GE Appliances

Technical Service Guide

April 2016

2014 - 2015 GE, Adora, Café & Profile™ French Door Refrigerators

CFE28TSH	GFE26GSH
CFE28USH	GFE28HGH
CYE22TSH	GFE28HMH
CYE22USH	GFE28HSH
DFE28JGH	GYE22KMH
DFE28JMH	GYE22KSH
DFE28JSH	PFE28RSH
GFE26GGH	PFH28PSH
GFE26GMH	PYE22PSH

GE Appliances
Louisville, Kentucky 40225

31-9250

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 Appliances

Technical Service Guide

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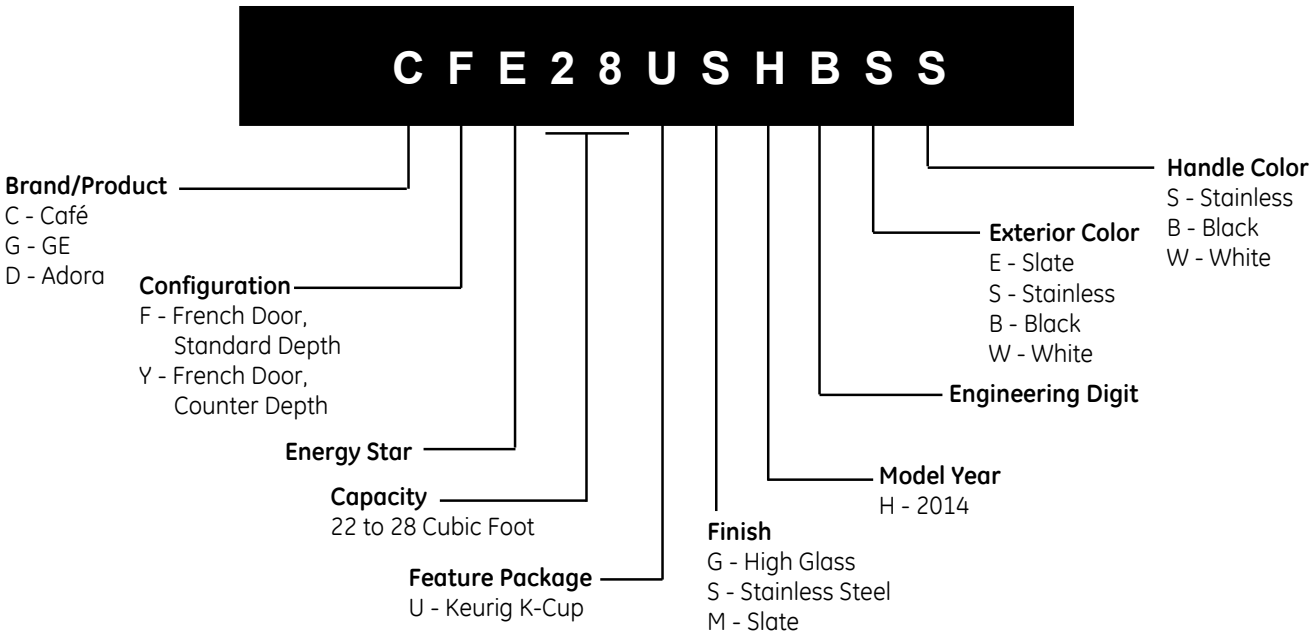
Introduction

The Cafe, Profile, GE and Adora French Door Refrigerators have the following features:

- Available in 22-28 cubic foot capacity
- ENERGY STAR® qualified
- Made In America
- Integrated Dispenser with Crushed Ice, Chilled Water, Hot Water and Actual Temperature Display
- Keurig ® K-CUP® Brewing System available on Cafe Models
- Advanced filtration system — GE's exclusive filtration system removes harmful pharmaceuticals from water and ice.
- Seamless stainless steel water/ice dispenser with pullout tray
- Hands-free Auto Fill — Allows you to walk away while the dispenser automatically fills most containers with filtered water.
- Space-saving icemaker in the door and an additional icemaker on some models
- Stainless steel doors with hidden hinges — Offer a sleek finish with the clean look of concealed hinges.
- An articulating door mullion attached to the left-side door provides a movable center mullion that maximizes access to the fresh food compartment.
- Secure-Close Door Systems — Securely pulls the doors and drawers shut.
- TwinChill™ with Dual Evaporators — Uses 2 evaporators to help maintain temperature and humidity levels to keep foods fresh.
- A full-width deli pan with 3 electronically controlled temperature settings and Colored LED lighting.
- External air thermistor and Humidity Sensor changes the control setting based on ambient condition to keep the fresh food and freezer at the correct temperature.
- TurboCool™ — Rapidly cools the refrigerator compartment in order to more quickly cool foods.
- TurboFreeze™ — Rapidly cools the freezer compartment in order to more quickly freeze foods.
- LED Pin-Point Lighting — Casts a clean, beautiful light throughout the fresh food and freezer.
- Available in Slate, White, Black finish or stainless steel.
- Drop-down tray — Allows for extra door storage when you need it and tucks away when you don't.

NOTE: Features may vary by model.

Nomenclature



The nomenclature breaks down and explains what the letters and numbers mean in the model number.

Serial Number
The first two characters of the serial number identify the month and year of manufacture. The letter designating the year repeats every 12 years.

Example: LA123456S = June, 2013

A – JAN	2024 – Z
D – FEB	2023 – V
F – MAR	2022 – T
G – APR	2021 – S
H – MAY	2020 – R
L – JUN	2019 – M
M – JUL	2018 – L
R – AUG	2017 – H
S – SEP	2016 – G
T – OCT	2015 – F
V – NOV	2014 – D
Z – DEC	2013 – A

The mini-manual is located inside the hinge cover.

The nomenclature plate is located on the upper right wall of the fresh food compartment. It contains the following information:

- Model and Serial Number
- Minimum Installation Clearances
- Electrical Voltage, Frequency
- Maximum Amperage Rating
- Refrigerant Charge and Type

Technical Data

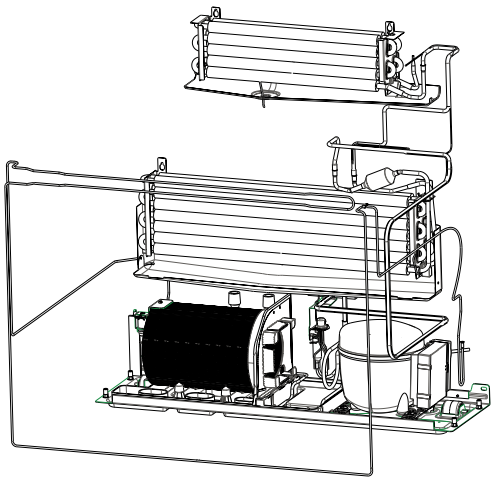
⚠ WARNING Electrical Shock Hazard

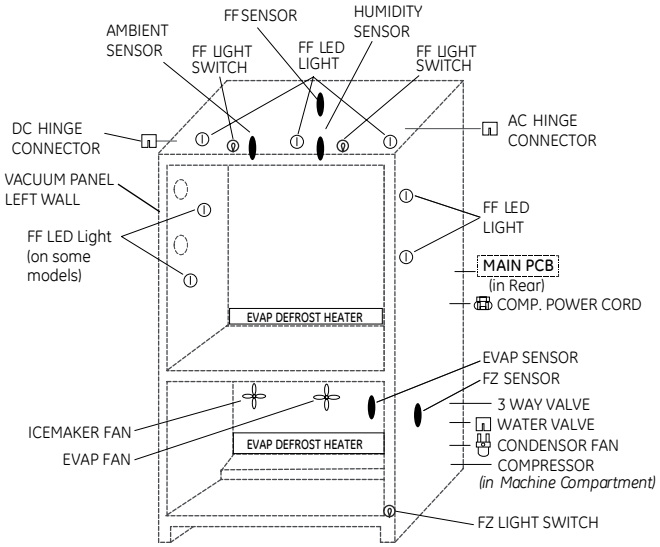
Death or serious injury can result from failure to follow these instructions.

- **Service by a qualified service technician only.**
- **Disconnect power before servicing this product.**
- **Reconnect all grounding devices after service.**
- **Reconnect all grounding devices after service.**
- **Replace all parts and panels before operating.**

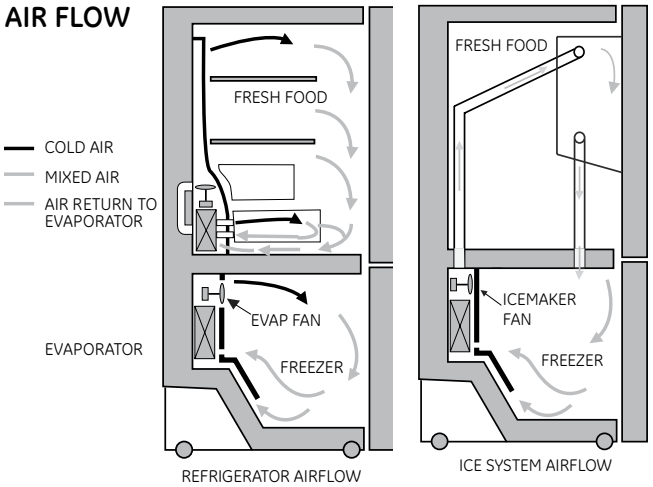
ELECTRICAL SPECIFICATIONS	PFE28/	DFE29/ GFE29	GYE22/ PYE22 CWE23/ PWE23/ ZWE23	GNE29/ GNE26	GFE26/ DFE28/ GFE28/ GFE27/ PFH28	CFE28	CYE22
REFRIGERANT CHARGE (134a), oz	5.375	5.5	5.25	5.25	5.50	5.375	5.25
Thermistor kilo-ohm resistance @ 32°F	16.3						
Over temperature Thermostat	140°F						
Adaptive Defrost Control Fresh Food	32 hrs						
Adaptive Defrost Control Freezer	96 hrs						
Electri cal Rating: 115 VAC, 60 Hz	9.5 Amp	9.5 Amp	9.5 Amp	9.5 Amp	9.5 Amp	12 Amp	12 Amp
NO LOAD PERFORMANCE							
Control Position 37/0 and Ambient of 65°F to 90°F							
Run Time, % @ 65°F	30 to 55						
Run Time, % @ 90°F	55 to 95						

MODEL STATIC PRESSURES @, PSIG	55°F	70°F	90°F
29/28/26 Single Speed	34.8	48.3	60.3
22/23/29 Variable Speed	25.0	35.9	45.3





AIR FLOW



Electrical Specifications

Café Hot Water Door Components

- **Door Control Board**: 120 VAC and 13.6 DCV inputs with 5 VDC, 6 VDC, 13.6 VDC, 120 VDC and 120 VAC outputs
- **Ice/Water dispenser switch**: 13.6 VDC, Normally Closed (NC) – When not activated, Normally Open (NO) – When activated
- **Auger Motor**: 120 VDC, 110 Ohms
- **Ice Box Thermistor**: 5 VDC, 5K Ohms @ 77˚F
- **Flow Meter**: 5 VDC, 17.6K Ohms and 18.6K Ohms
- **Freezer LED lighting**: 6 VDC. 20K Ohms
- **Dispenser Board**: 13.6 VDC input
  - **Speaker**: 8.8 Ohms
- **Water Valve**:
  - **Isolation**: 120 VAC, 390 Ohms
  - **Icemaker**: 120 VAC, 390 Ohms
  - **Cold Water**: 120 VAC, 390 Ohms
  - **Hot Water**: 120 VAC, 390 Ohms
  - **Keurig**: 120 VAC, 390 Ohms
- **Hot Water Tank**:
  - **Heater**: 120 VAC input, 19 Ohms / 12 Ohms Keurig
  - **Thermistors**: 5 VDC, 1.5K Ohms @ 75˚F
  - **Float switch**: 5 VDC, NO - Full, NC - Not full
- **Icemaker**: 120 VAC and 5 VDC inputs
  - **Motor**: 120 VAC, 2.9K Ohms
  - **Heater**: 120 VAC, 110 Ohms
  - **Thermistor**: 5 VDC, 10 K Ohms @ 77˚F
  - **Halls sensors**: 0 – 5 VDC
- **Door Heaters**: 0 – 13.6 VDC
  - **Recess Heater**: 146 Ohms
  - **Fill Tube Heater**: 321 Ohms
  - **Articulating Mullion Heater**: 25 Ohms
  - **Ice Box Heater**: 38 Ohms
- **Keurig Components**:
  - **Vent Valves**: 13.6 VDC, 118 Ohms
  - **Hot Water Outlet Vavle**: 13.6 VDC / 118 Ohms
  - **Air Pump**: 2 - 9 VDC, 9 Ohms
  - **Bracket and Motor Assembly**:
  - **Nozzle Motor**: 10 - 13 VDC, 9 Ohms
  - **Nozzle Position Switch**: (NO)
  - **Brewer Position Switch**: (NO) - When brewer not inserted

Tools Needed

1/8”, 3/16", 5/32” and 1/4” Allen Keys

1/4”, 5/16” and 3/8” Nut drivers, sockets or wrenches

T15, T20 and T27Torx bits

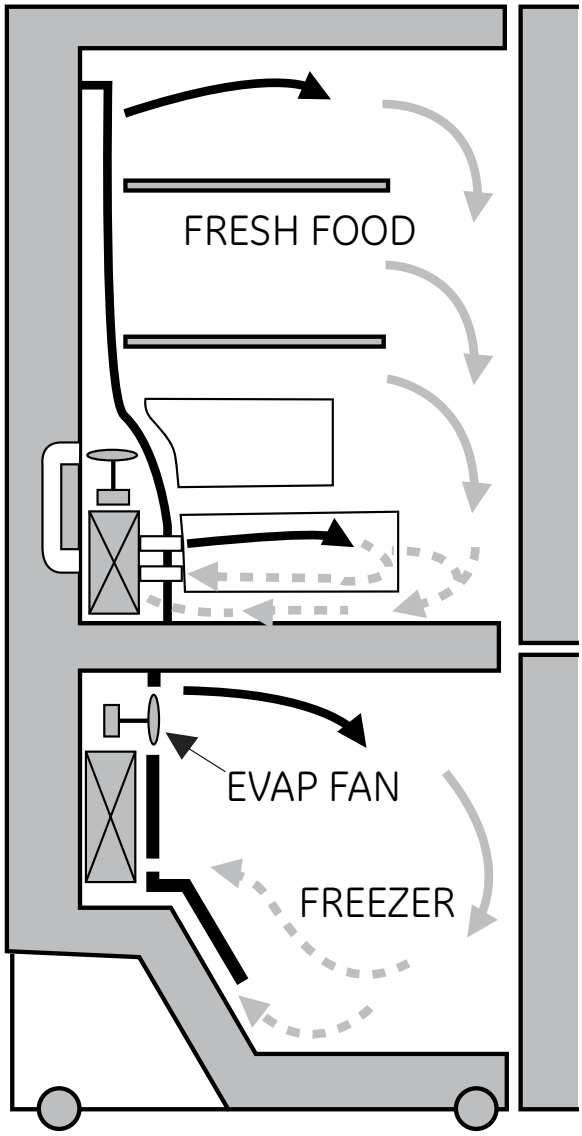
Pocket Type straight blade screwdrivers, 2 needed

#2 Phillips screwdriver

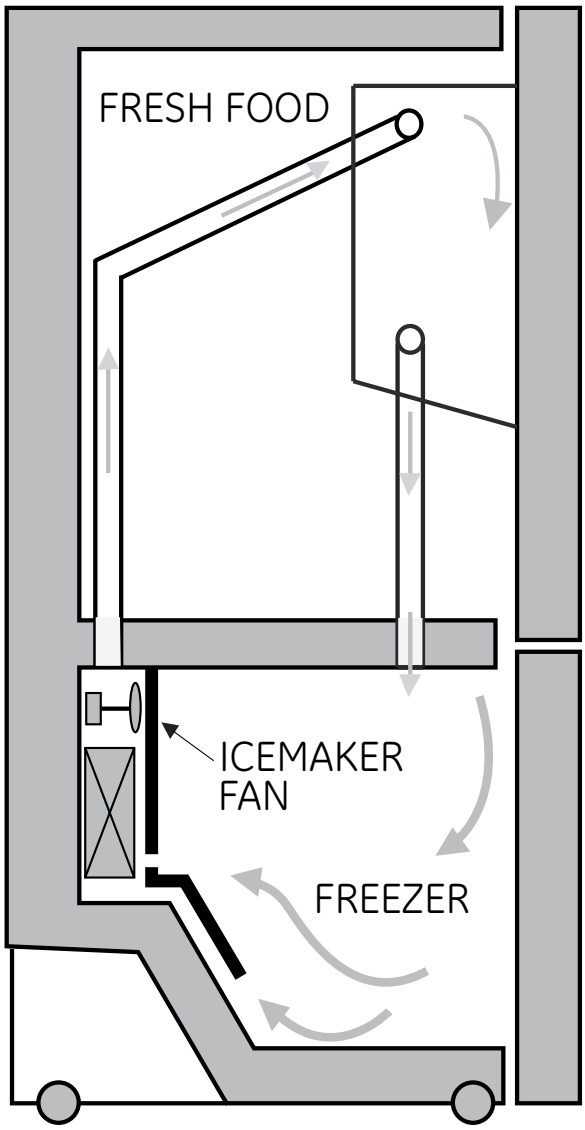
NOTE: All Ohm readings are +/- 10%

Interior Airflow

Refrigerator Air Flow (side view)



Ice System Air Flow (side view)



COLD AIR — MIXED AIR — AIR RETURN TO EVAPORATOR

The fresh food evaporator fan forces air through the evaporator into the fresh food compartment. Air from the evaporator can also pass through the deli drawer damper/heater assembly to the deli drawer, through the fresh food compartment, and return to the evaporator. The damper/heater assembly is controlled by the main control board. When open, the damper allows the chilled air from the fresh food evaporator to move into the deli drawer. Air returns from the fresh food compartment to the fresh food evaporator via three return vents located on the bottom of the evaporator cover.

The freezer evaporator fan forces air through the evaporator into the freezer compartment. An additional ice box fan circulates air into and returns air from the ice box via plastic conduits embedded in the cabinet foam insulation. Air returns from the freezer compartment to the freezer evaporator via two return vents located on the bottom of the evaporator cover.

NOTE: Most Profile models use an electronically controlled damper and heater. Other models use a mechanically adjustable temperature control damper without a heater.

Installation

POWER CORD

The power cord of this appliance is equipped with a 3-prong (grounding) plug, that mates with a standard 3-prong (grounding) wall outlet to minimize the possibility of electric shock hazard from this appliance.

Have the wall outlet and circuit checked by a qualified electrician to make sure the outlet is properly grounded.

If the outlet is a standard 2-prong outlet, it is your personal responsibility and obligation to have it replaced with a properly grounded 3-prong wall outlet.

WARNING: Do not, under any circumstances, cut or remove the third (ground) prong from the power cord. For personal safety, this appliance must be properly grounded.

The refrigerator should always be plugged into its own individual electrical outlet, that has a voltage rating that matches the rating plate.

USE OF EXTENSION CORDS

Because of potential safety hazards under certain conditions, we strongly recommend against the use of an extension cord.

However, if you must use an extension cord, it is absolutely necessary that it be a UL-listed (in the United States) or a CSA-listed (in Canada), 3-wire grounding-type appliance extension cord having a grounding-type plug and outlet, and that the electrical rating of the cord be 15 amperes (minimum) and 120 volts.

REFRIGERATOR LOCATION

Do not install the refrigerator where the temperature will go below 60°F because it will not run often enough to maintain proper temperatures.

Do not install the refrigerator where the temperature will go above 100°F because it will not perform properly.

Install the refrigerator on a floor strong enough to support the refrigerator in a fully loaded condition.

CLEARANCES

Allow the following clearances for ease of installation, proper air circulation, and plumbing and electrical connections.

- **Sides**: 1/8 inch (3 mm)
- **Top**: 1 inch (25 mm) Cabinet/Hinge Cover
- **Back**: 2 inches (50 mm)

Fresh Food Door and Freezer Drawer Handles

Fresh Food Door and Freezer Drawer Handles Removal

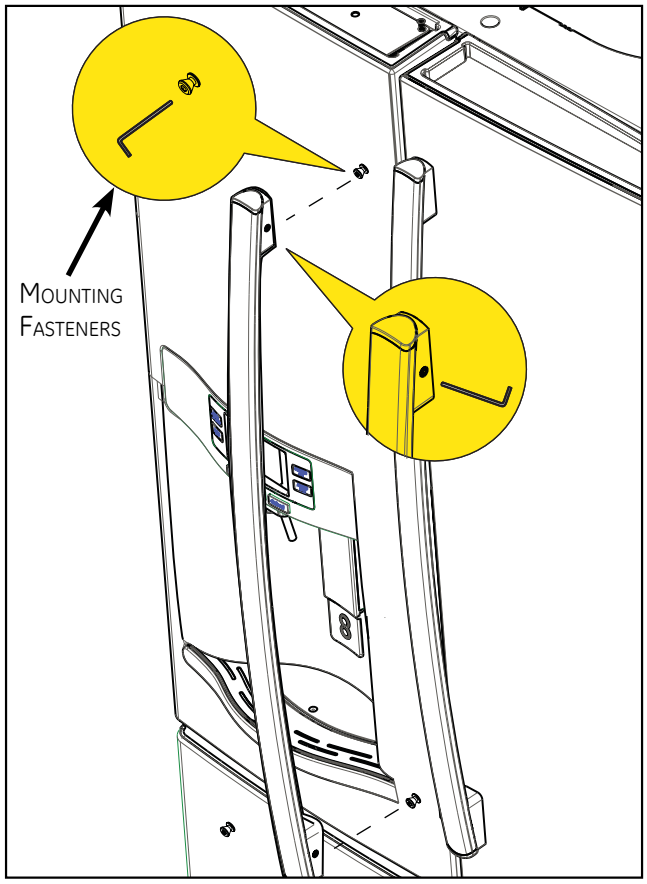
The handle design varies based on models, however, the installation is the same.

Stainless Steel and Plastic:

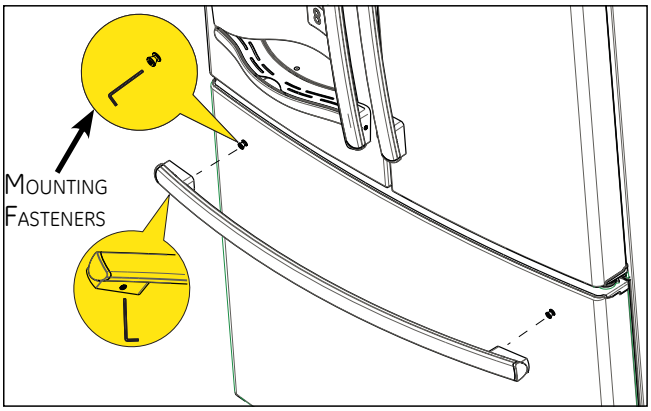
Loosen the set screws with an 1/8 in. Allen wrench and remove the handle.

NOTE: If the handle mounting fasteners need to be adjusted or removed, use a 1/4 in. Allen wrench.

Fresh Food Door Handle



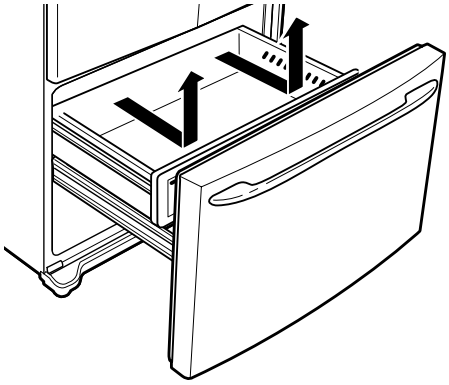
Freezer Drawer Handle



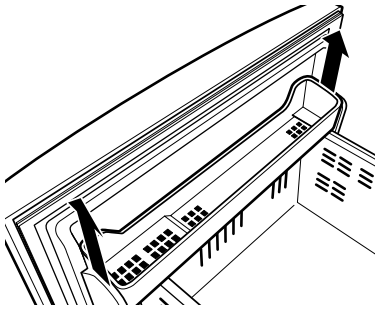
Freezer Drawer, Bin, and Basket

Freezer Drawer, Bin, and Basket Removal

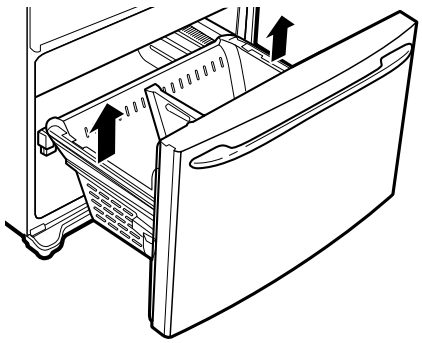
1. Open the freezer drawer, then lift and remove the freezer drawer.



2. Remove the freezer drawer bin by pushing the plastic tab on either the left or right side to release the bin hinge pin.



3. Remove freezer basket by lifting up the rear of the basket and moving basket rearward until the front of the basket can be rotated upward and out.

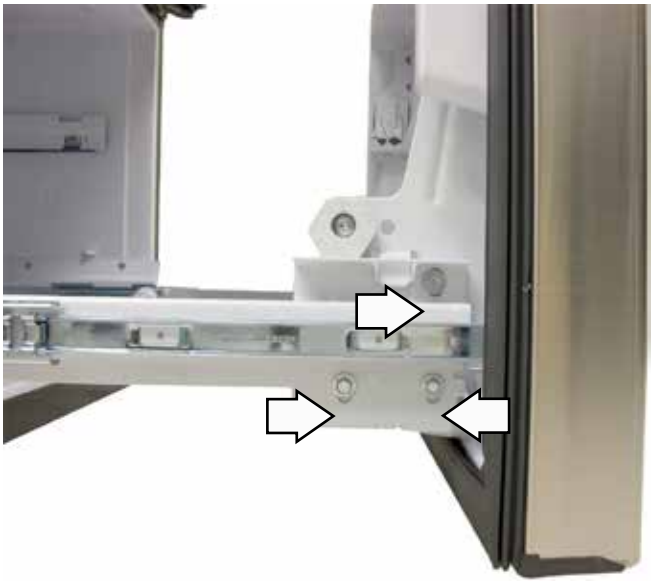


Freezer Drawer Front

The freezer drawer front is inserted into alignment slots (one on each side) and attached to the slide assemblies with 6 bolts (three on each side).

Freezer Drawer Removal

1. Remove the freezer drawer, bin, and basket (see **Freezer Drawer, Bin, and Basket** section).
2. Remove six 3/8 in. hex head bolts (three on each side) that attach the drawer front to the slide assemblies.

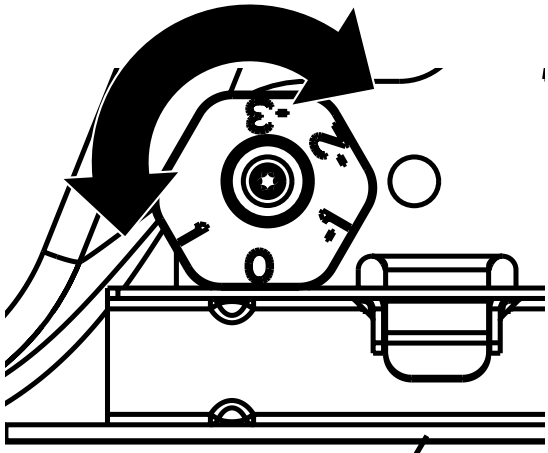


3. Lift the drawer front from the slide assemblies.

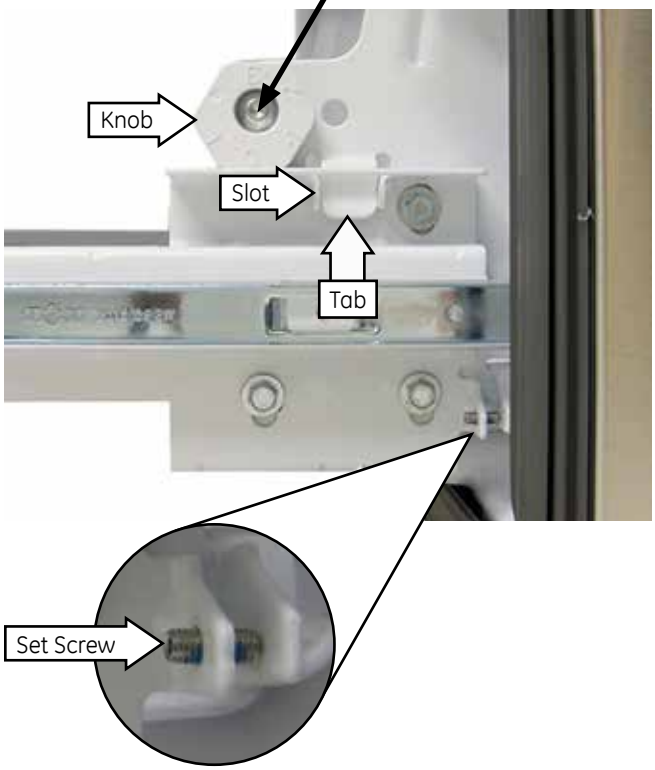
4. Place the drawer front on a protected surface.

NOTE:

- When installing the freezer drawer front, make sure the drawer alignment tabs are placed inside the alignment slots before installing the six 3/8 in. hex head bolts.
- An adjustment knob is provided on each side of the freezer drawer front to change the horizontal drawer position using a T-27 driver.



0 - Initial position
1 - Lift by 0.050”
-1 - Lower by 0.050”
-2 - Lower by 0.100
-3 - Lower by 0.150”



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After installation of the freezer drawer front, check for uniform gaps (top and bottom of right and left hand side). The gap should be 0.6 inches.

Adjusting the Freezer Drawer Front Gaps

Caution: The 6 mounting screws (three on each side) are NOT interchangeable with the center or top hinge screws.

1. Loosen the six 3/8 in. hex head bolts (three on each side) that attach the drawer front to the slide assemblies.
2. Adjust the 3/32 in. Allen set screw clockwise if the gap at the top is too big.
3. Adjust the set screw counterclockwise if the gap at the bottom is too big.
4. Tighten the 3 screws on each side (right and left).
5. Recheck the gaps and repeat steps 1 to 4, if required.

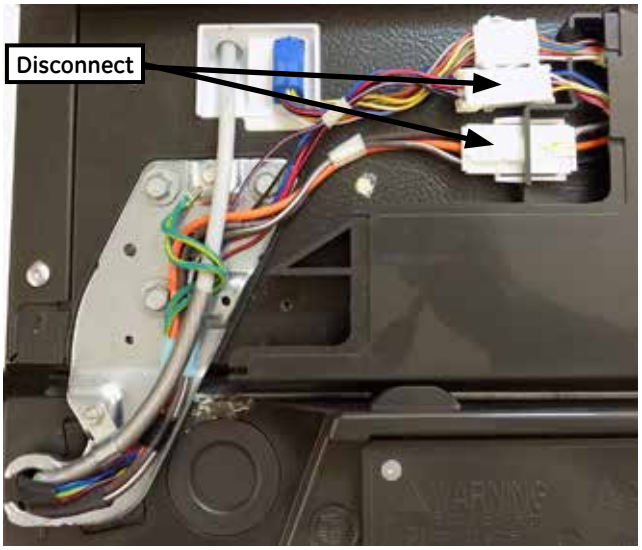
Fresh Food Doors

The procedure to remove the right and left fresh food doors is similar. There are no wires or water lines on the right side door.

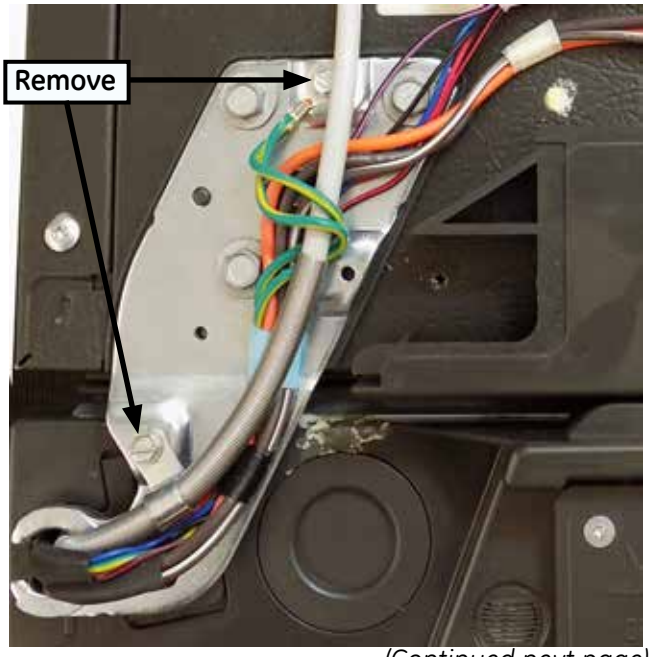
Caution: To prevent damage or injury, securely tape the door shut with masking tape or have a second person support the door.

Left Fresh Food Door Removal

1. Remove the hinge cover (see ***Hinge Cover*** section).
2. Disconnect both electrical connectors at the top cover.



3. Remove the 1/4 in. hex head screw to disconnect the ground wire from the hinge.
4. Remove the 1/4 in. hex head screw to remove the strain relief from the hinge.



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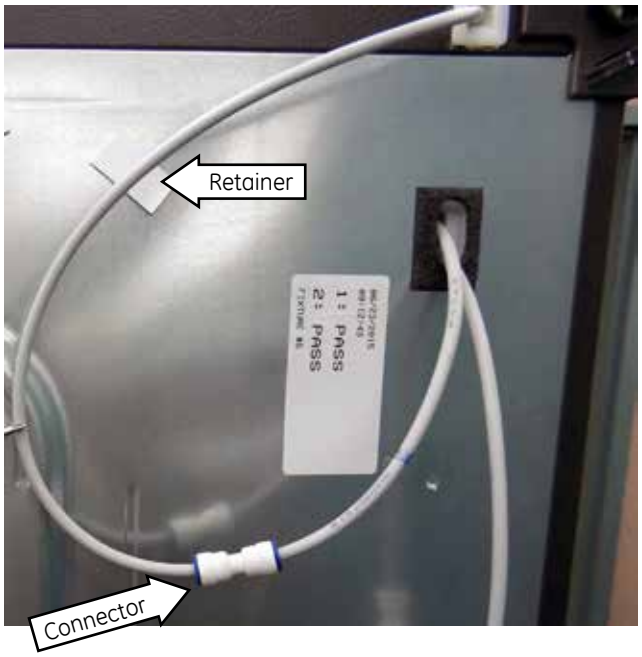
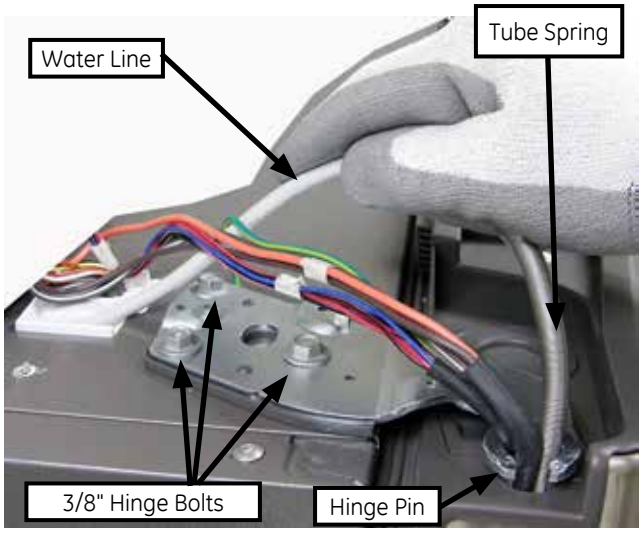
5. Push the collar in while pulling the door inlet tube out from the connector located at the rear of the cabinet. Remove the tube from retainer.



6. Pull the water line through the case conduit from the top to free the line for door removal.
7. Remove the 3/8 in. hex head screws that secure the top hinge to the cabinet.
8. Lift the hinge straight up to free the hinge pin from the recess in the top of the door.
9. Remove the anti-kink spring from the water tube.



Caution: In the following step, to prevent damage to the door and electronics, carefully place the door in a protected location.

NOTE: The lower door hinge pin and hinge are keyed and must be matched correctly for the door to self-close properly. For proper installation later, please follow the directions carefully.

10. Remove tape, and keeping the door as vertical as possible, open the door to 90 degrees+, then lift straight up from the bottom hinge.

(Continued next page)

Left Fresh Food Door Installation

NOTE: To close correctly to the cabinet, the hinge pin must be properly aligned with the lower hinge.

1. With the left side door at 90 degrees+ to the front of the case, lower the refrigerator door onto the center hinge. Ensure that the door and hinge align correctly.
2. Rotate the door closed and make sure the pin on top of the articulating mullion engages the guide located at the top of the fresh food compartment.
3. Install the top hinge, water line, strain relief, ground wire, and connect the wire harnesses. Install the hinge cover.

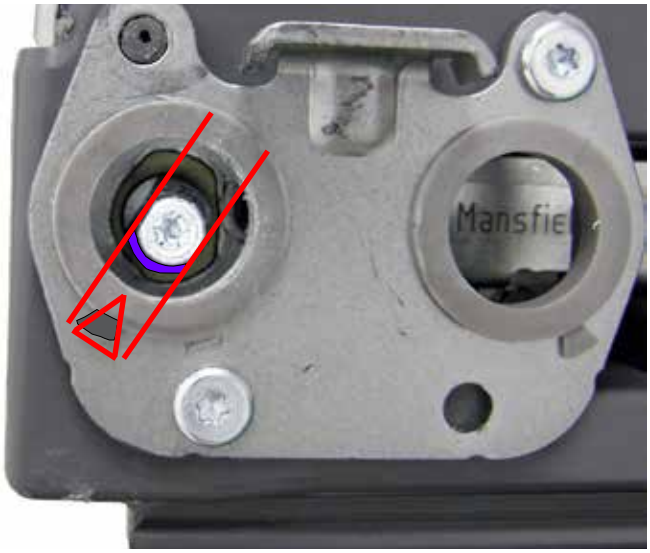
If the door will not close after reinstalling, it will be necessary to remove and turn the door upside down, and check the alignment mark and arrow. Rotate the door-closure mechanism hex head screw to align mark and arrow, and reinstall the door.

NOTE: Turn the closer pin on the right door counterclockwise, and the one on the left door clockwise.

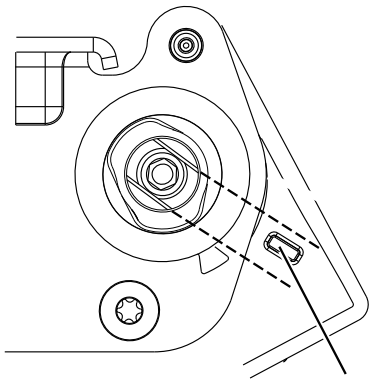
Using a 5/32 in. Allen wrench (some may be 1/4 in. hex), align the parallel flat surfaces of the hinge pin with the arrow on the hinge bushing, making sure the purple mark is facing the arrow. Turn the closer pin on the right door counterclockwise and the one on the left door clockwise.

With the pin set properly in this location, the door can now be remounted on the lower hinge with the door 90 degrees to the cabinet.

Profile & GE/Adora Models

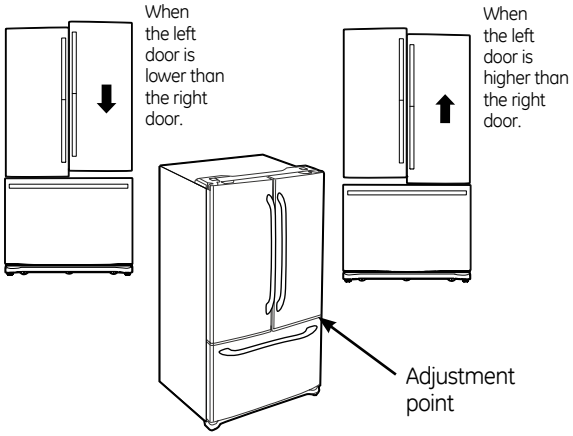


Cafe Models



Leveling the Fresh Food Doors

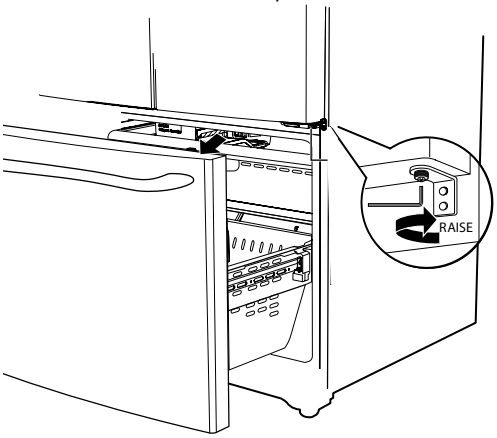
Remember a level refrigerator is necessary for getting the doors perfectly even. If you need help, review the previous section on leveling the refrigerator.



