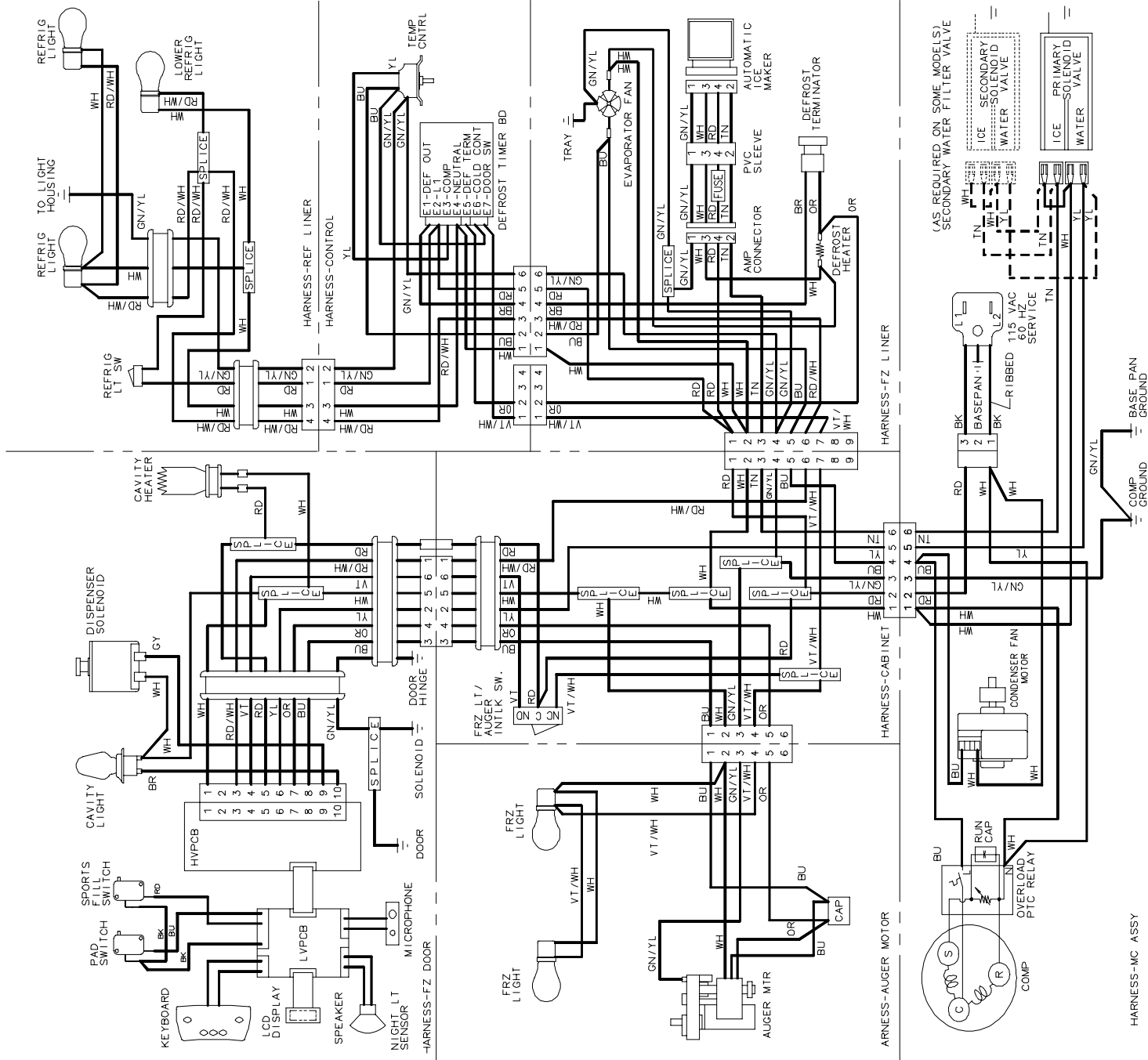


Wiring Diagram

WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power. Discharge capacitors through a 10,000-ohm resistor before handling. Wires removed during disassembly must be replaced on correct terminals to ensure proper grounding and polarization.



