Bally
REFRIGERATION PRODUCTS

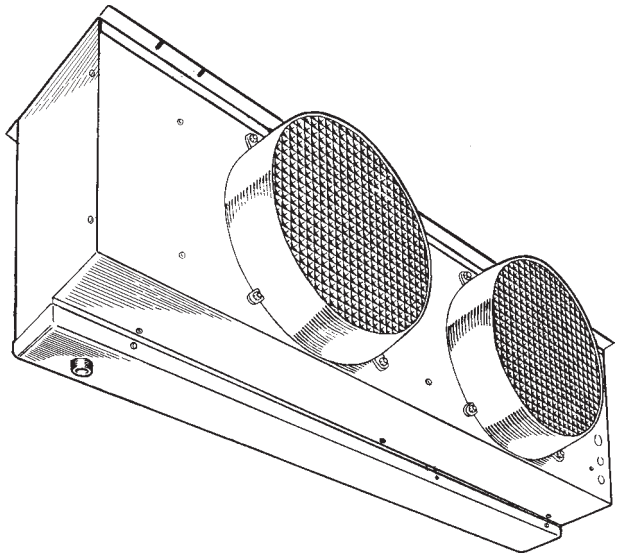
Electric Defrost
Medium Profile
BB Unit Coolers

PRODUCT DATA & INSTALLATION

Bulletin: B30-BBE-PDI-15
1048680

Medium and low Temp Applications (-30°F Room Temp. or Higher)

Electrical Power: Three Phase



NOMENCLATURE

BB 1 24 P -ED- T4 B

BALLY
MEDIUM PROFILE
UNIT COOLER

NUMBER OF FANS

MBH CAPACITY AT
10 °F T.D. (60Hz)
SIZE 24 = 24,000 BTUH
OF COOLING

OPTIONS
P = PRE ASSEMBLED REMOTE
S = STANDARD UNIT

DEFROST
ED = ELECTRIC DEFROST

ELECTRICAL
T3 = 208-230/3/60 T4 = 460/3/60
T5 = 575/3/60 T7 = 200-220/3/50
T8 = 380/3/60 T9 = 380-400/3/50

REVISION LEVEL

* Heavy gauge textured aluminum cabinet construction resists scratches/corrosion and minimizes weight for shipment, installation and service.

* Attractive and durable high density polyethylene fan guards with built-in throw boosters.

* 3/8 Tubing coil construction (reduces operating charge).

* VENTURI-FLO Distributor eliminates need for distributor nozzle selections.

* Adjustable Defrost Termination Thermostat with dual Fan Delay function.

* Stainless-Steel Defrost Heaters mounted on the coil for service accessibility

***** Refrigerants R12, R22, R502, R134a, R404A, R407A, R407B, R407C, R507.

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60Hz SPECIFICATIONS

Capacity Data - (BTUH) @ 10°F TD 60Hz

MODEL BB										
EVAP TEMPERATURE °F	**116P-ED**	**119P-ED**	**124P-ED**	**232P-ED**	**238P-ED**	**245P-ED**	**251P-ED**	**360P-ED**	**368P-ED**	**375P-ED**
+20/+25	19000	23000	29000	38000	46000	53000	60000	70000	80000	88000
+10	18620	22540	28420	37240	45080	51940	58800	68600	78400	86240
0	18050	21850	27550	36100	43700	50350	57000	66500	76000	83600
-10	17290	20930	26390	34580	41860	48230	54600	63700	72800	80080
-20	**16150**	**19550**	**24650**	**32300**	**39100**	**45050**	**51000**	**59500**	**68000**	**74800**
-30	15010	18170	22910	30020	36340	41870	47400	55300	63200	69520
-40	13680	16560	20880	27360	33120	38160	43200	50400	57600	63360
CFM	3100	4700	4550	9400	9400	9200	9100	13650	13650	13650
REFRIGERANT CHARGE* **LBS**	5.8	5.4	8.2	8.5	10.8	12.6	16.1	19.6	22.4	24.5
KG	2.7	2.4	3.7	3.9	4.9	5.7	7.3	8.9	10.2	11.2

* R404A at -20°F S.S.T. with coil 30% full

ELECTRICAL DATA 60HZ

208-230/3/60

MODEL	FAN MOTORS				DEFROST HEATERS			
	QTY	TOTAL FLA	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)	WATTS	AMPS	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)
BB116P-ED-T3B	1	2.0	2.5	15	4320	11.2	14	20
BB119P-ED-T3B	1	2.0	2.5	15	6100	15.8	19.8	25
BB124P-ED-T3B	1	2.0	2.5	15	6100	15.8	19.8	25
BB232P-ED-T3B	2	4.0	4.5	15	11680	30.2	37.8	45
BB238P-ED-T3B	2	4.0	4.5	15	11680	30.2	37.8	45
BB245P-ED-T3B	2	4.0	4.5	15	11680	30.2	37.8	45
BB251P-ED-T3B	2	4.0	4.5	15	11680	30.2	37.8	45
BB360P-ED-T3B	3	6.0	6.5	15	17250	44.7	55.9	60
BB368P-ED-T3B	3	6.0	6.5	15	17250	44.7	55.9	60
BB375P-ED-T3B	3	6.0	6.5	15	17250	44.7	55.9	60

