TLV Low Velocity Evaporators 60 Hz

PRODUCT DATA & INSTALLATION

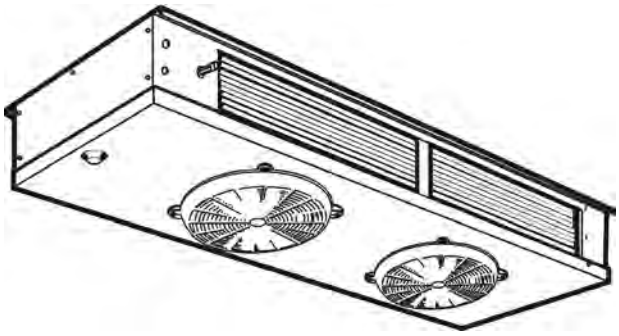
Bulletin T30-TLV-PDI-26

1073478

Questions about this product?
Email: evaps@t-rp.com
Call: 1-844-893-3222 x520

High Temperature
35°F *(2°C)* or Above Box Temperature and
Medium Temperature
28°F to 34°F Box Temperature *(-2°C to 1°C)*

Defrost Types:
Air, Electric or Hot Gas Defrost



SMARTSPEED™ FAN MOTOR TECHNOLOGY
See Page 14 for details

INCLUDES RATINGS FOR LOW GWP REFRIGERANTS

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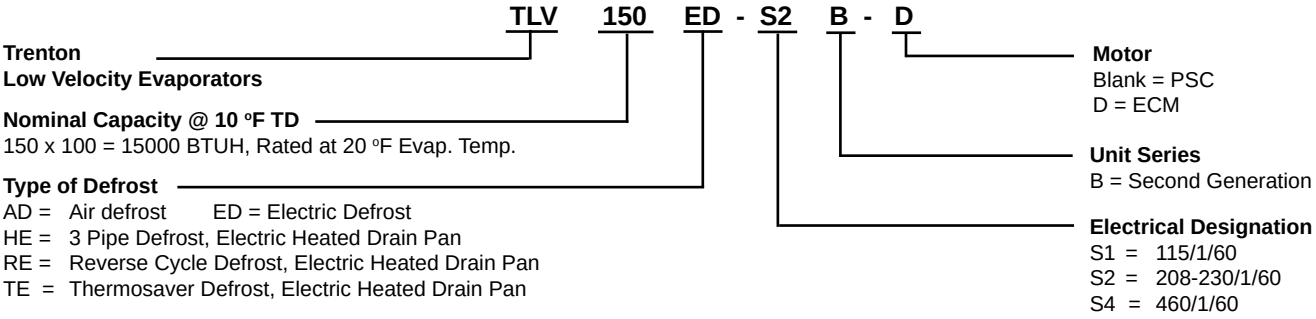
NOMENCLATURE



STANDARD FEATURES

- Compatable with Low GWP Refrigerants
- Heavy gauge textured aluminum cabinet construction resists scratches/corrosion and minimizes weight for shipment, installation and service.
- High-efficiency PSC motors.
- Specially designed for quiet operation - ideal for prep. rooms.
- Capacity up to 37,000 BTUH nominal.
- Dual refrigeration coils with two-way air distribution reduces air velocities to minimize product dehydration.
- Reduced operating charge with 3/8” OD tubing
- Spacious end compartment allows for easy component installation.
- Attractive and durable high-density polypropylene fan guards.
- Hinged drain pan provides convenient access for cleaning.
- Terminal board allows for easy electrical connections.
- Refrigerants R407A, R407C, R404A/R507, R22 and R134a.

OPTIONAL FEATURES

- Factory mounted solenoid valve, TXV and thermostat.
- Fin material and special coatings
- EC motors with patented SmartSpeed® Technology. See page 14
- Other options available - consult factory

CAPACITY DATA - ALL MODELS

High Temp. Model			060AD	090AD	120AD	150AD	180AD	220AD	270AD	300AD	340AD	370AD
Electric Defrost Model			060ED	090ED	120ED	150ED	180ED	220ED	270ED	300ED	340ED	370ED
Hot Gas Defrost Model			060‡	090‡	120‡	150‡	180‡	220‡	270‡	300‡	340‡	370‡
Capacity BTUH *(WATTS)*	Evap Temp. 25°F *(-4°C)*	R407A	*5700 (1669)*	*8550 (2503)*	*11400 (3338)*	*14250 (4172)*	*17100 (5007)*	*20900 (6120)*	*25700 (7511)*	*28500 (8345)*	*32300 (9458)*	*35200 (10292)*
		R407C	*5400 (1581)*	*8100 (2372)*	*10800 (3163)*	*13500 (3953)*	*16200 (4744)*	*19800 (5798)*	*24400 (7115)*	*27100 (7906)*	*30700 (8960)*	*33400 (9751)*
		R404A R507	*6000 (1757)*	*9000 (2635)*	*12000 (3514)*	*15000 (4392)*	*18000 (5271)*	*22000 (6442)*	*27000 (7906)*	*30000 (8784)*	*34000 (9956)*	*37000 (10834)*
		R22	*5700 (1669)*	*8550 (2503)*	*11400 (3338)*	*14250 (4172)*	*17100 (5007)*	*20900 (6120)*	*25700 (7511)*	*28500 (8345)*	*32300 (9458)*	*35200 (10292)*
		R134a	*5400 (1581)*	*8100 (2372)*	*10800 (3163)*	*13500 (3953)*	*16200 (4744)*	*19800 (5798)*	*24300 (7115)*	*27000 (7906)*	*30600 (8960)*	*33300 (9751)*
Air Flow	CFM *(L/s)*		850 *(401)*	1120 *(529)*	1500 *(708)*	2000 *(944)*	2530 *(1194)*	2785 *(1314)*	3400 *(1605)*	4000 *(1888)*	4370 *(2062)*	4840 *(2284)*
Refrigerant ** Charge R407A		Lbs *(Kg)*	2.6 *(1.3)*	4.4 *(2.2)*	6.5 *(3.3)*	7.3 *(3.6)*	7.9 *(4.0)*	10.1 *(5.1)*	9.9 *(5.0)*	11.9 *(6.1)*	15.2 *(7.7)*	15.2 *(7.7)*
Std. Unit Net Weight (w/o Refrigerant)		Lbs *(Kg)*	90 *(41)*	105 *(48)*	139 *(63)*	158 *(72)*	220 *(100)*	235 *(107)*	257 *(117)*	270 *(123)*	280 *(127)*	290 *(132)*

‡ Refer to Hot Gas Defrost nomenclature and insert appropriate code

NOTE: Defrost heaters can be field converted to operate on 208-230/3/60

Capacities rated using 10°F *(5.6°C)* TD & 100°F *(38°C)* liquid temperature.

Capacities at other TD within a range of 8 to 15 °F *(4.4 to 8.3°C)* are directly proportional to TD, or use formula: Capacity = Rated capacity ÷ 10 x TD.

For capacities at TD outside of range 8 to 15 °F *(4.4 to 8.3°C)*, or liquid temperature lower than 75°F *(24°)*, consult factory.

Capacities for R407A and R407C are based on mean temperature. Mean temperature is the average temperature between the saturated suction temperature and the temperature feeding the evaporator. For dew point ratings, consult factory.

**** REFRIGERANT CHARGE CONVERSION FACTORS**

R407C	R404A	R507	R22	R134a
0.99	0.92	0.93	1.02	1.03

Air Defrost Models - 115/1/60

Model	No. of Fans	Standard PSC Motor				Optional EC Motor			
		FLA	MCA*	Watts	MOP	FLA	MCA*	Watts	MOP
TLV 060AD	1	1.1	1.4	90	15	0.8	1.0	55	15
TLV 090AD	1	1.1	1.4	130	15	1.6	2.0	95	15
TLV 120AD	2	2.2	2.5	180	15	1.6	1.8	110	15
TLV 150AD	2	2.2	2.5	260	15	3.2	3.6	190	15
TLV 180AD	3	3.3	3.6	270	15	2.4	2.6	165	15
TLV 220AD	3	3.3	3.6	390	15	4.8	5.2	285	15
TLV 270AD	3	3.3	3.6	390	15	4.8	5.2	285	15
TLV 300AD	4	4.4	4.7	520	15	6.4	6.8	380	15
TLV 340AD	4	4.4	4.7	520	15	6.4	6.8	380	15
TLV 370AD	5	5.5	5.8	650	15	8.0	8.4	475	15

FLA = Full Load Amps MCA = Minimum Circuit Ampacity MOP = Maximum Over Current Protection

* Electrical wiring is to be sized in accordance with minimum circuit ampacity

Air Defrost Models - 208-230/1/60

Model	No. of Fans	Standard PSC Motor				Optional EC Motor			
		FLA	MCA*	Watts	MOP	FLA	MCA*	Watts	MOP
TLV 060AD	1	0.5	0.6	90	15	0.5	0.6	55	15
TLV 090AD	1	0.5	0.6	130	15	1.0	1.3	95	15
TLV 120AD	2	1.0	1.1	180	15	1.0	1.1	110	15
TLV 150AD	2	1.0	1.1	260	15	2.0	2.3	190	15
TLV 180AD	3	1.5	1.6	270	15	1.5	1.6	165	15
TLV 220AD	3	1.5	1.6	390	15	3.0	3.3	285	15
TLV 270AD	3	1.5	1.6	390	15	3.0	3.3	285	15
TLV 300AD	4	2.0	2.1	520	15	4.0	4.3	380	15
TLV 340AD	4	2.0	2.1	520	15	4.0	4.3	380	15
TLV 370AD	5	2.5	2.6	650	15	5.0	5.3	475	15

FLA = Full Load Amps MCA = Minimum Circuit Ampacity MOP = Maximum Over Current Protection

* Electrical wiring is to be sized in accordance with minimum circuit ampacity

Air Defrost Models - 460/1/60

Model	No. of Fans	Standard PSC Motor			
		FLA	MCA*	Watts	MOP
TLV 060AD	1	0.3	0.4	90	15
TLV 090AD	1	0.3	0.4	130	15
TLV 120AD	2	0.6	0.7	180	15
TLV 150AD	2	0.6	0.7	260	15
TLV 180AD	3	0.9	1.0	270	15
TLV 220AD	3	0.9	1.0	390	15
TLV 270AD	3	0.9	1.0	390	15
TLV 300AD	4	1.2	1.3	520	15
TLV 340AD	4	1.2	1.3	520	15
TLV 370AD	5	1.5	1.6	650	15

FLA = Full Load Amps MCA = Minimum Circuit Ampacity

MOP = Maximum Over Current Protection

* Electrical wiring is to be sized in accordance with minimum circuit ampacity

ELECTRICAL DATA (cont'd)

Electric Defrost Models - 115/1/60

Model	No. of Fans	Fan Motors								Defrost Heaters			
		Standard PSC Motor				Optional EC Motor							
		FLA	MCA*	Watts	MOP	FLA	MCA*	Watts	MOP	Watts	FLA	MCA*	MOP
TLV 060ED	1	1.1	1.4	90	15	0.8	1.0	55	15	1880	16.4	20.4	25
TLV 090ED	1	1.1	1.4	130	15	1.6	2.0	95	15	1880	16.4	20.4	25

FLA = Full Load Amps MCA = Minimum Circuit Ampacity MOP = Maximum Over Current Protection