12630801 PRINTED IN U.S.A.

Technical Information—Side by Side Refrigerator

ARSE667BB	PARSE667BB0	ARSE667BC	PARSE667BC0
ARSE667BS	PARSE667BS0	ARSE667BW	PARSE667BW0

- Due to a possibility of personal injury or property damage, always contact an authorized technician for service or repair of this refrigerator.
- Refer to Service Manual RS1300005 for installation, operating, disassembly, icemaker, testing, and troubleshooting information.

CAUTION

All safety information must be followed as provided in Service Manual RS1300005.

WARNING

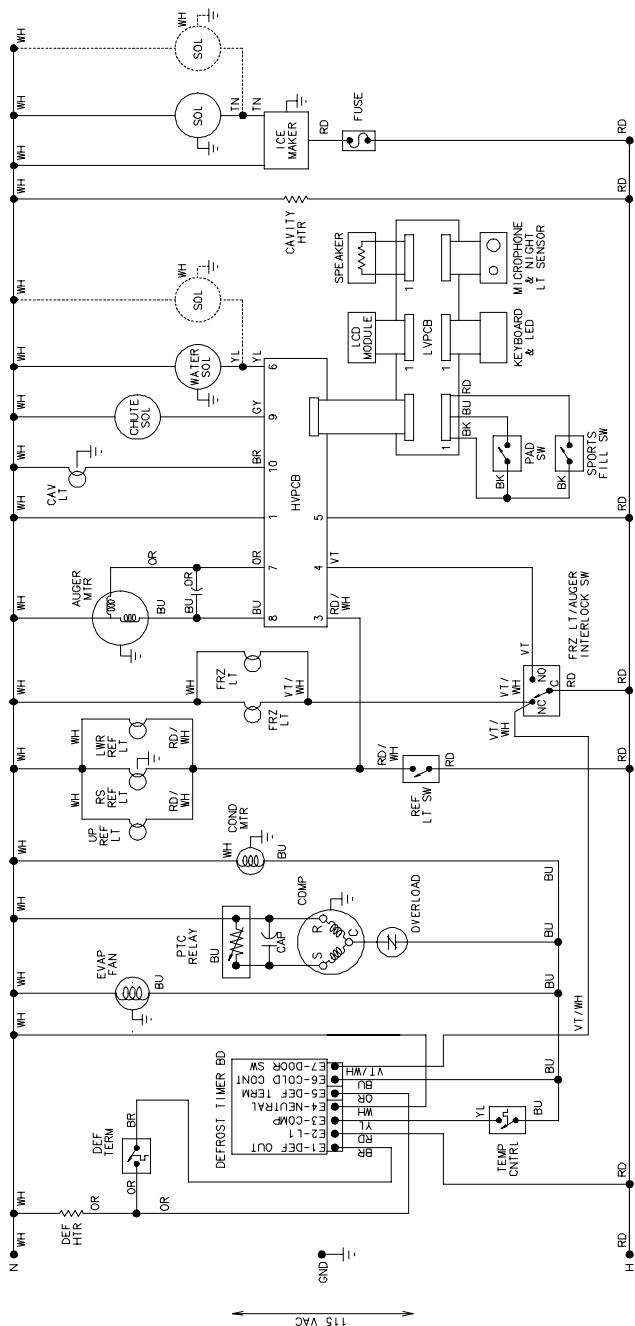
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No-Load Performance, Controls in Normal Position							
	Kw/24 hr ± 0.4			Percent Run Time $\pm 10\%$	Cycles/24 hr $\pm 25\%$	Refrigerator Center Compartment Average Food Temperature $\pm 3^\circ\text{F}$	Freezer Compartment Average Food Temperature $\pm 3^\circ\text{F}$
Ambient $^\circ\text{F}$	65°	90°	110°	65° 90° 110°	65° 90° 110°	65° 90° 110°	65° 90° 110°
26 cu ft	1.3	2.06	2.9	37 57 75	34 35 19	33 37 39	5 -3 1

Temperature Relationship Test Chart

	Evaporator Outlet ±3°F	Evaporator Inlet ±3°F	Suction Line ±7°F	Average Total Wattage ±10%	Suction Pressure ±2 PSIG	Head Pressure ± 5 PSIG
Ambient °F	65°	90°	65°	65°	65°	90°
26 cu ft	-25	-19	-24	-19	6" vac.	87
						137