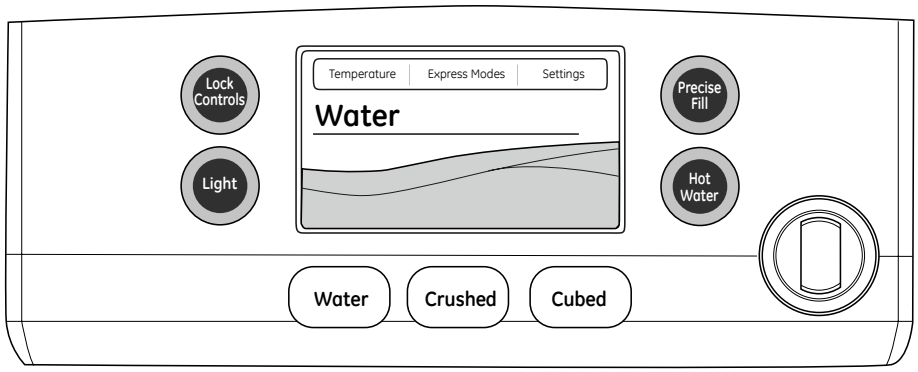
A If you open the freezer door, you can see the center hinge.

B Insert 1/4" Allen wrench into the shaft of the center hinge.

C Adjust the height by turning clockwise or counterclockwise. When you turn counterclockwise, the door will move up.



Cafe Controls



NOTE: The refrigerator is shipped with protective film covering the temperature controls. If this film was not removed during installation, remove it now.

The temperature controls are preset in the factory at 37°F for the refrigerator compartment, and 0°F for the freezer compartment. Allow 24 hours for the temperature to stabilize to the preset recommended settings.

The temperature controls can display both the SET temperature as well as the actual temperature in the refrigerator and freezer. The actual temperature may vary slightly from the SET temperature based on usage and operating environment.

For optimal temperature performance, we recommend to avoid placing food or other items directly at the air flow vents or the fresh food air tower, thus blocking the air flow.

To Change the Refrigerator Temperature:

1. Touch the Temperature button on the **HOME** screen.
2. Below the word "Refrigerator", use the arrows to select the desired temperature. Press **DONE** when finished to return to the **HOME** screen.

To Change the Freezer Temperature:

1. Below the word "Freezer", use the arrows to select the desired temperature. Press **DONE** when finished to return to the **HOME** screen.

To Turn OFF the Cooling System:

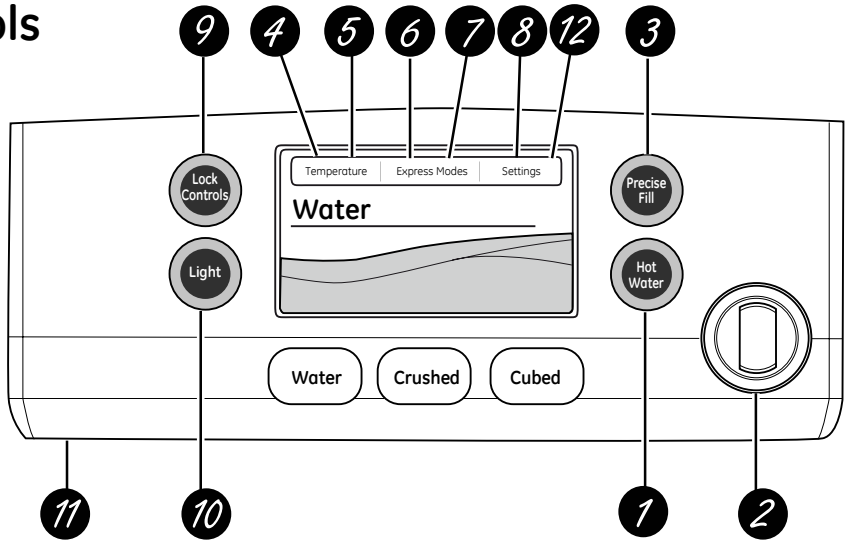
1. Access **SETTINGS** from the **HOME** screen. Page over and tap **COOLING SYSTEM ON**. Press **DONE** to return to the **HOME** screen.

To Turn ON the Cooling System:

1. Access **SETTINGS** from the **HOME** screen. Page over and tap **COOLING SYSTEM OFF**. Press **DONE** to return to the **HOME** screen.

NOTE: Turning the cooling system off stops the cooling to refrigerator, but it does not shut off the electrical power.

Cafe Controls



1 Hot Water

Dispenses up to 10 oz. of filtered hot water from the user selected range of 90°F to 185°F.

2 Hot Water Knob

Illuminates to indicate hot water is ready. Dispenses with two motions: a counter-clockwise twist and then push to dispense.

3 Precise Fill

Precisely dispenses filtered water in accurate measurements in ounces, cups, quarts, or liters using a paddle.

4 Refrigerator Temperature Control

Adjust freezer compartment temperature.

5 Fresh Food Temperature Control

Adjust fresh food compartment temperature

6 TurboFreeze™ Setting

Activate TurboFreeze™ to quickly restore freezer temperatures after frequent door openings.

7 TurboCool™ Setting

Activate TurboCool™ to quickly restore fresh food temperature after frequent door openings.

8 Humidity Setting

Humidity setting can be normal or high.

9 Lock Controls

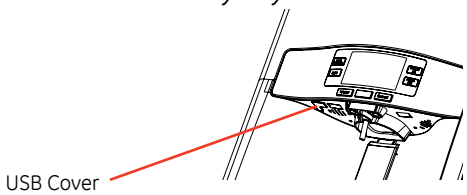
Press and hold 3 seconds to lock out ice and water dispenser and all feature and temperature buttons.

10 LED Dispenser Light

LED lighting that can be turned on/off to light your dispenser.

11 Photo Upload

Insert USB memory stick to upload personal photos to the refrigerator LCD screen. LCD will provide on screen prompts to load and view slideshow. Make sure the photos are in the root directory in your USB.



12 Additional Settings:

- Connected Home ready
- Slideshow
- Reset filter
- Ice maker on/off
- Door alarm
- Sound control
- Cooling system On/Off
- Metric/English units

Additional Modes:

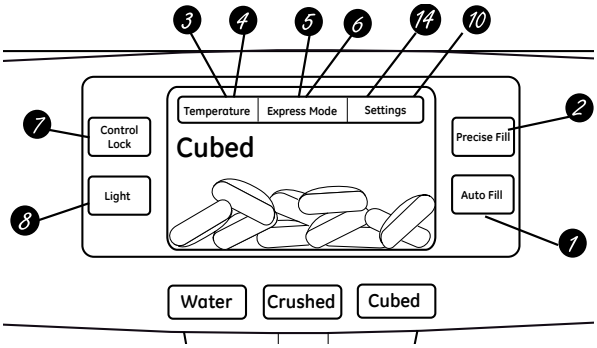
• Sabbath Mode

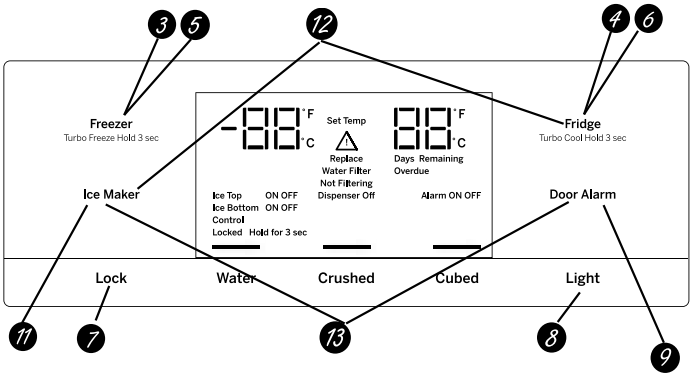
Press and hold lock and light simultaneously for 3 seconds to enter/exit Sabbath mode.

Activate Sabbath Mode to turn off interior lights, temperature control and advanced features. The compressor will run on a timed defrost when in Sabbath mode.

(Continued next page)

Profile & GE / Adora Controls





1 Hands-Free Autofill*

Hands-free Autofill uses sensors to monitor container heigh to automatically dispense filtered water without having to activate the paddle.

2 Precise Fill Setting*

Precisely dispenses filtered water in accurate measurements in ounces, cups, quarts, or liters using paddle.

3 Refrigerator Temperature Control

Adjust freezer compartment temperature.

4 Fresh Food Temperature Control

Adjust fresh food compartment temperature

5 TurboFreeze™ Setting

Activate TurboFreeze™ to quickly restore freezer temperatures after frequent door openings.

6 TurboCool™ Setting

Activate TurboCool™ to quickly restore fresh food temperature after frequent door openings.

7 Lock Controls

Press and hold 3 seconds to lock out ice and water dispenser and all feature and temperature buttons.

8 LED Dispenser Light

LED lighting that can be turned on/off to light your dispenser.

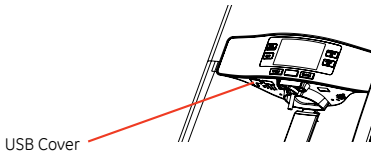
9 Door Alarm

Sounds to alert when the freezer food doors have been left open. Press and hold Door Alarm pad and it will toggle the sound between low, high, and off.

***Select Models Only**

10 Photo Upload*

Insert USB memory stick to upload personal photos to the refrigerator LCD screen. LCD will provide on screen prompts to load and view slideshow. Make sure the photos are in the root directory in your USB.



11 Ice Maker Setting

Turn your ice makers on/off.

12 Cooling System On/Off

Press and hold Fridge & Ice Maker simultaneously for 3 seconds to turn the cooling system on or off.

13 Metric/English Units

Press and hold Ice Maker & door alarm simultaneously for 3 seconds to switch between Metric & English units.

14 Additional Settings:

- Photo upload and delete
- Slideshow
- Connected Home ready
- Reset water filter
- Ice maker on/off
- Door alarm
- Sound control
- Cooling system On/Off
- Metric/English units
- Auto fill video tutorial

Additional Modes:

• Sabbath Mode

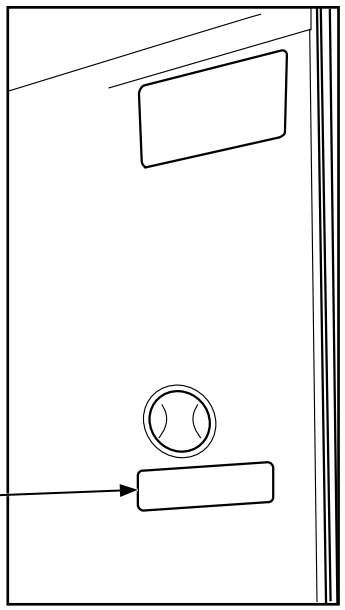
Press and hold lock and light simultaneously for 3 seconds to enter/exit Sabbath mode. Activate Sabbath Mode to turn off interior lights, temperature control and advanced features. The compressor will run on a timed defrost when in Sabbath mode.

Appliance Communication

GE WiFi Connect (for customers in the United States)

GE WiFi Connect Enabled*

If your refrigerator has a Connected Appliance information label located on the inside as shown, your refrigerator can be connected to your WiFi network, allowing it to communicate with your smart phone for remote monitoring, control and notifications. Depending on the refrigerator model you have, you either have a WiFi communication card built into the product, or a port for an external WiFi ConnectPlus Module (sold separately). Please visit **www.GEAppliances.com/connect** to learn more about connected appliance features, and to learn what connected appliance apps will work with your Smart Phone.



Connected Appliance Information

Contains FCCID: ZKJ-WCATA003	Network: GE_MODULE_XXXX
Contains IC: 10229A-WCATA003	Password: XXXXXXXX
MAC ID: D8-28-C9- XXXXXXXX	PT. NO. 257C2110G001

WiFi Connectivity: For assistance with the appliance or the **ConnectPlus** network connectivity (for models that are WiFi enabled or WiFi optional), please call **1-800-220-6899.**

REGULATORY INFORMATION

FCC/IC Compliance Statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

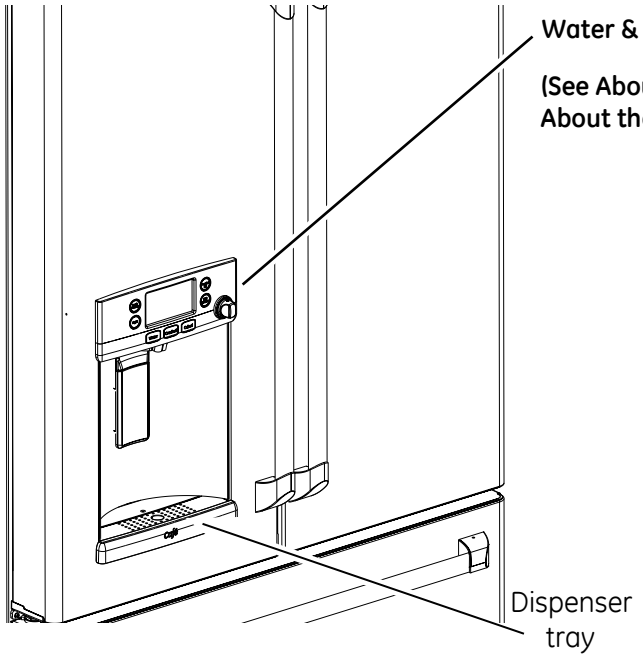
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Labelling: Changes or modifications to this unit not expressly approved by the manufacturer could void the user's authority to operate the equipment.

***Select Models Only**

About the Dispenser



If no water is dispensed when the refrigerator is first installed, there may be air in the water line system. Press the dispenser paddle for at least two minutes to remove trapped air from the water line, and to fill the water system. To flush out impurities in the water line, throw away the first six full glasses of water.

⚠WARNING: Laceration Hazard

- **Never put fingers or any other object into ice crusher discharge opening. Doing so can result in contacting the ice crushing blades and lead to serious injury or amputation**
- **Use a sturdy glass when dispensing ice. A delicate glass may break and result in personal injury.**

Dispenser Tray Removal

1. Pull the dispenser tray out until it stops.
2. Locate the tab in the center of the tray on the bottom and push it in.
3. Pull the dispenser tray assembly out.
4. Lift the metal dispenser tray out at the center notch to clean.

Dispenser Tray Reinstallation

1. Place the dispenser tray cover on top of the catch tray and position it under the two plastic retainers on either side.
2. Center the dispenser tray, and align it with the center guides.
3. Push the dispenser tray in until it is firmly in place.

Important Facts About the Dispenser

- Do not add ice from trays or bags to the door icemaker bucket. It may not crush or dispense.
- Avoid overfilling glass with ice and use of narrow glasses. Backed-up ice can jam the chute or cause the door in the chute to freeze shut. If ice is blocking the chute remove the ice bucket, poke it through with a wooden spoon.
- Beverages and foods should not be quick-chilled in the door icemaker bin. Cans, bottles or food packages in the storage drawer may cause the icemaker or auger to jam.
- To keep dispensed ice from missing the glass, put the glass close to, but not touching, the dispenser opening.
- Some crushed ice may be dispensed even though you selected CUBED ICE. This happens occasionally when a few cubes accidentally get directed to the crusher.
- After crushed ice is dispensed, some water may drip from the chute.
- Sometimes a small mound of snow will form on the door in the ice chute. This condition is normal and usually occurs when you have dispensed crushed ice repeatedly. The snow will eventually evaporate.

About Autofill

To Use HANDS FREE AUTO FILL:

1. Center the container on the recess dispenser tray (not touching bottom sensors) and remove hand from the container.
2. Press **AUTO FILL**.

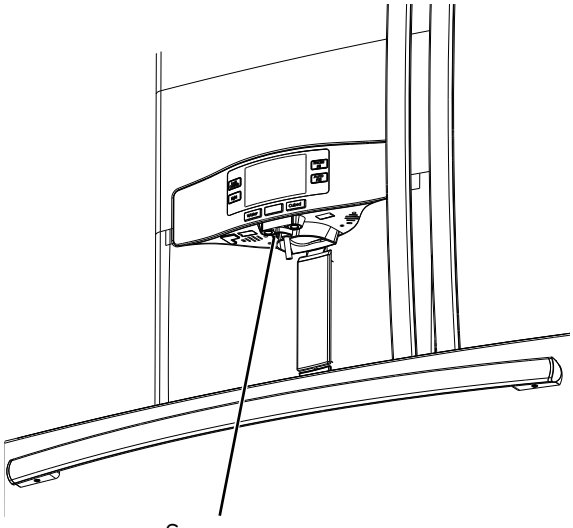
To Stop AUTO FILL:

1. Press **CANCEL**. To resume filling, press **AUTO FILL**.

Important Facts About AUTO FILL

- For optimum results, use a uniform container between 4 to 8 inches tall and 2 to 6 inches wide. Container should be as tall as the bottom sensors.
- Container shape, fill level and functionality may vary on containers taller than 8 inches.
- Container volumes may vary. If the error message **Container Not Found** is given, try a different container.
- If an unusual-shaped container does not fill to the proper volume, use Precise Fill.
- **AUTO FILL** will time out.
- Handles and garnishes on the rim of the container my cause overfilling or variation in fill volumes.
- Splashing may occur depending on the location of the container, water flow rate, container shape, and ice cubes.
- Keep sensors clean with a clean damp cloth, and do not spray liquid or cleaners directly on sensors.
- **AUTO FILL** works best with household water pressure of 60 to 100 psi.

***Select Models Only**



About the GE RPWFE Water Filter Cartridge

Water Filter Cartridge

The water filter cartridge is located in the fresh food interior on the left side wall, near the top.
This product uses radio frequency identification (RFID) to detect leaks and monitor filter status. The RFID technology is certified by the FCC.

FCCID: ZKJ-EBX1532P001 ICID: 10229A-EBX1532P001
'This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."
'This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

When to replace the filter cartridge

The filter cartridge should be replaced every six months or earlier if 170 gallons of water has been dispensed or the flow of water to the dispenser or icemaker decreases.

Touch Screen Models: A filter status message will appear on the screen when the water filter needs to be replaced. The filter status will automatically update when the filter is replaced.

Non-touch Screen Models: A filter indicator light will illuminate on the screen when the water filter needs to be replaced. The filter status will automatically update when the filter is replaced.

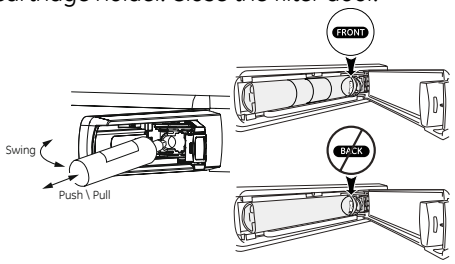
Removing the filter cartridge

To replace the filter, first remove the old cartridge by opening the filter door and pulling on the bottom of the cartridge to allow it to swing outward. When the cartridge can no longer swing, gently pull to unseat it from the cartridge holder. DO NOT TWIST CARTRIDGE. A small amount of water may drip out.

Installing the Filter Cartridge

1. Align the top of the filter cartridge with the cartridge holder with the word "FRONT" facing outward, then push the cartridge toward the rear of the unit until it is fully seated. **DO NOT TWIST THE FILTER CARTRIDGE!**

2. While continuing to ensure the cartridge is fully seated in the holder, gently swing the filter inward until it is in position. If the filter will not swing easily, check to ensure that the filter is properly aligned and fully seated within the cartridge holder. Close the filter door.



3. Run two gallons of water through the cold water dispenser (about 5 minutes) to remove air from the system. A newly installed filter cartridge will cause water to spurt from the dispenser. Use a large pitcher or sports bottle to catch the water spray. DO NOT use hands-free auto-fill (some models) until all air is removed from the system.

NOTE: A newly installed water filter cartridge may cause water to spurt from the dispenser during the first 5 minutes of operation. Use a large pitcher or sports bottle to catch the water spray.

NOTE: It is normal for water to appear discolored during the initial system flush. Water color will return to normal after first few minutes of dispensing.

Filter Bypass Plug

To reduce the risk of property damage due to water leakage, you **MUST** use the filter bypass plug when a replacement filter cartridge is not available. The dispenser and icemaker will not operate without either the filter or bypass plug installed. The bypass plug is installed in the same way as a filter cartridge.

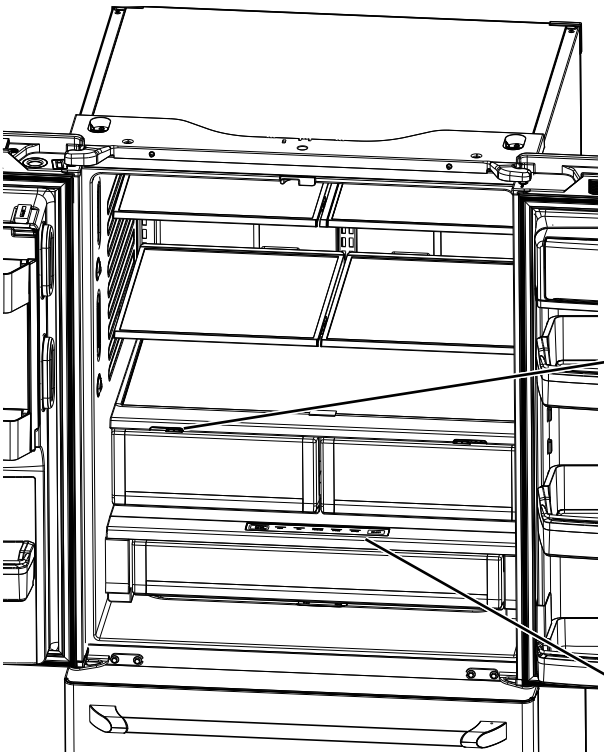
WARNING: To reduce the risk associated with choking, do not allow children under 3 years of age to have access to small parts during the installation of this product. The disposable filter cartridge should be replaced every 6 months at the rated capacity, or sooner if a noticeable reduction in flow rate occurs.

For the maximum benefit of your filtration system, GE recommends the use of GE-branded filters only. Using GE-branded filters in GE and Hotpoint® refrigerators provides optimal performance and reliability. GE filters meet rigorous industry NSF standards for safety and quality that are important for products that are filtering your water. GE has not qualified non-GE-branded filters for use in GE and Hotpoint refrigerators and there is no assurance that non-GE-branded filters meet GE's standards for quality, performance and reliability.

For questions, or to order additional filter cartridges, visit our website at www.geappliancepparts.com or call GE Parts and Accessories, 800.626.2002.

Customers in Canada should consult the yellow pages for the nearest Camco Service Center.

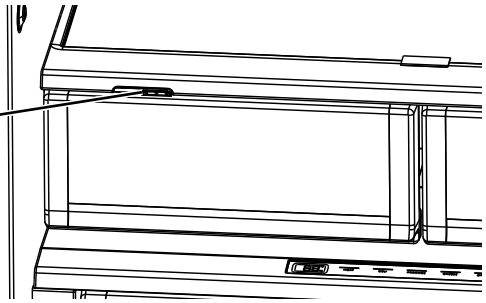
About the Climate Zone and Temperature Controlled Drawer



Climate Zone

Keep fruits and vegetables organized in separate compartments for easy access.

Excess water that may accumulate in the bottom of the drawers or under the drawers should be wiped dry.

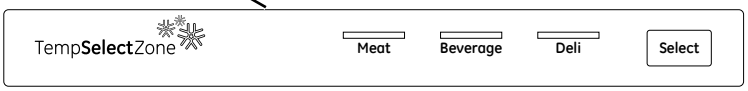


Temperature Controlled Drawer

The Temperature Controlled Drawer is a full-width drawer with adjustable temperature control. This drawer can be used for large miscellaneous items.

To change setting, press the Select button.

NOTE: Temperatures indicate the appropriate temperatures for the food and actual temperature may vary based on normal operation and other factors such as door openings and fresh food set point.



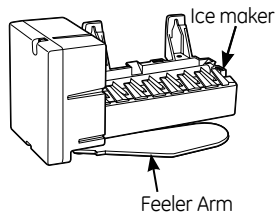
32° 34° 38°

⚠ CAUTION **Laceration Hazard.**

Do not store glass bottles at this setting. If they are frozen, they can break and result in personal injury.

About the Automatic Ice Maker

A newly installed refrigerator may take 12 to 24 hours to begin making ice.



Automatic Ice Maker (on some models)
The ice maker will produce seven cubes per cycle, or approximately 100 - 130 cubes in a 24-hour period, depending on the freezer compartment temperature, room temperature, number of door openings and other use conditions.

The ice maker will fill with water when it cools to 15°F (-10°C). A newly installed refrigerator may take 12 to 24 hours to begin making ice cubes.

If the refrigerator is operated before the water line connection is made to the unit, or if the water supply to an opening refrigerator is turned off, make sure that the ice maker is turned off. Once the water has been connected to the refrigerator, the ice maker may be turned on.

You may hear a buzzing sound each time the ice maker fills with water.

Throw away the first few batches of ice to allow the water line to clear.

Be sure nothing interferes with the sweep of the feeler arm.

When the bin fills to the level of the feeler arm, the ice maker will stop producing ice. It is normal for several cubes to be joined together.

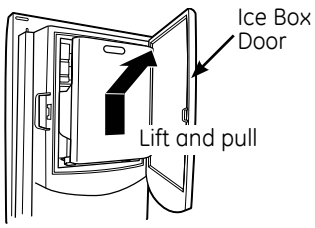
If ice is not used frequently, old ice cubes will become cloudy, taste stale and shrink.

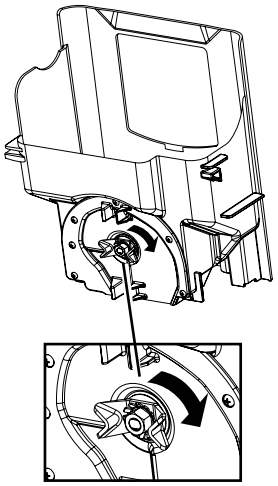
NOTE: In homes with lower-than-average water pressure, you may hear the ice maker cycle multiple times when making one batch of ice.

⚠ WARNING

To minimize the risk of personal injury, avoid contact with the moving parts of the ejector mechanism, or with the heating element that releases the cubes. Do not place fingers or hands on the automatic ice making mechanism while the refrigerator is plugged in.

Use the Settings menu on the touch screen to turn the icemaker on and off.



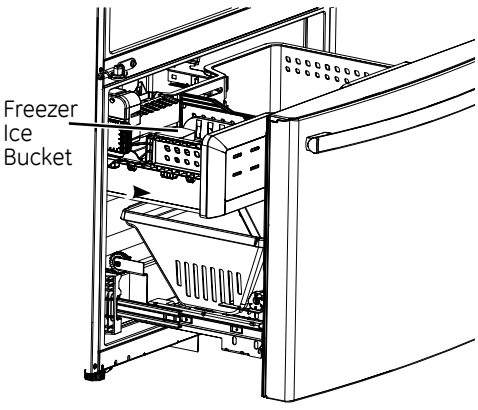


Ice Bucket and Dispenser*

- Open the ice box door on the inside of the left door.
- Pull up and out of the ice bucket in the left hand door to remove it from the compartment.
- To replace the ice bucket, set it on the guide brackets and push until the ice bucket seats properly.
- If the bucket cannot be replaced, rotate the ice bucket fork 1/4 turn clockwise, then try again.

Freezer Ice Bucket*
The ice storage is in the freezer compartment drawer.

- Open the freezer drawer.
- The ice bucket is located on the left side of the upper basket.
- Pull the upper basket forward to remove the ice bucket.



Dealer Demo Mode

LCD Display

To enter the Dealer Demo Mode, press ***Lock Controls*** and ***Precise Fill*** pads simultaneously for 3 seconds. **Entering Demo Mode** will be displayed. The lights and fans (if previously operating) will still operate, but the compressor will not operate. Exit the demo mode by pressing the same buttons again.

When dealer demo mode is active, the following will occur:

- The compressor is off at all times.
- All heaters will be disabled.
- The icemaker(s) are turned off, but control will operate the display function.
- The fans and dampers may run if prompted by a user setting change.
- Opening the doors will not turn on the fans.
- Liner protection mode is active.
- The deli pan LED lighting will work normally.
- The deli fan will turn on at the heating mode speed.
- The deli pan settings will remain the same between door openings, as the set points are not reset.
- LED lighting will come on when the door or drawer is opened and stay at full power for 8 minutes if the door remains open.
- After 8 minutes, the LEDs will start to lower their intensity in a smooth transition over the next 3 minutes to 75% of their original power and remain there until the door(s) is closed. Closing and reopening the doors will restart the timer.
- The user can activate and deactivate the Door Alarm, Lock, Dispenser Light, and Reset Filter functions.
- The user can adjust the temperatures, but the cooling components will not operate.
- The user interface will display the actual compartment temperatures.
- The paddle and switch will not operate dispenser components if pressed.
- The TurboCool™ and TurboFreeze™ can be turned on and off, but no cooling action will be initiated.
- The Precise Fill feature can be selected and amount of water set, but the water valve will not be activated.

- In Demo Mode, when the **Hot Water** or **Auto Fill** button is pushed, a video tutorial will play uninterrupted, then return to the demo home screen. Once the video starts, it cannot be stopped.

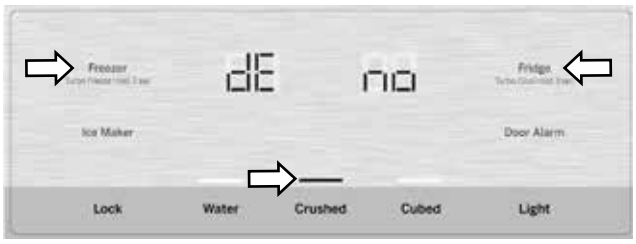
Video

(Continued next page)

Capacitance Touch User Interface

Entering and Exiting the Demo Mode

To enter or exit the demo mode, touch and hold the **Freezer, Fridge** and **Crushed** pads for approximately 5 seconds, **dE no** is displayed briefly. The settings can be adjusted, but the cooling system is turned off.



Entering and Exiting Sabbath Mode

To enter the Sabbath mode, touch and hold the **Lock** and **Light** pads for approximately 5 seconds. **SA bb** is briefly displayed, then the UI will go out along with the fresh food and freezer interior LED lighting. The control will automatically exit Sabbath mode after 76 hours or by touching and holding the **Lock** and **Light** pads for approximately 5 seconds.

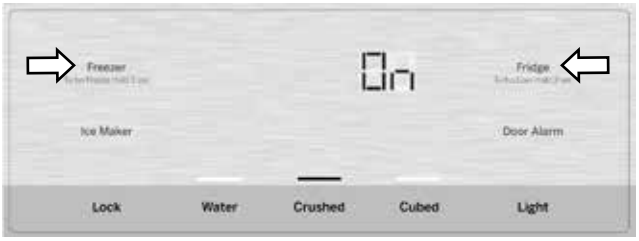
Touch and hold the **Freezer, Water** and **Cubed** pads for approximately 5 seconds to display the current state of the controls. When in the normal operating mode, actual temperatures are displayed. **dE no** is displayed if in the demo mode and **SA bb** is displayed if in the Sabbath mode.

Capacitance Touch UI (User Interface)

The capacitance touch UI has pads at each label to change settings. Touching the **Freezer** or **Fridge** pads will display the set temperature for its respective compartment. While the set temperature is displayed, touch the pad again to scroll to the next warmer setting. Each time the pad is touched, the temperature will increase 1 degree until the warmest setting is displayed. Continued touches change the setting to the coldest, then scrolls to the warmest again.

To turn the cooling system off, touch and hold the **Fridge** and **Ice Maker** pads for approximately 5 seconds.

Touch the Freezer or Fridge pad to turn the cooling system on.



Touching the **Door Alarm** pad turns the Door Alarm on and off. Also, touching and holding the **Door Alarm** pad for approximately 5 seconds will adjust the UI sound from off to low to high.

Consumer Control LCD Models

About the Home Screen

The home screen is the initial screen presented after power-up.

About Temperature Adjustments

NOTE: The LCD customer control does not incorporate pads for temperature adjustment.

To change compartment temperatures, touch the screen to wake the control up and change temperatures directly on the LCD screen.

Once the Temperature control is pressed, the adjustment screen will appear in the display. When adjusting the temperature, the actual temperature will show in the display window. After adjusting to the desired temperature setting, press **Done**.

The customer also has the option to change the displayed temperature from °F to °C from this screen.

About Dispenser Selections

When the customer changes the dispenser functions, the display will show a short animation of the dispenser selection.

About TurboCool and TurboFreeze

The Express Modes option allows the consumer to turn on or off the TurboCool™ and TurboFreeze™ functions.

NOTE: Select ***TurboFreeze***™ or ***TurboCool***™ separately. When TurboFreeze™ or TurboCool™ is selected, the set temperatures in the freezer and refrigerator are not changed. The set temperatures for the compartments can be changed while these functions are in use.

TurboFreeze™ Function

When selected, TurboFreeze™ adjusts controls to the coldest freezer setting for 8 hours, and the freezer fan runs continually. After 8 hours, or if TurboFreeze™ has been cancelled, the indicator goes off and the freezer set temperature will be restored.

TurboCool™ Function

When selected, TurboCool™ adjusts controls to 35°F for 8 hours, and the fresh food fan runs continually. After 8 hours or if TurboCool™ has been cancelled, the indicator goes off and the fresh food set temperature will be restored.

About Precise Fill Options

There are two modes of operation for water dispense: Precise Fill and Auto Fill.

By selecting Precise Fill, the customer can select the amount of water.

By selecting Auto Fill, the dispenser will function by the use of four ultrasonic sensors (two sensors located below the base of the paddle, and two sensors located in front of the dispenser funnel). These sensors measure the height, width, volume, and shape of the container and will automatically fill the container to approximately 90% full*.

Ultrasonic sensors work in much the same way as backup sensors used on many automobiles.

This system is operated by the LCD control and the door control board.

When using Auto Fill, if a container is not placed in the dispenser, Auto Fill will not operate, and the display will notify the consumer.

**Typical fill level is approximately 80%, but will vary based on the height of the container. Typical range is 70% to 95%. If the container is over 7.5 inches tall, the fill level could be anything UP TO 90%.*

Auto Fill Diagnostic Procedure

To Enter Sensor Diagnostic

1. Wake the screen.
2. Simultaneously press and hold the ***Water***, ***Cubed***, and ***Precise Fill*** buttons for 5 seconds.

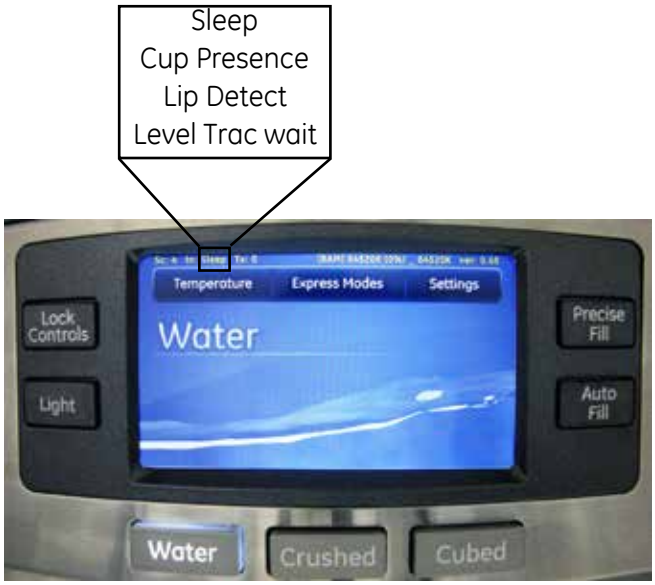
The display on the upper right should show the status of the sensors.

The first display shows the dispenser in Sleep mode. Place a cup in the recess, the display will then show Cup Presence, Lip Detect, Level Trac wait, and then go back to sleep when the container is removed.

If there is a lower sensor failure, the display will not detect the container.

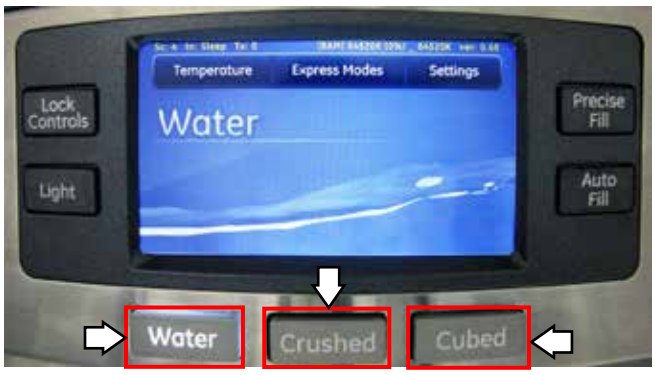
If the display cycles through these test messages, the sensors are OK. If the Auto Fill display quickly displays between Cup Presence and Lip Detect, the upper sensors have failed and need to be replaced.

Press the ***Auto Fill*** button to begin dispensing water and the LCD will display the amount.



To Exit Sensor Diagnostic

1. Enter service mode by simultaneously pressing ***Water***, ***Cubed***, and ***Crushed*** buttons for 5 seconds.
2. Select Yes.
3. Once in service mode, use code 00-16 to reboot the refrigerator (see the ***Service Diagnostic Functions*** section in this Service Guide).



(Continued next page)

About Consumer System Settings

When the consumer selects System Settings from the main screen, they can change or reset functions on the unit by scrolling thru the screens. These changes and resets are as follows:

- Upload up to 90 photos
- Initiate slideshow
- Connect Wi-Fi
- Turn the icemaker on and off
- Turn the door alarm on and off
- Turn the control sound on and off
- Turn the cooling system on and off
- Change the temperature display to F or C
- Change the water dispenser from US Imperial to Metric
- Altitude setting

About Sabbath Mode

To enter or exit Sabbath mode; press and hold simultaneously the ***Lock Controls*** and ***Light*** buttons for 3 seconds.

- This feature was designed for use on the Jewish Sabbath Holiday.
- The Sabbath mode feature will override typical interaction with the refrigerator.
- In Sabbath mode, the refrigerator will still cool normally, but will not respond to user actions.
- The LCD display will change to a screen prompting the consumer to enter or exit Sabbath mode.

- The display will show **Enter Sabbath Mode** or **Exit Sabbath Mode** for 3 seconds and then the display goes to sleep and won't wake up until Sabbath mode is exited.
- All of the displayed icons will be turned off.
- All of the sounds and tones will be turned off.
- The Sabbath mode will expire 76 hours after being activated by the consumer.

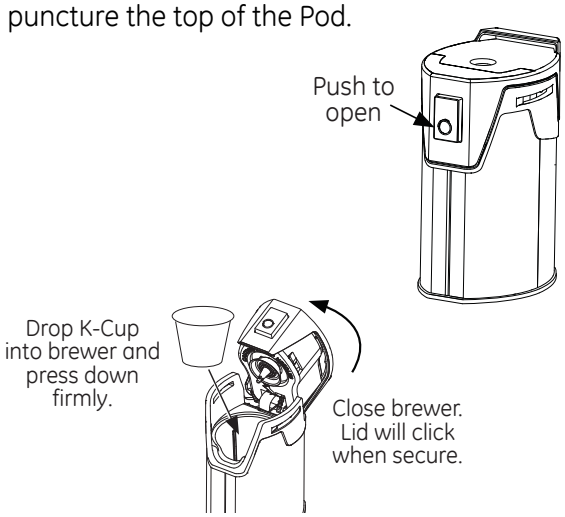
- The fan may or may not be running when the door is opened; however, this is not a result of the user's actions.
- There is a 20 second delay on all control changes (fans and compressor) while the door is open. This includes any fan action as a result of doors opening.
- After a power outage, the refrigerator will power back up in the Sabbath mode.
- The temperature settings of the refrigerator will remain as set prior to turning on Sabbath mode and will return to those setting after Sabbath mode is turned off.
- The door alarm is disabled.
- All of the button actions on the dispenser will be ignored by the control during Sabbath mode.
- The dispenser auto fill ultrasonic sensors are disabled.
- The water valve, auger motor, and duct door motor are disabled.
- The icemakers are inoperative during Sabbath mode.
- Door openings are not counted for adaptive defrost, so the user has no influence on the defrost process.
- The time between defrost cycles is fixed at 8 hours. The defrost heater termination is controlled by time or temperature.

About Keurig K-Cup

The Café models have a feature to heat water for a variety of uses. There are 5 presets programed into the control and labeled 'Soup', 'Tea', 'Hot Coco', 'Warm' and 'Keurig K-Cup Pod'. It also has a 'Custom Temperature' setting where user can select their own temperature between 90˚F to 185˚F in 5 degree increments. 'Keurig K-Cup Pod' selection is used with the brew module for brewing beverages.

Beverage Brewing

1. Open the Brew Module (also called the Brewer) by pressing the button, and drop in a beverage Pod. Any standard single serve Pod can be used in the Brewer.
2. Press the pod down onto the spike to puncture the bottom of the Pod.
3. Close and latch the top of the Brewer to puncture the top of the Pod.



Selecting K-Cup

From a blank or home screen press the Hot Water button to display hot water selection screen.

Select Keurig K-Cup Pod from the menu, or installing the brew module will take you directly to the Serving Size screen.

'Coffee'* or 'Cocoa' and size selection of '6', '8' or '10' ounce must be selected to start the water heating.

(Continued next page)

Heating Water

When a K-Cup® beverage size is selected both hot water tank valves open and the water in the hot water tank begins heating. Water heating time will depend on the temperature of the water in the tank.

The hot water tank has a 1200 watt heating element that is controlled by the door board and the feature board. Depending on the cooling needs of the refrigerator the water may heat on low at 600 watts. When low heat is used the message "**! Heating Slowed due to fridge cooling**" will be displayed at the bottom of the screen.