460/3/60

MODEL	FAN MOTORS				DEFROST HEATERS			
	QTY	TOTAL FLA	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)	WATTS	AMPS	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)
BB116P-ED-T4B	1	1.0	1.25	15	4320	5.6	7	15
BB119P-ED-T4B	1	1.0	1.25	15	6100	7.9	9.9	15
BB124P-ED-T4B	1	1.0	1.25	15	6100	7.9	9.9	15
BB232P-ED-T4B	2	2.0	2.25	15	11680	15.1	18.9	25
BB238P-ED-T4B	2	2.0	2.25	15	11680	15.1	18.9	25
BB245P-ED-T4B	2	2.0	2.25	15	11680	15.1	18.9	25
BB251P-ED-T4B	2	2.0	2.25	15	11680	15.1	18.9	25
BB360P-ED-T4B	3	3.0	3.25	15	17250	22.3	27.9	30
BB368P-ED-T4B	3	3.0	3.25	15	17250	22.3	27.9	30
BB375P-ED-T4B	3	3.0	3.25	15	17250	22.3	27.9	30

575/3/60

MODEL	FAN MOTORS				DEFROST HEATERS			
	QTY	TOTAL FLA	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)	WATTS	AMPS	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)
BB116P-ED-T5B	1	0.8	1	15	4320	4.5	5.6	15
BB119P-ED-T5B	1	0.8	1	15	6100	6.3	7.9	15
BB124P-ED-T5B	1	0.8	1	15	6100	6.3	7.9	15
BB232P-ED-T5B	2	1.6	1.8	15	11680	12.1	15.1	20
BB238P-ED-T5B	2	1.6	1.8	15	11680	12.1	15.1	20
BB245P-ED-T5B	2	1.6	1.8	15	11680	12.1	15.1	20
BB251P-ED-T5B	2	1.6	1.8	15	11680	12.1	15.1	20
BB360P-ED-T5B	3	2.4	2.6	15	17250	17.9	22.4	25
BB368P-ED-T5B	3	2.4	2.6	15	17250	17.9	22.4	25
BB375P-ED-T5B	3	2.4	2.6	15	17250	17.9	22.4	25

All Fan Motors are 3/4 H.P.

50Hz SPECIFICATIONS

Capacity Data - (BTUH) @ 10ºF TD 50Hz

MODEL BB										
EVAP TEMPERATURE ºF	**116P-ED**	**119P-ED**	**124P-ED**	**232P-ED**	**232P-ED**	**245P-ED**	**251P-ED**	**360P-ED**	**368P-ED**	**375P-ED**
+20/+25	17480	21160	26680	34960	42320	48760	55200	64400	73600	80960
+10	17130	20737	26146	34261	41474	47785	54096	63112	72128	79341
0	16606	20102	25346	33212	40204	46322	52440	61180	69920	76912
-10	15907	19256	24279	31814	38511	44372	50232	58604	66976	73674
-20	**14858**	**17986**	**22678**	**29716**	**35972**	**41446**	**46920**	**54740**	**62560**	**68816**
-30	13809	16716	21077	27618	33433	38520	43608	50876	58144	63958
-40	12586	15235	19210	25171	30470	35107	39744	46368	52992	58291
CFM	2570	3900	3780	7800	7800	7800	7550	11330	13650	13650
REFRIGERANT CHARGE* LBS	5.8	5.4	8.2	8.5	10.8	12.6	16.1	19.6	22.4	24.5
KG	2.7	2.4	3.7	3.9	4.9	5.7	7.3	8.9	10.2	11.2