Schematic



Component Specifications

WARNING

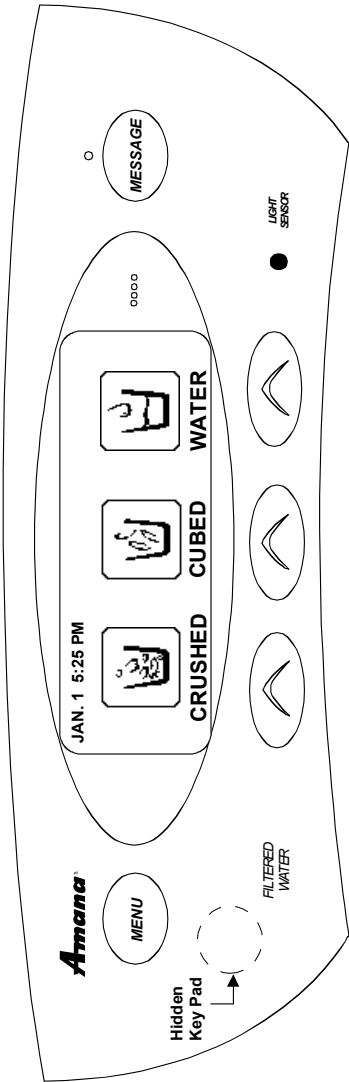
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Part Number	Component	Specifications all parts 115VAC/60HZ unless noted
C8931612	Compressor run capacitor	Volt..... 210/220 VAC Capacitance 15 µfd ± 10%
12049718	Compressor	BTU/H 965 BTU/H Watt 60 Hz / 168 watts Current Lock rotor 19.5 amps± 15% Current Full load 1.50 amps± 15% Resistance Run windings..... 2.79 ohms± 15% Resistance Start windings..... 4.49 ohms± 15%
12571701	Damper control	Settings #1 Closing temperatures #4 50.6°F #7 42.3°F 34.1°F
12351006	Freezer temperature control	Settings #1 – out Temperatures #4 – out 5.3°F ±3° #7 – out -4.9°F ±1.5° -9.6°F ±3°
12628701	Condenser motor	Rotation (facing end opposite shaft) RPM Clockwise Watt..... 1250 RPM Current..... 4.2 watts± 15%@115VAC 0.063 ma± 15%@115VAC
10449508	Evaporator fan motor	Rotation (facing end opposite shaft) RPM Clockwise Watt..... 2800 RPM 5.9 ± 15% watts@115VAC Note: Fan blade must be fully seated on shaft to achieve proper airflow.
12555902	Overload/Relay	Ult. trip amps @ 158°F (70°C) 3.51 amps± 15% Close temperature 142°F ±6° Open temperature 257°F ±3° Short time trip (seconds) 10 seconds ±5 Short time trip (amps @77°F (25°C)).. 14 amps ±2amps
12601205	Thermostat	Volt 120/240 VAC Watt 1000 watts Current 10/5 amps Resistance across terminals: Above 45°F ±5° Open Below 15°F ±7° Closed
12049801	Evaporator heater	Volt..... 115 VAC Wattage..... 450 ±5% watts @ 115VAC Resistance 29 ±5% ohms
12566102	Adaptive defrost control	Volt..... 120VAC, 60 HZ See adaptive defrost board section
12501001	Auger Motor	Rotation (facing end opposite shaft) Power to blue and white is clockwise orange and white is counterclockwise
12544002 12544102	Water Valve (primary) Water Valve (secondary)	RPM 17± 3 RPM Watts Brown side 35w, Purple side 20w Watts Brown side 35w, Purple side 20w
12466104	Light switch	Type..... SPST NC Volt..... 125/250 VAC Current..... 8 / 6 amps
12466103	Light switch / Interlock	Type..... SPDT NO/NC Volt..... 125/250 VAC Current..... 8 / 6 amps
12575401	DC Solenoid (Ice Chute)	Resistance across leads 101 ohms ± 10%

Dispenser Operation

WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power. Discharge capacitors through a 10,000-ohm resistor before handling. Wires removed during disassembly must be replaced on correct terminals to ensure proper grounding and polarization.



