



SECTION 9

TROUBLESHOOTING GUIDES

GENERAL TROUBLESHOOTING GUIDE LAYOUT

The list below indicates how the General Trouble Shooting Guide is arranged. Before proceeding to the troubleshooting guide, see "NOTE" at end of list. Following the General Troubleshooting Guide is the Sealed System Troubleshooting Guide.

- A. Warm Freezer Compartment Temperature with "VACUUM CONDENSER" flashing on the LCD
- B. Warm Freezer Compartment Temperature without "VACUUM CONDENSER" illuminated on the LCD
- C. Warm Refrigerator Compartment Temperature with "VACUUM CONDENSER" flashing on the LCD
- D. Warm Refrigerator Compartment Temperature without "VACUUM CONDENSER" illuminated on the LCD
- E. Warm Freezer and Refrig. Compartment Temperatures with "VACUUM CONDENSER" flashing on the LCD
- F. Warm Freezer and Refrig. Compartment Temperatures without "VACUUM CONDENSER" illuminated on LCD
- G. Compartment Temperatures Normal with "VACUUM CONDENSER" Flashing
- H. Compartment Temperatures Normal with "SERVICE " Flashing
- I. Warm or Normal Freezer Compartment with "EE" Displayed for Freezer Temp and "SERVICE" Flashing
- J. Warm or Normal Refrig. Compartment with "EE" Displayed for Refrig. Temp and "SERVICE" Flashing
- K. Freezer and/or Refrigerator Compartment too Cold
- L. Membrane Switch on Control Board Malfunctioning
- M. No Lighting
- N. Lights Stay on when Door Closed
- O. Noise - Intermittent
- P. Noise - Constant or Intermittent
- Q. Doors Uneven or Unit Not level
- R. No Ice, "ICE" Not Displayed
- S. No Ice with "ICE" Displayed
- T. No Ice with "ICE" and "SERVICE" Flashing
- U. Too Much Ice
- V. Icemaker Produces Small Cubes
- W. Icemaker Produces Hollow Cubes
- X. Water From Icemaker In Ice Bucket

NOTE : For problems "A" through "K," "S" and "V" above, begin troubleshooting by opening door and recording Set-Points. Then initiate Diagnostic Mode to record the compartment and evaporator temperatures. For problems "C" and "D " observe refrigerator evaporator temperature with door open for five minutes.

INITIATING DIAGNOSTIC MODE

To initiate diagnostic mode, press and hold either COLDER key, then the UNIT ON/OFF key. All annunciators on the LCD should light-up indicating diagnostic mode is now activated, and the first reading is displayed on the LCD. Pressing the COLDER key successively will display the readings in sequence, bypassing location display. If location is unknown, press and hold the UNIT ON/OFF key (see sequence listings below.)

For models 611, 632, 642, 650 and 690,
the diagnostic mode sequence is:

- 1st - ("F") Freezer Compartment
- 2nd - ("r") Refrigerator compartment
- 3rd - ("rE") Refrigerator Evaporator
- 4th - ("FE") Freezer Evaporator
- 5th - ("IL") Inactive Line

For model 601R, diagnostic mode sequence is:

- 1ST - ("r") Refrigerator compartment
- 2ND - ("rE") Refrigerator Evaporator

For model 601F, diagnostic mode sequence is:

- 1ST - ("F") Freezer compartment
- 2ND - ("FE") Freezer Evaporator
- 3RD - ("IL") Inactive Line

NOTE: The electronic control will exit diagnostic mode ten seconds after the last key stroke.

NOTE: Always recheck set-points after performing diagnostic mode procedures.

NOTE: Before beginning, see page 9-2, and see "Pointers" in PROBLEM column.

Problem	Possible Cause	Test/Action
A.) Warm Freezer Temperatures w/ "VACUUM CONDENSER" flashing (NOTE: To clear error indicator after repairs, power OFF, then back ON.) Pointers: (NOTE: w/Freezer Comp. Running) 1. Evap. temp -20°F or lower see: <ul style="list-style-type: none"> Door ajar Evaporator fan fault Evaporator heavily frosted Faulty light switch Sealed system problem, leak or partial restriction 2. Evap. Temp. between -19°F & 0°F see: <ul style="list-style-type: none"> Condenser Air Flow Sealed System problem, leak 3. Evap. Temp. 0°F or higher see: (NOTE: Verify freezer comp is running & not in defrost) <ul style="list-style-type: none"> Power to Compressor Fault Sealed System problem, leak, restriction or inefficient compressor 	Door ajar a. Food product obstruction b. Door out of adjustment c. Door or cabinet hinge problem	a. Move obstruction. b. Adjust door. c. Replace hinge or component.
	Condenser Air Flow a. Dirty condenser b. Condenser fan blade obstructed c. Condenser fan motor disconnected or defective d. No power from control board (excluding 601F) (NOTE: A compressor must be running)	a. Clean condenser. b. Remove obstruction. c. Check electrical connections, reconnect/repair. Check power to motor, replace motor if defective. d. Check COND FAN terminal at control board for 115V (w/comp. running). Replace board if defective.
	Faulty light switch/Light stays on	Check light switch, lights off when depressed. Replace if defective.
	Evaporator Fan fault a. Fan blade out of adjustment. b. Fan blade obstructed c. Faulty fan switch d. Evap. fan motor disconnected or faulty	a. See SECTION 5 - AIR FLOW & FAN BLADE SPACING b. Move obstruction. c. Check power to and from fan switch. Replace if defective. d. Check wiring to, and power at, fan motor. Repair wiring or replace motor if defective.

