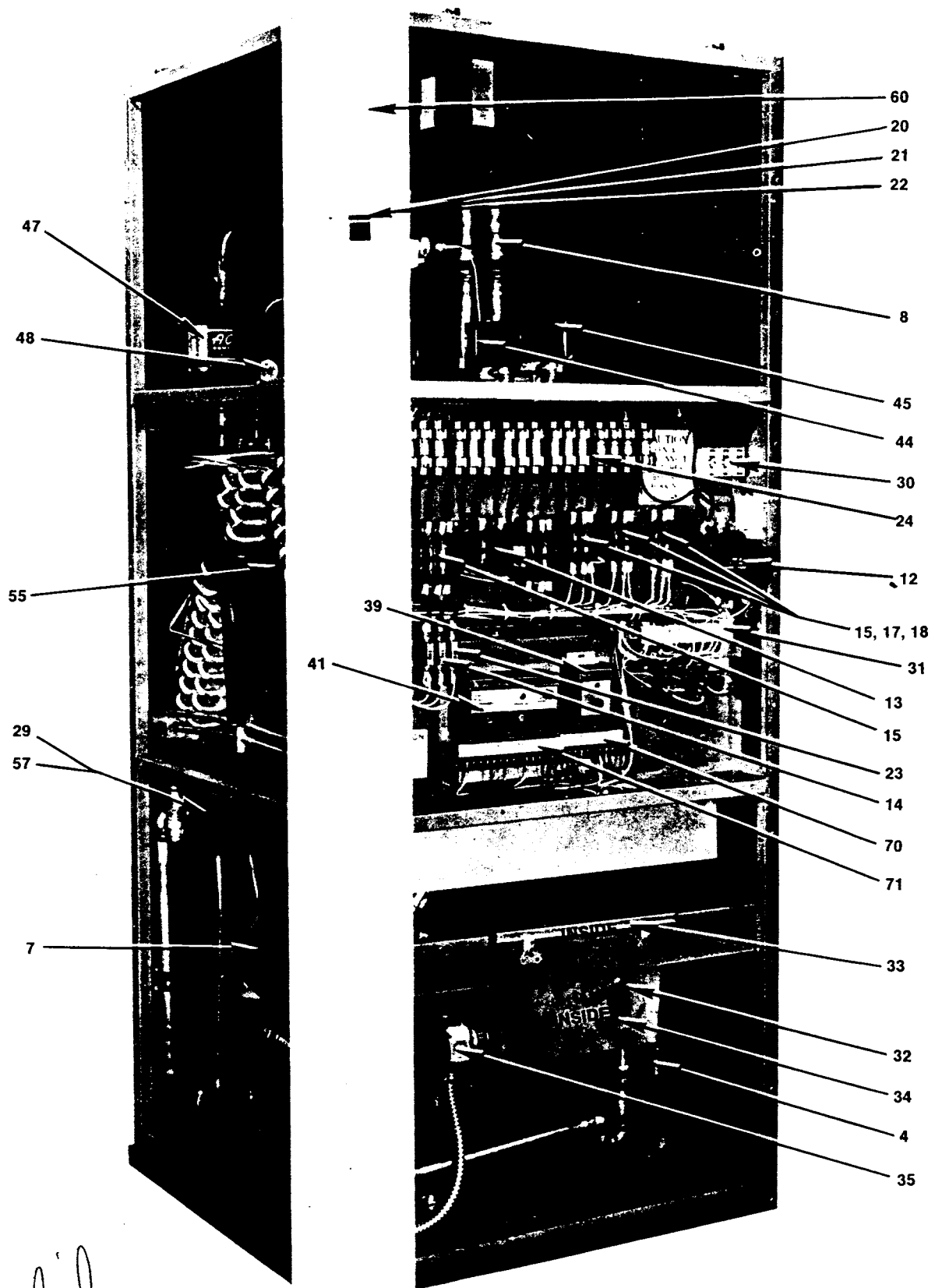
## PARTS BOOK USAGE INSTRUCTIONS

Follow these instructions when using this Parts Manual:

- I — Find the "Table of Contents", located above.
- II — Determine where this replacement part is located in the unit:  
Example — Fan Bearing located in Blower Section — Page 3.
- III — Turn to the pages indicated and locate the part under descriptions:  
Example — Fan Bearings located on page 3.
- IV — Find the model number of the unit located on the outside frame bottom, left-hand corner of unit:  
Example — CF64A
- V — Use LIEBERT Model Number and description of the part to locate the correct LIEBERT Part Number:  
Example — Location — Blower Section  
Description — Fan Bearing  
Page Number — 3  
Model Number — CF64A  
LIEBERT Part Number — B-4
- VI — To cross-reference a replacement part, you will find Code Numbers located in the Parts Book to the left of the Part Number; these Code Numbers are located on the photographs.