* R404A at -20ºF S.S.T. with coil 30% full

ELECTRICAL DATA 50HZ

200-220/3/50

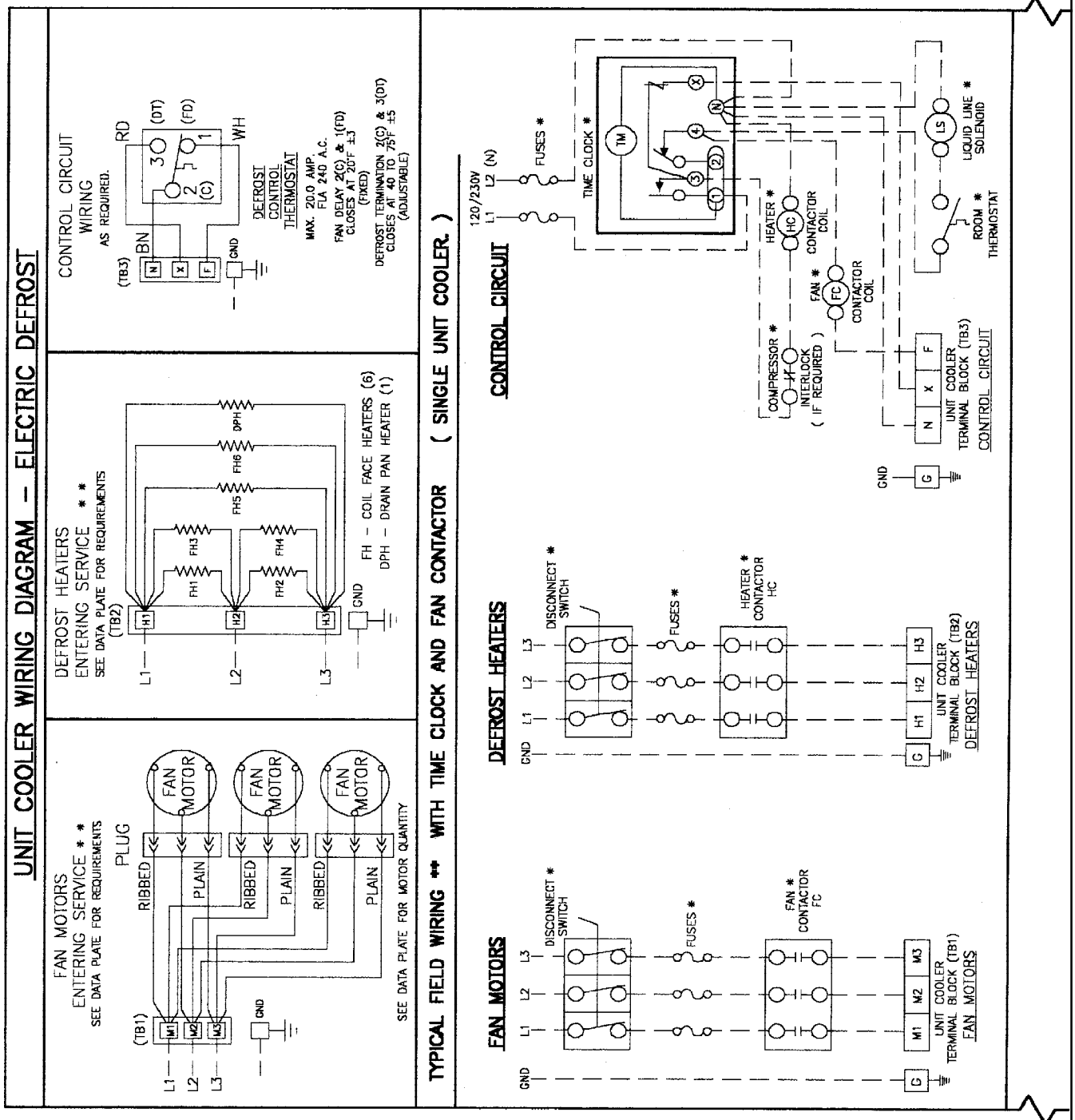
MODEL	FAN MOTORS				DEFROST HEATERS			
	QTY	TOTAL FLA	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)	WATTS	AMPS	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)
BB116P-ED-T7B	1	1.7	2.13	15	3950	10.7	13.4	15
BB119P-ED-T7B	1	1.7	2.13	15	5580	14.5	18.1	20
BB124P-ED-T7B	1	1.7	2.13	15	5580	14.5	18.1	20
BB232P-ED-T7B	2	3.4	3.83	15	10685	27.7	34.6	40
BB238P-ED-T7B	2	3.4	3.83	15	10685	27.7	34.6	40
BB245P-ED-T7B	2	3.4	3.83	15	10685	27.7	34.6	40
BB251P-ED-T7B	2	3.4	3.83	15	10685	27.7	34.6	40
BB360P-ED-T7B	3	5.1	5.53	15	15785	40.9	51.1	55
BB368P-ED-T7B	3	5.1	5.53	15	15785	40.9	51.1	55
BB375P-ED-T7B	3	5.1	5.53	15	15785	40.9	51.1	55

380-400/3/50

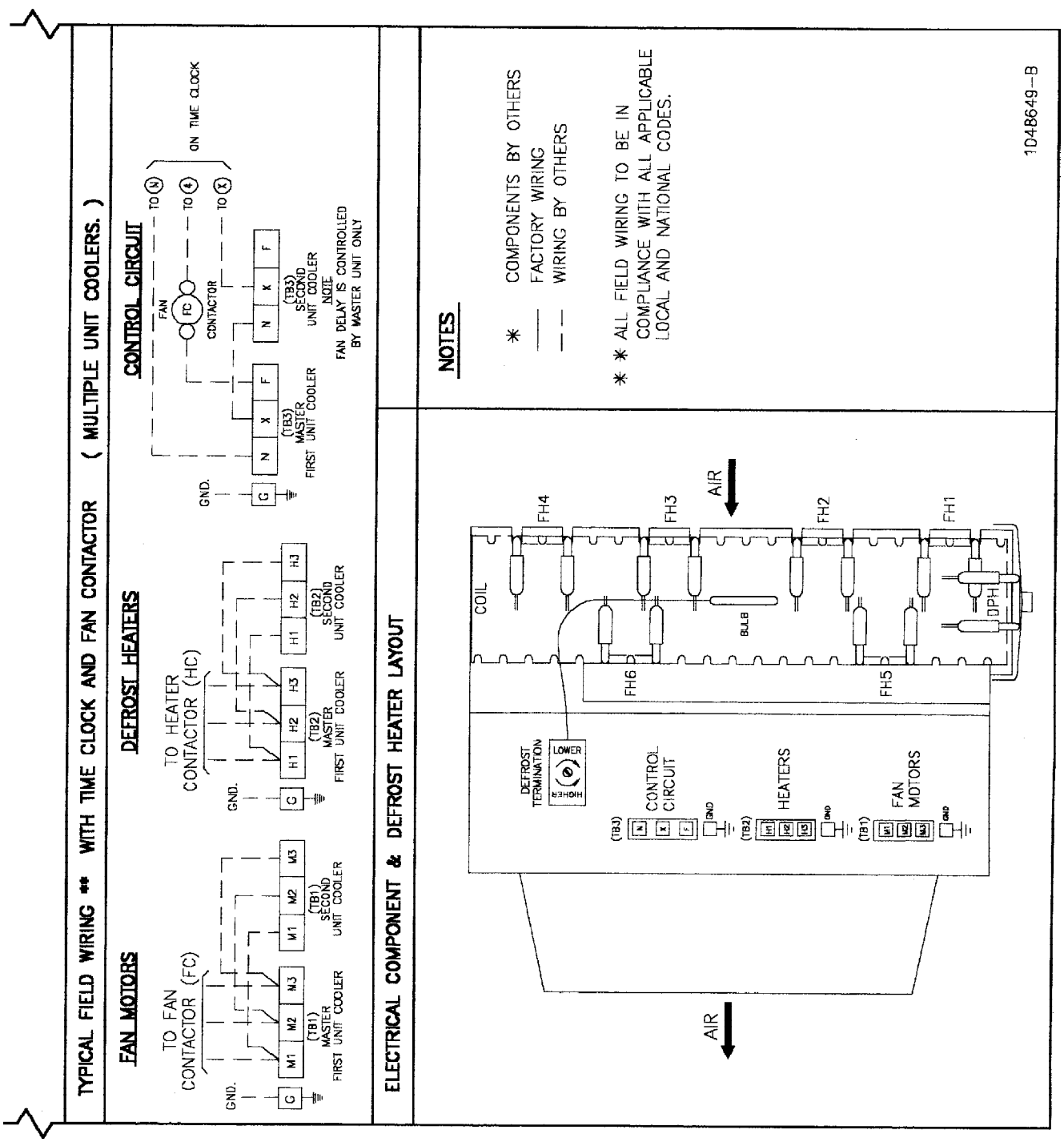
MODEL	FAN MOTORS				DEFROST HEATERS			
	QTY	TOTAL FLA	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)	WATTS	AMPS	MIN. CIRC. AMPACITY	MAX. FUSE (AMPS)
BB116P-ED-T9B	1	0.8	1.0	15	4320	6.8	8.5	15
BB119P-ED-T9B	1	0.8	1.0	15	6100	9.6	12	15
BB124P-ED-T9B	1	0.8	1.0	15	6100	9.6	12	15
BB232P-ED-T9B	2	1.6	1.8	15	11680	18.3	22.9	25
BB238P-ED-T9B	2	1.6	1.8	15	11680	18.3	22.9	25
BB245P-ED-T9B	2	1.6	1.8	15	11680	18.3	22.9	25
BB251P-ED-T9B	2	1.6	1.8	15	11680	18.3	22.9	25
BB360P-ED-T9B	3	2.4	2.6	15	17250	27	33.8	40
BB368P-ED-T9B	3	2.4	2.6	15	17250	27	33.8	40
BB375P-ED-T9B	3	2.4	2.6	15	17250	27	33.8	40

