SERVICE AND WIRING SHEET

14-Jun-2007 10:45:45

W10142175A

⚠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.

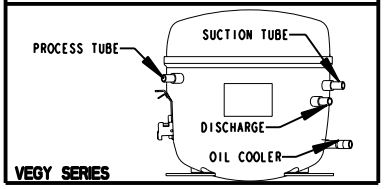
- Normal operating conditions are viewed when the air and temperature controls are at mid-setting, freezer section 0 to -5°F and unit is cycling.

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 (2223420C)

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. PART NUMBER CAN BE FOUND ON THE COMPONENT.

SERVICEABLE ELECTRICAL PARTS MATRIX COMPONENTS

SERVICEABLE PARTS	PART NUMBER			WATT/RES
	WHIRLPOOL	KENMORE	KITCHENAID	
COMPRESSOR	2223801			50-200
RUN WINDINGS	*			6.4Ω
START WINDINGS	*			6.4Ω
INVERTER ASSY	2306957			
THERMISTOR (REFRIG AND FRZ)	2188820			2.7KΩ@25°C
BAFFLE MODULE	2220377			
ELECTRONIC CTL (MAIN CONTROL)	2307028			
ELECTRONIC CTL (DISPLAY)	2307037			
TOUCHPAD BOX SUB ASSY (DISPLAY)	2306990	2307038	2306989	
CIRCUIT BOARD - EMITTER	2220398			
CIRCUIT BOARD - RECEIVER	2255114			
DEFROST HEATER	2210737			614W/23.5Ω
DEFROST BI-METAL	2188824			
EVAPORATOR FAN	2259385			12VDC/3W
CONDENSER FAN	SEE NOTE 5			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 7 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 (33 minutes) is reached.

SERVICE DIAGNOSTICS MODE

The Service Diagnostic Mode has two methods of verifying components. The main control board automatically tests steps 1 through 2. The component status is displayed on the RC display. 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 **°C or TEMP MODE** 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 FC temperature display area and the component status in the RC display area. The freezer compartment (FC) temperature display will show "01" to indicate the control is in Step #1 of the diagnostics routine and the refrigerator compartment (RC) temperature display will show the component status.
- The table below shows the "Step #", the "Component Tested", the "Suggested Diagnostics Routine" and the "Component Status Indicator" at each step. Each step must be manually advanced by pressing the Freezer up arrow or + key to move to the next step in the sequence.
- The FC display advances each time the Freezer up arrow or + key 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	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 RC display.	"01" Pass "02" Thermistor Open "03" Thermistor Short
2	RC Thermistor		
3	Evaporator Fan Motor	Step 3 is a visual inspection test. When Step 3 is selected, if the motor is not functioning, verify 12VDC is between White/Violet and Yellow/Red of the fan motor connection.	"01" Fan Motor Energized
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)	"01" 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.	"01" Compressor On / Speed OK "02" 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.	"01" 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 RC display will display "01". 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.	"01" Defrost Heater Energized/Bi-metal closed "02" 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 RC indicator. The RC display should read "01". Repeating the process above for the icemaker valve should display "10" on the RC indicator.

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

NOTES:

1. IM SOLENOID GROUNDED THROUGH MOUNTING.
2. EVAP COVER GROUNDED HEAT SHIELD.
3. THE DISPENSER CONTROL HAS A BUILT IN INVERTER BOARD WHICH CONVERTS THE AC VOLTAGE TO 120V DC. 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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WIRING DIAGRAM

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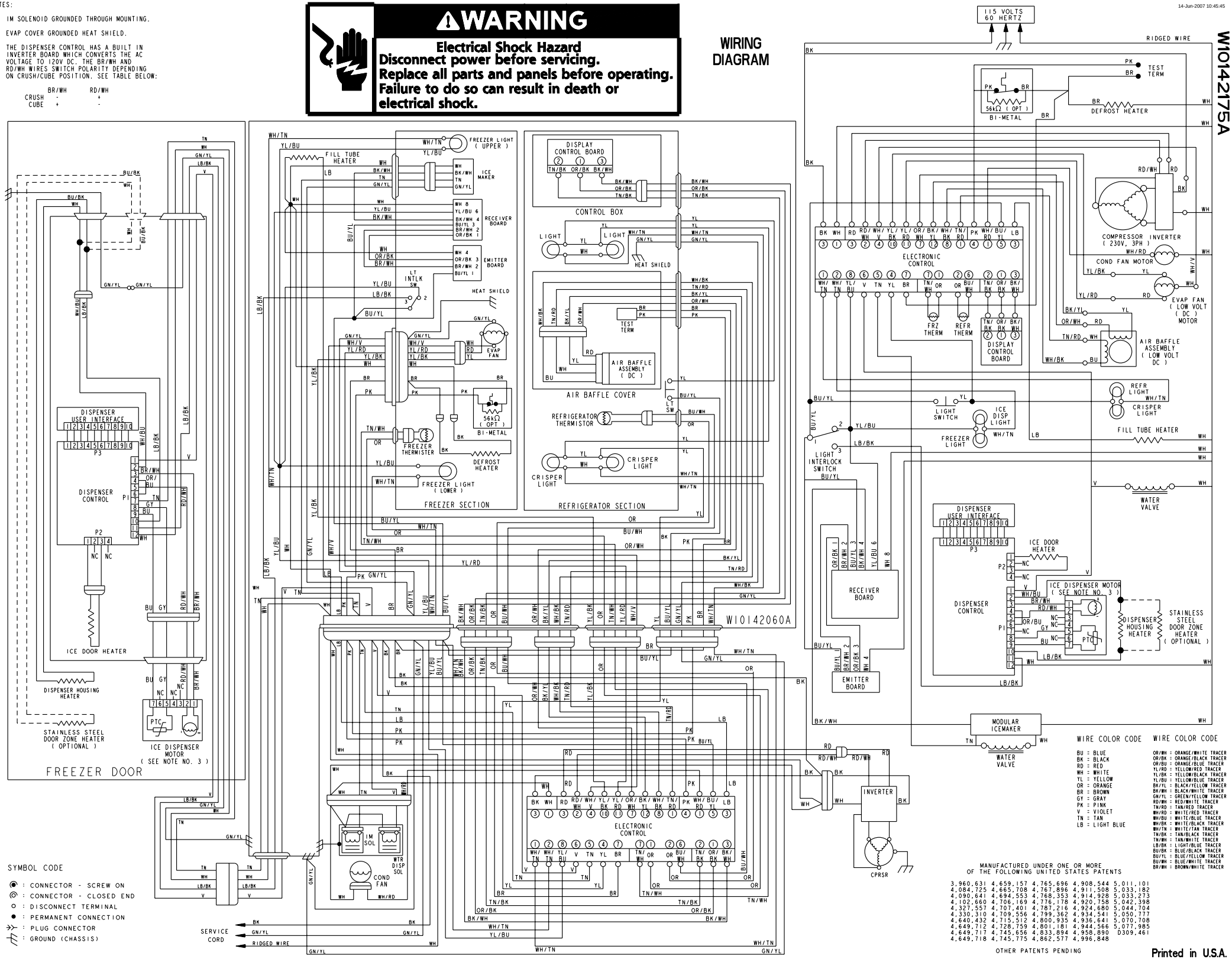

SYMBOL CODE

- ◉ : CONNECTOR - SCREW ON
- ◎ : CONNECTOR - CLOSED END
- ○ : DISCONNECT TERMINAL
- ● : PERMANENT CONNECTION
- ⟩⟨ : PLUG CONNECTOR
- ⏚ : GROUND (CHASSIS)

WIRE COLOR CODE

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

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