

# BPO Energy Star ® Refrigerators



imagination at work

## **IMPORTANT SAFETY NOTICE**

The information in this presentation is intended for use by individuals possessing adequate backgrounds of electrical, electronic, & mechanical experience. Any attempt to repair a major appliance may result in personal injury & 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 & properly fastened.

**GE Factory Service Employees are required to use safety glasses with side shields, cut resistant (Dyneema®) gloves & steel toe shoes for all repairs.**



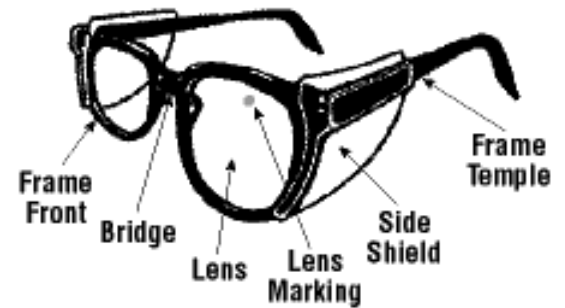
**Dyneema® Cut Resistant Glove**



**Steel Toe Shoes**



**Plano Safety Glasses**



**Prescription Safety Glasses**

**Safety Glasses must be compliant with ANSI Z87.1-2003**

# ENERGY STAR®

GSH22JFXL

GSH22JSXL

GSF25IGXL

GSH25ISXL

GSH25JFXL

GSH25JSXL

GSL22JFXL

GSL25IGXL

GSL25JFXL

## GE ENERGY STAR® Qualified Refrigerators

- GE refrigerators that have earned the ENERGY STAR are 30% more energy efficient than refrigerators that do not qualify for the ENERGY STAR, and 40% more energy efficient than conventional refrigerators sold in 2001.
- All ENERGY STAR qualified GE refrigerators sold in 2007 were designed to avoid the emissions of more than 944,000 metric tons of carbon dioxide over the course of their lifetimes compared to an equal number of conventional refrigerators.
- A single ENERGY STAR qualified GE refrigerator is designed to avoid the emissions of more than 2200 lbs of carbon dioxide over the course of its lifetime compared to a conventional refrigerator over the same 13-year period; this is equivalent to the carbon dioxide absorbed in one year by 1/4 acre of trees in a southeastern US forest.
- In some areas, the purchase of an ENERGY STAR qualified refrigerator may make consumers eligible for utility rebates.

# ENERGY STAR® Product Changes

- New Main Board
- New Compressor Inverter
- Electric Air Damper Control
- New Damper Air Flow Control
- New Door Cam Riser

# ENERGY STAR® Product Changes

- New Main Board



Always refer to the label on the back of the cabinet or the part list.

Currently this board is specific to these E-Star models only.

**ATTENTION  
USE ONLY MAIN BOARD  
SPECIFIED FOR  
VARIABLE SPEED COMPRESSOR  
REPLACEMENT PART NUMBER  
WR55X10968**

These units use a variable speed compressor, single freezer evaporator and an electric FF damper control.