Seconds to dispense 10 oz. water

Supply pressure	35 psig	45 psig	55 psig	75 psig
Filter model	9.0	8.0	7.0	6.0
Bypass installed				
Filter model	11.0	10.0	8.0	7.0
New filter installed				

A minimum supply pressure of 35 psig for water filter units. Minimum pressure requirement ensures that water valves close and sufficient water volume is available to fill icemaker. Proper fill is 140 cc. of water in 7.5 seconds. Failure of water valves to close because of low pressure will result in fill-tube freeze-up or dripping at cavity.

12566102 Adaptive Defrost Board (ADC)

The ADC adapts the compressor run time between defrosts to achieve optimum defrost intervals by monitoring the cold control and length the defrost heater is on.
After initial power up, defrost intervals are 6 hr.(initial), 8 hr.(minimum), 96 hr. (maximum). Defrost is delayed for 4 min. after the control cycles compressor off.
Optimum defrost is 15 minutes. Each additional minute the defrost thermostat remains closed, 1 hr. is subtracted from the previous defrost interval. Each minute the thermostat opens prior to optimum defrost, it extends the next defrost interval 1 hr. ADC will terminate defrost at 30 minutes even if defrost thermostat has not opened and will reset the defrost interval to the 8 hr. minimum setting.
A 6 minute delay occurs after defrost thermostat opens before compressor is allowed to run. If defrost thermostat opens within 30 seconds of beginning of defrost, delay is by passed.
Four hours of continuous compressor run will initiate a defrost, and defrost interval re-sets to 8 hours.

Power up If defrost thermostat is open, compressor is powered momentarily. ADC checks to confirm defrost thermostat is open and immediately restores compressor circuit. This check may cause compressor overload to trip in high ambient conditions.
This is normal, compressor should start back up within 5 minutes.

If defrost thermostat is closed, defrost is powered.

To Force or Terminate defrost: Toggle freezer door light switch 5 times within 6 sec
If cold control is open, a forced defrost will not occur until the cold control closes, then the ADC will immediately switch the function to defrost.
If cold control is closed and defrost terminator or heater circuit is open when defrost is forced, ADC shuts unit down momentarily and immediately restores power to refrigeration circuit.

If cold control is closed, a forced defrost is immediate without any delay (When the ADC cycles the unit into defrost on it's own defrost it is delayed until 4 minutes after the compressor has been cycled off by the cold control.)
When ADC is in defrost, cold control is closed and refrigeration is forced, ADC bypasses 6 minute dwell time.
Input Voltage Readings and Checks
E2 to E4..... Line voltage should be present when the unit is powered
E6 to E4..... Line voltage should be present when the cold control contacts are closed
E5 to E4..... Line voltage should be present when the ADC is in defrost mode and the defrost terminator contacts are closed
E7 to E4..... Line voltage should be present when the freezer door is open (freezer light switch closed)

Output Voltage Readings and Checks
E1 to E4..... Line voltage should be present when the ADC is in defrost mode
E3 to E4..... Line voltage should be present when the ADC is not in the defrost mode or compressor dwell mode.

Dispenser Troubleshooting

Dispenser Troubleshooting



CAUTION

To avoid risk of damaging electronic circuit board. Electro-Static Wrist strap must be worn when replacing electronic circuit board.

Freezer Door Harness connection to the power board:

Pin	Color	Power Board Graphic Marking	Signal and State Definition	
1	WH	NEU	LINE NEUTRAL INPUT (TOP PIN OF LARGE CONNECTOR)	0 VAC CONSTANT
2	N/C		NO CONNECTION	
3	RD/WH	FF	FRESH FOOD DOOR INPUT	DOOR OPEN 0 VAC
4	VT	FZ	FREEZER DOOR INPUT	DOOR OPEN 115 VAC
5	RD	L1	LINE POWER INPUT	115 VAC CONSTANT
6	YL	WAT	WATER SOLENOID OUTPUT	VALVE ON 115 VAC
7	OR	CUB	CUBED ICE MOTOR DRIVE	CUBE WINDING ON 115 VAC
8	BU	CSH	CRUSHED ICE MOTOR DRIVE	CRUSHED WINDING OFF 0 VAC
9	GY	ICE	ICE CHUTE SOLENOID OUTPUT	SOLENOID ENERGIZED 115 VAC
10	BR	LIT	NIGHT-LIGHT OUTPUT (BOTTOM PIN OF LARGE CONNECTOR)	NIGHT-LIGHT OFF 0 VAC

