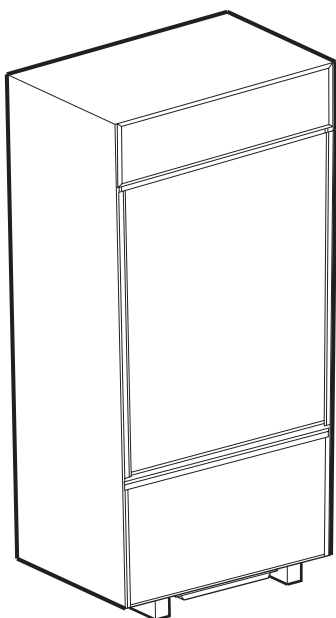




GE Consumer & Industrial

TECHNICAL SERVICE GUIDE

Monogram Bottom Mount Inverter Compressor Refrigerators with Electronic Controls



**MODEL SERIES:
ZIC360NR
ZICS360NR**





IMPORTANT SAFETY NOTICE

The information in this service guide is intended for use by individuals possessing adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

To avoid personal injury, disconnect power before servicing this product. If electrical power is required for diagnosis or test purposes, disconnect the power immediately after performing the necessary checks.

RECONNECT ALL GROUNDING DEVICES

If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

GE Consumer & Industrial

Technical Service Guide

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TECHNICAL DATA

DISCONNECT POWER CORD BEFORE SERVICING IMPORTANT - RECONNECT ALL GROUNDING DEVICES

All parts of this appliance capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

CAUTION

To avoid personal injury when servicing the condensing unit, stand on a ladder which will give enough support to allow removal of the top panel and safely allow access to service the unit.

ELECTRICAL SPECIFICATIONS

Max Defrost Control

W/No Door Openings	60 hrs @ 40 min
Evap Defrost Thermo Disc	65-45°F
Light Thermostat.....	190-130°F
Electrical Rating: 115V AC 60 Hz.....	9.0 amp
Maximum Current Leakage	0.75 mA
Maximum Ground Path Resistance	0.14 Ohms
Energy Consumption	39 KWhr/month

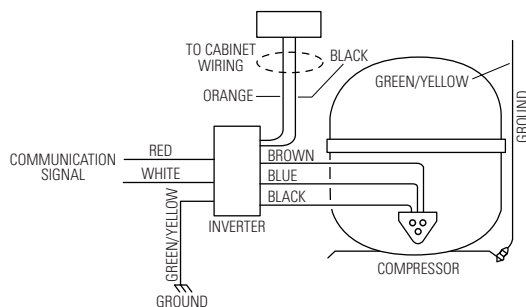
NO LOAD PERFORMANCE

CONTROL POSITION 37-0°F and
AMBIENT TEMPERATURE OF

	70°F	90°F
Fresh Food, °F	35-39	35-39
Frozen Food, °F	(-4) +4	(-4) +4
Percent Running Time	60	80

REFRIGERATION DIAGNOSIS

To access the **low pressure** side of the system, install a **WJ56X61** valve **only** on the process tube extending from the compressor case.



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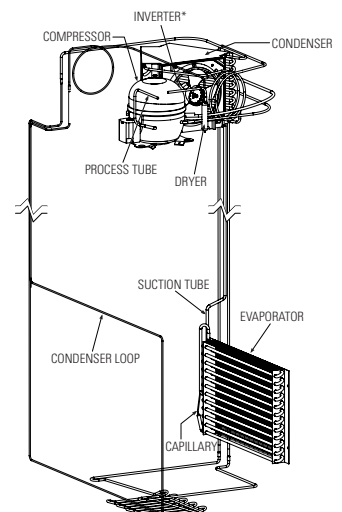
REFRIGERATION SYSTEM

Compressor	833 BTU/hr
Minimum Compressor Capacity	
Vacuum,	22 inches
Minimum Equalized Pressure	
@ 70°F	60/65 PSIG
@ 90°F	79/80 PSIG
R134a Refrig. Chg.	13.00 oz

REPLACEMENT PARTS

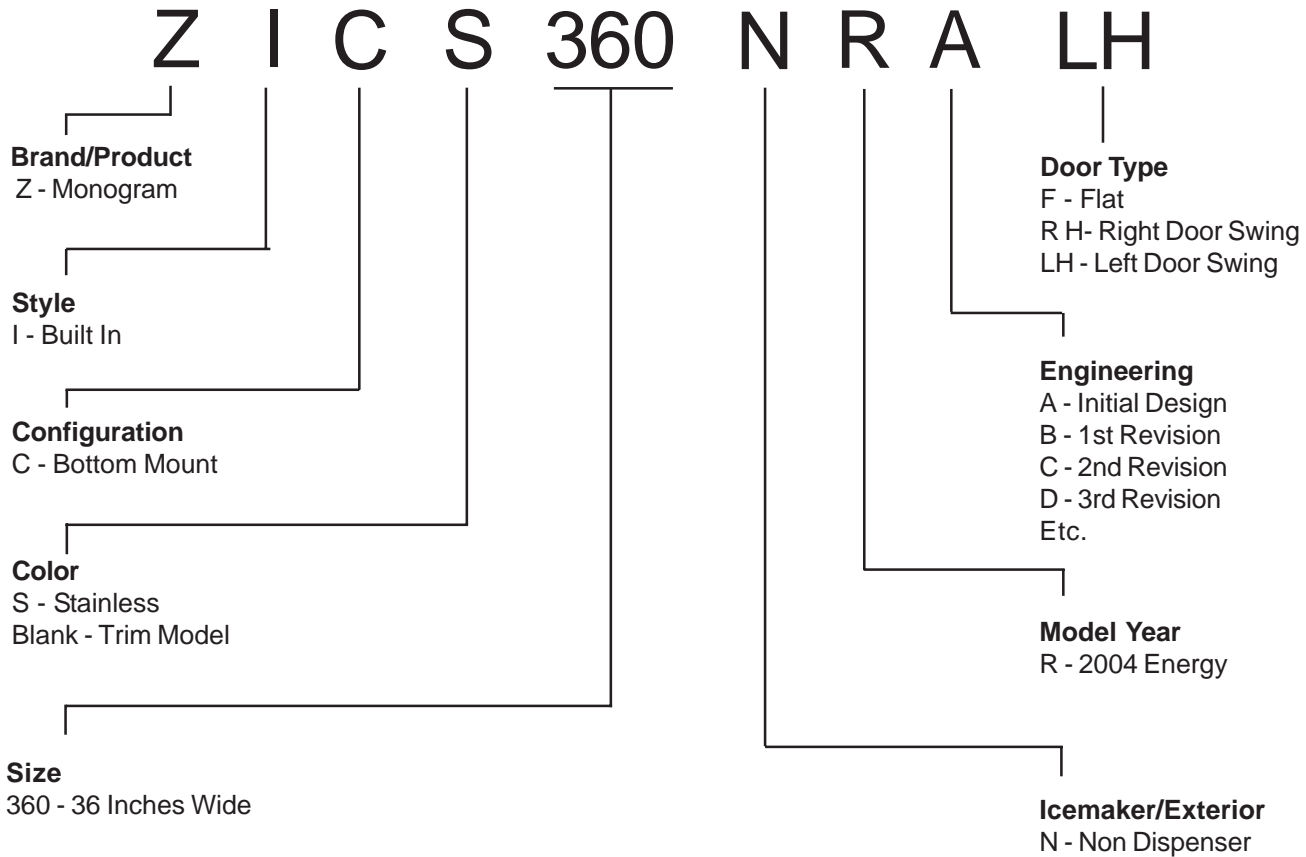
Temperature Control.....	WR55X10098
Lamp Overtemperature Thermostat..	WR50X10003
Defrost Heater Overtemperature	
Thermostat.....	WR50X10030
Defrost Heater.....	WR51X10015
Condenser Fan Motor.....	WR60X10053
Condenser Fan Blade.....	WR60X10049
Evaporator Fan Motor.....	WR60X10043
Evaporator Fan Blade.....	WR60X10050
Main Board.....	WR55X10433
Thermistors (2-FF, 1-FZ, 1-EV).....	WR55X10028
Drain Pan Fan Motor.....	WR60X10106
Damper.....	WR09X10065
Evaporator.....	WR85X10007
Compressor.....	WR87X10064
Condenser.....	WR84X10030
Dryer.....	WR86X0096
Inverter.....	WR55X10155

Sealed System



*Approximate location of inverter

MODEL NOMENCLATURE



MINI-MANUAL

The mini-manual is located behind the grille panel at the top of the unit. It is taped to the left side wall of the machine compartment. When done, return the mini-manual to its original location for future use.

RATING PLATE

The rating plate, located inside the fresh food compartment under the right-hand storage drawer, contains the model and serial numbers. Additionally, the rating plate specifies the minimum installation clearances, electrical voltage, frequency, maximum amperage rating, refrigerant charge, and type.

Serial Number

The first two numbers of the serial number identify the month and year of manufacture.

Example: **AG**123456S = January, 2004

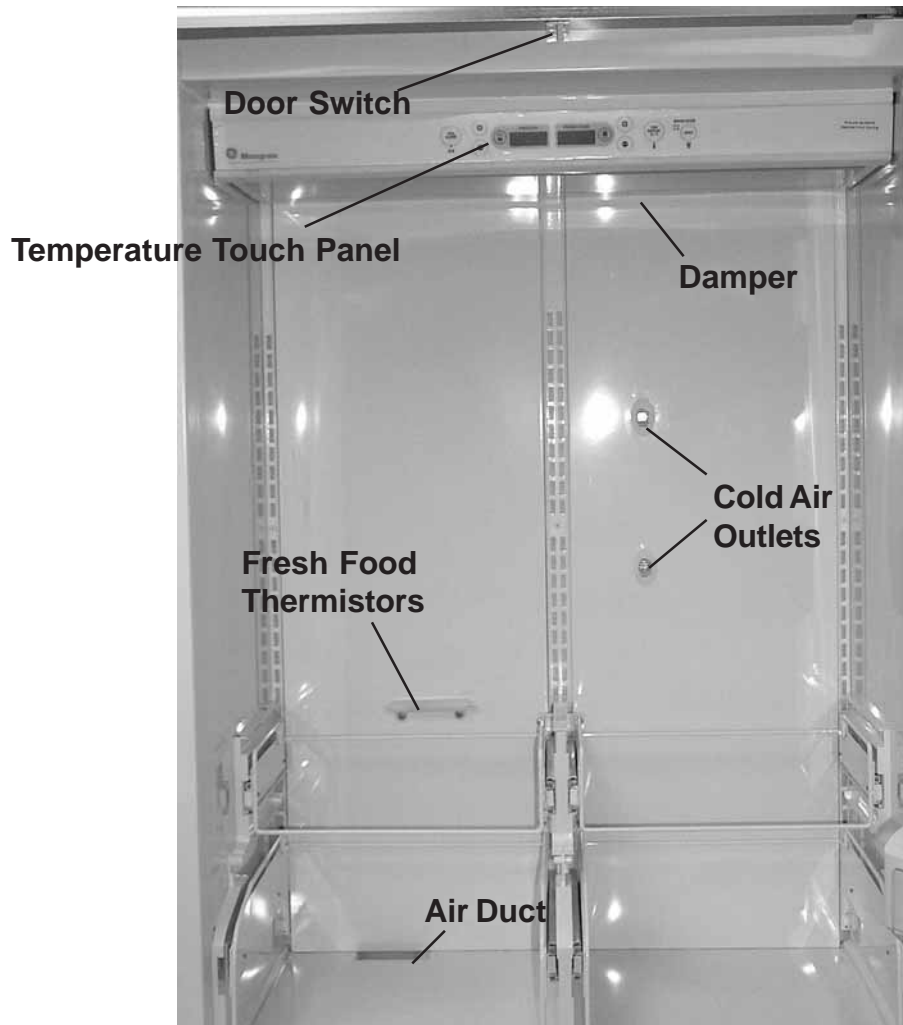
A - JAN	2005 - H
D - FEB	2004 - G
F - MAR	2003 - F
G - APR	2002 - D
H - MAY	2001 - A
L - JUN	2000 - Z
M - JUL	1999 - V
R - AUG	1998 - T
S - SEP	1997 - S
T - OCT	1996 - R
V - NOV	1995 - M
Z - DEC	1994 - L

The letter designating the year repeats every 12 years.

Example:

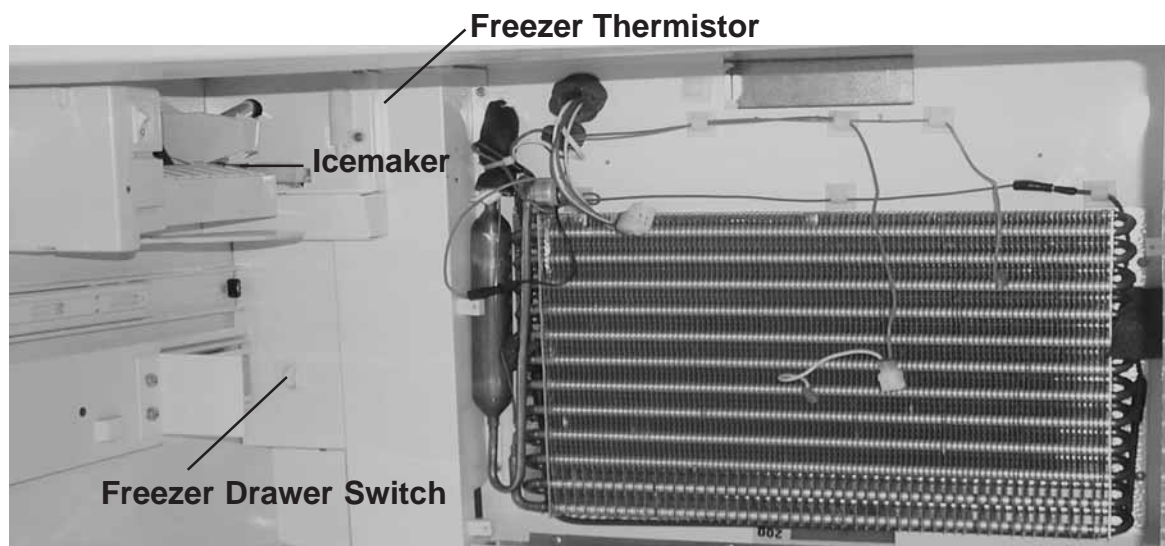
T - 1974
T - 1986
T - 1998

COMPONENT AND CONNECTOR LOCATOR VIEWS



P0003329

Fresh Food Compartment



P0003376

Freezer Compartment

CABINET

Cabinet

The outer case is made of galvanized steel. The fresh food and freezer liners are painted metal with a smooth finish. Individual fresh food and freezer compartments provide separation and enhanced individual control between the compartments. The metal liner provides a thermal break between the interior of the refrigerator and freezer compartments and reduces the transfer of heat from the room into the fresh food and freezer compartments. The liner is not removable or replaceable.

Machine Compartment

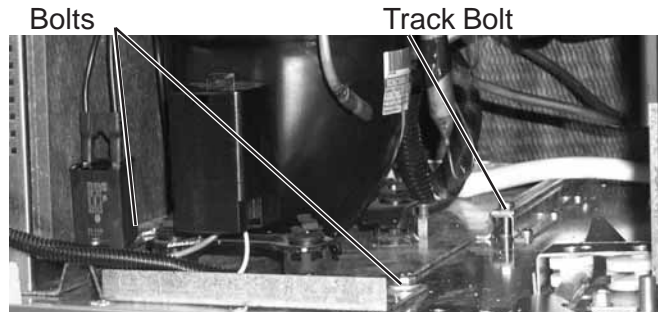
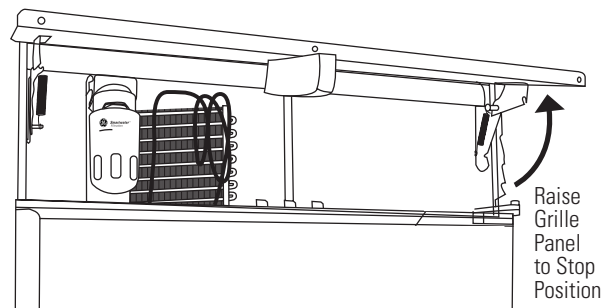
The machine compartment is located on the top of the unit and has a movable chassis that can be extended from the front of the unit to provide access to the refrigeration system and components.

Caution: Avoid kinking the refrigeration lines when sliding the chassis out and back in.

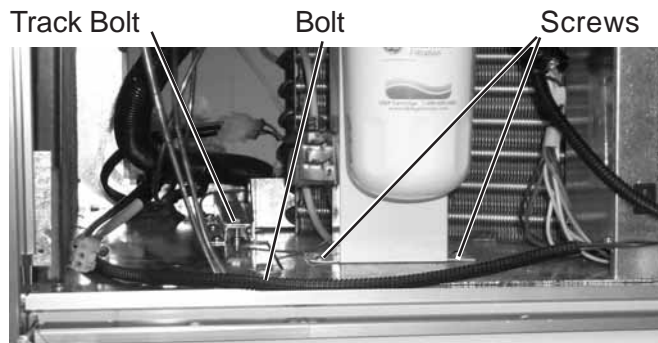
To extend the chassis:

1. Raise the grille panel to stop position.
2. Remove the wire guard and door cover.
3. Remove the door switch.
4. Disconnect the door closure mechanism spring from the pin and remove the pin by turning it counterclockwise.
5. Remove the 2 screws securing the inverter.
6. Remove the door spring.
7. Remove the 2 front (7/16-in.) bolts from tray.
8. Loosen the 2 rear (7/16-in.) tray bolts.
9. Pull the chassis forward until it reaches the stops in the tracks, working the refrigeration tubing as you pull the chassis out.

Note. When sliding the chassis back into position, be certain the lines and wiring have not fallen behind the chassis.



Right Side of Machine Compartment



Left Side of Machine Compartment

Door Closure Mechanism

The door closure mechanism uses a spring to provide positive door closure from 30 degrees. The door closure mechanism actuator arm has a spring attached to the rear and is supported by guide rollers on either side of the base channel. The roller circumferences and the actuator arm detents are matched for smooth operation. The arm is attached to the door with an Allen head shoulder bolt.

The closure mechanism allows easy opening to approximately 90 degrees, where the arm has a detent to permit the door to remain open at 90 degrees with minimal tension. Once the door is opened beyond 90 degrees, the closure mechanism pulls the door open until the closure arm engages the door stop at approximately 130 degrees. The reverse action occurs when the door is closed.

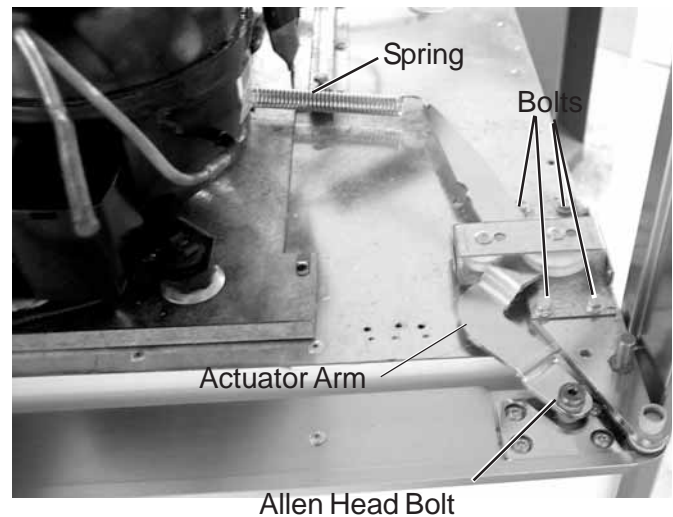
Note: The door closure mechanism and the top door hinge are held by the same bolts. Take the necessary precautions to secure the fresh food door when the door closure mechanism is being removed.