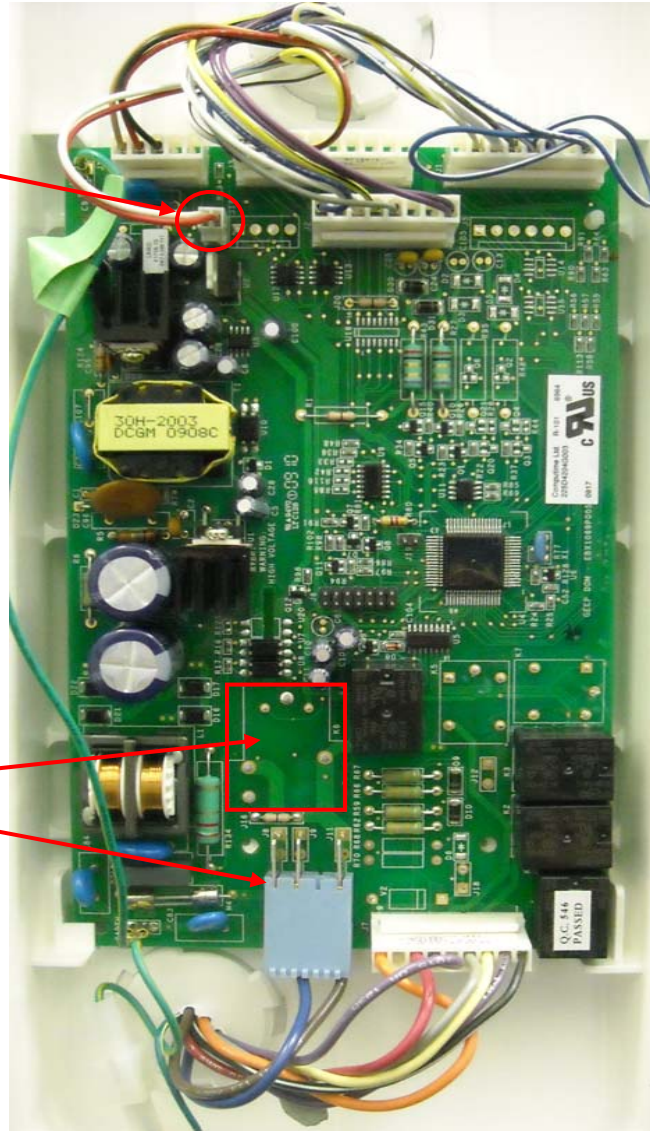


# • New Main Board

J15 connector for inverter communication. This connector sends the 5-6 vdc control voltage to the compressor inverter board.

Do **NOT** install another variable speed or dual evaporator replacement board, the software is not compatible.

No compressor relay or compressor output wire.



# Correct Board Installed

Unit knows it is a variable speed with damper control

The screenshot shows the 'Field Inspector V 2.30' software interface. At the top, there are tabs for 'Status Screen', 'Service Diagnostics', 'Setup Screen', and 'About'. The main area is divided into several sections:

- I/O STATUS:** A list of components with their status. 'Compressor' is 'High' and '3-Way Valve' is 'N/A'. Under 'DOORS', 'Fresh Food' is 'Open'. Under 'FANS', 'Fresh Food' is 'High'. Under 'THERMISTORS', 'FF1' is 'Out of range', 'FF2' is '72.17 F', 'FF Average' is '72.24 F', 'FZ' is '71.78 F', 'FZ Evaporator' is '71.82 F', and 'Custom Cool' is 'Out of range'.
- Test Cable Status:** A dropdown menu showing 'Connected'.
- Model:** A dropdown menu showing 'Variable Speed' and 'Damper'. 'Variable Speed' is circled in red.
- Speed [RPM]:** A dropdown menu showing 'Freezer Fan' with a value of '2828'.
- Cycle Time [Hours : Minutes]:** Three dropdown menus showing 'Compressor On' (0 : 0), 'Compressor Off' (0 : 45), and 'Adaptive Defrost Timer' (0 : 0).
- Compare Target Temperature with THERMISTOR Readings:** A table with columns for 'Freezer' and 'Fresh Food'. 'Customer Setting' shows 0 for Freezer and 37 for Fresh Food. 'Target Temperature' shows 2 for Freezer and 37 for Fresh Food. These values are circled in red.
- Current Operation Mode:** A table of operation modes: 'FF (Dual Evap Only)' (Normal Run), 'Freezer' (Normal Run), 'Last Freezer Defrost' (Abnormal), 'Turbo Cool' (Off), 'Quick Ice' (Off), and 'MB Part Number' (225D4204G3, circled in red).
- Factory Code:** A dropdown menu showing '5'.
- Memory Check:** A dropdown menu showing 'Pass'.
- Buttons:** 'Set Model', 'Exit Program', 'Save Data To File', 'Toggle Defrost', and 'Reset Control Board'.



# Incorrect Board Installed

Unit thinks it is a single speed dual evaporator model using a three way valve. Note the run time and the fresh food temperatures. The refrigerator cycled off at a fresh food temperature of 14 degrees.

