

TROUBLESHOOTING GUIDES

This section of the manual contains:

- The Error Code Table and Error Code Troubleshooting Guide.
- The General Troubleshooting Guide, which covers all problems that a 700-3 Series unit may experience.
- The Membrane Switch/Ribbon Cable Test Procedures, used to determine if a control panel assembly is defective.
- The Door Hinge Test Procedures and Corrections explain how to test and correct door closing problems.

HOW TO USE THE ERROR CODE TROUBLESHOOTING GUIDE

Error Codes are logged for thermistor errors, and/or defrost system errors. A model 700TF/I-3 may also log error codes for variable speed compressor control system errors. If Error Codes are logged, they will appear when Diagnostic Mode is initiated.

NOTE: *If Error Codes appear with a flashing "SERVICE" indicator prior to initiating Diagnostic Mode, the unit experienced excessive compressor run condition that may or may not be associated with the Error Codes displayed.*

To initiate Diagnostic Mode, press and hold either COLDER key, then press the UNIT ON/OFF key, then release both keys. Now, check to see if Error Codes are present, being sure to toggle through all error and temperature readings by pressing either COLDER key or either WARMER key. (See Error Code Table Below)

If Error Codes appear, follow the Error Code Troubleshooting Guide on the following page. The left column of the troubleshooting guide lists the error codes. The information in the right column explains what tests to perform and/or what action to take to correct the error.

NOTE: *If error codes are observed in diagnostic mode, a non-flashing SERVICE indicator will appear on the LCD when Diagnostic Mode ends indicating error codes are still stored. Error Codes must be manually cleared from the electronic control memory. To clear the non-flashing SERVICE indicator and the error codes, the problem must be corrected and the unit must be ON. Then, press and hold the Door Ajar Alarm Bell ON/OFF key for fifteen (15) seconds. The control will emit a short "beep" when the SERVICE indicator and error codes are cleared.*

Error Code Table

CODE	INDICATION
05	Refrig. cabinet thermistor read open or shorted for 10+ seconds, or repeatedly read erratic temp's
06	Refrig. evaporator thermistor read open or shorted for 10+ seconds, or repeatedly read erratic temp's
07	Freezer cabinet thermistor read open or shorted for 10+ seconds, or repeatedly read erratic temp's
08	Freezer evaporator thermistor read open or shorted for 10+ seconds, or repeatedly read erratic temp's
20	Defrost under-heat with no voltage feedback through Gray/White wire at defrost start
21	Defrost overheat
22	No voltage feedback through Gray/White wire at defrost start
23	Defrost overheat with no voltage feedback through Gray/White wire at defrost start
24	Defrost Under-heat
30	Excessive Icemaker Water Valve Solenoid Activation (Exceeded 15 Seconds)
40	Excessive Freezer Compressor Run
50	Excessive Refrigerator Compressor Run



ERROR CODE TROUBLESHOOTING GUIDE

ERROR CODE	TEST / ACTION
05	a. Check refrigerator compartment thermistor electrical connections and continuity from thermistor to J1 on control board. Reconnect / repair connections. b. Check resistance of refrigerator compartment thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.
06	a. Check refrigerator evaporator thermistor electrical connections and continuity from thermistor to J1 on control board. Reconnect / repair connections. b. Check resistance of refrigerator evaporator thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.
07	a. Check freezer compartment thermistor electrical connections and continuity from thermistor to J1 on control board. Reconnect / repair connections. b. Check resistance of freezer compartment thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.
08	a. Check freezer evaporator thermistor electrical connections and continuity from thermistor to J1 on control board. Reconnect / repair connections. b. Check resistance of freezer evaporator thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.
20	a. With a cold evaporator (< 10°F / < -12°C), initiate Manual Defrost. If compressor starts 5 minutes after defrost is initiated, check Grey/White wire connections and continuity from defrost heater to J4-4 on control board. Reconnect / repair Grey/White wire &/or electrical connections. b. Check for proper ohm readings of defrost heater. Replace heater if defective. c. Check defrost terminator and its electrical connections, Reconnect / repair bad connections or replace terminator if defective. d. Initiate Manual Defrost, check for 115V AC at E2 on control board. If no voltage, replace board. e. Initiate Manual Defrost, check for 115V AC from E2 (Blue Wire) on control board to defrost terminator. Reconnect / repair blue wire &/or electrical connections. f. Reference wiring diagram to identify components in same White wire circuit as defrost heater. Check all White wire electrical connections and continuity from defrost heater to J7-8 on control board.
21	a. Check for proper mounting and location of freezer evaporator thermistor and defrost heater. Remount correctly. b. Check for correct wire connection at control board, Blue wire at E2 on control board. If connected to wrong pin, reconnect correctly. c. Check for electrical short of Blue wire to another circuit. Repair Blue wire &/or electrical connections. d. Check for proper operation of defrost terminator: Cut-in 30°F (-1°C) / Cut-out 70°F (21°C). Replace if defective.
22	a. Initiate Manual Defrost. If compressor starts 5 minutes after defrost is initiated, check Grey/White wire connections and continuity from defrost heater to J4-4 on control board. Reconnect / repair Grey/White wire &/or electrical connections.
23	a. Check for proper mounting and location of freezer evaporator thermistor and defrost heater. Remount correctly. b. Check for correct wire connection at control board, Blue wire at E2 on control board. If connected to wrong pin, reconnect correctly. c. Check for electrical short of Blue wire to another circuit. Repair Blue wire &/or electrical connections. d. Initiate Manual Defrost. If compressor starts 5 minutes after defrost is initiated, check Grey/White wire connections and continuity from defrost heater to J4-4 on control board. Reconnect / repair Grey/White wire &/or electrical connections.
24	a. Check for proper ohm readings of defrost heater. Replace heater if defective. b. Check for proper mounting and location of freezer evaporator thermistor and defrost heater. Remount correctly.

NOTE: After repairs, always clear Error Codes by pressing Bell ON/OFF key for 15 seconds.



ERROR CODE TROUBLESHOOTING GUIDE

ERROR CODE	TEST / ACTION
30	<ul style="list-style-type: none"> A. Check for jammed cube in icemaker. B. Reference wiring diagram to identify components in same White wire circuit as water valve solenoid. Check all White wire electrical connections and continuity from water valve solenoid to J7-8 on control board.
40	<ul style="list-style-type: none"> A. If Error Code 07, 20, 21, 22, 23, or 24 is also displayed during Diagnostic Mode, see Test/Actions under that code. B. Check for obstructions to freezer door/drawer closing. Remove obstruction. C. Check cleanliness of condenser. Clean if needed. D. Check for obstruction to condenser fan blade or loose fan blade. Remove obstruction/Tighten Blade. E. Check evaporator fan blade position and for obstructions. Reposition if incorrect/Remove obstruction. F. Check resistance of freezer compartment thermistor - 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective. G. With unit on, check to see if lights shut off when light switch is depressed. Repair defective wiring or replace defective switch. H. With freezer compressor running: <ul style="list-style-type: none"> 1. (Model 700TF/I Only) Check for 115 V AC from compressor to condenser fan. Repair defective wiring or replace defective motor. 2. (All Models Except 700TF/I) Check for 115 V AC from control board to condenser fan. Repair defective wiring, or replace defective motor, or replace defective board. I. With freezer compressor running and fan switches depressed, check for 115 V AC from compressor to evaporator fan motor. Repair wiring, or replace defective switch, or replace defective fan motor. J. Check sealed system for leaks, restrictions or inefficient compressor.
50	<ul style="list-style-type: none"> A. If Error Code 05, or 06 is also displayed during Diagnostic Mode, see Test/Actions under that code. B. Check for obstructions to refrigerator door closing. Remove obstruction. C. Check cleanliness of condenser. Clean if needed. D. Check for obstruction to condenser fan blade or loose fan blade. Remove obstruction/Tighten Blade. E. Check evaporator fan blade position and for obstructions. Reposition if incorrect/Remove obstruction. F. Check resistance of refrigerator compartment thermistor - 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective. G. With unit on, check to see if lights shut off when light switch is depressed. Repair defective wiring or replace defective switch. H. With refrigerator compressor running (All models except 700TF/I) check for 115 V AC from control board to condenser fan. Repair defective wiring, or replace defective motor, or replace defective board. I. With refrigerator compressor running and fan switches depressed (All Models Except 700TF/I), check for 115 V AC from compressor to evaporator fan motor. Repair wiring, or replace defective switch, or replace defective fan motor. J. Check sealed system for leaks, restrictions or inefficient compressor.

