

# 25HCD3 Comfort™ 13 Heat Pump with Puron® Refrigerant 1-1/2 to 5 Nominal Tons



## Wiring Diagrams

### CONNECTION DIAGRAM

### SCHEMATIC DIAGRAM (LADDER FORM)

**CONDENSING UNIT CHARGING INSTRUCTIONS**  
For use with units using R-410A refrigerant

FIELD SELECTED TIME PERIOD BETWEEN DEFOREST CYCLES (MINUTES)  
HEAT CYCLE: 90 MIN, ACCELERATED TO 21 SEC.  
60 MIN, ACCELERATED TO 14 SEC.  
30 MIN, ACCELERATED TO 7 SEC.  
DEFOREST CYCLE: 10 MIN, ACCELERATED TO 2 SEC.

### LEGEND

- FACTORY POWER WIRING
- - - FIELD POWER WIRING
- FACTORY CONTROL WIRING
- - - FIELD CONTROL WIRING
- CONDUCTOR ON CIRCUIT BOARD
- COMPONENT CONNECTION
- 1/4-IN QUICK CONNECT TERMINALS
- FIELD SPLICE
- JUNCTION
- CAP CAPACITOR
- \*CH CRANKCASE HEATER
- \*CHS CRANKCASE HEATER SWITCH
- COMP COMPRESSOR
- CONT CONTACTOR
- CB CIRCUIT BOARD
- DFT DEFOREST THERMOSTAT
- DR DEFOREST RELAY & CIRCUITRY
- \*DTS DISCHARGE TEMP. SWITCH
- \*HPS HIGH PRESSURE SWITCH
- \*LLS LIQUID LINE SOLENOID VALVE
- \*LPS LOW PRESSURE SWITCH
- OFM OUTDOOR FAN MOTOR
- RVS REVERSING VALVE SOLENOID
- \*SC START CAPACITOR
- \*SR START RELAY
- \*ST START THERMISTOR
- \*MAY BE FACTORY OR FIELD INSTALLED

### NOTES:

- Compressor and fan motor furnished with inherent thermal protection.
- To be wired in accordance with National Electric Code (N.E.C.), and local codes.
- N.E.C. class 2, 24V circuit, min. 40 VA required, 60 VA on units installed with LLS.
- Use copper conductors only, from disconnect to unit.
- Must use thermostat and sub-base as stated in pre-sale literature.
- If indoor section has a transformer with a grounded secondary, connect the grounded side to "C" on the circuit board.
- If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
- Check all electrical connections inside control box for tightness.
- Do not attempt to operate unit until service valves have been opened.
- Use conductors suitable for at least 75°C (167°F).

**CAUTION**

- Compressor damage may occur if system is over charged.
- This unit is factory charged with R-410A in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. Check refrigerant charge for maximum efficiency. See Product Data Literature for required Indoor Air Flow Rates and for use of line lengths over 15 feet.
- Relieve pressure and recover all refrigerant before system repair or final disposal. Use all service ports and open all flow-control devices, including solenoid valves.
- Never vent refrigerant to atmosphere. Use approved recovery equipment.

OUTDOOR TEMP °F	50	52	54	56	58	60	62	64	67	68	70	72	74	76
55	11	11	12	12	13	17	20	24	25	25	25	25	25	25
60	6	7	7	7	7	12	16	21	22	23	23	23	23	23
70	--	--	--	--	3	7	12	16	19	21	21	22	22	22
75	--	--	--	--	--	7	14	16	18	20	20	20	20	20
82	--	--	--	--	--	--	11	13	16	18	18	18	18	18
85	--	--	--	--	--	--	11	13	16	18	18	18	18	18
90	--	--	--	--	--	--	11	13	16	18	18	18	18	18
95	--	--	--	--	--	--	11	13	16	18	18	18	18	18
100	--	--	--	--	--	--	11	13	16	18	18	18	18	18
105	--	--	--	--	--	--	11	13	16	18	18	18	18	18
110	--	--	--	--	--	--	11	13	16	18	18	18	18	18
115	--	--	--	--	--	--	11	13	16	18	18	18	18	18

