

SERVICE AND WIRING SHEET

05-Mar-2004 13:43:08

2305869REL

⚠ WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

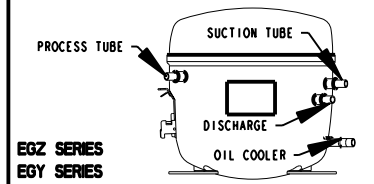
• Normal operating conditions are viewed when the air and temperature controls are at mid-sitting, freezer section 0 to -5°F and unit is cycling.

NOTE: Wall and pressure readings will vary and are influenced by the existing condition of the appliance, such as iced-up evaporator, condition

of condenser, defrost cycle, pull-down time and customer use.

PERFORMANCE DATA (NORMAL OPERATING CONDITIONS)			
AMB	WATTS	SYSTEM PRESSURE (PSIG)	
		HIGH SIDE	LOW SIDE
70°	140±20	95 ± 20	-7 TO 3
90°	150±20	135 ± 20	-4 TO 3
110°	170±20	185 ± 20	-2 TO 4

(OIL COOLER IS OPTIONAL)
 EMBRACO



SERVICE INFORMATION (2305868 REL)

1. COMPRESSOR SUCTION AND PROCESS STUBS MAY NOT BE INTERCHANGED UNLESS INDICATED BY **.
2. REFRIGERANT CHARGE MUST BE APPLIED TO HIGH SIDE ONLY.
3. ICE MAKER AND WATER VALVE NOT ORIGINAL EQUIPMENT ON ALL MODELS.
4. NOTE: ICE MAKER CYCLE MUST BE INITIATED ELECTRICALLY. DO NOT TRY TO MANUALLY START CYCLE.
5. SERVICE DEFROST BI-METALS -50°F OPEN.
6. DEFROST TIMER MAY CONTAIN A CAPACITOR IN SERIES WITH MOTOR. DO NOT CONTINUITY TEST WHEN CHECKING FOR FAILED TIMER MOTOR. INSTEAD, ENERGIZE TIMER AND LISTEN FOR GEAR MOVEMENT.
7. PART NUMBER CAN BE FOUND ON THE COMPONENT.

SERVICEABLE ELECTRICAL PARTS MATRIX (COMPONENTS BY CUBIC FOOT SIZE)

SERVICEABLE PARTS	20 AND 22 CUBIC FOOT		25, 26 AND 27 CUBIC FT		WATTAGE		RESISTANCE	
	120V	220-240V	120V	220-240V	120V	220-240V	120V	220-240V
COMPRESSOR	2212191		2255197					
RUN WINDINGS	*		*				1-5	
START WINDINGS	*		*				3-11	
RELAY, OVERLOAD	See Note 7		See Note 7					
RUN CAPACITOR ** (OPT)	2169373		2169373					
THERMOSTAT	See Note 7		See Note 7					
BAFFLE MODULE (OPT)	2161467		2161467					
DEFROST TIMER (OPT)	See Note 7		See Note 7					
ADAPTIVE DEFROST ** (OPT)	2188159		2188159					
ADC/FILTER INDICATOR (OPT)	See Note 7		See Note 7					
DEFROST HEATER	2188174		2188175		550-650		27-21	
DEFROST BI-METAL	2196155		2196155					
EVAPORATOR FAN	See Note 7		See Note 7		2-9			
CONDENSER FAN	See Note 7		See Note 7		3-12			

** PRIMARY SOURCE PART NUMBER

STEPS TO ENTER ELECTRONIC DEFROST CONTROL TEST MODE (IF APPLICABLE)

OPTION #1 (BI-METAL CLOSED)

STEPS

- #1 - POWER OFF TO REFRIGERATOR FOR AT LEAST 30 SECONDS
- #2 - THERMOSTAT OFF
- #3 - POWER ON TO REFRIGERATOR

OPTION #2 (BI-METAL CLOSED)

STEPS

- #1 - THERMOSTAT OFF 15 SECONDS
- #2 - THERMOSTAT ON 5 SECONDS
(REPEAT STEPS 1 AND 2 TWO MORE TIMES)
- #3 - THERMOSTAT OFF

ENTER TEST MODE

IN 3-8 SECONDS, CONTROL WILL TURN ON DEFROST HEATER. DEFROST HEATER WILL TURN ON FOR 21 MINUTES OR UNTIL BI-METAL OPENS. TO TERMINATE TEST EARLY, REMOVE POWER FROM REFRIGERATOR.

NOTE: IF OPTION #2 DOES NOT WORK, TRY OPTION #1 BEFORE REPLACING CONTROL. ALWAYS CHECK CONNECTIONS BEFORE REPLACING CONTROL.