**LIEBERT CHALLENGER UP FLO**



**LIEBERT CHALLENGER FLOR FLO**

## FILTER AND BLOWER SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	64A	64A	70W	70W
1	A-0420	Filters, 17 x ½ x 23½ x 1 (2 Per Unit)					X	X	X	X
1	A-0430	Filters, 17½ x 17½ x 1 (2 Per Unit)	X		X					
1	A-0440	Filters, 17½ x 21½ x 1 (2 Per Unit)		X		X				
2	B-0960	Blower Housing w/Wheel	X	X	X	X				
2	B-0620	Blower Housing w/Wheel					X	X	X	X
3	B-1150	Fan Shaft					X	X	X	X
4	B-0120	Sail Switch	X	X	X	X	X	X	X	X
5	B-0080	Bushing					X	X	X	X
6	B-0040	Fan Bearing					X	X	X	X
7	B-1040	Motor, ½ HP, 208-Volt	X	X	X	X				
7	B-1050	Motor, ½ HP, 230/460-Volt	X	X	X	X				
7	B-1060	Motor, ½ HP, 575-Volt	X	X	X	X				
7	B-1250	Motor, ½ HP, 416-Volt, 60-Hz					X	X	X	X
7	B-0160	Motor, 1 HP, 230/460-Volt, 60-Hz					X	X	X	X
7	B-0170	Motor, 1 HP, 575-Volt, 60-Hz					X	X	X	X
7	B-0900	Motor, 1 HP, 400-Volt, 50-Hz	X	X	X	X	X	X	X	X
7	B-1080	Motor, 1 HP, 220/380-Volt, 50-Hz	X	X	X	X	X	X	X	X
7	B-1270	Motor, 1 HP, 416-Volt, 60-Hz					X	X	X	X
7	B-0150	Motor, 1 HP, 208-Volt, 60-Hz	X	X	X	X				
		Size, Model Number and Mfg. Part Number Must Be Included with All Orders for Belts, Sheaves and Pulley's. Prices Will Be Quoted.								

## COMPRESSOR AND LEE TEMP SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	54A	64A	70W	70W
8	C-0400	Compressor, 208/230-Volt					X	X	X	X
8	C-0410	Compressor, 480/440-Volt					X	X	X	X
8	C-0420	Compressor, 660/550-Volt					X	X	X	X
8	C-0430	Compressor, 208/230-Volt	X	X	X	X				
8	C-0440	Compressor, 480/440-Volt	X	X	X	X				
8	C-0450	Compressor, 600/550-Volt	X	X	X	X				
		LEE TEMP								
0	W-0040	Receiver	X	X						
0	W-0050	Receiver					X	X		
0	W-0070	Bell Box w/Lee Temp Cover	X	X			X	X		
0	W-0270	3 Way Control Valve	X	X			X	X		
0	W-0090	Check Valve, 7/8"	X	X			X	X		
0	W-0100	Roto-Lock Valve	X	X			X	X		
0	W-0140	Liquid Indicator — Bullseye	X	X			X	X		
0	W-015L	Silicone Heater, Lee Temp, 115-Volt	X	X			X	X		
0	W-015R	Silicone Heater, Lee Temp, 115-Volt	X	X			X	X		
0	W-016L	Silicone Heater, Lee Temp, 220-Volt	X	X			X	X		
0	W-016R	Silicone Heater, Lee Temp, 220-Volt	X	X			X	X		
0	W-0340	Head Pressure Control Valve, 7/8"	X	X			X	X		
0	W-0170	Relief Valve, 400 psi (R-22)	X	X			X	X		