Where a dash (-) appears do not attempt to charge system under these conditions or refrigerant slugging may occur. Charge must be weighed in.  
Note: Superheat °F is at low-side service port, allow a tolerance of +/- 3°F  
Note: Indoor dry bulb between 70 °F and 80 °F  
\* Optimum performance point, 82 °F outdoor ambient and (80 °F dry bulb), (67 °F wet bulb) indoor conditions. (DOE B Test Conditions)

SUPERHEAT TEMP °F	108	112	117	121	126	131	139	141	146
0	35	37	39	41	43	45	47	49	51
2	37	39	41	43	45	47	49	51	53
4	39	41	43	45	47	49	51	53	55
6	41	43	45	47	49	51	53	55	57
8	43	45	47	49	51	53	55	57	59
10	45	47	49	51	53	55	57	59	61
12	47	49	51	53	55	57	59	61	63
14	49	51	53	55	57	59	61	63	65
16	51	53	55	57	59	61	63	65	67
18	53	55	57	59	61	63	65	67	69
20	55	57	59	61	63	65	67	69	71
22	57	59	61	63	65	67	69	71	73
24	59	61	63	65	67	69	71	73	75
26	61	63	65	67	69	71	73	75	77
28	63	65	67	69	71	73	75	77	79
30	65	67	69	71	73	75	77	79	81

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Fig. 1 - Wiring Diagram — Model sizes 1-1/2 - 4 Tons, 208/230-1