NOTE: After repairs, always clear Error Codes by pressing Bell ON/OFF key for 15 seconds.



HOW TO USE GENERAL TROUBLESHOOTING GUIDE

The General Troubleshooting Guide Table of Contents on the following page indicates how the General Trouble Shooting Guide is arranged. Match the description of the problem the unit is experiencing with those in the table. To the left of the problem description is a letter. Locate that letter in the left column of the Troubleshooting Guide. The information in the center column of the Troubleshooting Guide identifies possible causes for the problem. The information in the right column explains the tests to perform and/or what action to take to correct the problem.

For Problems "A" through "N":

1. Begin troubleshooting by observing the compartment set points.
2. If the set-points are normal, initiate Diagnostic Mode by pressing and holding either COLDER key, then press the UNIT ON/OFF key, then release both keys.
3. When Diagnostic Mode is initiated, check to see if "Error Codes" are present, being sure to toggle through all the error and temperature readings by pressing either COLDER key or either WARMER key. (See Thermistor Location Code Tables below.)
4. If Error Codes are present, refer to Error Code Troubleshooting Guide on previous pages.
5. If there are no Error Codes, initiate Manual Component Activation Mode (which lasts five (5) minutes), by pressing and holding the desired compartment COLDER and UNIT ON/OFF keys for ten (10) seconds, then observe the evaporator temperatures.

NOTE: Verify that the compressor is operating before observing evaporator temperatures. If the problem is in the refrigerator section, the refrigerator door must be left open for five (5) minutes with the compressor running.

6. After observing the evaporator temperatures as instructed above, take note of the "Pointers" in the first column of the troubleshooting guide under problems "A" through "D". The "Pointers" list what possible causes to check based on the evaporator temperatures observed.

For All Problems:

If the unit's temperature history is needed to help diagnose the problem, initiate Temperature Log Recall Mode as described below. This allows the preceding fourteen days of the unit's temperature history to be observed.

- a. *To View Compartment Temperature History Only:* Begin with the unit ON. Now, press and hold the desired compartment WARMER key, then press the UNIT ON/OFF key, then release both keys.
- b. *To View Compartment or Evaporator Temperature History:* Begin with the unit on and in Diagnostic Mode. While in Diagnostic Mode, toggle through the readings until the desired thermistor temperature is displayed on the LCD. Now, press the WARMER key for that compartment and the UNIT ON/OFF key simultaneously.

700TC/I-3 & 736TC/I-3		700TR-3 & 736TR-3		700TF/I-3	
THERMISTOR LOCATION	CODE	THERMISTOR LOCATION	CODE	THERMISTOR LOCATION	CODE
Freezer Compartment	F	Lower Compartment	L	Freezer Compartment	F
Refrigerator Compartment	r	Upper Compartment	U	Freezer Evaporator	FE
Freezer Evaporator	FE	Lower Evaporator	LE		
Refrigerator Evaporator	rE	Upper Evaporator	UE		



GENERAL TROUBLESHOOTING GUIDE TABLE OF CONTENTS

<u>Ltr</u> <u>Problem Description</u>	<u>Page #</u>
A. Error Codes and “SERVICE” Flashing	8-7
B. “EE” Displayed in Place of Freezer Temperature with “SERVICE” Flashing	8-7
C. “EE” Displayed in Place of Refrigerator Temperature with “SERVICE” Flashing	8-7
D. Warm or Normal Temperatures Displayed with “SERVICE” Alone Flashing	8-7
E. Warm or Normal Temperatures Displayed with non-flashing “SERVICE” Displayed	8-7
F. Erratic Temperatures with or without “SERVICE” Flashing	8-7
G. Warm Freezer Compartment Temp. with “SERVICE” Flashing on the LCD	8-7
H. Warm Freezer Compartment Temp. without “SERVICE” Flashing on the LCD	8-9
I. Warm Refrigerator Compartment Temp. with “SERVICE” Flashing on the LCD	8-11
J. Warm Refrigerator Compartment Temp. without “SERVICE” Flashing on the LCD	8-12
K. Warm or Normal Temp. in Both Compartment with “SERVICE” Flashing on the LCD	8-14
L. Warm Temp. in Both Compartments without “SERVICE” Flashing on the LCD	8-14
M. Product Temp. 10° or More Colder or Warmer than Displayed Temp.	8-15
N. 1. “Extremely” Cold Temp. Displayed - (1° to 7° in Refrigerator and -21° to -15° in Freezer)	8-15
2. If outside U.S. - “Extremely” Warm Temp. Displayed - (34° to 45° in Refrig. and -5° to 5° in Freezer)	8-15
O. No Ice with “ICE” and “SERVICE” Flashing on LCD	8-15
P. No Ice, “ICE” Displayed on LCD, but not Flashing	8-16
Q. No Ice, “ICE” not Displayed on LCD	8-17
R. Too Much Ice	8-17
S. Icemaker Produces Hollow Cubes	8-17
T. Icemaker Produces Small Cubes	8-17
U. Water in Ice Bucket / Clump of Ice in Ice Bucket	8-17
V. Membrane Switch on Control Board Malfunctioning	8-18
W. No Lighting	8-18
X. Lights Stay on When Door and/or Drawers Are Closed (May be Accompanied by Door/Drawer Ajar Alarm Bell)	8-19
Y. Door or Drawers Not Able to Close Completely	8-19
Z. Door or Drawers Uneven	8-19
<hr/>	
Sealed System Troubleshooting /Diagnostic Tables	8-20
Normal Operating Pressures	8-20
Pressure Indications	8-20
Evaporator Temperature / Sealed system Low-side Pressure Correlation	8-21
Control Panel Membrane Switch / Ribbon Cable Test	8-22
Door Hinge Operation Test Procedures and Corrections	8-23