When heating water a relay on the door board closes to supply 120 VAC from the door board J8-2 to the Feature Board J203-2. Low heat is used when the compressor, icemaker or defrost heater is energized to keep total current within energy specification

To produce 600 watts, low heat, from a 1200 watt heater, 120 VAC is passed through a diode on the Feature Board resulting in 60 VAC output from J203-1 to ORANGE neutral. (Wiring Diagram 1)

For 1200 watts, High heat, a relay on the Feature Board closes, bypassing the diode resulting in 120 VAC from J203-1 to ORANGE neutral on the Feature Board. (Wiring Diagram 2)

High heat is referred to in diagnostics as '**Turbo Heat**'

Cafe Models

When water is hot and the heater is turned off the hot water is ready to be dispensed. The knob is turned counterclockwise and pushed in and held to dispense the hot water.

As the water is dispensed it passes through the venturi that creates suction pulling the water out of the upper chamber until the check ball rests on its gasket preventing air from being drawn into the water from the vent.

The inlet water leaves the venturi, flows through the dip tube to enter the lower chamber at the bottom. As the cold water enters the bottom it forces the hot water out of the outlet port at the top left of the tank. Water then flows through the hot water outlet tube from the Hot Water tank to the outlet in the recess then into the user's cup or bowl. When the water stops dispensing the water in the outlet tube is higher than the tank outlet port so the weight of the water causes the water very quickly flow back to the hot water tank, float up the check ball and collect the excess water in the upper chamber. This action causes a very fast shut off of the water and the water returning to the tank prevents drips at the recess.

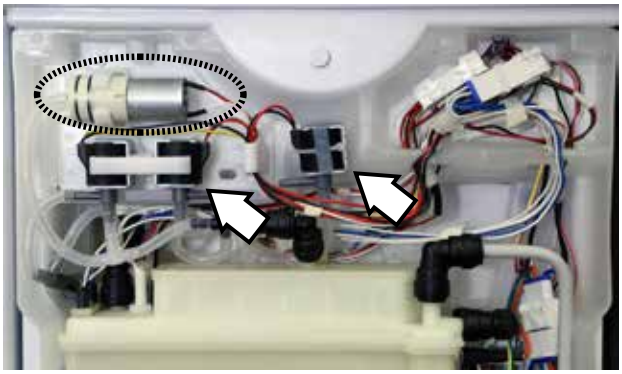
Keurig K-Cup

When water is hot the Ready screen appears.

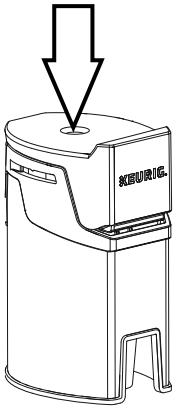
(Continued next page)

When the Hot Water knob is turned counterclockwise, pushed then released the brewing begins. The **Brewing** screen is displayed.

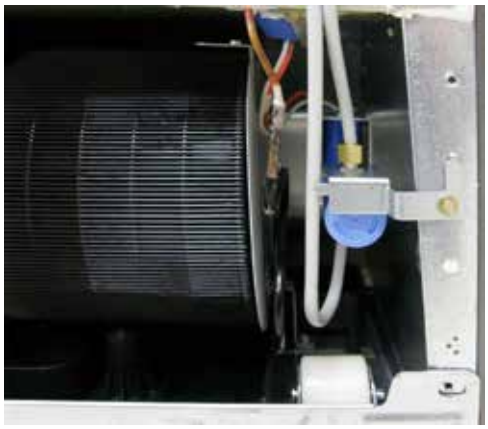
The air pump starts, both of the hot water tank vent valves close.



The nozzle lowers into the brewer.

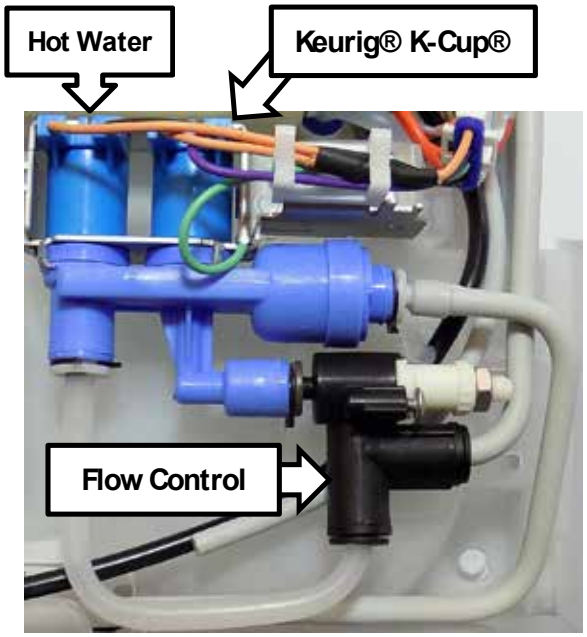


The isolation valve opens in the machine compartment.

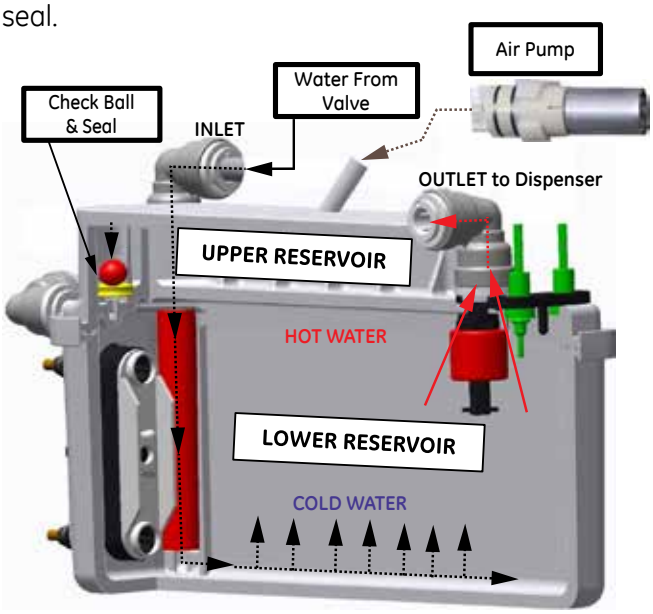


After 6 – 10 seconds the vent valves closes, air pump and isolation valve continue. The Keurig® water valve of the hot water valve assembly is energized. The water from the water valve and upper reservoir flows down the dip tube to the bottom of the lower reservoir, pushing hot water out of the top of the hot water tank.

Water is dispensed more slowly for K-Cup brewing by passing the water through a Flow Control Valve. The Flow Control Valve reduces the water flow to an ideal rate for brewing beverages.



The air pump continues to run, keeping the upper reservoir pressurized to keep the check ball on the seal.



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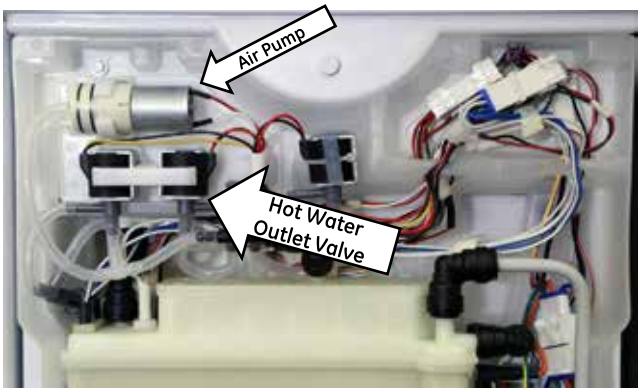
Hot water flows into the Hot Water Outlet tube, to the Bracket and Motor Assembly nozzle.

Water then flows through the brewer and pod into the user's cup.

At the end of the brewing time the isolation valve and K-Cup® water valves close stopping the water flow. The air pump continues to run for an additional 5 – 10 seconds. The Hot Water Outlet Valve opens to blow air through the hot water outlet to clear the pod of excess water and residual beverage to minimize drips.



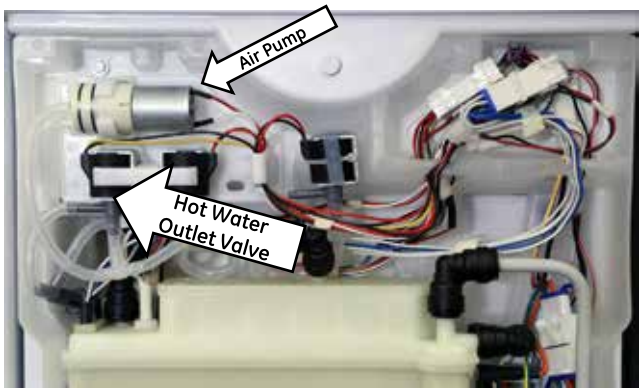
After the 5 – 10 seconds the air pump is turned off, the nozzle retracts from the Brewer, both vent valves open and the Hot Water Outlet remains open. Dispensing is complete and the **Enjoy** screen is displayed. All three valves remain open for an additional 30 seconds to ensure there is no pressure on the hot water system.

Brewing Cocoa

Cocoa and other beverage pods contain powder that will dissolve during the brewing process. When Cocoa is selected the heating temperature and time is the same as Coffee.

(Continued next page)

The difference is during brewing and dispensing. During a Cocoa dispense the Hot Water Outlet Valve will open briefly about half way through to inject air into the Pod to stir up the contents so all will be used. As dispensing finishes the dispenser outlet valve opens again and the air pump continues for 5-10 seconds blowing air through the Hot Water Outlet and pod to clear water and beverage however the last 2 seconds the air pump increases speed and pressure to ensure all of the content of the pod are used.



Hot Water Tank

The Hot Water tank is made of very strong glass filled polypropylene material with a stainless steel liner to protect the tank from the heater.

The tank consists of 2 chambers, a large lower reservoir and a small upper reservior connected by 2 quick connectors. The lower reservior holds approximately 22 ounces of water, contains the heater and stainless steel liner. The upper chamber is an expansion area to prevent water drips at the recess while the water is heating and provide a quick shut off when hot water dispensing is complete.

The heater is a 750 watt calrod for the standard Cafe Models and a 1200 watt calrod for the Keurig K-cup models the heater is protected by 2 internal 305˚F thermal cut outs. (TCO)

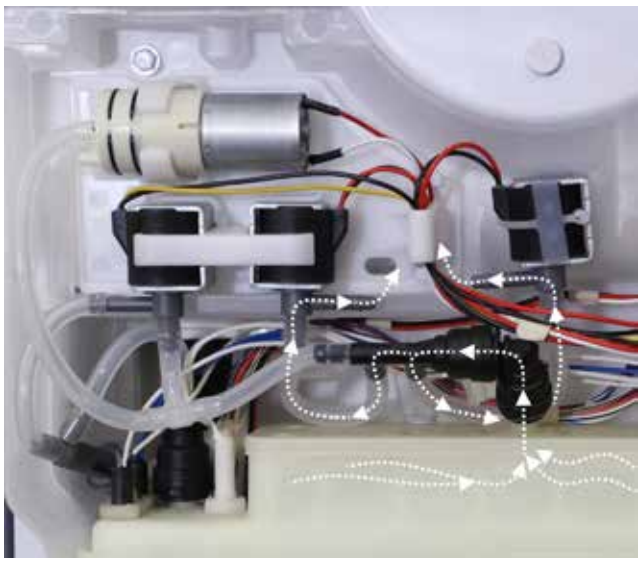
The water temperature in the tank is monitored by 2 thermistors located at the top left of the tank. Both thermistors must have a valid reading (neither open or shorted) for the Hot Water system to operate. When the Hot Water system is activated the door controls monitor both of the thermistors to ensure the difference in temperatures is less than 15˚F. Should the temperature difference get greater than 15˚F after the first 30 seconds of operation the Hot Water system will be disabled and a fault code is set. Both are wired to a 6 pin low voltage DC connector.

Thermistor value: 10KΩ ± 7% at 77˚F; 1.257K ± 5% at 176˚F.

Just to the right of the thermistors is the float switch that signals the controls that the tank is either full when the contact is open or not full when the contact is closed. The float switch if wired into the same 6 pin low voltage DC connector as the tank thermistors.

Water enters the Hot Water tank through the inlet port at the top right flows through the venturi then down the dip tube into the main lower chamber where it is heated. When the tank is full the float of the float switch is raised opening the contact, water is shut off and is now ready to be heated.

As the water is heated it expands into the upper chamber through the dip tube, venture, 2 quick connectors then floats up the check ball allowing the excess water to enter and be collected. A vent tube at the top of the upper chamber allows this water to enter without resistance. On Keurig K-Cup models the vent tube has a connector attached to two solenoid valves that open and close the vent to the atmosphere.



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Hot Water Operation Notes

- The flow of the water during the fill, dispense, and purge modes is monitored by the flow meter.
- If after 3 seconds the control does not see pulses from the flow meter while using Hot Water feature, the main board will deactivate the isolation water valve, the door board will deactivate the hot water valve, the control will deactivate the Hot Water feature and set a fault code.
- The controls must measure ¼ ounce per second while dispensing a minimum of 5 ounces of cold water to determine flow rate, if it does not the Hot Water feature will be deactivated.
- The control will deactivate the Hot Water feature if the time to dispense 10 ounces of cold water is greater than 45 seconds.
- If the Hot Water feature is deactivated the icemaker & chilled water systems are still active.
- If the consumer presses 'Hot Water' when the Hot Water is deactivated the control displays 'Hot Water Disabled'.
- The Hot Water feature can be reactivated by dispensing 7 ounces of cold water within 28 seconds to restoring all of its functions.
- The control measures the total water volume and the time from the beginning to the end of all dispenses and displays the volume.
- Maximum water heating time is 8 minutes.
- Minimum water heating time of 1 minute will be displayed on the screen.
- Maximum amount of hot water available to dispense is 10 ounces.
- UI will chime to signal 'Hot Water Ready' then 30 seconds later chime again then again at 1 minute if Hot Water is still not dispensed or canceled, it will chime again at 2, 3, 4, 5, 6, 7 minutes, at 8 minutes hot water is canceled without any sound.
- While heating water if the consumer presses one of the buttons on the user interface; Water, Crushed, Cubed, Lock, Precise Fill, or Hot Water, the LCD screen will display 'Do You Want to Cancel?' and continue to heat.
- If the consumer selected 'YES', The LCD screen will display 'Hot Water Canceled' for 3 seconds, terminate water heating then go to the refrigerator home screen and the control will execute the selected function.
- If the consumer selected 'NO', the LCD screen will revert to the previous screen and the control will continue hot water operation.
- The Hot Water system is not active while the control is in 'Sabbath', 'Demo' or 'Service' modes.
- The USB uploading of photos is disabled while the control is in Hot Water Dispense mode. (actually dispensing hot water)
- If a Hot Water system fault occurs the UI screen will display 'Hot Water Canceled'. (See mini-manual for fault codes)
- The Hot Water heating countdown time is only an estimate displayed in 15 minute intervals.
- Countdown timer can hold for more than 15 seconds at any time or skip a 15 second interval. (Examples: timer could hold at 1 minute for 25 seconds; the time could go from 45 seconds to 15 seconds skipping 30 seconds)
- In 'Purge Mode' even though the pad says "Empty Tank' the tank is not emptied it dispenses the hot water which is replaced with filtered water.
- Hot water temperature in the user's container could be as much as 15˚F below the set temperature depending on its size and constitution.
- Both of the thermistors must have a valid temperature reading for the Hot Water system to perform any operation.

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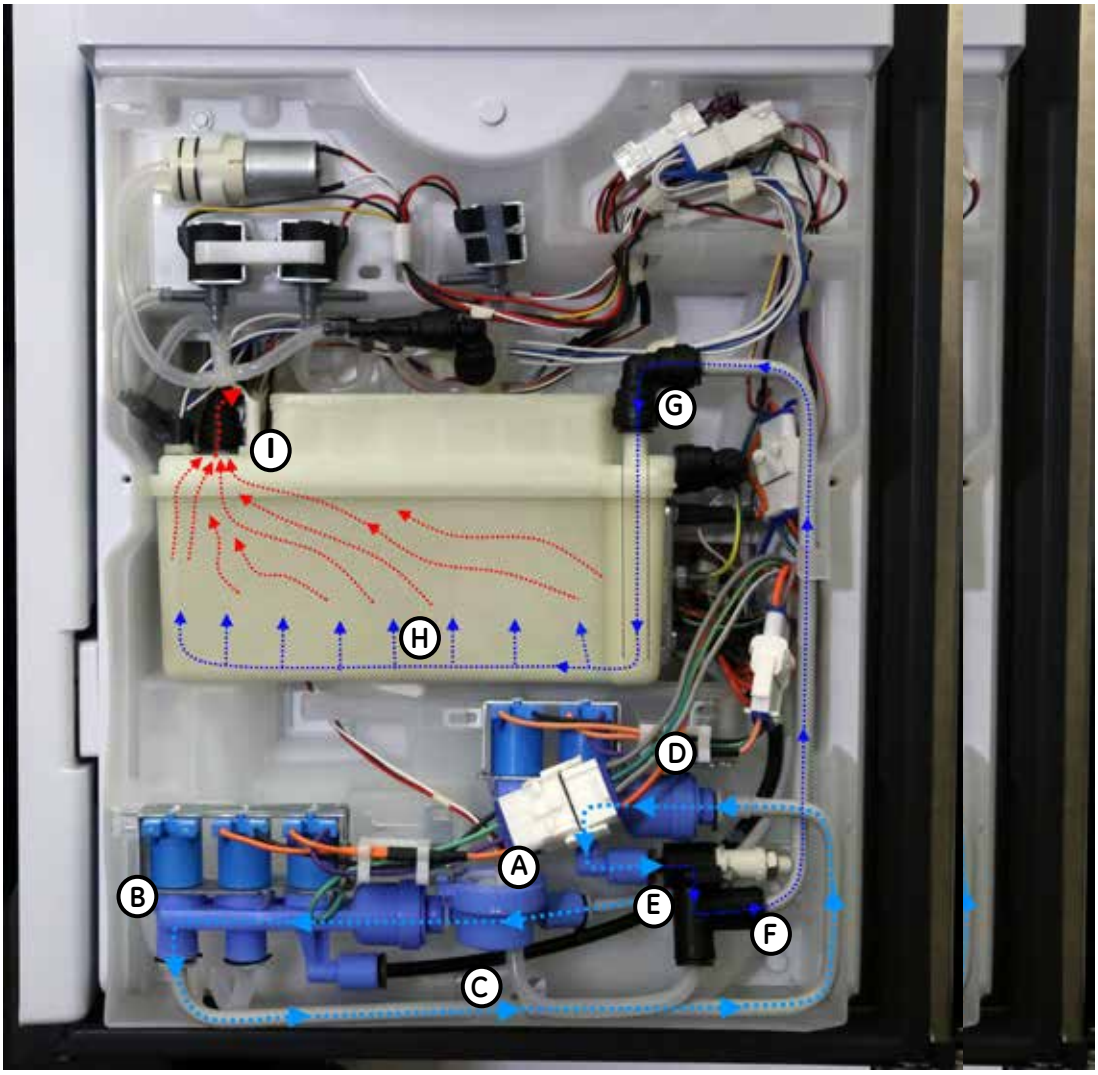


A. Filtered cold supply water enters the flow meter from the isolation valve in the machine compartment

B. Water passes through the left port of the triple valve

C. Water passed through the valve jumper tube to the hot water valve inlet

D. Water flows through the double valve's right port to the flow control valve

E. As water passes through the flow control the flow is controlled for the best beverage brewing.

F. Water from the Flow Control passes through a jumper tube to the hot water tank inlet

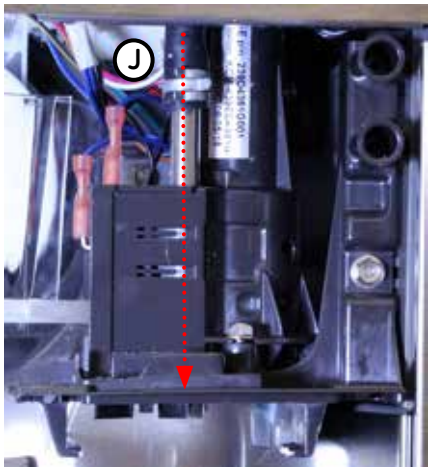
G. Cold water enters the HW tank at the top right then down a tube to the bottom of the Hot Water tank

H. As cold water enters the bottom of the tank hot water is pushed to the top of the tank.

I. Hot Water exits the tank at the top left then into the hot water outlet and into the recess.

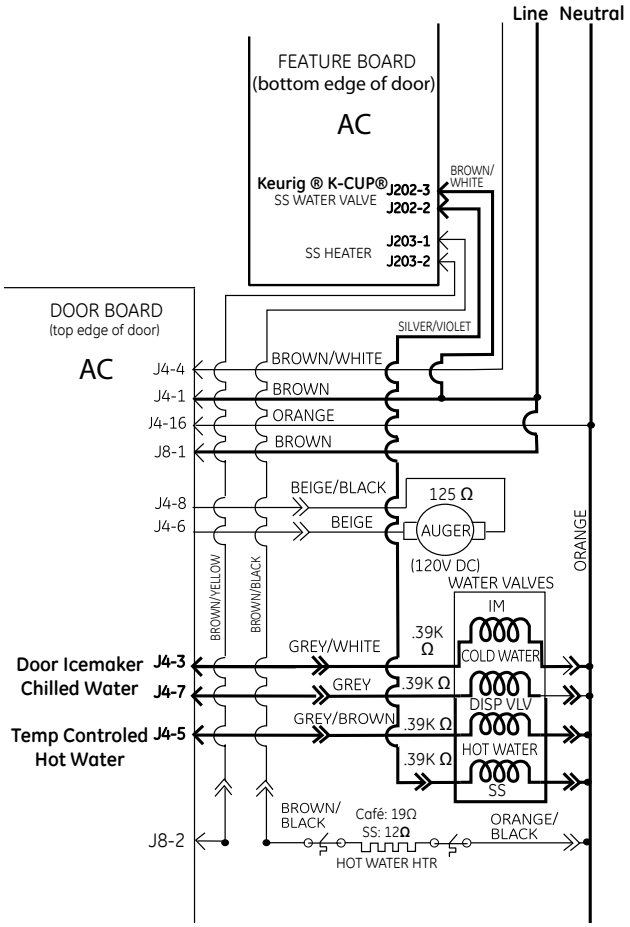
(Continued next page)

J. Hot water from the Hot Water tank passes through the Bracket and Motor Assembly's nozzle into the brewer.



K. Hot water mixes with contents of the beverage pod.

L. Hot beverage is dispensed into cup or container sitting on the shelf below.



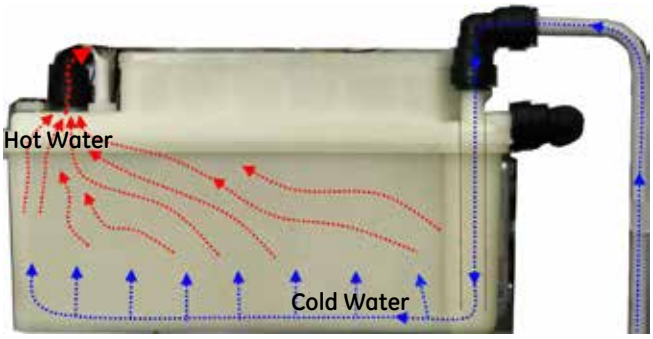
Water from either outlet of the double valve passes through the flow control. Water from the left side of the double valve enters the Flow Control from the bottom and exits from the outlet on the right. This is a bypass so water flows unrestricted through the Flow Control for temperature selected hot water.

The water from the right outlet of the valve enters the Flow Control from the left and exits from the right port providing the correct water flow for Keurig K-Cup brewing to the hot water tank.

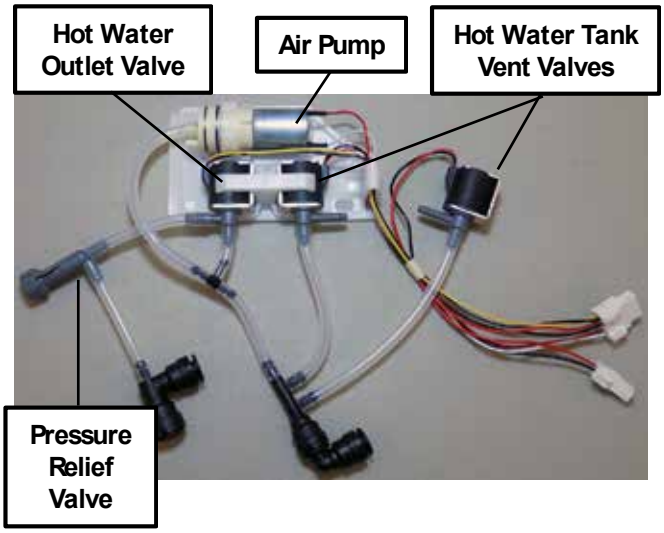
NOTE: The ?Flow Control is factory set, **DO NOT** attempt to adjust.

(Continued next page)

Cold water from the flow control enters the hot water tank at 2 different rates, normal flow for hot water selections or slow regulated flow for Keurig ® K-CUP® brewing. When brewing there is insufficient water flow for the venturi to work. A small pump and two tank vent valves are used pressurize the upper reservoir.



The **Pressure Relief Valve** is a safety device located just below the Hot Water Outlet valve with tubing to the Hot Water Outlet and Valve. The Pressure Relief Valve opens at 20 PSI should the hot water outlet become blocked or the Pod is not punctured on the top or bottom by the Brew Module.



The Pressure Relief Valve opens at ~20 PSI and water will be released into the tank and valve compartment. The consumer may observe water on the top left of the mullion or the bottom of the door. Should this occur check for obstructions in the hot water outlet tubing, the bracket and motor assembly or the pins in the brew module.

UI (**U**ser **I**nterface) Components

The User Interface on the dispenser door has a touch screen board mounted to a housing containing the buttons and hot water knob.

To remove the UI, pull out rotate the left side of the trim clockwise, then release from around the knob.

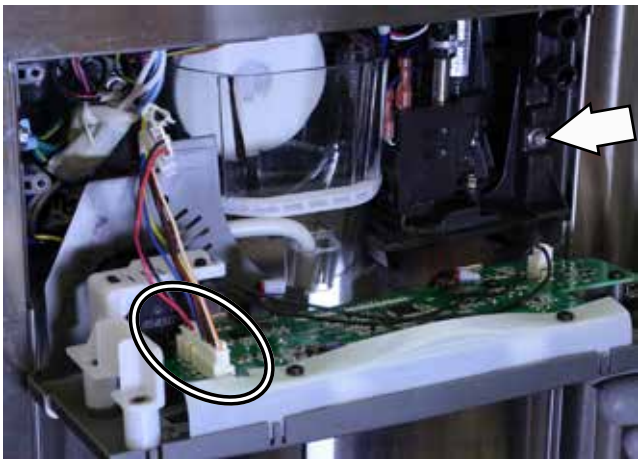
(Continued next page)

Remove the four 1/4” screws from the UI Bracket.

Using a small flat blade screwdriver, release the two tabs where the brewer attaches to the dispenser, starting with the left. When reassembling, ensure both tabs are engaged.

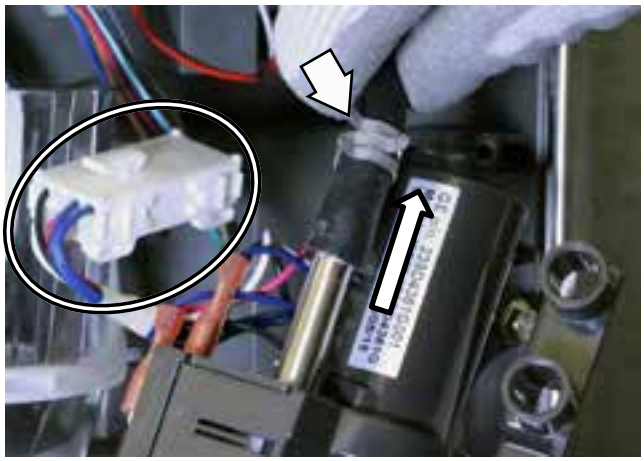
Pull the UI forward and lean the top forward, then disconnect the two connectors from the board.

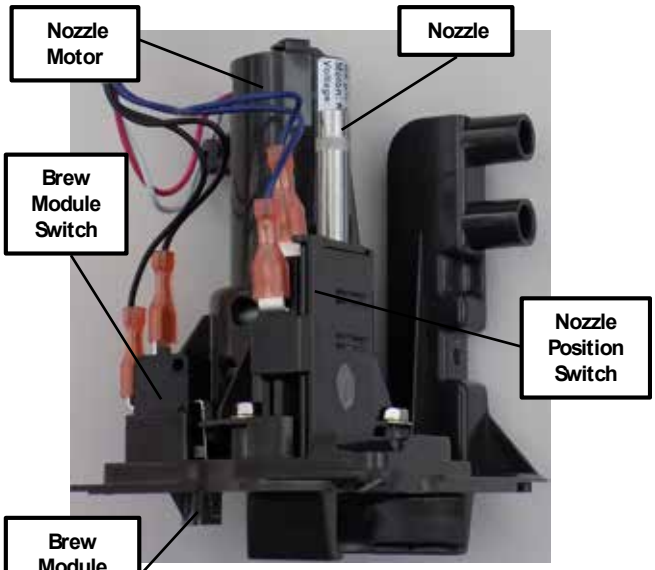
Remove the 1/4” mounting screw on the Bracket and Motor Assembly, then pull it forward.



Squeeze then slide the spring clamp up from the metal nozzle. Pull off the rubber hose and disconnect the harness connector.

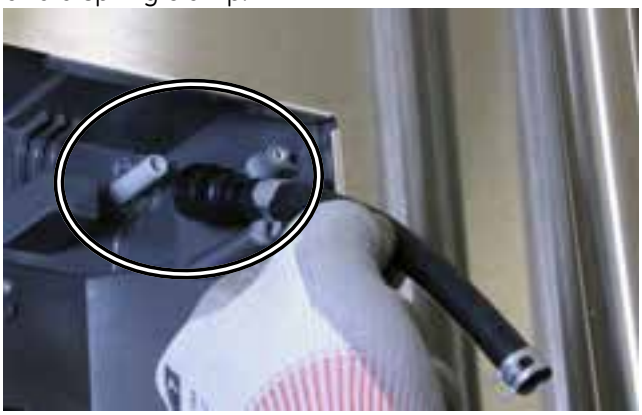
When reinstalling the spring clamp make sure the tabs are not pointing forwardard as they will interfere with proper reinstallation of the UI housing.





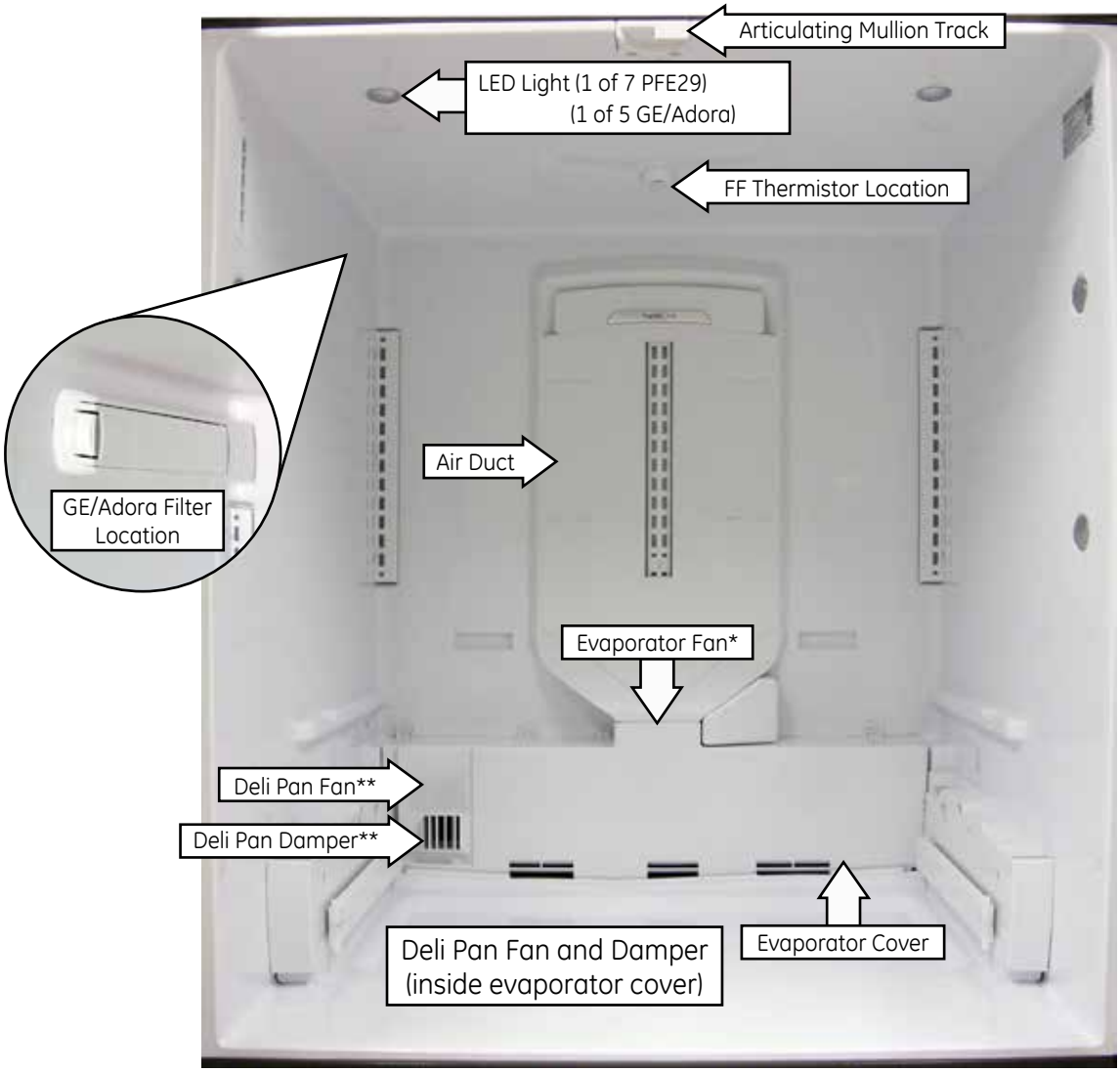
Only available as a complete assembly

The hot water outlet tube connects at the top right of the recess with a black barbed quick connector and a spring clamp.



Component Locator Views

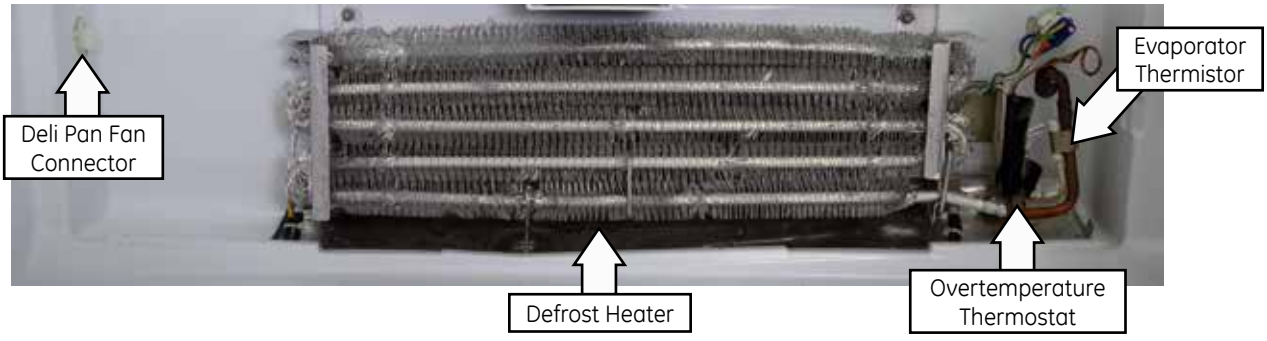
Fresh Food Compartment



*****The evaporator fan is attached to the inside of the air duct.

******On most Profile models, the deli pan fan and deli pan damper are attached to the inside of the evaporator cover. The damper is mechanical and manually operated on GE models.