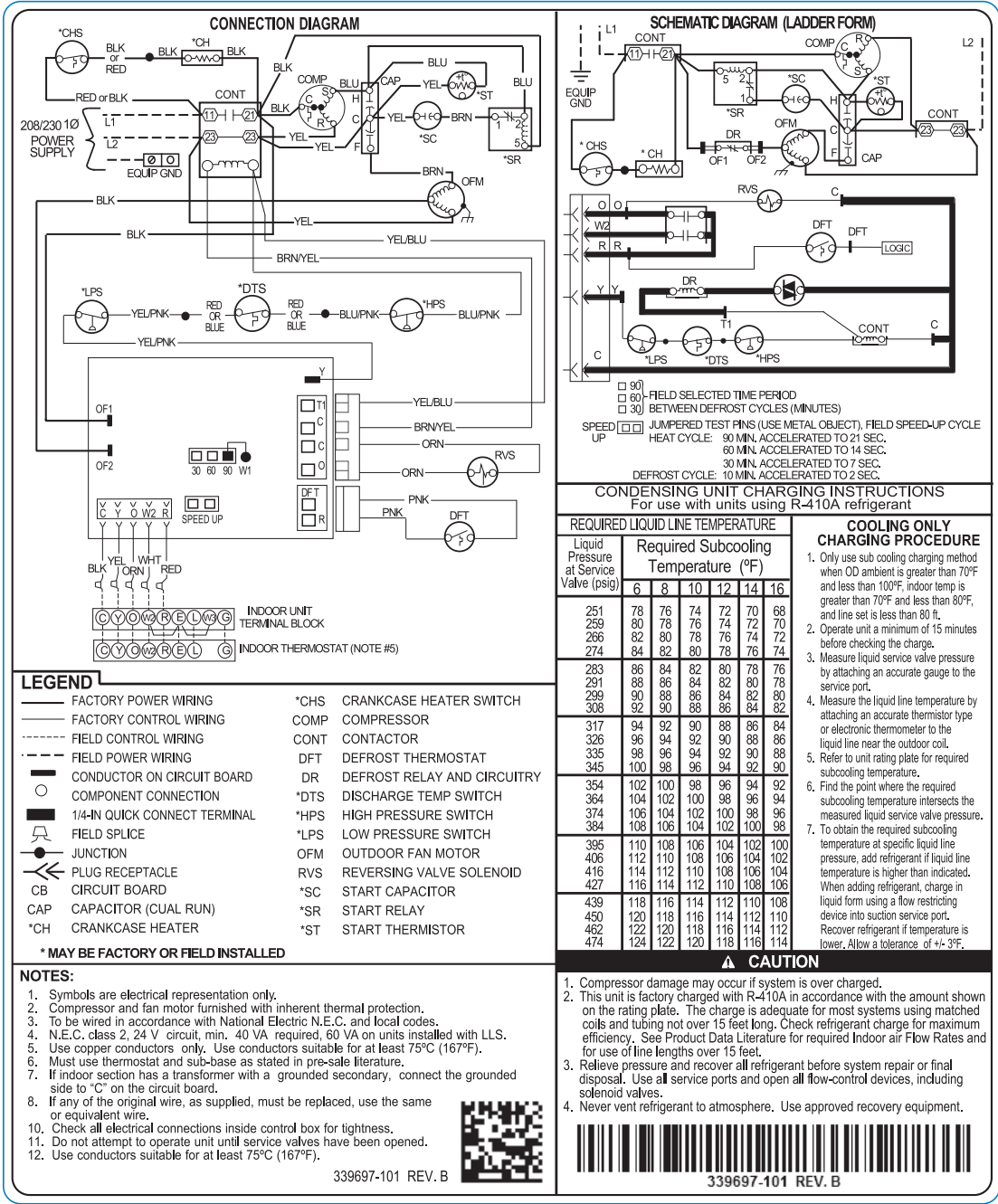


Fig. 2 – Wiring Diagram — Model size 5 Tons, 208/230-1