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
A. Error Codes & "SERVICE" Flashing	Unit Experienced Temperature Problems	See Error Code Troubleshooting Guide
B. "EE" Displayed in Place of Freezer Temperature with "SERVICE" Flashing	Freezer Compartment Thermistor Disconnected, Shorted, or Misread	Check wiring from thermistor to control board. Reconnect/repair connections. Resistance of thermistor = 30,000-33,000 ohms at 32°F (0°C). Replace if defective.
C. "EE" Displayed in place of Refrigerator Temperature with "SERVICE" Flashing	Refrigerator Compartment Thermistor Disconnected, Shorted, or Misread	Check wiring from thermistor to control board. Reconnect/repair connections. Resistance of thermistor = 30,000-33,000 ohms at 32°F (0°C). Replace if defective.
D. Warm or Normal Temp's Displayed with "SERVICE" Alone Flashing	Unit Experienced Temperature Problems	See Error Code Troubleshooting Guide
	Refrigerator Evaporator Thermistor Disconnected, Shorted, or Misread	Check wiring from thermistor to control board. Reconnect/repair connections. Resistance of thermistor = 30,000-33,000 ohms at 32°F (0°C). Replace if defective.
E. Warm or Normal Temperatures Displayed with non-flashing "SERVICE" Displayed	Error Codes Observed in Diagnostic Mode, but not Cleared from Memory	Enter diagnostic mode to observe error codes. See Error Code Troubleshooting Guide. Verify unit was repaired for error codes displayed. Press and hold alarm key for 15 seconds to clear error codes.
F. Erratic Temperatures with or without "SERVICE" Flashing	Control Board Configured for Wrong Model	<i>If possible, reconfigure to correct model. If not possible, replace control board.</i>
G. Warm Freezer Temperature with "SERVICE" Flashing Pointers: 1. Evap Temp -20°F (-29°C) or lower, see: • Door ajar • Lights ON w/door closed • Evaporator fan fault • Compartment thermistor mis-read • Evaporator heavily frosted • Sealed system fault: leak or partial restriction 2. Evap Temp between -19°F (-28°C) and 0°F (-17°C), see: • Condenser Air Flow • Compartment thermistor mis-read • Sealed system fault: leak 3. Evaporator Temp higher than 0°F (-17°C), see: • Power to compressor fault • Sealed system Fault: leak, restriction, inefficient compressor (Continued) (See NOTES on next page)	Door or Drawer Ajar a. Food product obstruction b. Door/cabinet hinge problem c. Drawer closer tripped backwards	a. Move obstruction. b. See Door Hinge Operation Test Procedures later in this section. Replace hinge if defective. c. Trip drawer closer forward
	Condenser Air Flow a. Dirty condenser b. Condenser fan blade obstructed or loose c. Condenser fan motor disconnected d. Condenser fan motor defective e. Power from control board fault (700TC/I-3 & 700TR-3 only) f. Power from compressor controller fault (700TF/I-3 only)	a. Clean condenser. b. Remove obstruction or tighten nut on motor shaft. c. Check continuity from motor to control board (J7-1) on 700TC/I-3 & 700TR-3, from motor to compressor controller on 700TF/I-3. Reconnect / repair wiring or connections. d. Check for 115V AC to motor, replace motor if defective. e. With compressor running, check for 115V AC at control board (J7-1 on 700TC/I-3 & 700TR-3). Replace board if defective. f. With compressor running, check for 115V AC from controller (700TF/I-3 only). Replace compressor controller if defective.



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p><i>(Continued)</i></p> <p>G. Warm Freezer Temperature with "SERVICE" Flashing</p> <p>Pointers:</p> <ol style="list-style-type: none"> Evap Temp -20°F (-29°C) or lower, see: <ul style="list-style-type: none"> Door ajar Lights ON w/door closed Evaporator fan fault Compartment thermistor misread Evaporator heavily frosted Sealed system fault: leak or partial restriction Evap Temp between -19°F (-28°C) and 0°F (-17°C), see: <ul style="list-style-type: none"> Condenser Air Flow Compartment thermistor misread Sealed system fault: leak Evaporator Temp 0°F (-17°C) or higher, see: <ul style="list-style-type: none"> Power to compressor fault Sealed system Fault: leak, restriction, inefficient compressor <p>NOTE: "Pointers" do not apply to cabinet initial pulldown from ambient temperatures.</p> <p>NOTE: To clear flashing SERVICE indicator after repairs, power OFF, then back ON.</p> <p>NOTE: To clear non-flashing SERVICE indicator after repairs, press door ajar alarm bell ON/OFF key for 15 seconds.</p>	<p>Light ON with Door/ Drawers Closed</p> <ol style="list-style-type: none"> Top hinge cover missing, not depressing light switch Faulty light switch 	<ol style="list-style-type: none"> Replace hinge cover. Check operation of light switches, lights off when switch is depressed. Replace switch if defective. (NOTE: there are two light switches in the drawer area)
	<p>Evaporator Fan Fault</p> <ol style="list-style-type: none"> Top hinge cover missing, not depressing fan switch Fan blade obstructed or out of position Faulty fan switch (NOTE: A compressor must be running) Evaporator fan motor disconnected Evaporator fan motor defective (NOTE: Compressor must be running) 	<ol style="list-style-type: none"> Install hinge cover. Move obstruction or reposition blade. Check for 115V AC to fan switch, depress fan switch and check for 115V AC from fan switch. Replace switch if defective. (NOTE: there are two fan switches in the drawer area) Check electrical connections of motor. Reconnect / repair bad connections. Check for 115V AC at fan motor with fan switch depressed. Replace motor if defective.
	<p>Compartment Thermistor Misread</p>	<p>Check resistance of freezer compartment thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.</p>
	<p>Evaporator Heavily Frosted</p> <ol style="list-style-type: none"> Door or drawer ajar Evaporator fan fault Compartment thermistor misread Defrost heater disconnected or faulty Defrost terminator disconnected or faulty. Defrost sense line disconnected. No power from control board to defrost circuit 	<ol style="list-style-type: none"> See Door or Drawer Ajar on previous page. See Evaporator Fan Fault on previous page. See Compartment Thermistor Misread on previous page. Check electrical connections. Reconnect / repair bad connections. Check resistance of heater, 30-38 Ohms, replace if defective. Check electrical connections, Reconnect / repair bad connections or replace terminator if defective. Manually initiate defrost by pressing ICE key for 10 seconds. If defrost lasts exactly 5 minutes, check all connections of gray/white wire from terminator to J4-4 on control board. Reconnect / repair bad connections. Manually initiate defrost by pressing ICE key for 10 seconds. Check for 115V AC at E2 on control board. Replace control board if defective.
	<p>Power to Compressor Fault NOTE: For 700TF/I-3, see Error Code Troubleshooting Guide</p>	<p>Check for 115V AC at E7 on control board. Replace control board if defective.</p>
	<p>Sealed System Fault</p> <ul style="list-style-type: none"> Sealed System Leak Sealed System Restriction Inefficient Compressor 	<p>See Sealed System Troubleshooting Guide</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p>H. Warm Freezer Temperatures without "SERVICE" Flashing</p> <p>Pointers:</p> <ol style="list-style-type: none"> "Sr" appears during Diagnostic Mode, see: <ul style="list-style-type: none"> Unit in Showroom Mode Evap Temp -20°F (-29°C) or lower, see: <ul style="list-style-type: none"> Door ajar Lights ON w/door closed Evaporator fan fault Compartment thermistor mis-read Evaporator heavily frosted Sealed system fault: leak or partial restriction Evap Temp between -19°F (-28°C) and 0°F (-17°C), see: <ul style="list-style-type: none"> Warm food load High room ambient Door ajar Condenser Air Flow Compartment thermistor mis-read Sealed system fault: leak Evaporator Temp 0°F (-17°C) or higher, see: <ul style="list-style-type: none"> Power to compressor fault Sealed system Fault: leak, restriction, inefficient compressor <p>NOTE: "Pointers" do not apply to cabinet initial pulldown from ambient temperatures.</p> <p>NOTE: To clear non-flashing SERVICE indicator after repairs, press door ajar alarm bell ON/OFF key for 15 seconds.</p> <p>(Continued)</p>	<p>No Power to Unit</p>	<p>Check power to unit, plug unit in or switch supply circuit breaker ON.</p>
	<p>Unit Switched OFF</p>	<p>Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key.</p>
	<p>Unit in Show Room Mode</p>	<p>Press UNIT ON/OFF key to OFF, then press and hold WARMER& COLDER keys, and press UNIT ON/OFF key.</p>
	<p>Control Set Too High</p>	<p>Check set-point. If high, adjust.</p>
	<p>Warm Food Load</p>	<p>Check contents of freezer for warm food load. Instruct customer.</p>
	<p>High Room Ambient</p>	<p>Instruct customer unit performs best between 60°F(16°C) and 90°F(32°C).</p>
	<p>Door or Drawer Ajar</p> <ol style="list-style-type: none"> Food product obstruction Door/cabinet hinge problem Drawer closer tripped backwards 	<ol style="list-style-type: none"> Move obstruction. See Door Hinge Operation Test Procedures later in this section. Replace hinge if defective. Trip drawer closer forward
	<p>Condenser Air Flow</p> <ol style="list-style-type: none"> Dirty condenser Condenser fan blade obstructed or loose Condenser fan motor disconnected Condenser fan motor defective Power from control board fault (700TC/I-3 & 700TR-3 only) Power from compressor controller fault (700TF/I-3 only) 	<ol style="list-style-type: none"> Clean condenser. Remove obstruction or tighten nut on motor shaft. Check continuity from motor to control board (J7-1) on 700TC/I-3 & 700TR-3, from motor to compressor controller on 700TF/I-3. Reconnect / repair wiring or connections. Check for 115V AC to motor, replace motor if defective. With compressor running, check for 115V AC at control board (J7-1 on 700TC/I-3 & 700TR-3). Replace board if defective. With compressor running, check for 115V AC from controller (700TF/I-3 only). Replace compressor controller if defective.
	<p>Lights ON with Door/ Drawers Closed</p> <ol style="list-style-type: none"> Top hinge cover missing, not depressing light switch Faulty light switch 	<ol style="list-style-type: none"> Replace hinge cover. Check operation of light switches, lights off when switch is depressed. Replace switch if defective. (NOTE: there are two light switches in the drawer area)