## AIR COOLED CONDENSER SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	ACD	ACD	FCA	FCA
			6 7.5 8 10	11	5 10	8 12
9	B-0950	Condenser Fan Motor, ¾ HP (Fan Speed Control), 230-Volt	X	X	X	X
10	D-016A	Condenser Fan Blade, 5/8 Bore, 22"	X			
10	D-0200	Condenser Fan Blade, 5/8 Bore (Fan Speed Control)		X		
9	D-0120	Condenser Fan Motor, 1/3 HP, Single Phase, 230-Volt	X			
10	D-0160	Condenser Fan Blade, 1/2 Bore, 22"	X			
9	D-0130	Condenser Fan Motor, 1/2 HP, Single Phase, 230-Volt		X		
10	D-0190	Condenser Fan Blade, 1/2 Bore, 28"		X		
10	D-016F	Condenser Fan Blade, 5/8 Bore, 26-28"		X		
9	D-0680	Condenser Fan Motor, 1/2 HP, Single Phase, 230-Volt			X	X
10	D-016B	Condenser Fan Blade, 1/2 Bore, 24"			X	
10	D-016E	Condenser Fan Blade, 5/8 Bore, 24" (Fan Speed Control)			X	X
10	D-016C	Condenser Fan Blade, 1/2 Bore, 26"				X
10	D-016D	Condenser Fan Blade, 5/8 Bore, 26" (Fan Speed Control)				X



## ELECTRICAL SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	64A	64A	70W	70W
11	E-0010	Condenser Transformer, 440/480-Volt, 60-Hz	X	X			X	X		
11	E-001A	Condenser Transformer, 380/440/415-Volt, 50-Hz	X	X			X	X		
11	E-0020	Condenser Transformer, 575-Volt, 60-Hz	X	X			X	X		
12	E-0050	Transformer, 208/480-Volt, 60-Hz	X	X	X	X	X	X	X	X
12	E-0060	Transformer, 575-Volt, 60-Hz	X	X	X	X	X	X	X	X
12	E-3300	Transformer, 380/400/415-Volt, 50-Hz	X	X	X	X	X	X	X	X
13	E-009A	Condenser Contactor, 30-Amp, 2 Pole	X	X			X	X		
14	E-009B	Tri-Block Overload	X	X	X	X	X	X	X	X
15	E-009F	Contactor, 30-Amp, 3 Ph	X	X	X	X	X	X	X	X
16	E-010A	N/O Aux Contact	X	X	X	X	X	X	X	X
16	E-010B	N/C Aux Contact	X	X	X	X	X	X	X	X
17	E-0100	Contactor, 40-Amp, 3 Ph	X	X	X	X	X	X	X	X
18	E-0110	Contactor, 25-Amp, 3 Ph	X	X	X	X	X	X	X	X
19	E-0180	Humidity Sensor (Wafer Style)	X	X	X	X	X	X	X	X
20	E-2210	Lamp for On/Off Switch	X	X	X	X	X	X	X	X
21	E-2220	Push Button Cap	X	X	X	X	X	X	X	X
22	E-2200	Main Fan Pilot Switch	X	X	X	X	X	X	X	X
23		Heater Elements (Specify Size)	X	X	X	X	X	X	X	X
24	E-1020	3 Gang, 30-Amp, 250-Volt, Fuseblock	X	X	X	X	X	X	X	X
24	E-1030	Single, 30-Amp, 250-Volt, Fuseblock	X	X	X	X	X	X	X	X
24	E-1060	Single, 30-Amp, 600-Volt, Fuseblock	X	X	X	X	X	X	X	X
24	E-1050	3 Gang, 30-Amp, 600-Volt, Fuseblock	X	X	X	X	X	X	X	X
25	E-1790	Glass Fuse, 10-Amp	X	X	X	X	X	X	X	X
25	E-2760	GMQ Fuse, 3.2-Amp	X	X			X	X		
26	E-0130	Shunt Relay for Fan Speed Control	X	X	X	X	X	X	X	X
27	E-2640	Time Delay Relay	X	X	X	X	X	X	X	X
28	E-3250	Fan Speed Control, R-22	X	X	X	X	X	X	X	X

## ELECTRICAL SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	64A	64A	70W	70W
29	R-0130	Reheat Safety	X	X	X	X	X	X	X	X
30	E-0400	Terminal Block, NG-3	X	X	X	X	X	X	X	X
31	E-0410	Terminal Strip-15	X	X	X	X	X	X	X	X
31	E-007B	Transformer, 75-VA, 400-Volt, 60-Hz	X	X			X	X		
31	E-007C	Transformer, 75-VA, 600-Volt, 60-Hz	X	X			X	X		
31	E-330B	Transformer, 75-VA, 380/400/415-Volt, 50-Hz	X	X			X	X		