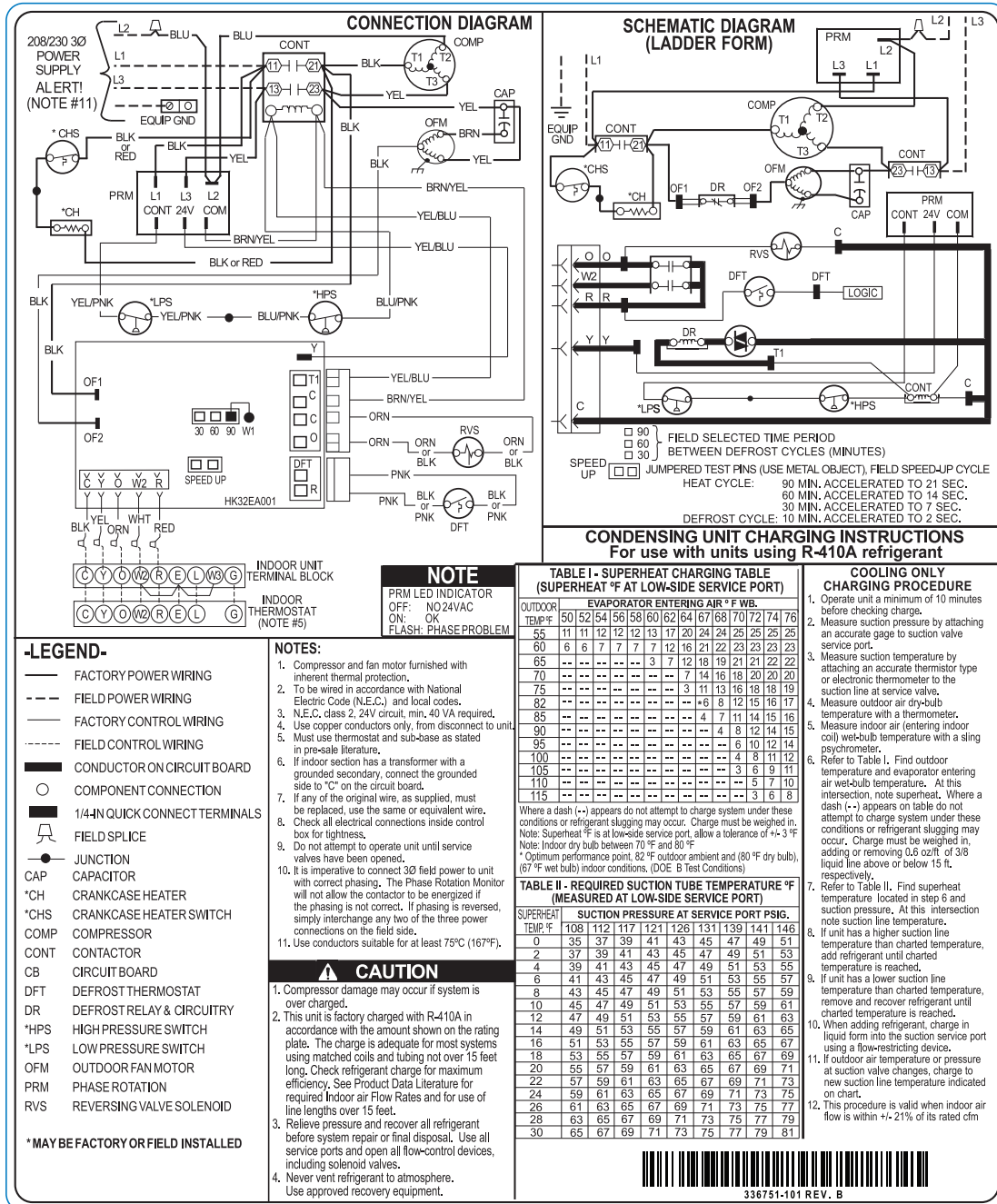
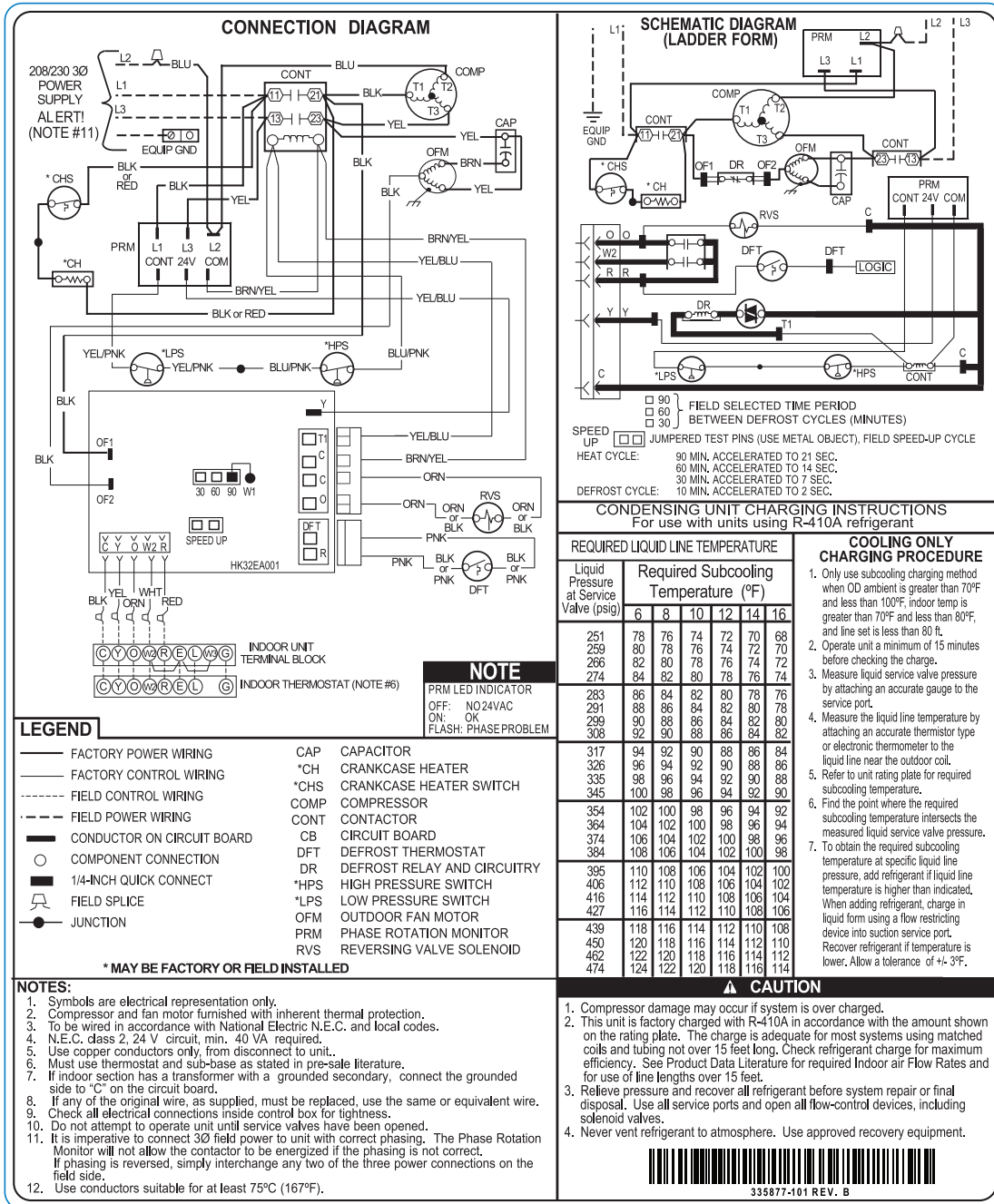