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p>(Continued)</p> <p>H. Warm Freezer Temperatures without "SERVICE" Flashing</p> <p>Pointers:</p> <ol style="list-style-type: none"> "Sr" appears during Diagnostic Mode, see: <ul style="list-style-type: none"> Unit in Showroom Mode Evap Temp -20°F (-29°C) or lower, see: <ul style="list-style-type: none"> Door ajar Lights ON w/door closed Evaporator fan fault Compartment thermistor misread Evaporator heavily frosted Sealed system fault: leak or partial restriction Evap Temp between -19°F (-28°C) and 0°F (-17°C), see: <ul style="list-style-type: none"> Warm food load High room ambient Door ajar Condenser Air Flow Compartment thermistor misread Sealed system fault: leak Evaporator Temp 0°F (-17°C) or higher, see: <ul style="list-style-type: none"> Power to compressor fault Sealed system Fault: leak, restriction, inefficient compressor <p>NOTE: "Pointers" do not apply to cabinet initial pull-down from ambient temperatures.</p> <p>NOTE: To clear non-flashing SERVICE indicator after repairs, press door ajar alarm bell ON/OFF key for 15 seconds.</p>	<p>Evaporator Fan Fault</p> <ol style="list-style-type: none"> Top hinge cover missing, not depressing fan switch Fan blade obstructed or out of position Faulty fan switch <i>(NOTE: A compressor must be running)</i> Evaporator fan motor disconnected Evaporator fan motor defective <i>(NOTE: Compressor must be running)</i> 	<ol style="list-style-type: none"> Replace hinge cover. Move obstruction or reposition blade. Check for 115V AC to fan switch, depress fan switch and check for 115V AC from fan switch. Replace switch if defective. <i>(NOTE: there are two fan switches in the drawer area)</i> Check electrical connections of motor. Reconnect / repair bad connections. Check for 115V AC at fan motor with fan switch depressed. Replace motor if defective.
	<p>Compartment Thermistor Misread</p>	<p>Check resistance of freezer compartment thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.</p>
	<p>Evaporator Heavily Frosted</p> <ol style="list-style-type: none"> Door or drawer ajar Evaporator fan fault Compartment thermistor misread Defrost heater disconnected or faulty Defrost terminator disconnected or faulty. Defrost sense line disconnected. No power from control board to defrost circuit 	<ol style="list-style-type: none"> See Door or Drawer Ajar on previous page. See Evaporator Fan Fault above. See Compartment Thermistor Misread above. Check electrical connections. Reconnect / repair bad connections. Check resistance of heater, 30-38 Ohms, replace if defective. Check electrical connections, Reconnect / repair bad connections or replace terminator if defective. Manually initiate defrost by pressing ICE key for 10 seconds. If defrost lasts exactly 5 minutes, check all connections of gray/white wire from terminator to J4-4 on control board. Reconnect / repair bad connections. Manually initiate defrost by pressing ICE key for 10 seconds. Check for 115V AC at E2 on control board. Replace control board if defective.
	<p>Power to Compressor Fault NOTE: For 700TF/1-3, see Error Code Troubleshooting Guide</p>	<p>Check for 115V AC at E7 on control board. Replace control board if defective.</p>
	<p>Sealed System Fault</p> <ul style="list-style-type: none"> Sealed System Leak Sealed System Restriction Inefficient Compressor 	<p>See Sealed System Troubleshooting Guide</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p>1. Warm Refrigerator Temperatures with "SERVICE" Flashing</p> <p>Pointers:</p> <p><i>Refrigerator door must be open and compressor running for <u>five minutes</u>.</i></p> <p>1. "EE" appears in place of refrigerator evap. temperature, see:</p> <ul style="list-style-type: none"> • Evaporator thermistor disconnected or shorted <p>2. Evaporator Temp 15°F (-9°C) or lower within 5 minutes w/door open, see:</p> <ul style="list-style-type: none"> • Door ajar • Lights stay ON • Evaporator fan fault • Compartment or evaporator thermistor misread • Evaporator heavily frosted • Sealed system fault: leak or partial restriction <p>3. Evaporator Temp cannot pull below 30°F (-1°C) within 5 minutes w/door open, see:</p> <ul style="list-style-type: none"> • Condenser Air Flow • Compartment or evaporator thermistor misread • Sealed system fault: leak or inefficient compressor <p>4. Evaporator Temp 35°F (2°C) or higher after 5 minutes w/door open, see:</p> <ul style="list-style-type: none"> • Condenser Air Flow • Power to compressor fault • Sealed system fault: leak, restriction or inefficient compressor <p>NOTE: "Pointers" do not apply to cabinet initial pulldown from ambient temperatures.</p> <p>NOTE: To clear flashing SERVICE indicator after repairs, power OFF, then back ON.</p> <p>NOTE: To clear non-flashing SERVICE indicator after repairs, press door ajar alarm bell ON/OFF key for 15 seconds.</p> <p>(Continued)</p>	<p>Door or Drawer Ajar</p> <ul style="list-style-type: none"> a. Food product obstruction b. Door/cabinet hinge problem c. Drawer closer tripped backwards 	<ul style="list-style-type: none"> a. Move obstruction. b. See Door Hinge Operation Test Procedures later in this section. Replace hinge if defective. c. Trip drawer closer forward
	<p>Condenser Air Flow</p> <ul style="list-style-type: none"> a. Dirty condenser b. Condenser fan blade obstructed or loose c. Condenser fan motor disconnected d. Condenser fan motor defective e. Power from control board fault (700TC/I-3 & 700TR-3 only) f. Power from compressor controller fault (700TF/I-3 only) 	<ul style="list-style-type: none"> a. Clean condenser. b. Remove obstruction or tighten nut on motor shaft. c. Check continuity from motor to control board (J7-1) on 700TC/I-3 & 700TR-3, from motor to compressor controller on 700TF/I-3. Reconnect / repair wiring or connections. d. Check for 115V AC to motor, replace motor if defective. e. With compressor running, check for 115V AC at control board (J7-1 on 700TC/I-3 & 700TR-3). Replace board if defective. f. With compressor running, check for 115V AC from controller (700TF/I-3 only). Replace compressor controller if defective.
	<p>Light ON with Door/ Drawers Closed</p> <ul style="list-style-type: none"> a. Top hinge cover missing light switch b. Faulty light switch 	<ul style="list-style-type: none"> a. Replace hinge cover. b. Check operation of light switches, lights off when switch is depressed. Replace switch if defective. (NOTE: there are two light switches in the drawer area)
	<p>Evaporator Fan Fault</p> <ul style="list-style-type: none"> a. Top hinge cover missing fan switch b. Fan blade obstructed or out of position c. Faulty fan switch (NOTE: A compressor must be running) d. Evaporator fan motor disconnected e. Evaporator fan motor defective (NOTE: A compressor must be running) 	<ul style="list-style-type: none"> a. Replace hinge cover. b. Move obstruction or reposition blade. c. Check for 115V AC to fan switch, depress fan switch and check for 115V AC from fan switch. Replace switch if defective. (NOTE: there are two fan switches in the drawer area) d. Check electrical connections of motor. Reconnect / repair bad connections. e. Check for 115V AC at fan motor. Replace motor if defective.
	<p>Evaporator Thermistor Disconnected or Shorted</p>	<p>Check refrigerator evaporator thermistor electrical connections from thermistor to J1 on control board. Reconnect / repair connections. Check resistance of refrigerator evaporator thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.</p>
	<p>Compartment or Evaporator Thermistor Misread</p>	<p>Check resistance of refrigerator compartment and evaporator thermistors for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p><i>(Continued)</i></p> <p>I. Warm Refrigerator Temperatures with "SERVICE" Flashing <i>(See Pointers on previous page)</i></p>	<p>Evaporator Heavily Frosted</p> <p>a. Door or drawer ajar b. Evaporator fan fault c. Thermistor misread</p>	<p>a. See Door or Drawer Ajar above. b. See Evaporator Fan Fault above. c. See Thermistor Misread above.</p>
	<p>Power to Compressor Fault <i>NOTE: For 700TF/I-3, see Error Code Troubleshooting Guide</i></p>	<p>Check for 115V AC at E7 and/or E6 on control board. Replace control board if defective.</p>
	<p>Sealed System Fault</p> <ul style="list-style-type: none"> Sealed System Leak Sealed System Restriction Inefficient Compressor 	<p>See Sealed System Troubleshooting Guide</p>
<p>J. Warm Refrigerator Temperatures without "SERVICE" Flashing</p> <p>Pointers: <i>Refrigerator door must be open and compressor running for five minutes.</i></p> <p>1. "Sr" appears during Diagnostic Mode, see: • Unit in Showroom Mode</p> <p>2. Evaporator Temp 15°F (-9°C) or lower within 5 minutes w/door open, see: • Door ajar • Lights stay ON • Evaporator fan fault • Compartment or evaporator thermistor misread • Evaporator heavily frosted • Sealed system fault: leak or partial restriction</p> <p>3. Evaporator Temp cannot pull below 30°F (-1°C) within 5 minutes w/door open, see: • Warm food load • High room ambient • Door ajar • Condenser Air Flow • Compartment or evaporator thermistor misread • Sealed system fault: leak or inefficient compressor</p> <p>4. Evaporator Temp 35°F (2°C) or higher after 5 minutes w/door open, see: • Condenser Air Flow • Power to compressor fault • Sealed system fault: leak, restriction or inefficient compressor</p> <p><i>(Continued)</i> <i>(See NOTES on next page)</i></p>	<p>No Power to Unit</p>	<p>Check power to unit, plug unit in or switch supply circuit breaker ON.</p>
	<p>Unit Switched OFF</p>	<p>Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key.</p>
	<p>Unit in Show Room Mode</p>	<p>Press UNIT ON/OFF key to OFF, then press and hold WARMER& COLDER keys, and press UNIT ON/OFF key.</p>
	<p>Control Set Too High</p>	<p>Check set-point. If high, adjust.</p>
	<p>Warm Food Load</p>	<p>Check contents of freezer for warm food load. Instruct customer.</p>
	<p>High Room Ambient</p>	<p>Instruct customer unit performs best between 60°F(16°C) and 90°F(32°C).</p>
	<p>Door or Drawer Ajar</p> <p>a. Food product obstruction b. Door/cabinet hinge problem c. Drawer closer tripped backwards</p>	<p>a. Move obstruction. b. See Door Hinge Operation Test Procedures later in this section. Replace hinge if defective. c. Trip drawer closer forward</p>
	<p>Condenser Air Flow</p> <p>a. Dirty condenser b. Condenser fan blade obstructed or loose c. Condenser fan motor disconnected d. Condenser fan motor defective e. Power from control board fault (700TC/I-3 & 700TR-3 only) f. Power from compressor controller fault (700TF/I-3 only)</p>	<p>a. Clean condenser. b. Remove obstruction or tighten nut on motor shaft. c. Check continuity from motor to control board (J7-1) on 700TC/I-3 & 700TR-3, from motor to compressor controller on 700TF/I-3. Reconnect / repair wiring or connections. d. Check for 115V AC to motor, replace motor if defective. e. With compressor running, check for 115V AC at control board (J7-1 on 700TC/I-3 & 700TR-3). Replace board if defective. f. With compressor running, check for 115V AC from controller (700TF/I-3 only). Replace compressor controller if defective.</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p><i>(Continued)</i></p> <p>J. Warm Refrigerator Temperatures without "SERVICE" Flashing</p> <p>Pointers: Refrigerator door must be open and compressor running for <u>five minutes</u>.</p> <p>1. "Sr" appears during Diagnostic Mode, see: <ul style="list-style-type: none"> • Unit in Showroom Mode </p> <p>2. Evaporator Temp 15°F (-9°C) or lower within 5 minutes w/door open, see: <ul style="list-style-type: none"> • Door ajar • Lights stay ON • Evaporator fan fault • Compartment or evaporator thermistor misread • Evaporator heavily frosted • Sealed system fault: leak or partial restriction </p> <p>3. Evaporator Temp cannot pull below 30°F (-1°C) within 5 minutes w/door open, see: <ul style="list-style-type: none"> • Warm food load • High room ambient • Door ajar • Condenser Air Flow • Compartment or evaporator thermistor misread • Sealed system fault: leak or inefficient compressor </p> <p>4. Evaporator Temp 35°F (2°C) or higher after 5 minutes w/door open, see: <ul style="list-style-type: none"> • Condenser Air Flow • Power to compressor fault • Sealed system fault: leak, restriction or inefficient compressor </p> <p>NOTE: "Pointers" do not apply to cabinet initial pulldown from ambient temperatures.</p> <p>NOTE: To clear non-flashing SERVICE indicator after repairs, press door ajar alarm bell ON/OFF key for 15 seconds.</p>	<p>Lights ON with Door/ Drawers Closed</p> <ul style="list-style-type: none"> a. Top hinge cover missing, not depressing light switch b. Faulty light switch 	<ul style="list-style-type: none"> a. Replace hinge cover. b. Check operation of light switches, lights off when switch is depressed. Replace switch if defective. (NOTE: there are two light switches in the drawer area)
	<p>Evaporator Fan fault</p> <ul style="list-style-type: none"> a. Top hinge cover missing fan switch b. Fan blade obstructed or out of position c. Faulty fan switch (NOTE: A compressor must be running) d. Evaporator fan motor disconnected e. Evaporator fan motor defective (NOTE: Compressor must be running) 	<ul style="list-style-type: none"> a. Replace hinge cover. b. Move obstruction or reposition blade. c. Check for 115V AC to fan switch, depress fan switch and check for 115V AC from fan switch. Replace switch if defective. (NOTE: there are two fan switches in the drawer area) d. Check electrical connections of motor. Reconnect / repair bad connections. e. Check for 115V AC at fan motor with fan switch depressed. Replace motor if defective.
	<p>Compartment or Evaporator Thermistor Misread</p>	<p>Check resistance of refrigerator compartment and evaporator thermistors for 30,000 to 33,000 ohms at 32°F (0°C). Replace thermistor if defective.</p>
	<p>Evaporator Heavily Frosted</p> <ul style="list-style-type: none"> a. Door or drawer ajar b. Evaporator fan fault c. Thermistor misread 	<ul style="list-style-type: none"> a. See Door or Drawer Ajar on previous page. b. See Evaporator Fan Fault above. c. See Compartment & Evaporator Thermistor Misread above.
	<p>Power to Compressor Fault NOTE: For 700TF/1-3, see Error Code Troubleshooting Guide</p>	<p>Check for 115V AC at E7 and/or E6 on control board. Replace control board if defective.</p>
	<p>Sealed System Fault</p> <ul style="list-style-type: none"> • Sealed System Leak • Sealed System Restriction • Inefficient Compressor 	<p>See Sealed System Troubleshooting Guide</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
K. Warm or Normal Temperatures in Both Compartments with "SERVICE" Flashing	High Room Ambient	Instruct customer unit performs best between 60°F(16°C) and 90°F(32°C).
	Condenser Air Flow a. Dirty condenser b. Condenser fan blade obstructed or loose c. Condenser fan motor disconnected d. Condenser fan motor defective e. Power from control board fault (700TC/I-3 & 700TR-3 only) f. Power from compressor controller fault (700TF/I-3 only)	a. Clean condenser. b. Remove obstruction or tighten nut on motor shaft. c. Check continuity from motor to control board (J7-1) on 700TC/I-3 & 700TR-3, from motor to compressor controller on 700TF/I-3. Reconnect / repair wiring or connections. d. Check for 115V AC to motor, replace motor if defective. e. With compressor running, check for 115V AC at control board (J7-1 on 700TC/I-3 & 700TR-3). Replace board if defective. f. With compressor running, check for 115V AC from controller (700TF/I-3 only). Replace compressor controller if defective.
	Refrigerator Evaporator Thermistor Disconnected or Shorted	Initiate Diagnostic Mode. If "EE" appears in place of refrigerator evap temp, check refrigerator evaporator thermistor electrical connections from thermistor to J1 on control board. Reconnect / repair connections. Check resistance of refrigerator evaporator thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.
L. Warm Temperatures in Both Compartments <u>without</u> "SERVICE" Flashing (Continued)	No Power to Unit	Check power to unit, plug unit in or switch supply circuit breaker ON.
	Unit Switched OFF	Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key.
	Unit in Showroom Mode	Press UNIT ON/OFF key to OFF, then 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 unit performs best between 60°F(16°C) and 90°F(32°C).
	Door Ajar a. Food product obstruction b. Door/cabinet hinge problem c. Drawer closer tripped backwards	a. Move obstruction. b. See Door Hinge Operation Test Procedures later in this section. Replace hinge if defective. c. Trip drawer closer forward