- The actuator arm is spring loaded with moderate spring tension.

To remove the door closure mechanism

1. Remove the 3/16-in. Allen head bolt and spacer from the door and actuator arm.
2. Disconnect the spring from the pin on the top of the cabinet and pull the actuator arm from the closure mechanism.
3. Remove 4 (3/8-in.) bolts and the door closure mechanism.

Shown with Inverter Removed for Clarity



Fresh Food Door and Hinges

WARNING: Use the appropriate safety equipment and lifting techniques.

Caution: Use wood or a heavy plastic sheet to protect the floor where the door will be placed.

Note: Unit must be removed from its installation to remove center hinge.

Door

The door is of one-piece construction with foam insulation. One-piece construction provides superior thermal performance and reduces air infiltration.

The inner door panel and outer door panel cannot be separated and must be replaced as an assembly.

1. Remove all food and bins from the inner door liner.
2. Tape door to cabinet.
3. Remove the door closure mechanism (see previous procedure).
4. Remove the upper hinge.
5. Remove tape and lift the door off center hinge.
6. Remove 4 T-27 Torx screws and center hinge.

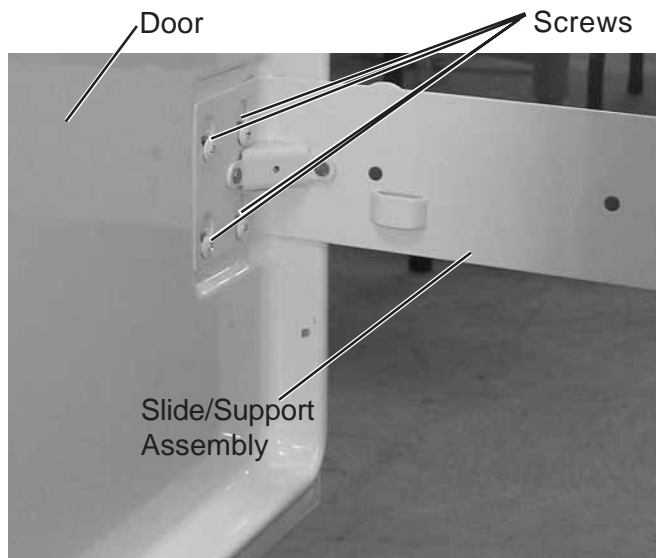
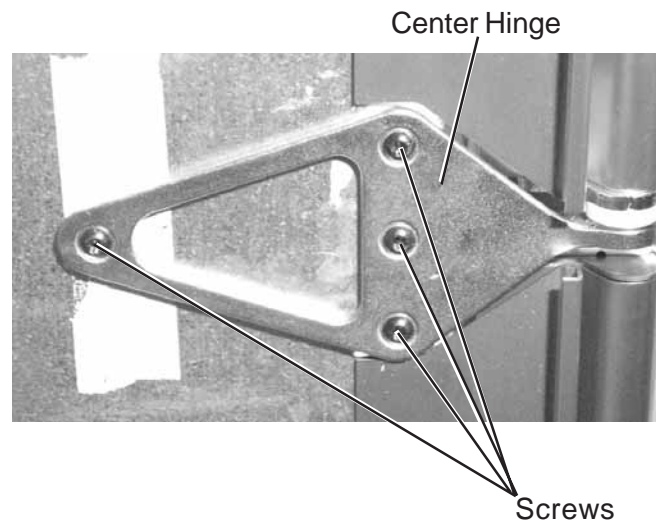
Freezer Drawer

1. Loosen 4 screws connecting each side of the freezer door to the slide/support assemblies.
2. Lift door up and out to remove.

Door and Drawer Gaskets

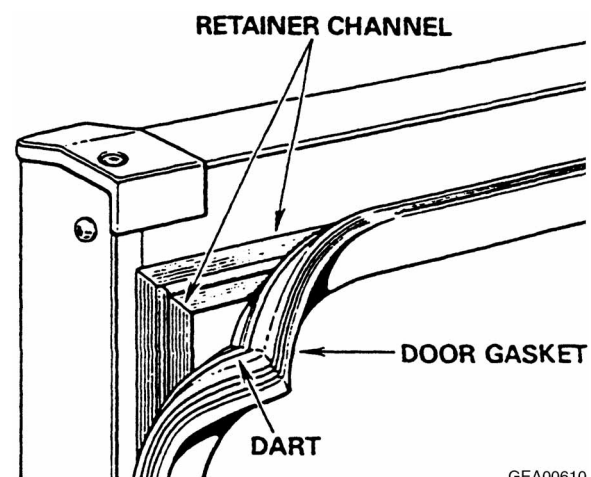
The fresh food door and freezer drawer have magnetic gaskets that create a positive seal to the front of the steel cabinet. The magnetic door gaskets are secured to the fresh food door and freezer drawer by a barbed edge that locks into a retainer channel.

1. Starting at any corner, pull the old gasket out of the retainer channel.
2. Soak the new gasket in warm water to make it pliable.
3. Push the barbed edge of the gasket into the retainer channel.



Left Side of Freezer Door

P0003336



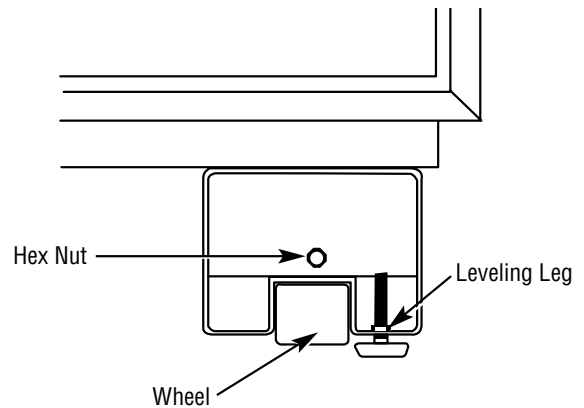
GEA00610

Rollers and Leveling

This model has 4-point leveling provided by adjustable rollers on the rear and leveling legs on the front. It also has 2 nonadjustable front rollers that are used only for unit positioning.

To level the unit:

1. Turn the 7/16-in. hex nut located above the front rollers to adjust the roller on the rear of the unit. Turn clockwise to raise, counterclockwise to lower.
2. Turn the front legs with a 1-1/4 in. open end wrench to adjust the front of the unit. Turn clockwise to raise, counterclockwise to lower.

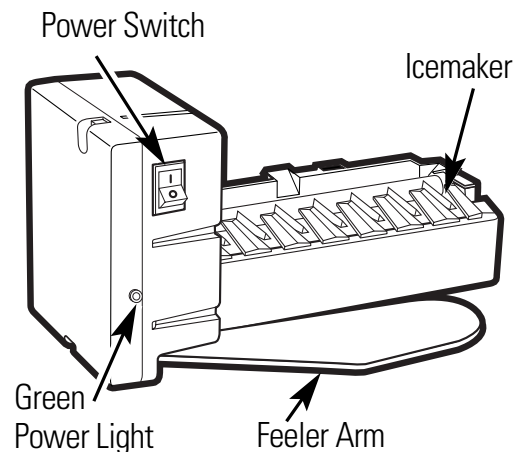


ICEMAKER

The icemaker is mounted to the upper left wall of the freezer cabinet. Under normal operating conditions, temperatures, door openings, and food load, the icemaker is capable of producing approximately 100 to 130 cubes in a 24-hour period.

Note: The freezer door light switch, located on the back wall of the freezer, also serves as an icemaker interlock (or kill) switch. It will open the circuit to the icemaker any time the freezer drawer is open.

To service the icemaker, refer to GE Publication 31-9063.



Water Valve and Water Line

The water valve is mounted to the side of the water filter bracket in the machine compartment.

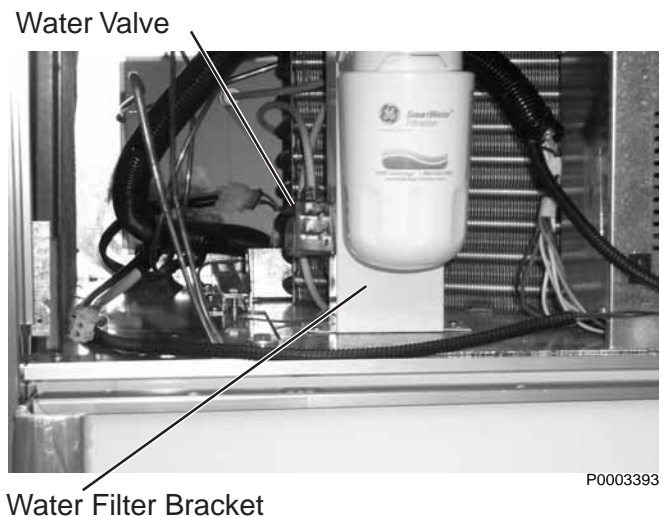
A plastic water line is routed from under the unit, up the back of the cabinet, into the machine compartment, and to the water valve.

A low-pressure plastic water line supplies water to the icemaker from the water valve. The plastic water line is routed from the water valve, out the back of the machine compartment, down the back of the cabinet to the fill tube grommet. The icemaker fill tube is also plastic.

To Replace the Water Valve

Note: Some water may leak from the water supply line and valve when they are disconnected.

1. Shut off the water supply to the freezer.



2. Raise the machine compartment cover panel.
3. Remove 2 Phillips screw attaching the water valve cover.
4. Remove 2 Phillips screw attaching the water valve to the filter bracket.
5. Disconnect the wiring harness connector and 2 water lines from the water valve and remove.

To Replace the Water Line from the Water Valve to the Fill Tube Grommet

Note: Some water may leak from the water supply line and valve when they are disconnected.

1. Shut off the water supply to the freezer.
2. Remove the unit from its installation.
3. Remove 14 (1/4-in.) screws and the metal access cover.
4. Disconnect the water line at the quick connector by pushing in the white collar on the quick connector while pulling the water line out.
5. Loosen the clamp at the fill tube grommet and remove the water line.

Water Valve



Screw



Access Cover

P0003413

AIRFLOW

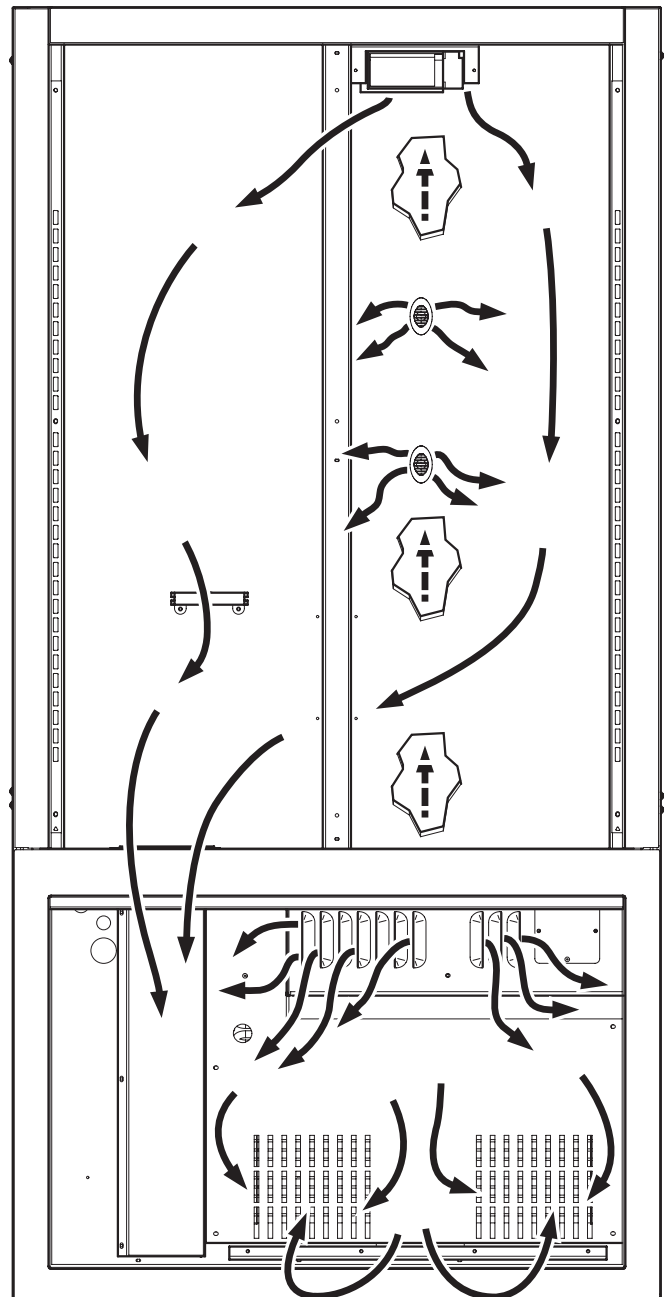
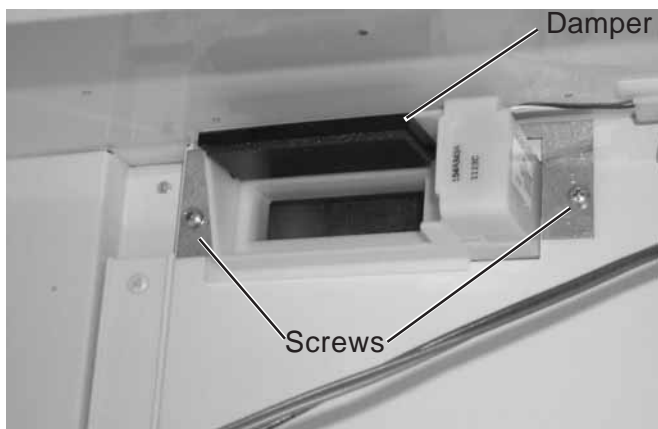
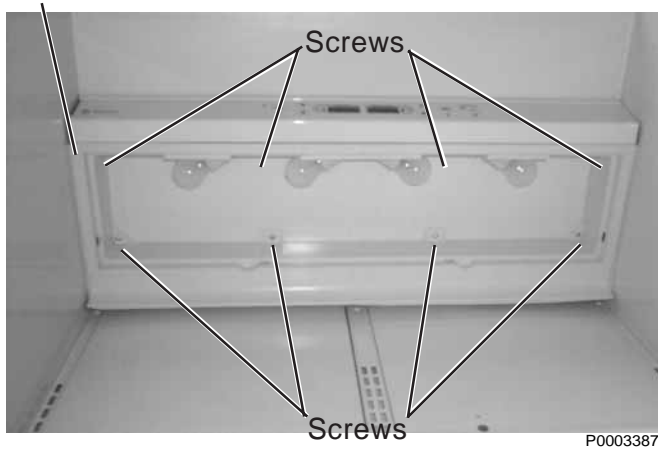
Damper

The fresh food compartment receives chilled air via an electronic damper that is positioned at the top rear of the fresh food compartment. The damper is controlled by the main control board and when open, allows the evaporator fan to push chilled air from the evaporator into the fresh food compartment.

To remove the damper

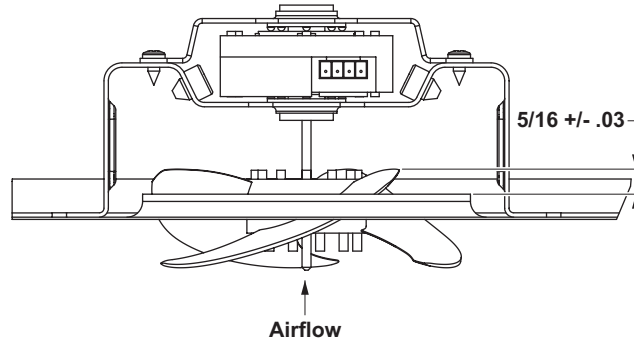
1. Remove the light cover.
2. Remove 8 Phillips screws and the light assembly.
3. Disconnect the damper wiring.
4. Remove 2 Phillips screws and the damper.

Light Assembly



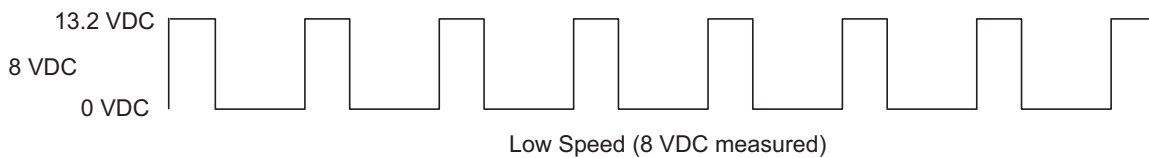
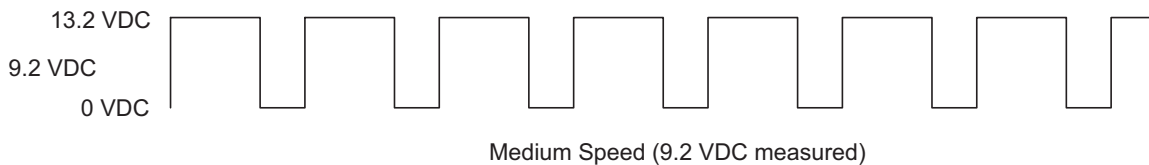
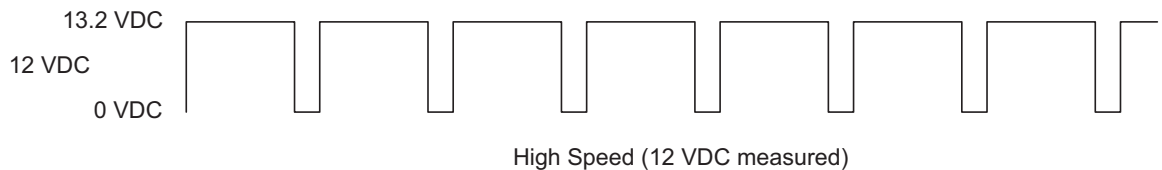
Evaporator Fan

The position of the fan blade in relation to the shroud is important. Refer to illustration for specifications.



The evaporator fan is the same fan used on previous models; however a significant difference is that the main control board does not require, nor receive, input from the fan feedback/rpm (blue) wire. The fan utilizes a permanent magnet, 4-pole, DC motor that operates at three different speeds: high, medium, and low. The speed of the fan is controlled by the voltage output from the main control board. Voltage output from the control board to the fan is 13.2 VDC; however to regulate the speed of the fan, the main control board uses pulse width modulation (PWM). When operating, voltage is sent in pulses (much like a duty cycle) as opposed to an uninterrupted flow. This pulsing of 13.2 VDC produces effective voltage being received at the motor, which is the equivalent to a reduction in voltage. Fan speed will be selected and maintained by the main control board regulating the length and frequency of the 13.2 VDC pulse.