Fig. 3 – Wiring Diagram — Model size 2-1/2 - 4 Tons, 208/230-3



**Fig. 4 – Wiring Diagram — Model size 5 Ton, 208/230-6**

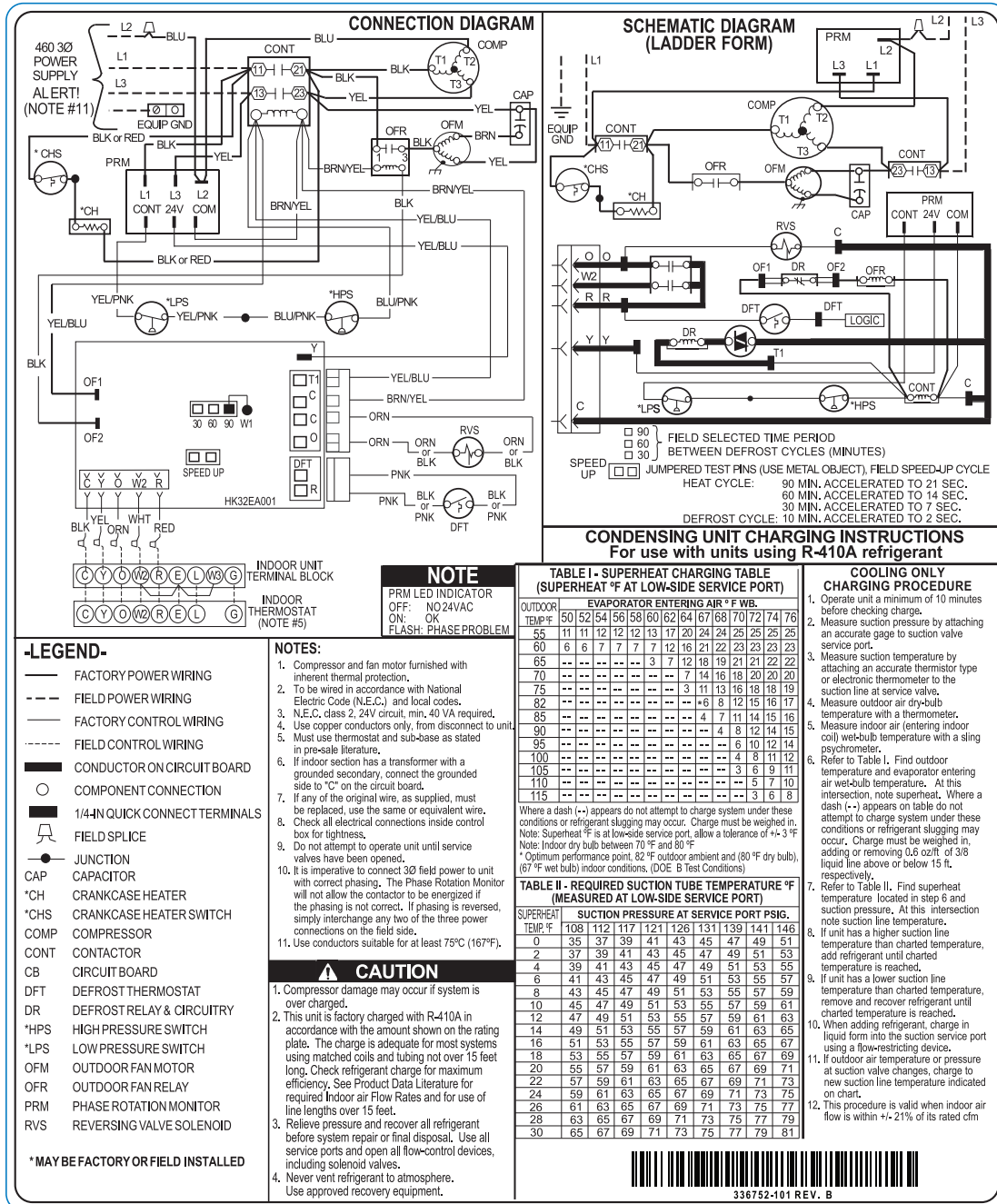