**Field Inspector V 2.30**

Status Screen | Service Diagnostics | Setup Screen | About

**I/O STATUS**

-----COMPONENTS-----  
Defrost Heater: Off  
Compressor: On  
3-Way Valve: FZ Open ←  
Cubed Ice Relay: Off  
Auger Relay: Off  
Water Relay: Off  
Custom Cool Heater: Off  
AC Mullion Heater: Off  
DC Mullion Heater: Off  
DD Mullion heater: Off  
-----DOORS-----  
Freezer : Closed  
Fresh Food : Closed  
-----DAMPERS-----  
Fresh Food : N/A ← Open  
Double : Closed  
Single : Closed  
-----FANS-----  
Fresh Food : High  
Condenser : Low  
Custom Cool : Off  
Freezer : Low ←  
QuickFreeze : Off  
-----THERMISTORS-----  
FF1: Out of range  
FF2: 15.47 F  
FF Average: 15.55 F  
FZ: -3.02 F  
FZ Evaporator: -6.55 F  
Custom Cool: Out of range

**Test Cable Status**  
Connected

**Model**  
Compressor: Single Speed  
Fresh Food Cooling Method: 3-Way Valve

**Speed [RPM]**  
Freezer Fan: 2746

**Cycle Time[Hours : Minutes]**  
Compressor On: 3 : 26  
Compressor Off: 1 : 34  
Adaptive Defrost Timer: 3 : 27

**Compare Target Temperature with THERMISTOR Readings**

|                    | Freezer | Fresh Food |
|--------------------|---------|------------|
| Customer Setting   | 0       | 37         |
| Target Temperature | -2      | 38         |

**Current Operation Mode**

FF (Dual Evap Only): Thermistor Fail Defrost  
Freezer: Normal Run  
Last Freezer Defrost: Abnormal  
Turbo Cool: Off  
Quick Ice: Off  
MB Part Number: 200D4864G37  
Factory Code: 19  
Memory Check: Pass