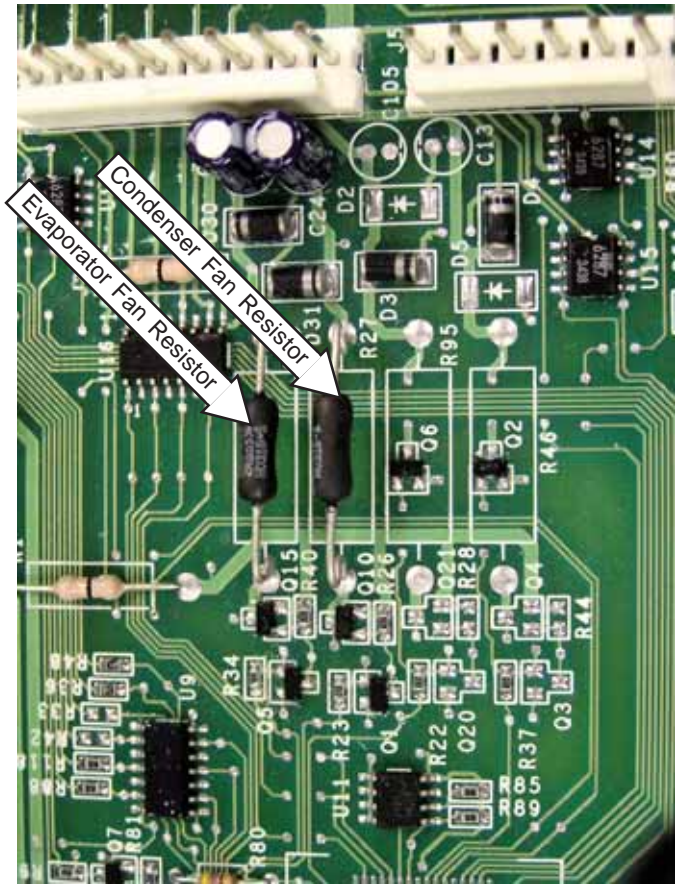
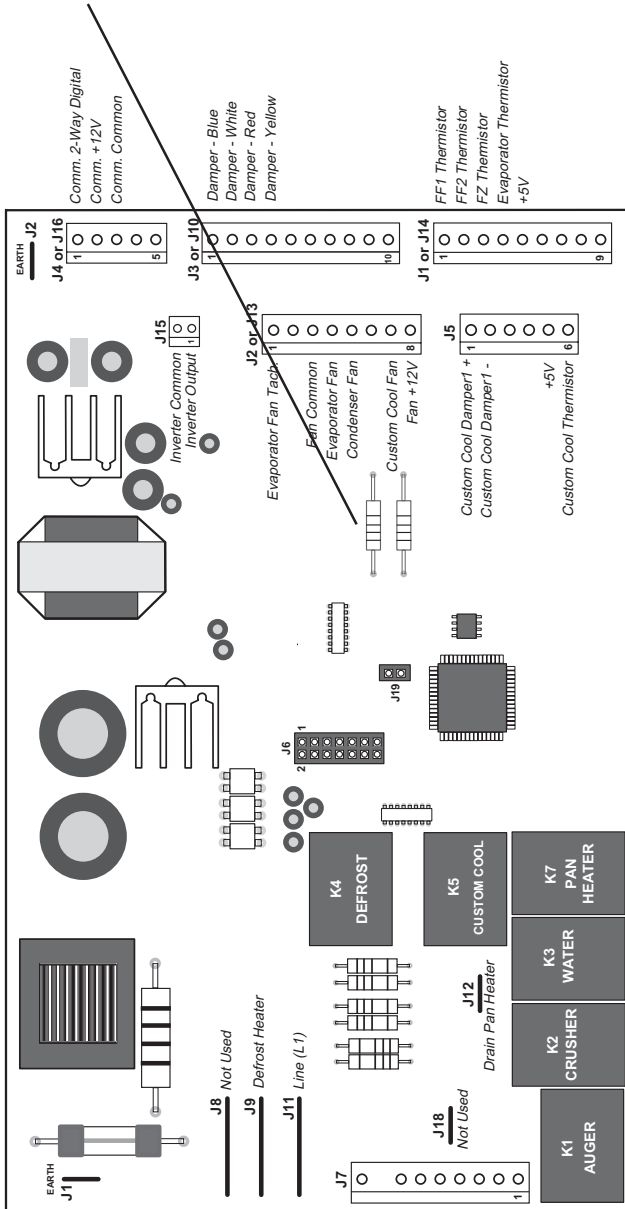
Temperature may cause some fan speed variation. Fan speed may vary +/- 5%, depending on the temperature, with higher temperatures causing slightly higher speeds.



EVAPORATOR FAN SPEEDS

If the fan shorts, it will damage the main control board. If the resistor on the main control board is burnt, you must replace the fan and the board (see photo).

Evaporator and Condenser Fan Resistors



White Wire (DC Common)

The white wire is the DC common wire used for testing. During repairs, DC polarity must be observed. Reversing the DC polarity will cause a shorted motor and/or board.

Red Wire (Supply)

Each motor uses an internal electronic controller to operate the motor. Supply voltage from the main control board remains at a constant 12 VDC.

Blue Wire (Feedback/RPM)

The blue wire feeds rpm (speed) information to the main control board, allowing the board to maintain consistent fan speeds. Loss of feedback from the blue wire will result in the fan accelerating to maximum speed. Measure the fan rpm using the frequency between the blue and white wires.

High speed - 205 to 215 Hz (3140 RPM)

Medium speed - 155 to 165 Hz (2415 RPM)

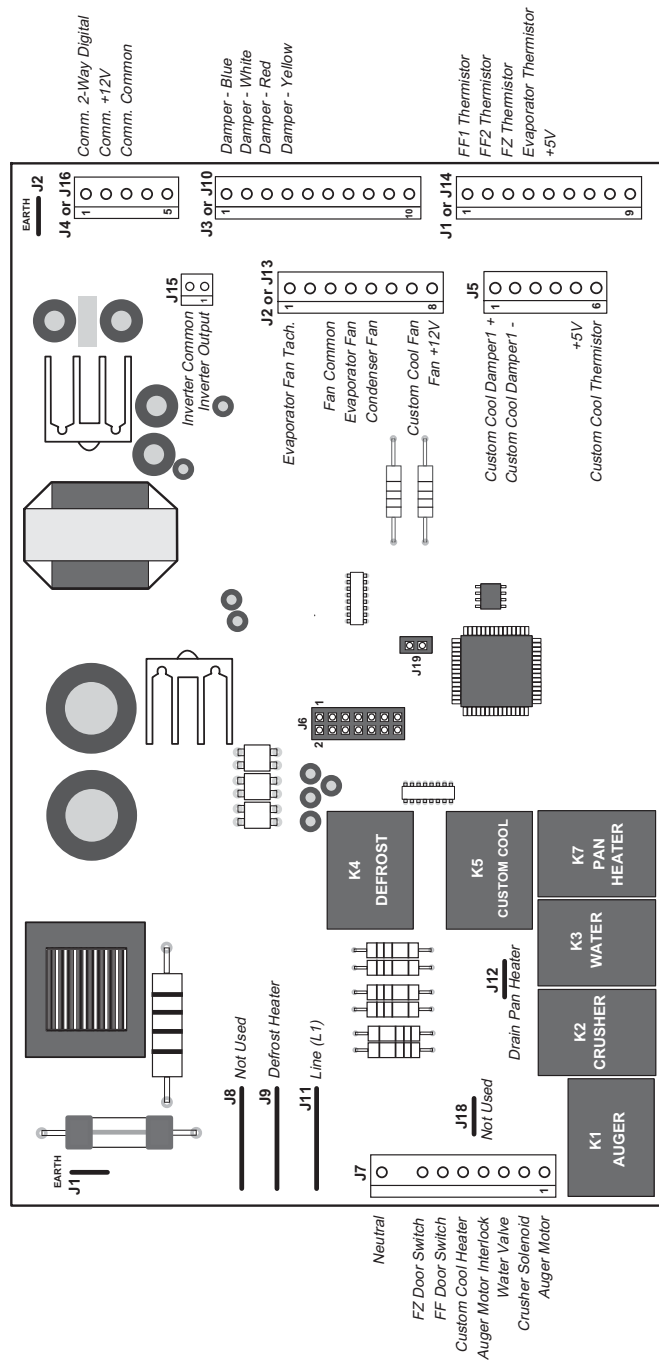
Low speed - 140 to 150 Hz (2160 RPM)

Yellow Wire (Signal)

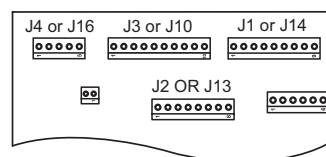
The yellow wire is the input wire from the main control board. The main control board provides 8 VDC effective voltage for low speed, 9.2 VDC effective voltage for medium speed, and 12 VDC for high speed. The fan will operate in low speed only when the fresh food thermistor is satisfied.

Note: When testing these motors:

- You cannot test with an ohmmeter.
- DC common is not AC common.
- Verify 2 voltage potentials:
 - a. Red to white - power for internal controller.
 - b. Yellow to white - power for fan.
- Observe circuit polarity.
- Motors can be run for short periods using a 9-volt battery. Connect the white wire to the negative (-) battery terminal only. Connect the red and yellow wires to the positive (+) battery terminal.



Some of the low voltage DC connector labeling on this model may differ from other models. The function and diagnostics for these connectors are identical for all models.



To remove the fan

1. Remove the drawer (see procedure).
2. Remove 5 screws securing the rear duct.
3. Disconnect the freezer light and light thermostat wiring and the remove duct.
4. Disconnect the wire connector from the fan motor.
5. Remove 2 screws from the fan motor bracket and remove the evaporator fan motor.

Condenser Fan

The condenser fan is a permanent-magnet, 4-pole, DC motor that will operate at 3 speeds. Fan speed (low, medium, high) corresponds with compressor speed to minimize pressure variations in the sealed system. The speed of the fan is controlled by the voltage output from the main control board. Voltage output from the control board to the fan is 13.2 VDC; however to regulate the speed of the fan, the main control board uses pulse width modulation (PWM).

Inlet air is available through the left front and left rear of the machine compartment.

If the fan shorts, it will damage the main control board. If the resistor on the main control board is burnt, you must replace the fan and the board.

The condenser fan is mounted with screws to a fan shroud and mounting bracket in back of the condenser.

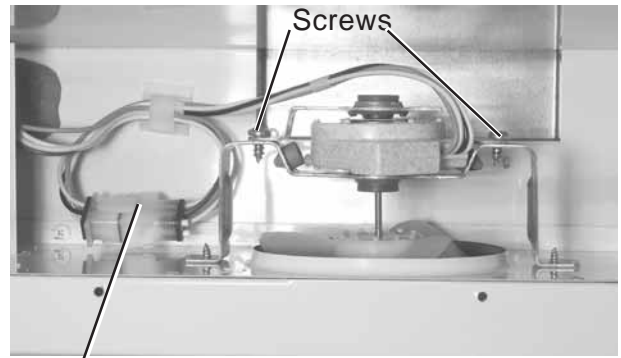
To remove the fan

1. Extend the machine compartment chassis (see Machine Compartment).
2. Disconnect the condenser fan wiring at the harness connector.
3. Remove 4 screws and fan assembly.
4. Remove fan blade, 2 screws from the fan mounting bracket, and fan motor.

Note: A magnetic tip screwdriver may be required to install the condenser fan mounting screws.

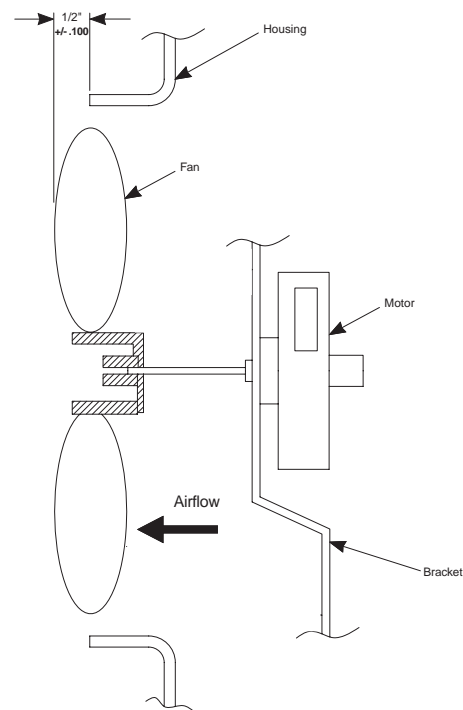
To install lower fan mounting screw:

1. Pull back foam insulation to visually locate screw hole.
2. Locate hole with fingers of left hand.
3. Place screw on the tip of the screwdriver.
4. Use your right hand to maneuver the screwdriver and use your left hand to guide the screw into the hole.

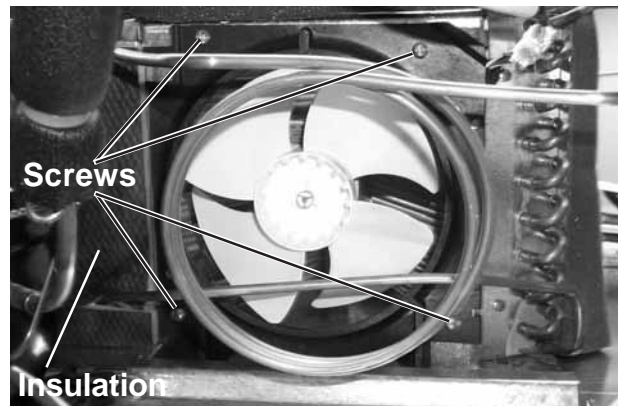


Wiring Harness Connector

Condenser Fan Adjustment



GEA01148



P0003374

Drain Pan Fan

The Monogram Bottom Mount has an auxiliary evaporation fan located under the unit. The purpose of this fan is to improve the evaporation rate of drain water should extreme conditions occur.

Should this fan malfunction, there is no replacement procedure. The absence of this fan will not affect drain water evaporation under normal conditions. A stainless steel hot gas loop routed through the drain pan will provide ample evaporation.

To remove the fan

1. Remove toe kick (2 screws).
2. Slide out and remove drain pan.
3. Disconnect harness from fan motor.
4. **Remove fan by unscrewing 2 screws accessible from within the pan housing.**

DEFROST SYSTEM

Adaptive Defrost

Adaptive Defrost can be described as a defrost system that adapts to a refrigerator's surrounding environment and household usage.

Unlike conventional defrost systems that use electromechanical timers with a fixed defrost cycle time, Adaptive Defrost utilizes an intelligent, electronic control to determine when the defrost cycle is necessary. In order to accomplish the correct defrost cycle time, the main control board monitors the following refrigerator operations:

- Length of time the refrigerator doors were open since the last defrost cycle
- Length of time the compressor has run since the last defrost cycle
- Amount of time the defrost heaters were on in the last defrost cycle

Adaptive Defrost is divided into 4 separate cycles. Those operations are:

- Cooling Operation
- Pre-Chill Operation
- Defrost Heater Operation
- Dwell Period

Adaptive Defrost (Cooling Operation)

During the cooling operation, the main control board monitors door opening (fresh food door and freezer drawer) and compressor run times. The board counts the time the doors are open. It reduces the length of time between defrosts by 300 seconds (multiplication factor) for each second that each door is open (if both doors are open, it reduces it by twice the amount). The multiplication factor reduces compressor run time. If the doors are not opened, the compressor will run up to 60 hours between defrosts. If the doors are opened frequently and/or for long periods of time, the compressor run time between defrosts will be reduced to as little as 8 hours.

Adaptive Defrost (Pre-Chill Operation)

When the main control board determines that defrost is necessary, it will force the refrigerator into a continuous cool mode (pre-chill). During pre-chill, the freezer temperature may be driven below the set point. However, the fresh food temperature will be regulated by the evaporator fan running at low speed. Pre-chill will last for 30 minutes. These models do have an 8-hour defrost hold-off.

Adaptive Defrost (Defrost Heater Operation)

After 30 minutes of pre-chill operation, the main control board turns off the compressor, condenser fan, and evaporator fan.

During defrost operation, the main control board monitors the evaporator temperature using evaporator thermistor inputs. Typically, the evaporator thermistor will sense a temperature of 45°F within 16 minutes. When the thermistor senses 45°F, the main control board will terminate defrost heater operation. Maximum defrost cycle (heater on) time is 35 minutes (main control board time out).

The defrost system is protected by a defrost overtemperature thermodisc (bimetal switch). The thermostat opens when the evaporator temperature raises to 60°F and closes when the evaporator temperature lowers to 45°F.

Adaptive Defrost (Dwell Period)

After defrost heater operation has been terminated by the main control board, a 20-minute dwell period occurs. During this period, the compressor, condenser fan, and evaporator fan remain off. The remaining frost melting from the evaporator will continue to drip and drain so that, prior to the cooling operation, the evaporator will be totally clear of any moisture. The pan heater is on for the entire 20 minute dwell period.

Normal Operating Characteristics

- The fill tube heater is on when the defrost heaters are on.
- Pan heaters are on when the defrost heaters are on and during dwell period (25 minutes plus defrost time).

Defrost Heater

Caution: Use care to avoid scratching the finish on unit walls.

The defrost heater is a single-calrod type, radiant heater mounted under the evaporator.

To remove the defrost heater:

1. Remove the drawer (see procedure).
2. Remove upper right slide/support assembly by removing 3 Phillips screws.
3. Remove lower right slide/support assembly by removing 3 Torx screws.
4. Remove 5 screws, disconnect light and light thermostat wiring, and remove rear duct.
5. Remove 4 screws and evaporator cover.
6. Disconnect the heater lead wires.
7. Remove the clip securing the heater to the evaporator and remove the heater.

Evaporator Thermistor

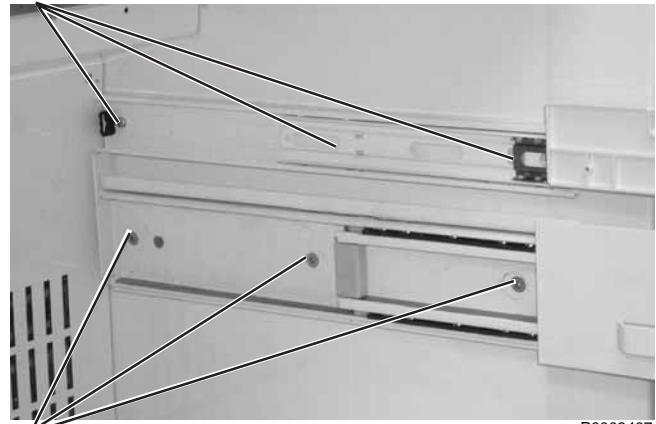
The evaporator thermistor is mounted on the upper left side of the evaporator. The defrost cycle will terminate when the main control board detects 45°F from the evaporator thermistor. The main control board must sense 45°F in less than 40 minutes, or the defrost cycle will time out. Average time to defrost is 20 minutes. Defrost time should not exceed 40 minutes. Defrost time does not include dwell and post dwell periods.