HELPFUL HINT: UPON ENTERING TEST MODE, A RELAY TURNS OFF THE COMPRESSOR AND TURNS ON THE DEFROST HEATER. LISTEN FOR THE RELAY TO CLICK. IF RELAY CLICKS ONCE UPON ENTERING TEST MODE, CHECK FOR DEFROST HEAT. IF RELAY CLICKS TWICE (ALLOW UP TO 30 SEC BETWEEN CLICKS), CHECK FOR BI-METAL OPEN.

ATTENTION: IF BI-METAL IS BY-PASSED FOR TESTING (IF APPLICABLE), DO NOT OVERHEAT EVAPORATOR AREA.

BAFFLE MODULE DIAGNOSTIC TEST (IF APPLICABLE)

The diagnostic steps given below are for evaluating the Baffle Module. Steps 4 and 5 include the settings and results. If the results listed do not occur after putting the controls in the given settings, then further in-depth diagnosis of the product is required. Possible areas to evaluate include wiring connections to all electrical components, freezer thermostat, defrost timer, baffle module, evaporator fan, condenser fan, and compressor.

STEP

1. VERIFY THAT THE PRODUCT IS NOT IN DEFROST.
2. OPEN THE REFRIGERATOR AND FREEZER DOORS SO THAT THE PRODUCT WARMS UP ENOUGH TO TRIP THE THERMOSTATS.
3. NOTE THE THERMOSTAT SETTINGS AND REMOVE THE CONTROL BOX FRONT COVER.
4. SET BOTH CONTROLS IN THE FOLLOWING MANNER, THEN CHECK FOR THE GIVEN RESULTS:

CONTROL	SETTING
FREEZER THERMOSTAT.....	COLDER (FAR RIGHT)
REFRIGERATOR THERMOSTAT.....	OFF (FAR LEFT)

COMPONENT	RESULTS
BAFFLE DOOR.....	10 SECONDS-CLOSED
COMPRESSOR.....	ON
CONDENSER FAN.....	ON
EVAPORATOR FAN.....	ON

5. SET BOTH CONTROLS IN THE FOLLOWING MANNER, THEN CHECK FOR THE GIVEN RESULTS:

CONTROL	SETTING
FREEZER THERMOSTAT.....	COLDER (FAR RIGHT)
REFRIGERATOR THERMOSTAT.....	COLDER (FAR RIGHT)

COMPONENT	RESULTS
BAFFLE DOOR.....	10 SECONDS-OPEN
COMPRESSOR.....	ON
CONDENSER FAN.....	ON
EVAPORATOR FAN.....	ON

6. TEST COMPLETE - BAFFLE MODULE GOOD. SET CONTROLS AT MID SETTINGS AND REPLACE CONTROL BOX FRONT COVER.

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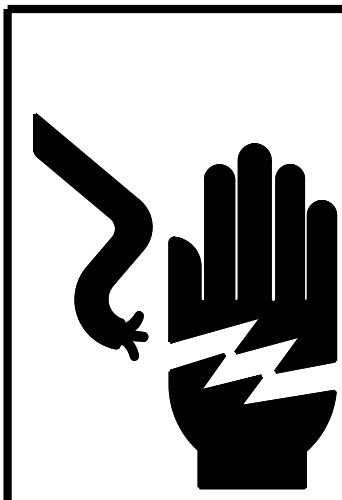
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- NOTES:
1. IM SOLENOID GROUNDED THROUGH MOUNTING.
 2. EVAP COVER GROUNDED HEAT SHIELD.
 3. THE DISPENSER HAS A BUILT IN INVERTER BOARD WHICH CONVERTS THE AC VOLTAGE TO 120V DC. THE OR/BU WIRE IS THE POSITIVE SIDE OF THE DC SIGNAL AND THE PK/BK WIRE IS THE NEGATIVE SIDE. THE BR/WH AND RD/WH WIRES SWITCH POLARITY DEPENDING ON CRUSH/CUBE POSITION. SEE TABLE BELOW:

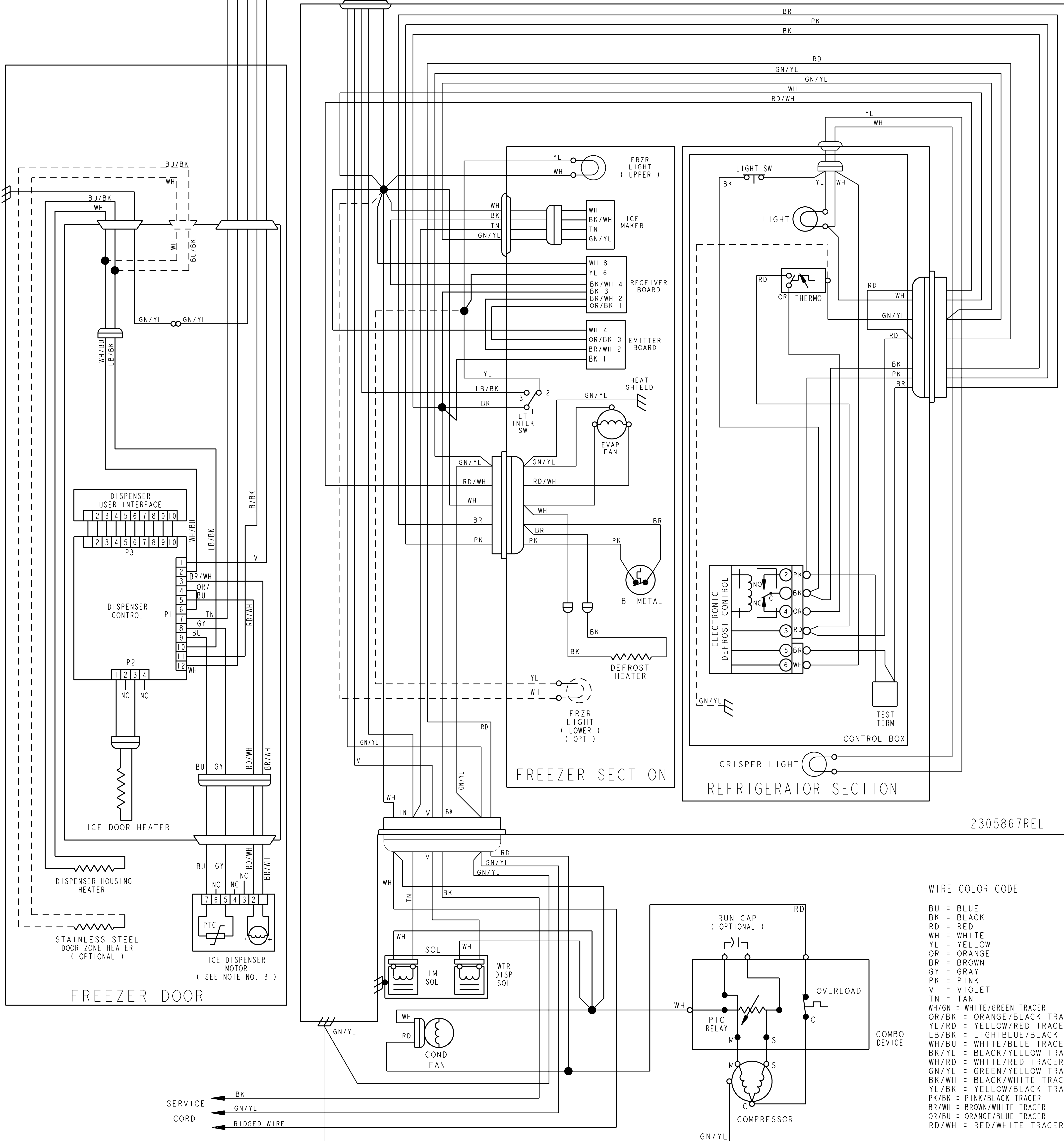
BR/WH	RD/WH
-	+
CRUSH	-
CUBE	+



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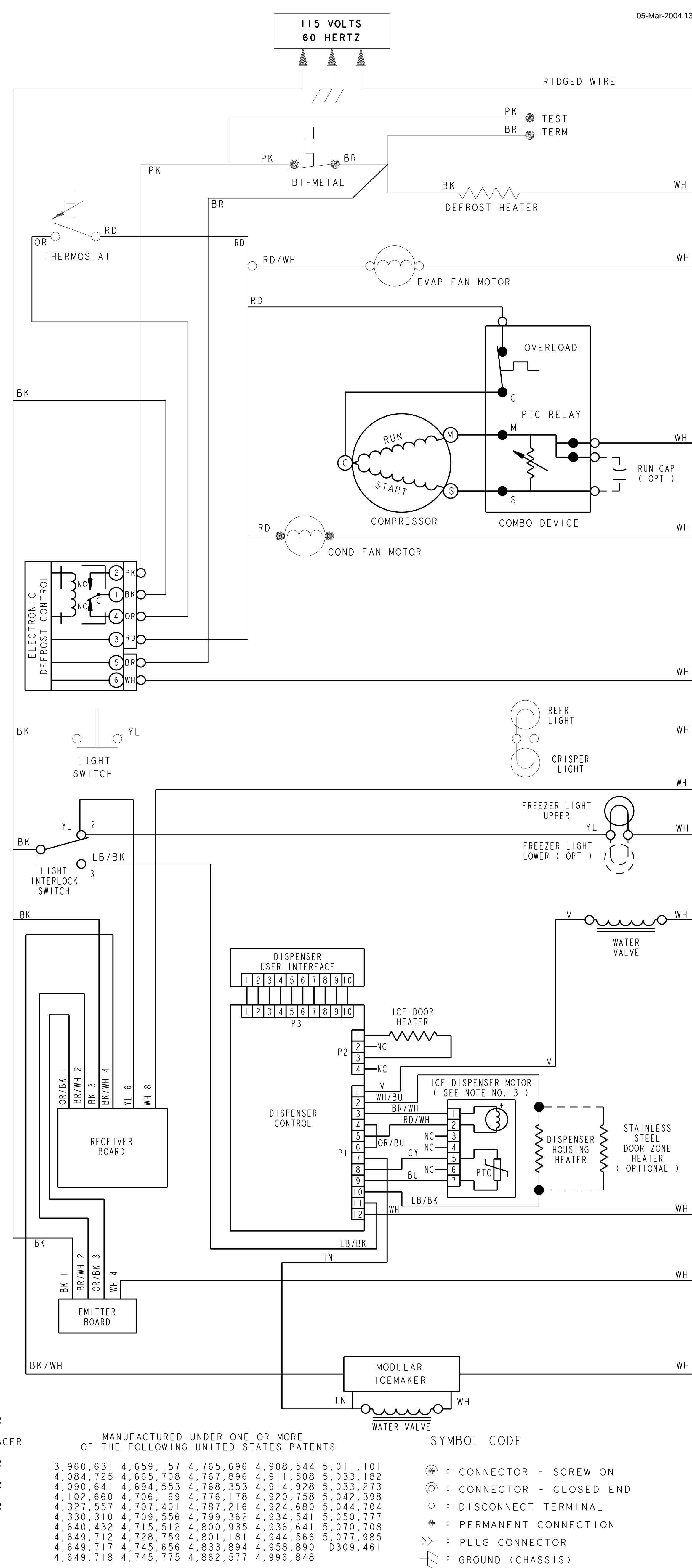
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WIRING DIAGRAM



WIRE COLOR CODE

BU = BLUE
BK = BLACK
RD = RED
WH = WHITE
YL = YELLOW
OR = ORANGE
BR = BROWN
GY = GRAY
PK = PINK
V = VIOLET
TN = TAN
WH/GN = WHITE/GREEN TRACER
OR/BK = ORANGE/BLACK TRACER
YL/RD = YELLOW/RED TRACER
LB/BK = LIGHTBLUE/BLACK TRACER
WH/BU = WHITE/BLUE TRACER
BK/YL = BLACK/YELLOW TRACER
WH/RD = WHITE/RED TRACER
GN/YL = GREEN/YELLOW TRACER
BK/WH = BLACK/WHITE TRACER
YL/BK = YELLOW/BLACK TRACER
PK/BK = PINK/BLACK TRACER
BR/WH = BROWN/WHITE TRACER
OR/BU = ORANGE/BLUE TRACER
RD/WH = RED/WHITE TRACER



MANUFACTURED UNDER ONE OR MORE
OF THE FOLLOWING UNITED STATES PATENTS

3,960,631 4,659,157 4,765,696 4,908,544 5,011,101
4,084,725 4,665,708 4,767,896 4,911,508 5,033,182
4,090,641 4,694,553 4,768,353 4,914,928 5,033,273
4,102,660 4,706,169 4,776,178 4,920,758 5,042,398
4,327,557 4,707,401 4,787,216 4,924,680 5,044,704
4,330,310 4,709,556 4,799,362 4,934,541 5,050,777
4,640,432 4,715,512 4,800,935 4,936,641 5,070,708
4,649,712 4,728,759 4,801,181 4,944,566 5,077,985
4,649,717 4,745,656 4,833,894 4,958,890 D309,461
4,649,718 4,745,775 4,862,577 4,996,848

OTHER PATENTS PENDING

SYMBOL CODE

- : CONNECTOR - SCREW ON
- ⊙ : CONNECTOR - CLOSED END
- : DISCONNECT TERMINAL
- : PERMANENT CONNECTION
- : PLUG CONNECTOR
- ≡ : GROUND (CHASSIS)

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