Fresh Food Evaporator (shown with evaporator cover removed)



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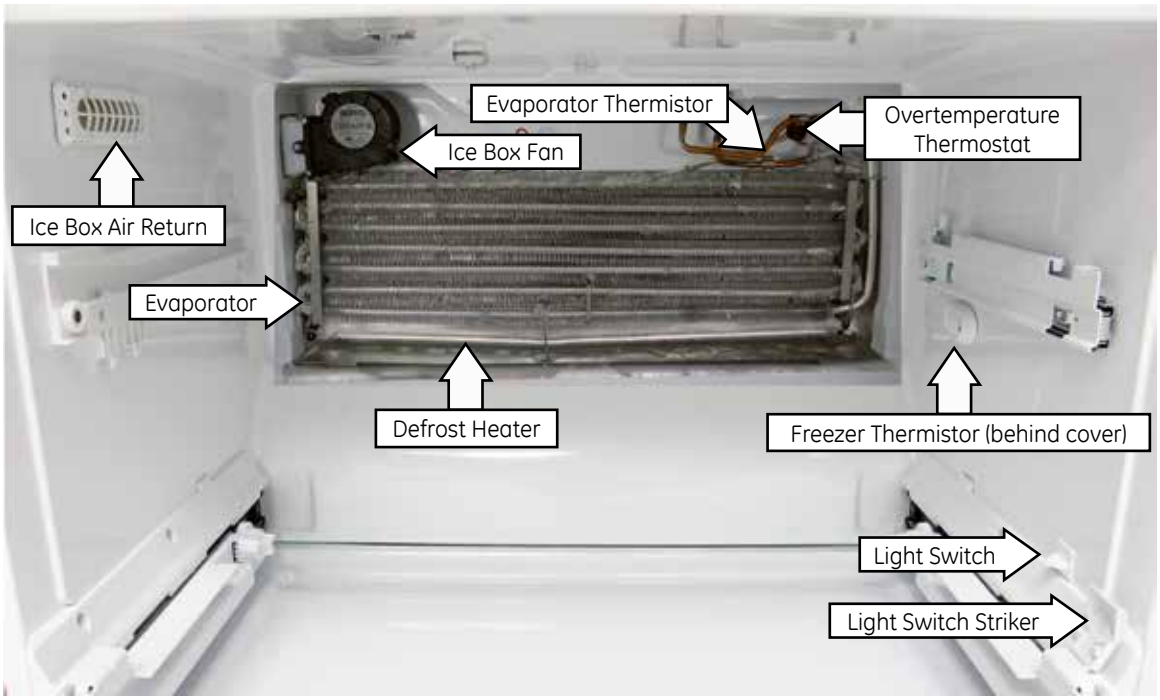
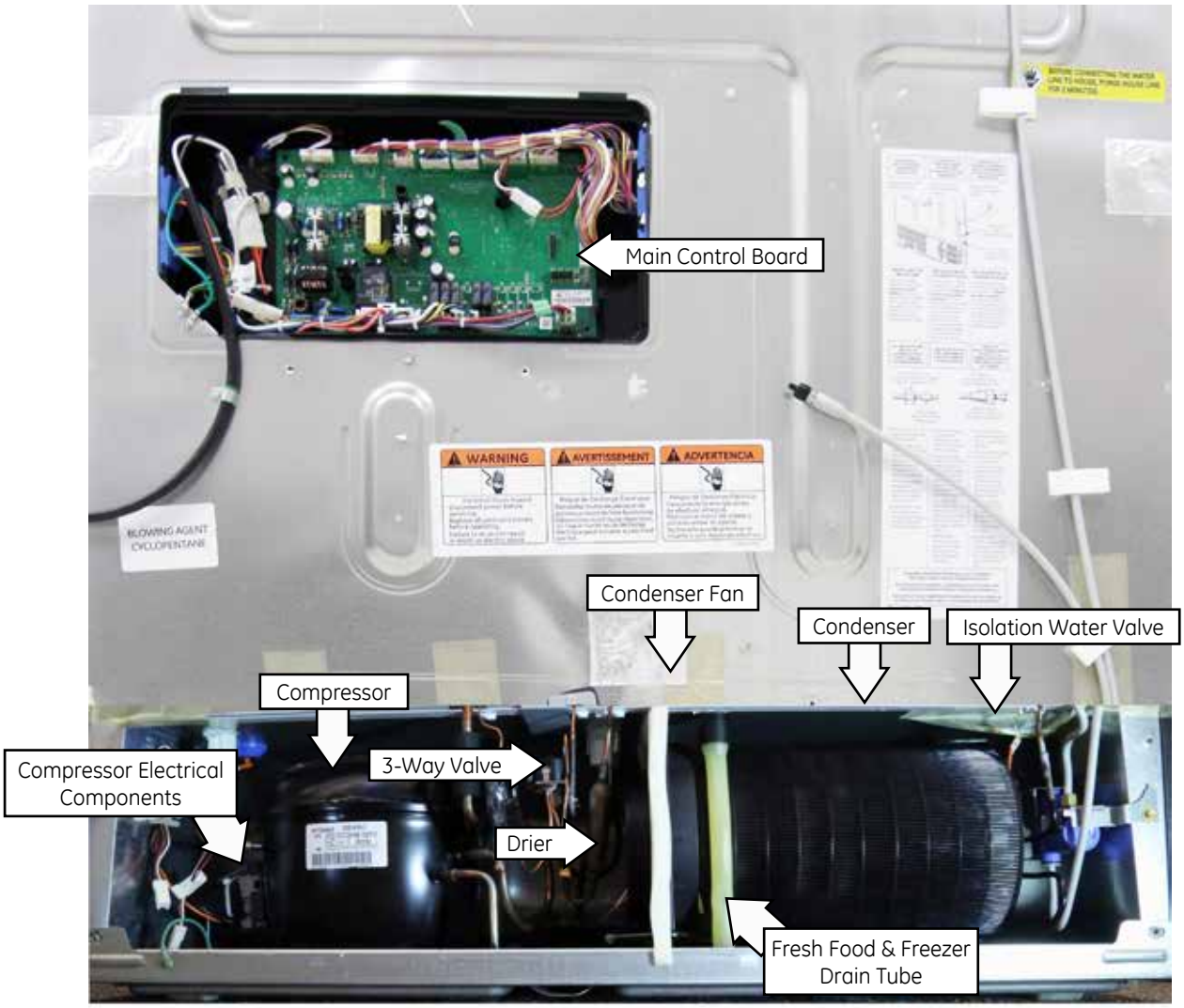
Freezer Compartment



Rear View



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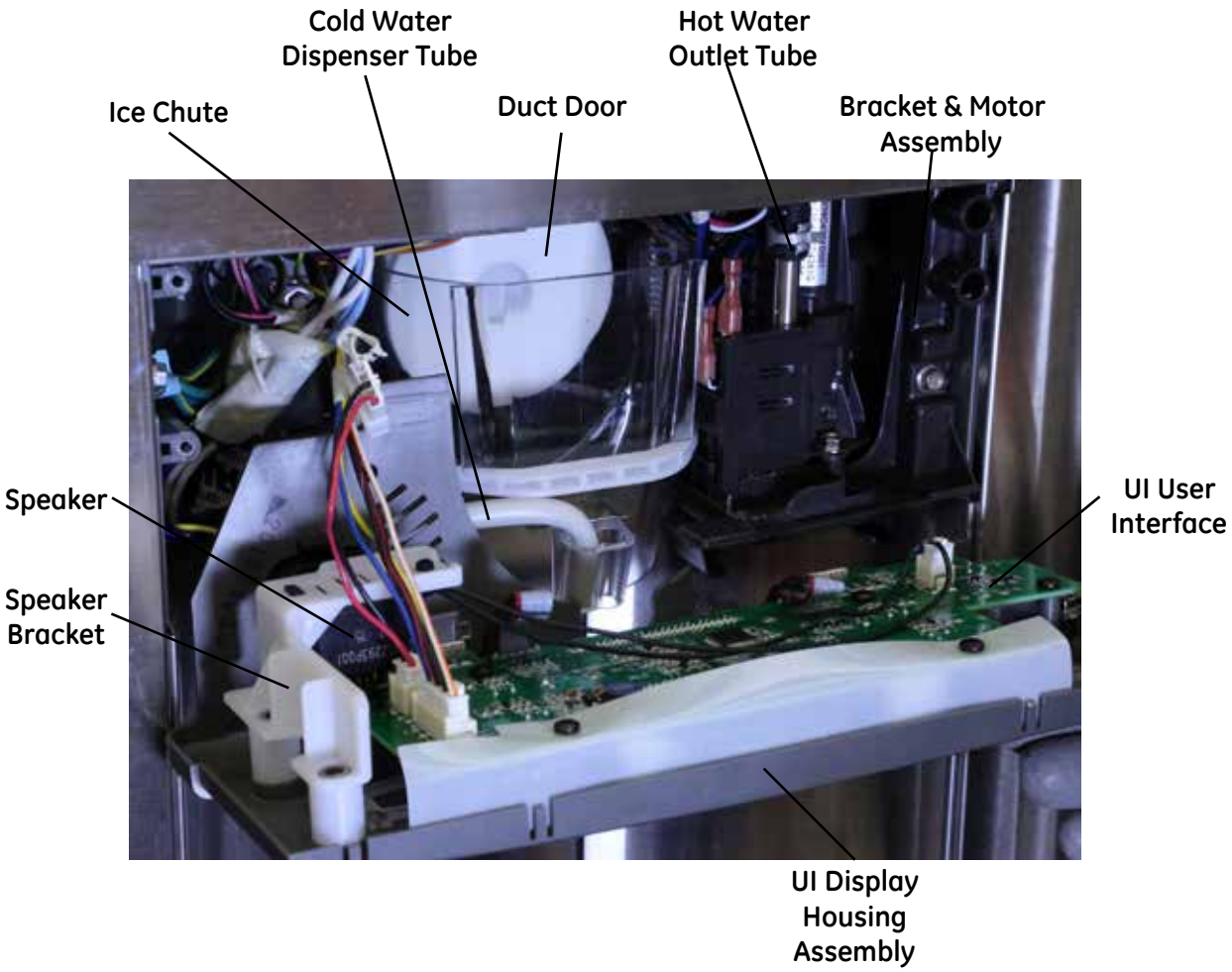
Dispenser Recess



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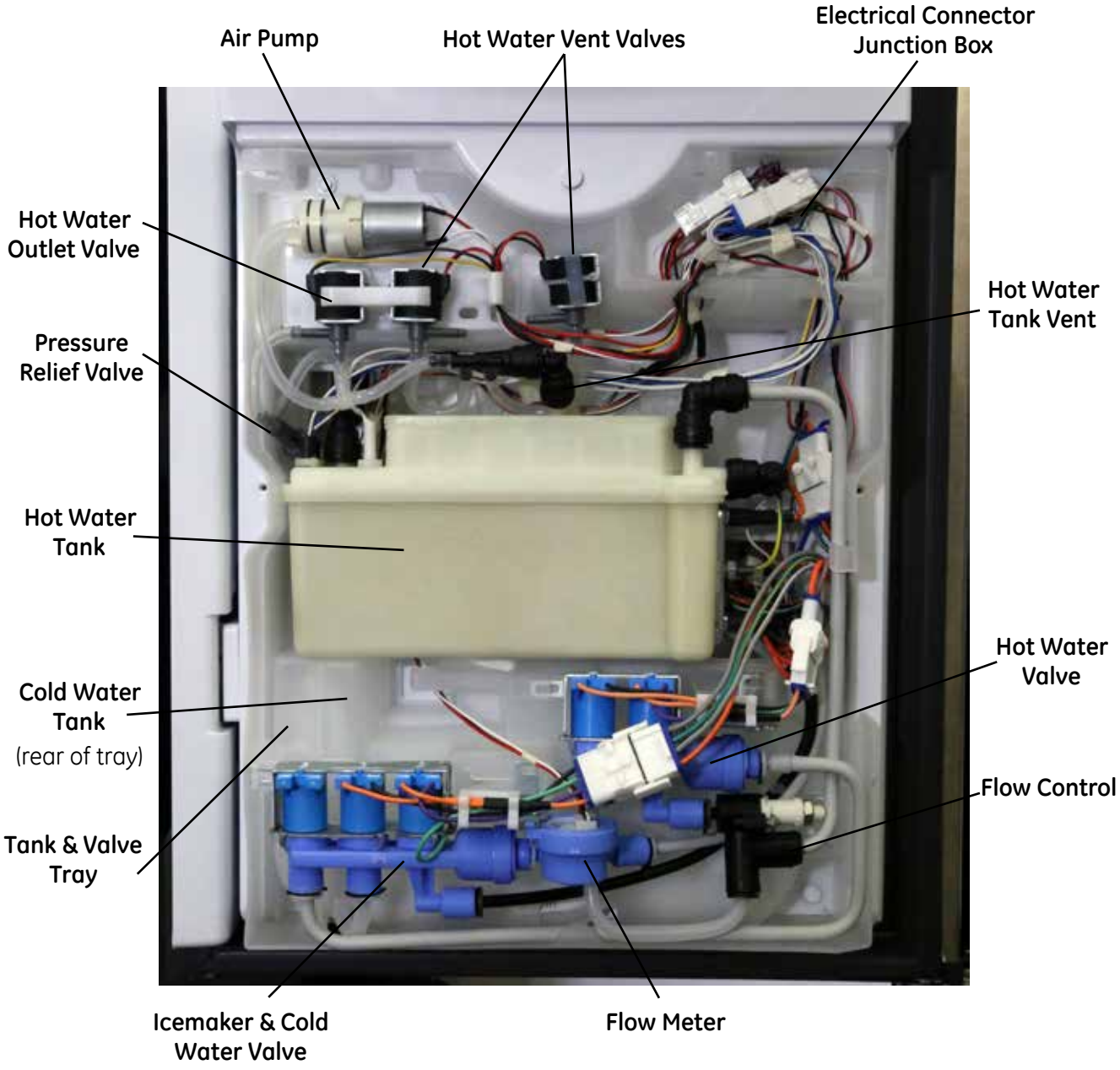
Tank and Valve Compartment



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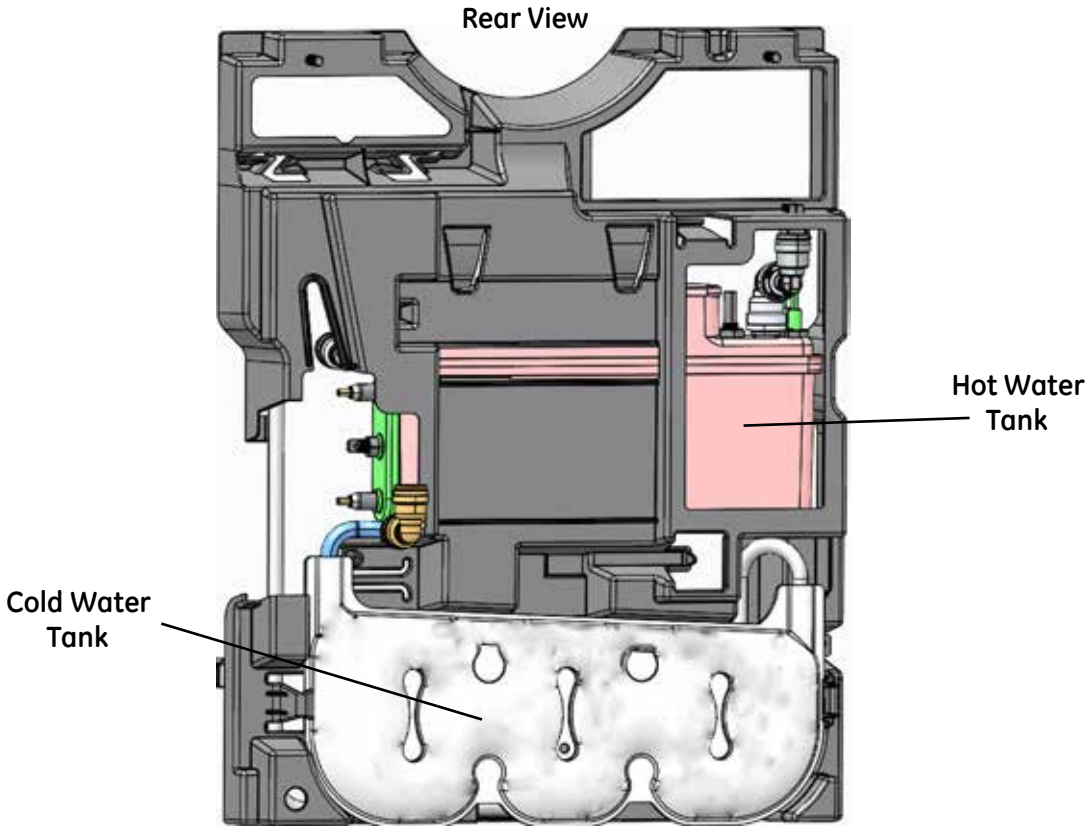
Tank and Valve Tray



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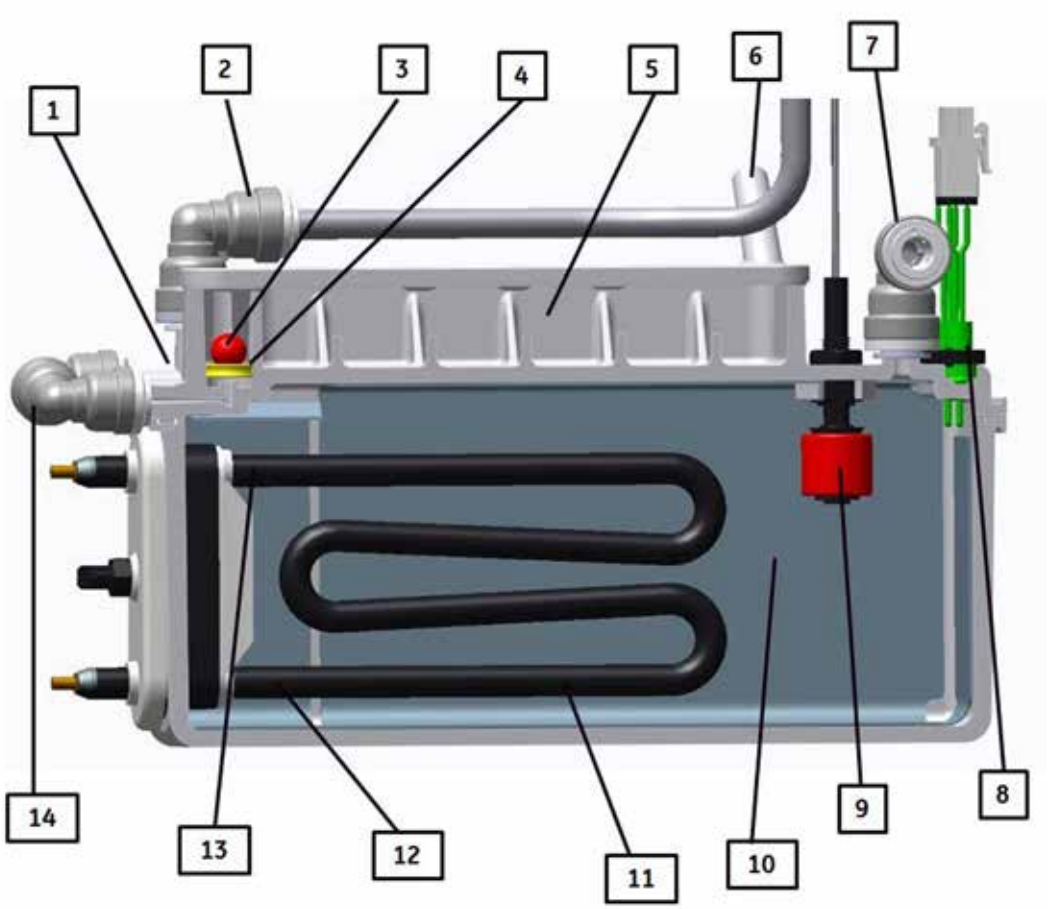
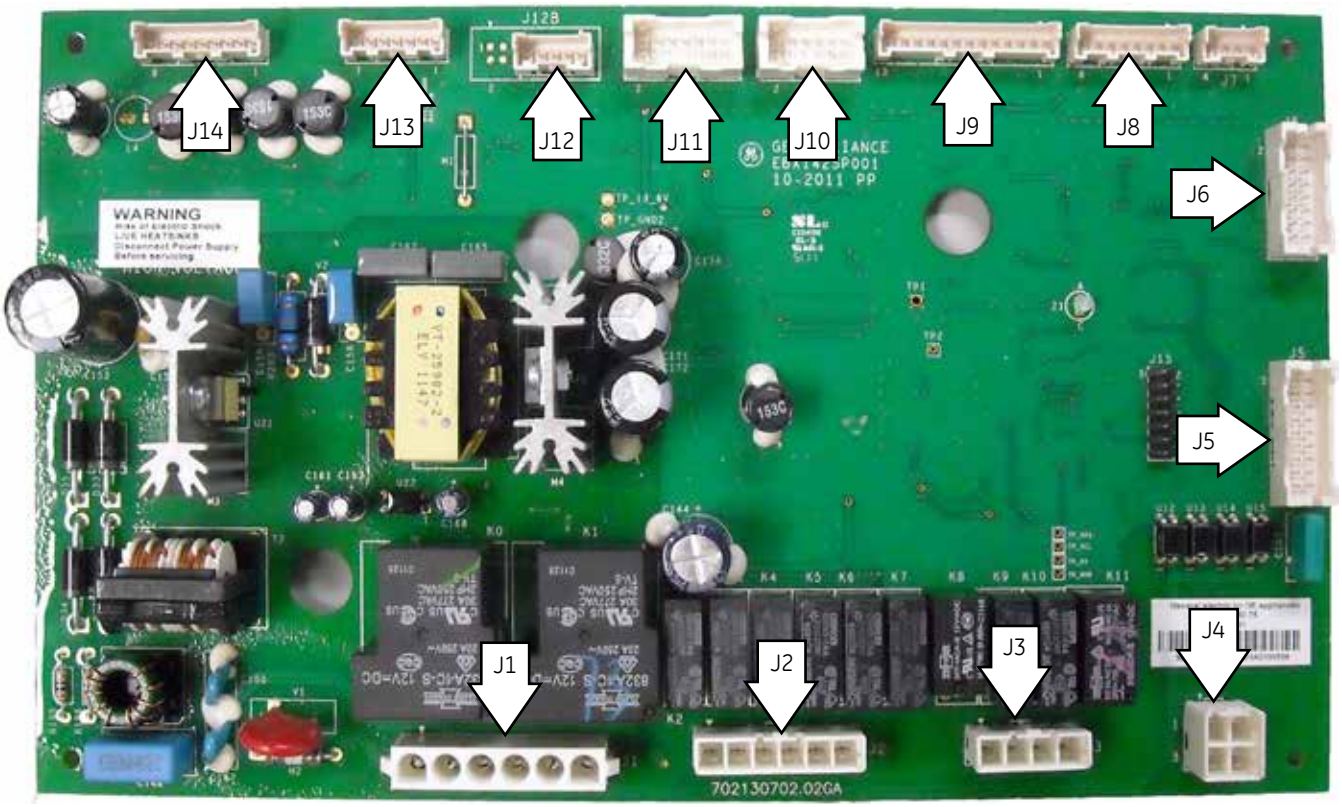
Hot Water Tank



1. Venturi
2. Water Inlet
3. Check Ball
4. Check Ball Seal
5. Upper Reservoir
6. Upper Reservoir Vent
7. Water Outlet
8. Dual Thermistors
9. Float Switch
10. Lower Reservoir
11. Heating Element
12. 305˚ TCO
13. 305˚ TCO
14. Connectors from Upper Reservoir to Lower Reservoir

Control Board Connector Locator

Main Control Board



J1 - Earth (Ground), Neutral Input, Freezer Defrost Heater, Line Input

J2 - Isolation Water Valve, Fresh Food Defrost Heater, Ice Port Heater, Deli Pan Heater

J3 - Freezer Icemaker (GE Models)

J4 - Left Door Switch, Freezer Light Switch, Right Door Switch

J5 - Model ID (Personality)

J6 - Deli Pan Fan, Fresh Food Fan, Deli Pan Damper

J8 - Freezer Evaporator Fan, Freezer Icebox Fan

J9 - Condenser Fan, Main Board Enclosure Heater, Inverter, Ambient Thermistor, Humidity Sensor

J10 - Freezer Thermistor, Freezer Evaporator Thermistor

J11 - Deli Pan Board, Deli Pan Thermistor, Fresh Food Evaporator Thermistor, Fresh Food Thermistor

J12 - 3-Way Valve

J13 - Energy Management System

J14 - LED Lighting

(Continued next page)

Door Board

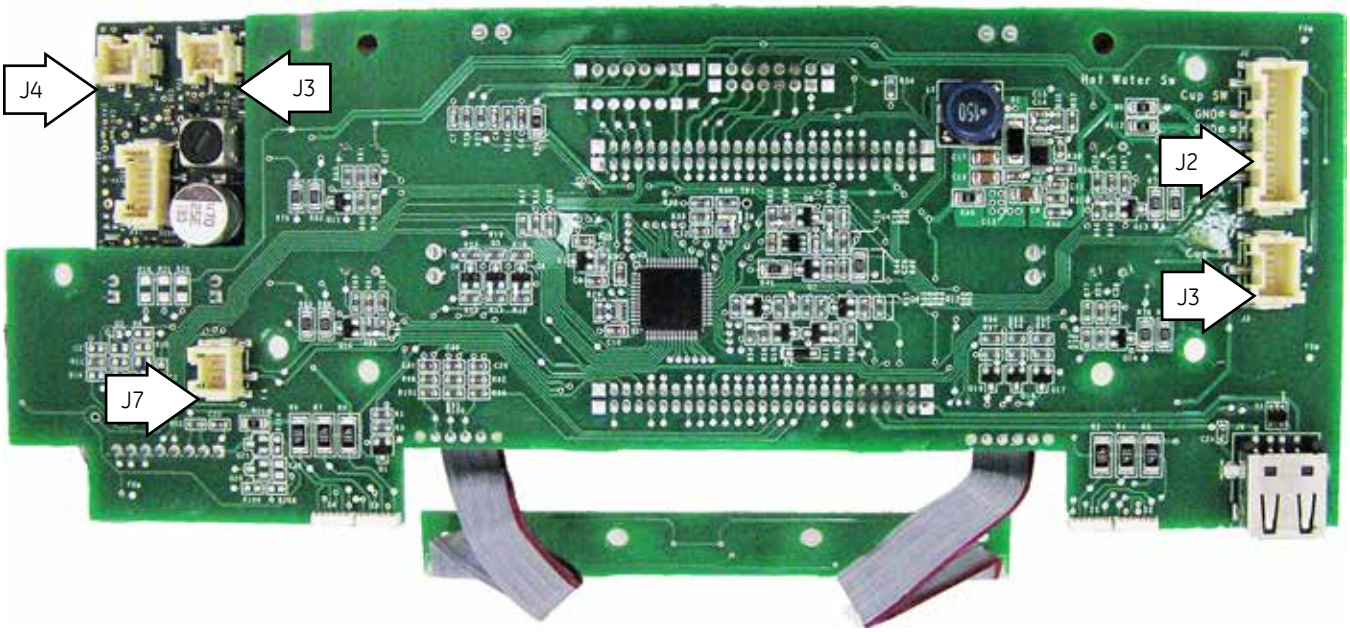
J3 - Ice Box Heater Gasket, Freezer LEDs, Articulating Mullion Heater, Icemaker Feeler Arm Sensor, Duct Door Motor, Flowmeter, Recess Heater, Icemaker Ejector Rake Sensor, Paddle Switch, Icemaker Fill Tube Heater

J4 - L1 Supply, Icemaker Rake Motor, Icemaker Water Valve, Switched L1 Auger Input, Auger Motor, Dispenser Water Valve, Icemaker Mold Heater, A/C Neutral

J5 - Icemaker Thermistor, 5 VDC, Ice Box Thermistor

J8 - 120 VAC supply for hot water heater & 120 VAC out to hot water heater

Dispenser Board



J2 - Communication, Hot H_2O LED, 12 VDC, Board Ground, Hot H_2O Cut Switch

J3 - Paddle Switch

J7 - Sound Module

Sensor Section *(auto fill models only)*:

J3 - Upper Ultrasonic Sensor

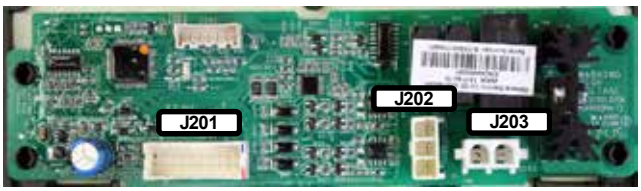
J4 - Upper Ultrasonic Sensor

(Continued next page)

Feature Board

The Feature Board is mounted in the bottom edge of the left fresh food door. The Feature Board operates the components for the Keurig® K-Cup® brewing system, receiving commands from the door board.

To access the Feature Board, remove three T15 screws. Push the board and cover to the rear slightly, then pull the board down to access connectors to remove it.

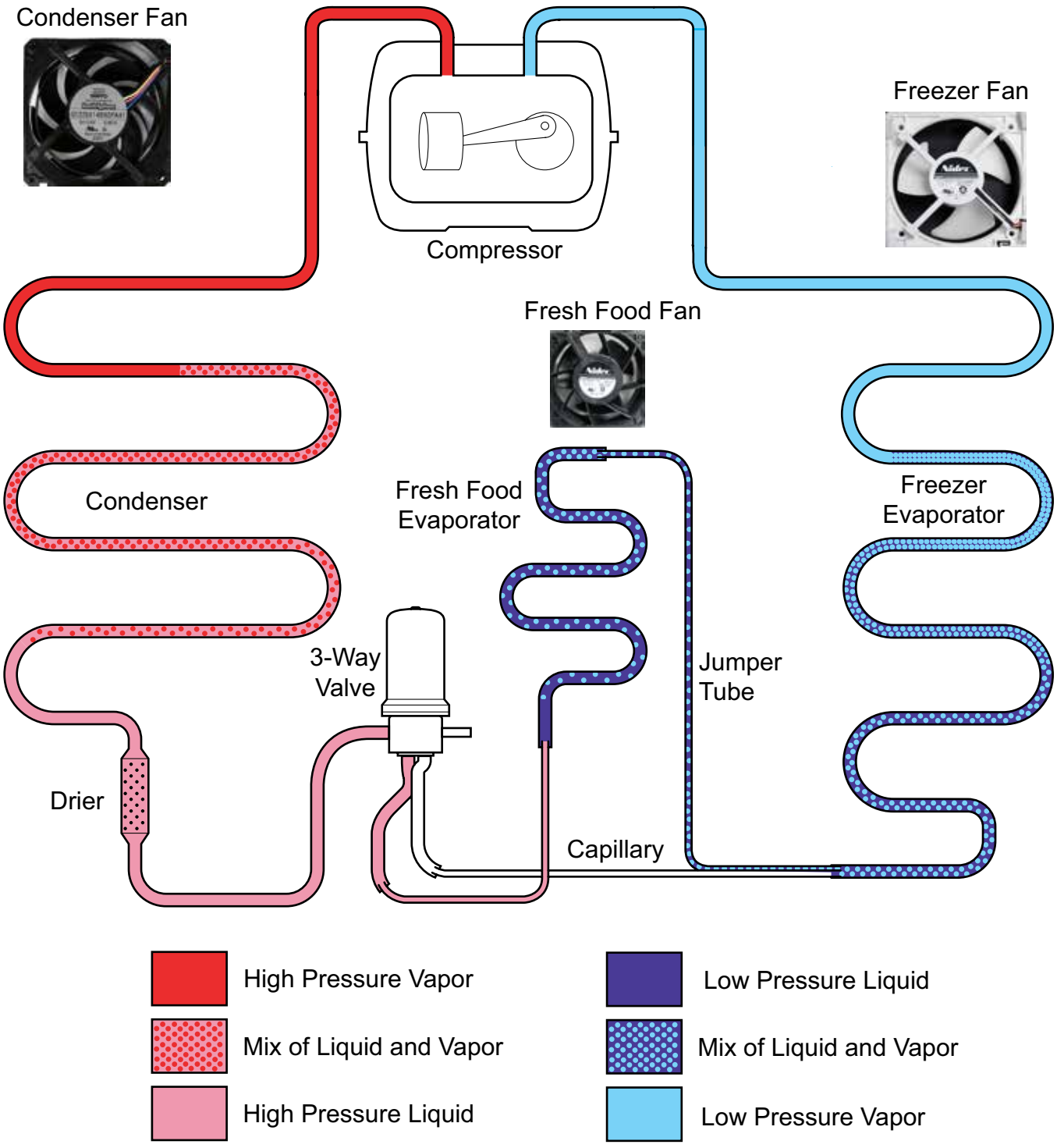


Refrigeration System

The compressor compresses R134a refrigerant, raising its pressure and temperature. Refrigerant vapor is pumped out the compressor discharge, down through the drain pan loop, up through the condenser coil, around the condenser loop, through the drier, and into the 3-way valve. By the time the refrigerant has reached the 3-way valve, it has completely condensed into a liquid. Depending upon whether the main control board opens the 3-way valve to the freezer evaporator or the fresh food and freezer evaporators, refrigerant flows through the appropriate capillary tube and into the evaporator. As the high pressure liquid passes through the capillary and enters the low pressure evaporator, it quickly expands and evaporates. During evaporation, the refrigerant absorbs heat, becoming cold. At the outlet of the freezer evaporator, an accumulator captures any remaining liquid, allowing only low pressure vapor to return to the compressor through the suction line.

(Continued next page)

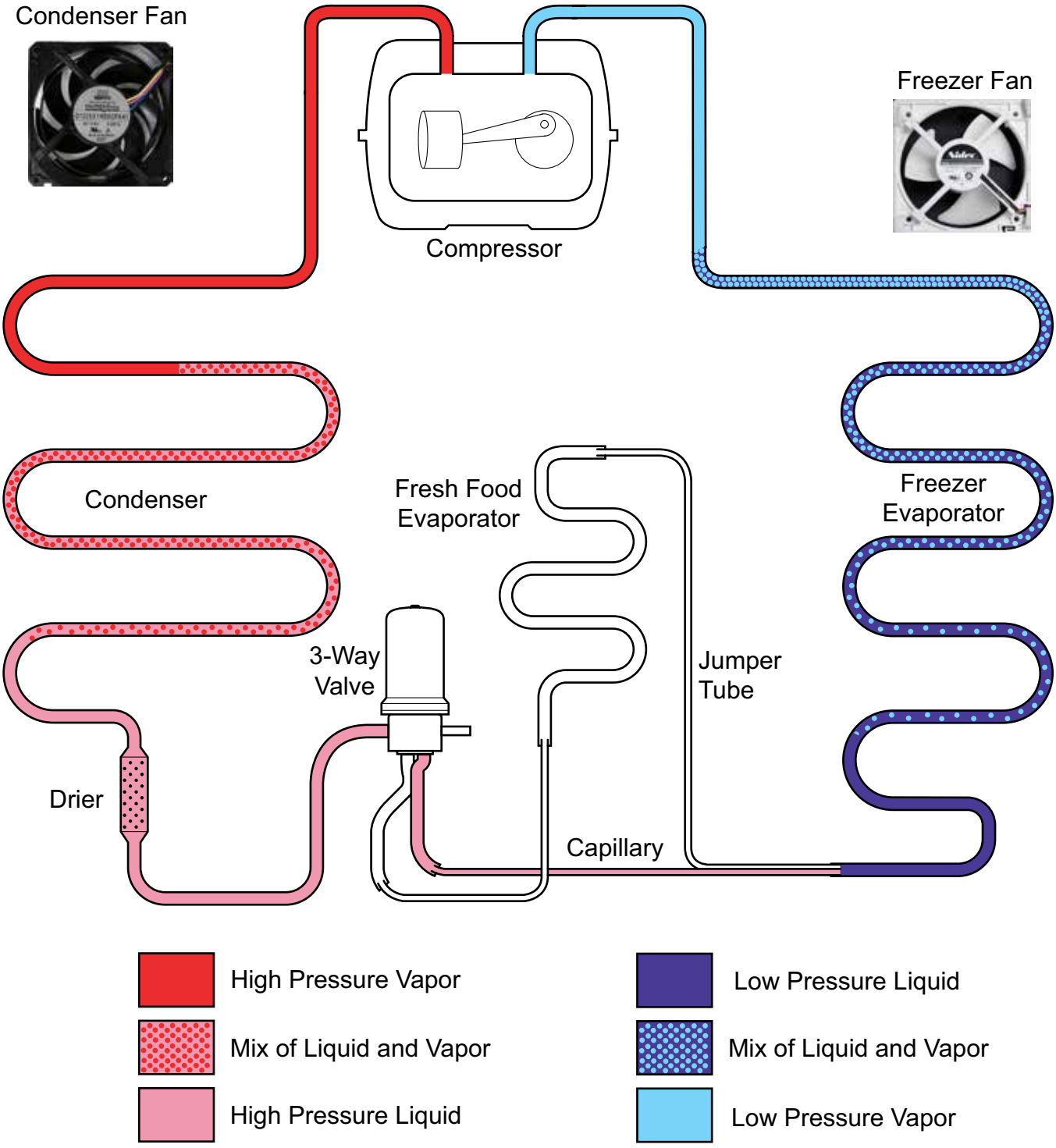
FRESH FOOD AND FREEZER SECTION COOLING - Position A



NOTE: The refrigerator will operate with the 3-way valve set for freezer only, or set for fresh food and freezer. There is no 3-way valve setting for fresh food only. If the fresh food thermistor is not satisfied, but the freezer thermistor is satisfied, the refrigerator will still operate with the 3-way valve set in the fresh food and freezer mode.

(Continued next page)

FREEZER SECTION COOLING - Position B



Operation Overview

Normal Operating Characteristics

- Liner protection mode will turn on either the fresh food or freezer fan if the doors or drawer are open for more than 3 minutes respectively.
- The condenser fan may run without the compressor operating.
- The dispenser will not operate with either fresh food door open.
- Fan(s) running without the compressor operating is normal.
- The variable speed compressor uses an inverter, like previous variable speed compressors.
- There is a 20 second compressor delay on power up, but the fans will start immediately if cooling is required.
- The compressor maximum-run time is limited to 6 hours, and the compressor minimum-off time is 2 minutes.
- If either fresh food door is open when the freezer drawer is opened, the freezer LEDs on the bottom of the left fresh food door will not come on.
- When either of the fresh food door(s) or freezer drawer is opened, the fans will turn off.
- The box type fans used on these models have different sound characteristics than fans used on previous models. Consumers may perceive this as a noise issue.
- On power-up or board reset, if the icemaker rake is not in the home position, the door icemaker heater will turn on for 1 minute (2 minutes for freezer icemaker) before power is applied to the rake motor. This could take up to 3 minutes to complete. The mold temperature is only limited by a 210°F one shot thermal cutout.
- The duct door is operated by a motor and the consumer may notice a very distinct motor sound when the duct door opens and closes.
- When either fresh food door is opened while dispensing, the dispenser will stop. After the door(s) are closed, the dispenser will not restart until the dispenser paddle switch is released and pressed again.

NOTE: The mold can get very warm.

NOTE: A loud buzzing sound may be heard every 20 to 40 minutes if the refrigerator is not connected to a water supply, Turn off the icemaker until it is connected to water supply.

Liner Protection Mode

- Liner protection mode is controlled by 2 timers.
- Timer #1 monitors door-open time. A 3 minute door-open count begins when the door is opened.
- If 3 minutes elapse before the door is closed, the liner protection mode will become active.
- Once the door is closed, timer #1 resets and liner protection mode goes into standby.
- In standby, normal fan operation resumes and timer #2 begins a 3 minute door-closed count.
- If 3 minutes elapse without a door opening, liner protection mode will reset.
- If a door is opened within the timer #2 door-closed count, the remaining time in the door-closed count will be deducted from the timer #1 door-open count.

Refrigerator Operation

GE and Profile models operate in the following states:

- Pull Down
- Cooling Operation
- Fresh Food Cycle Defrost
- Pre-Chill
- Fresh Food Only Heated Defrost
- Fresh Food and Freezer Heated Defrost
- Dwell
- Post Dwell

Pull Down

- Pull down occurs any time refrigerator is plugged in and the freezer temperature is above 60˚F.
- The 3-way valve moves to the B position. Compressor start is delayed for 20 seconds. The compressor will start at LOW speed (variable speed models only). The freezer fan is off, the fresh food fan cycles 5 minutes off, 3 minutes on for 5 minutes. The fresh food fan starts in the 5 minute off cycle.
- When the freezer evaporator temperature falls to -20˚F for single speed compressors, or 20/50˚F for variable speed compressors *(depending on which VS compressor used)* the compressor will change to HIGH speed and the 3-way valve will move to the A position, delivering refrigerant to both the fresh food and freezer evaporators. The freezer fan starts on high speed and the fresh food fan runs without cycling off and on.

(Continued next page)

- Compressor and fan speeds will vary with cabinet temperatures until the set temperature is obtained.
- After 6 hours of compressor run time (door openings not counted), both the fresh food and freezer will enter a heated defrost cycle.

Cooling Operation

- When cooling is required, the main control board moves the 3-way valve to either the A position (supplying refrigerant to both fresh food and freezer evaporators), or the B position (supplying only the freezer evaporator), depending upon compartment temperatures.
- The compressor and fan(s) are delayed for 3 minutes before restarting.
- When only the fresh food temperature is satisfied, the 3-way valve will move to the B position (supplying only the freezer evaporator) to continue cooling the freezer. Fresh food cycle defrost will begin.
- When the freezer and fresh food temperatures are satisfied, the compressor and fans will turn off. The 3-way valve will move to the D position, shutting off refrigerant flow to both evaporators to improve efficiency and to reduce refrigerant sounds.
- After the accumulated compressor run time (including door openings) has been reached, the unit will begin the defrost pre-chill cycle.

NOTE: (1 second of door-open time = 100 seconds of compressor run time.)

Fresh Food Cycle Defrost

- The fresh food cycle defrost occurs between heated fresh food defrost cycles to reduce excessive frost accumulations on the fresh food evaporator.
- During the fresh food cycle defrost, the evaporator fan runs and there is no refrigerant flow through the evaporator.
- The fresh food cycle defrost does not use the fresh food defrost heater.
- The fresh food cycle defrost will occur any time the temperature in the fresh food compartment has been satisfied. The fresh food fan will run at LOW speed for 10 minutes, then cycle off if fresh food temperatures are satisfied.
- The fresh food cycle defrost does not occur when the compressor cycles off.

Defrost Pre-Chill (Single and Variable Speed Compressor)

- After accumulating 32 hours of compressor run time (actual compressor run time and door openings), the operating system will enter freezer pre-chill.
- The pre-chill will occur whether the last freezer defrost was normal or abnormal.
- Pre-chill time will vary from 10 to 60 minutes, depending on door openings and compartment temperatures during pre-chill.
- Any compressor run time prior to the beginning of pre-chill does not count in the pre-chill time.
- There is a 6 second delay after the compressor cuts off at the end of pre-chill before energizing the defrost heaters.
- The ice box fan will run at HIGH speed whenever the ice box cooling is needed during the pre-chill cycle.
- Pre-chill ends when either the maximum time expires, the evaporator pre-chill temperature is met, or the freezer pre-chill temperatures is met.

Fresh Food Only Heated Defrost

- Fresh food only heated defrost occurs after 32 hours of compressor run time.
- A freezer pre-chill will run before the fresh food only heated defrost.
- Providing that the previous freezer and/or fresh food heated defrost cycles were normal, the freezer will defrost with every third fresh food defrost cycle.
- Fresh food only heated defrost occurs 32, 64, and 96 hours after defrosting both the fresh food and the freezer together.

(Continued next page)

Freezer and Fresh Food Heated Defrost

- Following pre-chill, the heated freezer and heated fresh food defrost cycle is initiated where both heaters will be on at the same time.
- The 3-way valve will move to the A position. The compressor will turn off. The condenser, freezer, fresh food, and ice box fans will turn off.
- The freezer defrost heater remains on until the freezer evaporator is 50˚F (defrost termination temperature) or the maximum defrost time of 45 minutes is reached.
- The fresh food defrost heater remains on until the fresh food evaporator is 45˚F (defrost termination temperature) or the maximum defrost time of 45 minutes is reached.
- If either the fresh food or freezer defrost heater's ON time exceeds the normal defrost threshold of approximately 20 minutes, the defrost is considered abnormal. Abnormal defrost forces both the fresh food and freezer into pre-chill after 6 hours of compressor run time (door openings not counted).
- During defrost, if power is interrupted, the refrigerator will restart in the dwell state if the freezer evaporator temperature is above 50˚F (defrost termination temperature).
- After both defrost heaters turn off, the refrigerator will enter the dwell cycle.

Dwell Cycle

- After both defrost heaters have cycled off, the unit will enter the dwell cycle.
- During the dwell cycle, the compressor and fans will remain off. The 3-way valve will move to the A position (both fresh food and freezer open) and remain there for the entire cycle.
- The dwell cycle will terminate after 7 minutes.
- At the end of the dwell cycle, the compressor run timer for adaptive defrost is reset to 0 hours and the refrigerator enters the post-dwell cycle.
- If power is interrupted during the dwell cycle and the freezer temperature is greater than 50˚F (the freezer defrost termination temperature), the dwell cycle will start over.

Post Dwell Cycle

- Upon completion of the dwell cycle, the unit will enter the post-dwell cycle.
- The 3-way valve will move to either the A or B position, depending upon whether the fresh food temperature is satisfied.
- The compressor and condenser fan will start, but the fresh food fan, freezer fan, and ice box fan will remain off.
- Post-dwell cycle will end when the freezer and fresh food evaporators reach the post dwell exit temperature of -10˚F, or the post-dwell time of 10 minutes has expired.
- Upon exit of post-dwell cycle, the control system will now operate all cooling components by its logic, and restarts the compressor run timer for adaptive defrost.

Refrigerator Operation Summary

Models operate as follows:

- Pull Down occurs when the refrigerator is powered up and the freezer is above 60˚F.
- Cooling operation is the normal cycling of temperatures whether the last defrost was normal or abnormal.
- Fresh food cycle defrost occurs when the 3-way valve turns off refrigerant flow to the fresh food evaporator, but the freezer continues to cool.
- Pre-chill occurs before the freezer heated defrost.
- Fresh food defrosts occur 32, 64, and 96 hours from the previous freezer and fresh food heated defrost.
- Freezer heated defrost occurs every 96 hours of compressor run time.
- Dwell occurs after every heated defrost cycle.
- Post Dwell occurs after every dwell cycle.

Components

NOTE: Throughout this appliance, certain water-handling components utilize lock clips. Lock clips must be reinstalled to prevent leaks. After the water handling component is removed from the connector, the lock clip can be reinstalled on the connector. The water-handling component can then be inserted with the lock clip in place.