Defrost Overtemperature Thermostat

The defrost overtemperature thermostat (bimetal switch) is mounted on the evaporator and provides overtemperature protection during defrost. This thermostat will open at 65°F and will close at 45°F.

Note: The main control board will not know if the heater does not come on due to a broken heater, open defrost overtemperature thermostat, or open wiring harness. The defrost heater is controlled by maximum time on the main control board or temperature at the evaporator thermistor.

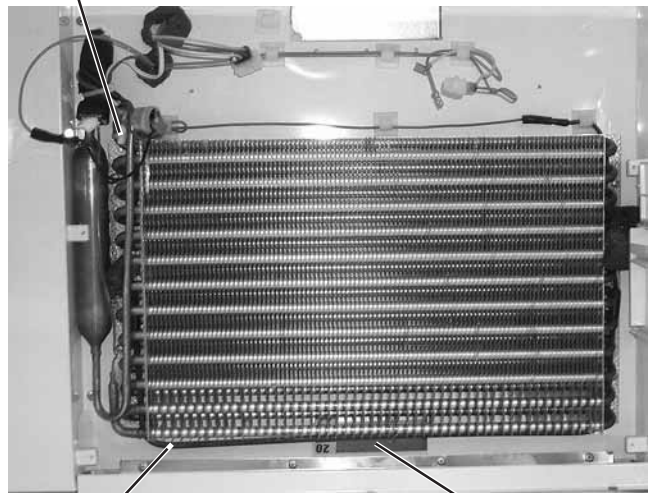
Screws



P0003407

Screws

Evaporator Thermistor

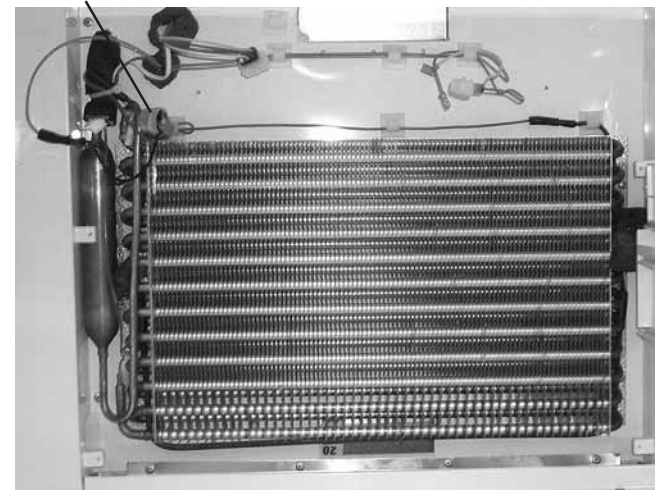


P0003343

Defrost Heater

Clip

Defrost Overtemperature Thermostat



P0003343

CONTROL SYSTEM

Touch Panel and Temperature Control Board

The temperature control assembly is located at the top front of the fresh food compartment and contains the touch panel and temperature control board.

The temperature control board receives switched DC voltage from the main control board. Input consists of pins 2 to 3. Failure of input results in default to most recent setting. Pin 1 provides digital communication between the temperature control board and the main control board. Failure of communication results in erratic control.

To remove the temperature control assembly:

1. Remove the light cover.
2. Remove 8 Phillips screws and the light assembly.

Note: Temperature control assembly is mounted on 3 slotted fasteners. Fasteners do not need to be loosened or removed.

3. Carefully cut RTV seal between temperature control assembly and cabinet.
4. Slide the temperature control assembly back to release it from the slotted fasteners and lower the assembly.
5. Disconnect the wiring connector from the temperature control board.
6. Slide the touch panel out of the temperature control assembly.
7. Remove 2 screws and the temperature control board.

Note: Use RTV 102 to reseal temperature control assembly when reassembling.

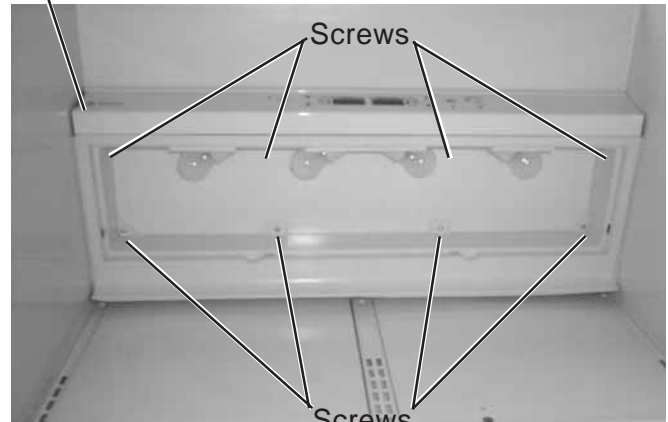
Temperature Control Assembly

Touch Panel



P0003340

Light Assembly

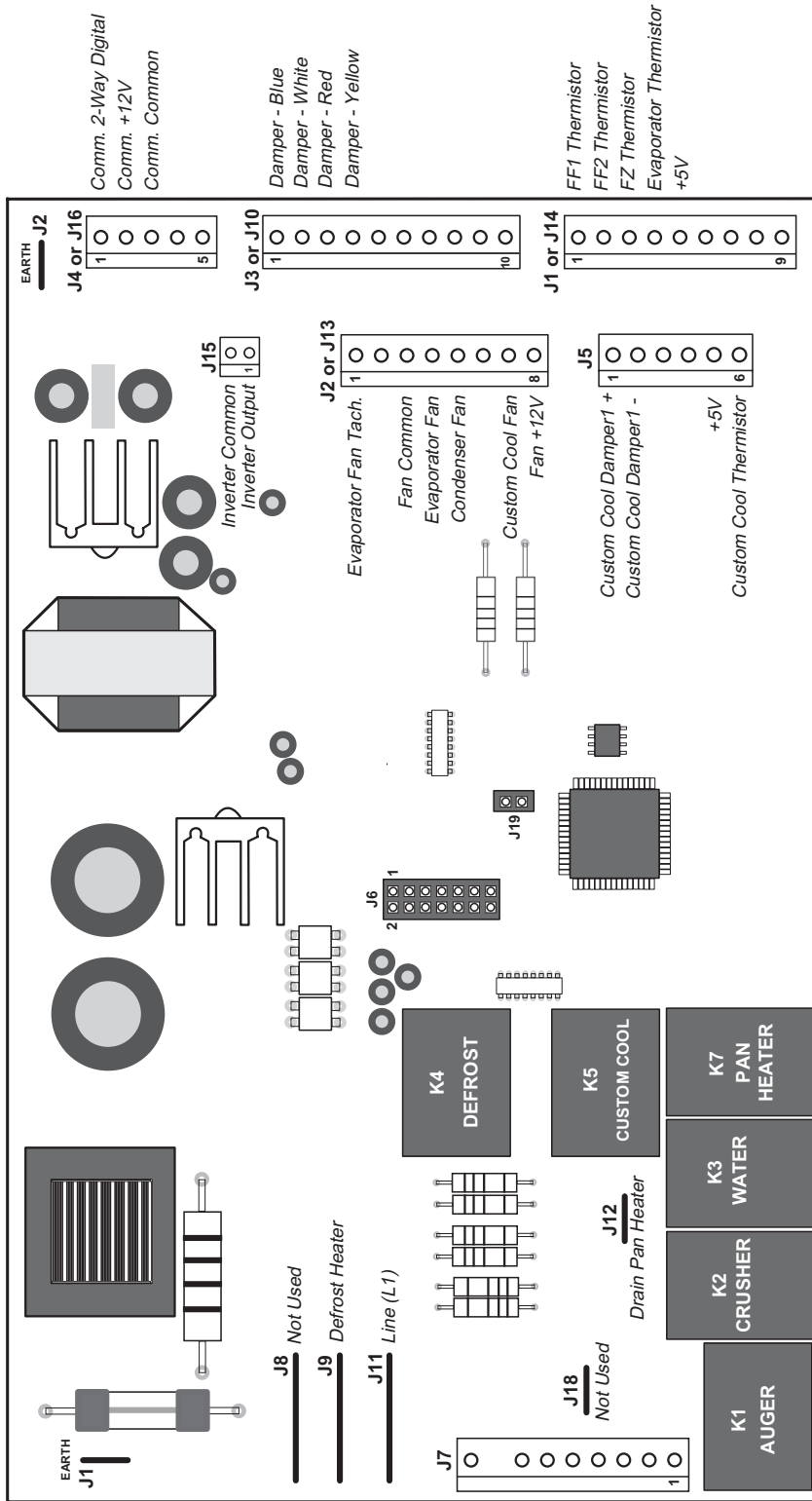
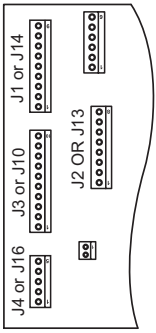


P0003387

Main Control Board

The main control board, located behind a metal cover at the top of the refrigerator in the machine compartment, manages the operation of the refrigerator by calculating response from various inputs.

Some of the low voltage DC connector labeling on this model may differ from other models. The function and diagnostics for these connectors are identical for all models.



CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J1 or J14	1	VDC		Feedback of fresh food thermistor value. Thermistor is NTC, when temperature drops, resistance value increases, causing return voltage reduction. This value is used to cycle fresh food fan (when used), evaporator fan, compressor, and condensor fan. Feedback is filtered to respond to 8 degrees of change per minute.
J1 or J14	2	VDC		Feedback of second fresh food thermistor value (when used). Thermistor is NTC, when temperature drops, resistance value increased, causing return voltage reduction. This value is used to cycle fresh food fan (when used), evaporator fan, compressor, and condensor fan. Feedback is filtered to respond to 8 degrees of change per minute.
J1 or J14	3	VDC		Feedback of freezer thermistor value. Thermistor is NTC, when temperature drops, resistance value increases, causing return voltage reduction. This value is used to cycle evaporator fan, compressor, and condensor fan, and will not cycle fresh food fan (when used). Feedback is filtered to respond to 8 degrees of change per minute.
J1 or J14	4	VDC		Feedback of evaporator thermistor value. Thermistor is NTC, when temperature drops, resistance value increases, causing return voltage reduction. This thermistor value is used to cycle the heater on during defrost when temperature is below defrost value and off when the temperature is above defrost value. This value is also read during power-up to determine if refrigerator goes into pulldown mode or cycle continuation. Feedback is unfiltered, responds immediately.
J1 or J14	5		VDC	Provides 5 VDC for thermistors and personality pins on J1.

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J2 or J13	1	Hz		Feedback from evaporator fan. This feedback frequency is used to control the PWM for fan speeds.
J2 or J13	3		VDC	Fan common - .VDC ground
J2 or J13	4		VDC	Output to evaporator fan for motor operation. Effective voltage is determined by PWM.
J2 or J13	5		VDC	Output to condensor fan for motor operation. Effective voltage is determined by PWM, speed set in EEPROM.
J2 or J13	7		VDC	Output to Express Chill (QuickChill) fan for motor operation. Effective voltage is determined by PWM.
J2 or J13	8		VDC	Provides 12-VDC supply voltage to all fans, constant voltage.

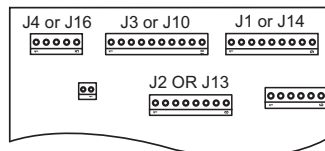
CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J3 or J10	1		VDC	Damper stepper motor
J3 or J10	2		VDC	Damper stepper motor
J3 or J10	3		VDC	Damper stepper motor
J3 or J10	4		VDC	Damper stepper motor

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J4 or J16	1	Digital Communication	Digital Communication	Two-way digital communication between main control board, temperature control (board), dispenser board, and QuickChill board.
J4 or J16	2		VDC	12-VDC supply
J4 or J16	3		VDC	DC common

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J5	1		VDC	12 VDC to Climate Control Drawer damper when Express Chill (QuickChill) is selected. Common - VDC ground when express thaw is selected.
J5	2		VDC	12 VDC to Climate Control Drawer damper when Express Thaw is selected. Common - VDC ground when Express Chill (Quick Chill) is selected.
J5	5		VDC	Provides 5 VDC for Express Chill (QuickChill) thermistor
J5	6	VDC		Feedback of Express Chill (QuickChill) thermistor. Thermistor is NTC, when temperature drops, resistance value increases, causing a reduction in return voltage.

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J7	1		VAC	Switched L1 voltage to the auger motor - 120 VAC
J7	2		VAC	Switched L1 voltage to the crusher solenoid - 120 VAC
J7	3		VAC	Switched L1 voltage to the water valve - 120 VAC
J7	4	VAC		Receives L1 input from freezer door switch when freezer door is closed.
J7	5		VAC	Switched L1 voltage to the Express Chill (QuickChill) heater - 120 VAC.
J7	6	VAC		Receives L1 input from fresh food door switch when switch closes (door open). This input is used for evaporator fan control, liner protection mode calculations, door alarm calculations, and adaptive defrost calculations.
J7	7	VAC		Receives L1 input from freezer door switch when switch closes (door open). This input is used for evaporator fan control, liner protection mode calculations, adaptive defrost calculations, door alarm calculations, and some door interlock functions. Switch must be closed in door closed position (switch depressed) for dispenser light and duct door magnet to energize.
J7	9	VAC		AC neutral in

Some of the low voltage DC connector labeling on this model may differ from other models. The function and diagnostics for these connectors are identical for all models.



CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J15	1		VDC	12V variable frequency square wave to control compressor speed.
J15	2		Common	

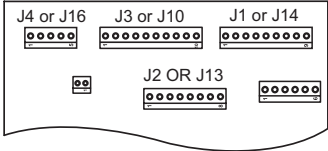
Note: The J15 connector controls compressor speed through voltage AND frequency. When the main board calls for compressor operation, J15 output between pins 1 and 2 should be approximately 5 VDC with the harness connected and approximately 12 VDC with the harness disconnected. The voltage will not change regardless of compressor speed. A change in frequency controls the compressor speed.

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J9	1		VAC	Switched L1 voltage to the defrost circuit - 120 VAC. A timer counts how long this circuit is energized and uses this information to determine if the next defrost cycle is adaptive or nonadaptive.

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J11	1	VAC		Constant L1 voltage to control board circuits - 120 VAC input potential for switched L1 terminals.

CONTROL BOARD PIN DEFINITIONS				
CONNECTOR	PIN	INPUT	OUTPUT	FUNCTION
J12	1		VAC	L1 voltage to the drain pan heater

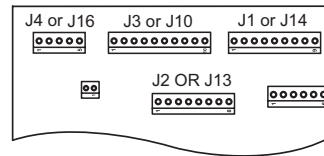
Some of the low voltage DC connector labeling on this model may differ from other models. The function and diagnostics for these connectors are identical for all models.



Main Control Board Locator Tables

Main Control Board J7 Connector (120 VAC Side)				
Pin	Wire Color	Component Termination	Input/Output	Pin-to-Pin Voltage Reading
1	Black	Auger motor	Output	J7 pin 1 to J7 pin 9 = 120 VAC
2	Purple	Crusher solenoid	Output	J7 pin 2 to J7 pin 9 = 120 VAC
3	Blue	Water valve	Output	J7 pin 3 to J7 pin 9 = 120 VAC
4	Red	Freezer door switch	Input	J7 pin 4 to J7 pin 9 = 120 VAC (FZ door closed)
5	Violet	QuickChill Heater	Output	J7 pin 5 to J7 pin 9 = 120 VAC
6	Blue	Fresh food door light switch	Input	J7 pin 6 to J7 pin 9 = 120 VAC (FF door open)
7	Yellow	Freezer door light switch	Input	J7 pin 7 to J7 pin 9 = 120 VAC (FZ door open)
9	Orange	Neutral	Neutral	Neutral

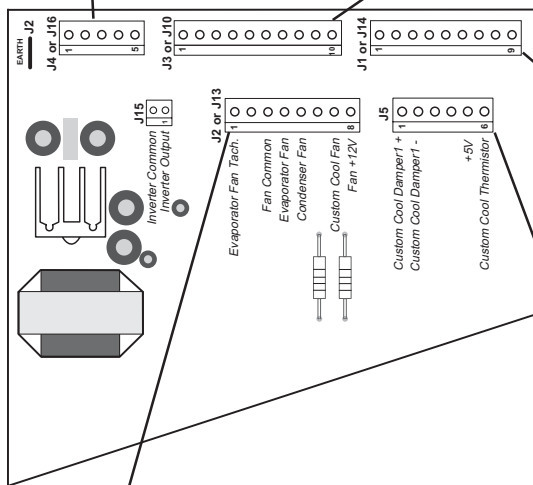
Some of the low voltage DC connector labeling on this model may differ from other models. The function and diagnostics for these connectors are identical for all models.



Main Control Board J8, J9, J11 Connectors (High-Voltage Side)			
Pin	Wire Color	Input/Output	Pin-to-Pin Voltage Reading
J9	Red	Output	J9 to J7 pin 9 = 120 VA
J11	Brown	Input	J11 to J7 pin 9 = 120 VA
J12	Black	Output	J12 to J7 pin 9 = 120 VA

Main Control Board J4 Connector (Low-Voltage DC Side)				
Pin	Wire Color	Component Termination	Input/Output	Pin-to-Pin Voltage Reading
1	Red	Temperature control	Communication	Two-way digital communication between main control board, temperature control (board), dispenser board, and QuickChill board.
2	Brown	Temperature control	VDC	12-VDC supply.
3	Orange	Temperature control	VDC	DC common.

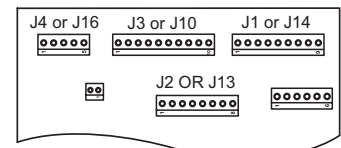
Main Control Board J3 Connector (Low-Voltage DC Side)				
Pin	Wire Color	Component Termination	Input/Output	Pin-to-Pin Voltage Reading
1	Blue	Damper Stepper Motor		J3 pin 1 to J4 pin 3 = Standing Voltage 2.3 VDC Traveling Voltage = 6.0 VDC
2	White	Damper Stepper Motor		J3 pin 2 to J4 pin 3 = Standing Voltage 2.3 VDC Traveling Voltage = 6.0 VDC
3	Red	Damper Stepper Motor		J3 pin 3 to J4 pin 3 = Standing Voltage 2.3 VDC Traveling Voltage = 6.0 VDC
4	Yellow	Damper Stepper Motor		J3 pin 4 to J4 pin 3 = Standing Voltage 2.3 VDC Traveling Voltage = 6.0 VDC



Main Control Board J1 Connector (Low-Voltage DC Side)				
Pin	Wire Color	Component Termination	Input/Output	Pin-to-Pin Voltage Reading
1	Purple	Fresh food thermistor 1	Input	J1 pin 1 to pin 5 = 2.8 to 3.5 VDC
2	Blue	Fresh food thermistor 2	Input	J1 pin 2 to pin 5 = 2.8 to 3.5 VDC
3	Red	Freezer thermistor	Input	J1 pin 3 to pin 5 = 2.8 to 3.5 VDC
4	Black	Evaporator thermistor	Input	J1 pin 4 to pin 5 = 2.8 to 3.5 VDC
5	Brown	Thermistor supply voltage (5 VDC)	Output	J1 pin 5 to J4 pin 3 = 5 VDC

Main Control Board J5 Connector (Low-Voltage DC Side)				
Pin	Wire Color	Component Termination	Input/Output	Pin-to-Pin Voltage Reading
1	Yellow	QuickChill (Custom Cool) Damper	Input/Output	J5 pin 1 to pin 2 = 12 VDC (reversing polarity)
2	Gray	QuickChill (Custom Cool) Damper	Input/Output	J5 pin 2 to pin 1 = 12 VDC (reversing polarity)
5	Brown	Supply Voltage (5 VDC)	Output	J5 pin 10 to J2 pin 3 = 5 VDC
6	Blue	QuickChill (Custom Cool) Thermistor	Input	N/A

Main Control Board J2 Connector (Low-Voltage DC Side)				
Pin	Wire Color	Component Termination	Input/Output	Pin-to-Pin Voltage Reading
1	Blue	Evaporator fan tachometer	Input	J2 pin 1 to pin 3 = 6.3 VDC
3	White	Fan common	Common	J2 pin 3 to pin 8 = 12 VDC
4	Yellow	Evaporator fan	Output	J2 pin 4 to pin 3 = 12.6 VDC (high), 8.1 VDC (med.), 8.1 VDC (low)
5	Pink	Condenser fan	Output	J2 pin 5 to pin 3 = 13.4 VDC (condenser fan is single speed)
6	Black	Drain pan fan	Ground	VDC ground
7	Black	QuickChill fan	Common	J2 pin 8 to pin 7 = 12 VDC
8	Red	Fan supply voltage (12 VDC)	Output	J2 pin 8 to pin 3 = 12 VDC



Some of the low voltage DC connector labeling on this model may differ from other models. The function and diagnostics for these connectors are identical for all models.