## HUMIDIFIER AND CHALLENGER CONTROL SECTION

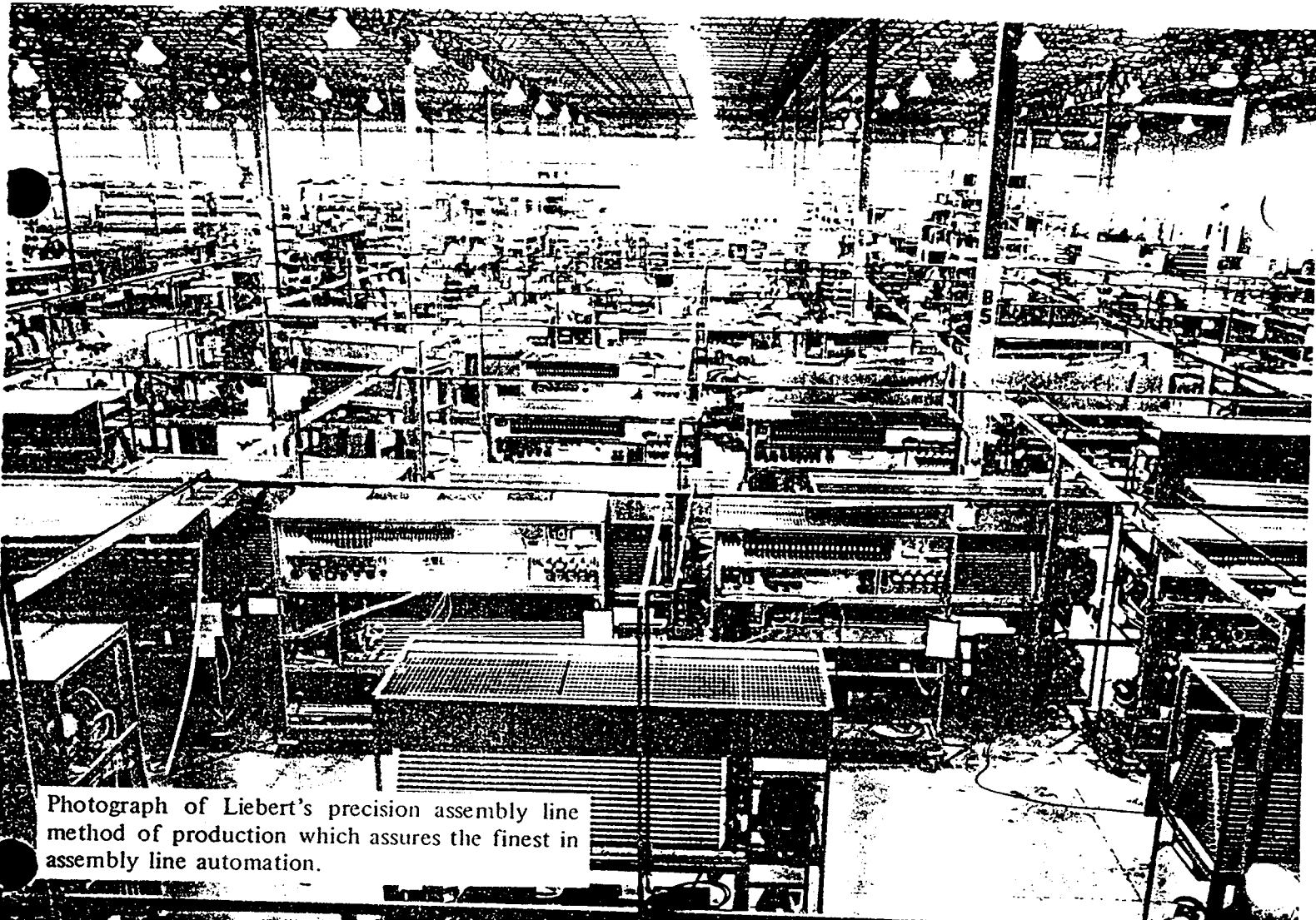
CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	64A	64A	70W	70W
32	F-2960	Humidifier Pan	X	X	X	X	X	X	X	X
33	H-025A	Humidifier Pan Gasket	X	X	X	X	X	X	X	X
34	H-0260	Copper Float	X	X	X	X	X	X	X	X
34	H-0050	Valve Assembly	X	X	X	X	X	X	X	X
34	H-026A	Cap for Valve Assembly	X	X	X	X	X	X	X	X
35	H-0330	Cartridge Heater, 230-Volt, 2500-Watt	X	X	X	X	X	X	X	X
35	H-0340	Cartridge Heater, 460-Volt, 2500-Watt	X	X	X	X	X	X	X	X
35	H-0350	Cartridge Heater, 575-Volt, 2500-Watt	X	X	X	X	X	X	X	X
34	H-0230	Humidifier Safety	X	X	X	X	X	X	X	X
CHALLENGER CONTROLS AND SENSORS										
39	H03LT	Humidity Control, HG-T	X	X	X	X	X	X	X	X
70	HR003	Humidity Control Bracket	X	X	X	X	X	X	X	X
19	E-0180	Humidity Sensor (Wafer Style)	X	X	X	X	X	X	X	X
40	HS005	Humidity Sensor, 33-41% (Cylinder)	X	X	X	X	X	X	X	X
40	HS006 628-0162	Humidity Sensor, 44-53% (Cylinder)	X	X	X	X	X	X	X	X
40	HS007	Humidity Sensor, 59-69% (Cylinder)	X	X	X	X	X	X	X	X
41	T002L	Temperature Control, TC-12	X	X	X	X	X	X	X	X
40	TS002	Temperature Sensor (Cylinder)	X	X	X	X	X	X	X	X
71	TB002	Temperature Control Bracket	X	X	X	X	X	X	X	X
TC-12 are Replacements for TA-12 Temperature Controls. HG-T are Replacements for HG Humidity Controls.										

