SERVICE AND WIRING SHEET

10-Mar-2003 11:11:55

2255774REL

⚠WARNING

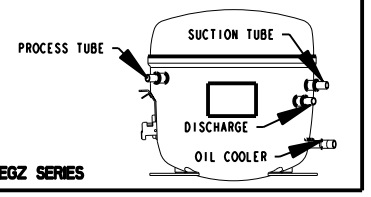
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

- 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: Watt 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)			
		SYSTEM PRESSURE (PSIG)	
AMB	WATTS	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 (2255773 REL)

1. COMPRESSOR SUCTION AND PROCESS STUBS MAY NOT BE INTERCHANGED.
2. REFRIGERANT CHARGE MUST BE APPLIED TO HIGH SIDE ONLY.
3. ICE MAKER AND WATER VALVE NOT ORIGINAL EQUIPTMENT ON ALL MODELS.
4. CAUTION: 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	22 CUBIC FOOT WHIRLPOOL 120V	25 AND 27 CUBIC FT WHIRLPOOL 120V	WATTAGE 120V	RESISTANCE 120V
COMPRESSOR	2255455	2255197		
RUN WINDINGS	*	*		1-5
START WINDINGS	*	*		3-11
TSD (RELAY, OVERLOAD)	2255554	2255198		
RUN CAPACITOR (OPT)	See Note 7	See Note 7		
THERMISTOR	2216113	2216113		2.7K @ 77°F (25°C)
MAIN CONTROL (Unit compartment)	2255239	2216216		
USER INTERFACE	2255229	2216217		
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	

ELECTRONIC CONTROL FEATURES

The electronic control in this appliance controls the temperatures in the refrigerator and freezer compartments using a single thermistor located in the RC compartment near the airbaffle, delays the operation of the evaporator fan, pulses the defrost heater and monitors the water filter usage. The fan delay and pulsed defrost features are controlled in the following manner:

1. **Evaporator Fan Delay** - The electronic control delays the evaporator fan from coming on for 40 seconds after the compressor has turned on. The evaporator fan stays on for 120 seconds after the compressor has turned off.
2. **Pulsed Defrost Heat** - During the defrost cycle the heater is energized continuously for the first 5 minutes. It is then cycled off for 60 seconds and back on for 120 seconds. This on/off cycle is repeated until the bi-metal opens or the maximum defrost time (25 minutes) is reached.

COOLING SYSTEM CONTROL SERVICE DIAGNOSTICS MODE

The control system for this product consists of two electronic controls: A main control, which is located in the unit compartment next to the compressor and a user interface board that is located in the upper left side of the Refigerator compartment.
The Service Diagnostic Mode tests the termimistor input and control board outputs. The result of the thermistor ckeck is displayed on the RC display as shown in the table below. In steps 2 through 4, the component tested will be energized and should function if operational.

How to enter the Service Mode:

- The RC and FC knobs must both be in the off position (0).
- Push in the door switch and turn the RC knob to position 1. When the control first enters the Service Diagnostics mode the FC display will show a "U" and the RC display will show 0-9 for three seconds. This is the revision level of the software in the User Interface board. Then the FC display will change to a "P" and the RC display will show the revision level of the main refrigeration control (again for 3 seconds prior to entering the Service Diagnostics mode.
- Diagnositics will begin at Step No. 1: The FC display is used to indicate the step number of the service diagnostics procedure, and the RC display is used to indicate the status of the test (where applicable - see table below).
- To advance from one step to the next rotate the Refrigerator control knob clockwise.
- The table below shows the component tested at each step.
- The diagnostics mode ends automatically after the steps are complete or 20 minutes have passed (whichever comes first). The control will then resume normal cooling operation. Please be sure to set the control knobs at the desired location (typically 4,4).

Service Tip: If the control does not respond it may be necessary to remove power from the entire appliance for a few seconds. Re-apply power and perform the service diagnostics routine to verify that the control is working correctly.

Step No.	Component Tested	Suggested Diagnostics Routine	FC Display	RC Display
1	RC thermistor	This is an internal board test. The board will check the resistance value of the thermistor and display the results (P or F) on the Refrigerator Compartment display.	Step No.	P or F
2	Defrost heater/Bi-metal	Line voltage switched to components from board, verify 120V AC between line and neutral at heater. Note: If Bi-metal is open, it will need to be by-passed for heater to operate. See Warning below.		
3	Evaporator fan motor	Line voltage switched to motor from board, verify 120V AC between line and neutral at motor. Verify 120V AC between white and red/white wires.		
4	Compressor and Condenser fan motor	Line voltage switched to components from board, verify 120V AC between line and neutral at compressor and motor (red and white wires).		