Hinge Cover

The hinge cover located on the top front of the refrigerator cabinet is made up of three parts. The left parts cover the left hinge, door harness connectors and water supply tubing. The center part houses both door switches, the ambient temperature sensor and a circuit board. The circuit board contains the RJ45 connector, the humidity sensor and the Wi-Fi communications board. The right part covers the right hinge and a harness connector from the cabinet to the cover's center part of the hinge cover.

Hinge Cover Removal

1. Remove the five 1/4 in. hex head screws that hold the hinge cover to the cabinet. However, the left and right parts can be removed individually by removing its two screws, then lift the tab from the hinge to release it from the hinge.

2. After removing the left and right parts, remove the center screw releases the center part of the hinge cover.

3. Lift and invert the center part of the hinge cover, then place it in the service position on top of the refrigerator.

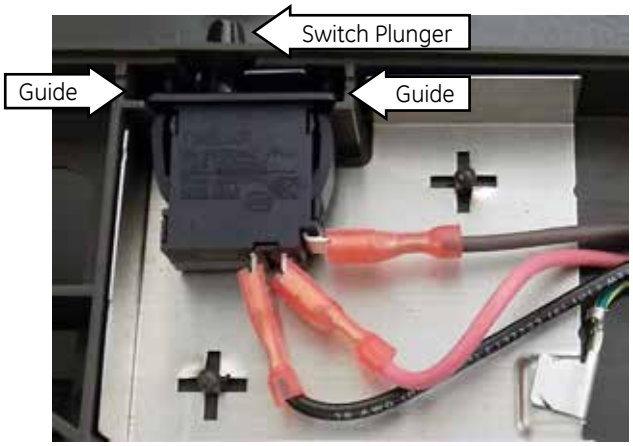
Hinge Cover Service Position

Door Switches

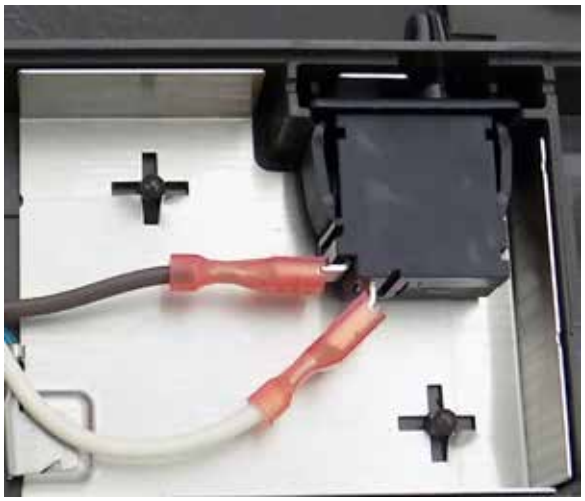
The hinge cover houses two door switches (one for each door). Each switch informs the main control board the status of each door, whether it is open or closed. The right door switch has two terminals and the left door switch has three terminals.

To replace a door switch, it is necessary to place the hinge cover in the service position.

To lift the switch out from the guides in the hinge cover, the switch plunger must be fully pressed inward.



LEFT



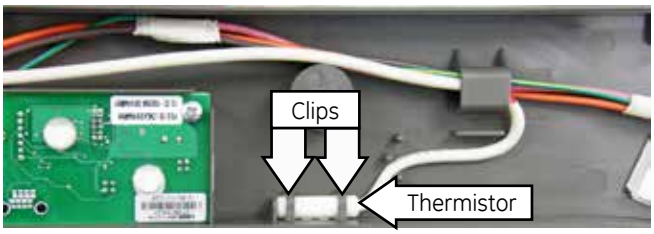
RIGHT

Ambient Thermistor

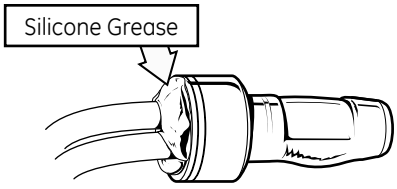
The ambient thermistor is located inside the center hinge cover on the top of the cabinet The thermistor is used to set the duty time of the sweat heaters and adjust the cooling system based on room temperature.

Ambient Thermistor Replacement

1. Place the hinge cover in the service position (see ***Hinge Cover*** section).
2. Pull the thermistor out from the retaining clips.



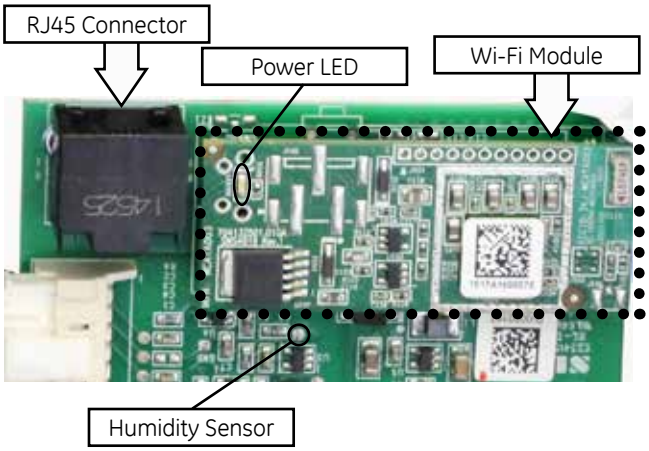
3. Place the replacement thermistor next to the original thermistor.
4. Cut the wiring at a location that will match the original length when the replacement thermistor is spliced to it.
5. Use plastic bell connectors (**Part #**: WR01X10466). Fill each connector with silicone grease then splice a new thermistor into the harness, as shown in the illustration below.



RJ45/Wi-Fi Board

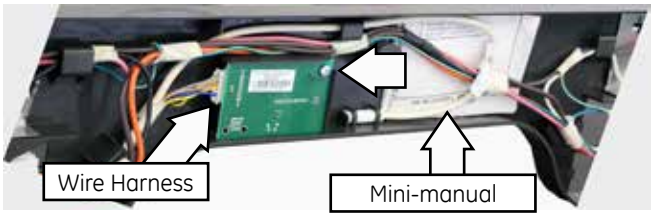
The Wi-Fi board is located under the center part of the fresh food hinge cover. It is mounted to the RJ45/Humidity board and is only available as a complete board assembly.

A power LED blinks for the first two minutes when powered up.



A wire harness is connected to the board. The board is attached to the hinge cover with two Phillips-head screw.

Note the location of the mini-manual.



GE Kitchen Smartphone Application

The Wi-Fi board works in conjunction with the GE Kitchen App and the consumer's router. Using the GE Kitchen App, the consumer can monitor and adjust freezer and refrigerator temperatures, start water heating for all hot water selections, schedule water heating days and times and update software. The app can be used with multiple appliances

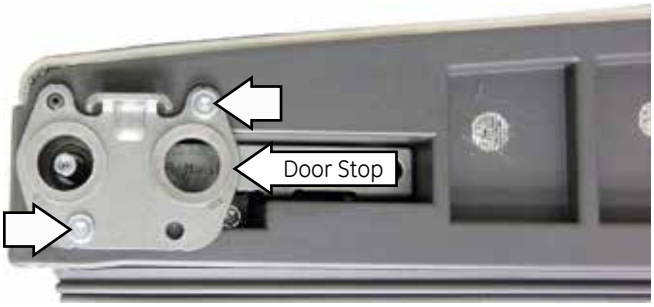
Using hot water selections from the UI will cancel App selections.

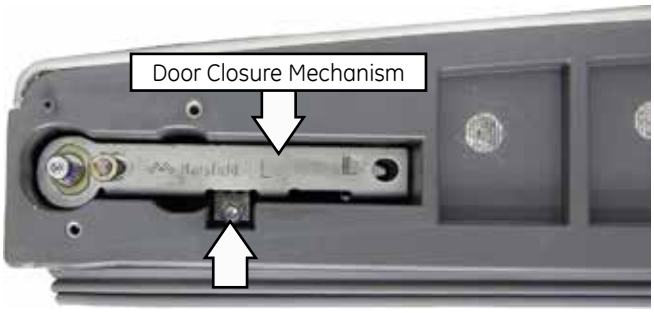
Scheduled heating cycles will maintain the water temperature for 15 minutes.

Door Closure Mechanisms

Refrigerator Doors

The closure mechanism for each door is attached to a recess in the bottom of the door with a 1/4 in. hex head screw. To access the door closure mechanism, it is necessary to remove the two T-20 Torx screws and the door stop.

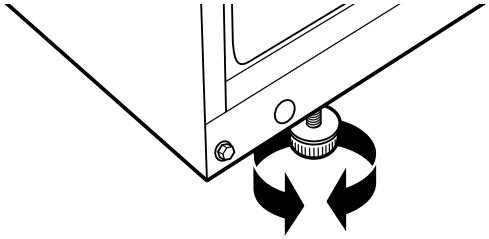




The door closure mechanism has a spring loaded pin that engages the lower door hinge.

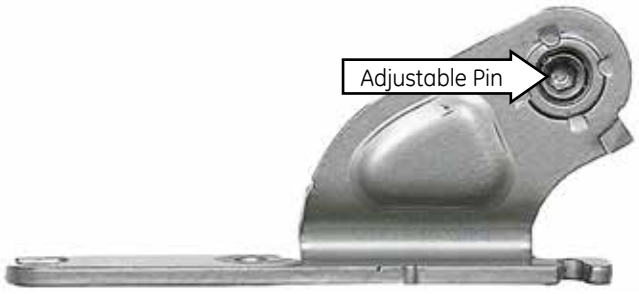
Door Alignment

To correctly align doors, adjust front legs until they are extended to the floor. If door alignment line does not match, turn each leveling leg separately until the leveling matches across both doors.

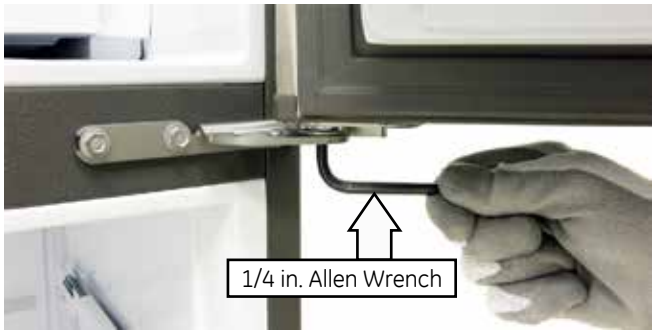


The right door lower hinge bracket, attached to the cabinet, has an adjustable pin that allows leveling of the fresh food doors.

Bottom view of right door lower hinge



If the doors remain uneven, turn the adjustable pin to raise or lower the right door to match the left door. Use a 1/4 in. Allen wrench to turn the pin.



Door/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 gaskets are secured to the doors/drawer by a barbed edge that locks into a retainer channel.

Door/Drawer Gasket Remove and Replacement

1. Starting at any corner, pull the old gasket out of the retaining 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.

Interior Lights

- Depending on the model, 5 or 7 Pin-Point LEDs are located in the fresh food compartment. One or 2 Pin-Point LEDS are located in the bottom of the left freezer door. Multiple LEDs are connected in a series circuit.
- When the freezer door is opened, the lights in the bottom of the left fresh food door come on to illuminate the freezer baskets. If the left fresh food door is opened while the freezer door is open, the freezer lights turn off. If the freezer is open and the right fresh food door is opened, the freezer lights will stay on.
- When the fresh food or freezer door is open, the LED lighting should come on and stay at full power for 8 minutes. After 8 minutes, the lights should start to lower their intensity in a smooth transition over the next three minutes to 75% of their original power. After 15 minutes, the LED's will turn off. If the fresh food or freezer door is closed and reopened, the timer will restart.
- If one LED fails (but the LED's resistor is still OK), that LED will not be lit while the others will be dim.
- When one LED fails completely, none of the LEDs will light.
- With a voltmeter, 5 VDC – 20 VDC can be read across the terminals of the completely failed LED assembly.
- Each LED has a 2-pin connector for easy replacement.

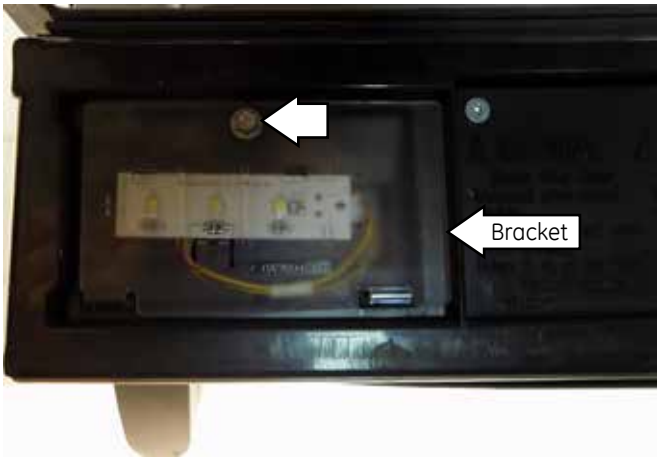
(Continued next page)

Fresh Food Compartment LEDs

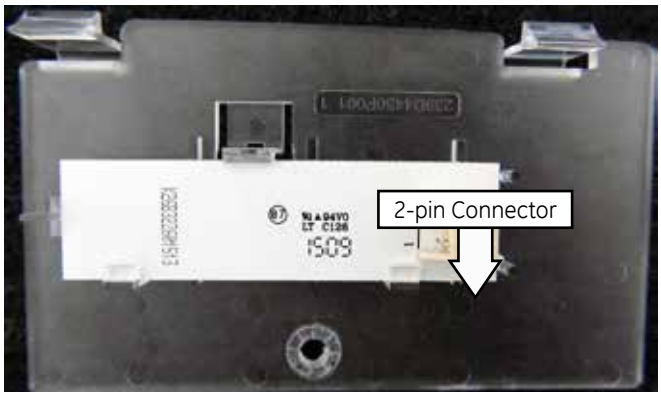
To remove the LED, using a small flat blade screwdriver, pry out the LED from the back side and slide the LED to the rear to release the tab located at the front.

Freezer Compartment LEDs

The LED's are attached onto the inside of a bracket located in the bottom of the LEFT fresh food door. The bracket is attached with a 1/4 in. screw..

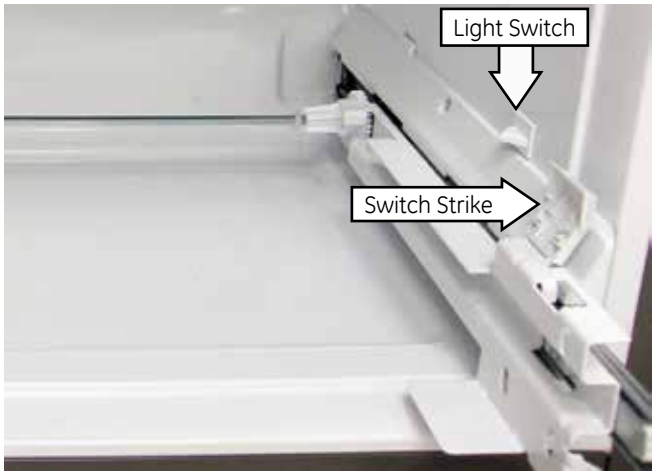


The freezer LED assembly is connected with a 2 pin connector. The LED is only available as a complete assembly.



Freezer Compartment Light Switch

The freezer compartment LED switch is located on the right side wall and is actuated by the strike attached to the right side drawer bracket.



Deli Pan Assembly

The deli pan assembly on most models consists of the deli pan, pan cover, pan slide assemblies, circuit board, thermistor and fan assembly.

The deli pan circuit board sends the customer setting to the main board to control the pan temperatures based on the deli thermistor value.

Temperature is controlled by varying fan speeds as needed.

The consumer presses the select button (tactile switch) to scroll thru the settings.

LEDs on the control above the selection will light the selected mode. Colored LEDs will also light the pan area for 3 seconds then turn to white.

Deli Pan Set Points

Meat - 32˚F

Beverage - 34˚F

Deli - 36˚F

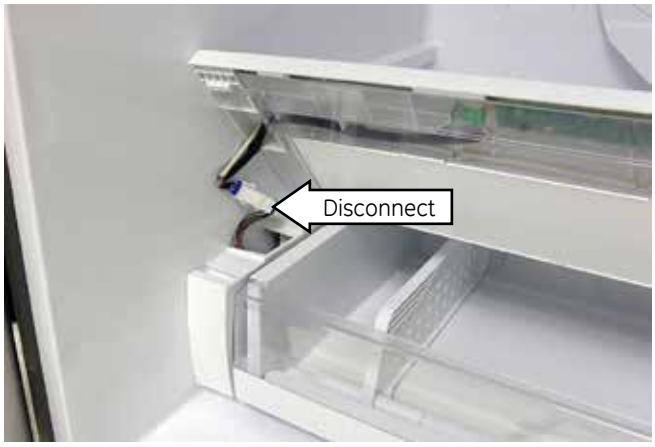
Deli Pan Circuit Board

The deli pan circuit board is located inside the deli pan front cover.

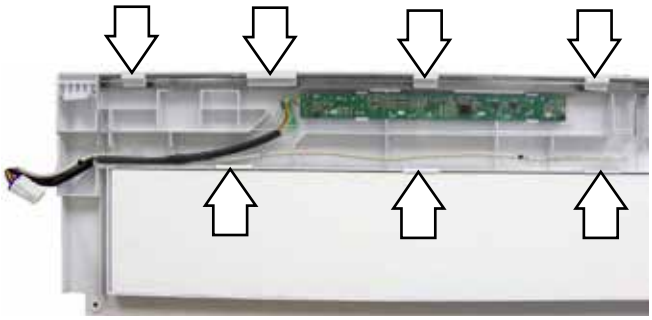
Deli Pan Circuit Board Replacement

1. Remove the vegetable bins, vegetable bins cover, and deli pan.
2. Remove the two 1/4 in. hex head screws from the top of the deli pan covers.

3. Lift the front deli pan cover, disconnect the wire harness, and place the cover on a protective surface. On 22 cu. ft. models, the connector is on the right.



NOTE: In the following steps, the shield over the circuit board is attached to the cover with 7 tabs.



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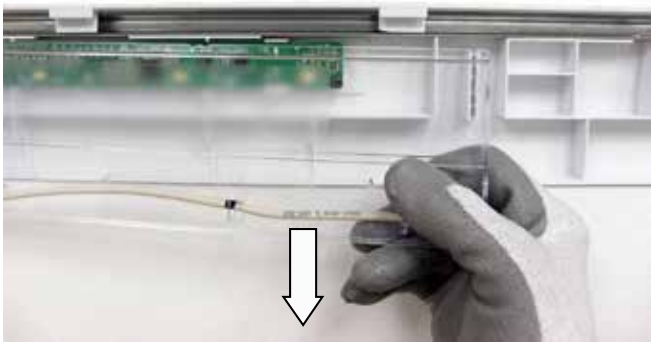
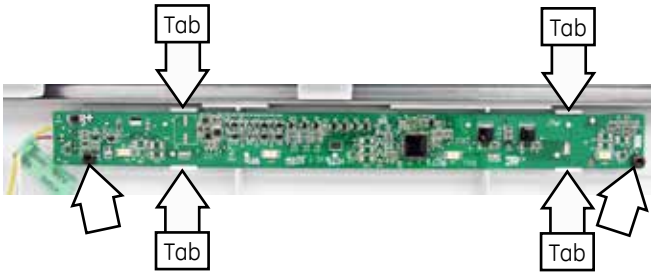
4. Simultaneously press each of the three bottom tabs while lifting the bottom of the circuit board shield.

5. Slide the circuit board shield out from the four top tabs.



6. Remove the two T-15 Torx screws from the circuit board.

7. Carefully press each of the four tabs and remove the circuit board from the deli pan cover.



8. Disconnect the circuit board wire harness.

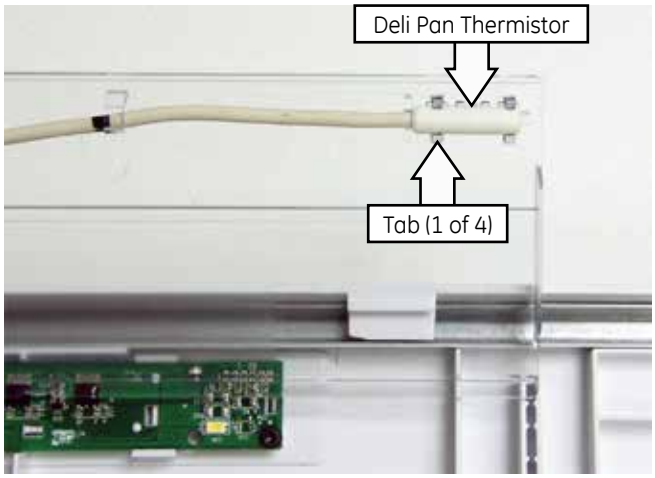
Deli Pan Thermistor Replacement

1. Unplug the refrigerator.

2. Access the deli pan thermistor (see **Deli Pan Circuit Board** section, follow steps 1 through 6).

3. Turn the circuit board shield over to access the thermistor.

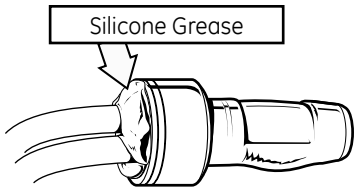
4. Pull the thermistor out from the four tabs in the circuit board shield.



5. Place the replacement thermistor next to the original thermistor.

6. Cut the wiring at a location that will match the original length when the replacement thermistor is spliced to it.

7. Use plastic bell connectors (**Part #**: WR01X10466). Fill each connector with silicone grease, then splice a new thermistor into the harness, as shown in the illustration.



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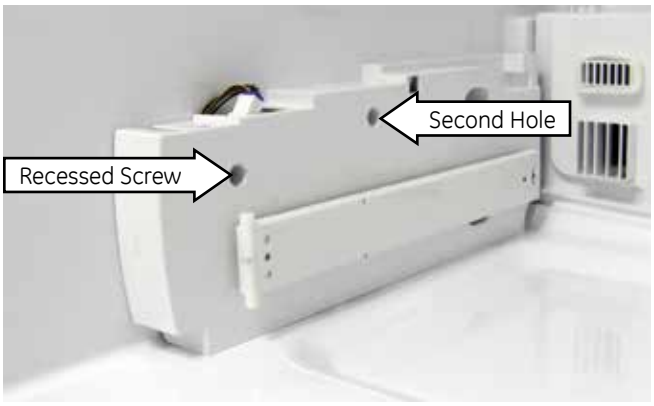
Deli Pan Slides

Deli Pan Slide Removal

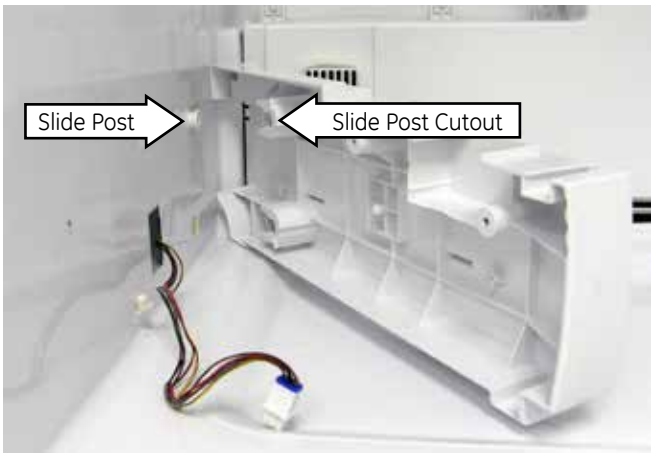
1. Remove the recessed 1/4 in. hex head screw that attaches the front of the slide support to the liner wall.

NOTE: If there is not a screw in the front hole and the deli pan side support does not come loose, look for a screw in the second hole.

2. With the slide support against the liner wall, pull the slide support toward the front of the refrigerator.

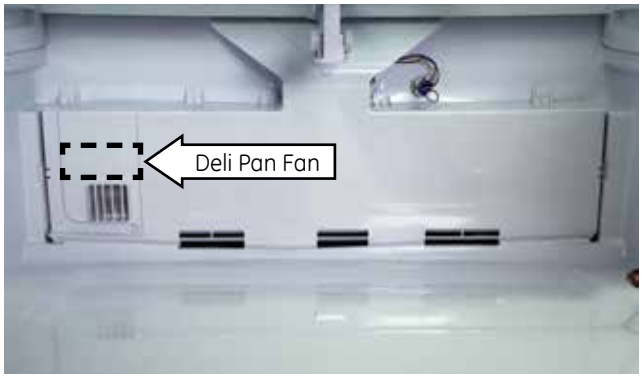


NOTE: When installing the slide support, make sure to engage the slide post cutout into the slide post before pushing the slide into place.



Deli Pan Fan

The deli pan fan is inserted in a Styrofoam™ recess that is located on the inside of the fresh food evaporator cover.



The deli pan fan will operate at 2000 to 6000 RPM with RPM feedback to the control.

To access the deli pan fan assembly, it is necessary to remove the fresh food evaporator cover. The deli fan is only available with the fresh food evaporator cover assembly

Thermistors

Thermistor Values		
Temperature Degrees (°F)	Temperature Degrees (°C)	Resistance in Kilo-Ohms
-40	-40	166.8 kΩ
-31	-35	120.5 kΩ
-22	-30	88 kΩ
-13	-25	65 kΩ
-4	-20	48.4 kΩ
5	-15	36.4 kΩ
14	-10	27.6 kΩ
23	-5	21 kΩ
32	0	16.3 kΩ
41	5	12.7 kΩ
50	10	10 kΩ
59	15	7.8 kΩ
68	20	6.2 kΩ
77	25	5 kΩ
86	30	4 kΩ
95	35	3.2 kΩ
104	40	2.6 kΩ
113	45	2.2 kΩ
122	50	1.8 kΩ
131	55	1.5 kΩ
140	60	1.2 kΩ

NOTE: To accurately test a thermistor, place the thermistor in a glass of ice and water (approximately 33°F) for several minutes and check for approximately 16k ohms.

Fresh Food and Freezer Air Thermistors

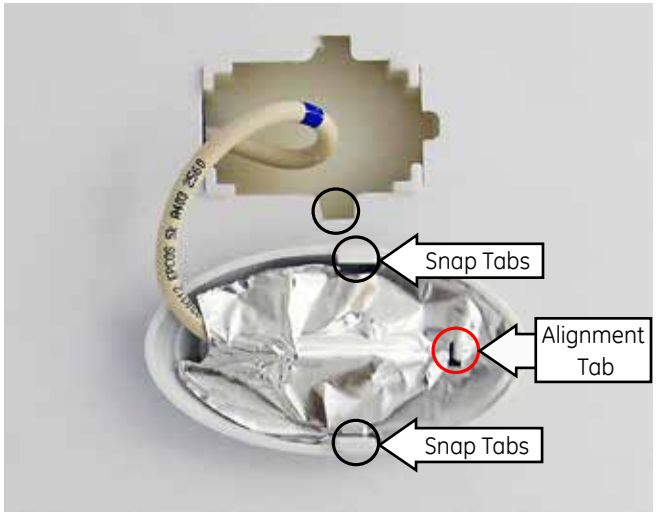
The fresh food air thermistor is located in the ceiling and the freezer air thermistor is located on the right hand side wall (see the ***Component Locator Views*** section).

The procedure to replace a fresh food air thermistor or a freezer air thermistor is similar.

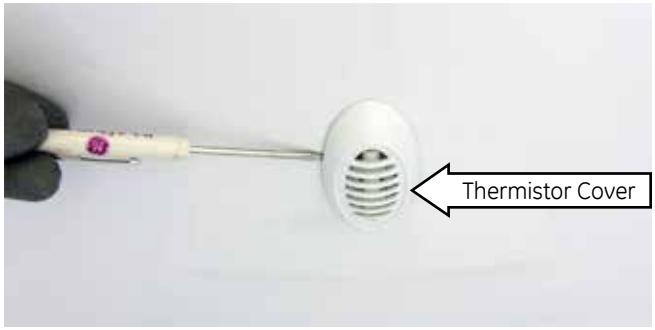
Fresh Food or Freezer Air Thermistor Replacement

1. Unplug the refrigerator.

NOTE: The thermistor grille uses an alignment tab to ensure proper grille placement. The grille also uses two snap tabs to lock it into the liner.



2. Insert a small flat blade screwdriver under the thermistor cover and gently lift the edge until it releases from the ceiling.



3. Peel back the foil shunt (if present) from the cover.

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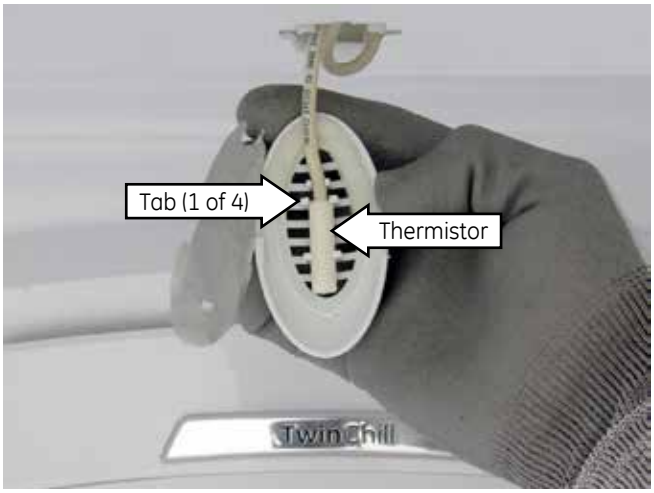
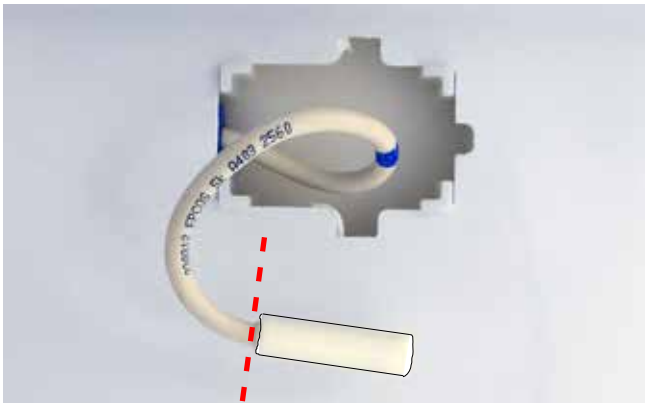
4. Pull the thermistor out from the four tabs in the cover.



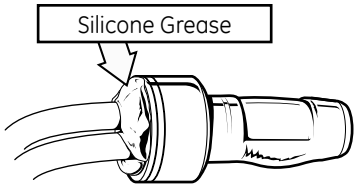
5. Cut the thermistor wiring as close to the thermistor as possible.

6. Strip the outer insulation from the thermistor case harness back 1 inch. Strip the two internal wires back 3/16 inch for splicing.



7. Prepare the replacement thermistor by cutting the wiring 4 inches back from the thermistor and strip the wires back 3/16 inch.

8. Using two bell connectors (**Part #**: WR01X10466), splice the wiring. After the splices are complete, fill the bell connectors fully with silicone grease (**Part #**: WR97X163).



9. Snap the thermistor into the grille and replace the foil shunt (**Part #**: WR01X11066) inside the cover. Place excess wiring into the thermistor pocket, then snap the grille back into the liner, taking note of the alignment pin.

Fresh Food Evaporator Cover

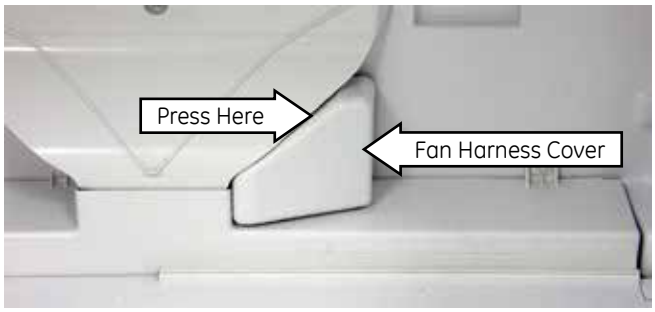
The fresh food evaporator cover is held to the back wall of the refrigerator with five 1/4 in. hex head screws.

Fresh Food Evaporator Cover Removal

1. Remove the two fruit and vegetable drawers, climate control shelf, and deli pan that are in front of the evaporator cover.

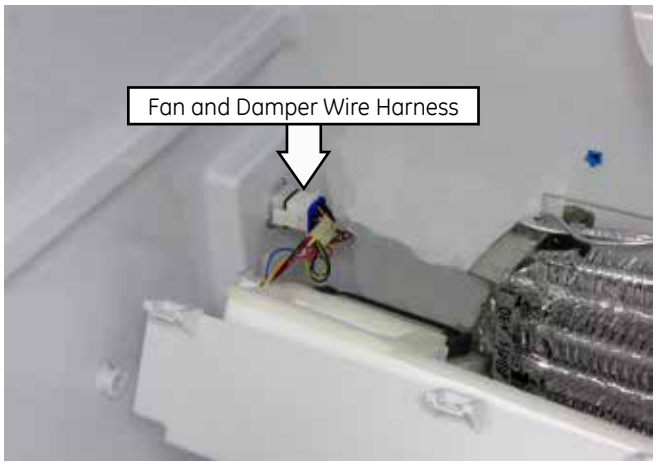
2. Remove the deli pan covers and deli pan slides (see ***Deli Pan Assembly*** section).

3. Press down and remove the fan harness cover.



4. Remove the five 1/4 in. hex head screws from the top of the evaporator cover.

5. Tilt the top of the evaporator cover out and disconnect the deli pan fan and damper wire harness. Remove the cover.



Fresh Food Defrost Heater

The defrost heater is a single-tube, glass-enclosed radiant heater. It is held in place by two tabs on the evaporator (one on each side), and by a ceramic and wire support.

The defrost heater has an approximate resistance value of 31 Ω.

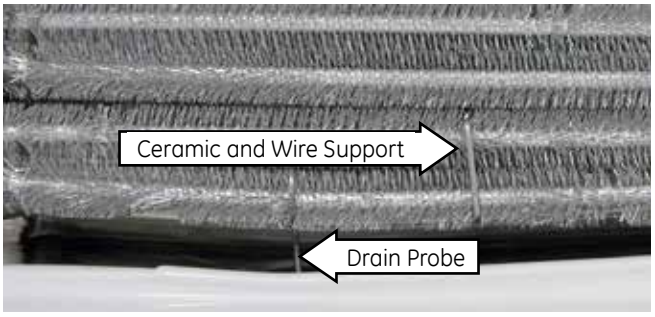
Defrost Heater Removal

1. Remove the fresh food evaporator cover (see the ***Fresh Food Evaporator Cover*** section).

NOTE:

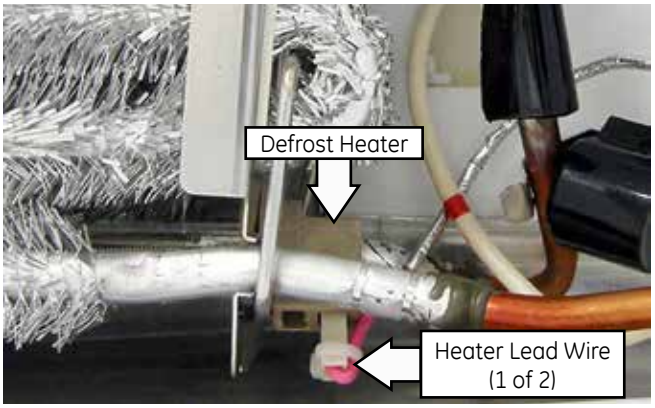
- During defrost, the drain probe assists in preventing the drain from icing closed. During assembly, the probe must be installed on the evaporator and inserted in the drain to prevent drain freeze-up.
- A ceramic and wire support prevents the heater from sagging and touching the metal drain trough if the glass is broken.

2. Remove the ceramic and wire support, and the drain probe from the evaporator.



3. Bend the aluminum tabs back (located at each end of the defrost heater) and lower the heater out of the evaporator.

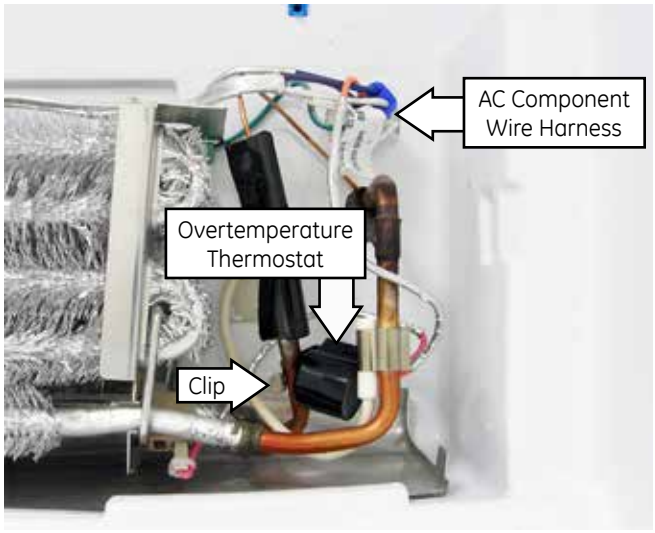
4. Disconnect the two lead wires and remove the heater.



Fresh Food Overtemperature Thermostat

The fresh food overtemperature thermostat will open its contacts and de-energize the heater whenever the evaporator temperature reaches approximately 140°F. The thermostat contacts will close at approximately 110°F.

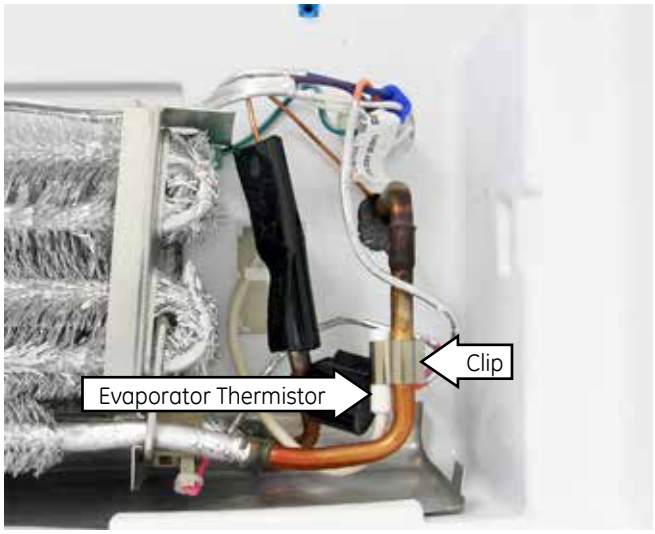
The fresh food overtemperature thermostat is attached to the evaporator inlet tube with a metal clip, and is connected to the AC component wire harness.



Fresh Food Evaporator Thermistor

To access the fresh food evaporator thermistor, the fresh food evaporator cover must be removed (see ***Fresh Food Evaporator Cover***.)

The fresh food evaporator thermistor is attached to the evaporator outlet tube with a metal clip.



Fresh Food Fan

The fresh food fan is inserted in a recess in the bottom of the fresh food air duct.

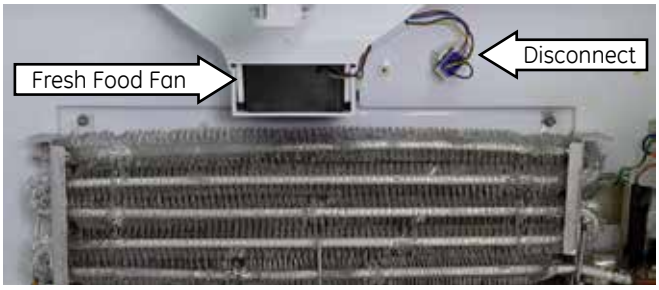
The fresh food fan will operate at three speeds with RPM feedback to the control. The speed range of the fresh food fan is 1500 RPM to 4100 RPM.

To replace the fresh food fan, the fresh food evaporator cover must be removed.

NOTE: The fan connector can be accessed for multi-meter checks by removing the right vegetable bin and the fan harness cover from the evaporator cover.

Fresh Food Fan Removal

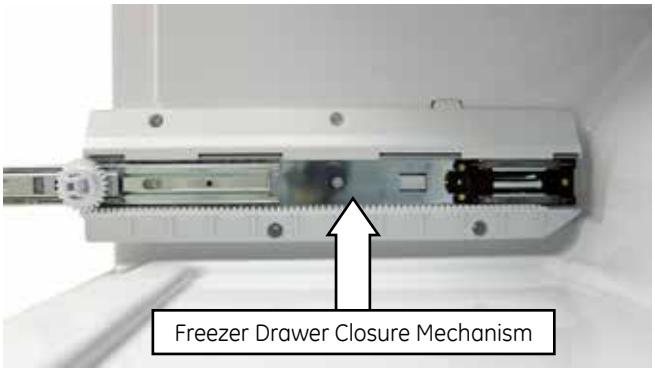
1. Remove the fresh food evaporator cover (see ***Fresh Food Evaporator Cover***, follow steps 1 through 5).
2. Disconnect the fresh food fan wire harness.
3. Pull the fresh food fan out from the air duct.



When reinstalling the fan make sure the tag on the fan is facing up and the harness exits the housing at the to right as shown.