Problem	Possible Cause	Test/Action
(Continued - see Pointers on previous page) A.) Warm Freezer Temperatures w/ "VACUUM CONDENSER" flashing	Evaporator heavily frosted <i>(NOTE: To manually initiate defrost, press and hold the ICE key for approximately ten seconds)</i> a. Evaporator fan malfunction b. Defrost heater disconnected or faulty c. Defrost terminator disconnected or faulty. d. Defrost sense line disconnected. e. No power from control board	a. See Evaporator Fan Fault above. b. Check electrical connections for 20 Ohms, reconnect or replace if defective. c. Check electrical connections, reconnect/repair or replace if defective. d. Check DEF SEN electrical connection at control board for 115V. Repair connection. e. Check DEF HTR terminal at control board for 115V. Replace board if defective.
	Power To Compressor fault a. Compressor wiring disconnected b. Compressor electricals disconnected or faulty c. No power from control board	a. Check wiring at compressor, reconnect or repair. b. Check compressor electricals. Replace if defective. c. Check F COMP terminal on control board for 115V. If no power, replace board.
	<ul style="list-style-type: none"> • Sealed System Leak • Sealed System Restriction • Inefficient Compressor 	<ul style="list-style-type: none"> • See following SEALED SYSTEM TROUBLESHOOTING GUIDE

Problem	Possible Cause	Test/Action
B.) Warm Freezer Temperatures w/o "VACUUM CONDENSER" illuminated. Pointers: (NOTE: w/Freezer Comp. Running) 1. Evap. temp -20°F or lower see: <ul style="list-style-type: none">• Door ajar• Evaporator fan fault• Evaporator heavily frosted• Faulty light switch• Sealed system problem, leak or partial restriction 2. Evap. Temp. between -19°F & 0°F see: <ul style="list-style-type: none">• Control set too high• Warm food load• High ambient• Door ajar• Condenser air flow• Sealed system problem, leak 3. Evap. Temp. 0°F or higher see: (NOTE: Verify freezer comp is running & not in defrost) <ul style="list-style-type: none">• Unit in Show Room mode• Power To Compressor fault• Sealed system problem, leak restriction or inefficient compressor 4. "EE" displayed in place of temperature reading, see: <ul style="list-style-type: none">• Thermistor malfunction	No power to unit	Check power to unit, plug unit in or trip supply circuit breaker ON.
	Unit switched OFF	Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key to ON.
	Unit in Show Room mode	If lights are on, listen for unit functioning. If not running, press UNIT ON/OFF key. Now press and hold WARMER& COLDER keys, and press UNIT ON/OFF key.
	Control set too high	Check set-point. If high, adjust.
	Warm food load	Check contents of freezer for warm food load. Instruct customer.
	High room ambient	Instruct customer.
	Door ajar a. Food product obstruction b. Door out of adjustment c. Door or cabinet hinge problem	a. Move obstruction. b. Adjust door. c. Replace hinge or component.
	Condenser air flow a. Dirty condenser b. Condenser fan blade obstructed. c. Condenser fan motor disconnected or defective d. No power from control board (excluding 601F) (NOTE: A compressor must be running)	a. Clean condenser. b. Remove obstruction. c. Check electrical connections, reconnect/repair. Check power to motor, replace if defective. d. Check COND FAN terminal at control board for 115V. (w/ a comp. running). Replace board if defective.
	Faulty light switch/Light stays on	Check light switch, lights off when depressed. Replace if defective.
	Evaporator Fan fault a. Fan blade out of adjustment b. Fan blade obstructed c. Faulty fan switch d. Evap. fan motor disconnected or faulty	a. See SECTION 5 - AIR FLOW & FAN BLADE SPACING b. Move obstruction. c. Check power to and from fan switch. Replace if defective. d. Check wiring to, and power at, fan motor. Repair wiring or replace motor if defective.