Fig. 5 – Wiring Diagram — Model size 3 - 4 Tons, 460/3

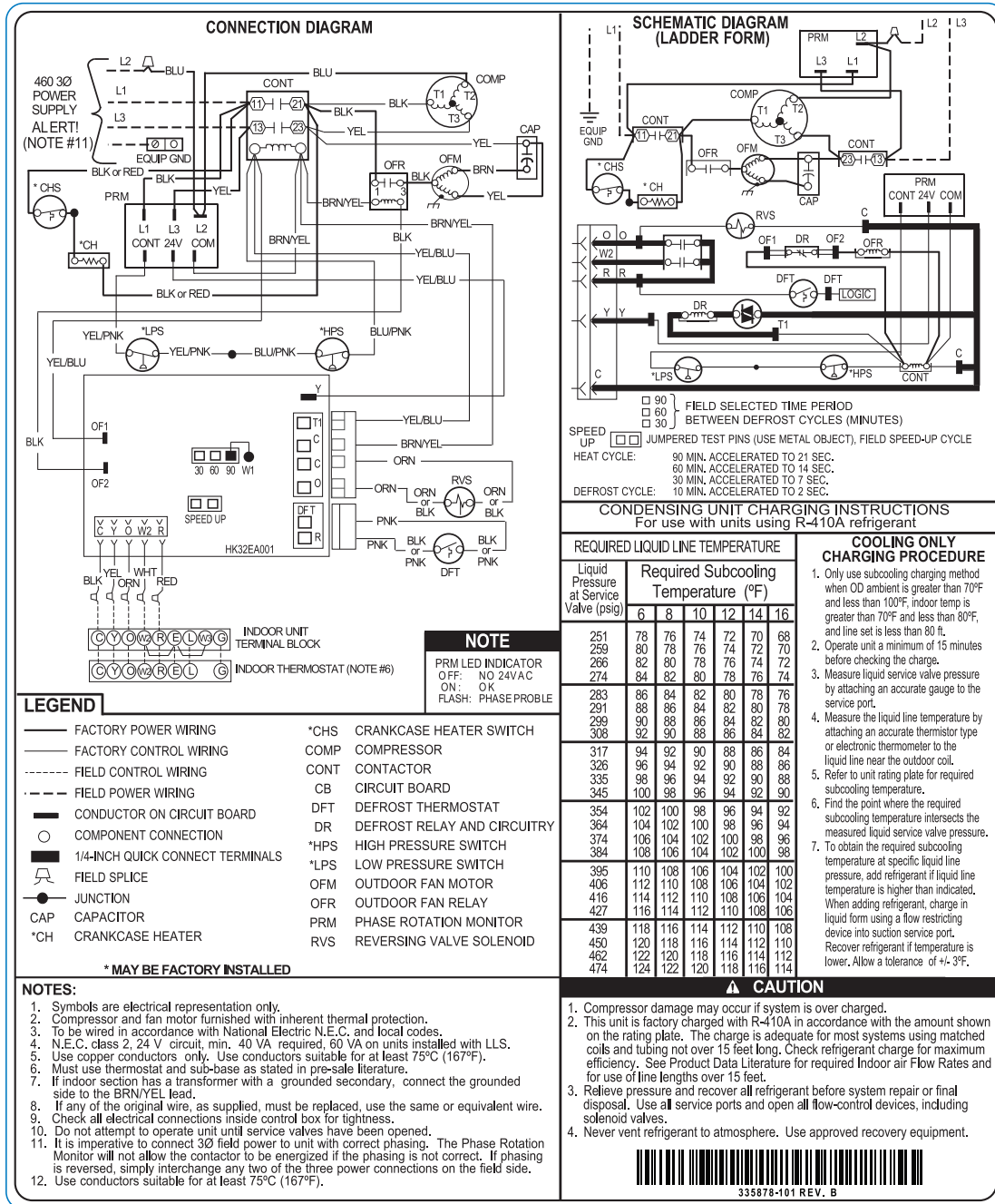


Fig. 6 – Wiring Diagram — Model size 5 Tons, 460/3