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p>(Continued)</p> <p>L. Warm Temperatures in Both Compartments without "SERVICE" Flashing</p>	<p>Condenser Air Flow</p> <p>a. Dirty condenser</p> <p>b. Condenser fan blade obstructed or loose</p> <p>c. Condenser fan motor disconnected</p> <p>d. Condenser fan motor defective</p> <p>e. Power from control board fault (700TC/I-3 & 700TR-3 only)</p> <p>f. Power from compressor controller fault (700TF/I-3 only)</p>	<p>a. Clean condenser.</p> <p>b. Remove obstruction or tighten nut on motor shaft.</p> <p>c. Check continuity from motor to control board (J7-1) on 700TC/I-3 & 700TR-3, from motor to compressor controller on 700TF/I-3 . Reconnect / repair wiring or connections.</p> <p>d. Check for 115V AC to motor, replace motor if defective.</p> <p>e. With compressor running, check for 115V AC at control board (J7-1 on 700TC/I-3 & 700TR-3). Replace board if defective.</p> <p>f. With compressor running, check for 115V AC from controller (700TF/I-3 only). Replace compressor controller if defective.</p>
<p>M. Product Temperature 10° or More Colder than Displayed Temperature</p>	<p>Compartment Thermistor Misread</p>	<p>Check resistance of compartment thermistor for 30,000 to 33,000 ohms at 32°F (0°C). Replace if defective.</p>
<p>N. 1. "Extremely" Cold Temperatures Displayed (1° to 7° in Refrigerator and -21° to -15° in Freezer)</p> <p>2. If outside US - "Extremely" Warm Temperatures Displayed (34° to 45° in Refrigerator and -5° to 5° in Freezer)</p>	<p>1. Control Set to Display Celsius but Customer Thought it Was Fahrenheit</p> <p>2. If Outside US - Control Set to Display Fahrenheit but Customer Thought it Was Celsius</p>	<p>1. Switch unit OFF, then ON, then press & hold Bell key and UNIT ON/OFF key for 10 seconds.</p> <p>2. Switch unit OFF, then ON, then press & hold Bell key and UNIT ON/OFF key for 10 seconds.</p>
<p>O. "ICE" and "SERVICE" Flashing on LCD</p>	<p>Water Valve Energized Longer than Fifteen Seconds</p>	<p>Check icemaker area for jammed ice cube, clear jam if present. Check levelness of icemaker, level if needed. Check position of fill cup. Reposition if in ice path.</p> <p>Check water supply pressure; must be constant 20-100 PSI. If not, instruct customer. Check water valve operation, opens when 115V AC is applied, closes completely when 115V AC is removed. Water valve Ohms = 160. Replace if defective.</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
<p>P. No Ice, "ICE" Displayed on LCD, but not Flashing</p> <p><i>(NOTE: The icemaker system is disabled for 45 minutes after each harvest.)</i></p>	<p>Unit Has Not Run Long Enough</p>	<p>Freezer must be 17°F for icemaker to operate, approximately 24 hours after unit installation. Instruct customer.</p>
	<p>Warm Freezer Temperatures <i>(NOTE: Freezer must be 17°F or colder for icemaker to function)</i></p>	<p>See PROBLEM B, D, F, G, H, K & L earlier in Troubleshooting Guide.</p>
	<p>Shut-off Arm Stuck in Up/Off Position</p>	<p>Check shut-off arm, if stuck in up/off position, correct problem.</p>
	<p>Disconnected or Defective Water Valve</p>	<p>Check electrical connections and water connections at water valve, Reconnect / repair connections. Check resistance of water valve, 160 ohms. Replace if defective.</p>
	<p>Frozen Fill Tube</p> <p>a. Water Supply Problem</p> <p>b. Disconnected or defective fill tube heater</p> <p>c. No power from control board to fill tube heater</p>	<p>a. Check water supply pressure; must be constant 20-100 PSI. If not, instruct customer.</p> <p>b. Check electrical connections at fill tube heater. Reconnect / repair connections. Check resistance of fill tube heater, 2300 - 2900 Ohms. Replace if defective.</p> <p>c. Check for 115V AC at J7-3 on control board. Replace board if defective.</p>
	<p>Icemaker System Fault</p> <p>a. Disconnected or damaged electrical connections at icemaker or water valve.</p> <p>b. Defective icemaker</p> <p>c. Defective icemaker</p> <p>d. Disconnected or damaged electrical connections at icemaker</p> <p>e. Icemaker switch disconnected or faulty</p> <p>f. Electrical connection at control board or control board defect</p>	<p>Pressing ICE key to OFF, then to ON to bypass 45 minute dwell. Then, depress icemaker switch & manually start icemaker with jumper between ports "T" & "H". Watch cycle of icemaker and see #1, #2 & #3 below.</p> <p>1. If icemaker motor starts and finishes cycle:</p> <p>a. Check for 115V at valve during fill mode. If no 115V, inspect connections at icemaker and valve. Repair or replace connection.</p> <p>b. Check for 115V from icemaker during fill mode. If no power, replace icemaker.</p> <p>2. If icemaker motor starts but does not finish cycle:</p> <p>c. Replace icemaker.</p> <p>3. If icemaker motor does NOT start:</p> <p>d. Check for 115V to icemaker. If no power, repair electrical connection.</p> <p>e. Check power to/from icemaker switch. Repair connection, replace defective switch.</p> <p>f. Check for 115V at control board (J7-5). If no power, replace control board. If power, repair connection.</p>