**Buttons:** Get Status, Hold Status, Set Model, Exit Program, Save Data To File, Toggle Defrost, Reset Control Board

**Status Data will refresh every minute unless held**

**Needless to say, this will be an immediate call back!**

# ENERGY STAR® Product Changes

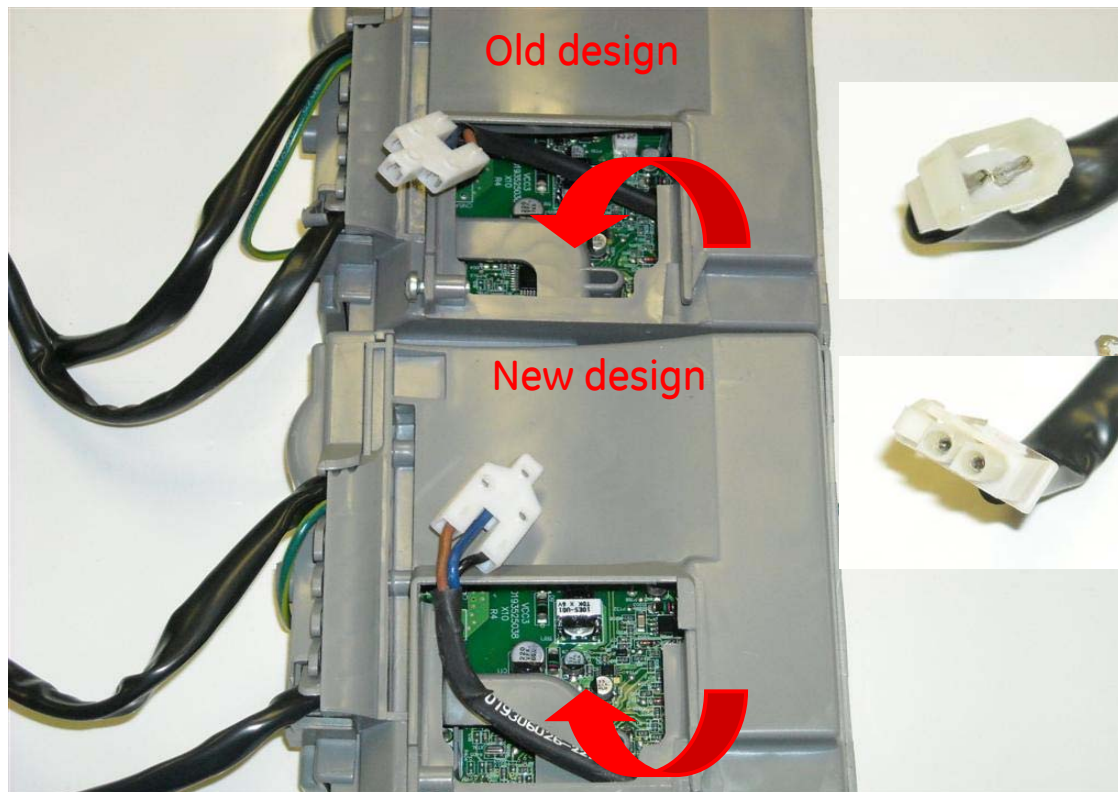
- New Compressor Inverter

WR55X10979



# New Compressor Inverter

The wire routing inside the new inverter has been changed to minimize the possibility of the wire cable damaging components on the pc board. The inverter also incorporates a new DC connection plug. It is important to make sure the internal cable is routed properly upon replacement.