Problem	Possible Cause	Test/Action
(Continued - see Pointers on previous page) B.) Warm Freezer Temperatures w/o "VACUUM CONDENSER" illuminated.	Evaporator heavily frosted <i>(NOTE: To manually initiate defrost, press and hold the ICE key for approximately 10 seconds)</i> a. Evaporator fan malfunction b. Defrost heater disconnected or faulty c. Defrost terminator disconnected or faulty d. Defrost Sense line disconnected e. No power from control board	a. See Evaporator Fan Fault on previous page. b. Check electrical connections and heater = 20 Ohms. Reconnect or replace if defective. c. Check electrical connections, reconnect/repair or replace if defective. d. With unit in defrost, check DEF SEN electrical connection at control board for 115V. Reconnect or repair connection if defective. e. With unit in defrost, check DEF HTR terminal at control board for 115V. Replace board if defective.
	Thermistor Malfunction	Check thermistor connection and thermistor Ohms = 32,500 at 32°F and 10,000 at 77°F. Repair connection or replace thermistor if defective.
	Power To Compressor fault a. Compressor wiring disconnected. b. Compressor electricals disconnected or faulty c. No power from control board	a. Check wiring at compressor, reconnect or repair. b. Check compressor electricals. Replace if defective. c. Check F COMP terminal on control board for 115V. If no power, replace board.
	<ul style="list-style-type: none"> • Sealed System leak • Sealed System restriction • Inefficient compressor • Non-operating compressor 	<ul style="list-style-type: none"> • See following SEALED SYSTEM TROUBLESHOOTING GUIDE
C. Warm Refrigerator Temperatures w/ "VACUUM CONDENSER" flashing <i>(NOTE: To clear error indicator after repairs, power OFF, then back ON)</i> See Pointers on next page	Door ajar a. Gallon door shelf obstruction b. Food product obstruction c. Door out of adjustment d. Door or cabinet hinge problem	a. Relocate shelf(s). b. Move obstruction c. Adjust door. d. Replace hinge or component,

Problem	Possible Cause	Test/Action
<p>(Continued)</p> <p>C. Warm Refrigerator Temperatures w/“VACUUM CONDENSER” flashing</p> <p>Pointers:</p> <p>(NOTE: w/Refrigerator Comp. running for 5 minutes)</p> <p>1. Evap. temp 15°F or lower within 5 minutes w/door open, see:</p> <ul style="list-style-type: none"> • Door ajar • Faulty light switch • Evaporator Fan fault • Evaporator heavily frosted • Evaporator thermistor malfunction • Sealed System problem, leak or partial restriction <p>2. Evap. Temp. cannot pull below 30°F within 5 minutes w/door open, see:</p> <ul style="list-style-type: none"> • Condenser Air Flow • Evaporator thermistor malfunction • Sealed System problem, leak or inefficient compressor <p>3. Evap. Temp. 35°F or higher within 5 minutes w/door open, see:</p> <ul style="list-style-type: none"> • Condenser Air Flow • Evaporator Thermistor Malfunction • Power To Compressor fault • Sealed System problem, leak, restriction or inefficient compressor <p>4. “EE” displayed in place of temperature reading, see:</p> <ul style="list-style-type: none"> • Thermistor Malfunction 	<p>Condenser Air Flow</p> <p>a. Dirty condenser</p> <p>b. Condenser fan blade obstructed</p> <p>c. Condenser fan motor disconnected or defective</p> <p>d. No power from control board (excluding 601R) (NOTE: A compressor must be running)</p>	<p>a. Clean condenser.</p> <p>b. Remove obstruction.</p> <p>c. Check electrical connections, reconnect/repair. Check power to motor, replace motor if defective.</p> <p>d. Check COND FAN terminal on control board for 115V. (w/comp. running). Replace board if defective.</p>
	Faulty light switch/Lights stay on	Check light switch, lights off when depressed. Replace if defective.
	<p>Evaporator Fan fault</p> <p>a. Fan blade out of adjustment</p> <p>b. Fan blade obstructed</p> <p>c. Faulty fan switch</p> <p>d. Evap. fan motor disconnected or faulty</p>	<p>a. See SECTION 5 - AIR FLOW & FAN BLADE SPACING</p> <p>b. Move obstruction.</p> <p>c. Check power to and from fan switch. Replace if defective.</p> <p>d. Check wiring to, and power at, fan motor. Repair wiring or replace motor if defective.</p>
	<p>Evaporator heavily frosted</p> <p>a. Evaporator fan malfunction</p> <p>b. Evaporator thermistor malfunction</p>	<p>a. See Evaporator Fan Fault above.</p> <p>b. See Evaporator Thermistor Malfunction below.</p>
	<p>Evaporator thermistor malfunction</p>	<p>Check evaporator thermistor connection and thermistor Ohms = 32,500 at 32°F and 10,000 = 77°F. Repair connection or replace thermistor if defective. (NOTE: If ohms are correct, investigate the two following Possible Causes. If they check OK, replace evaporator and compartment thermistors.)</p>
	<p>Power To Compressor fault</p> <p>a. Compressor wiring disconnected</p> <p>b. Compressor electricals disconnected or faulty</p> <p>c. No power from control board</p>	<p>a. Check wiring at compressor, reconnect or repair.</p> <p>b. Check compressor electricals, replace if defective.</p> <p>c. Check R COMP terminal on control board for 115V. If no power, replace board.</p>
	<ul style="list-style-type: none"> • Sealed System leak • Sealed System restricted • Inefficient compressor • Non-operating compressor 	<ul style="list-style-type: none"> • See following SEALED SYSTEM TROUBLESHOOTING GUIDE.