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
Q. No Ice and "ICE" Not Displayed on LCD	Icemaker System Not Energized	Press ICE key. "ICE" should appear on LCD.
R. Icemaker produces Too much ice	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, Pressing ICE key to OFF, then to ON to bypass 45 minute dwell. Then, depress icemaker switch & manually start icemaker with jumper between ports "T" & "H". If icemaker motor starts with arm in the UP/OFF position, replace icemaker.
S. Icemaker Produces Hollow Cubes	Freezer Too Cold, Cycles Icemaker Too Soon	See PROBLEM B & F earlier in Troubleshooting Guide.
	Not Enough Thermal-Mastic on Icemaker Thermostat	Inspect icemaker thermostat, apply more Thermal-Mastic to thermostat.
	Icemaker Defective	Replace Icemaker
T. Icemaker Produces Small cubes	Water Supply Problem	Check water supply pressure; must be constant 20-100 PSI. If not, instruct customer.
	Icemaker Not Level	Check level of icemaker, adjust if needed
	Low Fill Adjustment on Icemaker	Check for 100-110 cc. fill (3.5-3.75 oz.). If low, increase fill by turning adjusting screw counterclockwise.
U. Water in Ice Bucket / Clump of Ice in Ice Bucket	Icemaker Not Level	Check level of icemaker, level if needed
	High Fill Adjustment on Icemaker	Check for 100-110 cc. fill (3.5-3.75 oz.). Turn adjusting screw clockwise to decrease.
	Water Valve Energized Too Long	Check for jammed cube, clear jam. Check level of icemaker, level if needed. Check position of fill cup. reposition if in ice path. Check water supply pressure for constant 20-100 PSI. If not, instruct customer. Check water valve operation, opens when 115V AC applied, closes completely when 115V AC removed. valve solenoid ohms = 160. Replace if defective.
	Intermittent Warm Freezer Temperatures	See PROBLEM B, D, F, G, H, K & L earlier in Troubleshooting Guide.