Freezer Drawer Slide Assemblies

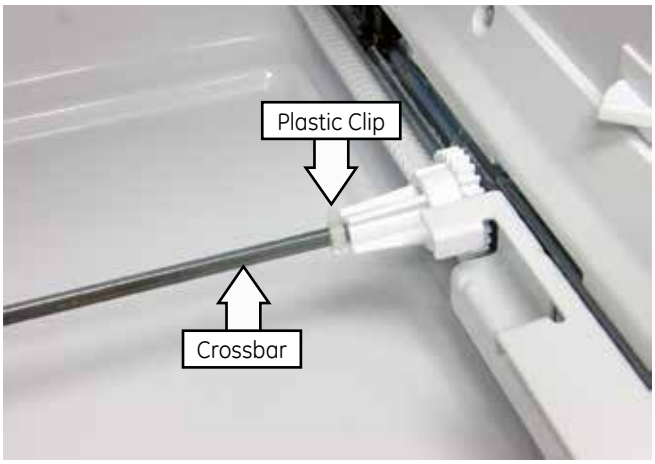
The freezer drawer utilizes two closure mechanisms that automatically pull the drawer shut when it is within 1 inch of the closed position. The mechanisms are built into the two freezer drawer slide assemblies and are not replaceable as a separate part.



The freezer drawer is inserted into alignment slots (one on each side), and attached to the slide assemblies with 6 bolts (three on each side).

Freezer Drawer Slide Assemblies Removal

1. Remove the freezer drawer front (see ***Freezer Drawer Front*** section).
2. Remove the plastic clip from the crossbar.



3. Pull the crossbar to the right, then remove it from the right side drawer gear.

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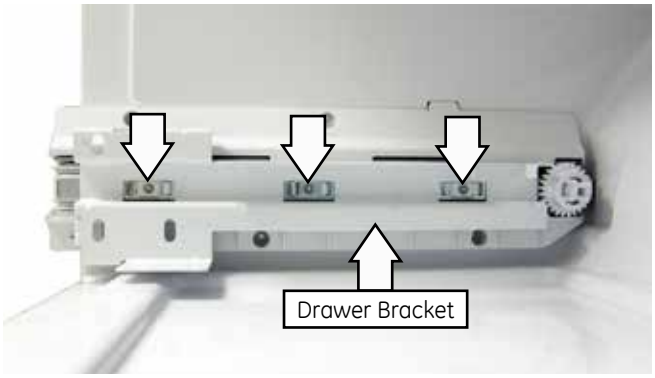
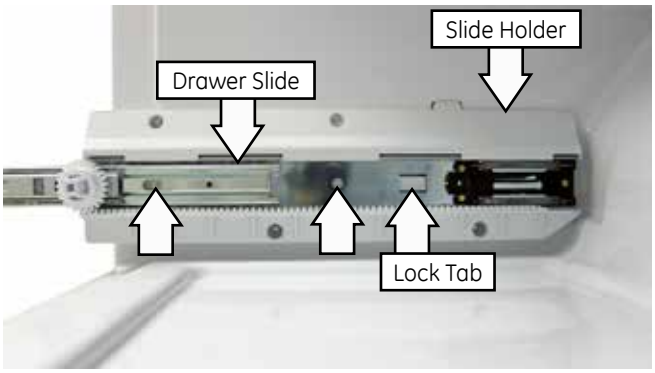
NOTE: The procedure to remove both drawer slide assemblies is similar.

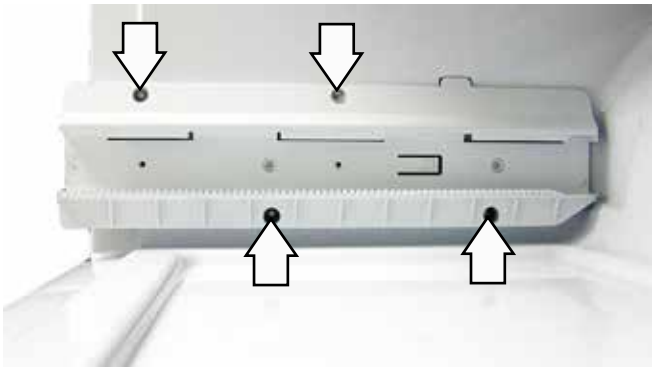
4. Remove the three T-20 Torx screws from the drawer bracket.



5. Lift the drawer bracket from the slide assembly
6. Pull the drawer slide out to the stop position
7. Remove the two T-20 Torx screws from the drawer slide.
8. Press in the lock tab and pull the drawer slide straight out from the slide holder.



9. Remove the four recessed 1/4 in. hex head screws from the slide holder.
10. Pull the slide holder out from the freezer wall.

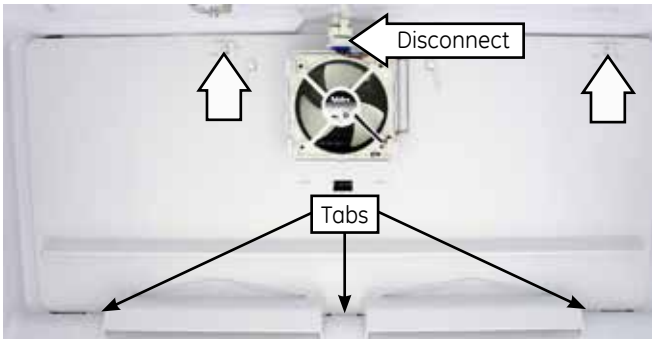


Freezer Evaporator Cover

The freezer evaporator cover is held to the back wall of the freezer with two 1/4-in. hex-head screws.

To remove the freezer evaporator cover:

1. Remove the freezer fan cover. (See ***Freezer Fan***, follow steps 2 and 3.)
2. Disconnect the freezer fan wire harness.
3. Remove the two 1/4-in. hex-head screws from the top of the evaporator cover.
4. Lift the bottom of the cover to release 3 bottom tabs, then pull cover out from the back wall.



Freezer Fan

The freezer fan is attached to the evaporator cover, and utilizes a fan cover to direct airflow.

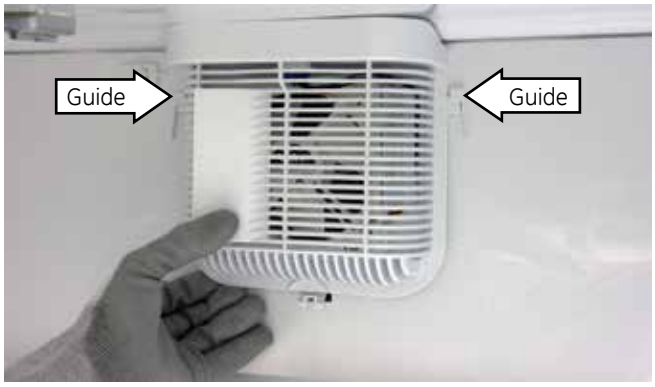
The freezer fan will operate at three speeds with RPM feedback to the control. The freezer fan speed range is 2200 RPM - 2500 RPM.

NOTE: The fan connector can be accessed for multi-meter checks by removing only the fan cover.

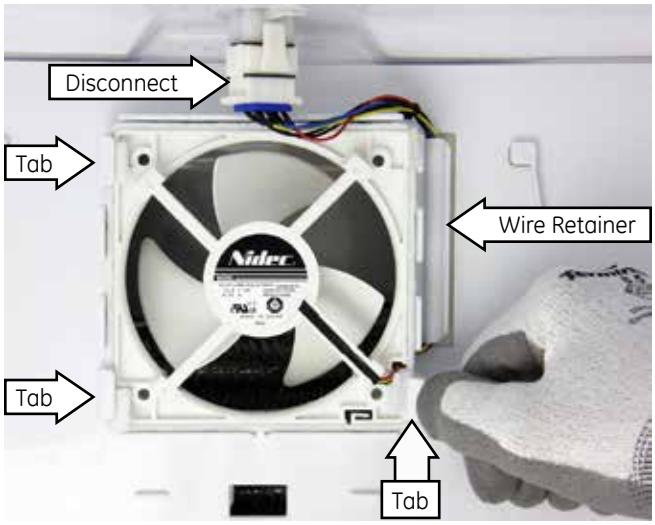
Freezer Fan Removal

1. Remove the freezer drawer front (see the ***Freezer Drawer Front*** section).
2. Using a flat blade screwdriver, pry up the fan cover lock tab.

3. Slide the fan cover down from the guides on the evaporator cover.



4. Disconnect the fan wire harness and remove the wires from the wire retainer.
5. Flex the bottom right tab, then release the right side of the fan from the evaporator cover.
6. Slide the fan to the right to disengage the two left side tabs.



Freezer Defrost Heater

The defrost heater is a 420-watt, single-tube, glass-enclosed radiant heater. It is located at the bottom of the evaporator between the rows of coils. It is held in place by two tabs on the evaporator (one on each end plate), a ceramic and wire support, and a right side wire support.

The defrost heater has an approximate resistance value of 32 ohms.

Defrost Heater Removal

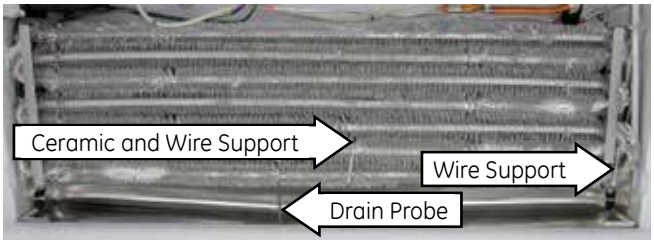
1. Remove the freezer evaporator cover (see the ***Freezer Evaporator Cover*** section).

NOTE:

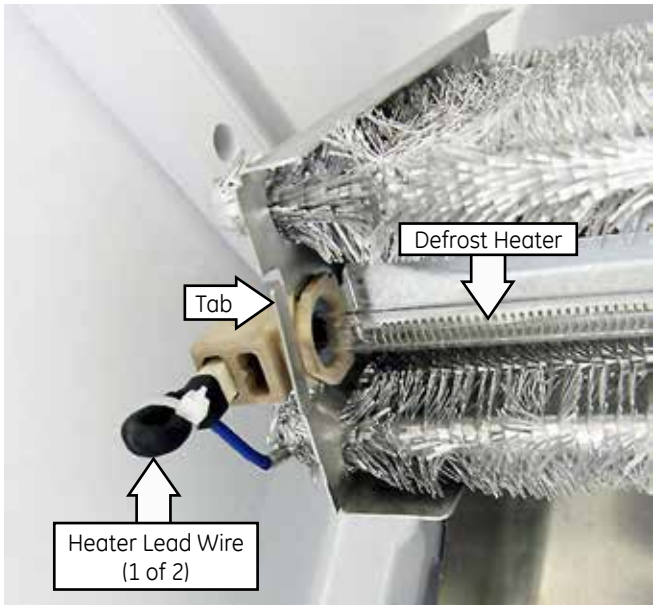
- During defrost, the drain probe assists in preventing the drain from icing closed. During assembly, the probe must be installed on the evaporator and inserted in the drain to prevent drain freeze-up.
- The ceramic and wire support prevents the heater from sagging and touching the metal drain trough if the glass is broken.
- There is a drip shield located just above the heater.

NOTE: The following procedures can be made easier by loosening the two Phillips-head screws (one on each top corner of the evaporator) and tilting the bottom of the evaporator out from the drain trough.

2. Remove the ceramic and wire support, right side wire support, and the drain probe from the evaporator.



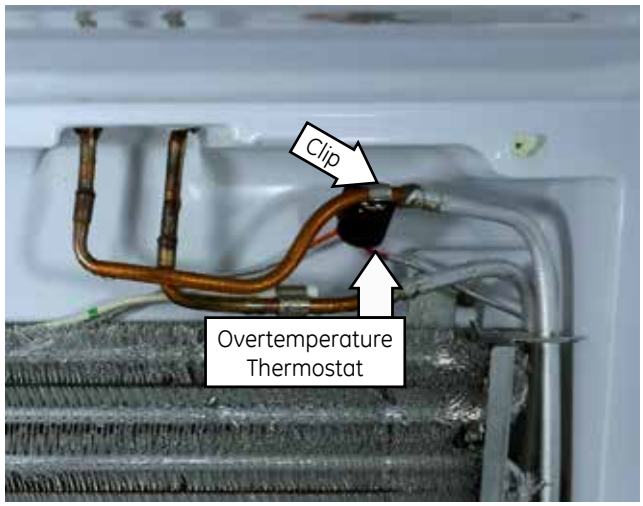
3. Bend the aluminum tabs back (located at each end of the defrost heater) and lower the heater from the evaporator.
4. Disconnect two lead wires and remove the heater.



Freezer Overtemperature Thermostat

The freezer overtemperature thermostat is attached to the evaporator suction line with a metal clip. The overtemperature thermostat will open its contacts and de-energize the heater whenever the evaporator temperature reaches approximately 140°F. The thermostat contacts will close at approximately 110°F.

To access the freezer overtemperature thermostat the freezer evaporator cover must be removed (see the ***Freezer Evaporator Cover*** section).



Freezer Evaporator Thermistor

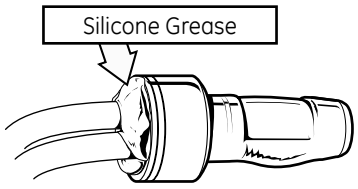
The freezer evaporator thermistor is attached to the inlet tube with a metal clip. The purpose of the thermistor is to monitor the evaporator temperature for defrost control.

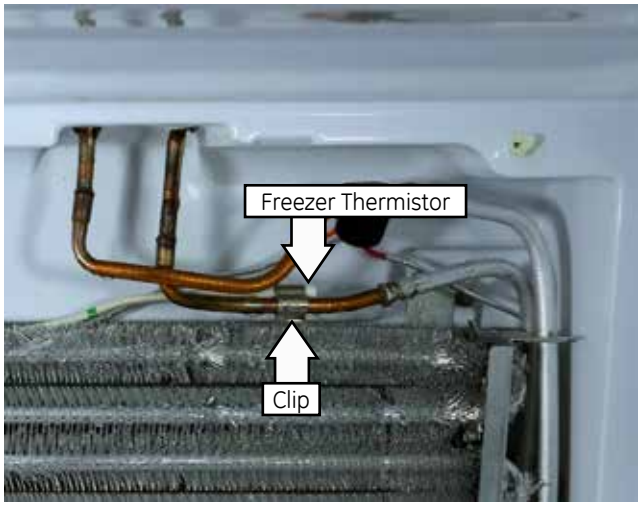
To access the freezer evaporator thermistor the freezer evaporator cover must be removed (see the ***Freezer Evaporator Cover*** section).

NOTE: The ice box fan wire connector also contains the freezer evaporator thermistor connections. The freezer evaporator thermistor can be replaced separately (**Part #**: WR55X10025).

When replacing the freezer thermistor:

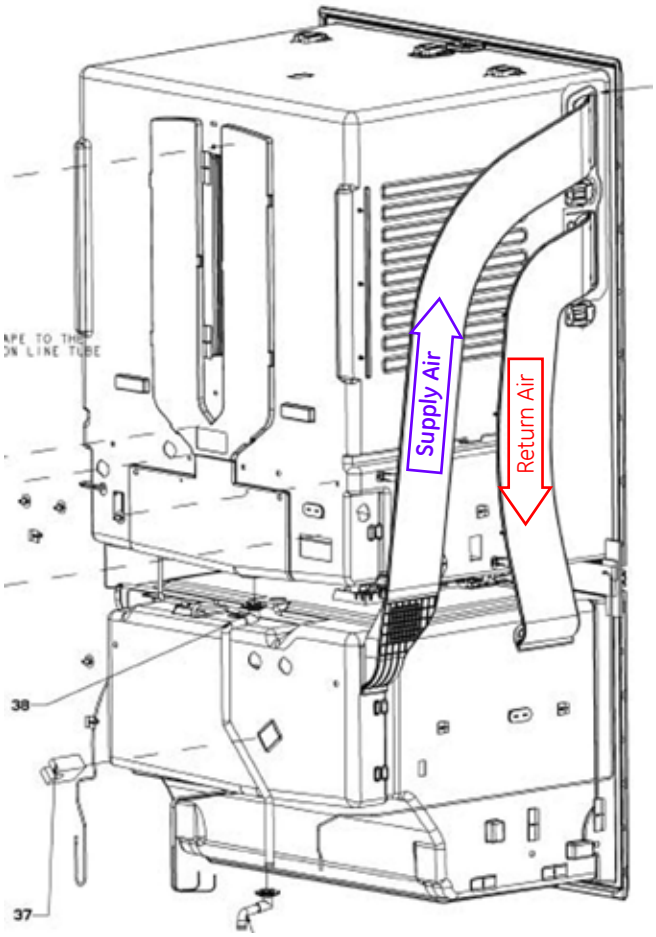
1. Place the replacement thermistor next to the original thermistor.
2. Cut the wiring at a location that will match the original length when the replacement thermistor is spliced to it.
3. Use plastic bell connectors (**Part #**: WR01X10466). Fill each connector with silicone grease, then splice a new thermistor into the harness as shown in the illustration.





Ice Box Fan

The ice box fan is located at the top left rear of the freezer compartment above the evaporator. The ice box fan circulates air into the left fresh food door ice box via duct work foamed into the case.



The fan will operate at three speeds with RPM feedback to the control. Speeds selected depend on the ice box cooling temperature and are controlled by the main board. The speed range is 1500 RPM - 2300 RPM.

(Continued next page)

Ice Box Fan Removal

1. Remove the freezer evaporator cover (see the ***Freezer Evaporator Cover*** section).

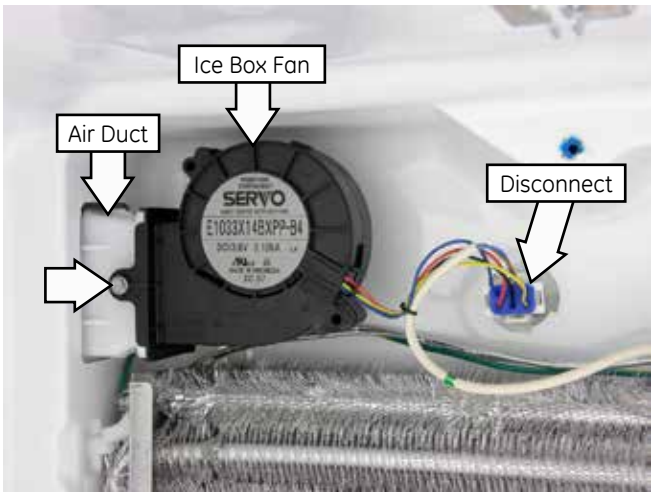
2. Disconnect the ice box fan wire harness.

NOTE: The ice box fan wire connector also contains the freezer evaporator thermistor connections.

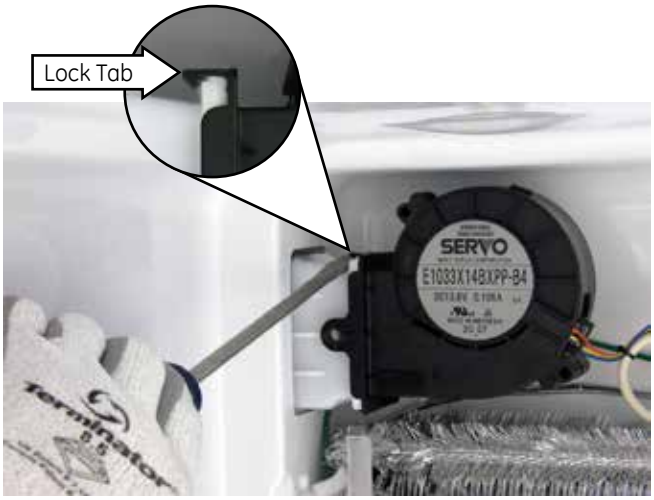
3. Remove the evaporator thermistor from the thermistor clip attached to the evaporator.

NOTE: In the following steps, the ice box fan is attached to the air duct with a screw and four lock tabs.

4. Remove the 1/4 in. hex head screw from the ice box fan.



5. Using a flat blade screwdriver, pry the top two lock tabs up, lower the fan, and release the bottom two lock tabs from the air duct.

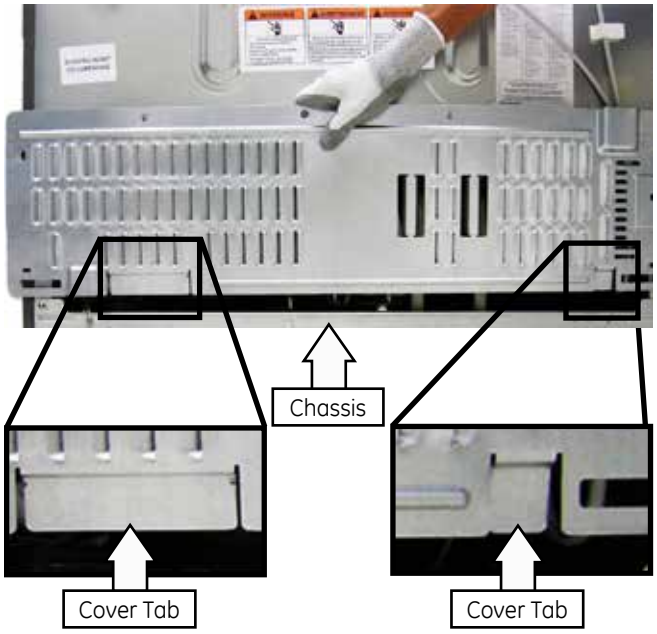


Caution: To prevent damage, make sure the freezer evaporator thermistor is installed under the thermistor clip attached to the evaporator.

Machine Compartment Cover

The machine compartment cover is held to the rear of the refrigerator with six 1/4 in. hex head screws. After removing the screws, the cover can then be lifted from the two bottom tabs.

NOTE: When installing the machine compartment cover, be sure to place the two cover tabs behind chassis before installing screws.



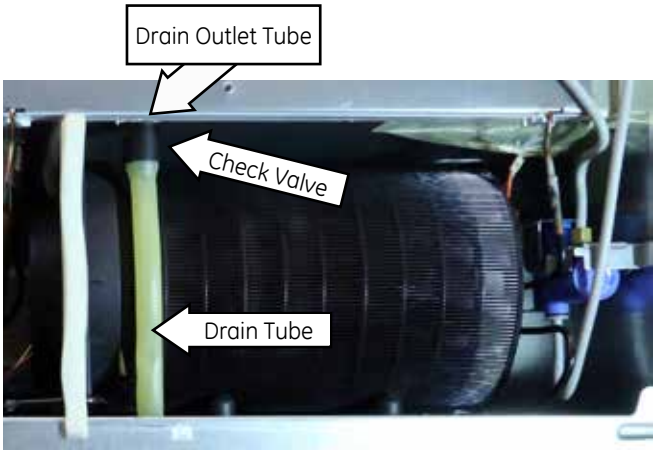
NOTE: The machine compartment cover must be properly installed to ensure air passes through the condenser.

Freezer and Fresh Food Drain Trap Tubes

The freezer and fresh food drain trap tubes connected inside the cabinet and exit through a common drain outlet tube.

A check valve is located between each drain outlet tube and each drain trap tube.

Each drain trap tube can be removed by pulling it down and off the check valve. The check valve can then be pulled off the evaporator drain tube.



Caution: An improperly assembled drain trap tube and check valve can result in a distorted check valve resulting in water overflowing the evaporator drain trough. To ensure the check valve functions properly, the check valve must be installed onto the drain trap tube first, and then attached to the evaporator drain outlet tube at the bottom of the cabinet.

Damaged Check Valve

Good Check Valve

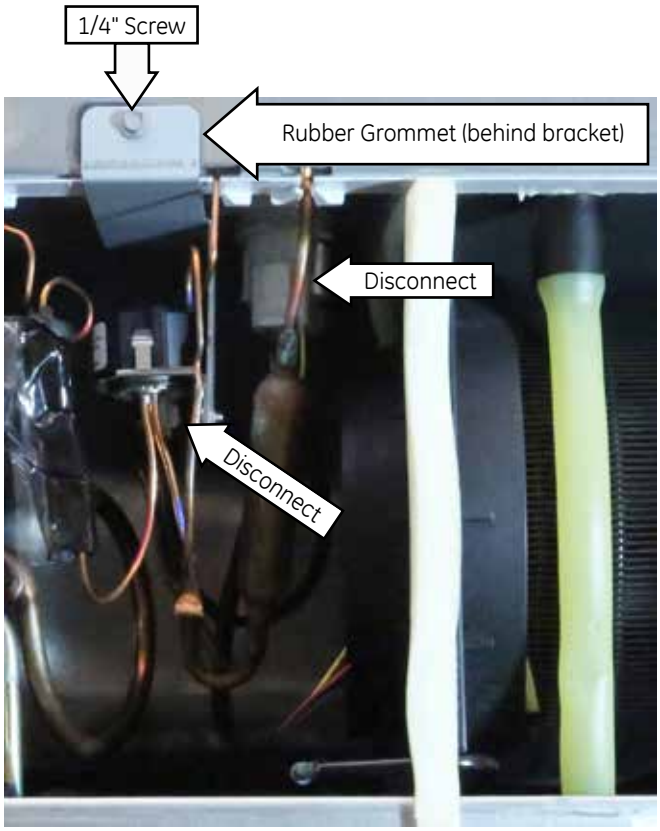
Condenser Fan

The condenser fan is located in the machine compartment between the 3-way valve and the condenser.

The condenser fan will operate at 1000 RPM –2100 RPM with RPM feedback to the control.

Condenser Fan Removal

1. Remove the machine compartment cover (see the ***Machine Compartment Cover*** section).
2. Remove the 1/4 in. hex head screw that attaches the 3-way valve bracket and rubber grommet to the refrigerator.
3. Carefully reposition the 3-way valve and drier to gain better access to the condenser fan and valve wire harnesses.
4. Disconnect the wire harness attached to the back of the 3-way valve coil.
5. Disconnect the fan and valve wire harness from the cabinet.



(Continued next page)

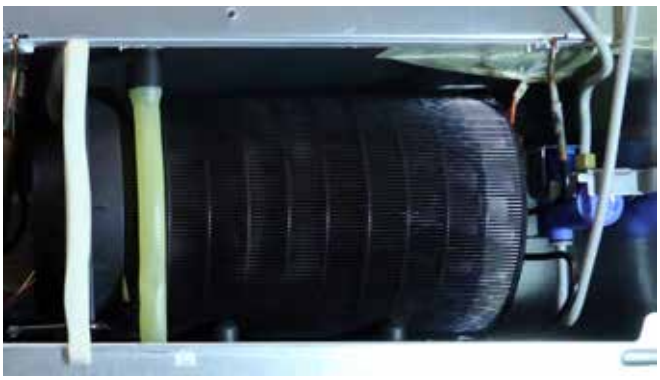
6. Remove the 1/4 in. screw to dismount the water valve from right rear of the machine compartment (as viewed from the rear) then move to the side. Water can remain connected.

7. Remove the 1/4 in. screw from the right side of the condenser (as viewed from the rear).

8. Slide the condenser to the right to disengage from the shroud.

9. Carefully pull discharge tube from the notch at the bottom of shroud.

10. Pull shroud outward and over the discharge tube to disengage the 4 tabs at the bottom to remove from the base pan.



3-Way Valve Coil

The 3-way valve coil is attached to the top of the 3-way valve.

3-Way Valve Coil Removal

1. Remove the machine compartment cover (see ***Machine Compartment Cover*** section).

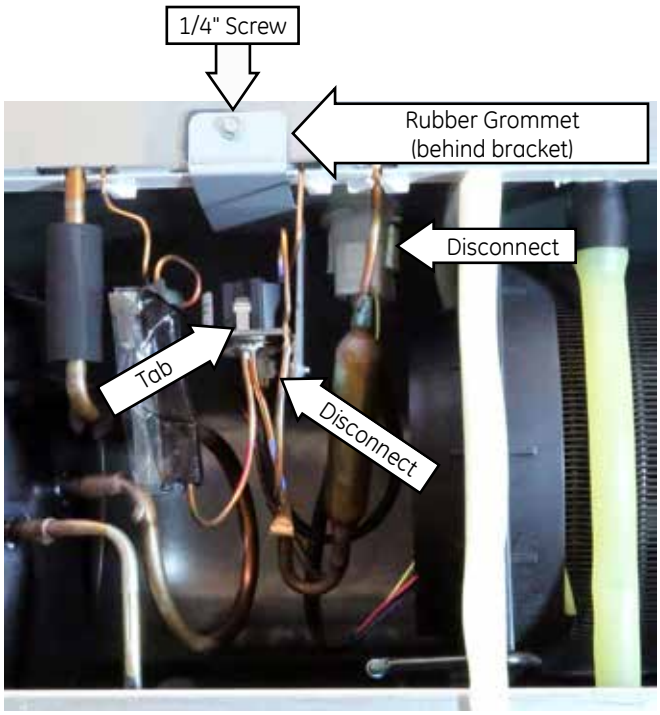
2. Remove the 1/4 in. hex head screw that attaches the 3-way valve bracket and rubber grommet to the refrigerator.

3. Carefully reposition the 3-way valve and drier to gain better access to the condenser fan and valve wire harnesses.

4. Disconnect the wire harness attached to the back of the 3-way valve coil.

5. Disconnect the fan and valve wire harness from the cabinet.

6. Using a flat blade screwdriver, simultaneously pry out the tab and lift the 3-way coil from the valve assembly.



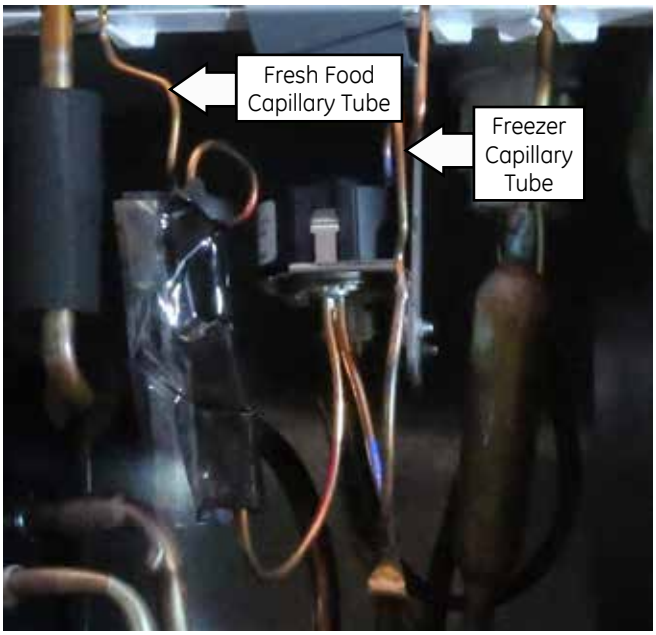
3-Way Valve

The 3-way valve is located in the machine compartment between the compressor and the condenser fan.

The capillary tubes on the refrigerator are color coded on the tubing.

The fresh food capillary tube is on the left, and color coded with **RED**.

The freezer capillary tube is on the right, and is color coded with **BLUE**.



The 3-way valve is used to direct refrigerant flow.

The valve has four different positions.

They are referred to by the letters **A**, **B**, **C**, and **D**.

A	Open to the fresh food and freezer evaporators in series (Refrigerant flows through the fresh food evaporator and then into the freezer evaporator.)
B	Open to the freezer evaporator only
C	Open to both the fresh food and freezer evaporators via the individual capillary tubes (This position is not currently used on these models for cooling.)
D	Closed to both fresh food and freezer evaporators during the off cycle (This is also called the home position.)

Inverter

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 VAC and 240 VAC to be received at the compressor. Frequency will vary from 40Hz at low speed, up to 151Hz at high speed.

The inverter receives commands from the main control board. The main control board will send a PWM run signal from the J9 connector pins 7 to 8 of 2-3 VDC (effective voltage) to the inverter (all wires must be connected). The inverter will select the compressor speed (voltage output) based on this signal. The PWM run signal voltage can also be checked at the inverter harness. 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, a reading of 4-6 VDC will be measured with all wires connected. If the inverter wiring is disconnected, the board output will measure between 4-5 VDC.

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 twelve consecutive compressor-start attempts (once every 12 seconds). After twelve attempts, if 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 minutes.

The inverter has 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. Replace the inverter first. If the compressor fails to start after inverter replacement, replace the compressor.

(Continued next page)

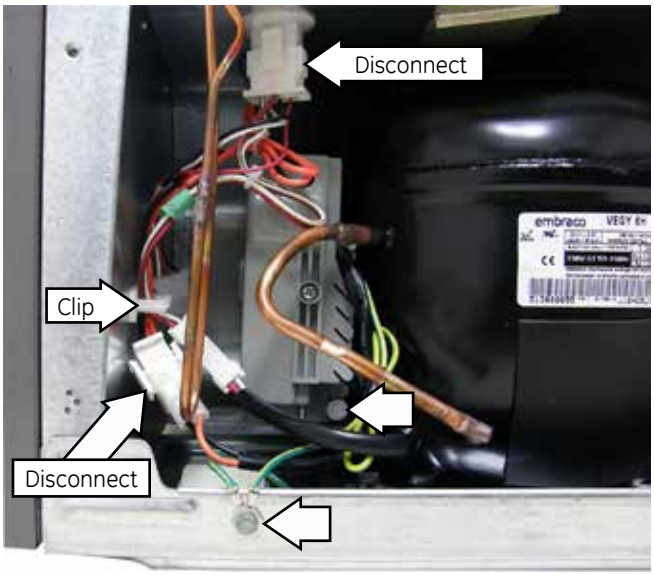
The inverter is accessed from the back of the refrigerator and is located on the left side of the compressor.

Inverter Removal

1. Remove the machine compartment cover (see ***Machine Compartment Cover*** section).
2. Disconnect the inverter wire harnesses from the top of the machine compartment.
3. Remove the 2-wire inverter harness from the retainer clip and disconnect the 3-wire harness.
4. Remove the 1/4 in. hex head screw that attaches the inverter ground screw from the chassis.
5. Remove the 1/4 in. hex head screw from the inverter.

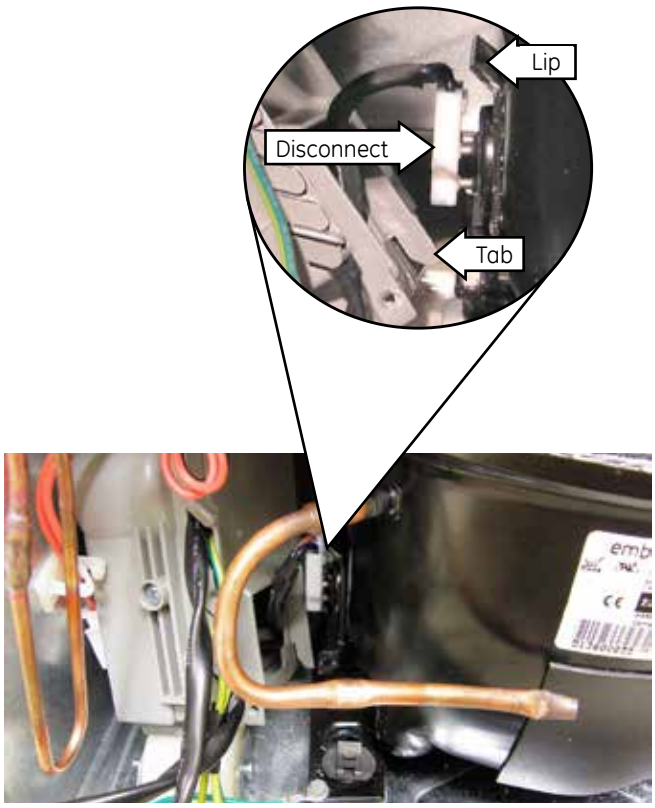
NOTE: The inverter is attached to the compressor by a lip above the compressor terminals, a tab (located at the bottom rear corner), and a 1/4 in. hex head screw.

6. Remove the 1/4 in. hex head screw from the inverter.



7. Lift the inverter off the compressor.

8. Disconnect the compressor harness from the compressor terminals.



WARNING: When the refrigerator connected to power, 120 VAC is always present at the inverter.

Compressor Replacement

This process applies to both variable speed and single speed compressors.

1. Recover refrigerant.
2. Remove all electrical components.
3. Disconnect suction and discharge lines.
4. Remove the compressor mounting clips.
5. Loosen the compressor from the four grommets, it is not necessary to remove the grommets.
6. Move the compressor to the left off of the mounting studs.
7. Rotate the compressor with the base facing out and refrigerant lines facing up.
8. Pull the compressor out from its enclosure.
9. Reverse process to install compressor. **Tip**: Lubricate the compressor grommet with a soap solution or refrigerant leak detect solution for easier grommet installation to compressor base.

Inverter Compressor

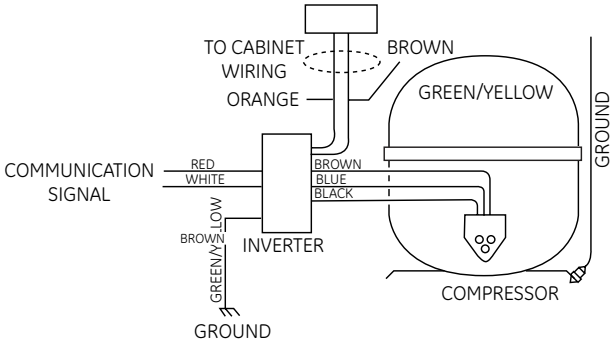
Caution: Do not attempt to direct-start the compressor. The compressor operates on a 3-phase power supply. Applying 120 VAC to the compressor will permanently damage the unit. It is not possible to start the compressor without an inverter.

The compressor is a reciprocating, variable speed, 4-pole type. It operates on 3-phase, 80 VAC to 240 VAC within a range of 55 Hz to 130 Hz.

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

Compressor wattages at various speeds are 60 watts - 180 watts.

The compressor is controlled by the inverter, which receives its signal from the main control board. Varying the frequency to the inverter changes the compressor speed.



Compressor speed is based on the temperature set point in conjunction with the specific cabinet temperature.

The use of 3-phase power eliminates the need for the 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 9 ohms to 11 ohms should be read between any 2 of the 3 pins. Should an opening 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.

Compressor operation is extremely smooth and cool. The compressor exterior temperature may be slightly higher than room temperature while operating; therefore, it may be difficult to detect a running unit.

To verify that the compressor is running:

Run diagnostic 0 - 95 and check for compressor startup. Feel for a vibration when the compressor tries to start. It may take up to 8 seconds before the compressor attempts to start.

NOTE:

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

Single-Speed Compressor

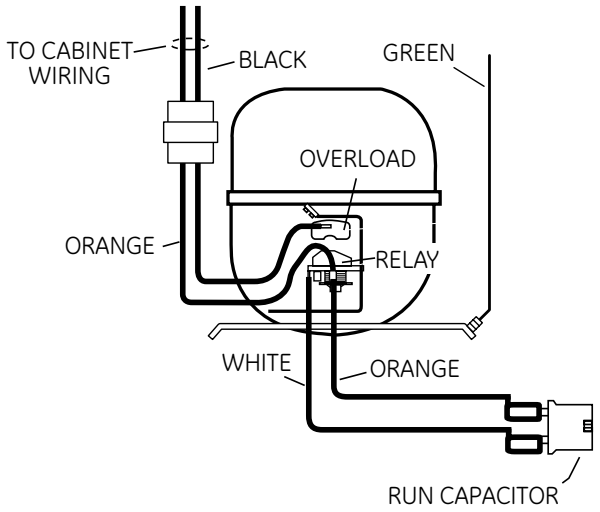
The compressor is a reciprocating type. Refer to the mini-manual for specifications.

To verify that the compressor is running:

WARNING: During normal operation, the temperature of the single-speed compressor may be hot. Use caution to avoid injury and wear Kevlar® gloves or equivalent protection.

Disconnect power from the unit. Wait 3 to 5 minutes for pressure to equalize. Place a hand on the chassis, near the compressor. Reconnect power and feel for a vibration when the compressor tries to start.

NOTE: The single-speed compressor will start right away if pressure is equal.



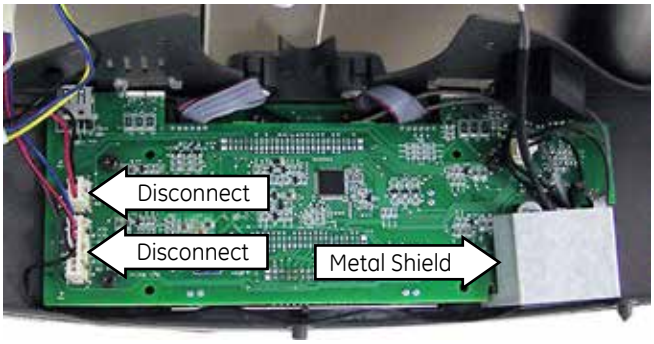
Dispenser Assembly

The dispenser assembly incorporates the user interface (UI) used for temperature control and features and houses the dispenser LED lights and ultrasonic sensors.

Dispenser Assembly Components Removal

1. Pull the bottom of the display assembly out, then lower the display assembly from the dispenser recess.

2. Disconnect the left side wire harnesses and lift and pivot open the metal shield.

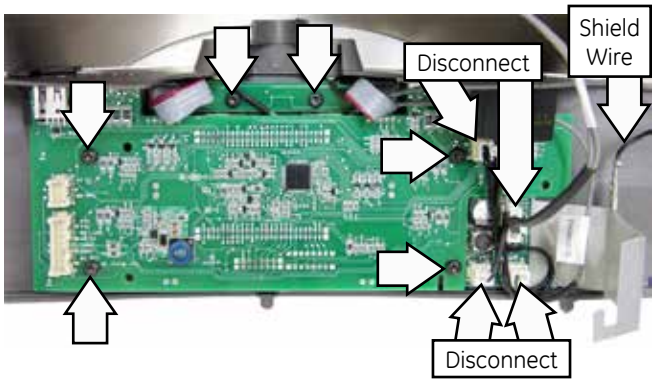


3. Disconnect the speaker wire, two upper ultrasonic sensors, and the lower ultrasonic harnesses.

NOTE: In the following step, the shield wire uses a releasing lock tab.