Jumper Harness from the power board header J1 to the

control board header J1:

Pin	Color	Signal
1	GY	NIGHT-LIGHT (0, 2 or 4 VDC) (TOP PIN OF SMALL CONNECTOR ON POWER BOARD)
2	BR	AC INPUT (both doors open or closed – 2.0 VDC, FZ door open – 5VDC, FF door open - < 0.5 VDC)
3	VT	AC REF (2.0 – 2.5 VDC continuous)
4	OR	ICE CHUTE (5VDC WHEN ENERGIZED)
5	BU	CRUSHED ICE (5VDC WHEN ENERGIZED)
6	RD	CUBED ICE (5VDC WHEN ENERGIZED)
7	YL	WATER (5VDC WHEN ENERGIZED)
8	WH	VCC (5VDC CONSTANT)
9	N/C	NO CONNECTION
10	BK	GROUND (BOTTOM PIN OF SMALL CONNECTOR)

Dispenser Switch Harness

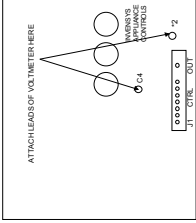
Pin	Color	Signal
1	BU	DISPENSER SWITCH
2	RD	WATER SWITCH
3		N/C
4	BK	COMMON

Keyboard switch test:

PRESS PAD NAME	MEASURE 100 – 500 OHMS ACROSS TRACES
MESSAGE	2 AND 4
MENU	3 AND 4
LEFT	1 AND 3
CENTER	1 AND 4
RIGHT	1 AND 5
HIDDEN	2 AND 5
MESSAGE LED CIRCUIT	7 TO 8 (< 2 K OHMS) 8 TO 7 (INFINITE OHMS)

Symptom	Possible Cause	Test Procedure	Repair
Dispenser light never turns on.	The bulb is not screwed in tight in the socket.	Check to see if the bulb is tight in the socket.	Screw the bulb in tight.
	The bulb filament has opened.	Check the bulb for continuity.	Replace the bulb.
	The bulb socket contacts are not contacting the bulb metal surface.	Test for the presence of line voltage across the terminals on the socket while dispensing.	Repair/replace the bulb socket.
No prerecorded sounds or messages can be heard.	The volume is set too low.	Press the MESSAGE PAD. Record and play back a message. Adjust the volume until it can be heard.	Done.
	A speaker wire is not attached or is broken.	Measure the resistance of the speaker and wire harness. It should be 8 +/- 1 Ohms.	If the reading is within range, then replace the control board. Otherwise, replace the speaker or repair the wire connection.
No message LED	Failed keyboard.	Set up meter to read 5 VDC. Press the MESSAGE PAD. Record a message and press STOP button. The message LED should begin to flash. If it does not, then measure the voltage from pin 4 of the dispenser switch header J4 on the control board to R14 just above and to the right of the keyboard connector.	The voltage should be cycling between 5 and 0 VDC. If it does not, then replace the control board, otherwise replace the keyboard.
Prerecorded sounds are ok but cannot hear user messages at all.	Control board microphone malfunctioning	Press the MESSAGE PAD. Record and play back a message. Try adjusting the volume.	If user messages cannot be heard but prerecorded sounds can be heard, then replace the Control board.
Messages can be heard but there are no prerecorded sounds	The NO SOUND option has been set in the control.	From the dispenser screen press the MENU pad. For the SOUND Option select either TONE or VOICE and retest.	If it works, then done. If it fails, then verify the volume is turned up loud enough to hear. If it still fails then replace the control board.
Control not responding to keyboard pad presses	Keyboard tail not fully inserted into control board header.	Reinstall the keyboard tail into the control board and retest. If the control does not respond to keyboard pad presses then test the keyboard as defined above.	Replace the keyboard if it fails the test, otherwise replace the control board.
Night-Light is always on. Sometimes it is dim and sometimes it is bright.	The LIGHT option is configured ON.	When the LIGHT is ON, then in low light the light is on at ½ power and when there is a lot of ambient light, the light is on full power.	Done.
LCD Module is hard to read.	The LCD backlight has been turned off.	From the dispenser screen, press and hold the MENU pad for 3 seconds until the screen changes. Press the buttons under the arrow pads until TURN ON THE DISPLAY LIGHT is highlighted. Press the pad under SELECT to turn on the display light.	Done.
LCD backlight sometimes is dim, sometimes bright.	The LCD Contrast is too low.	From the dispenser screen press MENU pad 3 times until SET AUDIO VOLUME appears in the display banner. Press SELECT pad to display the SET LCD CONTRAST screen. Press the up and down arrows until the desired contrast is achieved.	Done.
	Automatic backlight level adjustment.	The LCD backlight has 3 separate levels; low, medium and high. When the room is dark the backlight automatically will be in the low state. In medium light level conditions the LCD backlight will be at a medium level. In bright rooms the LCD backlight level will be high.	No manual adjustment is available.
No LCD Graphics visible	Failed LCD Module or control board.	1. Press the message pad to get into the message center. 2. Press the LEFT pad under the display to record a message. Speak into the microphone area for about 10 seconds. 3. Press the LEFT pad again to stop recording. Does the message begin to flash on and off? 4. Press the MESSAGE pad and then press and hold the CENTER pad under the display to begin playback of the message and begin increasing the volume of the playback. Can the recorded message be heard?	If the answer to either of these questions is YES, then replace the LCD module. Otherwise replace the control board.