Problem	Possible Cause	Test/Action
D. Warm Refrigerator Temperature w/o “VACUUM CONDENSER” illuminated Pointers: <i>(NOTE: W/refrigerator comp. running for 5 minutes and refrigerator door open)</i> 1. Evap. temp 15°F or lower within 5 minutes w/door open, see: <ul style="list-style-type: none"> • Door ajar • Faulty light switch • Evaporator Fan fault • Evaporator heavily frosted • Evaporator thermistor malfunction • Sealed System problem, leak or partial restriction 2. Evap. Temp. cannot pull below 30°F within 5 minutes w/door open, see: <ul style="list-style-type: none"> • Condenser Air Flow • Evaporator thermistor malfunction • Sealed System problem, leak or inefficient compressor 3. Evap. Temp. 35°F or higher within 5 minutes w/door open, see: <ul style="list-style-type: none"> • Condenser Air Flow • Power To Compressor fault • Evaporator Thermistor Malfunction • Sealed System problem, leak, restriction or inefficient compressor 4. “EE” displayed in place of temperature reading, see: <ul style="list-style-type: none"> • Thermistor malfunction 	No power to unit	Check power to unit, plug unit in or trip supply circuit breaker to ON.
	Unit switched OFF	Check for “OFF” displayed at LCD. If off, press UNIT ON/OFF key to ON.
	Unit in Show Room mode	If lights are on, listen for unit functioning. If not running, press and hold WARMER & COLDER keys, then press UNIT ON/OFF key.
	Control set too high	Check set-points. If high, adjust.
	Warm food load	Check contents of refrigerator for warm food load. Instruct customer.
	High room ambient	Instruct customer.
	Door ajar <ul style="list-style-type: none"> a. Gallon door shelf obstruction b. Food product obstruction c. Door out of adjustment d. Door or cabinet hinge problem 	a. Relocate shelf(s). b. Move obstruction. c. Adjust door. d. Replace hinge or component.
	Condenser Air Flow <ul style="list-style-type: none"> a. Dirty condenser b. Condenser fan blade obstructed c. Condenser fan motor disconnected or defective d. No power from control board (excluding 601R) <i>(NOTE: A compressor must be running)</i>	a. Clean condenser. b. Remove obstruction. c. Check electrical connections, reconnect/repair. Check power to motor, replace if defective. d. Check COND FAN terminal at control board for 115V. (w/ comp. running). Replace board if defective.
	Faulty light switch/Lights stay on	Check light switch, lights off when depressed. Replace if defective.
	Evaporator thermistor malfunction	Check evaporator thermistor connection and thermistor Ohms = 32,500 at 32°F and 10,000 = 77°F. Repair connection or replace thermistor if defective. <i>(NOTE: If ohms are correct, investigate the two following Possible Causes. If they check OK, replace evaporator and compartment thermistors.)</i>
	Power To Compressor fault <ul style="list-style-type: none"> a. Compressor wiring disconnected b. Compressor electricals disconnected or faulty c. No power from control board 	a. Check wiring at compressor, reconnect or repair. b. Check compressor electricals. Replace if defective. c. Check R COMP terminal on control board for 115V. If no power, replace board.