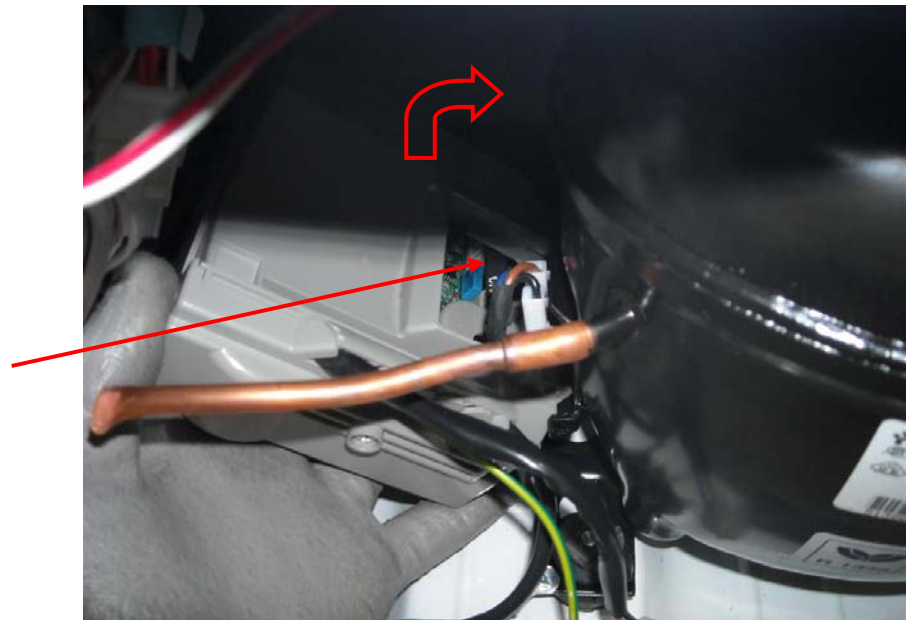


# New Compressor Inverter



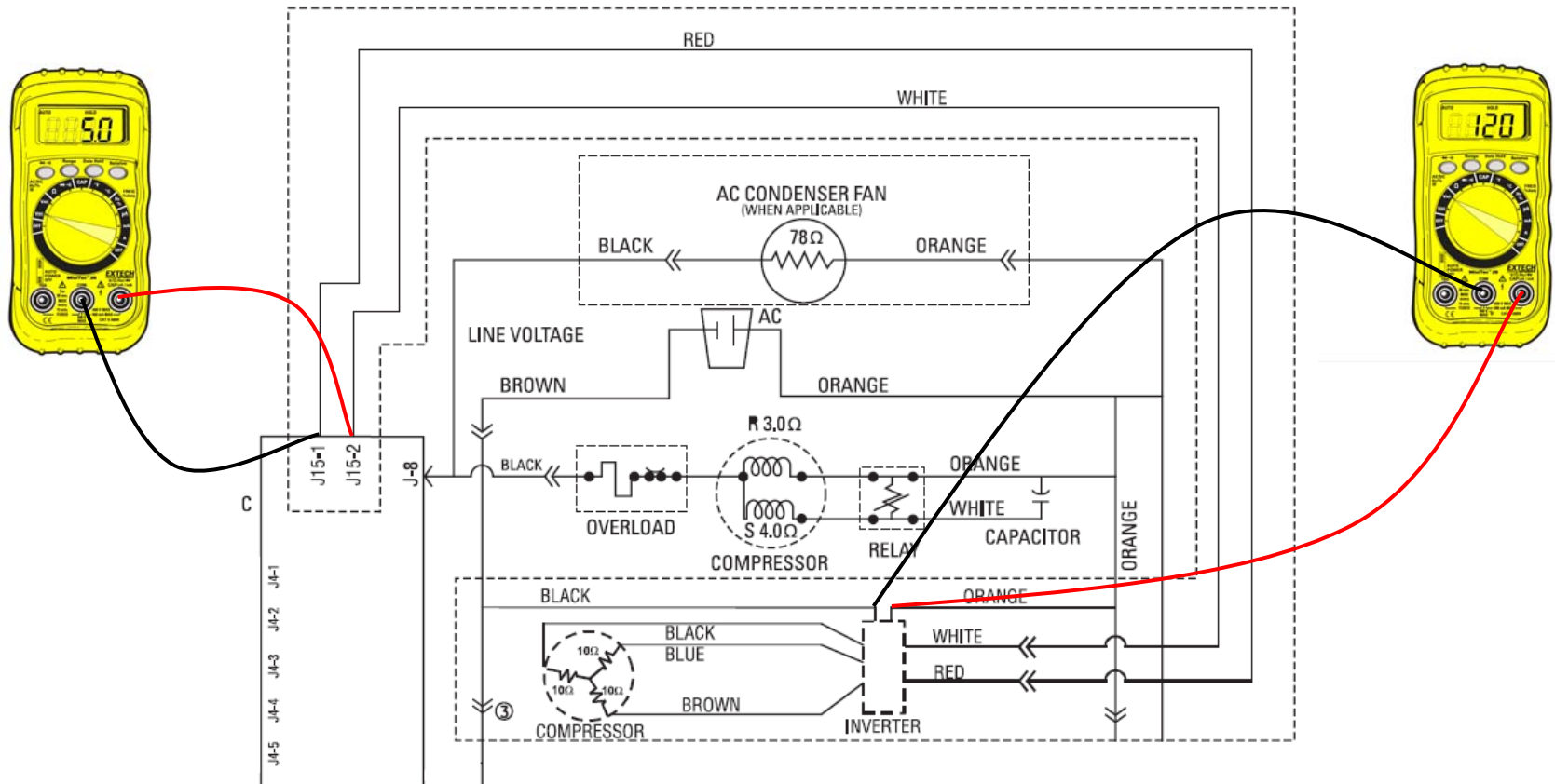
When replacing the inverter; set the inverter down beside the compressor and connect the inverter plug to the compressor.

While installing the inverter make sure the internal cable remains in the bottom of the enclosure so it does not touch the pc board.