The water valve inputs to the control board can be checked when you are in the normal cooling mode. To verify that the water valve inputs are correctly connected to the main control open the Refrigerator door and press in the door switch. Activate the water dispenser and look at the water filter indicator. The green indicator light should be on. Repeating the process above for the icemaker valve would turn the red indicator light on.

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

SERVICE AND WIRING SHEET NO. 2255774REL

SERVICE AND WIRING SHEET NO. 2255774REL

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 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	+	-

⚠WARNING

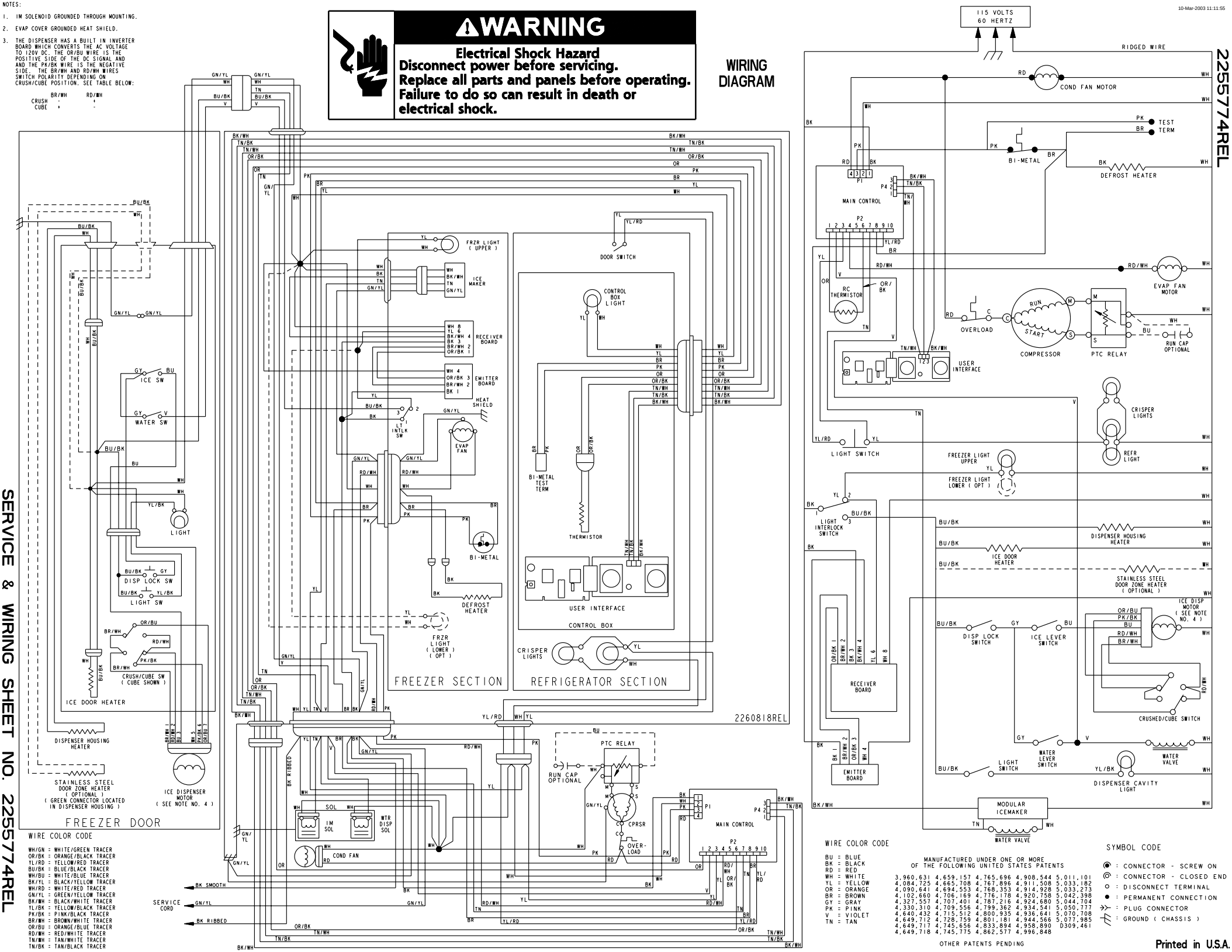
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

WIRING DIAGRAM

10-Mar-2003 11:11:55

2255774REL

SERVICE & WIRING SHEET NO. 2255774REL



WIRE COLOR CODE

WH/GN = WHITE/GREEN TRACER
OR/BK = ORANGE/BLACK TRACER
YL/RD = YELLOW/RED TRACER
BU/BK = BLUE/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
TN/WH = TAN/WHITE TRACER
TN/BK = TAN/BLACK TRACER

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

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)

Printed in U.S.A.