4. Disconnect the shield wire from the metal shield.

5. Remove the six T-15 Torx screws that attach the display board to the display cover bracket.

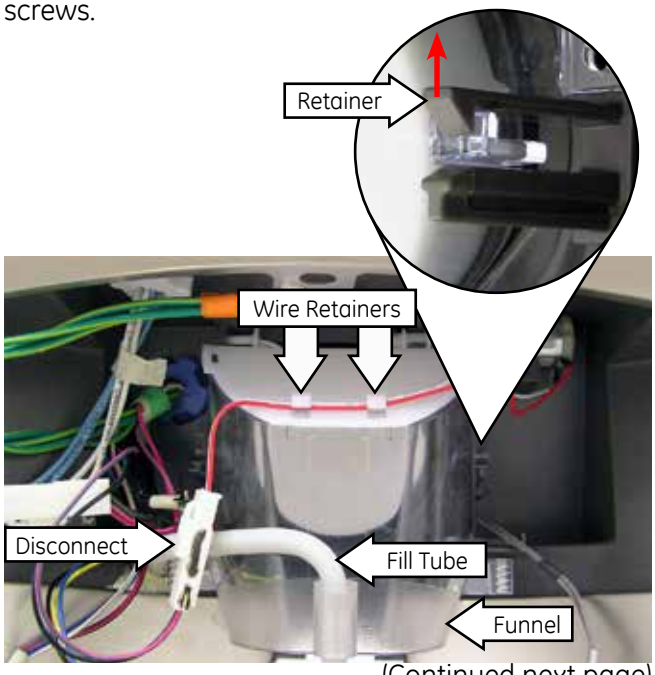


6. Pull the fill tube out from the funnel.

7. Disconnect the duct door motor wire harness and remove the motor wiring from the wire retainers.

8. Push up on both the right and left retainers and pull the funnel out from the dispenser recess.

NOTE: The funnel on GE/Adora models is attached to the dispenser recess with two 1/4 in. hex head screws.



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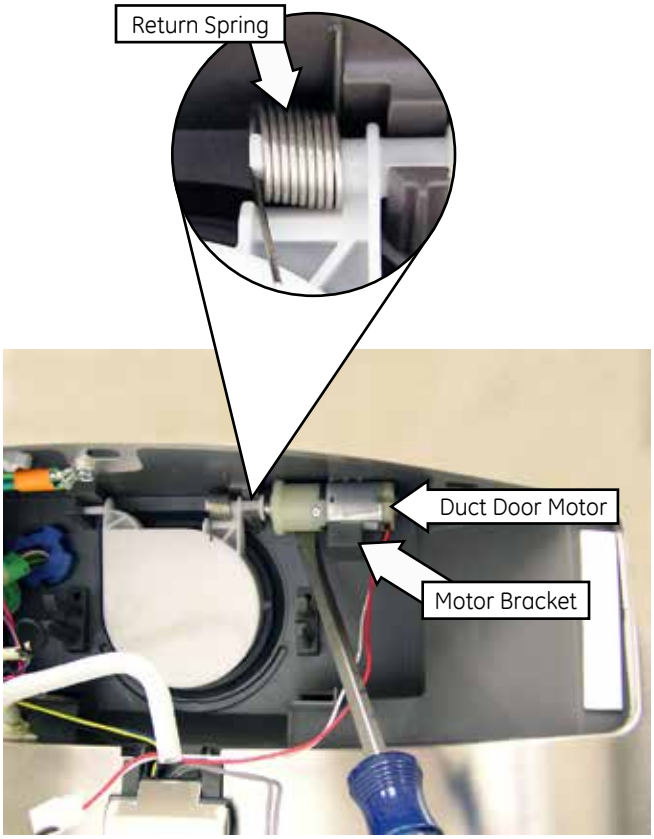
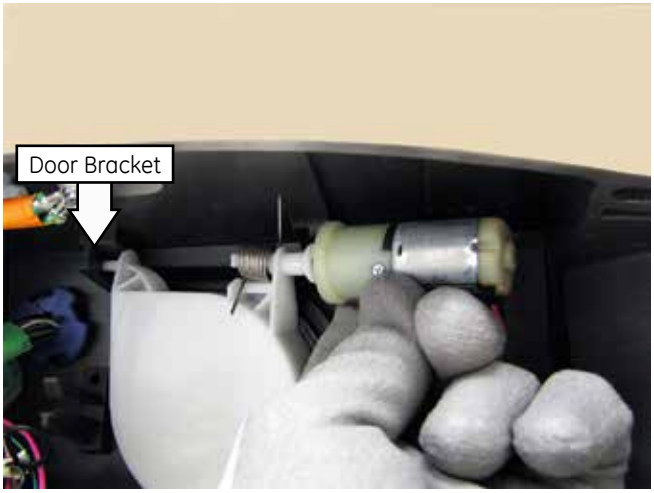
NOTE: Before performing the following step, take notice of the position of the duct door return spring.

9. Using a flat blade screwdriver, gently pry the duct door motor out from the motor bracket.



10. Move the motor, return spring, and duct door as an assembly to the right, then remove the duct door from the door bracket at the left.



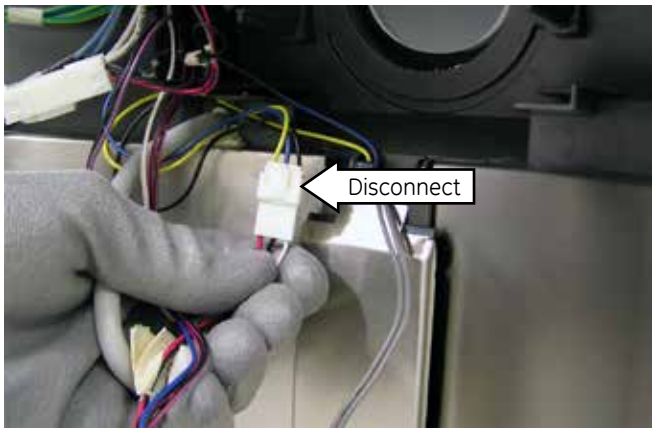
Actuator Paddle, Switch, and Lower Ultrasonic Sensors

NOTE:

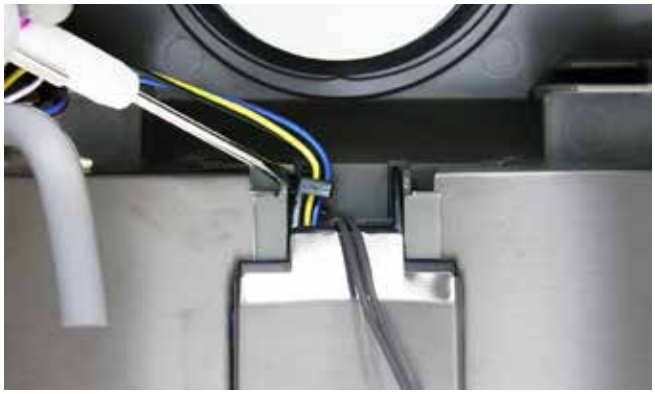
- The paddle switch is a 2-position switch with three wires. It has a normally open and a normally closed contact.
- Both the door board and user interface board (UI) look for a change of state of both contacts when the paddle is depressed before the selected function is activated.
- The door board monitors one of the contacts and the user interface board (UI) monitors the other contact.
- The paddle and switch are attached to the dispenser recess with two top pins and two bottom tabs located inside.

Actuator Paddle and Switch Removal

1. Remove the funnel (see **Dispenser Assembly Components Removal,** follow steps 1 through 9).
2. Disconnect the actuator switch wire harness.



3. Using a small flat blade screwdriver, gently pry inward and disengage each top pin from the dispenser recess and then pull the paddle up.



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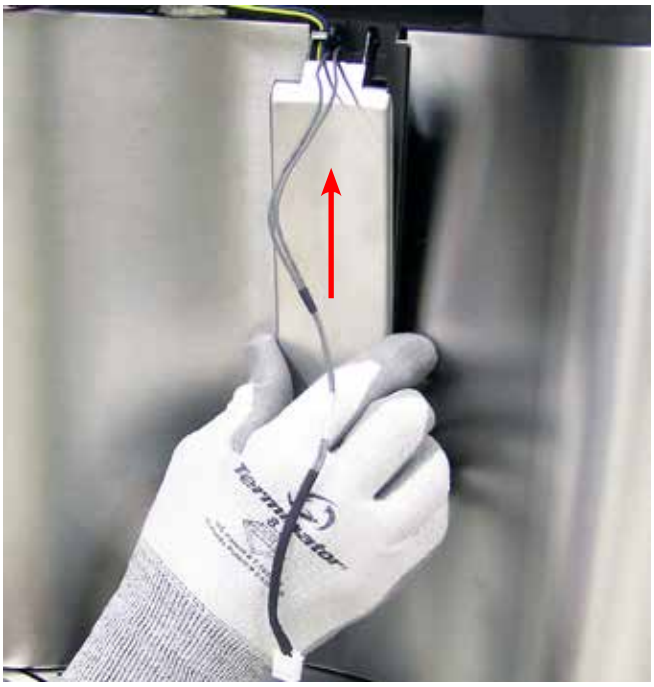
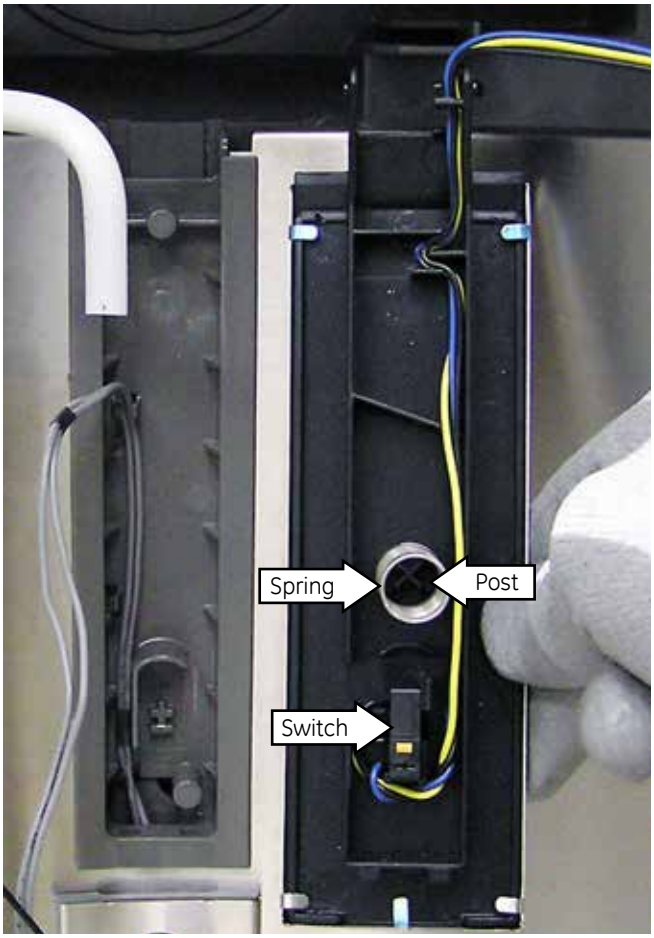
4. Tilt the top of the paddle out, then remove it from the dispenser recess.



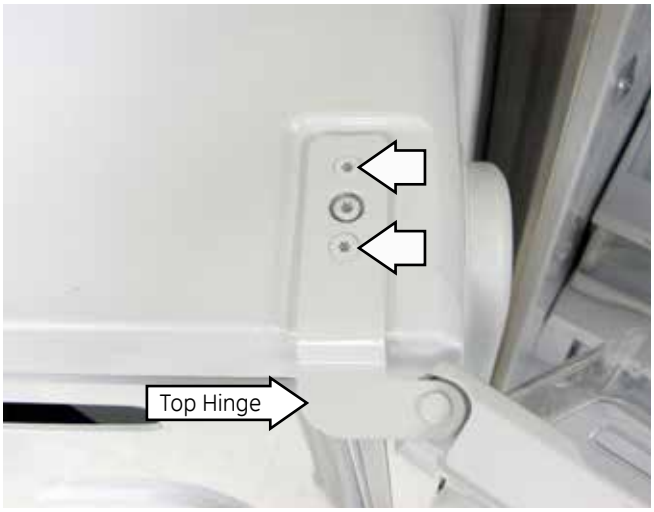
NOTE: The paddle and switch are supplied as an assembly. The spring is inserted around a post and is available separately.



Ice Box Door Assembly

The ice box door assembly consists of the door, latch, and gasket.

The ice box door assembly is attached to the left-side refrigerator door with two hinges. To remove the ice box door assembly, it is necessary to open the door and remove the two T-15 Torx screws and the top hinge. The door assembly can then be lifted off of the bottom hinge.



The door latch cover must be removed to access the latch to the ice box door. The cover is attached to the door with two rear tabs and two front tabs. A small flat blade screwdriver can be used to pry out the front of the latch cover.

The cover can then be pulled toward the latch handle and removed.

(Continued next page)

The door latch is attached to the ice box door with 2 Phillips head screws.

The door gasket is secured to the door by a barbed edge that locks into a retainer channel.

To remove and replace the door gasket:

1. Starting at any corner, pull the old gasket out of the retaining 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.

Starting in July 2015 the ice box door gasket is integrated into the door and is not replaceable, the ice box door must be replaced.

Ice Bucket

The bucket can be removed by pulling the door latch down, opening the ice box door, then lifting and pulling the bucket out.

(Continued next page)

Ice Bucket (rear view)

NOTE: Ice bucket and crusher available as an assembly.

Icemakers

The icemakers are similar to previous icemaker designs.

Although similar, they are NOT interchangeable with each other (between door and freezer models) or any other service icemaker.

Ice Box-Mounted Icemaker

Freezer-Mounted Icemaker

(Continued next page)

The icemakers operate in much the same way as previous bottom mount models, with one significant difference: the icemakers are controlled by either the main control board or the door control board. The board inside the icemaker does NOT control operation.

The icemaker in the door is controlled by the door control board.

The icemaker in the freezer is controlled by the main control board.

These boards will monitor the mold thermistor, rake and feeler arm sensors to operate the rake motor, heater and water valve.

The thermistor has the same resistance value as previous electronic icemakers.

The icemaker thermistor has a negative coefficient — an increase in temperature will cause a decrease in resistance.

Temperature Degrees (°F)	Temperature Degrees (°C)	Resistance in Kilo-Ohms
-40	-40	207 k
35.6	2	25.37 k
39.2	4	23.27 k
50	10	18.07 k
59	15	14.75 k
68	20	12.11 k
77	25	10 k
176	80	1.67 k

Icemaker Sequence

The normal icemaker sequence is to fill the mold with water, wait until the water is frozen, harvest the ice, and then repeat the cycle.

To accomplish this sequence, three cycles are defined: **Freeze**, **Harvest** and **Water Fill**.

Freeze:	The **Freeze** cycle begins after a fill, when the mold temperature drops below 32˚F and will last for a minimum of 50 minutes. After the **Freeze** cycle conditions have been met and the feeler arm is in the "bin not full" position, a harvest cycle will be initiated.
Harvest:	At the start of the **Harvest** cycle, the heater will turn on and remain on until the mold temperature is at least 36˚F (minimum heater time is 1 minute). The heater will cycle to maintain at least 36˚F during harvest. Once 36˚F is reached, the rake motor will turn on, making one revolution to eject the cubes while the control monitors rotation through the home position.
Water Fill:	When the rake motor is back at the home position, the **Water Fill** cycle starts by cooling the mold to 40˚F. The icemaker then fills with water for 5.1 seconds (no additional fills are used). The icemaker then starts another **Freeze** cycle.

The average time from fill to fill is 60-70 minutes.

(Continued next page)

Icemaker Diagnostics

Use Service Diagnostic Mode to enter service diagnostics (see ***Service Diagnostic Mode***). Use diagnostic code **00 99** to cycle icemaker in the door and **01 00** to cycle icemaker in the freezer.

The service test will consist of a harvest cycle followed by a water fill cycle.

The harvest cycle will be entered immediately, regardless of mold temperature or feeler arm position.

The mold heater will be turned on for a minimum of 20 seconds.

At the end of the harvest cycle, a normal water fill cycle will be initiated.

After the water fill cycle, the icemaker will enter the freeze cycle.

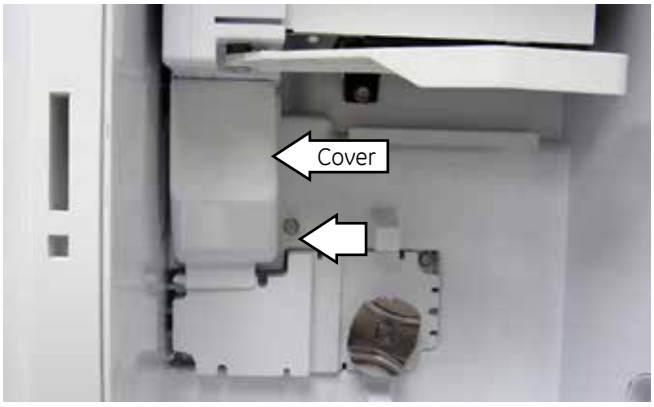
During the service diagnostic test, the feeler arm position sensor and motor position sensor are tested by the control board software. The motor and water valves are energized and can be visually observed for diagnostic purposes.

Under normal operating conditions, the icemaker is capable of producing approximately 100 - 130 cubes (approximately 4.3 pounds of ice) in a 24 hour period. The rate of ice production depends on freezer and ice box compartment temperature, room temperature, number of door/drawer openings, and other use conditions.

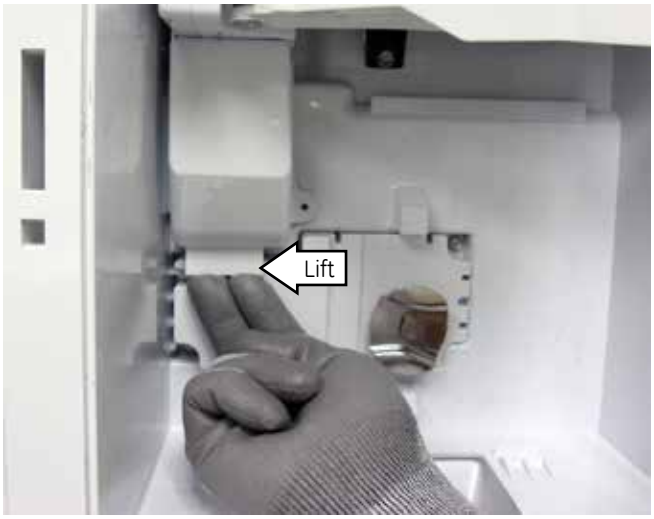
Fresh Food Door Icemaker Removal

NOTE: The icemaker is located inside the left side refrigerator door.

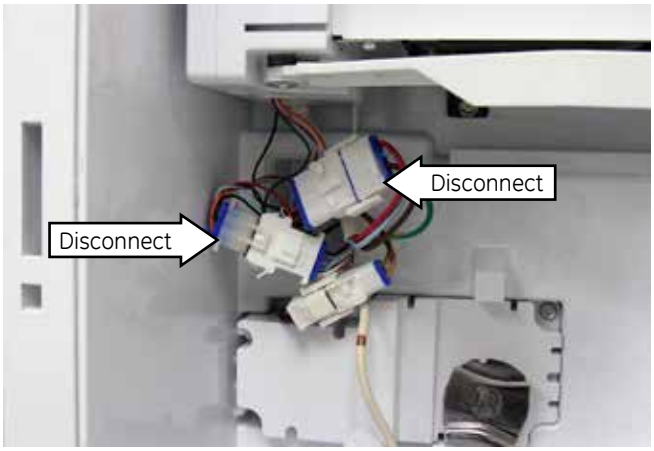
1. Open the ice box door and remove the ice bucket.
2. Remove the 5/16 in. hex head screw from the wire harness cover.



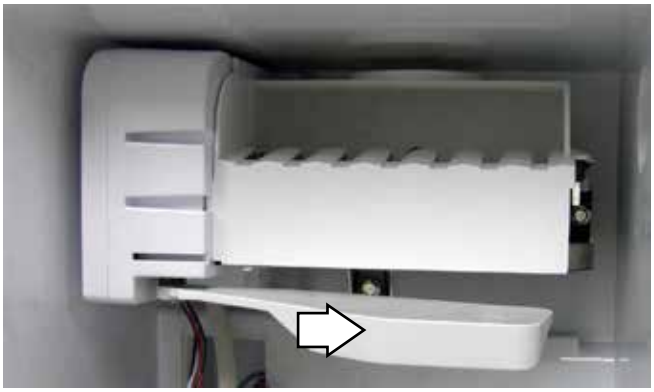
3. Lift the bottom of the wire harness cover, then remove the cover.



4. Disconnect the icemaker wire harnesses.



5. Remove the bottom center 5/16 in. hex head screw that attaches the icemaker to the ice box.
6. Lift and remove the icemaker.



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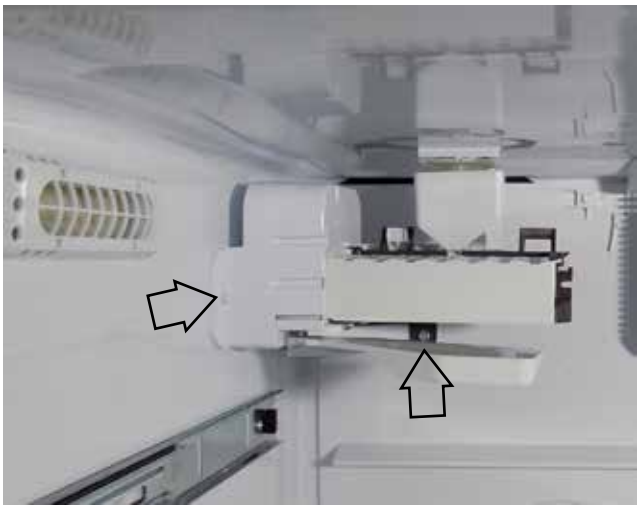
Freezer Icemaker Removal

1. Remove the 1/4 in. hex head screw from the left side of the icemaker and below the mold.
2. Disconnect the two wire harnesses.



Ice Box Thermistor

The ice box thermistor communicates ice box temperatures to the door control board.

The door control board monitors the ice box thermistor to control temperatures in the ice box.

The ice box fan circulates cold air from the freezer evaporator through the cabinet ducting to achieve the desired temperature.

The temperature in the ice box will vary based on the freezer setpoint and the state of ice production or storage.

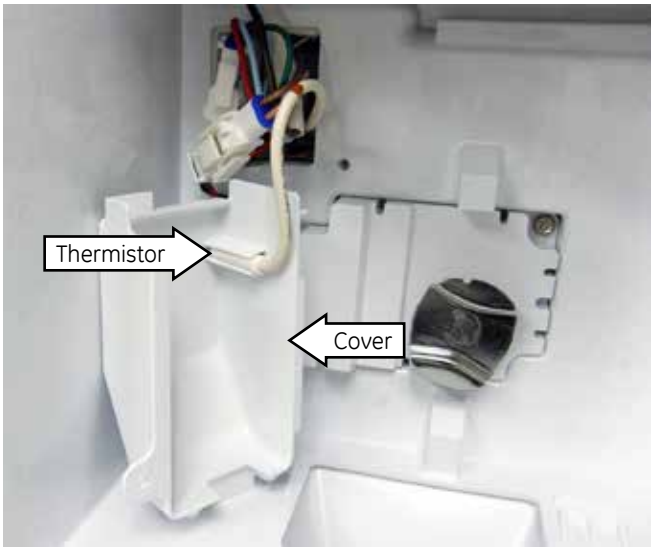
Based on freezer temperature and assuming the ice box has not been opened before testing, the maximum expected temperature in the ice box is shown in the table below.

Example: At a 0˚F freezer set point, the expected maximum temperature observed would be 15˚F. The temperature range is approximately 5˚to 15˚F.

Freezer Set Point	Ice Box Set Point
-6˚F	3˚F
-5˚F	5˚F
-4˚F	7˚F
-3˚F	9˚F
-2˚F	11˚F
-1˚F	13˚F
0˚F	15˚F
1˚F	17˚F
2˚F	19˚F
3˚F	21˚F
4˚F	23˚F
5˚F	25˚F
6˚F	27˚F
7˚F	29˚F
8˚F	31˚F

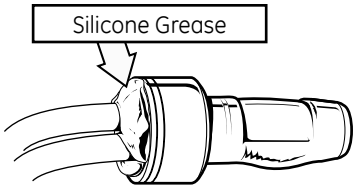
(Continued next page)

The ice box thermistor is located on the inside of the wire harness cover.



Ice Box Thermistor Replacement

1. Place the replacement thermistor next to the original thermistor.
2. Cut the wiring at a location that will match the original length when the replacement thermistor is spliced to it.
3. Use plastic bell connectors (**Part #**: WR01X10466). Fill each connector with silicone grease, then splice a new thermistor into the harness as shown in the illustration.



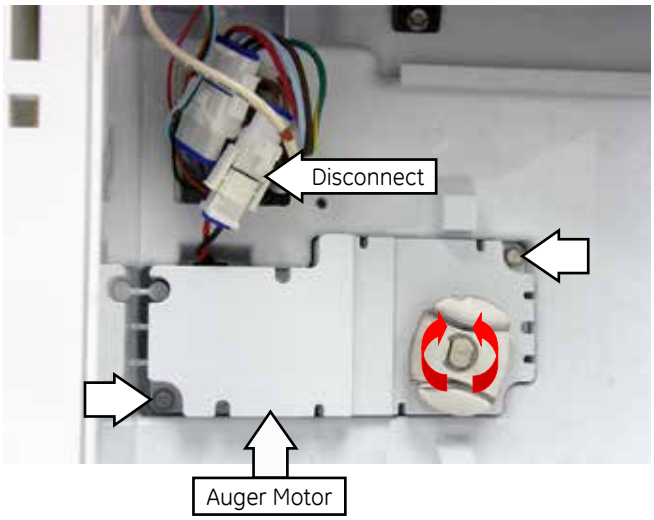
Auger Motor

The auger is rotated by utilizing a DC reversible motor that is located inside the left side refrigerator door. It is necessary to remove the ice bucket to replace the auger motor.

Auger Motor Removal

1. Remove the wire harness cover (see the ***Icemakers*** section, follow steps 1 through 3).
2. Disconnect the auger motor wire harness.
3. Remove the two 5/16 in. hex head screws that attach the auger motor to the ice box.

NOTE: As shown below, the coupling rotates clockwise for crushed ice, and counterclockwise for cubed ice.



RFID Water Filter

Radio Frequency IDentifiaction (RFID) Water Filter

RFID water filter system is designed to alert the consumer when the filter should be replaced, if the filter is improperly installed or if there is a leak. A RFID detection board automatically resets the timer on the main control when a new RFID filter is installed.

The RFID system consists of a RFID detection control board in the filter housing and a filter cartridge with a RFID tag (an electronic chip located under the filter label). The bypass cartridge for these models also contains a RFID tag.

Note:

A bypass cartridge is installed in the water filter manifold for shipping.

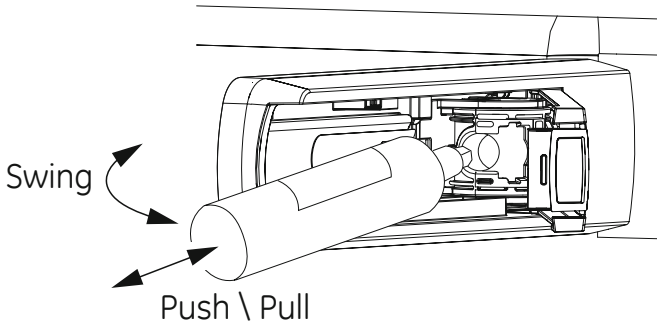
The water filter should be installed when the refrigerator is delivered to the consumer.

To remove the water filter

The water filter, for models with icemaker in the freezer, is located on the left side of the fresh food compartment.

1. Pull the filter compartment door forward then swing open the cover.

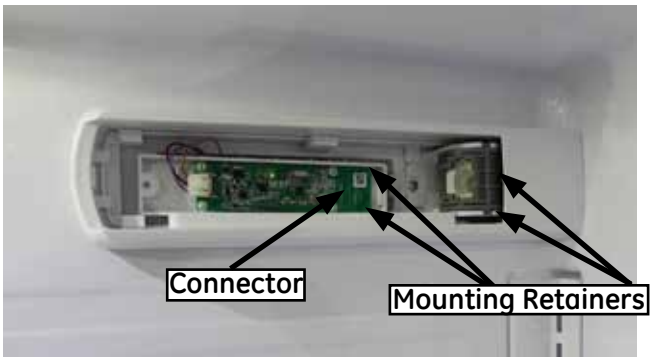
2. Grasp and swing the water filter out until it stops.
3. Maintaining that same angle, pull the water filter straight out. DO NOT TWIST OR TURN THE FILTER.



RFID Board

1. Remove the RFID filter.
2. Remove the 1/4" screw on the left of the board cover
3. Disconnect the wiring harness.
4. Unsnap the four retainers to remove the board.

NOTE: access cover is removed



Each RFID filter cartridge tag has a unique serial number the main board will recognize and store.

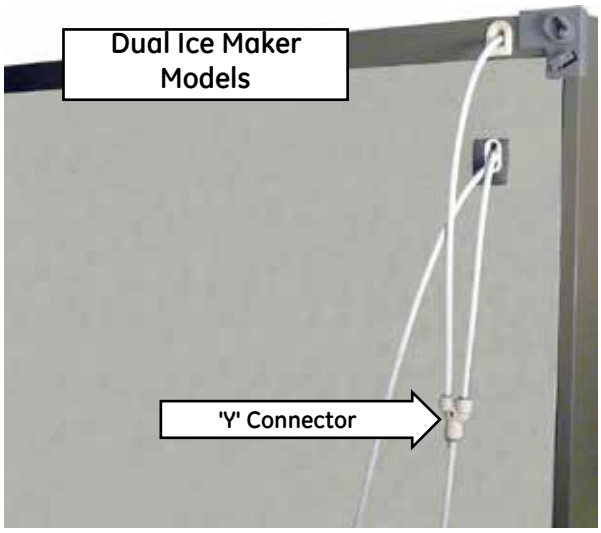
If a filter is not installed a RFID bypass plug must be installed.

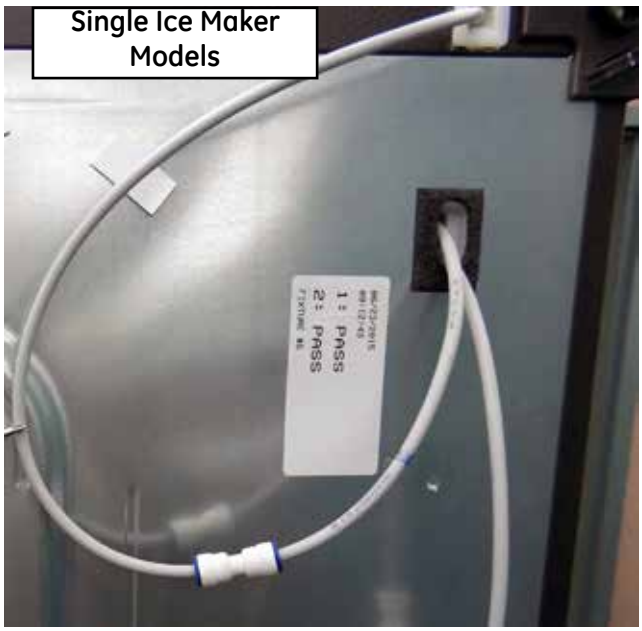
Both the filter and bypass must be installed with the word **FRONT** in blue visible when the filter is in place.

(Continued next page)

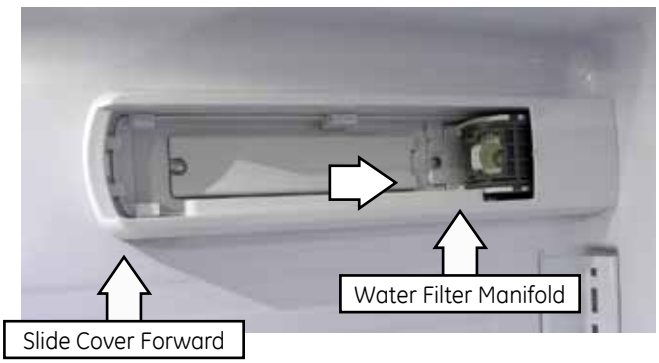
Filter Manifold Removal

Disconnect the inlet tubing from the isolation valve in the machine compartment and the outlet tubing from the quick connector behind the refrigerator. Note that dual icemaker models have a 'Y' connector.





The filter cover pulls forward to unsnap from the side wall. After removing the Phillips-head screw, the manifold can be pulled out forward at the front.



Filter Detection

If there is no filter or bypass cartridge installed or the filter is installed incorrectly, the **Filter Maintenance Alert** screen is displayed and the ice and water systems are disabled.

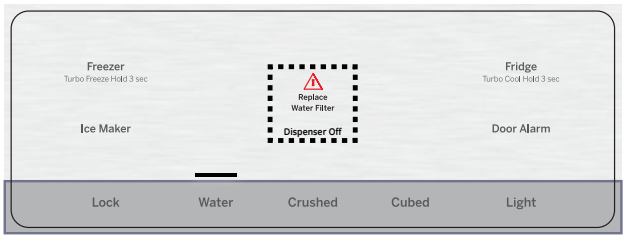
Pressing the **Detail** pad will display the **Filter Alert** screen with information about the status of the ice and water systems, along with filter or bypass cartridge installation instructions.

Pressing the Dismiss pad will display the home screen showing Water **Filter: Leak Detected.** the ice and water systems are disabled.

Pressing the **Order New Filter** pad will display **Order a Water Filter** screen with ordering information and the filter catalogue number.

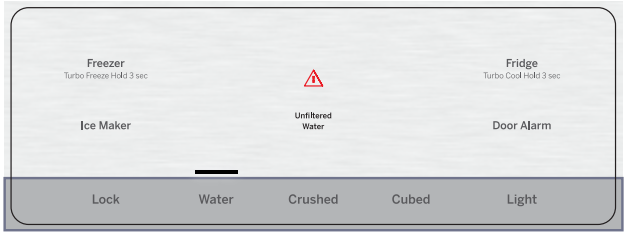
(Continued next page)

If there is no filter or by pass cartridge installed or installed incorrectly on capacitance touch models, when the dispenser paddle is activated, the display will show **Replace Water Filter**, the alert indicator and **Dispenser Off**. The ice and water systems are also disabled.



Installing a new RFID water filter or RFID bypass cartridge will reactivate the ice and water systems.

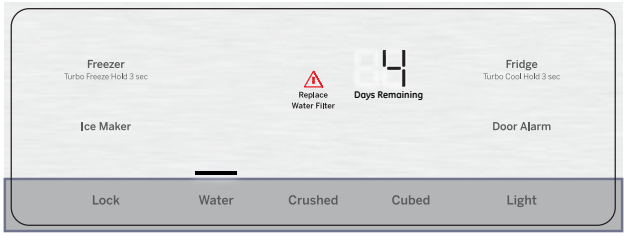
When the RFID Bypass cartridge is installed the user Interface will show the water is not being filtered while dispensing.



NOTE: ONLY USE A RFID BYPASS CARTRIDGE!

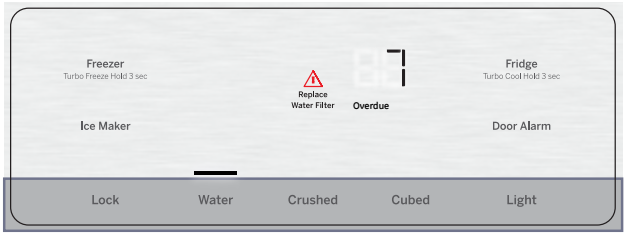
When the filter reaches 95% of its life by volume or time, Water Filter: **Order Now** is displayed.

Capacitance touch controls display Replace Water Filter, alert indicator and the days remaining before expiration when the paddle switch is activated.



When the filter reaches 100% of its life by volume or time, **Water Filter: _days** is displayed. This is the number of days since the filter expired.

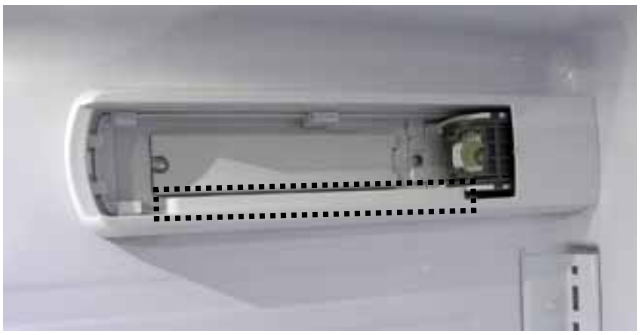
Capacitance touch controls display **Replace Water Filter**, the alert indicator and the days **Overdue** from expiration.



(Continued next page)

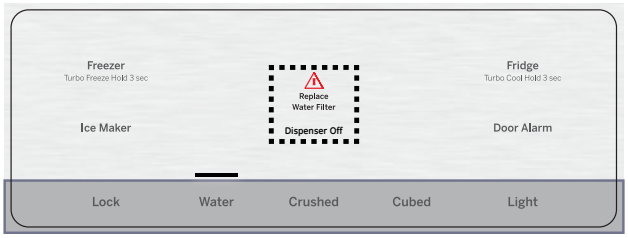
Filter Leak Detection

There is a small trough under the filter to catch water drips if they occur.



If the trough accumulates water, the water wets a strip in the tag area on the filter. This opens the circuit of the RFID tag. When the filter tag opens the ice and water systems are disabled and displays the **Filter Maintenance Alert** screen.

If the filter tag opens because of a leak on capacitance touch controls, when the dispenser paddle is activated, the display shows **Replace Water Filter**, alert indicator and **Dispenser Off**. The ice and water systems are also disabled.



A Filter Maintenance Alert screen is displayed when any of the following occur:

- A leak in the filter area
- No filter cartridge is installed
- No bypass cartridge is installed
- A filter cartridge is installed incorrectly
- A bypass cartridge is installed incorrectly

After the filter has been replaced, the filter must be purged of air and loose carbon. Water Filter: Need Purging is displayed until purging is complete.

Purge the filter by running water through the dispenser until the “Need Purging” alert clears from the display. The hot water system is disabled on Café models until 64 oz. of cold water is dispensed.

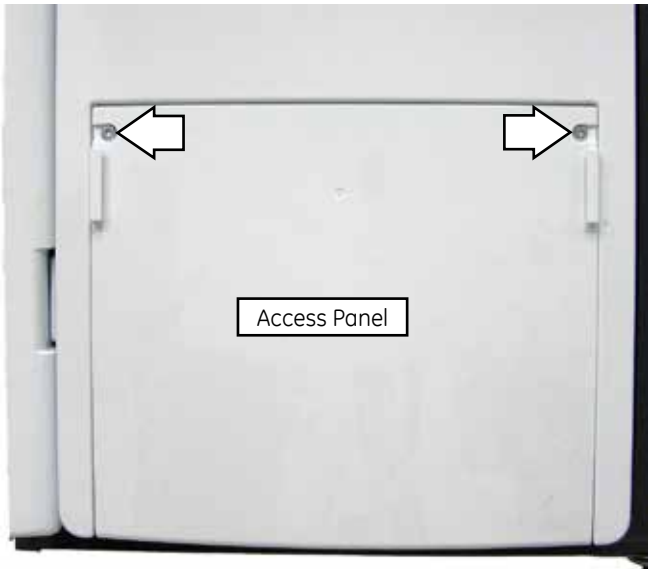
There is no indication of a good filter on capacitance touch controls.

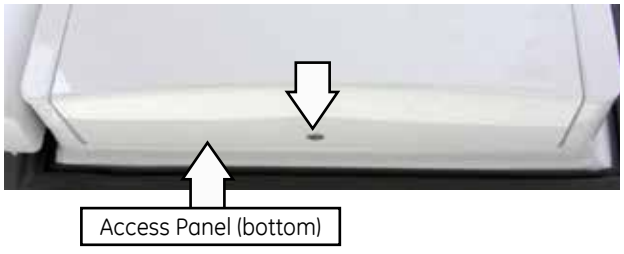
Chilled Water Tank

The water tank is located inside the left-side refrigerator door. The water tank capacity is 16 ounces. It is necessary to remove the access panel to replace the water tank.

To remove the water tank:

1. Remove the T-20 Torx screw from the bottom and the two T-20 Torx screws from the front that attach the access panel to the door.