* Electrical wiring is to be sized in accordance with minimum circuit ampacity

Electric Defrost Models - 208-230/1/60

Model	No. of Fans	Fan Motors - 208-230/1/60								Defrost Heaters - 208/230/1/60				Defrost Heaters field converted to operate on 208-230/3/60			
		Standard PSC Motor				Optional EC Motor											
		FLA	MCA*	Watts	MOP	FLA	MCA*	Watts	MOP	Watts	FLA	MCA*	MOP	Watts	FLA	MCA*	MOP
TLV 060ED	1	0.5	0.6	90	15	0.5	0.6	55	15	1880	8.2	10.2	15	1880	4.9	6.1	15
TLV 090ED	1	0.5	0.6	130	15	1.0	1.3	95	15	1880	8.2	10.2	15	1880	4.9	6.1	15
TLV 120ED	2	1.0	1.1	180	15	1.0	1.1	110	15	3180	13.8	17.3	20	3180	8.5	10.6	15
TLV 150ED	2	1.0	1.1	260	15	2.0	2.3	190	15	3180	13.8	17.3	20	3180	8.5	10.6	15
TLV 180ED	3	1.5	1.6	270	15	1.5	1.6	165	15	4540	19.7	24.7	25	4540	12.1	15.1	20
TLV 220ED	3	1.5	1.6	390	15	3.0	3.3	285	15	4540	19.7	24.7	25	4540	12.1	15.1	20
TLV 270ED	3	1.5	1.6	390	15	3.0	3.3	285	15	4540	19.7	24.7	25	4540	12.1	15.1	20
TLV 300ED	4	2.0	2.1	520	15	4.0	4.3	380	15	4540	19.7	24.7	25	4540	12.1	15.1	20
TLV 340ED	4	2.0	2.1	520	15	4.0	4.3	380	15	5580	24.3	30.3	35	5580	14.9	18.6	20
TLV 370ED	5	2.5	2.6	650	15	5.0	5.3	475	15	5580	24.3	30.3	35	5580	14.9	18.6	20

FLA = Full Load Amps MCA = Minimum Circuit Ampacity MOP = Maximum Over Current Protection

* Electrical wiring is to be sized in accordance with minimum circuit ampacity

Hot Gas Defrost Models - 115/1/60

Model	No. of Fans	Standard PSC Motor					Optional EC Motor				
		Drain Pan Heater Watts	Heater Amps	Fan Motor FLA	MCA*	MOP	Drain Pan Heater Watts	Heater Amps	Fan Motor FLA	MCA*	MOP
TLV 060 HE/RE	1	580	5.0	1.1	6.3	15	580	5.0	0.8	6.6	15
TLV 090 HE/RE	1	580	5.0	1.1	6.3	15	580	5.0	1.6	6.6	15
TLV 120 HE/RE	2	580	5.0	2.2	6.3	15	580	5.0	1.6	6.6	15
TLV 150 HE/RE	2	580	5.0	2.2	6.3	15	580	5.0	3.2	6.6	15
TLV 180 HE/RE	3	820	7.1	3.3	8.9	15	820	7.1	2.4	9.4	15
TLV 220 HE/RE	3	820	7.1	3.3	8.9	15	820	7.1	4.8	9.4	15
TLV 270 HE/RE	3	820	7.1	3.3	8.9	15	820	7.1	4.8	9.4	15
TLV 300 HE/RE	4	820	7.1	4.4	8.9	15	820	7.1	6.4	9.4	15
TLV 340 HE/RE	4	1020	8.9	4.4	11.1	15	1020	8.9	6.4	11.6	15
TLV 370 HE/RE	5	1020	8.9	5.5	11.1	15	1020	8.9	8	11.6	15

FLA = Full Load Amps MCA = Minimum Circuit Ampacity MOP = Maximum Over Current Protection

* Electrical wiring is to be sized in accordance with minimum circuit ampacity

Hot Gas Defrost Models - 208-230/1/60

Model	No. of Fans	Standard PSC Motor					Optional EC Motor				
		Drain Pan Heater Watts	Heater Amps	Fan Motor FLA	MCA*	MOP	Drain Pan Heater Watts	Heater Amps	Fan Motor FLA	MCA*	MOP
TLV 060 HE/RE	1	580	2.5	0.5	3.2	15	580	2.5	0.5	2.9	15
TLV 090 HE/RE	1	580	2.5	0.5	3.2	15	580	2.5	1.0	2.9	15
TLV 120 HE/RE	2	580	2.5	1.0	3.2	15	580	2.5	1.0	2.9	15
TLV 150 HE/RE	2	580	2.5	1.0	3.2	15	580	2.5	2.0	2.9	15
TLV 180 HE/RE	3	820	3.6	1.5	4.5	15	820	3.6	1.5	4.1	15
TLV 220 HE/RE	3	820	3.6	1.5	4.5	15	820	3.6	3.0	4.1	15
TLV 270 HE/RE	3	820	3.6	1.5	4.5	15	820	3.6	3.0	4.1	15
TLV 300 HE/RE	4	820	3.6	2.0	4.5	15	820	3.6	4.0	4.1	15
TLV 340 HE/RE	4	1020	4.4	2.0	5.5	15	1020	4.4	4.0	5.1	15
TLV 370 HE/RE	5	1020	4.4	2.5	5.5	15	1020	4.4	5.0	5.1	15

FLA = Full Load Amps MCA = Minimum Circuit Ampacity MOP = Maximum Over Current Protection

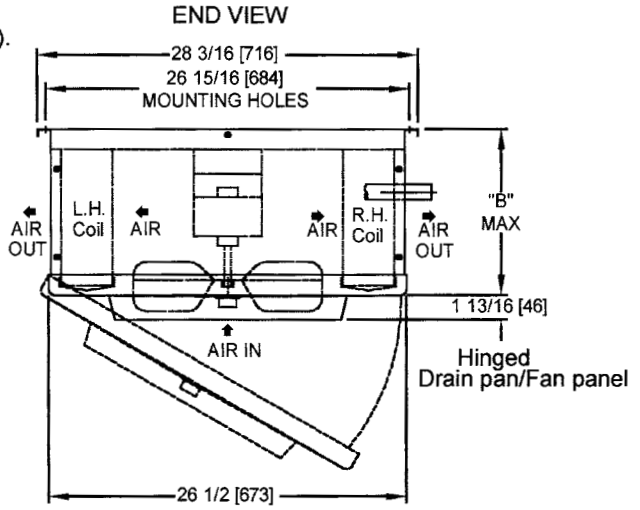
* Electrical wiring is to be sized in accordance with minimum circuit ampacity

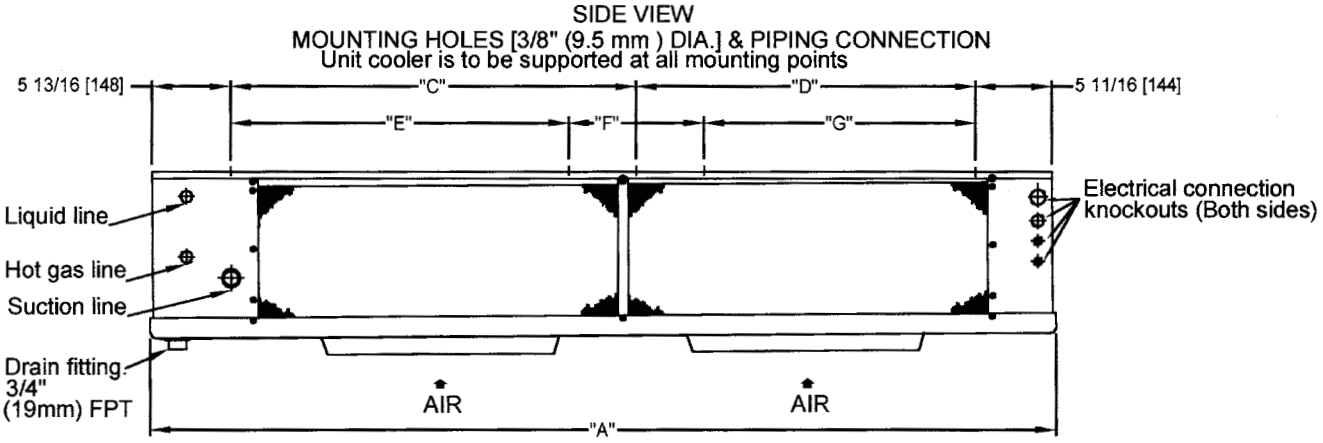
DIMENSIONAL DATA - Inches *(mm)*

NOTES: 1) Dimensions shown in inches & (mm). These are typical for Air, Electric and Hot gas defrost models.

2) Electrical connection end is opposite to the piping end on all models.

3) 1/4" (6 mm) O.D. external equalizer line and service access fitting included on all suction headers inside end compartment