All Fan Motors are 3/4 H.P.

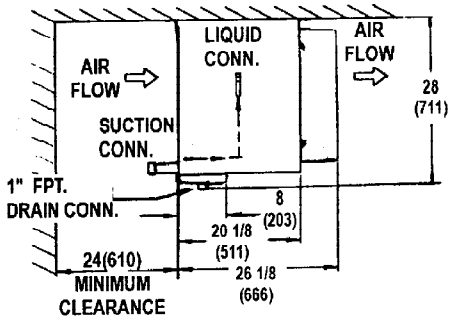
WIRING DIAGRAM



WIRING DIAGRAM

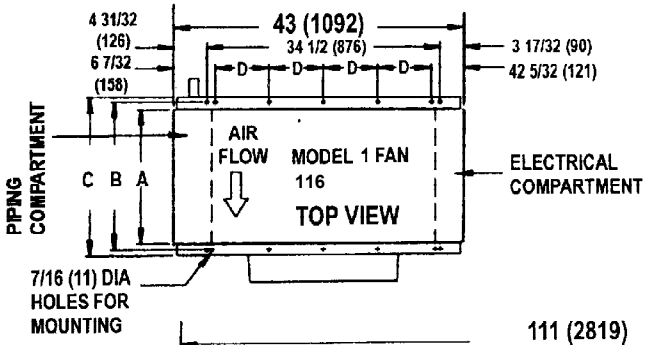


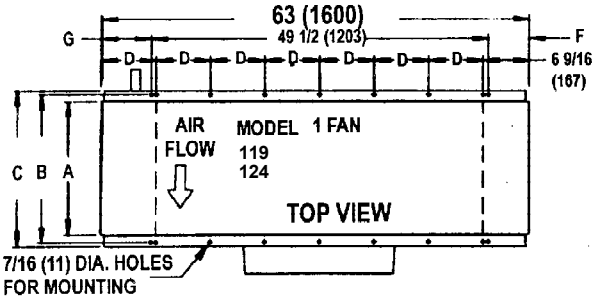
DIMENSIONAL DATA

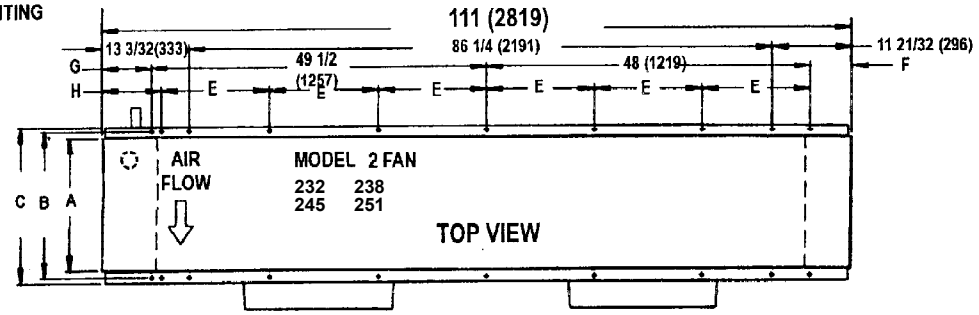


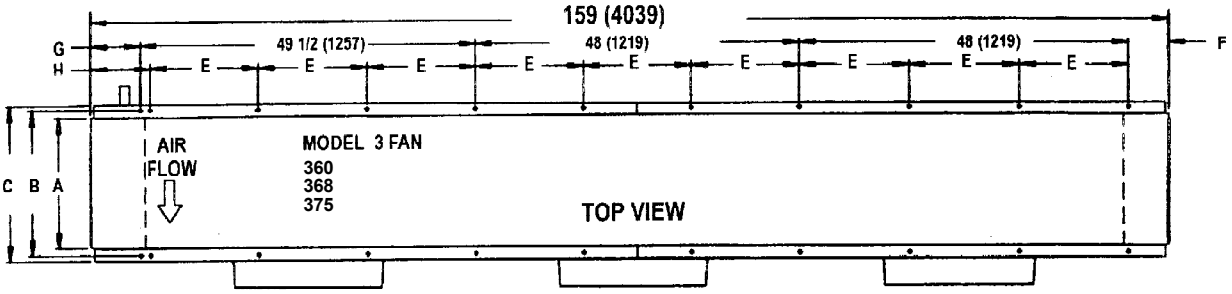
Inches (mm)