Problem	Possible Cause	Test/Action
(Continued - see Pointers on previous page) D. Warm Refrigerator Temperature w/o "VACUUM CONDENSER" illuminated	<ul style="list-style-type: none"> Sealed System leak Sealed System restriction Inefficient compressor 	<ul style="list-style-type: none"> See following SEALED SYSTEM TROUBLESHOOTING GUIDE
E. Warm Freezer and Refrigerator Temperatures w/ "VACUUM CONDENSER" flashing <i>(NOTE: To clear error indicator after repairs, power OFF then back ON)</i>	High room ambient Condenser Air Flow <ul style="list-style-type: none"> Dirty condenser Condenser fan blade obstructed Condenser fan motor disconnected or defective No power from control board (excluding 601R and 601F) <i>(NOTE: A compressor must be running)</i>	Instruct customer. a. Clean condenser. b. Remove obstruction. c. Check electrical connections, reconnect/repair. Check power to motor, replace motor if defective. d. Check COND FAN terminal on control board for 115V. (w/comp. running). Replace board if defective. <i>(NOTE: If problem persists, see PROBLEM A & C).</i>
F. Warm Freezer and Refrigerator Temperatures w/o "VACUUM CONDENSER" illuminated	No power to unit Unit switched OFF Unit in Show Room mode Control set too high Warm food load High room ambient Condenser Air Flow <ul style="list-style-type: none"> Dirty condenser Condenser fan blade obstructed Condenser fan motor disconnected or defective No power from control board (excluding 601R and 601F) <i>(NOTE: A compressor must be running)</i>	Check power to unit, plug unit in or trip supply circuit breaker ON. Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key to ON. If lights are on, listen for unit functioning. If not running, press UNIT ON/OFF key. Now press and hold WARMER& COLDER keys, and press UNIT ON/OFF key. Check set-points. If high, adjust. Check contents of freezer for warm food load. Instruct customer. Instruct customer. a. Clean condenser. b. Remove obstruction. c. Check electrical connections, reconnect/repair. Check power to motor, replace motor if defective. d. Check COND FAN terminal on control board for 115V. (w/comp. running). Replace board if defective. <i>(NOTE: If problem persists, see PROBLEM B & D).</i>

Problem	Possible Cause	Test/Action
G. <u>Compartment Temperatures Normal w/“VACUUM CONDENSER” flashing</u> <i>(NOTE: To clear error indicator after repairs, power OFF then back ON)</i>	Condenser Air Flow a. Dirty condenser b. Condenser fan blade obstructed c. Condenser fan motor disconnected or defective d. No power from control board (excluding 601R and 601F) <i>(NOTE: A compressor must be running)</i>	a. Clean condenser. b. Remove obstruction. c. Check electrical connections, reconnect/repair. Check power to motor, replace motor if defective. d. Check COND FAN terminal on control board for 115V. (w/comp. running). Replace board if defective.
	Thermistor Malfunction	If “EE” is displayed in place of temperature during diagnostic mode, that thermistor is disconnected or faulty. If no “EE” is displayed, replace refrigerator Compartment and Evaporator Thermistor.
	Possible early signs of Sealed System leak	<ul style="list-style-type: none"> • See following SEALED SYSTEM TROUBLESHOOTING GUIDE
H. <u>Compartment Temperatures Normal w/“SERVICE” flashing</u> <i>(NOTE: To clear error indicator after repairs, power OFF then back ON)</i>	Refrigerator evaporator thermistor malfunction	Check refrigerator evaporator thermistor connection. If all connections are good, replace Evaporator Thermistor.
I. <u>Warm or Normal Freezer Temp. w/“EE” displayed for freezer temp. and “SERVICE” flashing</u> <i>(NOTE: To clear error indicator after repairs, power OFF then back ON)</i>	Freezer compartment thermistor malfunction	Check freezer compartment thermistor connection. If all connections are good, replace Compartment Thermistor.
J. <u>Warm or Normal Refrig. Temp. w/“EE” displayed for refrigerator temp. and “SERVICE” flashing</u> <i>(NOTE: To clear error indicator after repairs, power OFF then back ON)</i>	Refrigerator compartment thermistor malfunction	Check refrigerator compartment thermistor connection. If all connections are good, replace Compartment Thermistor.
K. <u>Freezer and/or Refrigerator Compartment too cold</u>	Control set too low	Check set-points. If low, adjust.
	Thermistor malfunction	If “EE” is displayed in place of temperature during diagnostic mode, thermistor is disconnected or faulty. Check thermistor connection and Ohms = 32,500 at 32°F and 10,000 at 77°F. Repair connection or replace thermistor if defective. <i>(NOTE: If “EE” is not displayed, replace all thermistors.)</i>
L. <u>Membrane switch on control board malfunctioning</u>	Ribbon cable to control board incorrectly attached to control board or ribbon cable broken	Check ribbon cable at control board. Label on cable terminal housing must be oriented toward arrow on control board. If connected properly, check for breaks .
	Defective Membrane Switch	See MEMBRANE SWITCH/RIBBON CABLE TEST at end of troubleshooting guides.