Dispenser Troubleshooting

Symptom	Possible Cause	Test Procedure	Repair
Dead Control: No display No sound No dispensing	Open circuit in the L1 RED wire in the freezer door harness.	Unplug the refrigerator. Remove the large 10-pin connector from the power board. Power up the refrigerator. Take line voltage reading between RED wire on pin 5 (L1) on the connector across to the unit chassis. The reading must be line voltage level.	If the correct voltage is not measured, then locate source of the open on L1 or the ground wire/connection to the wall outlet and repair/replace as necessary. If voltage reading is ok, then go to the frame below.
	Open circuit in the neutral WHITE wire in the freezer door harness.	Perform test above first, then if it passes, take line voltage reading between RED wire pin 5 (L1) on the connector across to WHITE wire pin 1 (NEU). The reading must be line voltage level.	If the correct voltage is not measured, then locate source of the open and repair/replace as necessary. If break in the wire is not accessible, then replace the door.
	Failed power board	Unplug the refrigerator. Remove the small 10-pin connector at the bottom of the power board from the power board. Power up the refrigerator. Take a voltage reading between pin 8 and pin 10 at the very bottom of the header on the PCB. The reading must be 5.0 VDC +/- 0.25 VDC.	If the correct voltage is not measured, then replace the power board. If voltage reading is ok, then go to the frame below.
Failed control board or LCD Module.		Place one Probe left of the C4 graphic on the PCB. The other probe needs to be placed on the solder test point just right of J1 the 10 pin header. Control Board 	If the correct voltage is present, then replace the control board. If the correct voltage is not present, then disconnect the LCD Module tail at the control board and check the voltage again. Now if the correct voltage is present, replace the LCD Module. If the black and white jumper harness wires are not making good contact, then repair/replace the jumper harness wires, otherwise replace the control board.
		With the unit powered up, connect a voltmeter configured for DC volts: For a “no auger motor operation”, check across pins 1 and 4 of the dispenser connector. For a “no water flow”, check across pins 2 and 4 of the dispenser connector. When the switch is not pressed there should be 5.0 VDC. When the switch is pressed, there should be 0 VDC. Measure voltage without pressing the switch. The meter should measure 5.0 VDC.	If there is 0 VDC, then disconnect the dispenser harness and read the meter again. If there is still 0 VDC then replace the control board. Otherwise if the meter reads 5.0 VDC, then close the switch. The meter must read 0VDC. If it does not, then test the dispenser harness connections, water and dispenser switch function and mechanical functioning of the pushbuttons. Repair or replace as needed.
Water never dispenses. Animation displays when the switch is pressed.	Failed control board, power board, power valve or harness.	Setup voltmeter to read line voltage. Attach meter probes to Power board J2 pins 1 (WH) and 6 (YL). When the system is powered up and the dispenser switch is open, <15 VAC must be read. When the switch is closed, line voltage must be read.	If the proper voltages are read, then the problem is in the wiring back to the water valve or one of the water valves. If the proper voltages are not read, then setup voltmeter to read 5.0 VDC. Measure voltage on the power board from J1 pins 7 to 10. 5 VDC must be read when the switch is closed. If the proper voltage is read, then replace the power board otherwise check the harness and replace either the harness or the control board.
Ice never dispenses. Animation displays when switch is closed.	Failed control board, power board, auger motor or harness.	Setup voltmeter to read line voltage. Attach meter probes to Power board J2 pins 1 (WH) and 7 (OR) for cubed ice or 8 (BL) for crushed ice direction. When the system is powered up and the dispenser switch is open, <15 VAC must be read. When the switch is closed, line voltage must be read.	If the proper voltages are read, then the problem is in the wiring back to the auger motor or the auger motor itself. If the proper voltages are not read, then setup voltmeter to read 5VDC. Measure voltage on the power board from J1 pins 6 (RD) for cubed or 5 (BU) for crushed and pin 10 (BK). 5 VDC must be read when the switch is closed. If the proper voltage is read, then replace the power board otherwise check the harness and replace either the harness or the control board.