Thermistors

This main control board uses input from 4 thermistors. These thermistors are located in the fresh food section, the freezer section, and on the evaporator. The main control board monitors the thermistors to determine the temperature in these areas of the unit and determines which components to run and when to run them based on this information.

Thermistor Values		
Temperature Degrees (C)	Temperature Degrees (F)	Resistance in Kilo-ohms
-40	-40	166.8 kΩ
-30	-22	88 kΩ
-20	-4	48.4 kΩ
-10	14	27.6 kΩ
0	32	16.3 kΩ
10	50	10 kΩ
20	68	6.2 kΩ
30	86	4 kΩ
40	104	2.6 kΩ
50	122	1.8 kΩ
60	140	1.2 kΩ

Temperature Set Point Chart					
Fresh Food Control Setting	Fresh Food Thermistor Temperature Range		Freezer Control Setting	Freezer Thermistor Temperature Range	
	Minimum	Maximum		Minimum	Maximum
34 °F	32 °F	36 °F	-5 °F	-10 °F	0 °F
35 °F	33 °F	37 °F	-4 °F	-9 °F	1 °F
36 °F	34 °F	38 °F	-3 °F	-8 °F	2 °F
37 °F	35 °F	39 °F	-2 °F	-7 °F	3 °F
38 °F	36 °F	40 °F	-1 °F	-6 °F	4 °F
39 °F	37 °F	41 °F	0 °F	-5 °F	5 °F
40 °F	38 °F	42 °F	1 °F	-4 °F	6 °F
41 °F	39 °F	43 °F	2 °F	-3 °F	7 °F
42 °F	40 °F	44 °F	3 °F	-2 °F	8 °F
43 °F	41 °F	45 °F	4 °F	-1 °F	9 °F
44 °F	42 °F	46 °F	5 °F	0 °F	10 °F
45 °F	43 °F	47 °F	6 °F	1 °F	11 °F

ELECTRICAL SYSTEM

Door and Drawer Switches

The door switch (fresh food door or freezer drawer) closes when the door is open. When the door switch is closed, L1 is provided to the compartment light(s). The main control board receives L1 input on pin 6, J7 when the fresh food door switch is closed (door open). The main control board receives L1 input on pin 7, J7 when the freezer drawer switch is closed (door open).

Master Light Switch

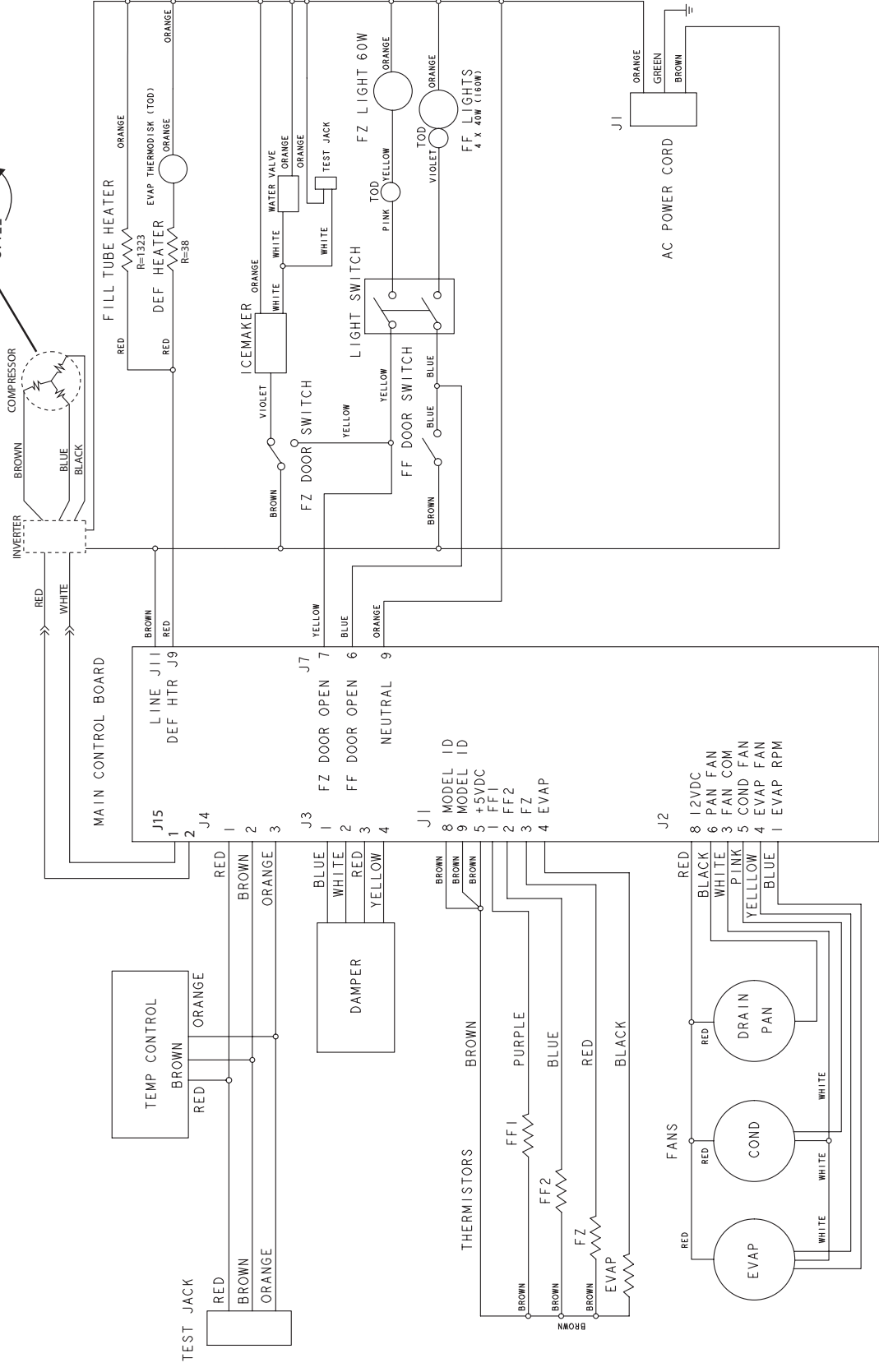
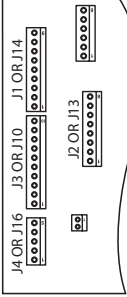
The Master light switch is located behind the grille panel on the control board cover. The master light switch will open the light circuit preventing the interior lights from receiving L1; therefore, the lights will not operate when either door is open.

Temperature Overload Device (TOD)

A temperature overload device is wired in series with both the fresh food light and the freezer light. If either light should reach excessive temperatures due to a door/drawer being open for an extended period, the corresponding TOD will open the light circuit. The TOD will open at 190°F and close at 130°F.

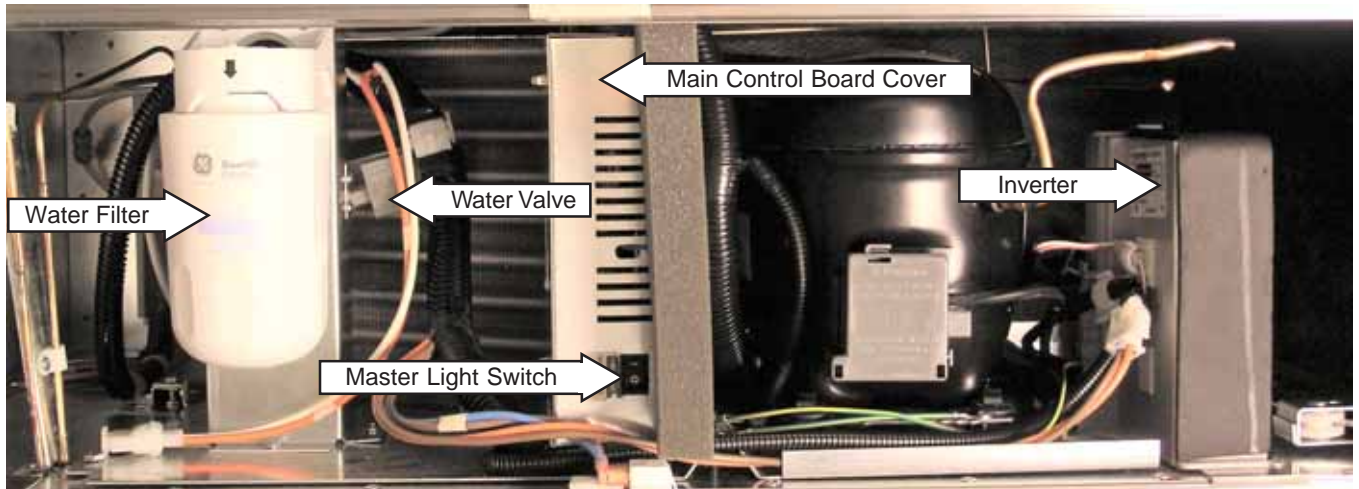
Schematic

SOME OF THE LOW VOLTAGE DC CONNECTOR LABELING ON THIS MODEL MAY DIFFER FROM OTHER MODELS. THE FUNCTION AND DIAGNOSTICS FOR THESE CONNECTORS ARE IDENTICAL FOR ALL MODELS.

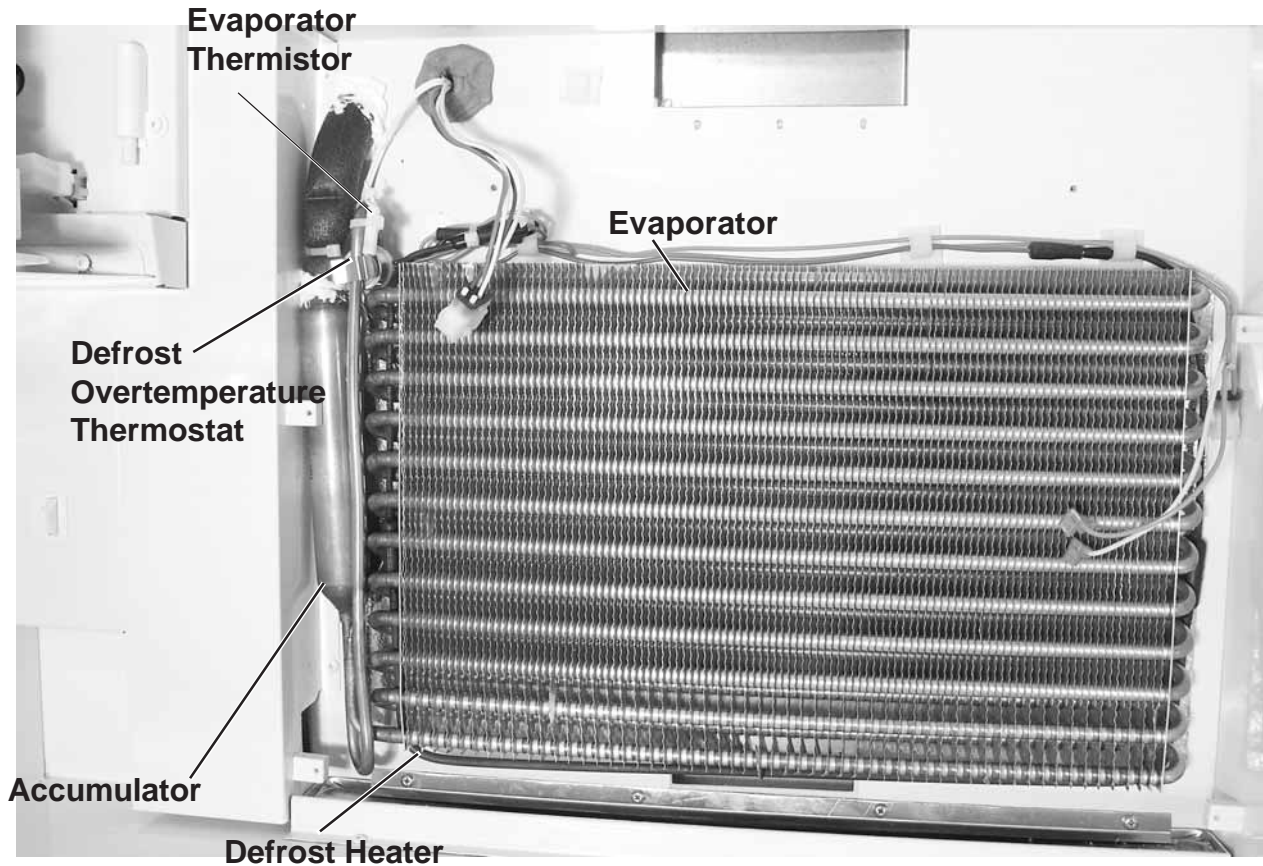


REFRIGERATION SYSTEM

Machine Compartment Front View



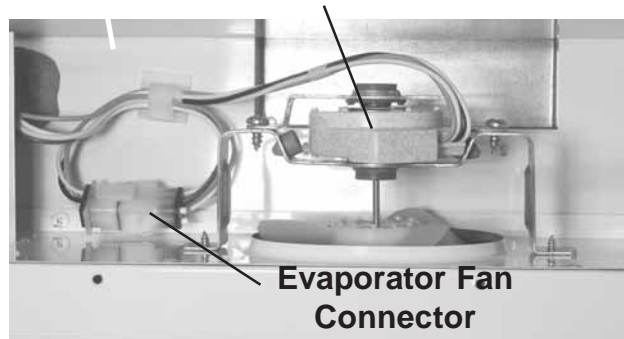
Evaporator



Compressor and Inverter



Evaporator Fan Motor



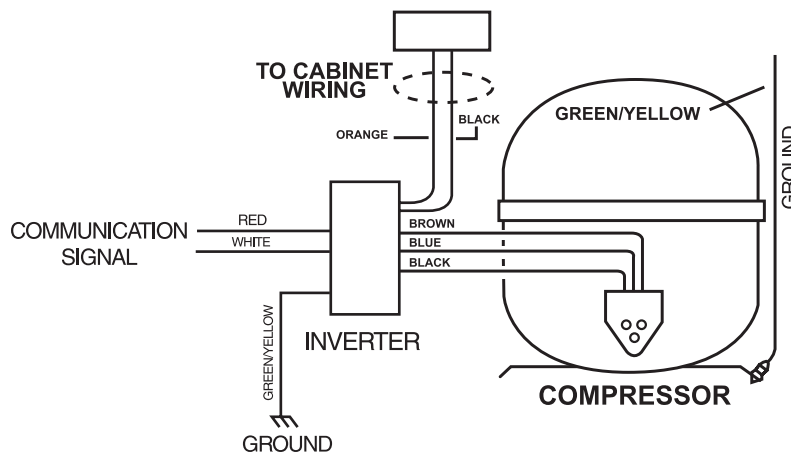
Evaporator Fan

Inverter Compressor

The new inverter compressor is not controlled by 120 VAC output from the main control board, as in previous models. The compressor is controlled by the inverter.

Warning: Disconnecting the 6-pin connector does not disconnect power (120 VAC) from the inverter. The refrigerator must be unplugged before servicing the inverter or compressor.

Caution: Do not attempt to direct-start the compressor. The compressor operates on a 3-phase power supply. Applying 120 VAC to the compressor will permanently damage the unit. It is not possible to start the compressor without an inverter.



The compressor is a reciprocating, variable speed, 4-pole type. It operates on 3-phase, 80 to 230 VAC within a range of 57 to 104 Hz. Compressor speed is controlled by voltage frequency and pulse width modulation. Increasing frequency from the inverter will produce an increase in compressor speed.

- Frequency of 57 Hz will produce low speed operation at 1710 rpm.
- Frequency of 70 Hz will produce medium speed at 2100 rpm.
- Frequency of 104 Hz will produce 3120 rpm.

Note: Certain voltmeters will not be able to read voltage output or frequency from the inverter.

Compressor wattages at various speeds are:

- LOW - 65 watts
- MED - 100 watts
- HIGH - 150 watts

BTU rating also varies according to operating speed.

Compressor speed is based on the temperature set-point in conjunction with the cabinet temperature. Speeds are selected according to the following cabinet temperatures:

- 8°F to 19.5°F above set-point = high speed
- 6°F to 8°F above set-point = medium speed
- 3.5°F to 6°F above set-point = low speed

Note: The compressor will run at medium speed if the cabinet temperature is 20°F or more above the set-point.

The use of 3-phase power eliminates the need for the PTCR relay, capacitor, and individual start and run windings; therefore the start, run, and common pins found on conventional compressors are not applicable on this 3-phase model. Compressor pin functions are identical and compressor lead wire configuration is of no importance. A resistance of 9Ω to 11Ω should be read between any 2 of the 3 pins. Should an open occur in the compressor winding or should one of the compressor lead wires become open or disconnected, the inverter will stop voltage output to the compressor.

High compressor torque enables the compressor to start against high pressure in the sealed system. When power has been disconnected from an operating unit, the high torque may enable the compressor to start immediately upon power restoration. The compressor, if unable to start after 12 times, will wait for 8 minutes before trying again.

Compressor and sealed system operation is extremely smooth and cool. The compressor exterior may be room temperature while operating; therefore a running unit may be difficult to detect.

To verify that the compressor is running:

Disconnect power from the unit and place a hand on the compressor. Reconnect power and feel for a vibration when the compressor tries to start. It may take up to 8 seconds before the compressor attempts to start.