Problem	Possible Cause	Test/Action
M. <u>No lights</u>	No power to unit	Check power to unit, plug unit in or trip supply circuit breaker ON.
	Unit switched OFF	Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key to ON.
	Unit in Holiday mode	Press UNIT ON/OFF key. Lights should illuminate if unit was in Holiday mode.
	Defective or loose light bulb(s)	Install a known good light bulb, if it illuminates, replace defective bulb.
	Light terminator interrupt	Check for proper door closing. If door is ajar too long, lighting system is interrupted by the terminator. Clear obstruction or adjust door and allow bulbs to cool.
	Light switch disconnected or defective	Check wire connections at light switch. Reconnect/repair. Check power to and from light switch. Replace if defective.
	Light system wiring disconnected	After verifying power to light switch and the light switch is good, signal trace the lighting system after switch. Repair wiring if disconnected.
	No power from control board	Check LIGHTS terminal at control board for 115V. Replace board if defective.
N. <u>Lights stay ON when door is closed</u>	Door ajar a. Gallon door shelf obstruction b. Food product obstruction c. Door out of adjustment d. Door or cabinet hinge problem	a. Relocate shelf(s). b. Move obstruction. c. Adjust door. d. Replace hinge or component.
	Faulty light switch	Check light switch, lights off when depressed. Replace if defective.
O. <u>Noise</u> (buzz/hum - intermittent)	Water Valve a. No water supply hook-up	a. Check water valve for water hookup. If none, press ICE key to de-energize icemaker system and instruct customer.
	b. Defective water valve	b. Check water valve for "excessive" operating noise, replace if defective.
P. <u>Noise</u> (rattle/clank/clatter/click/buzz/hum/whir/squeak/clang/clunk - constant or intermittent)	Sealed System tubing contact	Check compressor area for sealed system tubing touching other tubing or other components, then adjust tubing.
	Fan blade obstruction or defect	Check condenser and evaporator fan blade positions, adjust if needed; check for fan blade obstructions, clear obstruction if needed; check for fan blade defects (unbalanced), replace if defective.
	Fan motor defect	Check condenser and evaporator fan motors for "excessive" operating noise, replace if defective.
	Compressor defect	Check compressor for "excessive" operating noise, replace if defective.

Problem	Possible Cause	Test/Action
Q. <u>Doors uneven or not level</u>	Unit not level or doors out of adjustment	See UNIT LEVELING (ALL MODELS) and DOOR ADJUSTMENT (ALL MODELS) in Installation Information section of Service/Training manual.
R. <u>No ice, Ice not displayed</u>	Icemaker system not energized	Press ICE key.
S. <u>No ice w/ "ICE" displayed</u> <i>(NOTE: Icemaker is disabled for 45 minutes after each ice harvest. To bypass for cycling icemaker, press ICE key OFF, then ON)</i>	Unit has not been running long enough	Freezer must be 10°F for icemaker to operate, approximately twenty-four hours after unit installation. Instruct customer.
	Unit in Show Room mode	If lights are on, listen for unit functioning. If not running, press and hold WARMER & COLDER keys, then press UNIT ON/OFF key.
	Warm freezer temperatures <i>(NOTE: Freezer must be 10°F for icemaker to function)</i>	See PROBLEM A, B, E & F earlier in Troubleshooting Guide.
	Shut-off arm stuck in Up/Off position	Check shut-off arm, and lower it if its stuck in the up/off position.
	Disconnected or Defective water valve	Check electrical connections at water valve, connect or repair. Water valve Ohms = 260.
	No water supply	Check water valve for water hook-up, if none, instruct customer. Loosen inlet connection to verify water to valve. If water supply is turned off/closed, turn on/open.
	IceMaker System <i>(NOTE: For models 601F, 611, 650 and 690, the icemaker switch which is normally activated by the ice bucket must be depressed in order to complete the icemaker circuit.)</i> a. Disconnected or damaged electrical connections at icemaker or water valve. b. Defective icemaker c. Defective icemaker d. Disconnected or damaged electrical connections at icemaker e. Icemaker switch disconnected or faulty (Models 601F, 611, 650 690 only. See NOTE above.) f. Electrical connection at control board or control board defect	After manually bypassing 45 minute dwell, manually start icemaker by rotating the ejector blades clockwise by hand, while turning the drive gear counterclockwise with a flat blade screwdriver. 1. If icemaker motor starts and finishes cycle: a. Check for 115V at water valve during fill mode. If no power, visually inspect electrical connections at icemaker and water valve. Reconnect, repair or replace connection. b. Check for 115V from icemaker during fill mode. If no power, replace icemaker. 2. If icemaker motor starts but does not finish cycle: c. Replace icemaker. 3. If icemaker motor does NOT start: d. Check for 115V to icemaker. If power, repair electrical connection. e. Check power to and from icemaker switch. Reconnect or repair connection. Replace switch if defective. f. Check ICE MKR terminal at control board for 115V. If power is present, check and repair connection. If no power, replace control board.