## VALVE, REFRIGERATION, AND WATER COOLED CONDENSER SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	64A	64A	70W	70W
43	P-0010	Hi-Low Pressure Switch, 325 psi			X	X			X	X
43	P-001B	Hi-Low Pressure Switch, 360 psi	X	X			X	X		
44	P-3070	Low Pressure Switch	X	X			X	X		
45	P-3080	Hi Pressure Switch, 360 psi	X	X			X	X		
46	P-0020	Filter Drier	X	X	X	X	X	X	X	X
47	P-0030	Muffler					X	X	X	X
47	P-0040	Muffler	X	X	X	X				
48	P-0050	Liquid Indicator	X	X	X	X	X	X	X	X
49	P-0070	Solenoid Valve	X	X	X	X	X	X	X	X
50	P-0110	Expansion Valve	X	X	X	X				
50	P-0130	Expansion Valve					X	X	X	X
51	P-0260	Water Regulating Valve, 3/4"			X	X				
51	P-3110	Water Regulating Valve, 1"							X	X
52	P-0230	Receiver Valve	X	X	X	X	X	X	X	X
53	P-0240	Relief Valve	X	X	X	X	X	X	X	X
54	J-0120	Water Cooled Condenser			X	X				
54	J-0130	Water Cooled Condenser							X	X
55	X-0120	DX Coil					X	X	X	X
55	X-0130	DX Coil	X	X	X	X				

## REHEAT AND MISCELLANEOUS SECTION

CODE NO.	PART NO.	DESCRIPTION OF PART	C/F	C/U	C/F	C/U	C/F	C/U	C/F	C/U
			45A	45A	49W	49W	64A	64A	70W	70W
29	R-0130	Reheat Safety	X	X	X	X	X	X	X	X
57	R-0570	Reheat Element, 208-Volt, 60-Hz	X	X	X	X				
57	R-0580	Reheat Element, 230-Volt, 60-Hz	X	X	X	X				
57	R-0590	Reheat Element, 480-Volt, 60-Hz	X	X	X	X				
57	R-0600	Reheat Element, 575-Volt, 60-Hz	X	X	X	X				
57	R-0610	Reheat Element, 208-Volt, 60-Hz					X	X	X	X
57	R-0620	Reheat Element, 230-Volt, 60-Hz					X	X	X	X
57	R-0630	Reheat Element, 480-Volt, 60-Hz					X	X	X	X
57	R-0640	Reheat Element, 575-Volt, 60-Hz					X	X	X	X
57	R-0670	Reheat Element, 415-Volt, 50-Hz	X	X	X	X				
57	R-0680	Reheat Element, 415-Volt, 50-Hz					X	X	X	X
58	S-1090	Touch Up Paint (All Colors)	X	X	X	X	X	X	X	X
58	S-1100	Touch Up Paint (All Colors)	X	X	X	X	X	X	X	X
59	X-0150	Condensate Pump	X	X	X	X	X	X	X	X
60	F-2600	Challenger Accent		X		X		X		X
60	F-2610	Challenger Accent	X		X		X		X	