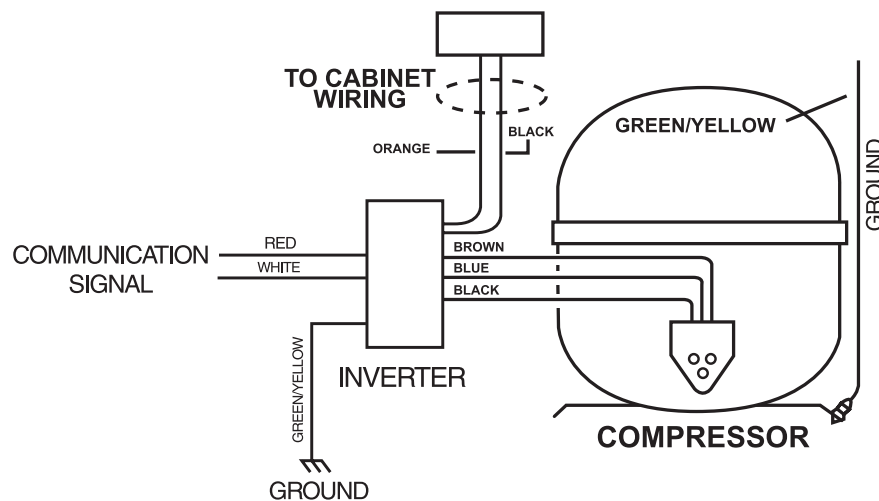
To determine motor rpm:

Measure the frequency of the voltage being applied to the compressor and multiply this number by 30. For example, a frequency measurement of 70 Hz would show a compressor speed of 2100 rpm (30 x 70 = 2100).

Note: If the compressor fails to start, the inverter will briefly stop voltage output. The inverter will make 12 consecutive attempts to start the compressor (once every 12 seconds). If, after 12 attempts, the compressor has not started, an 8-minute count will occur. After 8 minutes, the inverter will attempt to start the compressor again. If the compressor starts, normal operation will resume. If the compressor fails to start, the process will be repeated. Removing power from the unit will reset the inverter count. When power is restored, the inverter will attempt to start the compressor within 8 seconds.

Note:

- When ordering a replacement compressor, order both the compressor and inverter. Replace the compressor first. If, after compressor installation, the compressor fails to start, replace the inverter.
- When servicing the compressor, it is important to dress the wiring to keep low voltage DC wiring and 120 VAC wiring separate.



Inverter

Warning: Disconnecting the 6-pin connector does not disconnect power (120 VAC) from the inverter. The refrigerator must be unplugged before servicing the inverter.

Note: Certain voltmeters will not be able to read voltage output from the inverter. If no voltage or erratic voltage is measured, it does not necessarily indicate a faulty inverter.

The inverter receives 120 VAC line-in from the power supply. The inverter converts this single-phase, 60 Hz, 120 VAC into 3-phase, 230 VAC, with frequency variations between 57 Hz and 104 Hz. This voltage is delivered to the compressor through 3 lead wires. Each wire will carry identical voltage and frequency. When checking inverter voltage output, connect the test-meter leads to any 2 of the 3 compressor lead wires. The same reading should be measured between any 2 of the 3 wires.

Note: The compressor leads must be connected to measure voltage output. If the compressor wires are not connected, or if an open occurs in one of the 3 lead wires or in the compressor, the inverter will stop voltage output.

The inverter controls compressor speed by frequency variation and by pulse width modulation (PWM). Changing frequency and PWM will cause an effective voltage between 80 and 230 VAC to be received at the compressor.

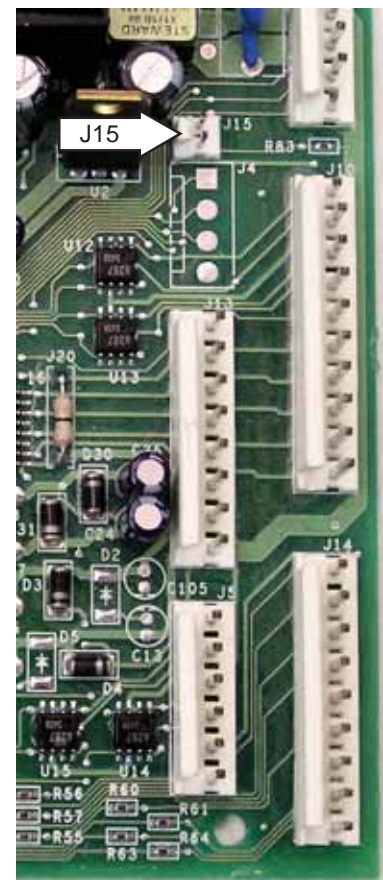
- Low speed (1710 rpm) - 57 Hz
- Medium speed (2100 rpm) - 70 Hz
- High Speed (3120 rpm) - 104 Hz

The inverter receives commands from the main control board. The main control board will send a (PWM) run signal between 1.5 and 3.5 VDC effective voltage to the inverter. The signal voltage at the inverter should be equal to the signal voltage sent by the main control board. The inverter will select compressor speed (voltage output) based on this signal. A signal voltage from the main control board (J15 connector) lower than 5 VDC indicates a faulty main control board. The main control board will only send a run signal to the inverter when the compressor should be on.

Note: When measuring signal voltage (from the main control board) at the inverter, disconnect the wire harness connector at the inverter and measure the voltage at the connector.

The inverter will monitor compressor operation and if the compressor fails to start or excessive current draw (4 amps maximum) is detected, the inverter will briefly stop voltage output. The inverter will then make 12 consecutive compressor start attempts (once every 12 seconds). If after 12 attempts the compressor has not started, an 8-minute count will initiate. After the 8-minute count, the inverter will attempt to start the compressor again. If the compressor starts, normal operation will resume. If the compressor fails to start, this process will be repeated. Removing power to the unit will reset the inverter count. When power is restored, the inverter will attempt to start the compressor within 8 seconds.

The inverter has a built-in circuit protection to guard against damage from a failed or shorted compressor. However, if a failed compressor is diagnosed, order a new compressor and inverter. If the compressor fails to start after replacement, replace the inverter.



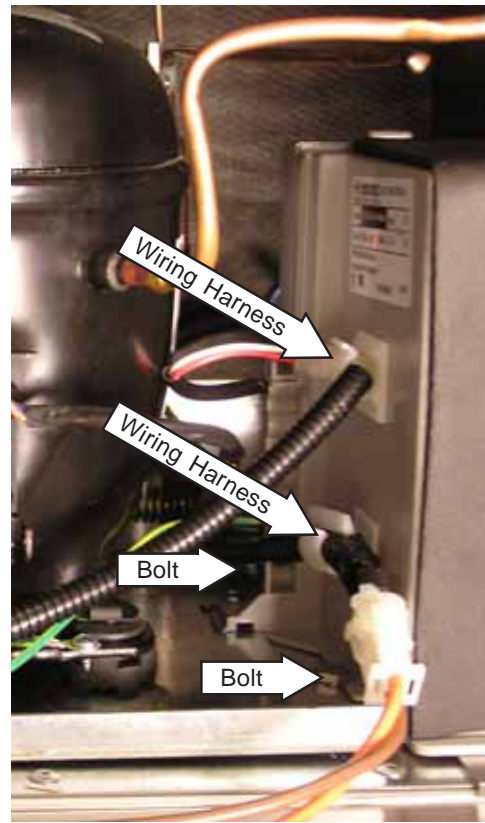
Note: When servicing the inverter, it is important to dress the wiring to keep low-voltage DC wiring and 120 VAC wiring separate.

To remove the inverter:

1. Unplug the unit.
2. Open access cover.
3. Loosen the 2 hex-head bolts that hold the inverter in place.
4. Disconnect the 2 wiring harnesses from the left side of the inverter.
4. Slide the inverter to the right to disengage the holding tabs.

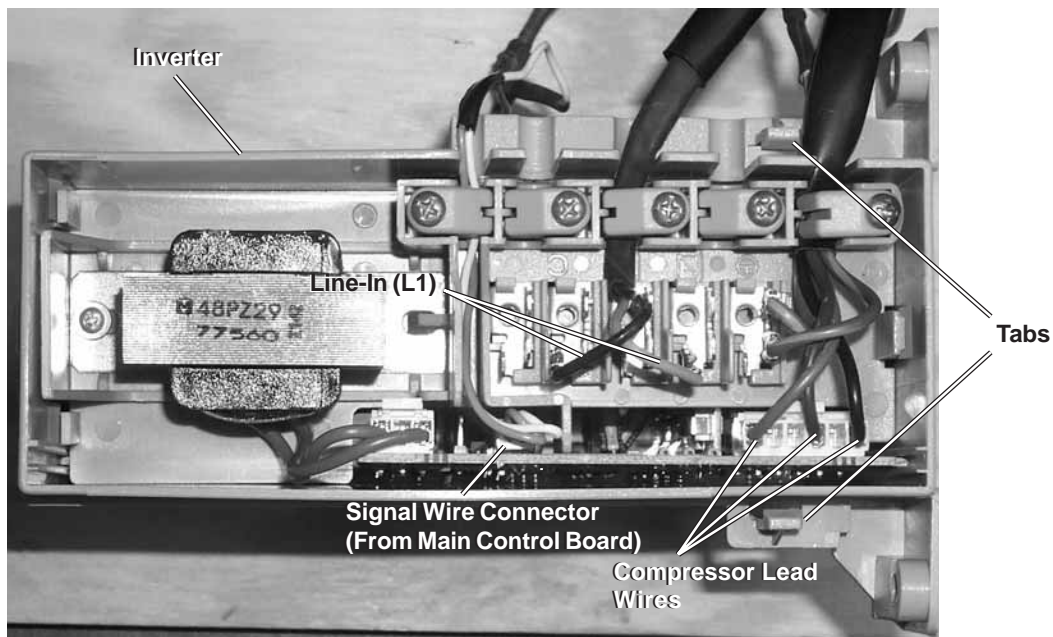
Note: It may be necessary to bend the process tube in order to remove the inverter. If it is necessary to bend the process tube, use extreme care.

5. Slide the inverter out of the machine compartment.



To remove the inverter cover:

Use a small screwdriver to release the two small tabs and carefully remove the inverter cover.

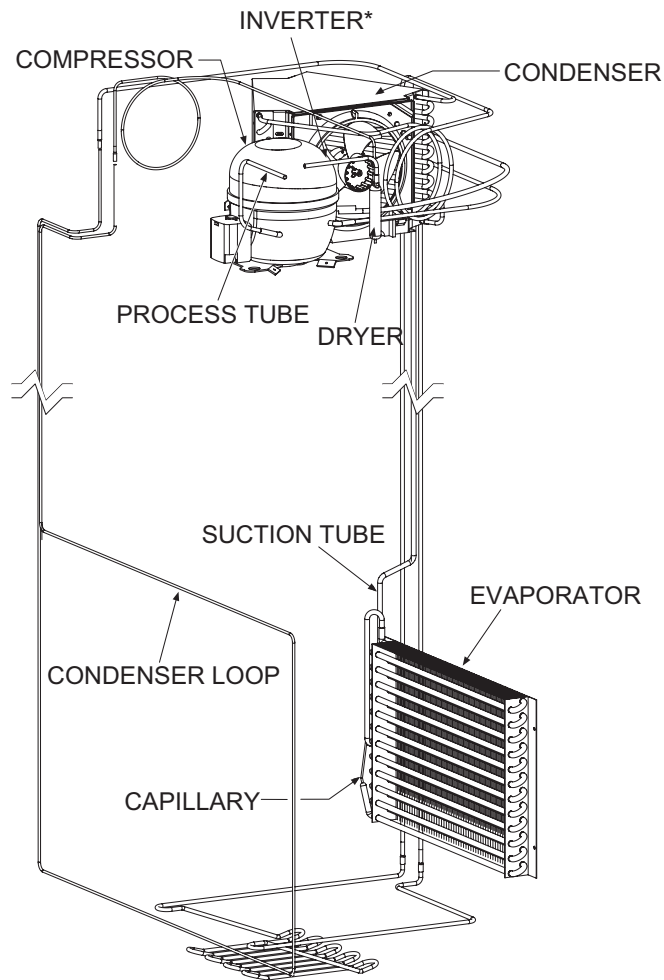


Condenser

The condenser is located behind the grille panel at the top of the refrigerator and is made of steel tubing. The outlet of the condenser is connected to a copper jumper tube that is connected to the inlet of the condenser loop. In a normal home environment, there is no need for routine condenser cleaning. However, in environments that may be particularly dusty or greasy, the condenser should be cleaned periodically for efficient refrigeration operation. An ordinary appliance brush should be all that is needed. Functionally, the condenser does the same job as previous models. Air is drawn through the condenser by the condenser fan from the front left and rear left of the machine compartment. Air exits only from the right side of the machine compartment.

Condenser Loop

The condenser loop, made of copper tubing, is foamed in place behind the breaker frame and across the mullion. It is not accessible for replacement. The tubing is routed from the machine compartment forward to the mullion, down to the freezer compartment, around the front perimeter of the freezer, and back into the machine compartment. The outlet of the condenser loop is connected to the dryer inlet.



Drier

The drier is positioned vertically in the center of the machine compartment. A copper process tube, connected to the inlet of the drier, provides access to the high-pressure side of the refrigeration system. The capillary is connected to the outlet of the drier.

Evaporator

The evaporator is made of copper and aluminum and is located above the evaporator fan at the top of the freezer compartment.

To replace the evaporator

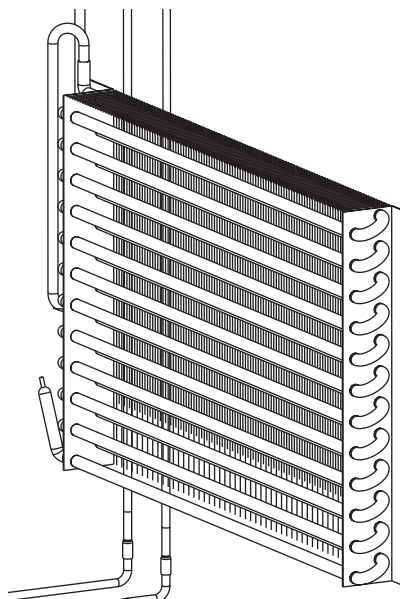
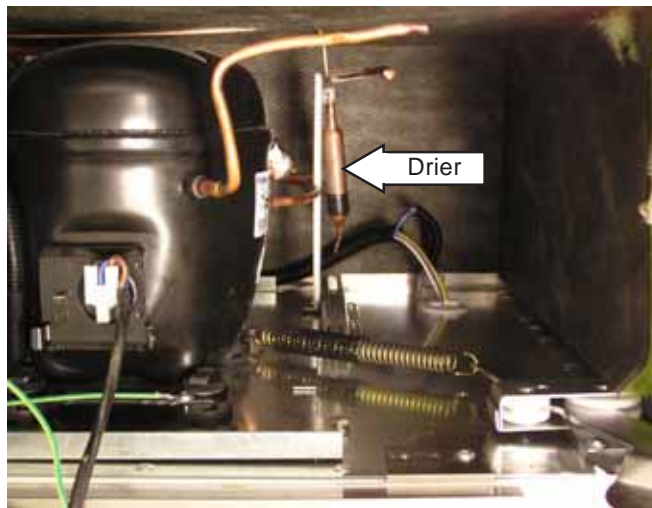
1. Recover the refrigerant.
2. Remove the evaporator fan (see procedure).
3. Remove the defrost heater (see procedure).
4. Remove the defrost overtemperature thermodisc and evaporator thermistor.
5. Disconnect the ground wire from the evaporator and position all wiring to allow for evaporator removal.
6. Remove the screws securing the evaporator to the cabinet.

Caution: Protect wiring from heat during desoldering and resoldering.

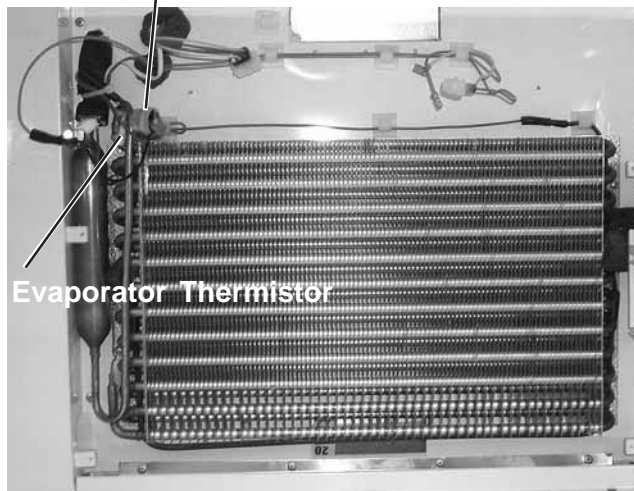
7. Desolder the capillary tube from the evaporator.
8. Desolder the suction line.
9. Remove the evaporator.
10. Using a file, score the capillary tube just above the old solder and break the solder-covered section off. This will help prevent the capillary tube from becoming plugged when resoldering.
11. Position the new evaporator in the cabinet. Insert the suction line and capillary tube into the evaporator.
12. Solder the suction line to the evaporator.
13. Solder the capillary tube to the evaporator.
14. Install a replacement drier WR86X93.
15. Evacuate and recharge the system using currently accepted procedures.

Note: Mastic should be replaced on evaporator discharge line after replacing the evaporator.

Shown with Inverter Removed



Defrost Overtemperature Thermostat



P0003343

Auxiliary Line

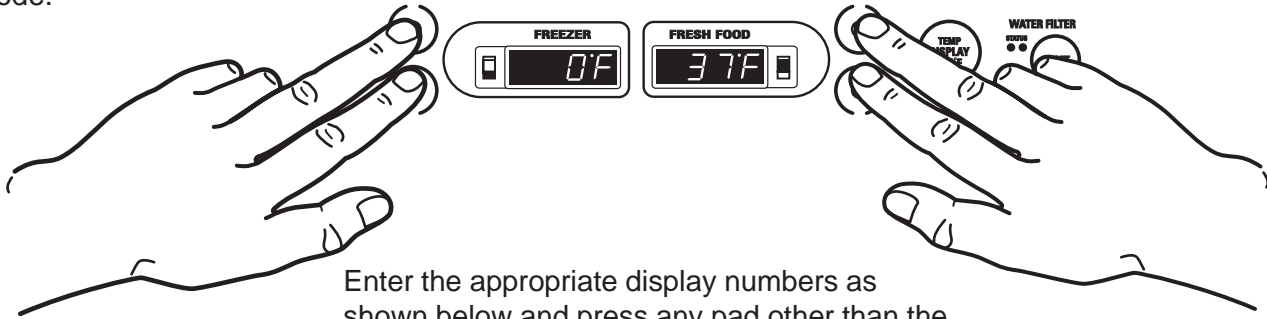
A stainless steel hot gas loop is routed from the machine compartment down the back of the unit into the drain pan and back up to the machine compartment. Hot refrigerant gas flows through the gas loop to assist the evaporation of drain water collected in the drain pan.

Refrigerant Charge

The refrigerant used in this model is type R134a. Refer to the mini-manual or model tag for the exact refrigerant charge quantity.

Diagnostic Mode

Enter the diagnostic mode by pressing both the freezer temperature pads (plus and minus) and the refrigerator temperature pads (plus and minus) simultaneously. All 4 pads must be held for approximately 3 seconds. A blinking "0" in both displays indicate the refrigerator has entered the test mode.