Problem	Possible Cause	Test/Action
(Continued) S. <u>No ice w/ "ICE" displayed</u> <i>(NOTE: Icemaker is disabled for 45 minutes after each ice harvest. To bypass for cycling icemaker, press ICE key OFF, then ON)</i>	Frozen fill tube a. Water supply problem b. Disconnected or defective fill tube heater c. Electrical connection at control board or control board defect	a. Check water supply to unit. Pressure MUST be constant 20 psi to 100 psi. If not, instruct customer. b. Check electrical connections at fill tube heater; reconnect or repair as needed. Check fill tube heater Ohms = 2,600. Replace if defective. c. Check ICE ACC at control board for 115V. If power, connect or repair wiring. If no power, replace board.
T. <u>No ice w/ "ICE" and "SERVICE" flashing</u> <i>(NOTE: To clear error indicator after repairs, power OFF then back ON)</i>	Water valve energized too long	Check icemaker area for jammed ice cube, clear jam if present. Check levelness of icemaker; level if needed. Check water supply pressure; must be constant 20-100 PSI. Also, check water valve for defects, replace if defective.
U. <u>Too much ice</u>	Ice level arm/linkage bent or broken	Inspect ice level arm, shut-off arm and linkage. Replace defective parts.
	Icemaker faulty	With the ice level arm in the UP/OFF position, manually start icemaker by rotating the ejector blades clockwise by hand while turning the drive gear counter-clockwise with a flat blade screwdriver. If icemaker motor starts with arm in the UP/OFF position, replace icemaker.
V. <u>Icemaker produces small cubes</u>	Icemaker not level	Adjust icemaker.
	Low fill adjustment on icemaker	Increase fill level by turning adjusting screw counter-clockwise (Fill = 100-110 cc. or ~ 3.5-3.75 oz.).
W. <u>Icemaker produces hollow cubes</u>	Warm freezer temperature	See Problems A, B, E, F & I earlier in Troubleshooting Guide.
	Icemaker faulty	Replace icemaker.
X. <u>Water from icemaker in ice bucket</u>	Icemaker not level	Adjust icemaker.
	High fill adjustment on icemaker	Decrease fill level by turning adjusting screw clockwise (Fill = 100-110 cc. or ~ 3.5 -3.75 oz.)
	Water valve energized too long	Check icemaker area for jammed ice cube, clear jam if present and check water supply pressure. Check water valve for defects, replace if defective.

SEALED SYSTEM

NOTE: Before troubleshooting the sealed system, be sure to see Page 9-2 and go through the preceding General Troubleshooting Guide.

NOTE: Whenever entering the sealed system, always use solder-on process valves.

NOTE: Whenever servicing the sealed system, the filter-drier must be replaced.

Normal Operating Pressures			
MODEL		NORMAL LOW SIDE PRESSURE	NORMAL HIGH SIDE PRESSURE
601R		10 psi to 36 psi	90 psi to 100 psi
601F		-1" Vac to 13 psi	90 psi to 100 psi
611	Refrig.	6 psi to 40 psi	90 psi to 100 psi
	Freezer	-2" Vac to 14 psi	90 psi to 100 psi
632	Refrig.	11 psi to 38 psi	90 psi to 100 psi
	Freezer	-1" Vac to 9 psi	90 psi to 100 psi
642	Refrig.	11 psi to 38 psi	90 psi to 100 psi
	Freezer	-1" Vac to 9 psi	90 psi to 100 psi
650	Refrig.	6 psi to 40 psi	90 psi to 100 psi
	Freezer	-2" Vac to 14 psi	90 psi to 100 psi
680	Refrig.	16 psi to 36 psi	90 psi to 100 psi
	Freezer	-1" Vac to 9 psi	90 psi to 100 psi
690	Refrig.	16 psi to 36 psi	90 psi to 100 psi
	Freezer	-1" Vac to 9 psi	90 psi to 100 psi

Pressure Indications		
IF LOW SIDE PRESSURE IS	& HIGH SIDE PRESSURE IS	POSSIBLE PROBLEM IS
NORMAL	NORMAL	MECHANICAL (See General Troubleshooting Guide)
LOW	LOW	Leak
LOW	HIGH	Restriction
HIGH	LOW	Inefficient Compressor
HIGH	HIGH	Over Charge

