

SERVICE AND WIRING SHEET

15-Aug-2003 17:11:34

2266830A

⚠ 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.

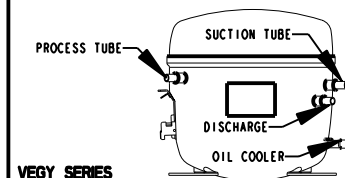
• Normal operating conditions are viewed when the air and temperature controls are at mid-sitting, freezer section 0 to 5°F and unit is cycling.

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 OPERATION 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 (2266831A)

1. COMPRESSOR SUCTION AND PROCESS STUBS CAN NOT BE INTERCHANGED.
2. REFRIGERANT CHARGE MUST BE APPLIED TO HIGH SIDE ONLY.
3. NOTE: ICE MAKER CYCLE MUST BE INITIATED ELECTRICALLY. DO NOT TRY TO MANUALLY START CYCLE.
4. SERVICE DEFROST BIMETALS - 50° F OPEN.
5. 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.
6. PART NUMBER CAN BE FOUND ON THE COMPONENT.

SERVICEABLE ELECTRICAL PARTS MATRIX COMPONENTS

SERVICEABLE PARTS	Part Number	Watt/Res.				
		120V				
COMPRESSOR	2223393	70-130				
RUN WINDINGS	*	6.4Ω				
START WINDINGS	*	6.4Ω				
INVERTER ASSY	2223385					
THERMISTOR (Refrig. & Frz)	2213442	2.7Ω@25°C				
BAFFLE MODULE	2220377					
ELECTRONIC CTL (CONTROL)	2252097					
ELECTRONIC CTL (DISPLAY)	2252110					
DEFROST HEATER (EVAP.)	2207485	450W/32Ω				
DEFROST HEATER (SHROUD)	2207486	150W/96Ω				
DEFROST BI-METAL	2196155					
EVAPORATOR FAN	2259385	2-5W				
CONDENSER FAN	2206036	3-5.3W				

ELECTRONIC CONTROL FEATURES

The electronic control in this appliance controls the temperatures in the refrigerator and freezer compartments independently, delays the operation of the evaporator fan (optional), pulses the defrost heater and monitors the water filter usage. The fan delay and pulsed defrost features are controlled in the following manner:

1. Pulsed Defrost Heat - During the defrost cycle the heater is energized continuously for the first 2 minutes. It is then cycled off for 60 seconds and on for 120 seconds. The on/off cycle is repeated until the bi-metal opens or the maximum defrost time (25 minutes) is reached.

SERVICE DIAGNOSTICS MODE

The Service Diagnostic Mode can be entered 13 seconds after the refrigerator is powered up. This mode has two methods of verifying components. The main control board automatically tests steps 1 through 3. The component status is displayed on the WFI indicator. Steps 4 through 7 require the service technician to visually inspect the component on test. He/She will need to physically look at the component on test to verify the component is active.

How to Enter Service Diagnostic Mode:

- While depressing the **WATER FILTER RESET** button, press and hold the **POWER ON/OFF** button for 3 seconds, then release both buttons.
- Diagnostics will begin at step #1:

Each step displays the sequence number in the RC temperature display area and the component status in the WFI display area. The refrigerator compartment (RC) temperature display will show "Ol" to indicate the control is in Step #1 of the diagnostics routine and the WFI display will show the component status.

- The table below shows the "Step #", the "Component Tested", the "Suggested Diagnostics Routine" and the "Water Filter Component Status Indicator" at each step.
- Each step must be manually advanced by pressing and holding the water filter reset button for 2 seconds or until it beeps to move to the next step in the sequence.

Numeric - The RC display advances each time the water filter reset is pressed indicating the completion of the previous step.

- The diagnostic mode ends automatically after the steps are completed or 20 minutes have passed (whichever comes first). The control will then resume normal cooling operation.

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 #	Component Tested	Suggested Diagnostics Routine	Water Filter Component Status Indicator
1	FC Thermistor	Step 1 and Step 2 are internal board tests, which means the Main Controller board will check the resistance value of each thermistor and display the results on the water filter status indicator.	"Ol" Pass
2	RC Thermistor		"O2" Thermistor Open "O3" Thermistor Short
3	Evaporator Fan Motor	Step 3 is an internal board test, which means that the Main Control Board will automatically verify if the evaporator fan motor is working properly. In Step 3, the evaporator fan motor will automatically have its speed set to run at 2500 rpm. If the motor does not reach this pre-selected speed, the WFI display will display "O2".	"Ol" Fan Motor On / Speed OK "O2" Fan Motor On / Improper Speed
4	Condenser Fan Motor	Step 4 is a visual inspection test. When Step 4 is selected, if the motor is not functioning, verify 120VAC is between line and neutral at the condenser fan motor connection. (white/red and white wires)	"Ol" Condenser Fan Motor Energized
5	Compressor	Step 5 should turn on the compressor within a 7 second window and will run at full speed, 4500 rpm. NOTE: If compressor does not turn on during this step, wait 7 minutes and re-check the compressor.	"Ol" Compressor On / Speed OK "O2" Compressor Off
6	Air Baffle Motor	Step 6 is a visual inspection test. When Step 6 is selected, if the damper motor is operating correctly, the damper will attempt to open fully.	"Ol" Air Door Open
7	Defrost Heater/Bi-metal	Step 7 is a visual inspection test. When Step 7 is selected, the heater will energize if the Bi-Metal is closed and the WFI display will display "Ol". If the heater does not energize, the Bi-metal may be open and will need to be by-passed for the heater to operate. See Warning below.	"Ol" Defrost Heater Energized/Bi-metal closed "O2" Defrost Heater Energized/Bi-metal open

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 yellow indicator light should be on or the numeric display should read "Ol". Repeating the process above for the icemaker valve would turn the red indicator light on or display "IO" on the numeric indicator.