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
V. Membrane Switch on Control Board Malfunctioning	Control Panel Ribbon Cable Disconnected or Connected Incorrectly	Check control panel ribbon cable. All Pins on board should be in ribbon cable terminal housing. See Membrane Switch/Ribbon Cable Test Procedures for terminal housing Pin 1 identification.
	Control Panel Assembly Defective (OR) No Signal Read at Control Board	See Membrane Switch/Ribbon Cable Test Procedures. If membrane switch fails any test, replace entire control panel assembly. If switch passes all tests, replace control board.
W. No Lights	No power to unit	Check power to unit, plug unit in or switch supply circuit breaker ON.
	Unit switched OFF	Check for "OFF" displayed at LCD. If off, press UNIT ON/OFF key.
	Unit in Sabbath Mode	Press UNIT ON/OFF key to OFF.
	Defective or loose light bulb(s)	Install a known good light bulb.
	Light Terminator Interrupt / Door Ajar	Check for proper door closing. If door is open too long, lighting system is interrupted by terminator. If door is obstructed, move obstruction. If door does not close properly, see Door Hinge Operation Test Procedures later in this section. Replace hinge if defective.
	Light Switch Disconnected or Defective	Check wire connections at light switch. Reconnect/repair. Check for 115V AC to and from light switch. Replace switch if defective.
	Lighting System Wiring Disconnected or Defective	Check continuity from light sockets to control board (J7-4). Reconnect/repair or replace defective components.
No Power From Control Board <i>(NOTE: See Unit in Sabbath Mode above.)</i>	Check for 115V AC at J7-4 on control board. Replace board if defective. <i>(NOTE: See Unit in Sabbath Mode above.)</i>	



PROBLEM	POSSIBLE CAUSE	TEST / ACTION
X. Lights Stay ON when Door &/or Drawers are Closed - (May be Accompanied by Door/Drawer Ajar Alarm Bell)	Door or Drawer Ajar a. Food product obstruction b. Door/cabinet hinge problem c. Drawer closer tripped backwards	a. Move obstruction. b. See hinge adjustment procedures at end of troubleshooting guides. Replace hinge if defective. c. Trip drawer closer forward
	Top Hinge Cover Missing	Install hinge cover
	Light Switch Defective	Check for 115V AC to and from light switch. Replace switch if defective.
	Wiring to Light Switch and Fan Switch Crossed	Check operation of light switch and fan switch, lights OFF when light switch depressed, fan ON when fan switch depressed. If crossed, reconnect wiring correctly.
Y. Door or Drawers Not Able to Close Completely	Food Product Obstruction	Move obstruction.
	Door/Cabinet Hinge Problem	See Door Hinge Operation Test Procedures later in this section. Replace hinge if defective.
	Drawer Closer Tripped Backwards	Trip drawer closer forward
Z. Door or Drawers Uneven	Improper Door or Drawer Panel Installation	The doors and drawers are non-adjustable. Instead, the door and/or drawer panels must be adjusted if there is an alignment problem. Refer to the Installation Manual and/or installation video for panel installation and adjustment.
	Unit Not Level	Check levelness of unit. If un-level, turn front leveling legs counterclockwise to raise front or clockwise to lower it. Rear levelers are adjusted from front of base by turning adjusting screw clockwise to raise rear or counterclockwise to lower it. Refer to the Installation Manual and/or installation video for complete installation and leveling instructions.



SEALED SYSTEM TROUBLESHOOTING / DIAGNOSTICS TABLES

NORMAL OPERATING PRESSURES TABLE NOTES:

- Only enter the sealed system to check pressures if the Error Code Troubleshooting Guide and General Troubleshooting Guide could not pinpoint the cause of the temperature problem.
- Always use solder-on process valves when entering the sealed system. Do NOT use bolt-on process valves as they are prone to leak.
- Whenever servicing the sealed system, the high-side filter-drier MUST be replaced.
- Pressures listed below are not indicative of initial pull down, but rather of a steadily running and properly functioning appliance.
- Pressures listed are for reference only, as actual pressure readings may vary because of one or more of the following reasons:
 1. Ambient temperatures (Pressures are based on a 70°F (21°C) Ambient).
 2. Temperature set-points (Pressures listed below are based on set-points of 0°F (-18°C) in freezers and 38°F (3°C) in refrigerators)
 3. Food load quantity and temperature.
 4. Condenser cleanliness.
 5. Whether or not one or both refrigeration systems are operating.
 6. Gauge calibration.

NORMAL OPERATING PRESSURES		
Model	Normal Low-Side Pressures	Normal High-Side Pressures
700TC/I-3	Refrigerator	0 - 12 psi to 30 - 42 psi
	Freezer	5" Vac - 1 psi to 6 - 12 psi
700TR-3	Upr Refrig.	0 - 12 psi to 30 - 42 psi
	Lwr Refrig.	0 - 12 psi to 30 - 42 psi
700TF/I-3	5" Vac - 1 psi to 6 - 12 psi	75 psi to 120 psi
736TC/I-3	Refrigerator	0 - 12 psi to 30 - 42 psi
	Freezer	5" Vac - 1 psi to 6 - 12 psi
736TR-3	Upr Refrig.	0 - 12 psi to 30 - 42 psi
	Lwr Refrig.	0 - 12 psi to 30 - 42 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

EVAPORATOR TEMPERATURE / SEALED SYSTEM LOW-SIDE PRESSURE CORRELATION

NOTE: The temperature/pressure table at right is for reference only. A unit's temperature/pressure correlation may differ from those listed due to: variations in evaporator thermistor location, set-points, where the sealed system is in the refrigeration cycle, etc.

If a unit is experiencing temperature problems, it is recommended that you follow the "Pointers" in the first column of the General Troubleshooting Guide. After all mechanical and electrical components have been ruled out, sealed system pressures can be checked by applying solder-on process valves and referencing the preceding page. Do NOT use bolt-on process valves as they are prone to leak.

This table should only be used as a last quick check before entering the sealed system.

Temperature	Pressure
-30°F / -34°C	10" Vac / -.69 Bar
-25°F / -32°C	7" Vac / -.48 Bar
-20°F / -29°C	4" Vac / -.28 Bar
-15°F / -26°C	0" Vac / 0 Bar
-10°F / -23°C	2 Psi / .14 Bar
-5°F / -21°C	4 Psi / .28 Bar
0°F / -18°C	7 Psi / .48 Bar
5°F / -15°C	9 Psi / .62 Bar
10°F / -12°C	12 Psi / .83 Bar
15°F / -9°C	15 Psi / 1.03 Bar
20°F / -7°C	18 Psi / 1.24 Bar
25°F / -4°C	22 Psi / 1.51 Bar
30°F / -1°C	26 Psi / 1.79 Bar
35°F / 2°C	30 Psi / 2.07 Bar
40°F / 4°C	35 Psi / 2.41 Bar
45°F / 7°C	40 Psi / 2.76 Bar
50°F / 10°C	45 Psi / 3.10 Bar
55°F / 13°C	51 Psi / 3.52 Bar
60°F / 16°C	57 Psi / 3.93 Bar
65°F / 18°C	64 Psi / 4.41 Bar
70°F / 21°C	71 Psi / 4.90 Bar
75°F / 24°C	78 Psi / 5.38 Bar



CONTROL PANEL MEMBRANE SWITCH / RIBBON CABLE TEST

If integrity of control panel assembly is suspect, perform continuity tests at membrane switch ribbon cable terminal housing. Begin by disconnecting ribbon cable from control board. Disengage control board from control panel. Remove control panel assembly from unit and place it on solid surface.