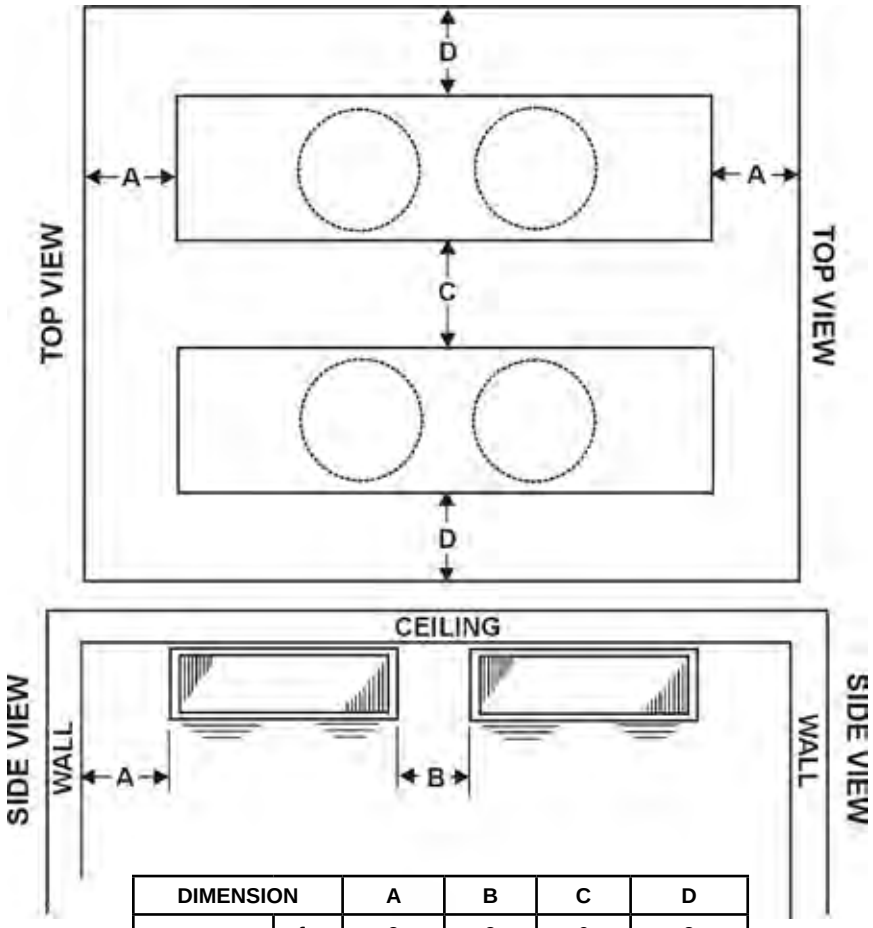




MODEL	No. of Fans	DIMENSIONAL DATA - INCHES *(mm)*									
		Suction Connection (OD)	Distributor Inlet (OD)	Hot Gas Side Conn. (OD)	A	B	Mounting Holes				
							C	D	E	F	G
060	1	5/8 *(16)*	1/2 *(13)*	1/2 *(13)*	66 7/8 *(1699)*	8 11/16 *(221)*	27 1/2 *(699)*	27 1/2 *(699)*	-	-	-
090	1	7/8 *(22)*	1/2 *(13)*	1/2 *(13)*	66 7/8 *(1699)*	9 9/16 *(252)*	27 1/2 *(699)*	27 1/2 *(699)*	-	-	-
120	2	7/8 *(22)*	1/2 *(13)*	1/2 *(13)*	66 7/8 *(1699)*	12 7/16 *(316)*	27 1/2 *(699)*	27 1/2 *(699)*	-	-	-
150	2	1 1/8 *(29)*	1/2 *(13)*	1/2 *(13)*	66 7/8 *(1699)*	14 15/16 *(378)*	27 1/2 *(699)*	27 1/2 *(699)*	-	-	-
180	3	1 1/8 *(29)*	1/2 *(13)*	1/2 *(13)*	92 7/8 *(2359)*	14 15/16 *(378)*	40 1/2 *(1029)*	40 1/2 *(1029)*	-	-	-
220	3	1 1/8 *(29)*	1/2 *(13)*	1/2 *(13)*	92 7/8 *(2359)*	14 15/16 *(378)*	40 1/2 *(1029)*	40 1/2 *(1029)*	-	-	-
270	3	1 1/8 *(29)*	* 7/8 *(22)*	5/8 *(16)*	92 7/8 *(2359)*	17 7/16 *(443)*	40 1/2 *(1029)*	40 1/2 *(1029)*	-	-	-
300	4	1 1/8 *(29)*	* 7/8 *(22)*	5/8 *(16)*	92 7/8 *(2359)*	17 7/16 *(443)*	40 1/2 *(1029)*	40 1/2 *(1029)*	-	-	-
340	4	1 3/8 *(35)*	* 7/8 *(22)*	5/8 *(16)*	112 7/8 *(2867)*	17 7/16 *(443)*	-	-	40 1/2 *(1029)*	20 *(508)*	40 1/2 *(1029)*
370	5	1 3/8 *(35)*	* 7/8 *(22)*	5/8 *(16)*	112 7/8 *(2867)*	17 7/16 *(443)*	-	-	40 1/2 *(1029)*	20 *(508)*	40 1/2 *(1029)*

* Reducer supplied to accomodate 1/2" or 7/8" TXV outlet connection.

RECOMMENDED INSTALLATION CLEARANCES



DIMENSION		A	B	C	D
Minimum	ft.	2	2	6	3
	(cm.)	*(61)*	*(61)*	*(183)*	*(92)*
Maximum	ft.	-	7	40	20
	(cm.)	-	*(210)*	*(1200)*	*(600)*

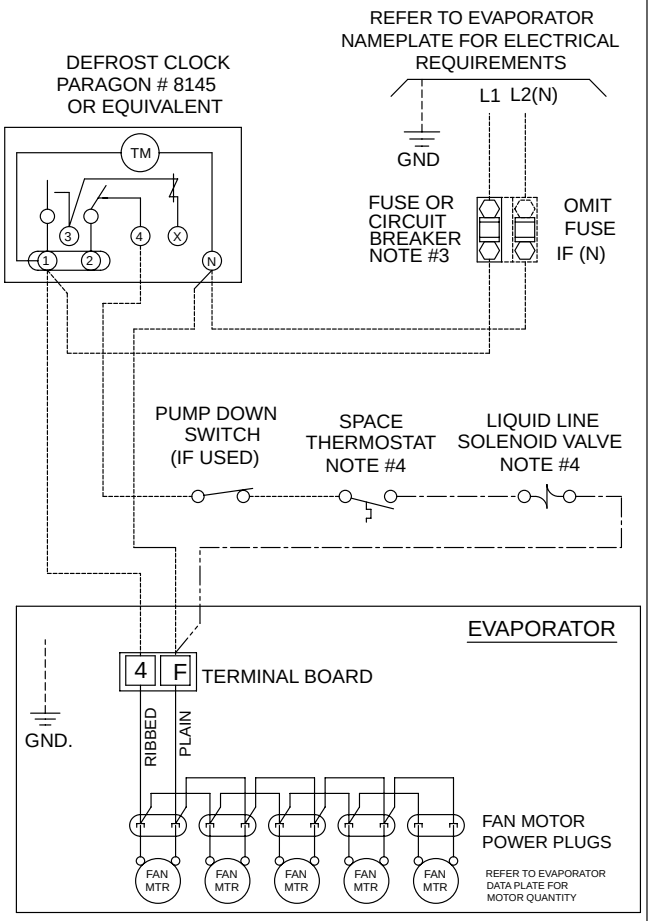
WIRING DIAGRAM

AIR DEFROST - 120V & 208-230V

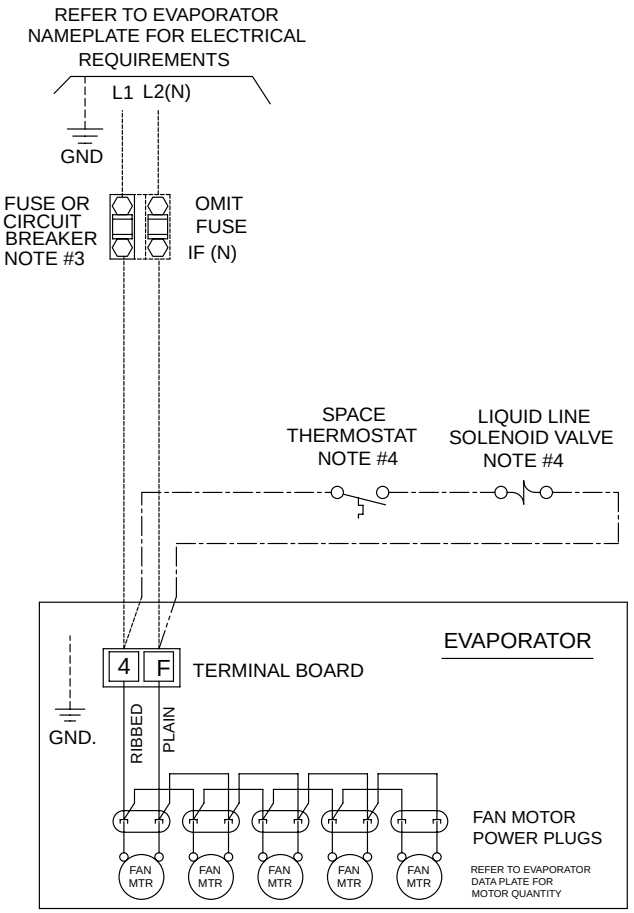
AIR DEFROST

TYPICAL WIRING: FOR MULTIPLE EVAPORATORS AND OTHER ALTERNATIVE WIRING, SEE INSTALLATION MANUAL

WITH DEFROST TIME CLOCK



WITHOUT DEFROST TIME CLOCK



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 75°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR (PRE-ASSEMBLED MODELS)

TERMINALS

DH -DRAIN PAN HEATER

◯-COMP0NENT TERMINAL - MARKED

⬡-COMPONENT TERMINAL - UNMARKED (IDENTIFIABLE BY LOCATION)

○ -COMPONENT TERMINAL - UNMARKED (UNIDENTIFIABLE)

□ -TERMINAL BLOCK TERMINAL

∘ -WIRE SPLICE

CONDUCTORS/WIRING

——————— FACTORY WIRING

- - - - - - - - - - - - WIRING BY OTHERS

—·—·—·—·—·— OPTIONAL FACTORY OR BY OTHERS

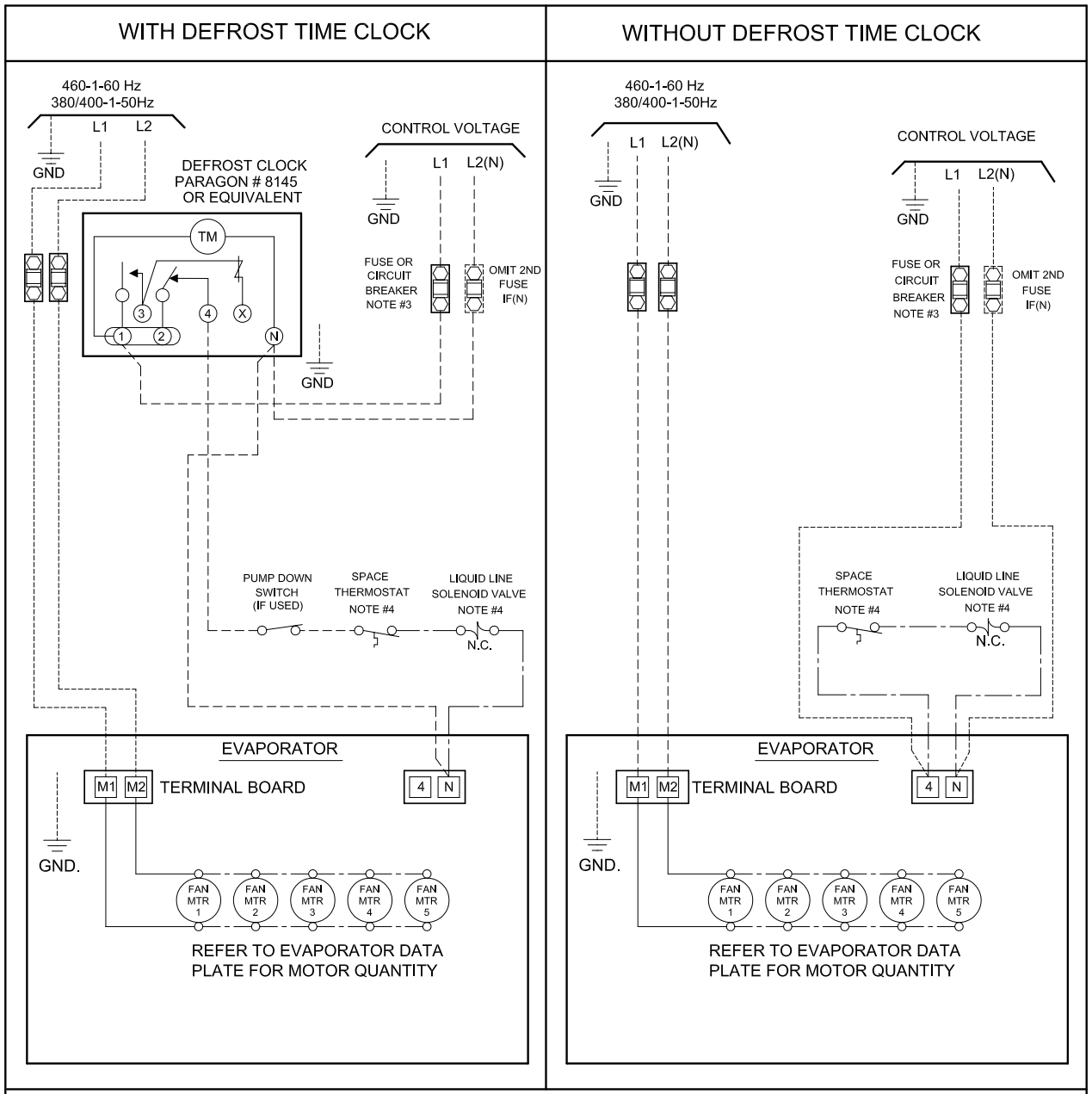
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

REV A
11/05/01
1073979

WIRING DIAGRAM

AIR DEFROST - 460V

TYPICAL WIRING: FOR MULTIPLE EVAPORATORS AND OTHER ALTERNATIVE WIRING, SEE INSTALLATION MANUAL



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 90°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR .

5). REFER TO EVAPORATOR DATA PLATE FOR MOTOR QUANTITY

KTM AD 06/16

TERMINALS

○ -COMPONENT TERMINAL

□ -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

———— FACTORY WIRING

- - - - - - - - - - - - WIRING BY OTHERS

——·——·—— OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

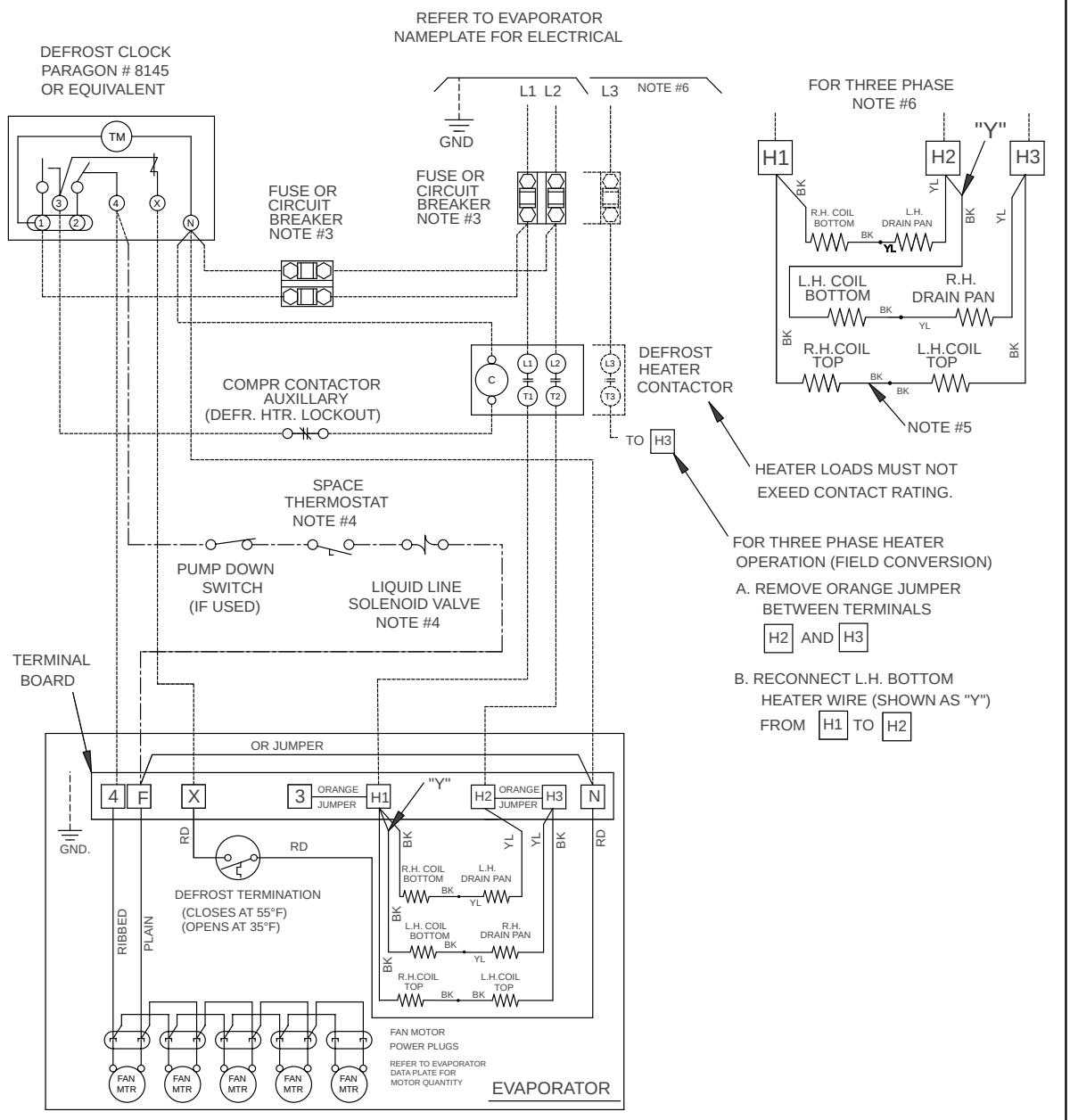
WIRING DIAGRAM

ELECTRIC DEFROST - SINGLE EVAPORATOR

ELECTRIC DEFROST

EVAPORATOR WITH DEFROST HEATER CONTACTOR

TYPICAL WIRING: FOR MULTIPLE EVAPORATORS AND OTHER ALTERNATIVE WIRING, SEE INSTALLATION MANUAL



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 75°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR (PRE-ASSEMBLED MODELS) ON MULTIPLE PRE-ASSEMBLED EVAPORATORS WIRE SECOND EVAPORATOR SOLENOID IN PARALLEL WITH FIRST ONE. ONLY USE ONE THERMOSTAT.

5). THESE HEATERS NOT USED ON _LV060ED AND _LV090ED MODELS

TERMINALS

- -COMPONENT TERMINAL - MARKED
- -COMPONENT TERMINAL - UNMARKED (IDENTIFIABLE BY LOCATION)
- -COMPONENT TERMINAL - UNMARKED (UNIDENTIFIABLE)
- -TERMINAL BLOCK TERMINAL
- -WIRE SPLICE

CONDUCTORS/WIRING

- FACTORY WIRING
- WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

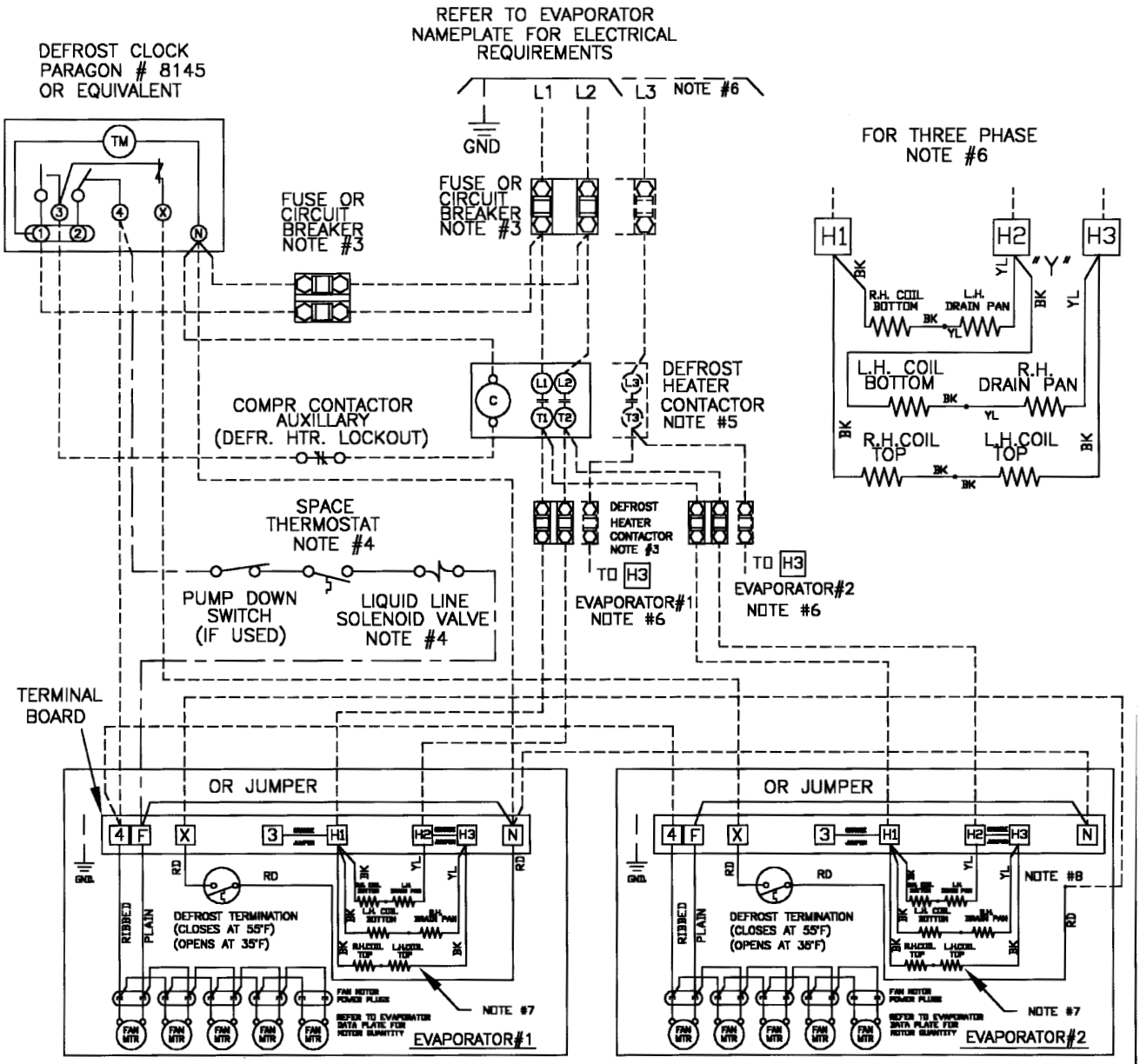
REV B 11/05/01

1073978

WIRING DIAGRAM

ELECTRIC DEFROST - MULTIPLE EVAPORATORS

FOR ALL MODELS USING DEFROST HEATER CONTACTOR



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 60°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR (PRE-ASSEMBLED MODELS) ON MULTIPLE PRE-ASSEMBLED EVAPORATORS WIRE SECOND EVAPORATOR SOLENOID IN PARALLEL WITH FIRST ONE. ONLY USE ONE THERMOSTAT.

5). HEATER LOADS MUST NOT EXCEED CONTACT RATING.

6). FOR THREE PHASE HEATER OPERATION (FIELD CONVERSION)

A. REMOVE ORANGE JUMPER BETWEEN TERMINALS

H2 AND H3

B. RECONNECT L.H. BOTTOM HEATER WIRE (SHOWN AS "Y")

FROM H1 TO H2

7). TOP HEATERS NOT USED ON MODELS _LV060ED & _LV090ED

8). REMOVE RD WIRE FROM TERMINAL N AND SPLICE AS SHOWN

TERMINALS

- ○ -COMPONENT TERMINAL - MARKED
- ⬡ -COMPONENT TERMINAL - UNMARKED (IDENTIFIABLE BY LOCATION)
- o -COMPONENT TERMINAL - UNMARKED (UNIDENTIFIABLE)
- □ -TERMINAL BLOCK TERMINAL
- • -WIRE SPLICE

CONDUCTORS/WIRING

- ——— FACTORY WIRING
- - - - - - - - - WIRING BY OTHERS
- ——— - - ——— OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

REV 10/26/01

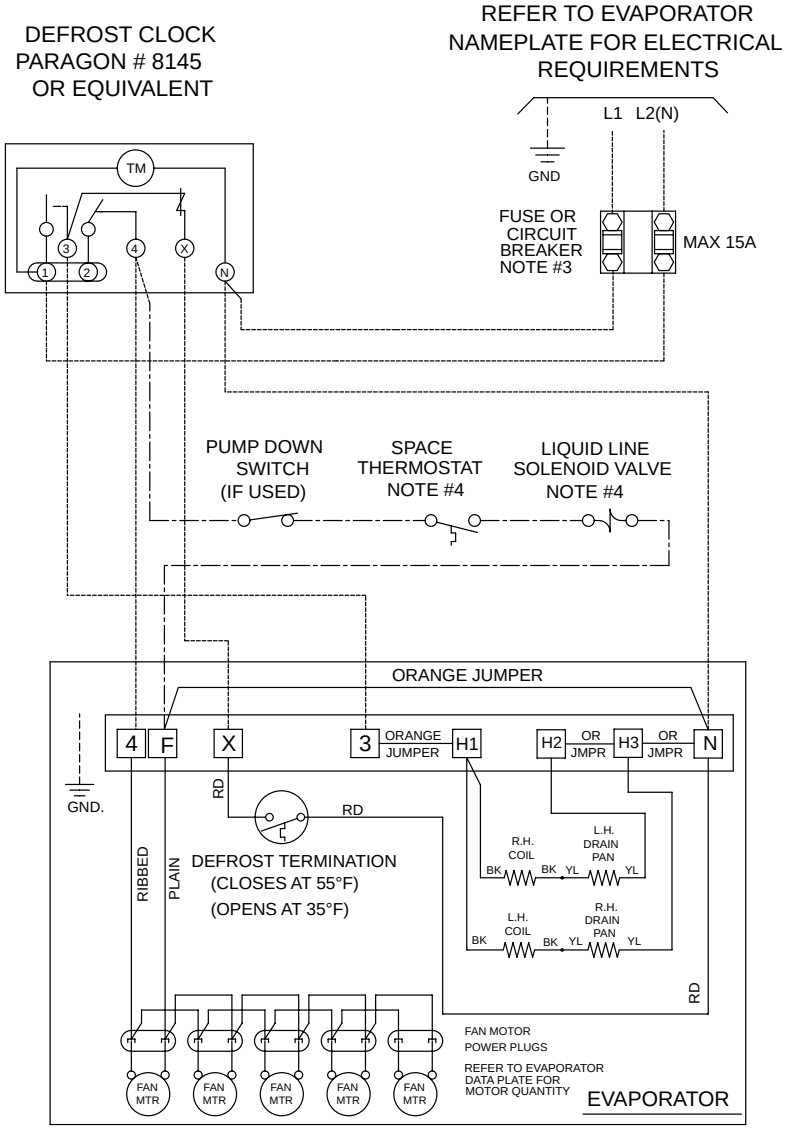
WIRING DIAGRAM

ELECTRIC DEFROST - (For optional use on models 060ED and 090ED operating on 208-230/1/60)