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

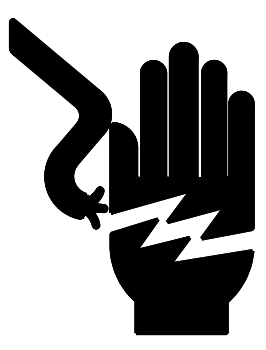
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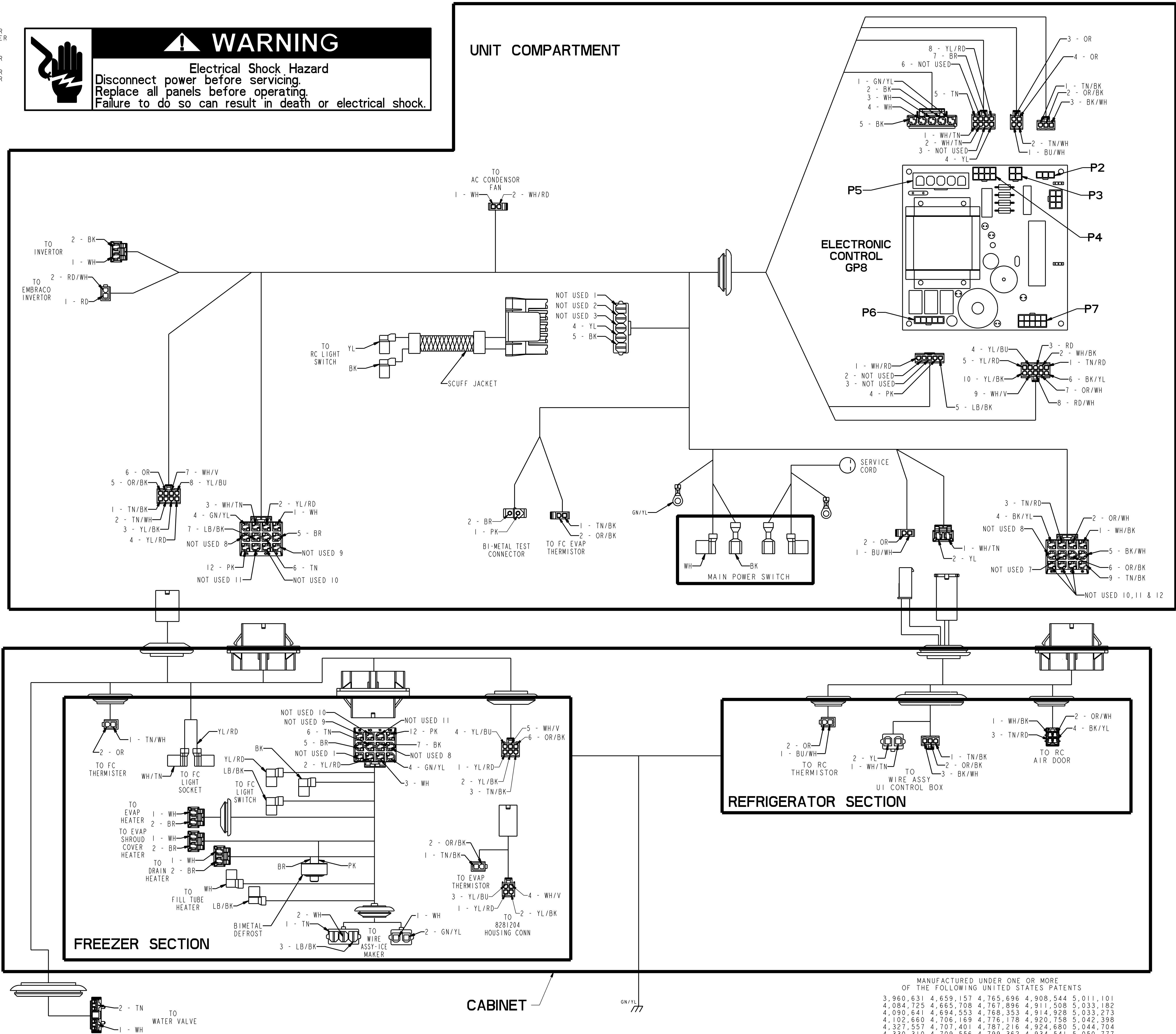
WIRE COLOR CODE		
BK = BLACK	BU/OR = BLUE/ORANGE TRACER	
BU = BLUE	WH/BU = WHITE/BLUE TRACER	
BR = BROWN	WH/BR = WHITE/BROWN TRACER	
GY = GRAY	YL/BK = YELLOW/BLACK TRACER	
OR = ORANGE	YL/OR = YELLOW/ORANGE TRACER	
PK = PINK	YL/RD = YELLOW/RED TRACER	
PUR = PURPLE	BR/WH = BROWN/WHITE TRACER	
RD = RED	OR/BK = ORANGE/BLACK TRACER	
TN = TAN	RD/WH = RED/WHITE TRACER	
WH = WHITE	GN/YL = GREEN/YELLOW TRACER	
YL = YELLOW	BK/YL = BLACK/YELLOW TRACER	
V = VIOLET	BU/BK = BLUE/BLACK TRACER	
	WH/RD = WHITE/RED TRACER	
	BK/WH = BLACK/WHITE TRACER	
	TN/RD = TAN/RED TRACER	
	WH/BK = WHITE/BLACK TRACER	
	WH/TN = WHITE/TAN TRACER	



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NOTES:

1. IM SOLENOID VALVE GROUNDED THROUGH MOUNTING.
2. EVAP COVER GROUNDED THROUGH MOUNTING.

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



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99.5% OF ALL LEAKS ARE AT JOINTS.