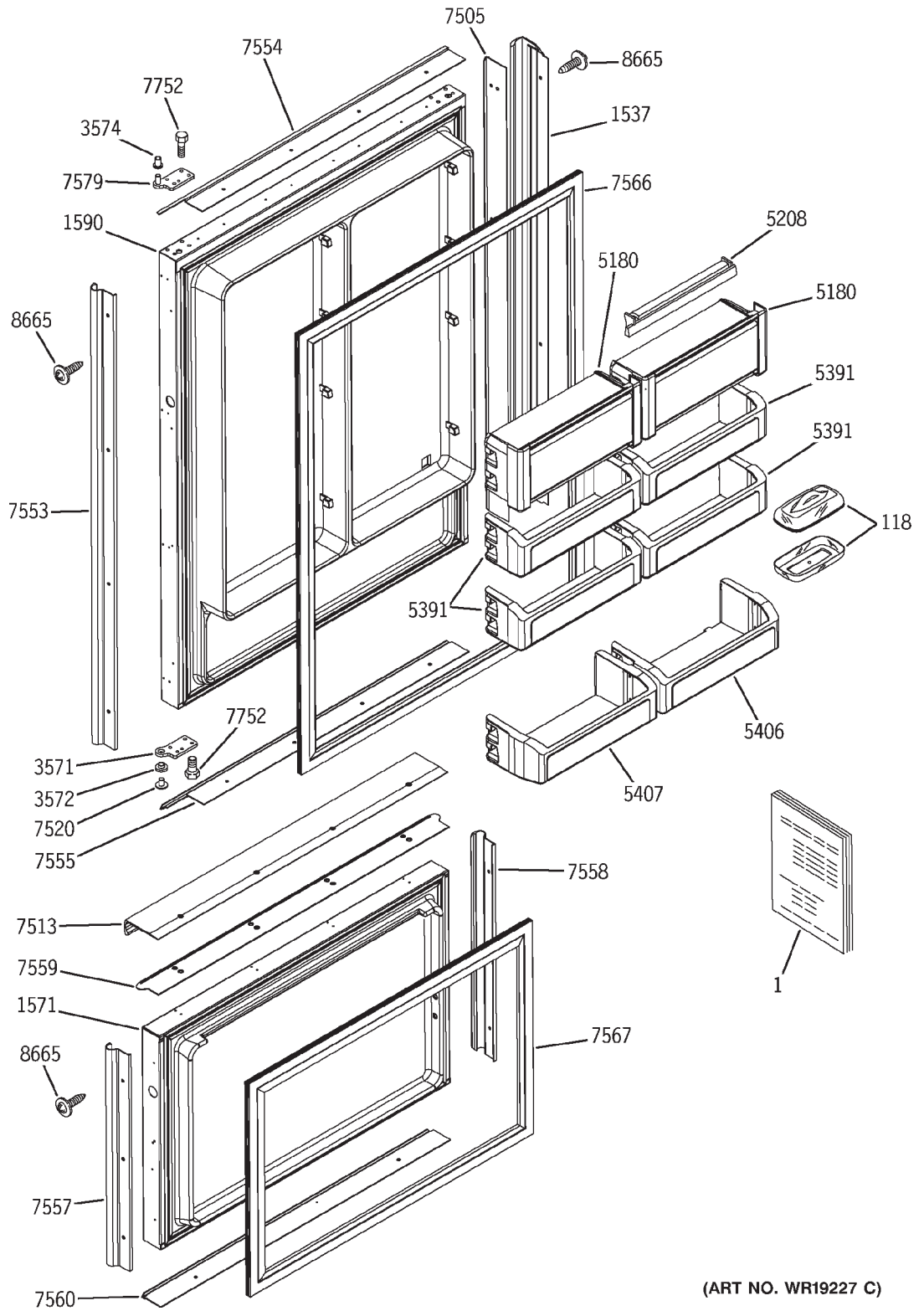
Enter the appropriate display numbers as shown below and press any pad other than the temperature pads to activate that test mode.

Freezer Display	Fresh Food Display	Diagnostics	Results	Comments
0	1	Showroom Mode.	Unit in showroom mode.	FF door must be closed and reopened to start showroom mode.
0	2	Communication check between temperature control and main control board.	"P" on FZ display if OK. "F" on FZ display means problem is found.	
0	3	Communication check between temperature control and dispenser.	"P" on FZ display if OK. "F" on FZ display means problem is found.	
0	4	Communication check between dispenser and main control board.	"P" on FZ display if OK. "F" on FZ display means problem is found.	
0	6	HMI (temperature control) Self Test.	All LED's and numeric segments will illuminate.	When "Express Thaw" pad is pressed "Express Thaw" LED's will turn off. When "Express Chill" pad is pressed "Express Chill" LED's will turn off.
0	7	Control and Sensor System Self Test.	Checks each thermistor and displays "P" for pass and "0" for fail.	See note 1 below.
0	8	Open Duct Door.	Duct door opens for 10 seconds then closes.	
0	9	Dispenser Recess Heater Test.	Turns the dispenser recess heater on for 60 seconds.	
1	0	Dampers Test.	Each damper will open, pause briefly, then close.	
1	2	100% Run Time.	Sealed system on 100% of the time. Times out after 1 hour.	Cannot be entered if refrigerator is set to off.
1	3	Pre-chill Test.	Starts pre-chill mode. Unit returns to normal on its own.	Cannot be entered if refrigerator is set to off.
1	4	Defrost Test.	Toggles the defrost cycle. See note 2 below.	Must press again to turn heaters off. Cannot be entered if refrigerator is set to off. See note 2 below.
1	5	Main Control Reset.	Causes a system reset.	
1	6	Exit Diagnostic Mode.	Causes a temperature control board reset.	
1	7	Degree C/F.	Changes temperature display from F to C.	

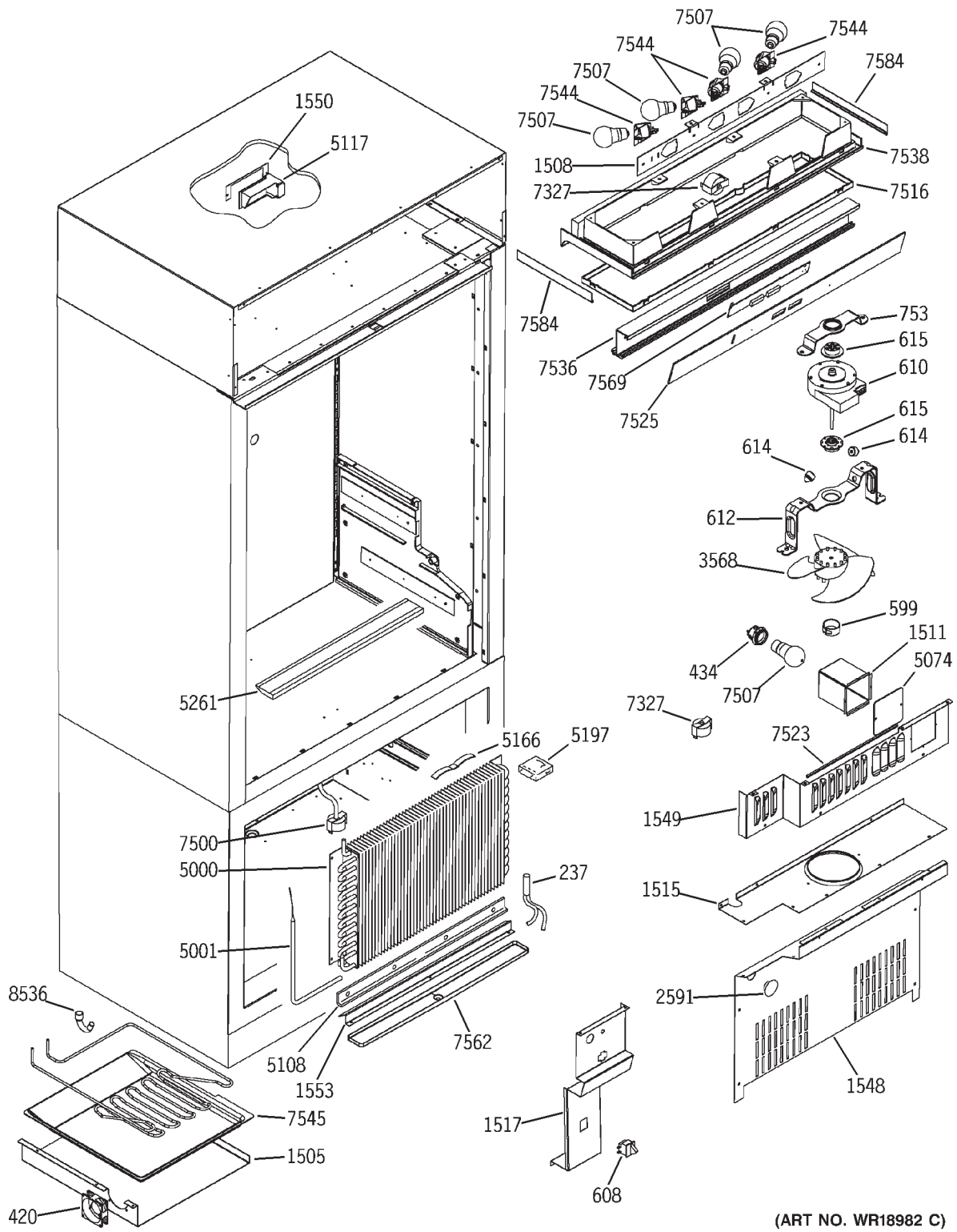
Note 1: Display order is: 1) Fresh Food 1, 2) Fresh Food 2, 3) Freezer, 4) Evaporator, 5) Custom Cool. Thermistor test results are P = pass, 0 = fail, S = short to 5 VDC, B = bad amplifier (replace main control).

Note 2: You must enter the defrost test again to toggle the defrost heater off at the end of the test. The heater will not come on if the evaporator thermistor or overtemperature thermistor is warm.

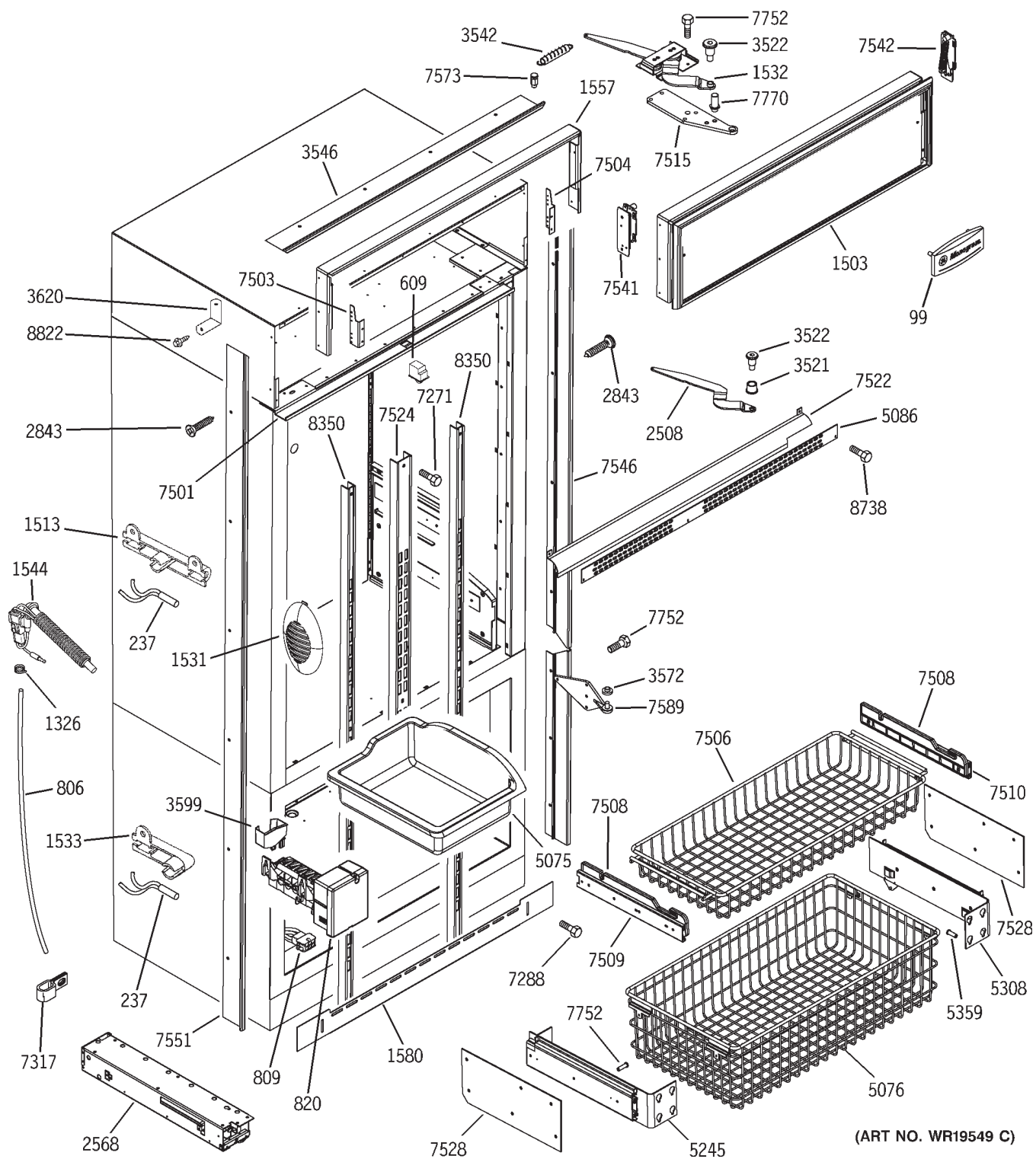
Illustrated Parts

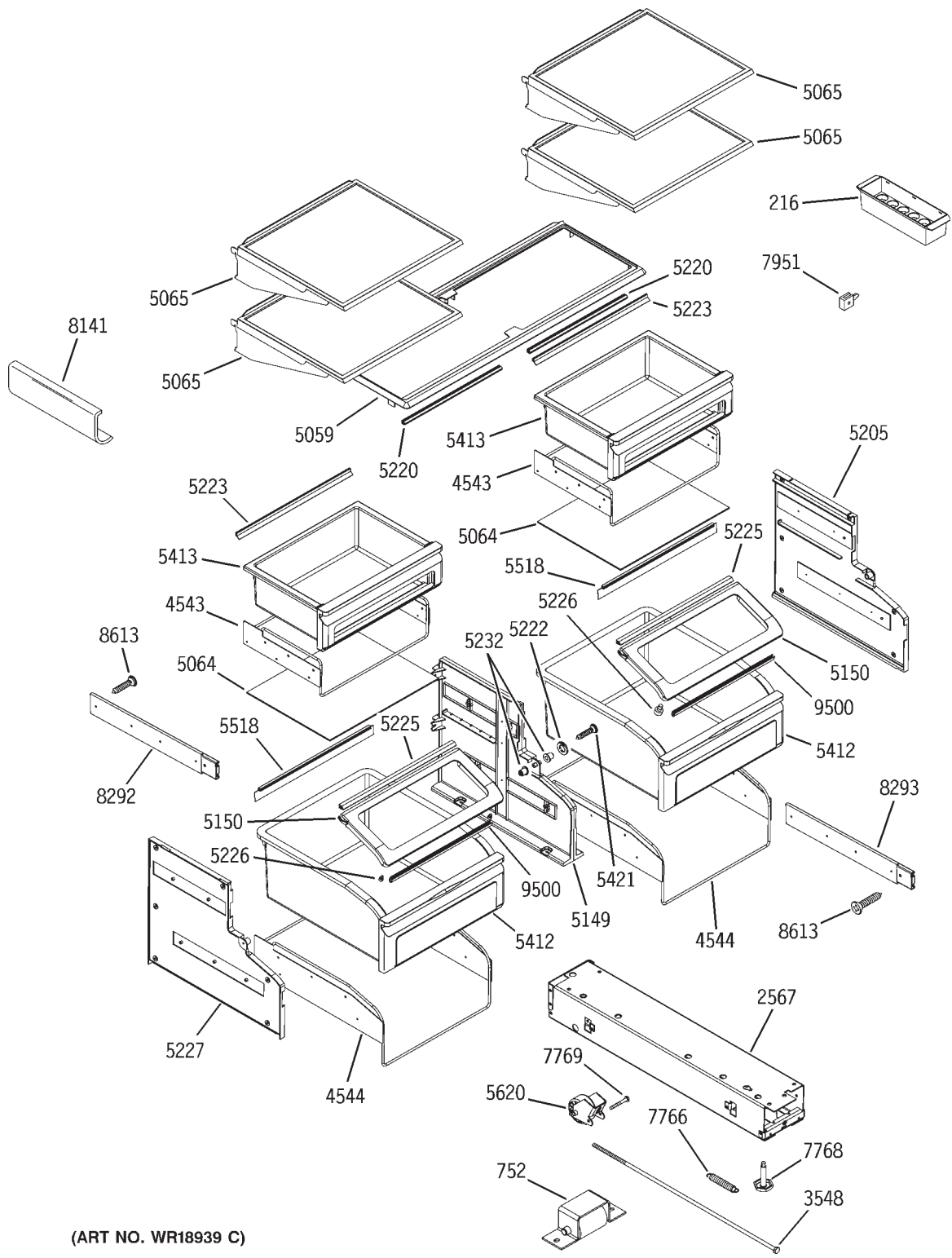


(ART NO. WR19227 C)