A	B	C	D	E	F	G	H
20 (508)	22 1/8 (562)	23 5/8 (600)	8 (203)	16 (406)	6 1/32 (153)	7 15/32 (190)	8 3/4 (222)









AIR THROW (ALL MODELS)
APPROX. 100 FEET (30.5 METERS)

DIMENSIONAL DATA

INCHES (MILLIMETERS)

Electric Defrost Model		116	119	124	232	238	245	251	360	368	375
Number of Fans		1	1	1	2	2	2	2	3	3	3
Liquid Connection (O.D. Sweat)		5/8 (16)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	1 1/8 (29)	1 1/8 (29)
Suction Connection (O.D. Sweat)		7/8 (22)	1 1/8 (29)	1 3/8 (35)	1 3/8 (35)	1 5/8 (41)	1 5/8 (41)	1 5/8 (41)	1 5/8 (41)	2 1/8 (54)	2 1/8 (54)
Approx. Shipping Weight	Lbs.	160	190	205	350	370	380	390	540	560	580
	Kg	73	86	93	159	168	173	177	245	227	264

ALCO TXV SELECTIONS

R404A - R507	MODEL BB									
EVAP TEMP	116P-ED		119P-ED		124P-ED		232P-ED		238P-ED	
	BTUH	VALVE #	BTUH	VALVE#	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/+25°F +10°F 0°F	19000 18620 18050	HFES 1 1/2-RC	23000 22540 21850	HFES 1 1/2-RC	29000 28420 27550	HFES 2-RC	38000 37240 36100	HFES 3 1/2-RC	46000 45080 43700	HFES 3 1/2-RC
-10°F -20°F -30°F	17290 16150 15010	HFES 1 1/2-RZ	20930 19550 18170	HFES 2-RZ	26390 24650 22910	HFES 3 1/2-RZ	34580 32300 30020	HFES 3 1/2-RZ	41860 39100 36340	HFES 5-RZ
-40°F	13680	HFES 2-RZ	16560		20880		27360		33120	
EVAP TEMP	245P-ED		251P-ED		360P-ED		368P-ED		375P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/+25°F +10°F 0°F	53000 51940 50350	HFES 3 1/2-RC	60000 58800 57000	HFES 3 1/2-RC	70000 68600 66500	HFES 5-RC	80000 78400 76000	HFES 5-RC	88000 86240 83600	HFES 7-RC
-10°F -20°F -30°F	48230 45050 41870	HFES 5-RZ	54600 51000 47400	HFES 5-RZ	63700 59500 55300	HFES 7-RZ	72800 68000	HFES 7-RZ	80080 74800	HFES 10-RZ
-40°F	38160	HFES 7-RZ	43200	HFES 7-RZ	50400	HFES 10-RZ	63200 57600	HFES 10-RZ	69520 63360	

R22	MODEL BB									
EVAP TEMP	116P-ED		119P-ED		124P-ED		232P-ED		238P-ED	
	BTUH	VALVE #	BTUH	VALVE#	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/+25°F +10°F 0°F	19000 18620 18050	HFES 1 1/2-HC	23000 22540 21850	HFES 1 1/2-HC	29000 28420 27550	HFES 2-HC	38000 37240 36100	HFES 2 1/2-HC	46000 45080 43700	HFES 3-HC
-10°F -20°F	17290 16150	HFES 2-HZ	20930 19550	HFES 2 1/2-HZ	26390 24650	HFES 2 1/2-HZ	34580 32300	HFES 3-HZ	41860 39100	HFES 5 1/2-HZ
-30°F -40°F	15010 13680	HFES 2 1/2-HZ	18170 16560		22910 20880	HFES 3-HZ	30020 27360	HFES 5 1/2-HZ	36340 33120	
EVAP TEMP	245P-ED		251P-ED		360P-ED		368P-ED		375P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/+25°F +10°F 0°F	53000 51940 50350	HFES 3-HC	60000 58800 57000	HFES 5 1/2-HC	70000 68600 66500	HFES 5 1/2-RC	80000 78400 76000	HFES 5 1/2-HC	88000 86240 83600	HFES 5 1/2-HC
-10°F -20°F -30°F -40°F	48230 45050 41870 38160	HFES 5 1/2-HZ	54600 51000 47400	HFES 5 1/2-HZ	63700 59500 55300 50400	HFES 8-RZ	72800 68000 63200	HFES 8-HZ	80080 74800	HFES 8-HZ
			43200	HFES 8-HZ			57600	HFES 10-HZ	69520 63360	HFES 10-HZ

R134a	MODEL BB									
EVAP TEMP	116P-ED		119P-ED		124P-ED		232P-ED		238P-ED	
	BTUH	VALVE #	BTUH	VALVE#	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/+25°F +10°F 0°F	19000 18620 18050	HFES 1 1/2-MC	23000 22540 21850	HFES 1 3/4-MC	29000 28420 27550	HFES 1 3/4-MC	38000 37240 36100	HFES 2 1/2-MC	46000 45080 43700	HFES 4-MC
EVAP TEMP	245P-ED		251P-ED		360P-ED		368P-ED		375P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/+25°F +10°F 0°F	53000 51940 50350	HFES 4-MC	60000 58800 57000	HFES 4-MC	70000 68600 66500	HFES 6-MC	80000 78400 76000	HFES 6-MC	88000 86240 83600	HFES 6-MC

Where available use the HFESC series valve which includes sweat fittings with a removable/cleanable inlet screen.
Note: Above Selections are based on 100 °F Entering Liquid Temperature.
VENTURI - FLO distributor does not require the selection or use of distributor nozzles.