ELECTRIC DEFROST

EVAPORATOR WITHOUT DEFROST HEATER CONTACTOR USING MAX 15A HEATER OVERCURRENT PROTECTION

TYPICAL WIRING: FOR MULTIPLE EVAPORATORS AND OTHER ALTERNATIVE WIRING, SEE INSTALLATION MANUAL



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 75°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR (PRE-ASSEMBLED MODELS) ON MULTIPLE PRE-ASSEMBLED EVAPORATORS WIRE SECOND EVAPORATOR SOLENOID IN PARALLEL WITH FIRST ONE. ONLY USE ONE THERMOSTAT.

TERMINALS

- ◯-COMP0NENT TERMINAL - MARKED
- ⬡-COMPONENT TERMINAL - UNMARKED (IDENTIFIABLE BY LOCATION)
- O -COMPONENT TERMINAL - UNMARKED (UNIDENTIFIABLE)
- □ -TERMINAL BLOCK TERMINAL
- ⚬ -WIRE SPLICE

CONDUCTORS/WIRING

- ——————— FACTORY WIRING
- ---------- WIRING BY OTHERS
- - — · — · — OPTIONAL FACTORY OR BY OTHERS

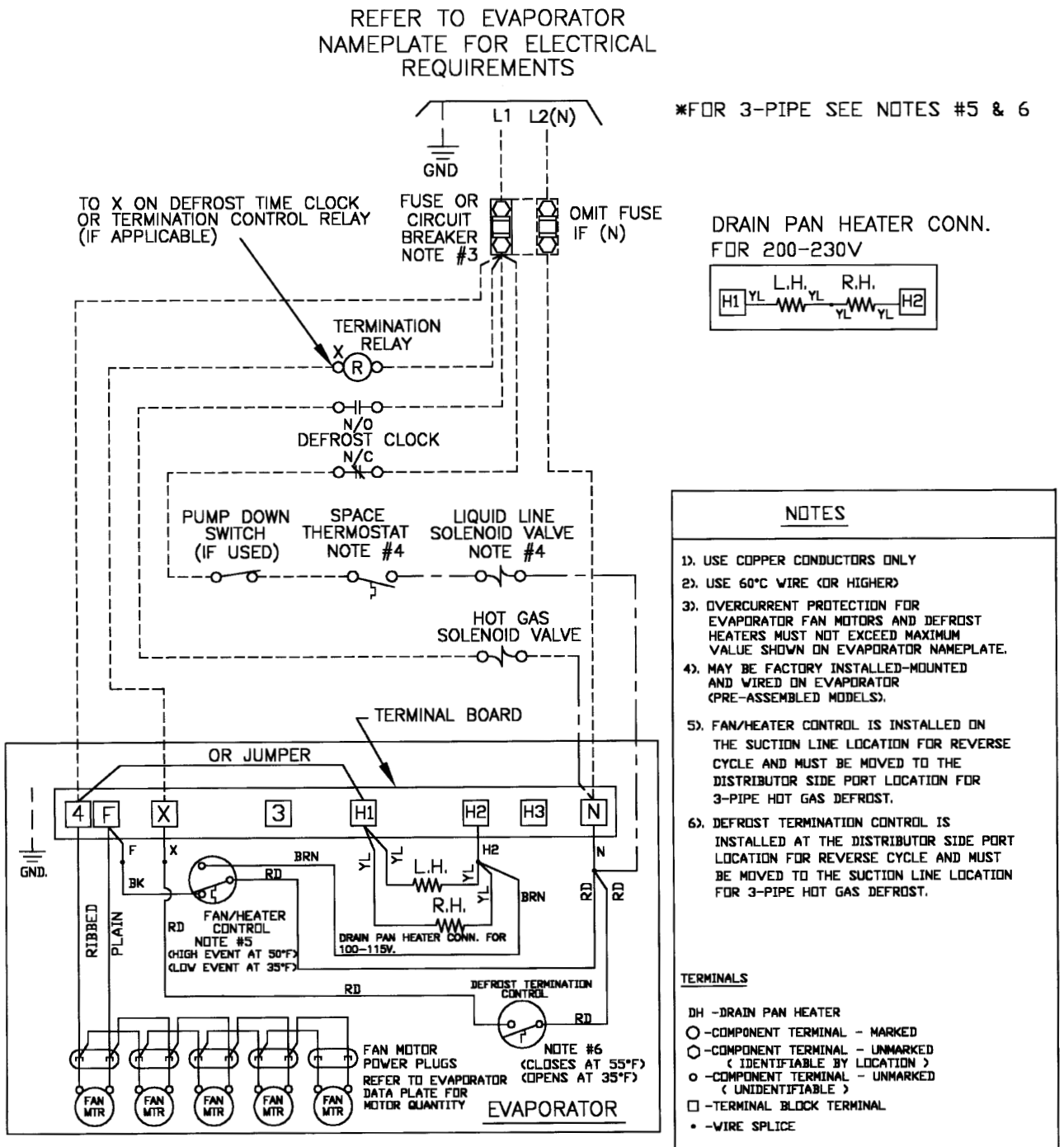
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

1074180
REV-A

WIRING DIAGRAM

HOT GAS DEFROST - 120V & 208-230V

REVERSE CYCLE AND 3-PIPE HOT GAS DEFROST



NOTE: DURING THE HOT GAS DEFROST CYCLE, THE FAN/HEATER CONTROL DE-ENERGIZES THE EVAPORATOR FANS AND ENERGIZES THE DRAIN PAN HEATERS, ANYTIME TEMPERATURE OF INCOMING REFRIGERANT GAS IS ABOVE 50°F

NOTES

1). USE COPPER CONDUCTORS ONLY
2). USE 60°C WIRE (OR HIGHER)
3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR (PRE-ASSEMBLED MODELS).
5). FAN/HEATER CONTROL IS INSTALLED ON THE SUCTION LINE LOCATION FOR REVERSE CYCLE AND MUST BE MOVED TO THE DISTRIBUTOR SIDE PORT LOCATION FOR 3-PIPE HOT GAS DEFROST.
6). DEFROST TERMINATION CONTROL IS INSTALLED AT THE DISTRIBUTOR SIDE PORT LOCATION FOR REVERSE CYCLE AND MUST BE MOVED TO THE SUCTION LINE LOCATION FOR 3-PIPE HOT GAS DEFROST.

TERMINALS

DH -DRAIN PAN HEATER
○ -COMPONENT TERMINAL - MARKED
⬡ -COMPONENT TERMINAL - UNMARKED (IDENTIFIABLE BY LOCATION)
o -COMPONENT TERMINAL - UNMARKED (UNIDENTIFIABLE)
□ -TERMINAL BLOCK TERMINAL
• -WIRE SPLICE

CONDUCTORS/WIRING

———— FACTORY WIRING
– – – – – – – – WIRING BY OTHERS
—— – —— OPTIONAL FACTORY OR BY OTHERS

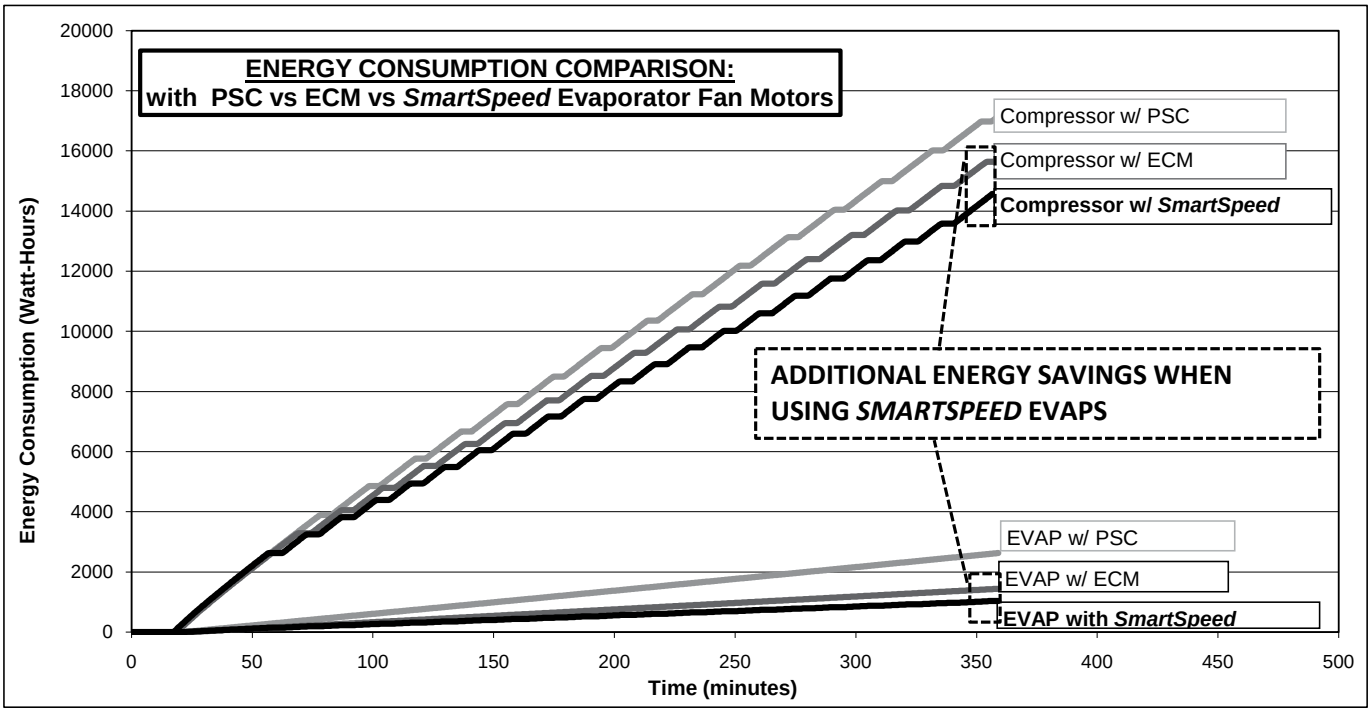
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

REV 11/05/01

US Patents
8,635,883 &
9,151,525

DESIGN FEATURES

- Standard on all EC Motors
- NO special controls required.
- Refrigeration mode – EC motor operates at full speed. Consumption 95 W per motor
- Off Cycle mode – EC motor operates at reduced speed. Consumption 25 W per motor.
- Energy saving benefit on motor and compressor wattage consumption:



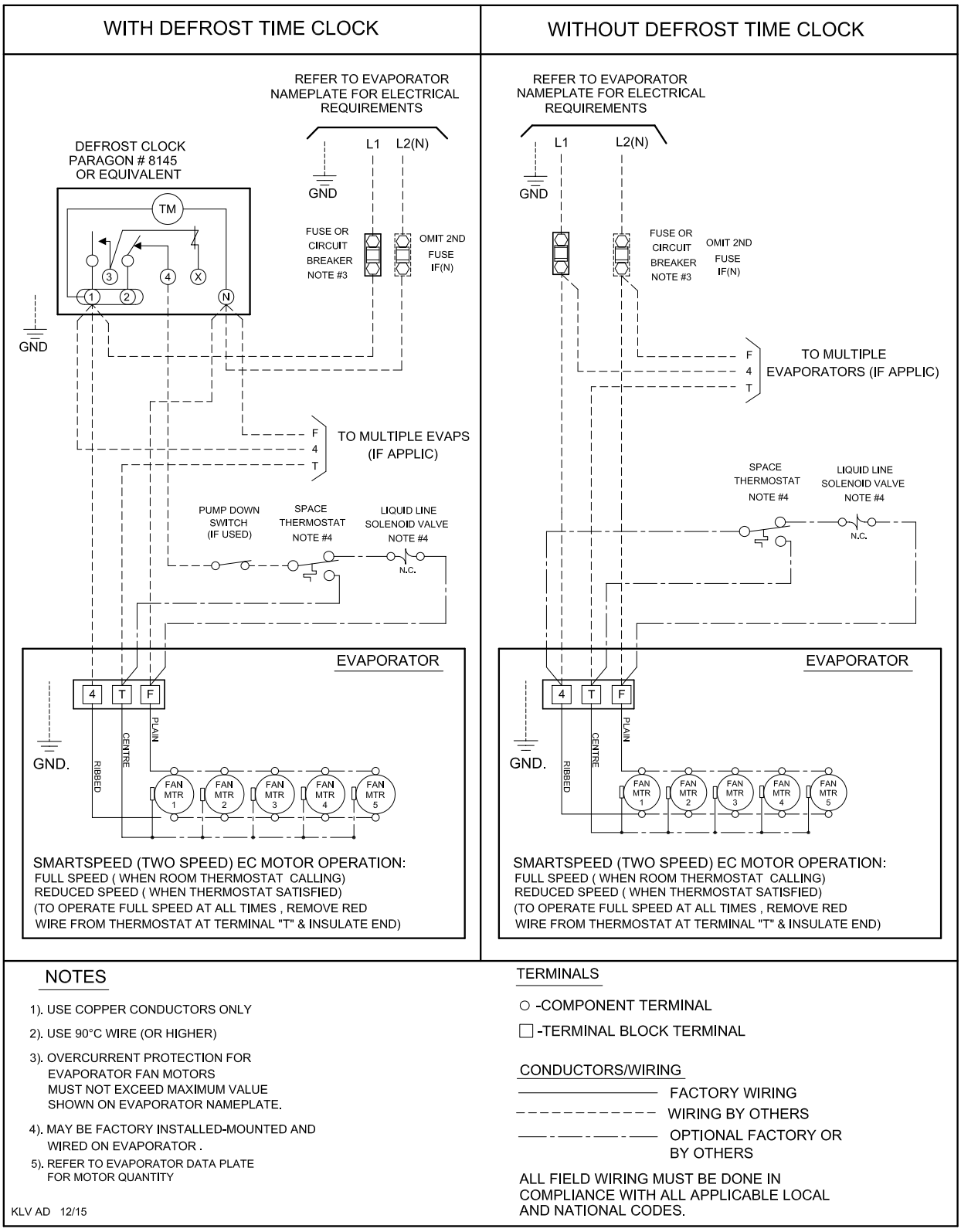
Note: Data collected on a typical freezer application with a 3HP low temp condensing unit and a 4 fan TLP evaporator. Similar results can be expected with TLV evaporators.

INSTALLATION NOTES

EC motors are factory wired for SmartSpeed operation on evaporators equipped **with** a factory installed thermostat.

For SmartSpeed operation on Evaporators **without** a factory installed thermostat, a field wired SPDT type thermostat is required.

WIRING DIAGRAM - 120V & 208-230V
OPTIONAL EC MOTOR with SMARTSPEED™
AIR DEFROST MODELS



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 90°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR .

5). REFER TO EVAPORATOR DATA PLATE FOR MOTOR QUANTITY

KLV AD 12/15

TERMINALS

○ -COMPONENT TERMINAL

□ -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

———— FACTORY WIRING

– – – – – – – – – – – – WIRING BY OTHERS

——·——·—— OPTIONAL FACTORY OR BY OTHERS

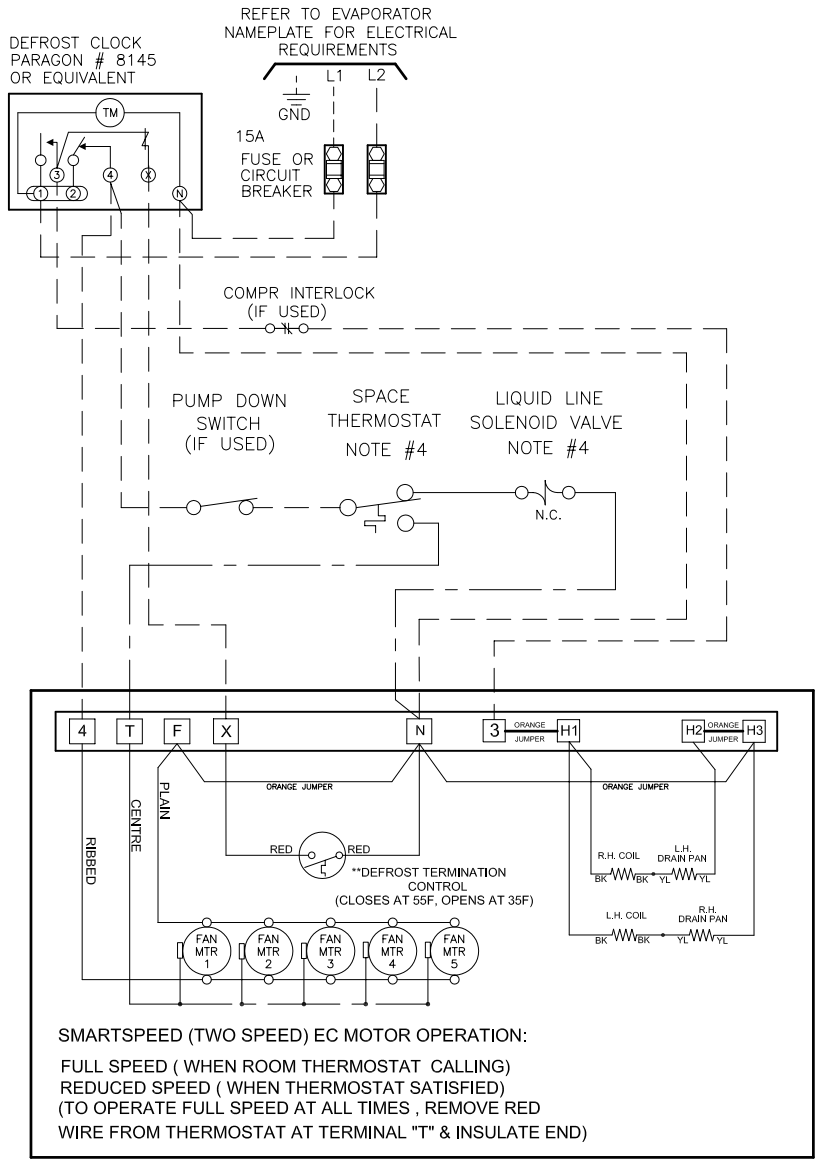
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

WIRING DIAGRAM - 208-230/1/60

OPTIONAL EC MOTOR with SMARTSPEED™

ELECTRIC DEFROST MODELS 060ED AND 090ED

FOR _LV060ED & _LV090ED MODELS WITHOUT DEFROST HEATER CONTACTOR



SMARTSPEED (TWO SPEED) EC MOTOR OPERATION:

FULL SPEED (WHEN ROOM THERMOSTAT CALLING)
REDUCED SPEED (WHEN THERMOSTAT SATISFIED)
(TO OPERATE FULL SPEED AT ALL TIMES , REMOVE RED WIRE FROM THERMOSTAT AT TERMINAL "T" & INSULATE END)

NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 90°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

5). REFER TO EVAPORATOR DATA PLATE FOR MOTOR QUANTITY

KLV 060-090 ED 12/15

TERMINALS

○ -COMPONENT TERMINAL

□ -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

———————— FACTORY WIRING

– — — — — — – WIRING BY OTHERS

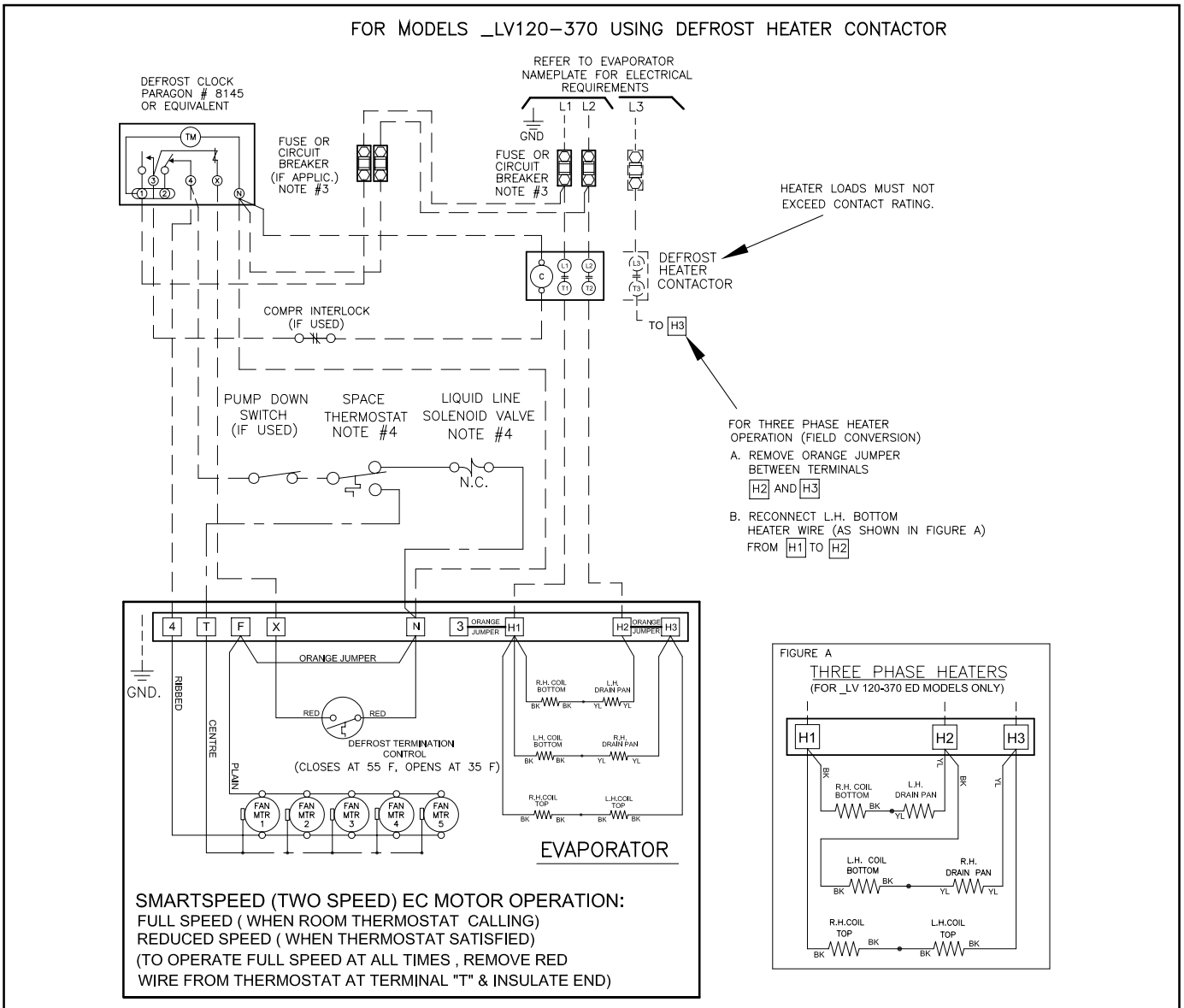
—— – ——— – —— OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