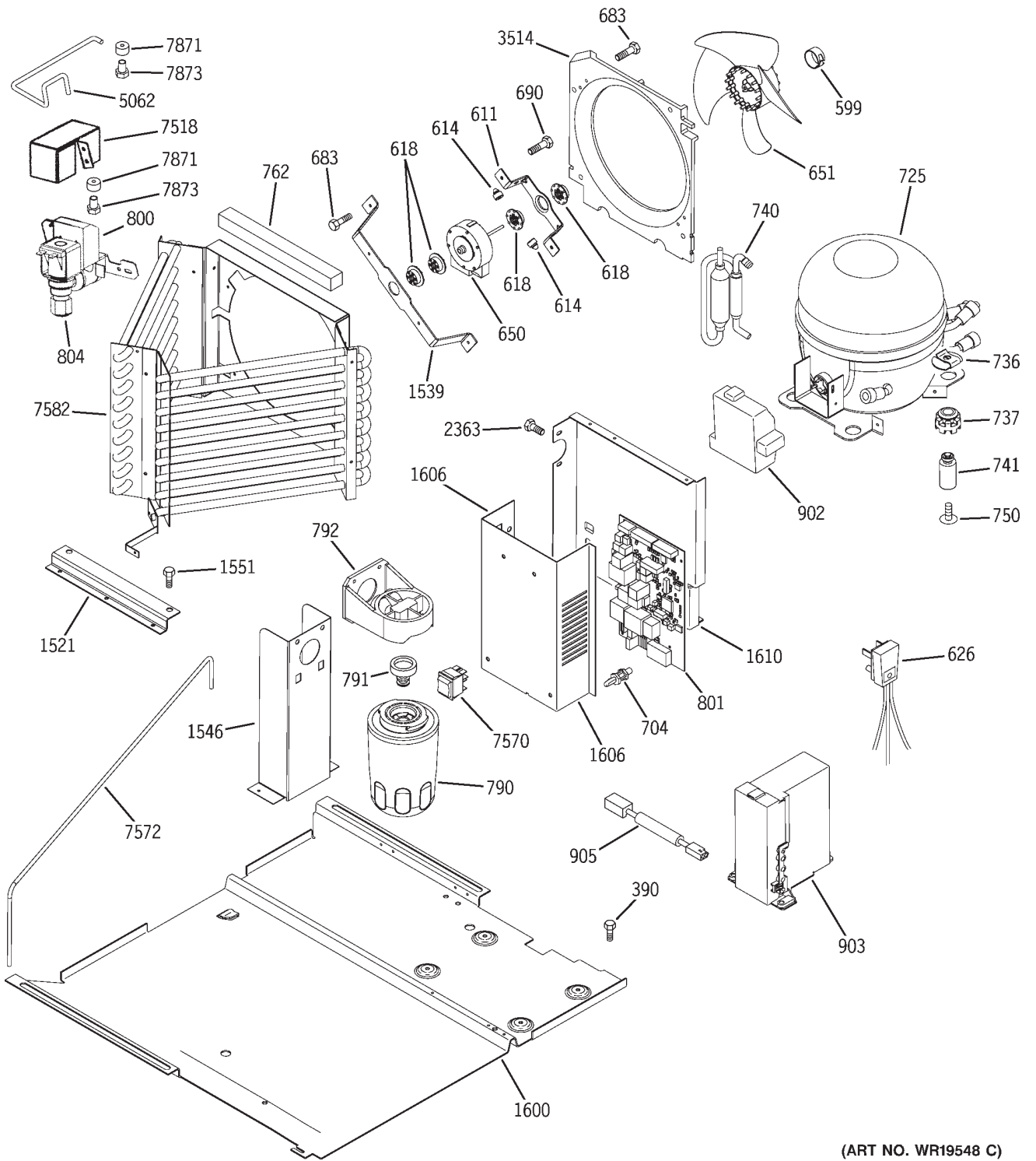


(ART NO. WR18982 C)





(ART NO. WR18939 C)



(ART NO. WR19548 C)

VIEW NUMBER	CATALOG NUMBER	DESCRIPTION	QUANTITY
0001	31-51562	MINI MANUAL DATA SHEET	1
0001	49-60316	OWNER'S MANUAL	1
0001	49-60320	INSTALL INSTRUCTION	1
0099	WB02X10831	MG LOGO LARGE ADHESIVE	1
0118	WR19X0035	DISH BUTTER ASM	1
0200	WR17X11561	SWITCH PLATE LH	1
0216	WR32X1435	BUCKET EGG	1
0237	WR55X10028	SENSOR TEMP	4
0237	WR55X10025	SENSOR TEMP	4
0390	WR01X1826	SCREW	4
0420	WR60X10106	DC FRESH FOOD FAN	1
0434	WR02X10732	SOCKET STRAIGHT LIGHT FZ	1
0599	WR02X10509	RING COMPRESSION FAN	2
0608	WR23X10286	SWITCH LIGHT FZ	1
0609	WR23X10143	SWITCH LIGHT FF	1
0610	WR60X10083	MOTOR DC EVAP FAN	1
0611	WR02X10521	BRACKET COND FAN (MTG)	1
0610	WR60X10043	MOTOR DC EVAP FAN	1
0612	WR02X10653	BRACKET ORIFICE FAN	1
0614	WH01X2722	BUMPER LID	4
0615	WR02X10519	GROMMET EVAP FAN	2
0618	WR02X10520	GROMMET COND FAN	2
0626	WR23X0108	POWER CORD	1
0650	WR60X10053	MOTOR DC COND FAN	1
0651	WR60X10049	BLADE COND FAN ASM	1
0626	WR23X10300	POWER CORD	1
0683	WR01X1716	SCREW, FAN MOTOR	8
0690	WR01X1466	SCR 8-32 T HXW 3/8 S	4
0704	WR01X10301	MAIN BOARD STAND OFFS	4
0725	WR87X10064	COMPRESSOR REPL ASM	1
0736	WR02X8583	CLIP COMP MTNG	4
0690	WZ5X158D	SCR 8-32 T HXW 3/8 S	4
0737	WR02X10099	GROMMET	4
0740	WR86X93	DRIER	1
0741	WR01X1779	STUD MTG COMPR	4
0750	WR01X1786	SCR 10-32 TR T 1/2	4
0752	WR02X8470	FT WHEEL BKT	2
0753	WR02X10548	BRACKET EVAP FAN BTM	1
0762	WR14X0313	FOAM STRIP	2
0790	GWF	FILTER CANISTER	1
0791	WR02X10577	PLUG BYPASS FILTER	1
0792	WR17X10707	FILTER MNT & TUBE ASM	1
0753	WR01X10287	BRACKET EVAP FAN BTM	1
0753	WR02X10764	BRACKET EVAP FAN BTM	1
0800	WR57X10034	VALVE WATER	1
0801	WR55X10433	MOTHER BOARD	1
0804	WR57X0057	NUT SLEEVE 1/4	1
0791	WR02X11705	PLUG BYPASS FILTER	1

VIEW NUMBER	CATALOG NUMBER	DESCRIPTION	QUANTITY
0806	WR17X2107	WATER LINE	1
0809	WR02X11452	AMP J10 CONNECTOR	1
0820	WR30X10012	ELECTRONIC IM-DOM	1
0902	WR02X11262	RELAY COVER	1
0903	WR55X10155	INVERTER ASM	1
0905	WR23X10381	HARNESS INVERTER COMM	1
1326	WR02X3736	CLAMP TUBE	2
1503	WR74X10159	GRILLE PANEL ASM.	1
0806	WR17X11349	WATER LINE	1
1505	WR17X11006	HOUSING DRAIN PAN	1
0809	WR02X11453	AMP J10 CONNECTOR	1
1508	WR02X11023	FIXTURE LIGHTING	1
1511	WR74X10085	BRACKET LIGHT SOCKET FZ	1
0902	WR02X11262	RELAY COVER	1
1513	WR02X10942	FF THERMISTOR HOLDER	1
1515	WR74X10096	PLATE FAN MOTOR MTG.	1
1517	WR74X10086	FILL TUBE COVER	1
1521	WR02X10941	BRKT REFRIG PAN GUIDE	2
1530	WR02X10980	CLOSURE ASM TOP DOOR LH	1
1531	WR71X10325	FF AIR DIFFUSER	2
1533	WR02X10944	FZ THERMISTOR CLIP	1
1537	WR12X10644	HANDLE FF	1
1539	WR02X10945	BRKT COND FAN MOTOR LG	1
1544	WR49X10093	FILL TUBE KIT BM/SXS(D)	1
1546	WR02X10946	FILTER BRACKET	1
1548	WR74X10097	EVAPORATOR COVER 36" BM	1
1549	WR74X10098	EVAPORATOR FAN COVER	1
1550	WR17X11009	BRACKET DAMPER MTG	1
1521	WR02X10941	BRKT REFRIG PAN GUIDE	2
1551	WR01X5645	SCREW IM STRAP, PAN	17
1553	WR17X11010	WATER COLLECTOR	1
1557	WR74X10081	HOOD HINGE MOUNT 36	1
1571	WR78X10497	FZ DRAWER FOAMED ASM	1
1580	WR74X10089	TOE KICK 36 BM	1
1591	WR78X10514	FF DR FOAM ASM LH	1
1600	WR17X11794	PAN SYSTEM	1
1606	WR02X11933	MOTHER BOARD COVER	1
1610	WR17X11795	BAFFLE CONDENSER	1
2363	WR01X5684	6-32 X 3/8 PHIL S/S TYPE	2
2567	WR13X10200	CHANNEL BASE ASM (RH)	1
2568	WR13X10201	CHANNEL BASE ASM (LH)	1
2591	WR02X10154	PLUG BUTTON #413 I/M	1
2843	WR01X1903	SCREW CASE TRIM	12
3514	WR17X11011	HOUSING COND FAN	1
1571	WR78X10889	FZ DRAWER FOAMED ASM	1
3521	WR02X10951	BHNG ARM NYLON FF DR CL	1
3522	WR01X10254	BOLT SHOULDER FF DOOR	1
1591	WR78X10887	FF DR FOAM ASM LH	1

VIEW NUMBER	CATALOG NUMBER	DESCRIPTION	QUANTITY
3542	WR01X10255	SPRING FF DOOR CLOSURE	1
3546	WR17X11354	CASE TRIM TOP 36	1
3548	WR01X10256	BASE SHAFT	2
3568	WR60X10050	BLADE FAN MOTOR	1
3571	WR13X10202	HINGE DOOR BOTTOM	1
3572	WR02X10953	BUSHING HINGE BOTTOM	1
3574	WR02X10954	BUSHING HINGE TOP	1
3599	WR29X10021	CUP FILL IM	1
3620	WR02X11335	TRIM CORNER KEY	2
4543	WR02X10149	PAN SUPPORT SNACK PAN	2
4544	WR02X10150	PAN SUPPORT ASM VEG PAN	2
5000	WR85X10007	EVAP COIL	1
5001	WR51X10015	DEFROST HEATER 36BM	1
5059	WR32X10072	SNACK PAN COVER	1
5062	WR02X10141	TUBE - WATER VALVE INLET	1
5064	WR32X10073	VEG PAN COVER	2
5065	WR32X10074	ENCAP SHELF ASSY	4
5074	WR17X10347	LIGHT SHIELD FZ	1
5075	WR32X10075	ICE BUCKET	1
5076	WR21X10007	FZ BASKET LG	1
5086	WR02X10142	VENT GUARD 36BM	1
3599	WR29X10046	CUP FILL IM	1
5108	WR17X10349	DRAIN BAFFLE	1
5117	WR09X10065	DAMPER MOTORIZED	1
5149	WR72X10011	DIVIDER ASM VEG. PANS	1
5150	WR32X10076	SHOWCASE LID ASM.	2
5166	WR01X10045	WIRE RETAINER EVAP HEATE	2
5180	WR71X10142	ASM DAIRY COMP	2
5197	WR02X10145	BAFFLE EVAP LH	1
5205	WR72X10012	SUPPORT, SLIDE RH	1
5208	WR22X10007	SEAL DAIRY ASM	1
5220	WB07X10461	SEAL, FRONT SNACK PAN	2
5222	WR01X10046	WASHER SHOWCASE PIVOT	2
5223	WR14X10011	SEAL, RR SNACK PAN	2
5225	WR14X10012	SEAL, FRT VEG PAN GLASS	2
5226	WR01X10047	BUTTON GLIDE	4
5227	WR72X10013	SUPPORT, SLIDE LH	1
5232	WR01X10048	BUSHING, SHOWCASE PIVOT	2
5117	WR09X10050	DAMPER MOTORIZED	1
5245	WR72X10084	FZ SLIDE/SUPPORT ASM LH	1
5261	WR49X10015	MULLION BLOCK KIT BTM.MT	1
5308	WR72X10014	FZ SLIDE/SUPPORT ASSY RH	1
5359	WR01X10049	SCREW, TRUSS HD 1/4-20 X	8
5391	WR71X10138	BIN, FF DOOR W/WINDOW	4
5406	WR71X10139	BIN, DOOR FF DEEP RH	1
5407	WR71X10140	BIN, DOOR FF DEEP LH	1
5412	WR32X10077	VEG PAN ASM	2
5413	WR32X10078	SNACK PAN ASM	2

VIEW NUMBER	CATALOG NUMBER	DESCRIPTION	QUANTITY
5421	WR01X10050	SCREW, #8 18 X 7/8	2
5518	WR14X10014	SEAL REAR VEG PAN GLASS	2
5620	WR02X8377	WHEEL ASM REAR	2
7271	WR01X10051	10-24*7/8 PHIL P-HD TAP	9
7288	WR01X1831	SCREW GRILLE MTG.	2
7317	WR17X3046	1/4 CLAMP NYLON	4
7327	WR50X10003	THERMOSTAT	2
5245	WR72X10124	FZ SLIDE/SUPPORT ASM LH	1
7500	WR50X10030	EVAP. THERMODISC	1
7503	WR02X10956	BRACKET GRILLE LH	1
5308	WR72X10125	FZ SLIDE/SUPPORT ASSY RH	1
7504	WR02X10957	BRACKET GRILLE RH	1
7505	WR12X10492	DR HNDL TRIM FF LH/RH	1
7506	WR21X10043	BASKET UPPER FRZ	1
7507	40A15	LAMP 40W	4
7508	WR72X10080	SUPPORT BASKET UPPER FZ	2
7509	WR72X10081	SLIDE LINER UPPER FZ	2
7510	WR72X10082	SLIDE BASKET UPPER FZ	2
7513	WR17X11560	FF DOOR BTM- RH HINGE	1
7515	WR13X10203	HINGE UPPER FF CASE	1
7516	WR17X11014	LIGHT SHIELD FF	1
7518	WR02X10958	WATER VALVE BRKT	1
7288	WR01X5686	SCREW GRILLE MTG.	2
7520	WR01X10257	PIN BTM. LOWER HINGE	1
7523	WR38X10247	EDGE TRIM FZ REAR DUCT	1
7524	WR17X11097	SHELF TRACK CENTER	1
7525	WR17X11036	CTRL. PANEL TEMP. CTRL.	1
7528	WR72X10085	FREEZER SLIDE SHIM	2
7533	WR17X11180	CASE TRIM FF SIDE	1
7534	WR17X11558	FF DOOR TRIM RH HINGE	1
7535	WR17X11559	FF DOOR TRIM TOP- RH HIN	1
7536	WR74X10082	HOUSING CONTROL	1
7538	WR17X11015	TRIM LIGHTING FF	1
7541	WR13X10204	HINGE ASM GRILLE LEFT	1
7542	WR13X10205	HINGE ASM GRILLE RIGHT	1
7544	WR02X11024	SOCKET LAMP FF	4
7545	WR17X11016	DRAIN PAN	1
7546	WR17X11562	RH HINGE SIDE TRIM	1
7557	WR17X11553	FZ DOOR TRIM RH	1
7558	WR17X11554	FZ DOOR TRIM LH	1
7559	WR17X11555	FZ DOOR HANDLE TRIM	1
7560	WR17X11556	FZ DOOR TRIM BOTTOM	1
7561	WR12X10642	FZ DOOR HANDLE	1
7562	WR17X11098	EVAPORATOR TROUGH	1
7524	WR17X11027	SHELF TRACK CENTER	1
7566	WR24X10147	GASKET FF DOOR BM	1
7567	WR24X10148	GASKET FZ DOOR BM	1
7569	WR55X10098	BOARD ASM TEMP CONTROL	1

VIEW NUMBER	CATALOG NUMBER	DESCRIPTION	QUANTITY
7570	WR23X10220	MASTER LIGHT SWITCH	1
7572	WR86X10016	CAP/SUCTION TUBE ASM	1
7573	WR01X10258	STUD SPRING FF DOOR	1
7580	WR13X10210	HINGE DOOR TOP FF LH	1
7581	WR02X11612	EYEBROW LH	1
7582	WR84X10030	CONDENSER MONOGRAM BM	2
7584	WR38X10255	GASKET FF LIGHT TRIM	2
7590	WR13X10211	HINGE CENTER LH	1
7595	WR02X10979	LINK ACTUATOR LH	1
7752	WR01X1845	SCREW 12-24TT OHT .900	12
7766	WR02X8799	SPRING WHEEL #LE022C4	2
7768	WR02X10479	LEVELING LEG	2
7769	WR02X8800	AXLE REAR	2
7770	WR13X0637	STOP DOOR	1
7871	WR57X10016	COMPRESSION NUT 1/4	1
7873	WR57X10017	BRASS FERRULE	1
7951	WR02X10151	TWIST SUPPORT	4
8141	WR17X4141	WINE RACK	1
8292	WR72X0269	SLIDE FULL EXT10	4
7569	WR55X10159	BOARD ASM TEMP CONTROL	1
8293	WR72X0270	SLIDE FULL EXT12	4
7570	WR49X10070	MASTER LIGHT SWITCH	1
8350	WR17X4140	TRACK SHELF FF	2
8536	WR17X10675	DRAIN TRAP AUX. COND.	1
8613	WR01X10052	#8-18AB X 1/2 PHILS TRUS	19
8665	WR01X2130	TRIM SCREW	24
8738	WR01X10053	#8-18 TYPE AB X 3/8 BLK	2
8822	WR01X10326	#6-32 X 3/16 MACH SCR.	4
9500	WR14X10040	SEAL FRONT SHOWCASE LID	2

WARRANTY

YOUR MONOGRAM REFRIGERATOR WARRANTY

Staple sales slip or cancelled check here. Proof of original purchase date is needed to obtain service under warranty.

WHAT IS COVERED

From the Date of the Original Purchase

FULL TWO-YEAR WARRANTY

For two years from date of original purchase, we will provide, free of charge, parts and service labor in your home to repair or replace *any part of the refrigerator* that fails because of a manufacturing defect.

FULL FIVE-YEAR WARRANTY

For five years from date of original purchase, we will provide, free of charge, parts and service labor in your home to repair or replace *any part of the sealed refrigerating system* (the compressor, condenser, evaporator and all connecting tubing) that fails because of a manufacturing defect.

LIMITED ADDITIONAL SEVEN-YEAR WARRANTY ON THE SEALED SYSTEM

For the sixth through twelfth year from the date of the original purchase, we will provide, free of charge, replacement parts for *any part of the sealed refrigerating system* (the compressor, condenser, evaporator and all connecting tubing) that fails because of a manufacturing defect. You pay for the service trip to your home and for service labor charges.

LIMITED LIFETIME WARRANTY ON ACCURIDE® SLIDES

From the date of the original purchase we will provide, free of charge, replacement parts for *any part of the Accuride Slides* that fails because of a manufacturing defect. You pay for the service trip to your home and for service labor charges.

.....
This warranty is extended to the original purchaser and any succeeding owner for products purchased for ordinary home use in the 48 mainland states, Hawaii and Washington, D.C. In Alaska the warranty is the same except that it is LIMITED because you must pay to ship the product to the service shop or for the service technician's travel costs to your home.

All warranty service will be provided by our Factory Service Centers or by our authorized Customer Care® servicers during normal working hours.

Should your appliance need service, during warranty period or beyond, in the U.S.A. call 800.444.1845. In Canada: 888.880.3030.

WHAT IS NOT COVERED

- Service trips to your home to teach you how to use the product.
- Replacement of house fuses or resetting of circuit breakers.
- Damage to the product caused by accident, fire, floods or acts of God.
- Failure of the product if it is used for other than its intended purpose or used commercially.
- Improper installation.
- If you have an installation problem, contact your dealer or installer. You are responsible for providing adequate electrical, plumbing and other connecting facilities.
- Loss of food due to spoilage.
- Incidental or consequential damage caused by possible defects with this appliance.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are in your state, consult your local or state consumer affairs office or your state's Attorney General.

Warrantor: General Electric Company, Louisville, KY 40225