SPORLAN TXV SELECTIONS

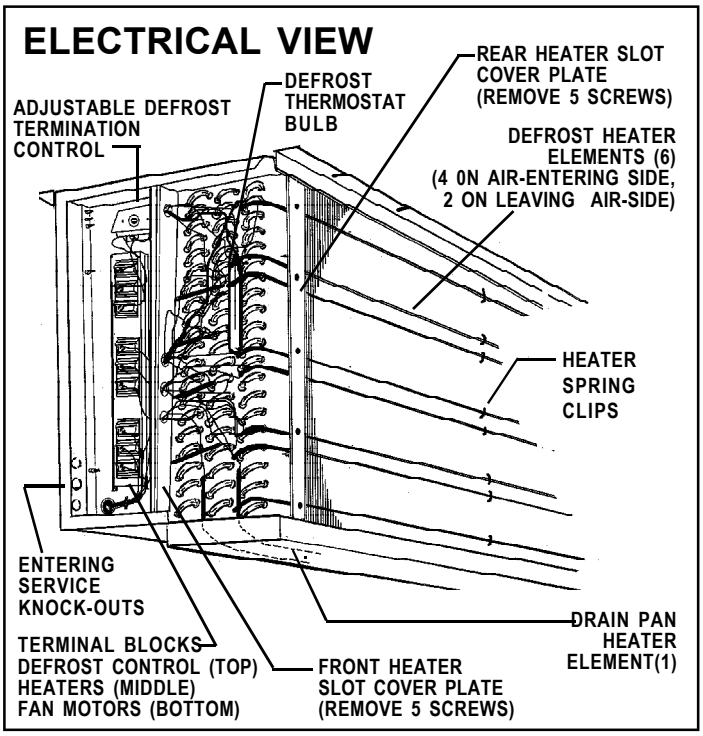
R502* - 404A - R507	MODEL BB									
EVAP TEMP	116P-ED		119P-ED		124P-ED		232P-ED		238P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/25 °F	19000	EGSE 1 1/2-C	23000	EGSE 1 1/2-C	29000	EGSE 2-C	38000	SSE 3-C	46000	SSE 4-C
+10 °F	18620		22540		28420		37240		45080	
0 °F	18050		21850	EGSE 2-C	27550		36100		43700	
-10 °F	17290	EGSE 1 1/2-ZP	20930	EGSE 2-ZP	26390	EGSE 2-ZP	34580	SSE 3-ZP	41860	SSE 4-ZP
-20 °F	16150		19550		24650	SSE 3-ZP	32300	SSE 4-ZP	39100	
-30 °F	15010		18170		22910		30020		36340	
-40 °F	13680		16560		20880		27360		33120	
EVAP TEMP	245P-ED		251P-ED		360P-ED		368P-ED		375P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/25 °F	53000	SSE 4-C	60000	SSE 4-C	70000	SSE 6-C	80000	SSE 7-C	88000	SSE 7-C
+10 °F	51940		58800		68600		78400		86240	
0 °F	50350		57000	SSE 6-C	66500	SSE 7-C	76000		83600	EBSSE 7 1/2-C
-10 °F	48230	SSE 4-ZP	54600	SSE 6-ZP	63700	SSE 6-ZP	72800	SSE 7-ZP	80080	SSE 7-ZP
-20 °F	45050	SSE 6-ZP	51000		59500	SSE 7-ZP	68000		74800	OSE 9-ZP
-30 °F	41870		47400		55300		63200	OSE 9-ZP	69520	
-40 °F	38160		43200	SSE 7-ZP	50400		57600		63360	