# New Compressor Inverter

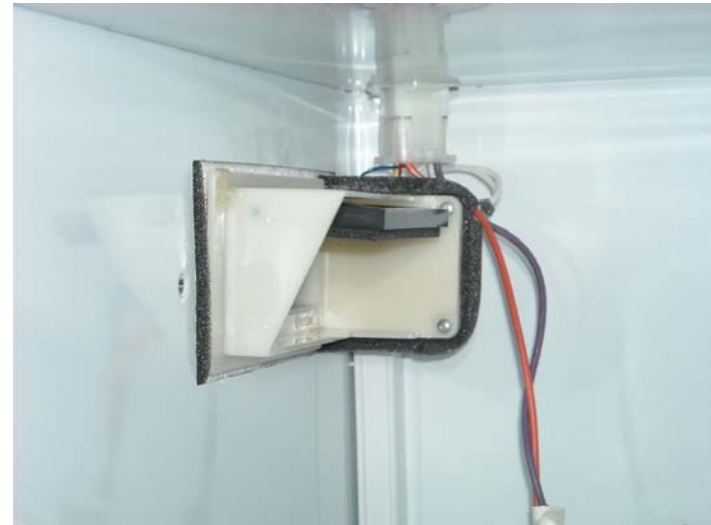
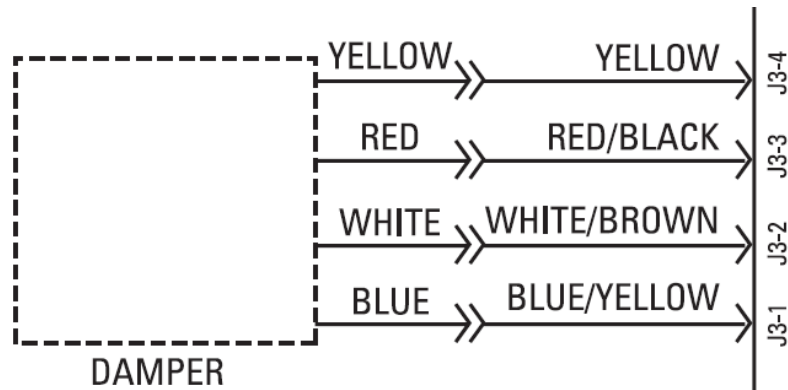
Diagnosis of the inverter circuit is unchanged. For no compressor operation, check for 5 to 6 volts DC from the J15 1-2 red/white and the 120 volts AC to Black to Orange at the inverter.



# ENERGY STAR® Product Changes

- Electric Air Damper Control

The E-Star units use the electric damper control instead of the atmospheric door. This is the same damper control we have used in the past.



Resistance for each stepper motor is approximately 400 ohms read at the J3 pins 1-2 and 3-4.

6 volts DC can be read on these wires individually by connecting to the J2 pin 3 white wire "fans common" while the damper is operating.



# ENERGY STAR® Product Changes

- New Damper Air Flow Control

Due to the high efficiency of the sealed system; air flow between the compartments is restricted with a foam insert in the air supply duct. This insert is installed before the cabinet is foamed in. There are two different inserts depending on the cubic foot size of the cabinet. Looking in through the freezer side you will see a “2” for 22 cuft or a “5” for 25 cuft models.



If you have issues with uneven temperatures check for this insert. If it is missing or damaged, order kit number, [WR49X10235](#).

# • New Damper Air Flow Control

GE Consumer & Industrial

## Service Instructions

REFRIGERATORS  
AIR SUPPLY DUCT – SxS MODELS

WR49X10235

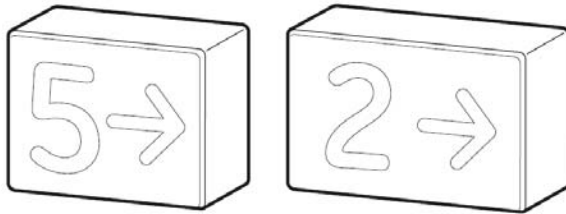
### AIR SUPPLY DUCT INSERT REPLACEMENT

The Air Supply Duct Insert has been damaged or is placed incorrectly, causing the fresh food compartment to be too cold and the freezer compartment to be too warm.

You will need to replace the insert with one of the included foam inserts.

For 22-cubic-foot models, use insert embossed with a 2 and an arrow.

For 25-cubic-foot models, use insert embossed with a 5 and an arrow.