WIRING DIAGRAM - 208-230/1/60

OPTIONAL EC MOTOR with SMARTSPEED™

ELECTRIC DEFROST MODELS 120ED TO 370ED



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 90°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

5). REFER TO EVAPORATOR DATA PLATE FOR MOTOR QUANTITY

KLV120-370 ED 12/15

TERMINALS

○ -COMPONENT TERMINAL

□ -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

———————— FACTORY WIRING

– — – — – — – WIRING BY OTHERS

—— – ——— – —— OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

WIRING DIAGRAM - 208-230/1/60

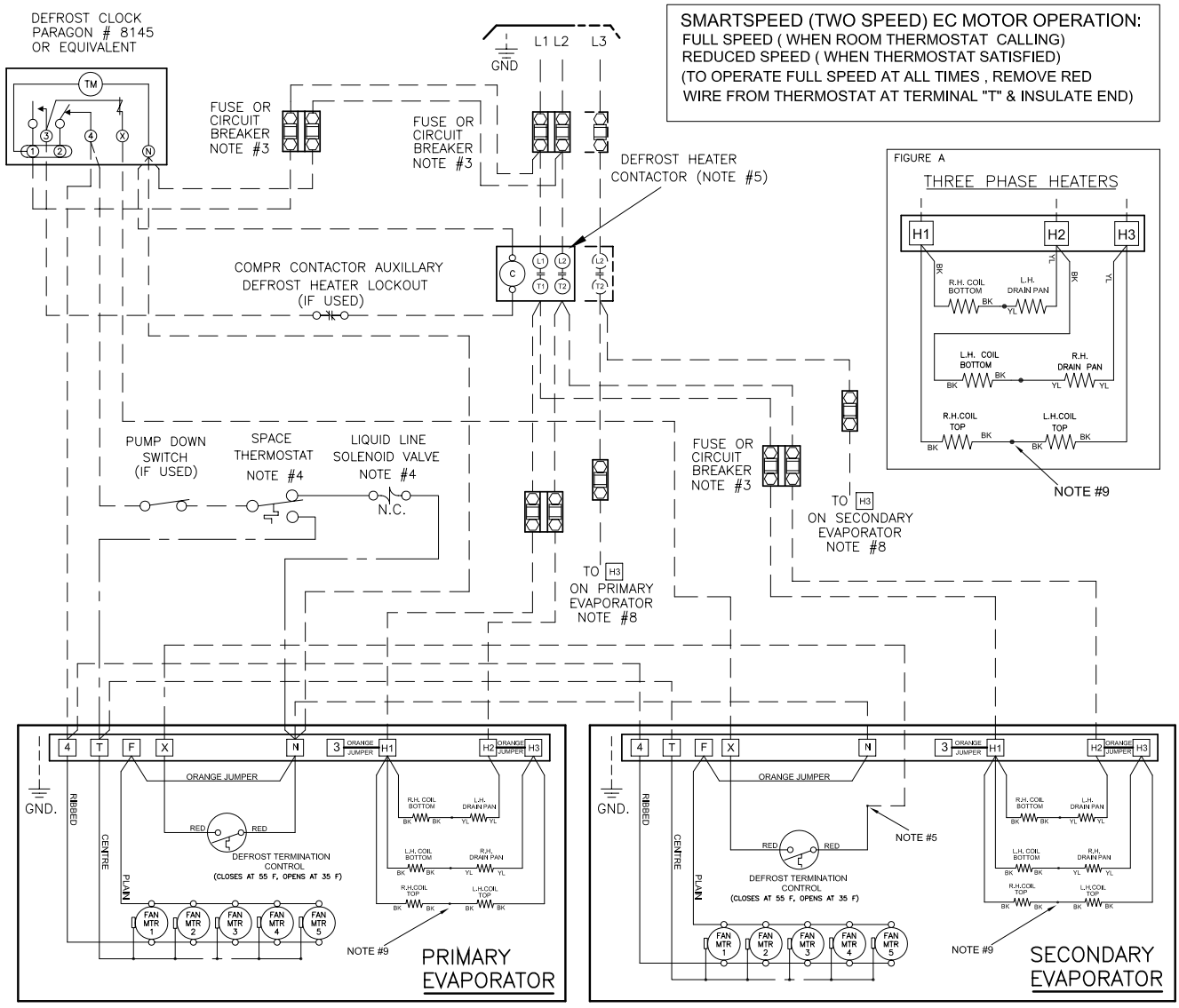
OPTIONAL EC MOTOR with SMARTSPEED™

ELECTRIC DEFROST MODELS - MULTIPLE EVAPORATORS

ECM 60Hz

FOR ALL MODELS USING DEFROST HEATER CONTACTOR

REFER TO EVAPORATOR NAMEPLATE FOR ELECTRICAL REQUIREMENTS



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 90°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR. (PRE-ASSEMBLED MODELS) ON MULTIPLE PRE-ASSEMBLED EVAPORATORS, WIRE SECOND EVAPORATOR SOLENOID IN PARALLEL WITH FIRST. USE ONLY ONE THERMOSTAT.

5). REMOVE RED WIRE FROM TERMINAL [N] AND SPLICE AS SHOWN

6). HEATER LOADS MUST NOT EXCEED CONTACTOR RATING

7). REFER TO EVAPORATOR DATA PLATE FOR MOTOR QUANTITY

8). FOR FIELD CONVERSION TO THREE PHASE HEATERS:

8a). REMOVE ORANGE JUMPER BETWEEN TERMINALS [H2] AND [H3]

8b). RECONNECT LH BOTTOM COIL WIRE FROM [H1] TO [H2]. AS SHOWN IN FIGURE A

9). TOP HEATER COILS ARE NOT INSTALLED ON _LV060ED & _LV090ED MODELS.

TERMINALS

○ -COMPONENT TERMINAL

□ -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

———————— FACTORY WIRING

— — — — — — WIRING BY OTHERS

——— – ——— OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

KLV ED CONTACTOR MULTI 12/15

THERMOSTATIC EXPANSION VALVE SELECTION - SPORLAN

MODEL NO.	TD °F	R407A R407C R22	R404A R507 *
060	10	SBFVE-AA-VC	SBFSE-AA-SC
	15	SBFVE-AA-VC	SBFSE-A-SC
090	10	SBFVE-AA-VC	SBFSE-A-SC
	15	SBFVE-A-VC	SBFSE-B-SC
120	10	SBFVE-A-VC	SBFSE-A-SC
	15	SBFVE-A-VC	SBFSE-B-SC
150	10	SBFVE-A-VC	SBFSE-B-SC
	15	SBFVE-B-VC	SBFSE-B-SC
180	10	SBFVE-A-VC	SBFSE-B-SC
	15	SBFVE-B-VC	SBFSE-C-SC
220	10	SBFVE-B-VC	SBFSE-B-SC
	15	SBFVE-B-VC	SBFSE-C-SC
270	10	SBFVE-B-VC	SBFSE-C-SC
	15	SBFVE-C-VC	SSE-4-C
300	10	SBFVE-B-VC	SSE-3-C
	15	SBFVE-C-VC	SSE-4-C
340	10	SBFVE-B-VC	SSE-3-C
	15	SVE-4-C	SSE-4-C
370	10	SVE-4-C	SSE-4-C
	15	SVE-4-C	SSE-6-C

SELECTIONS BASED ON 100°F*(37.7°C)* LIQUID
* FOR R507 REPLACE “S” WITH “P”

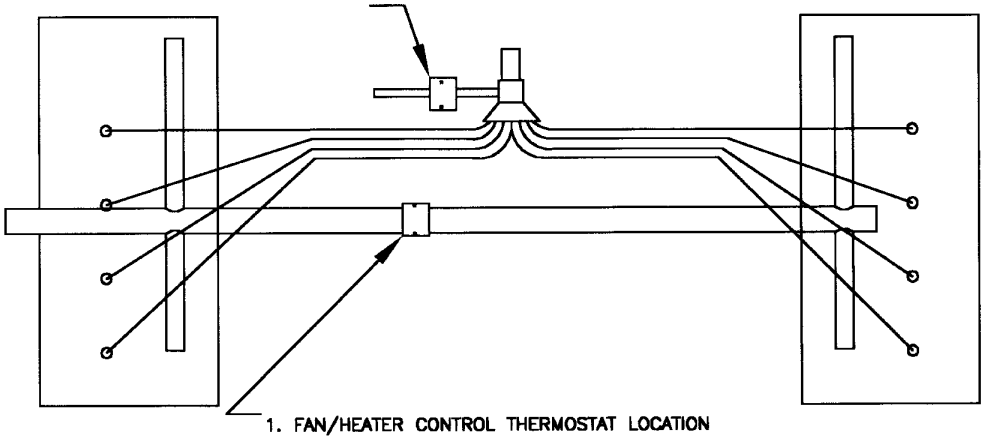
DISTRIBUTOR NOZZLE SELECTION

STANDARD NOZZLES FACTORY INSTALLED FOR ALL MODELS	
T.D.	**8°F TO 12°F** *(4.4°C to 6.6°C)*
EVAP. TEMP. RANGE	**18°F TO 40°F** *(-7.7°C TO 4.4°C)*
REFRIGERANT	**R407A, R407C, R404A, R507, R22**
060	L-3/4
090	L- 1
120, 150	L-1 1/2
180	L- 2
220	L-2 1/2
270	G- 2 1/2
300	G- 3
340, 370	G-4

SELECTIONS BASED ON 100 °F*(37.7 °C)* LIQUID

FAN/HEATER CONTROL AND DEFROST TERMINATION CONTROL POSITION

1. DEFROST TERMINATION CONTROL THERMOSTAT LOCATION FOR REVERSE CYCLE HOT GAS DEFROST
2. FAN/HEATER CONTROL THERMOSTAT MUST BE REINSTALLED HERE FOR 3–PIPE(BYPASS) HOT GAS DEFROST



1. FAN/HEATER CONTROL THERMOSTAT LOCATION FOR REVERSE CYCLE HOT GAS DEFROST
2. DEFROST TERMINATION CONTROL THERMOSTAT MUST BE REINSTALLED HERE FOR 3–PIPE(BYPASS) HOT GAS DEFROST

FIGURE 1

UNIT COOLER WILL LEAVE THE FACTORY WITH THE FAN/HEATER AND DEFROST TERMINATION CONTROL THERMOSTAT INSTALLED IN THE REVERSE CYCLE POSITION*

HOT GAS DEFROST (REVERSE CYCLE)