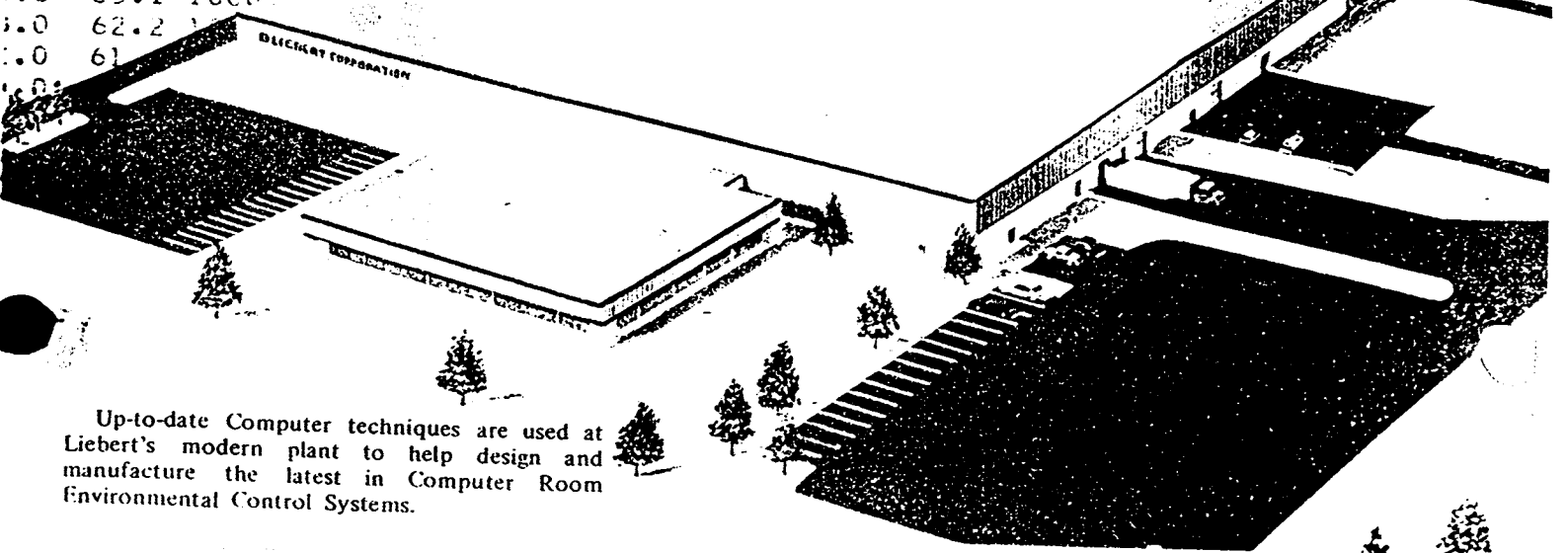


Photograph of Liebert's precision assembly line method of production which assures the finest in assembly line automation.

1.0	59.6	9000	446	175500	175500	1.00	0	.0	12.2	1.66	175500	14
1.0	58.7	9000	446	172700	172700	1.00	0	.0	12.1	1.68	172700	14
1.0	63.5	9000	446	189400	189400	1.00	0	.0	12.6	1.59	189400	14
1.0	60.4	9000	446	178100	178100	1.00	0	.0	12.3	1.65	178100	14

CFM=10000

1.0	68.2	10000	495	210600	210600	1.00	0	.0	12.5	1.50	210600	14
1.0	64.9	10000	495	197300	197300	1.00	0	.0	12.4	1.55	197300	14
1.0	64.0	10000	495	197300	197300	1.00	0	.0	12.4	1.55	197300	14
1.0	63.1	10000	495	197300	197300	1.00	0	.0	12.4	1.55	197300	14
1.0	62.2	10000	495	197300	197300	1.00	0	.0	12.4	1.55	197300	14
1.0	61	10000	495	197300	197300	1.00	0	.0	12.4	1.55	197300	14



Up-to-date Computer techniques are used at Liebert's modern plant to help design and manufacture the latest in Computer Room Environmental Control Systems.