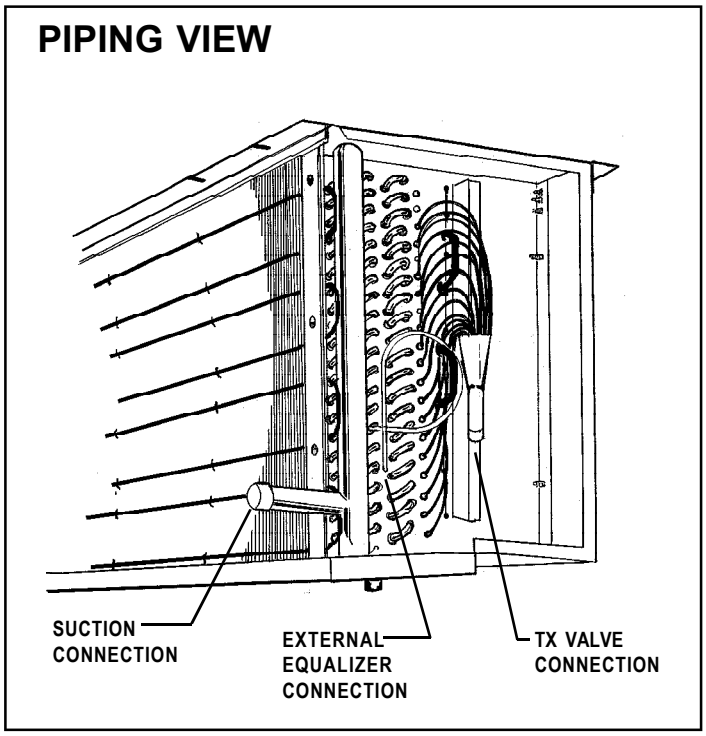
R22	MODEL BB									
EVAP TEMP	116P-ED		119P-ED		124P-ED		232P-ED		238P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/25 °F	19000	EGVE 1 1/2-C	23000	EGVE 1 1/2-C	29000	EGVE 2-C	38000	EGVE 3-C	46000	EGVE 3-C
+10 °F	18620		22540		28420		37240		45080	
0 °F	18050		21850	EGVE 2-C	27550	EGVE 3-C	36100		43700	
-10 °F	17290	EGVE 2-ZP40	20930	EGVE 2-ZP40	26390	EGVE 3-ZP40	34580	SVE 4-ZP40	41860	SVE 4-ZP40
-20 °F	16150		19550		24650		32300		39100	
-30 °F	15010		18170		22910		30020		36340	SVE 5-ZP40
-40 °F	13680		16560		20880		27360		33120	
EVAP TEMP	245P-ED		251P-ED		360P-ED		368P-ED		375P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/25 °F	53000	SVE 4-C	60000	SVE 4-C	70000	SVE 5-C	80000	SVE 8-C	88000	SVE 8-C
+10 °F	51940		58800		68600		78400		86240	
0 °F	50350		57000		66500		76000		83600	
-10 °F	48230	SVE 5-ZP40	54600	SVE 5-ZP40	63700	SVE 8-ZP40	72800	SVE 8-ZP40	80080	SVE 10-ZP40
-20 °F	45050		51000	SVE 8-ZP40	59500		63200	SVE 10-ZP40	74800	
-30 °F	41870		47400		55300		57600		69520	
-40 °F	38160	SVE 8-ZP40	43200		50400	SVE 10-ZP40	68000		63360	

R12* - R134a	MODEL BB									
EVAP TEMP	116P-ED		119P-ED		124P-ED		232P-ED		238P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/25 °F	19000	EGJE 1 1/2-C	23000	EGJE 1 1/2-C	29000	EGJE 2-C	38000	SJE 2 1/2-C	46000	SJE 3-C
+10 °F	18620		22540		28420		37240		45080	
0 °F	18050		21850	EGJE 2-C	27550		36100		43700	
EVAP TEMP	245P-ED		251P-ED		360P-ED		368P-ED		375P-ED	
	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
+20/25 °F	53000	SJE 5-C	60000	SJE 5-C	70000	SJE 5-C	80000	SJE 6-C	88000	EBSJE 7-C
+10 °F	51940		58800		68600	SJE 6-C	78400		86240	
0 °F	50350		57000		66500	SJE 5-C	76000	EBSJE 7-C	83600	

* Valve part numbers are coded for R404A (also may be used on R502 or R507) and R134a (also may be used on R12)

Note: Above Selections are based on 100 °F Entering Liquid Temperature.
VENTURI - FLO distributor does not require the selection or use of distributor nozzles.





APPLICATION

These Unit Coolers are designed for use with R12, R22, R134a, R404A, R407A/B/C, R507 or R502 refrigerants.

At room temperatures above 34°F and evaporating temps no lower than 27°F the air flowing through the coil will accomplish the defrost. Temperatures of 34°F and below (to -40°F) require positive defrosting. (either Electric or Hot Gas).These models require the use of (1) Time Clock (to initiate and terminate the defrost cycle). (2) Fan-Delay thermostat (to prevent evaporator fans from starting up right after defrost and blowing water on to fan blades, guards and floor) (3) Defrost Termination Control (to prevent unnecessary prolonged heating and steaming of the coil once all the ice and frost has melted).

The coil must not be exposed to any abnormal atmospheric or acidic environments. This may result in corrosion to the cabinet and possible coil failure (leaks). (Consult manufacturer for optional baked on phenolic protective coatings).

INSTALLATION

The installation and start-up of Unit Coolers should only be performed by qualified refrigeration mechanics.

This equipment should be installed in accordance with all applicable codes, ordinances and local by-laws.

INSPECTION

Inspect all equipment before unpacking for visible signs of damage or loss. Check shipping list against material received to ensure shipment is complete.

IMPORTANT: Remember, you, the consignee, must make any claim necessary against the transportation company. Shipping damage or missing parts, when discovered at the outset, will prevent later unnecessary and costly delays.

If damage or loss during transport is evident, make claim to carrier, as this will be their responsibility, not the manufacturer's.

Should carton be damaged, but damage to equipment is not obvious, a claim should be filed for "concealed damage" with the carrier.

IMPORTANT: The electrical characteristics of the unit should be checked at this time to make sure they correspond to those ordered and to electrical power available at the job site.

Save all shipping papers, tags and instruction sheets for reference by installer and owner.

LOCATION

The unit location in the room should be selected to ensure uniform air distribution throughout the entire space to be refrigerated. Be sure that the unit does not draw air in, or blow directly out, through an opened door and that the product does not obstruct the free circulation of air. Allow a minimum of 24" clearance at each end and behind the unit.

The Unit Coolers draw air through the coil and discharge air from the fan side.

Consideration should be given to the coil location in order to minimize the piping run length to the condensing unit and floor drain.

MOUNTING

Mounting brackets with 7/16" dia holes are provided for flush mounting to the ceiling. For details refer to dimensional data on page 6. Ensure adequate clearance (at least 24") is provided behind the coil as well as each side (to enable access to the electrical and refrig. compartments).

Ensure that the ceiling is level since the drain pan has been sloped for drainage during the defrost cycle.

DRAIN LINE

The drain line should be run from the drain connection, sloping at least 4" per foot. A trap outside the room will prevent warm air from entering through the tubing. Connection should be made to proper drainage facilities that comply with local regulations.