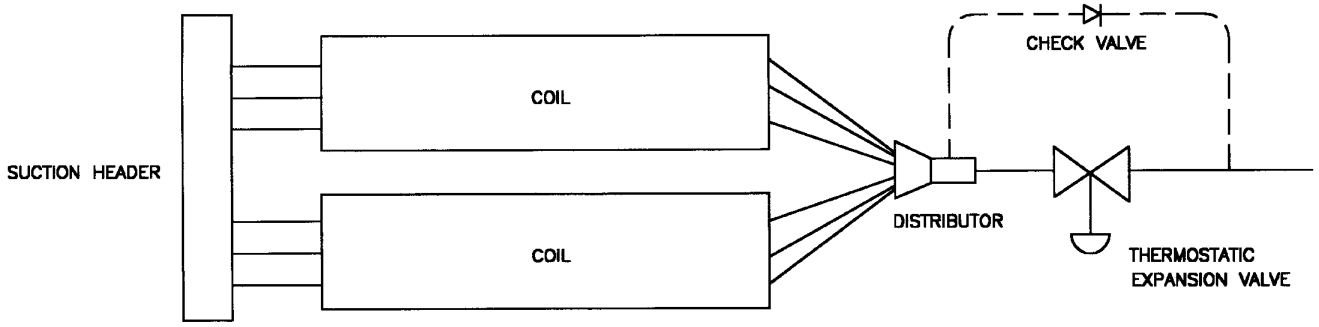


FIGURE 2

UNIT COOLER SHOWING HOT GAS LINE AND CHECK VALVE AROUND EXPANSION VALVE AS USED FOR REVERSE CYCLE HOT GAS DEFROST

HOT GAS DEFROST (3-PIPE OR BYPASS)

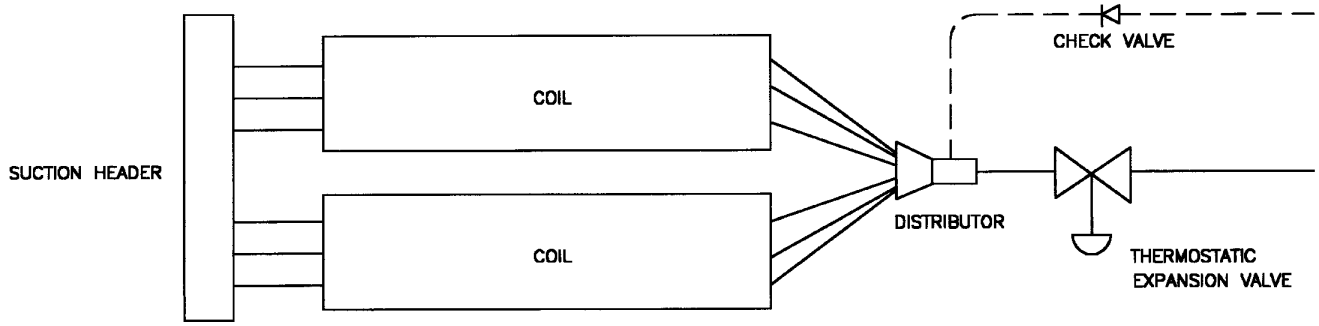


FIGURE 3

INSTALLATION

The installation and start-up of LV Evaporators 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.

APPLICATION

LV Unit Coolers are designed for use with a variety of popular refrigerants. At room temperatures above 34°F *(1.1°C)* (and evaporating temps no lower than 24 °F *(-4.4°C)*) positive coil defrosting (Electric or Hot Gas) is not required. (The air flowing through the coil will accomplish the defrost). At room temperatures of 34°F *(1.1°C)* and below, positive defrosting is required (either Electric (ED) or Hot Gas (HE, RE, TE) in model nomenclature). These models require the use of (1) Time Clock or equivalent (to initiate and terminate the defrost cycle), and (2) Defrost Termination Control (to prevent unnecessary prolonged heating and steaming of the coil once all the ice and frost has melted), (3) Hot Gas models also utilize a Fan/Heater drain pan control.

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).

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. LV Evaporators draw air through the fans and discharge air through both coils.

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

EXPANSION VALVE (TXV) SELECTION

All units require the use of an **externally equalized** expansion valve. (A 1/4" *(6 mm)* O.D. equalizer line has been provided on the coil) TX valves should **not** be selected strictly by their nominal ton rating. (This rating is based at a specific pressure differential and entering liquid temperature). Since applications will differ it is suggested the following selection procedure be followed.

1. Determine actual unit cooler BTUH or KW (thermal). The nominal rating is based at 10 °F T.D. *(5 .5°C)* (Room Temp. minus Evap. Temp.). Note that a higher / lower operating T.D.will increase / decrease this capacity rating by their direct ratio.

2. Determine the pressure drop across the valve by subtracting the suction (evaporating) pressure from the high side liquid pressure. Note: Also subtract the distributor pressure loss (use approx. 25 psig (1.1 bar) for R134a and 35 psig (2.4 bar) for R407A, R407C, R404A, R507 and R22).

3. Estimate entering liquid temperature. Temperatures lower than 100°F *(37.7°C)* increase valve capacity ratings. Refer to valve manufacturer's specs for details.

4. Select valve from the valve manufacturer selection charts for the appropriate refrigerant, evaporating temp and pressure drop.

5. After following the manufacturer's installation instructions and after the room has reached the desired temperature the valve superheat should be checked. This will confirm that the evaporator is operating properly and performing to maximum efficiency. The superheat should be around 5 to 8 °F *(2.7 to 4.4°C)* for a 10 to 12°F *(5.5 to 6.6°C)* T.D. Too high or low a super heat will result in unsatisfactory system performance and possible compressor problems.

NOZZLE INSTALLATION

All LV Evaporators have nozzles installed at factory. For nozzle selection refer to selection table. In case it is required to install the nozzle at some point in the future, the nozzle retainer clip (in distributor) must be removed before inserting nozzle. Re-install clip ensuring nozzle is properly in place.

MOUNTING

Refer to dimensional drawing for recommended mounting arrangements. Formed mounting channels are provided for flush mounting to the ceiling. Ensure adequate clearance (at least 24" *(600 mm)*) is provided at each end (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 1/4" *(6 mm)* per foot. A trap in a warm area outside the room will allow proper draining 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 35 °F *(1.7 °C)* 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 28°F *(-2.2°C)* room, is satisfactory. Drain line heaters are not required for constant room temperature above 35°F *(1.6°C)*.

Ensure that the drain line 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. Consult "Recommended refrigerant line sizes" charts in any standard reference book for proper line sizing.

Refrigerant piping and control system should be designed to prevent possible liquid slugging (from oil or refrigerant) of the compressors on start-up after the defrost cycle. On Hot Gas Defrost Systems the suction accumulator should be at least 2.5 times the coils operating charge.

See Dimensional data for line locations. For Reverse Cycle and Hot Gas models and 3-Pipe - see fig. 2 & 3 respectively on page 12 for typical unit piping. These models include a check valve (unmounted) packaged along with the nozzle in the refrig. connection compartment end panel.

WIRING

Wire system in accordance with governing standards and local codes. See data and wiring diagrams on pages 6 to 10 for wiring arrangement. Electrical wiring is to be sized in accordance with minimum circuit ampacity rating (MCA).

For ease of identifying the proper wiring terminal, unit wiring is color coded and terminal block connections are identified.

SYSTEM CHECK

Before Start-Up:

1. All wiring should be in accordance with local codes.
2. Refrigerant lines should be properly sized.
3. Off cycle defrost and electric defrost systems preferably must include a liqud line solenoid valve and suction accumulator.
4. Thorough evacuation and, dehydration has been performed.
5. The suction, discharge, and receiver service valves must be open.
6. The system preferably must include a liquid line drier moisture 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. Check the oil level to be sure the oil charge is correct.
2. On initial start up the fans do not start until coil temperature is pulled down to approximately 35°F *(1.7°C)* on the hot gas coil. Also, it is normal for the fans to cycle a few times until the room temperature is pulled down.
3. Fan/Heater control and defrost termination control is factory installed for reverse cycle defrost operation. Refer to Fig. 1 on page 14.
4. If coil is to be used for 3-pipe (bypass) Hot Gas Defrost, Fan/Heater must be moved from suction line to hot gas inlet line and the defrost termination control moved to the suction line. Refer to Fig. 1 on page 14.
5. In general, evaporators running with a TD of 10°F should have a superheat reading of 5 to 8 °F *(2.7 to 4.4°C)*. For evaporators with a higher TD, the superheat should be 8 to 12°F *(4.4 to 6.6 °C)*.
6. Heavy moisture loads are usually encountered when starting the system for the first time. This will cause a rapid build-up of frost on the unit cooler. During the initial pull down, we suggest that the frost build-up be watched and defrosted manually as required. This may be done by rotating the inner dial on the timer until the pin in the outer dial is directly opposite the timer pointer. (Paragon 8145-20 Timer by others).
7. Observe that the system goes through at least one complete DEFROST CYCLE.

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 coils inner and outer drain pans do not have any ice build-up from improper defrost operation. When replacing heater elements first remove heater retainer brackets and heater clips.

FOR SERVICE PARTS LOOK-UP:
visit: http://www.t-rp.com/serv_parts.htm
email: parts@t-rp.com
call: 1-844-893-3222 x501

SERVICE LOG

DATE	COMMENTS

NOTES

NOTES

FINISHED GOODS WARRANTY

The terms and conditions as described below in the General Warranty Policy cover all products manufactured by National Refrigeration.

GENERAL WARRANTY POLICY

Subject to the terms and conditions hereof, the Company warrants all Products, including Service Parts, manufactured by the Company to be free of defects in material or workmanship, under normal use and application for a period of one (1) year from the original date of installation, or eighteen (18) months from the date of shipment from the Company, whichever occurs first. Any replacement part(s) so supplied will be warranted for the balance of the product's original warranty. The part(s) to be replaced must be made available in exchange for the replacement part(s) and reasonable proof of the original installation date of the product must be presented in order to establish the effective date of the warranty, failing which, the effective date will be based upon the date of manufacture plus thirty (30) days. Any labour, material, refrigerant, transportation, freight or other charges incurred in connection with the performance of this warranty will be the responsibility of the owner at the current rates and prices then in effect. This warranty may be transferred to a subsequent owner of the product.

THIS WARRANTY DOES NOT COVER

(a) Damages caused by accident, abuse, negligence, misuse, riot, fire, flood, or Acts of God (b) damages caused by operating the product in a corrosive atmosphere (c) damages caused by any unauthorized alteration or repair of the system affecting the product's reliability or performance (d) damages caused by improper matching or application of the product or the product's components (e) damages caused by failing to provide routine and proper maintenance or service to the product (f) expenses incurred for the erecting, disconnecting, or dismantling the product (g) parts used in connection with normal maintenance, such as filters or belts (h) products no longer at the site of the original installation (i) products installed or operated other than in accordance with the printed instructions, with the local installation or building codes and with good trade practices (j) products lost or stolen.

No one is authorized to change this WARRANTY or to create for or on behalf of the Company any other obligation or liability in connection with the Product(s). There is no other representation, warranty or condition in any respect, expressed or implied, made by or binding upon the Company other than the above or as provided by provincial or state law and which cannot be limited or excluded by such law, nor will we be liable in any way for incidental, consequential, or special damages however caused.

The provisions of this additional written warranty are in addition to and not a modification of or subtraction from the statutory warranties and other rights and remedies provided by Federal, Provincial or State laws.

PROJECT INFORMATION

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

“AS BUILT” SERVICE PARTS LIST

Service Parts List
Label
To Be Attached
HERE

NATIONAL REFRIGERATION &
AIR CONDITIONING CANADA CORP.
159 Roy Blvd.
Brantford Ontario Canada N3R 7K1
PHONE: (519) 751-0444 800-463-9517
FAX (519) 753-1140 www.t-rp.com

c UL us LISTED 7L35

NSF

Due to the manufacturer’s policy of continuous product improvement, we reserve the right to make changes without notice.