Dispenser Troubleshooting

Symptom	Possible Cause	Test Procedure	Repair
Ice never dispenses. Animation displays when switch is closed.	Failed ice chute solenoid	Listen for auger motor operation while the switch is pressed. If the auger motor is operating, then check that the ice chute door is not mechanically stuck closed. If there is not a mechanical problem, then check for line voltage across the solenoid during operation. If line voltage is present then replace the solenoid. Otherwise, verify that there is line voltage on J2 of the power board pins 1 to 9 during operation.	If line voltage is present, then repair/replace the wiring to the solenoid. Otherwise check for 5.0 VDC present at the power board J1 pins 4 to 10. If 5.0 VDC is present, then replace the power board. If no voltage is present, then check the same pins on J1 of the control board. If 5 VDC is present on the control board then repair/replace the harness, else replace the control board.
Auger motor continuously cycling on and off when dispenser button is not being pressed.	Motor is cycling on thermal overload. Switch is stuck closed or mechanical obstruction is forcing switch closure.	Set up meter to read 5 VDC. Check across pins 1 and 4 of the dispenser connector. Without pressing dispenser switch the voltage should be 5 VDC.	If the reading is 0 VDC, then the dispenser switch is closed in error. Troubleshoot the pad assembly and switch. Repair or replace as necessary. If voltage measures ok, then remove probe from pin 1 and check voltage at J1 pins 4 and 5. If 5 VDC is read at either point, then replace the control board otherwise replace the power board.
Water flowing continuously without pressing a dispensing button.	Water valve stuck open.	Open the freezer door.	If the water flow does not stop, then replace the water valve. Otherwise go to the frame below.
Cannot turn off the door alarm and the display says one of the doors is open all the time.	Dispensing switch stuck closed	Set up meter to read 5 VDC. Check across pins 1 to 4 and 2 to 4 of the dispenser connector. Without pressing dispenser switch the voltage should be 5 VDC.	If either reading is 0 VDC, then the switch is closed in error. Troubleshoot the pad assembly or Front Fill button and switch. Repair or replace as necessary. If voltage measures ok, then remove probe from pin 1 and check voltage at J1 pin 7. If 5 VDC is read, then replace the control board otherwise replace the power board.
	Failed or improperly adjusted door or the door switch.	Open the door signaled as being open. Manually close the door switch. Does the alarm stop? If so, then check the door adjustment. Otherwise go to the next frame below.	Adjust door, door switch or replace the door switch as needed to turn off the alarm.
	Failed wiring harness or connection to the power board.	Unplug the refrigerator. Remove the façade from the door. Disconnect the freezer door harness from the power board. To test the freezer door connections, attach the voltmeter probes to J2, VT wire (pin 4) and WH (pin 10) on the harness. Set up the meter for line voltage AC type. Place the meter so that it is not held or touching any metal. Power up the refrigerator. There must be line voltage across the meter when the door is closed and <15 VAC when the door is open. To test the refrigerator door connections, use the same procedure as for the freezer door test above except attach the voltmeter probes to J2, RD/WH wire (pin 3) and WH (pin 10) on the harness.	If the voltage readings are incorrect, then power down the refrigerator and replace the power board. Otherwise power down the refrigerator. Attach the control board to the unit. Move the probes to J1 pins 10 and 2 on the control board. Repeat the last test. If the voltage readings are incorrect, then replace the jumper harness, otherwise replace the control board.