SEALED SYSTEM REPAIR PROCEDURES

Problem	What To Do
Non-Operating, Inefficient, Noisy Compressor <i>(NOTE: To check for a non-operating compressor, a hard start kit can be used.)</i>	a. Capture refrigerant. b. Replace compressor. c. Replace filter-drier. d. Evacuate or sweep charge system. e. Recharge system with Virgin 134a refrigerant.
High Side Leak	a. Capture refrigerant. b. Repair leak. c. Replace filter-drier. d. Evacuate or sweep charge system. e. Recharge system with Virgin 134a refrigerant.
Low Side Leak	a. Capture refrigerant. b. Repair leak (if at solder joint) or replace part. c. Back flush high side of sealed system. d. Replace compressor. e. Replace filter-drier. f. Evacuate or sweep charge system. g. Recharge system with Virgin 134a refrigerant.
Contaminated Sealed System Example: <ul style="list-style-type: none"> • Burned out compressor • Excessive moisture from leak at condensate loop • Excessive moisture from leak in low side • Plugged capillary tube, etc... 	a. Capture refrigerant. b. Repair leak (if at solder joint) or replace part. c. Back flush high side of sealed system. d. Replace compressor. e. Replace filter-drier. f. Replace heat exchanger if cap tube is clogged. g. Install a low side drier on suction line. h. Evacuate or sweep charge sealed system. i. Recharge with Virgin 134a refrigerant.
Restriction <i>(NOTE: If restriction is due to contaminated sealed system, see Contaminated Sealed System above.)</i>	a. Capture refrigerant. b. Locate and remove restriction or locate and replace part. c. Back flush high side of sealed system. d. Replace filter-drier. e. Evacuate or sweep charge system. d. Recharge system with Virgin 134a refrigerant.
Overcharge	a. Capture refrigerant. b. Replace filter-drier. c. Evacuate or sweep charge system. d. Recharge system with Virgin 134a refrigerant.

MEMBRANE SWITCH/RIBBON CABLE TESTS

Below is the procedure to follow if the integrity of the membrane switch on the control panel is suspect. To perform these tests, the ribbon cable terminal housing must be disconnected from the control board.

NOTE: The wires of the ribbon cable are exposed at the back side of the terminal housing. With an Ohm Meter, check for continuity at these exposed points/pins. Pin #1 is at the top of the terminal housing, closest to the arrow on the housing (see Figure 9-1).

1. Without pressing any of the keys on the membrane switch, check for continuity across all pin combinations. With no keys pressed, there should be no continuity.
2. With the UNIT ON/OFF key depressed, there should be continuity across pins #1 & #5 only.
3. With the Freezer COLDER key depressed, there should be continuity across pins #1 & #2 only.
4. With the Freezer WARMER key depressed, there should be continuity across pins #2 & #3 only.
5. With the Refrigerator COLDER key depressed, there should be continuity across pins #1 & #3 only.
6. With the Refrigerator WARMER key depressed, there should be continuity across pins #3 & #4 only.
7. With the ICE ON/OFF key depressed, there should be continuity across pins #1 & #4 only.

NOTE: If the membrane switch fails any of the fore mentioned tests, the control panel should be replaced.

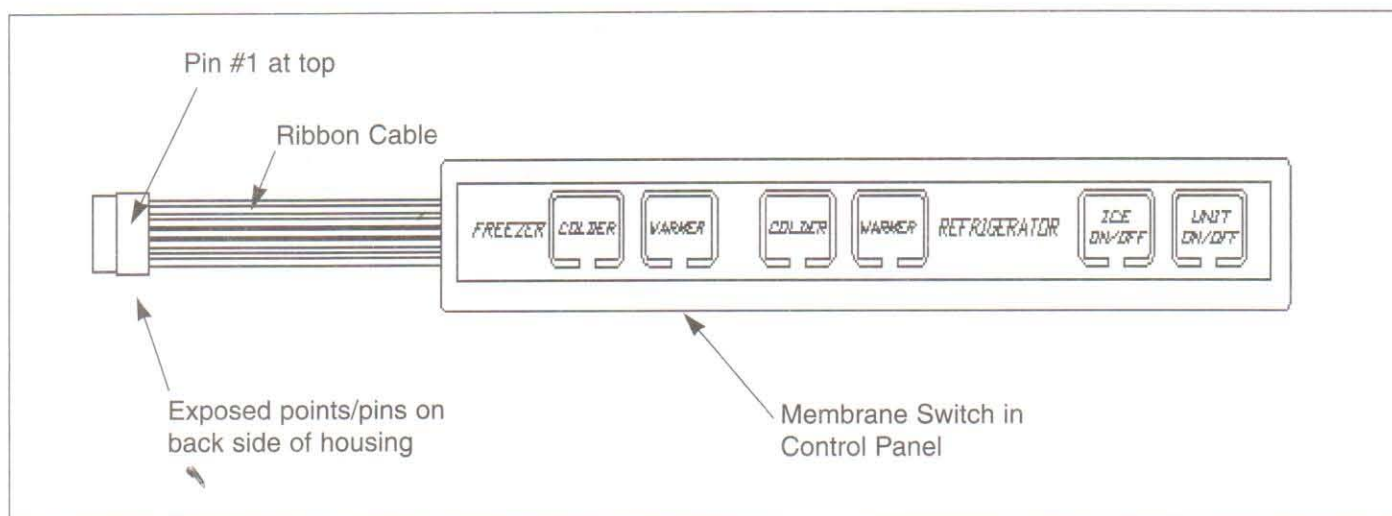


Figure 9-1. Membrane Switch