To prevent freeze-up when the temperature of the refrigerated space is 32 °F or lower, the drain line should be heated along its run inside the cold room. The heated drain line should be insulated. It is recommended that the heater be energized at all times. A heat input of 20 watts per foot in a 0 °F room and 30 watts per foot in a -20 °F room is usually satisfactory.

The drain pan may be mounted with the drain fitting at either end (remove pan heater and relocate pan). See page 6 for drain fitting details.

Ensure that the drain pan has sufficient slope for proper drainage (prevention of ice build up/blockage in pan).

PIPING

Refrigerant line sizes are important and may not be the same size as the coil connections. (depends on the length of run) If in doubt, consult "Recommended refrigerant line sizes" charts. (Engineering Manuals or other recognized sources of information).

WIRING

Wire system in accordance with governing standards and local codes. See data and wiring diagrams on pages 2, 3, 4 and 5 for wiring arrangement. Electrical wiring is to be sized in accordance with minimum circuit ampacity rating.

For ease of identifying the proper wiring terminals, unit wiring is colour coded and terminal block connections are identified. When **fan delay thermostats** (combination fan delay and defrost termination) are installed, on start-up, the fans do not operate until the coil temperature is reduced to approximately 20 °F. It is normal for the fans to cycle a few times until the room temperature is brought down. At higher evaporating temperatures this control may not close and therefore should be by-passed or replaced with an adjustable type.

The defrost termination control is adjustable and may be set at a minimumof 40 °F (fully CW) to a maximum of 75 °F (fully CCW). Normal setting is 55 °F. This can be increased if the defrost heaters are terminated too soon (frost still left) or decreased if terminated too long (steaming of coil). Time clock should be set for a fail-safe time termination of 30 minutes.

SYSTEM CHECK

Before Start-Up:

1. All wiring should be in accordance with local codes.
2. Refrigerant lines should be properly sized.
3. Electric defrost systems should include a liquid line solenoid valve.
4. Thorough evacuation and, dehydration has been performed.
5. The suction, discharge, and receiver service valves must be open.
6. The system should include a liquid line drier mois ture indicator and suction filter.
7. Pour enough water into the drain pan to allow a good check on drainage and seal the trap.

After Start-Up:

1. If necessary, temporarily by-pass fan delay control to run fans until room temp is lowered. (Run jumper wire from terminal N to F on control circuit terminal block).
2. Check the compressor oil level to ensure the correct oil charge.
3. Be sure that the expansion valve is properly set to provide the correct amount of superheat. (should be around 5 to 6 °F for 10 °F T.D. operation).
4. Heavy moisture loads are usually encountered when starting the system for the first time. If the coil temperature is below freezing, this will cause a rapid build-up of frost on the coil. During the initial pull-down frost build-up should be watched and the coil defrosted manually, as required.
5. Check for proper evaporator fan blade rotation.

MAINTENANCE

The unit should be periodically inspected for any dirt or build-up on the fin surface and cleaned if necessary with a soft whisk or brush.

Also ensure coil and pan does not have any excessive ice build-up from improper defrost operation. When replacing heater elements first remove heater slot covers and heater clips. (See page 9 for detailed view).

SERVICE PARTS LIST

FAN MOTORS - 60Hz	MODELS	PART #
208-230/1/60	ALL	1045032
208-230/3/60	ALL	1045033
460/3/60	ALL	1045034
575/3/60	ALL	1045035
FAN MOTORS - 50Hz	**MODELS**	**PART #**
200-220/1/50	ALL	1045032
200-220/3/50	ALL	1045033
380-400/3/50	ALL	1045034
FAN BLADES	**MODELS**	**PART #**
20" 18° Pitch 4-Blade	116P-ED	1048568
20" 23° Pitch 4-Blade	ALL (EXCEPT 116P-ED)	1045115
FAN GUARDS	**MODELS**	**PART #**
Moulded Throw Booster (standard)	ALL	1045089
Metal Wire (optional)	ALL	1045091
Acorn Nut	ALL	1045138
	MODELS	**PART #**
Motor Mount	ALL	1045031
	MODELS	**PART #**
Terminal Block - Fan Motor(s)	ALL	1045017
Terminal Block-Defrost Heaters	ALL	1045018
Terminal Block-Control	ALL	1045017
Defrost Control Thermostat	ALL	1048610
Face Heater Clip	ALL	1048609

	COIL FACE HEATERS (6 REQUIRED)				DRAIN PAN HEATER (1 REQUIRED)			
MODEL	**230V**	**380V**	**460V**	**575V**	**230V**	**380V**	**460V**	**575V**
116	1045039-001	1045039-002	1045039-003	1045039-004	1045039-017	1045039-018	1045039-019	1045039-020
119, 124	1045039-005	1045039-006	1045039-007	1045039-008	1045039-021	1045039-022	1045039-023	1045039-024
232, 238, 245, 251	1045039-009	1045039-010	1045039-011	1045039-012	1045039-025	1045039-026	1045039-027	1045039-028
360, 368, 375	1045039-013	1045039-014	1045039-015	1045039-016	1045039-029	1045039-030	1045039-031	1045039-032

SERVICE LOG

DATE	COMMENTS

PROJECT INFORMATION

System	
Model Number	Date of Start-Up
Serial Number	Service Contractor
Refrigerant	Phone
Electrical Supply	Fax

Bally
REFRIGERATION PRODUCTS

General Sales, Parts & Service Manufacturing & Engineering
135 Little Nine Drive, Morehead City, NC 28557
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Due to Manufacturer's policy of continuous product improvement, the Manufacturer reserves the right to make changes without notice.