Pin 1 Identification Procedure

The ribbon cable wires are exposed at the back-side of the terminal housing. Pin 1 is labeled on the ribbon cable (see Figure 8-1). If Pin 1 is not labeled and if:

1. Terminal housing is blue, then Pin 1 is indicated by the arrow on the housing.
2. Terminal housing is black, then place ohm meter leads between 1st and 2nd pin from each end of the housing while pushing UNIT ON / OFF Key. When continuity is observed, pin 1 is at that end.

Continuity Test Procedure

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 between any two pins.
2. Identify model number being serviced in left column of table below.
3. Press key listed at top of table.
4. Corresponding numbers to right of model number and below key being pressed are the pin numbers on terminal housing that should have continuity.

NOTE: If any continuity tests show failure, replace entire control panel assembly.

MODEL	UNIT ON/OFF KEY	ALARM (Δ) ON/OFF KEY	ICE ON/OFF KEY	REFRIG (UPPER) WARMER KEY	REFRIG (UPPER) COLDER KEY	FREEZER (REFRIG LOWER) WARMER KEY	FREEZER (REFRIG LOWER) COLDER KEY
700TC-3	1 - 2	2 - 5	2 - 3	1 - 6	5 - 6	3 - 4	4 - 5
700TR-3	1 - 2	2 - 5	NA	1 - 6	5 - 6	3 - 4	4 - 5
700TFI-3	1 - 2	2 - 5	2 - 3	NA	NA	3 - 4	4 - 5
736TCI-3	1 - 2	2 - 5	2 - 3	1 - 6	5 - 6	3 - 4	4 - 5
736TR-3	1 - 2	2 - 5	NA	1 - 6	5 - 6	3 - 4	4 - 5

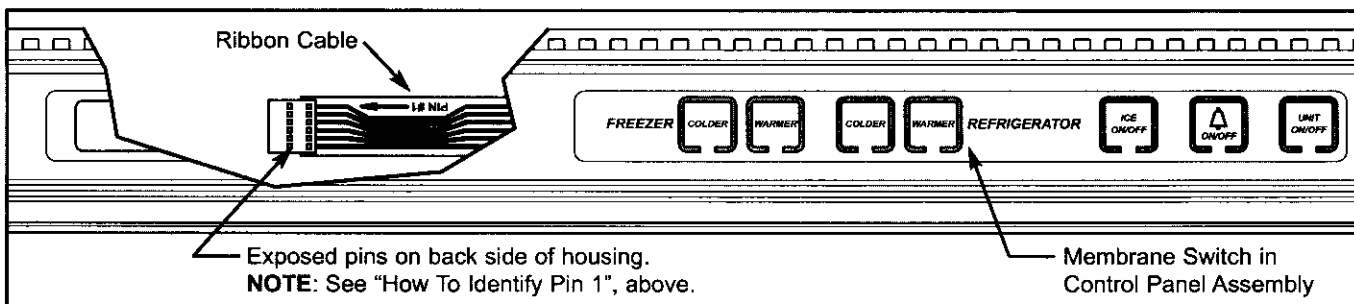


Figure 8-1. Control Panel Assy with Cut-Away View to Show Ribbon Cable (700TCI-3 Shown)

TALL UNIT DOOR HINGE OPERATION TEST PROCEDURES AND CORRECTIONS

1. If the door of a 700-3 tall unit will not close properly, first check for obstructions.
2. If there are no obstructions, open the door approximately 1" and let it go to see if it closes on its own. Repeat this three times.
3. If the door fails to close, remove the door gasket and repeat opening the door approximately 1", then let go. If the door does not close past parallel with the gasket seat, go to step #4 below. If the door does close past parallel with the gasket seat, this may indicate that the door gasket was binding on the hinge side. If so, the door hinges can be shimmed out slightly.

To shim a hinge out, remove the door from the unit. Then, extract the hinge mounting bolts and pull the hinges from the unit. Place washers (part #6240360) behind the hinges. Reinstall the hinges and hinge mounting bolts. (See Figure 8-2) Replace the door gasket and reattach the door, then retest the door closing operation.

NOTE: *Placing too many washers behind the hinges may cause air leaks. Check for air leaks after reattaching the door.*

4. If the door did not close past parallel with the gasket off, remove the top hinge cover and extract the one top door hinge screw closest to the pivot point of the hinge. Loosen the three remaining top hinge screws almost all the way out. Now, open the door approximately 1" and let go to see if it closes on its own.

If door closes, install the 700 Series Hinge Shims Package, part #4202290. (See Figure 8-3) If the door fails to close, remove the three remaining screws from the top door hinge and check the closing action of the hinge on its own. If it seems weak, replace it. If it does not seem weak, reinstall the top door hinge screws and go to step #5 below.

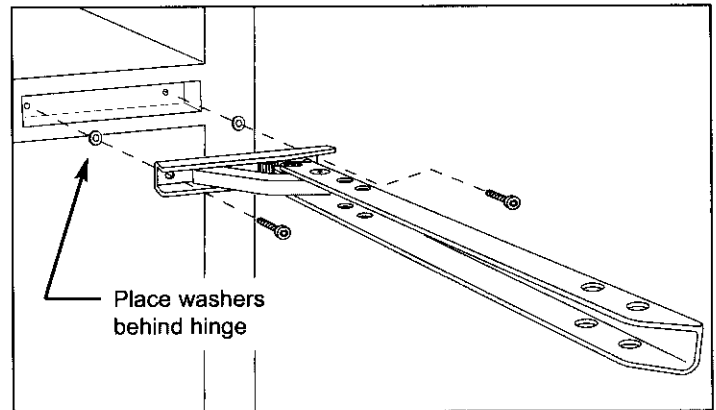


Figure 8-2. Shimming Hinge Out

5. If the door passed the test in step #4 above, remove the bottom hinge cover and extract the one bottom door hinge screw closest to the pivot point of the hinge. Loosen the three remaining bottom hinge screws almost all the way out. Now, open the door approximately 1" and let go to see if it closes on its own.

If door closes, install 700 Series Hinge Shims Package, part #4202290. If door fails to close, remove the three remaining screws from the bottom door hinge and check the closing action of the hinge on its own. If it seems weak, replace it.

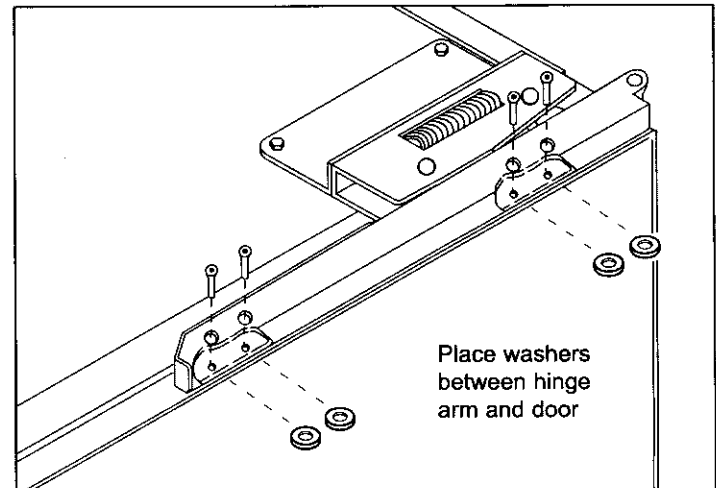


Figure 8-3. #4202290 Hinge Shim Package