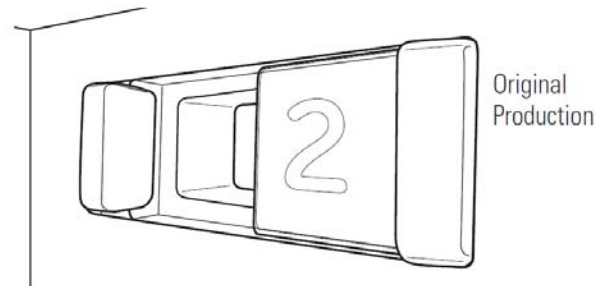


#### NOTE:

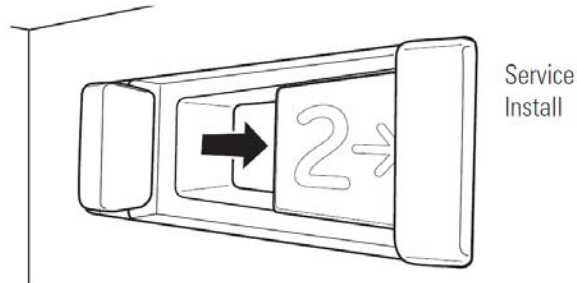
- Service foam inserts are smaller in size than production foam inserts.
- Production foam inserts are larger than the freezer liner hole. They may need to be broken to be removed.
- Production foam inserts cannot be reused once removed.
- Service foam inserts will fit tightly into the hole in the foam duct. It is an interference fit.

#### INSTALL THE INSERT

- Remove the ice shelf and bucket from the freezer compartment to access the air supply duct. The air supply duct is between the freezer and fresh food compartments.
- Remove the foam insert from the air duct.



- Insert the new foam insert into the air duct with the embossed number facing the freezer. Push the insert toward the front of the freezer following the direction of the arrow.

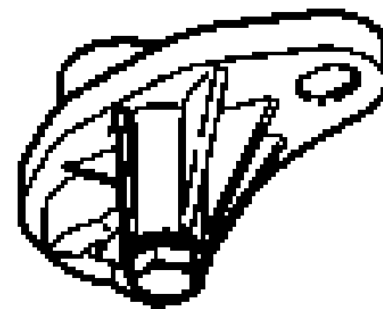


- Replace the ice dispenser.

# ENERGY STAR® Product Changes

- New Door Closure

The door closure/stop has been re-designed to be a one piece part. The bottom hinge and bottom closure cam has not been changed. The new part is secured to the door panel with a single 5/16" screw. The screw in the center of the closure serves no purpose other than to add strength to the door stop.



# • New Door Closure Kit

If you have issues with the doors not closing properly, check the following.

- Is the cabinet properly leveled with some tilt to the rear.
- Is there any scrubbing or deformity of the door gasket.
- Is there sufficient food weight in the door bins.
- Is the gasket lubricated along the hinge side.

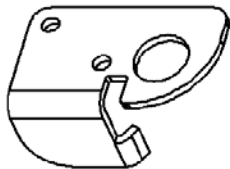
If none of the above issues are found, order the following kit which will retrofit the unit to the previous design closure mechanism.

## INSTRUCTIONS FOR CHANGING OUT FRESH FOOD AND FREEZER DOOR STOP MECHANISMS

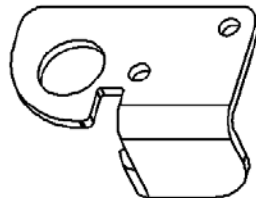
# WR49X10236

### PARTS LIST:

FRESH FOOD DOOR STOP BRACKET (1)



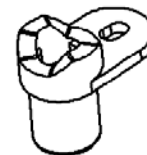
FREEZER DOOR STOP BRACKET (1)



FRESH FOOD CAM & THIMBLE (1)



FREEZER CAM & THIMBLE (1)





GE Appliances

# Service Bulletin

General Electric Company  
Appliance Park, Louisville, KY 40225

## PROBLEM

Side-By-Side refrigerators produced in Bloomington (metal liners) may experience doors hard to close, or won't stay closed.

## MODELS AFFECTED

Side-By-Side refrigerators produced in Bloomington (metal liners) between 02/09 and 06/09.

## REPAIR/RESOLUTION

Steps to address this condition,

1. Lubricate the door gaskets and all hinge pins.
2. Raise the front of cabinet using wheel adjustments located behind the base grille.
3. Inspect the door gasket to determine if the gasket is collapsed. If gasket is collapsed, replace the gasket.
4. Inspect the door stop located at the bottom hinge area. If the door stop is plastic, replace both Freezer and Fresh Food door stops using kit number WR49X10236.