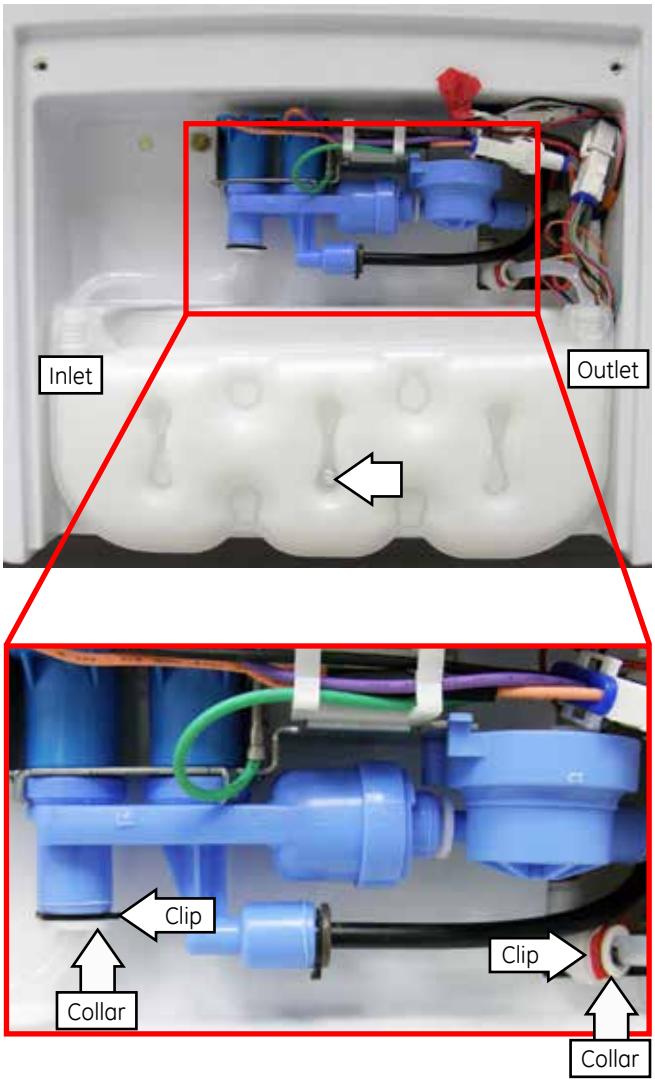


2. Using a flat blade screwdriver, push the plastic lock clip off the tank inlet coupling and the plastic lock clip off the tank outlet elbow coupling.

3. Carefully push each collar in while pulling each water line out from the coupling.

NOTE: See note on page 40 regarding lock clips.

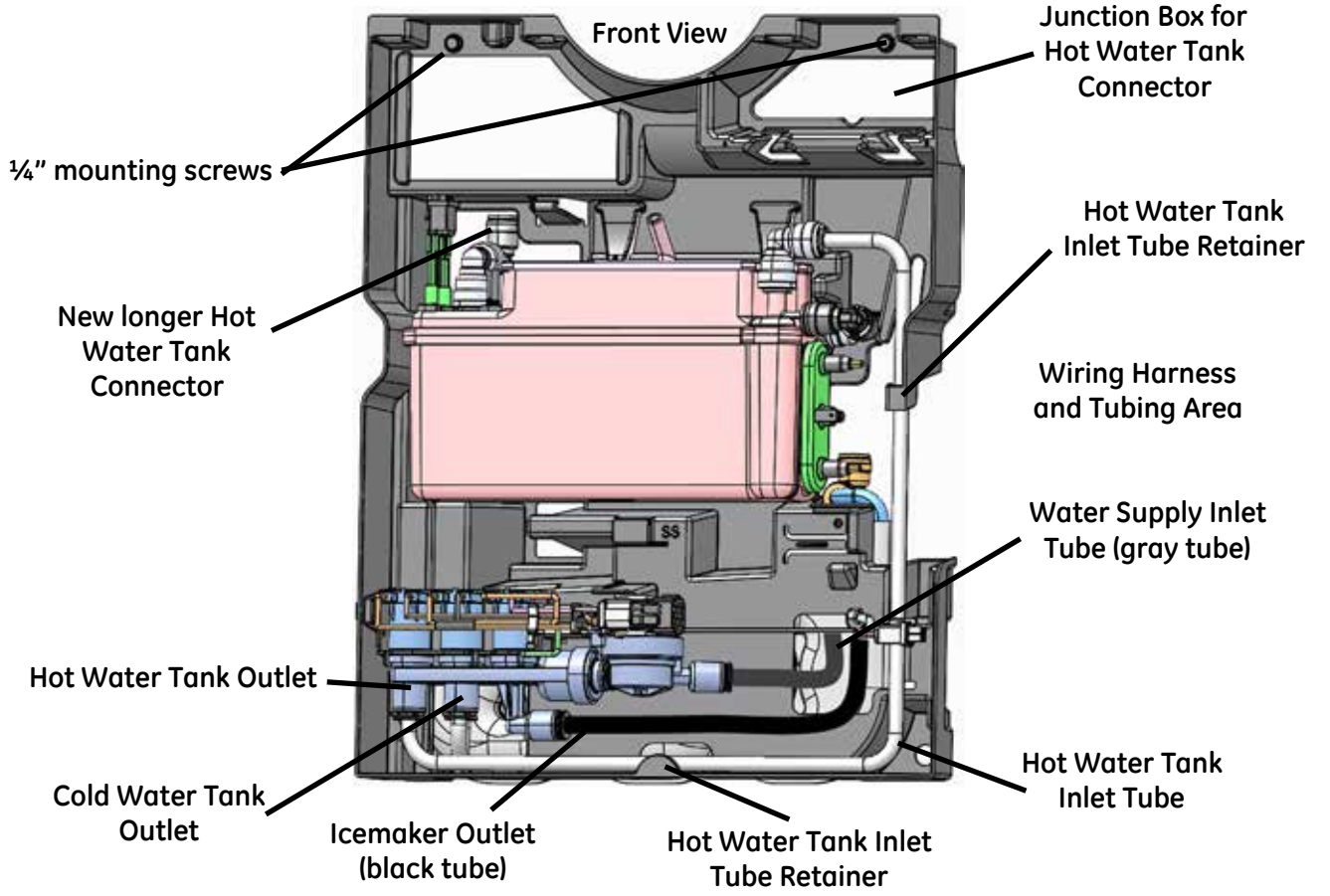
4. Remove the 1/4 in. hex head screw and water tank.

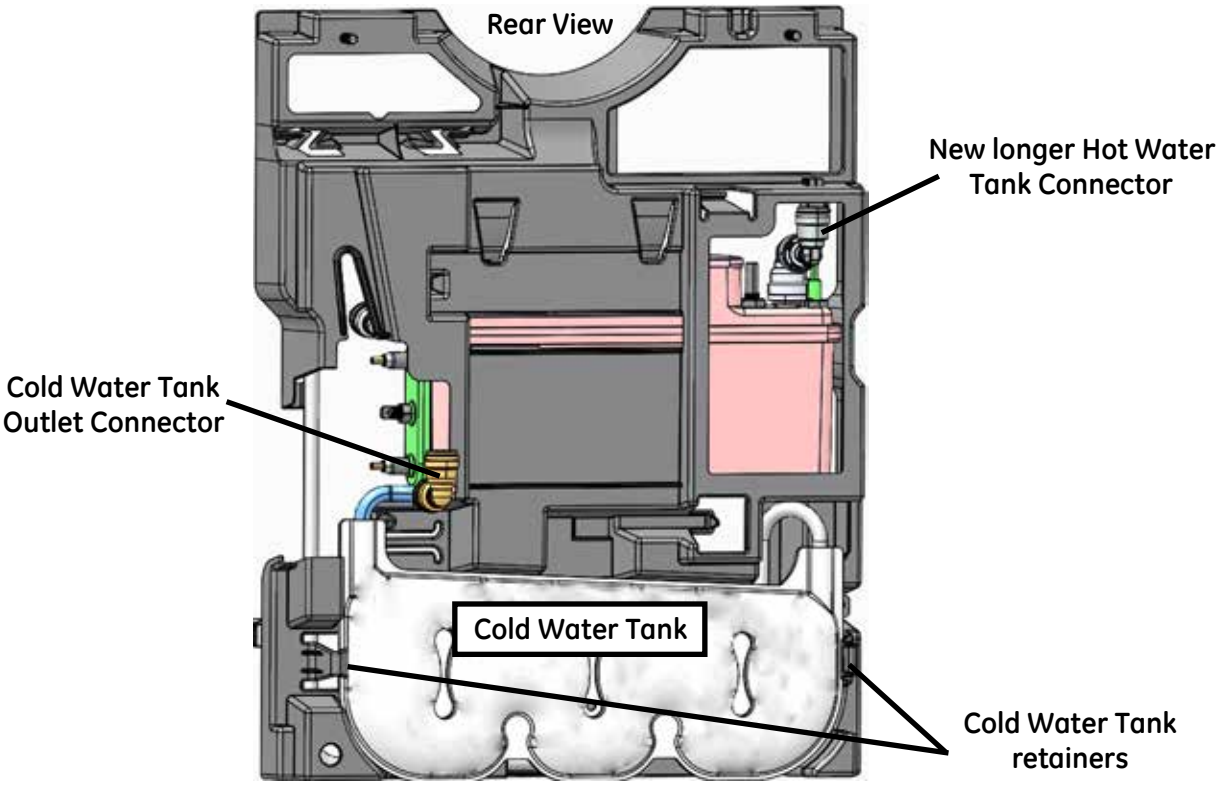


Beginning in July of 2015 the dispenser door design changed. The following two pages show the changes in the tank and valve compartment.

(Continued next page)

Café Tank & Valve Tray





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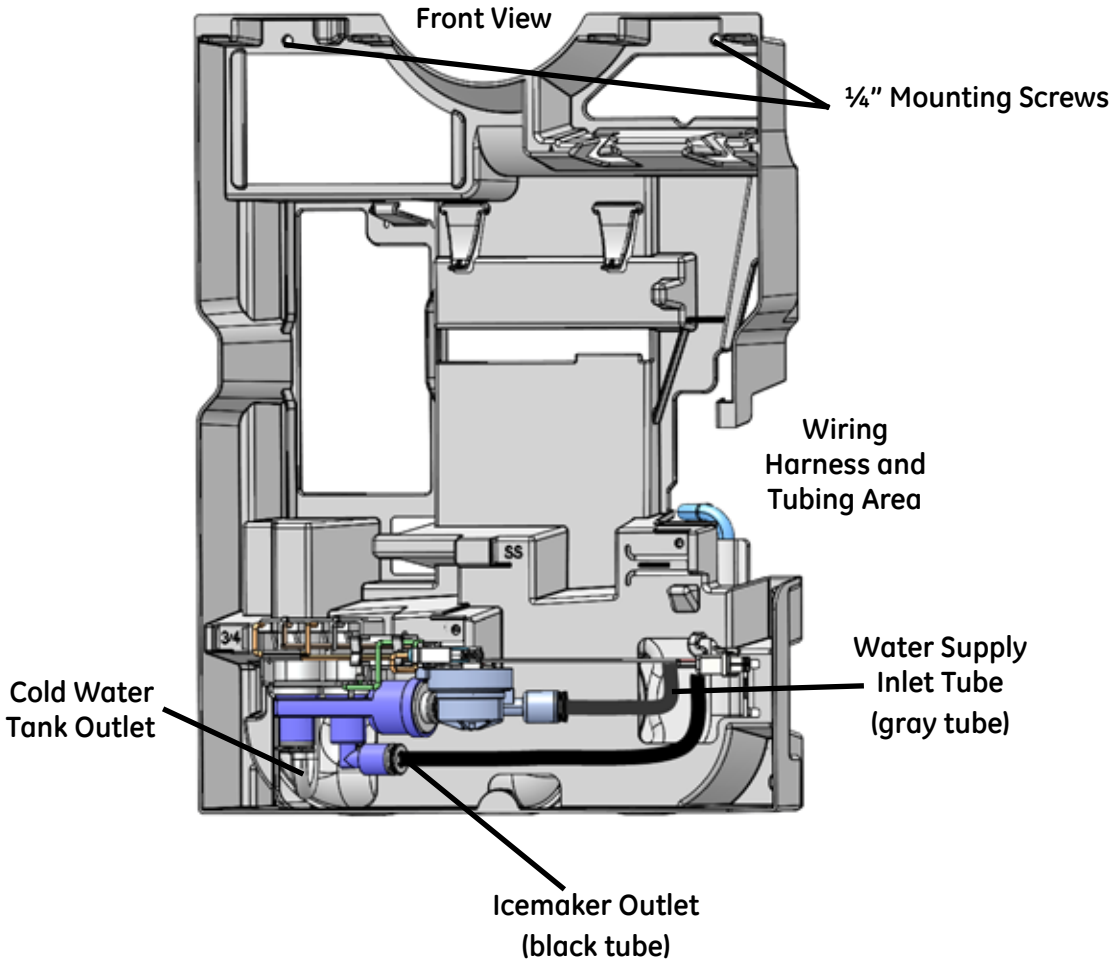
GE, Adora & Profile Tank & Valve Tray



NOTE: The rear view of the Tank and Valve tray is the same on all models.

Isolation Water Valve

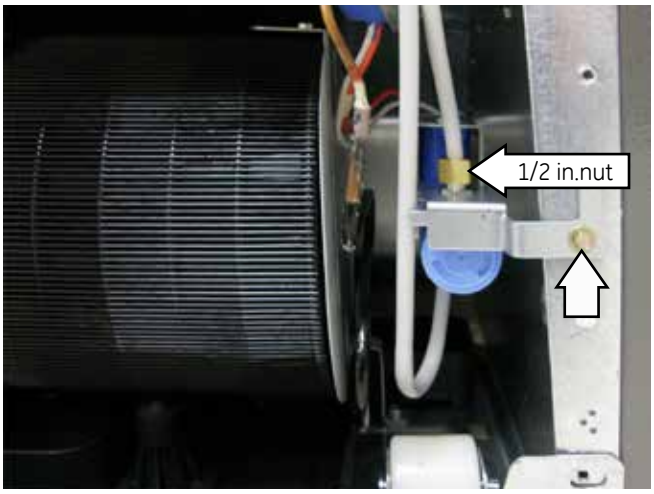
The isolation valve supplies water to the filter. The valve prevents the filter from being under constant house water pressure.

The isolation valve is operated by the main control board. The valve coil has an approximate resistance value of 390 ohms.

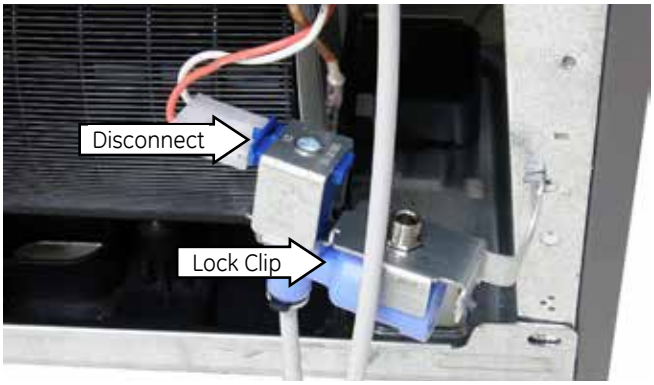
The isolation water valve is located in the machine compartment and to the right of the condenser.

Isolation Water Valve Removal

1. Remove the machine compartment cover (see ***Machine Compartment Cover***).
2. Shut off the water supply to the refrigerator, then remove the 1/2 in. nut that attaches the water supply line to the isolation water valve.
3. Remove the 1/4 in. hex head screw and valve from the cabinet.



4. Disconnect the water valve wire harness.
5. Remove the plastic lock clip from the coupling.
6. Carefully push the collar in while pulling the water line out from the valve.



Water Valve and Flowmeter

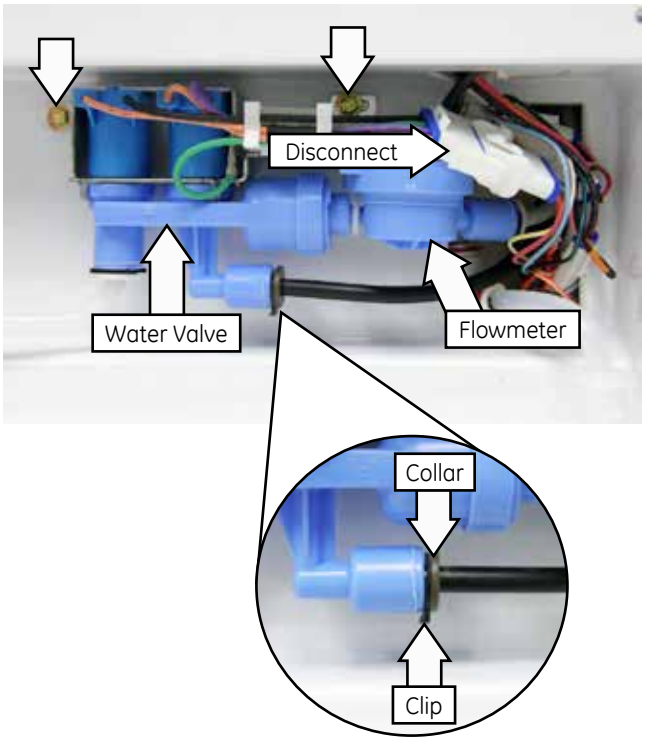
The water valve is located inside the left side refrigerator door. Models with Precise Fill and Auto Fill utilize a flowmeter that is connected to the inlet of the water valve. The water valve supplies water to the icemaker and dispenser. Each coil on the water valve has an approximate resistance value of 400 ohms. It is necessary to remove the access panel to replace the water valve and flowmeter. The procedure to remove the water valve on GE/Adora models is similar.

Water Valve and Flowmeter Removal

1. Remove the tank inlet tubing from the water valve (see ***Water Tank***, step 1 through 3).
2. Using a flat blade screwdriver, push the plastic lock clip off the icemaker water outlet coupling.
3. Carefully push the collar in while pulling the water line out from the coupling.

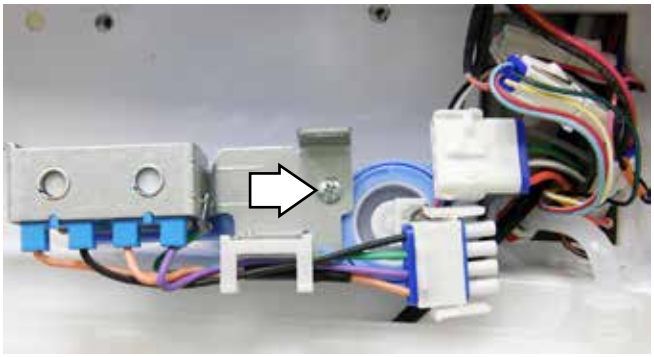
NOTE: Lock clips must be reinstalled to prevent leaks. After the water line is removed from the connector, the lock clip can be reinstalled on the connector. The water line can then be inserted with the clip in place.

4. Disconnect the valve wire harness.
5. Remove the two 5/16 in. hex head screws that attach the valve to the refrigerator.



(Continued next page)

6. Rotate the water valve and remove the Phillips head screw from the top of the flowmeter.

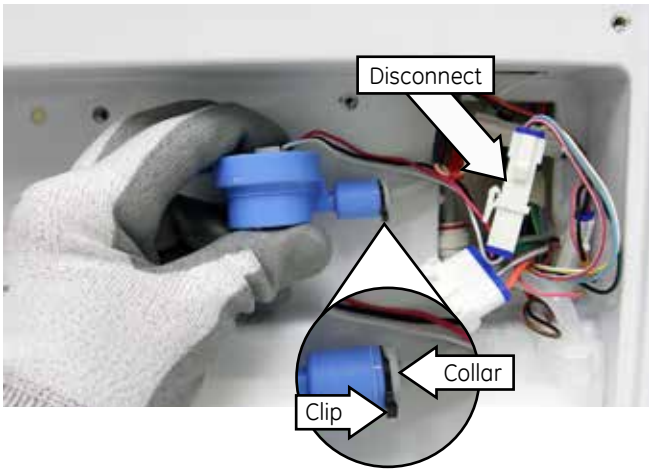


7. Carefully push the flowmeter collar in while simultaneously rotating and pulling the flowmeter out from the coupling.

8. Using a flat blade screwdriver, push the plastic lock clip off the flowmeter inlet coupling.

9. Carefully push the flowmeter inlet collar in while pulling the inlet water line out from the coupling.

10. Disconnect the flowmeter wire harness.



Freezer Icemaker Water Valve

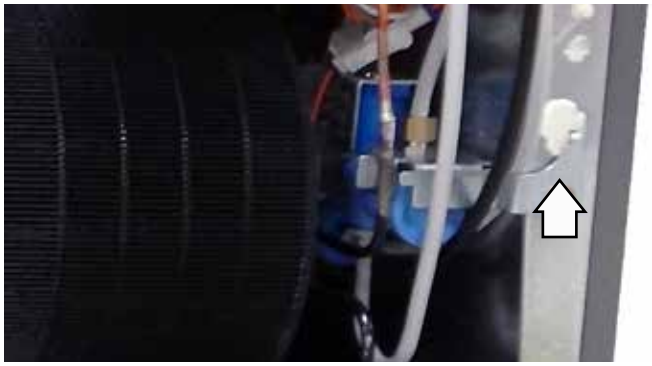
The freezer icemaker water valve receives filtered water and supplies this water to the freezer icemaker. The valve coil has an approximate resistance value of 400 W.

The freezer icemaker water valve is located in the machine compartment to the right of the condenser and is attached to the isolation valve bracket.

Freezer Icemaker Water Valve Remove

1. Remove the machine compartment cover (see ***Machine Compartment Cover***).

2. Remove the 1/4 in. hex head screw and valve assembly from the cabinet.



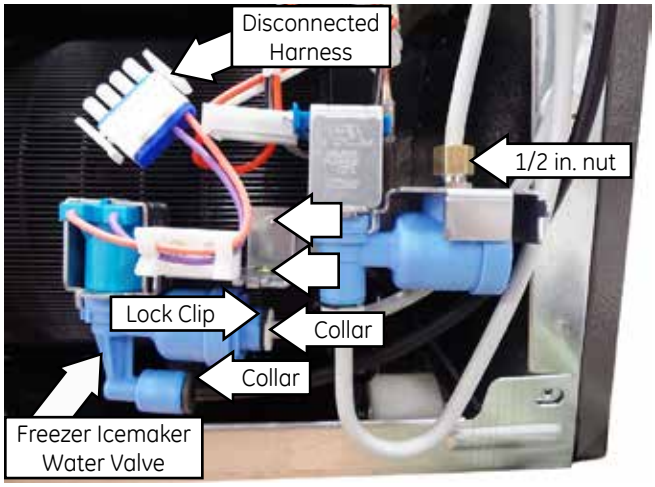
3. Shut off water supply to refrigerator and then remove the 1/2 in. nut that attaches the water supply line to the isolation water valve.

4. Disconnect the water valve wire harness.

5. Remove the plastic lock clips from the couplings, then carefully push each collar in while pulling each water line out from the valve.

NOTE: See note on page 78 regarding lock clips.

6. Remove the two Phillips-head screws from bracket.



Articulating Door Mullion

The articulating door mullion is attached to the left side door, and provides a movable center mullion that maximizes access to the fresh food compartment. With both refrigerator doors closed or only the right side door opened, the mullion stays in position. When the left side door is opened, the spring-loaded mullion is activated to fold against the handle side of the door liner.

The pin on top of the mullion and the track, located at the top center front of the refrigerator, ensures proper mullion bar alignment upon closure of the left side door.

Door Closed - Pin in Track

Door Opening - Pin Exiting Track

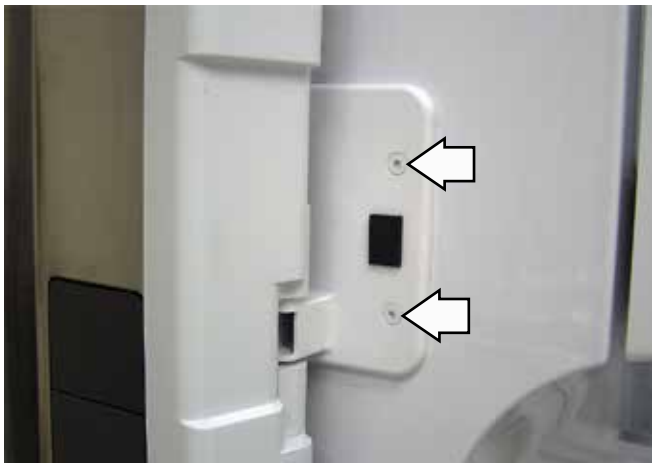
The articulating door mullion consists of the mullion and heater. The articulating door mullion is supplied as an assembly.

The heater operates on 12 VDC with the doors closed. Operation is based on room temperature and humidity.

The resistance value of the heater is approximately 24.7 W. Check for the correct voltage and resistance on the door board at J3 pin 4 to J3 pin 20.

Articulating Door Mullion Assembly Removal

1. Open the left door and move the articulating door mullion to the door-closed position.
2. Remove the two T-10 Torx screws from the wire harness cover.



3. Pull out and disconnect the wire harness.

(Continued next page)

4. Grasp the mullion and pull it vertically upward to release it from the top and bottom retainers.

Circuit Boards

Main Control Board

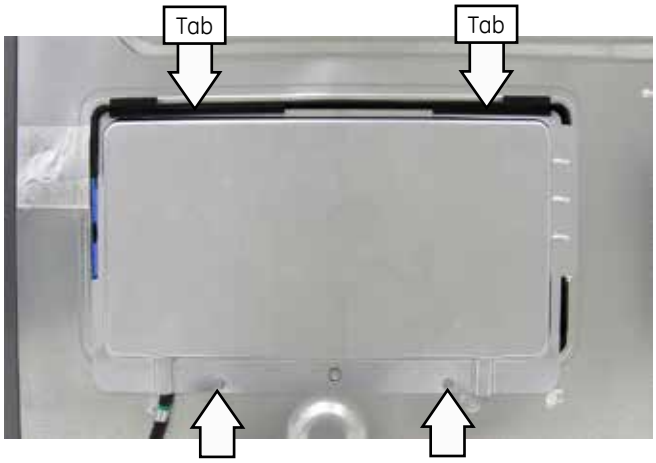
The main control board operates some or all of the following outputs, depending on the model identification used:

- Freezer temperature control using compressor, fans and 3-way valve
- Fresh Food temperature control using compressor, fans, 3-way valve, and damper (single evaporator models)
- Ice Box temperature control
- Deli pan control using the damper, fan and heater
- Variable fan speed control with RPM feedback for the condenser, fresh food and freezer evaporator, ice box and deli pan fans
- Freezer and fresh food evaporator defrost control
- Icemaker control for models with an icemaker in the freezer
- Control of freezer icemaker water valve
- Control of case water dispenser on non-dispenser models
- Control of the isolation water valve
- Control of mullion and ice port heaters based on external temperature and relative humidity
- Control of the fill tube heater for the icemaker located in the freezer
- Control of the interior LED lighting in the fresh food compartment

The main control board is installed in a recess located in the back of the refrigerator. The recess is concealed by a cover that is attached with two 1/4 in. hex head screws at the bottom and two tabs at the top.

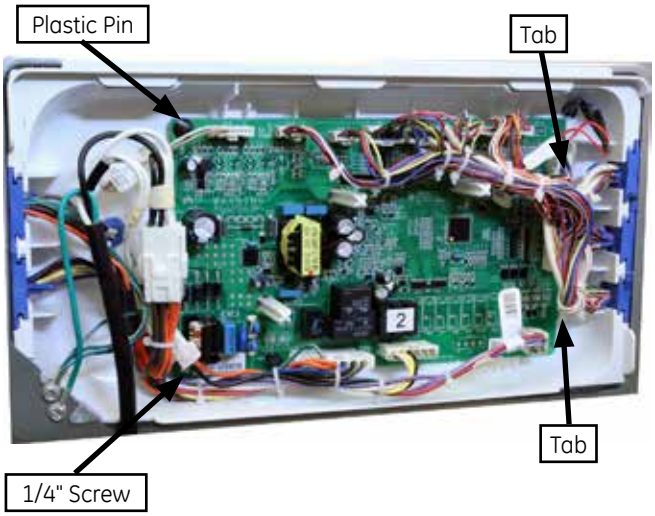
(Continued next page)

To access the main control board, it is necessary to remove the two 1/4 in. hex head screws then slide the cover down from the two tabs.



The main control board is attached to the recess with two tabs, one on each side. Some models may have two screws or two compression pins.

The board is connected to the refrigerator with eleven wire harnesses. To remove the board, it is necessary to disconnect the wire harnesses. Then remove the 1/4" screw at the bottom left, the plastic pin at the top left. Slide the board to the left to release from the right tabs.



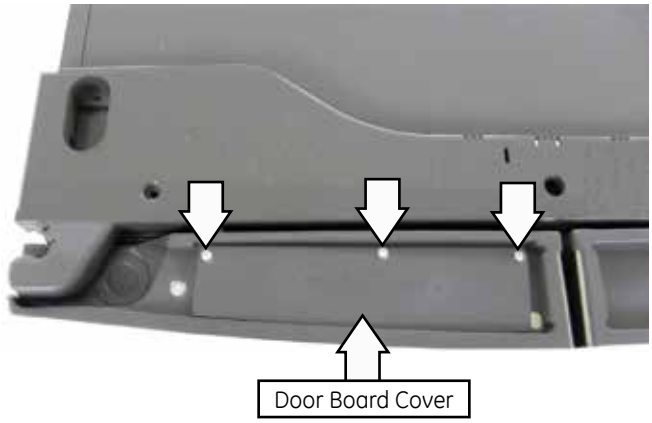
Door Control Board

The door control board controls all AC and DC functions of the left side fresh food door.

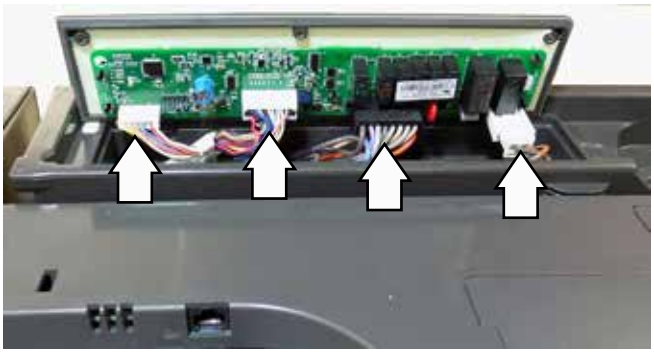
The door control board is attached to the bottom of the door board cover. The door board cover is attached to the top of the left side fresh food door with three screws and two tabs located inside the door board cavity.

Door Board Removal

1. Remove the three T-15 Torx screws that attach the door board cover to the top of the left side fresh food door.



2. Lift the back of the cover and disconnect all of the wire harnesses connectors from the door board.



Viewed from the rear

3. Compress each of the five pins that attach the door board to the cover.

Service Diagnostic Mode

Accessing Service Mode for Diagnostic Tests

To enter **Service Mode**, press and hold the **Water**, **Crushed** and **Cubed** pads together for 3 to 5 seconds.

Press **Yes** to enter the **Service Mode** or **No** to return to main screen.

The display will show **Entering Service Mode**.

The display will show 00 in the FZ temperature display and 00 in the FF temperature display. This is the setting to access the Service Diagnostic Tests. Additionally, all of the components will turn off, the 3-way valve will go to the home position (both closed), and the dampers will go to closed position.

The **Service Mode** will time out and go back to the main screen if no tests are performed within 5 minutes.

Use the left up and down scroll pad to adjust the 10's digit of the test and the right up and down scroll pad to adjust the 1's digit. Press either GO pad to execute the selection. The results will be displayed.

To exit without resetting the boards, hold the **Water**, **Crushed** and **Cubed** pads together down until prompted with **Entering Service Mode?**. Select **Yes**. To exit and reset the boards, set the **Service Mode** to 00 16, then press **GO**.

Boards

These are the Service Diagnostic Tests for Boards.

FZ Display	FF Display	Mode	Comments
00	02	Dispenser Self-Test Mode	Turns on all LEDs and 7 segments on the dispenser board for testing
00	06	COM Version	Returns the COM version (Only on LCD Models)
00	16	Exit All Tests	Resets all boards in the system
00	17	Door Board Version Test	Communication test that displays the software version if the test passes. If test fails and there is no communication, displays "— — —".
00	18	Dispenser Board Version Test	
00	19	Deli Pan Board Version Test	
00	21	WiFi Board* Model Version Test	
00	23	Main Board Version Test	
01	01	RFID Board Version	Returns software version
01	02	Feature Board Version	Returns software version

*: WiFi Board is a wireless communication module used for an external energy management network.

Thermistors

These are the Service Diagnostic Tests for Thermistors.

FZ Display	FF Display	Mode
00	24	FF1 Thermistor Test
00	26	FF Evaporator Thermistor Test
00	27	FZ Thermistor Test
00	28	FZ Evaporator Thermistor Test
00	29	Ambient Temp Test
00	30	Deli Pan Thermistor Test
00	36	Ice Mold Body (DB) Thermistor Test
00	37	Ice Cabinet Thermistor Test
00	38	Hot Water 1 Thermistor Test
00	39	Hot Water 2 Thermistor Test
00	40	Humidity Sensor Test

- These tests perform a check on all sensors located throughout the unit individually.
- Once the test for the thermistors is executed, the instantaneous temperature of the thermistor will be displayed in the displays.
- If the thermistor is out of range, " - - " will be displayed.
- When reading the temperature, insert a decimal between the 2 left and right digits.
- The example reading below of -1077 would be read as -10.77˚F.

Example: FZ Evaporator Thermistor Test

Enter the Service Diagnostic Test on the UI, and select **Go**

The UI displays the test result

Motor, Damper, Heater

These are the Service Diagnostic Tests for the Motor, Damper, and Heater.

FZ Display	FF Display	Mode	Comments
00	42	FF Door Flow Meter Test	Returns the flow from last dispense
00	43	Cycle Duct Door	Opens the Duct Door for 10 seconds and then closes it
00	46	Cycle Deli Pan Damper	Opens the Damper for 30 seconds and then closes it
00	53	FF Defrost Heater Test	Activates on the load
00	54	Deli Pan Heater Test	Activates on the load for 30 seconds
00	55	Isolation Valve Test	Activates on the load
00	56	Ice Port Heater Test	Activates on the load
00	57	Ice Duct Liner Heater	Activates on the load
00	60	FZ Defrost Heater Test	Activates on the load

Fans

These are the Service Diagnostic Tests for Fans.

FZ Display	FF Display	Mode	Comments
00	47	FF Fan Test	Turns the fan on 75% duty cycle and displays RPM
00	48	FZ Fan Test	Turns the fan on 75% duty cycle and displays RPM
00	49	Condenser Fan Test	Turns the fan on 75% duty cycle and displays RPM*.
00	50	Ice Box Fan Test	Turns the fan on 75% duty cycle and displays RPM*.
00	51	Deli/QC Fan Test	Turns the fan on 75% duty cycle and displays RPM*.
00	52	Odor Remover Fan	Turns the fan on 75% duty cycle and displays RPM*.

*: RPM's may vary by fan

Example:

To run the FF Fan Test, set the Service Mode to 00 47, and then select **GO**.

While the test is in progress, the LCD screen will display **Test Executing**.

The LCD will then display the test results in RPM's.

Seal System, Icemaker, Dispenser, Heaters, Lights

These are the Service Diagnostic Tests for the Seal System, Icemaker, Dispenser, Heaters, and Lights.

FZ Display	FF Display	Mode	Comments
00	61	Compressor Test	Turns on the load
00	63	IM Power Relay Test	Turns on the load
00	65	DB Icemaker Water Valve Test	Turns on the load
00	66	DB Icemaker Rake Motor Test	Turns on the load
00	67	DB Hot Water Valve Test	Turns on the load*
00	68	DB Water Valve Test	Turns on the load*
00	69	Hot Water Heater	Test Turns on the load for 5 seconds
00	70	Read Left FF Door Status	Returns the status (0 = Closed, 1 = Open)
00	71	Read Right FF Door Status	Returns the status (0 = Closed, 1 = Open)
00	72	Read FZ Door Status	Returns the status (0 = Closed, 1 = Open)
00	76	Read DB Icemaker Rake Status	Returns the status (0 = not home, 1 = Home)
00	77	Read DB Icemaker Feeler Arm Status	Returns the status (0 = not Full, 1 = Full)
00	78	Read DB Cold Water Paddle Switch	Returns the status (0 = Not Pressed)
00	79	Read DB Hot Water T&P Switch	Returns the status (0 = Not Pressed)
00	80	Read DB Hot Water Level Switch 1	Returns the status (0 = Not Full)
00	84	Turn ON DB Fill Tube Heater	Turns on the load
00	85	Turn on DB Recess Heater	Turns on the load
00	86	Turn on Vertical Mullion Heater	Turns on the load
00	87	Turn On Hot Water LED	Turns on the load
00	88	Turn on DB heater	Turns on the load
00	89	Turn on Ice Box Gasket Heater	Turns on the load

DB: Door Board, LH Door

*: All door switches must be in a closed position

FZ Display	FF Display	Mode	Comments
00	91	Turn on FF Lights	Turns the lights on at 100% Duty Cycle
00	92	Turn on FZ Lights	Turns the lights on at 100% Duty Cycle
00	93	FZ Defrost Heater Test with Feedback	The heater will come on and the evaporator temperature will be displayed
00	94	FF Defrost heater Test with Feedback	The heater will come on and the evaporator temperature will be displayed
00	95	FF Cooling Test	In this test, the following loads will be controlled • Valve = Position A, FZ only • Compressor = High • Condenser Fan High • FF Fan = Low • The test will return the FF Evaporator Temp
00	96	FZ Cooling Test	In this test, the following loads will be controlled • Valve = Position B, FF & FZ open in series • Compressor = High • Condenser Fan High • FZ Fan = Low • The test will return the FZ Evaporator Temp
00	97	DB Icemaker Heater Test	Turns on the load, turns off at 50°F
00	99	DB Icemaker Full Cycle Test	Icemaker Heater will come on and the Instantaneous Ice Mold Body Thermistor reading will be returned, and runs a cycle and fills with water

DB: Door Board, LH Door

RFID: Radio Frequency Identification (on some models)

FZ Display	FF Display	Mode	Comments
01	00	FZ Icemaker Full Cycle Test	
01	01	RFID Board Version	Returns software version
01	02	Feature Board Version	Returns software version
01	03	Air Pump and Pod Valve Test	Run air pump at 100% duty cycle and pod valve open
01	04	Air Pump and Vent Valve Test	Run air pump at 100% duty cycle and vent valve will open
01	05	Raise Dispenser Nozzle	Run motor at 100% duty cycle, raise nozzle, return pass/fail
01	06	Lower Dispenser Nozzle	Run motor at 100% duty cycle, lower nozzle, return pass/fail
01	07	Brew Module Switch Test	Return brew module switch status
01	08	Turbo Heat Relay Test	Turn on Turbo Heat Relay only
01	09	Hot Water Bypass Valve Test	Turn on Hot Water Bypass Valve relay only

Fault Codes

Accessing Service Mode for Fault Codes

To enter **Service Mode**, press and hold the **Water**, **Crushed** and **Cubed** pads together for 3 to 5 seconds.

Press **Yes** to enter the **Service Mode** or **No** to return to main screen.

The display will show **Entering Service Mode**.

The display will show 00 in the FZ temperature display and 00 in the FF temperature display. This is the setting to access the Fault Codes. Additionally, all of the components will turn off, the 3-way valve will go to the home position (both closed), and the dampers will go to closed position.

The **Service Mode** will time out and go back to the main screen if no tests are performed within 5 minutes.

Use the left up and down scroll pad to adjust the 10's digit of the test and the right up and down scroll pad to adjust the 1's digit. Press either GO pad to execute the selection. The results will be displayed.

To exit *without resetting* the boards, hold the **Water**, **Crushed** and **Cubed** pads together down until prompted with **Exiting Service Mode?**. Select **Yes**. To exit and reset the boards, set the **Service Mode** to 00 16, then press GO.

With 00 00 displayed, press either **GO** to display Error Codes.

Fault Codes & Display

Once the **Error Code** display is activated, the display will show the error codes, or fault codes, according to the following:

- The most recent fault code will be displayed first.
- A fault code value of zero ("0") will be displayed if there are no fault occurrences present within the system.
- Use the scroll pads on the right of the screen to see multiple fault codes, 3 can be displayed at a time.
- On LCD models the user interface will display one fault code at a time along with 3 sets/rows of data for each fault code:
  - Number of days since last occurrence
  - Number of occurrences
  - Number of days since last occurrence
- To clear the **Error Code** log, press the **Back** pad to return to the Service Diagnostics then go to 00 01 then press **GO**.

FZ Display	FF Display	Mode	Comments
00	00	Get Fault Codes	Use up and down scroll pads on the right of screen to view all.
00	01	Clear Fault Codes	Clears all the stored codes by pressing GO (LCD models) or any other button on (LED models) other than temperature.

Thermistors

These are the Fault Codes for Thermistors. (* **NOTE**: F10 not on Café.)

Fault Code	Displayed	Fault Code Definition
F1	1	FF1 Thermistor Invalid
F2	2	N/A
F3	3	FZ Cabinet Thermistor Invalid
F4	4	FZ Evaporator Thermistor
F5	5	Deli Pan Thermistor Invalid
F6	6	FF Evaporator Thermistor Invalid
F7	7	N/A
F8	8	Ambient Temperature Invalid
F9	9	Ambient Humidity Invalid
F10*	1 0	FZ Icemaker Mold Body Thermistor (MB) Invalid
F11	1 1	N/A
F12	1 2	N/A

- An invalid thermistor fault code is generated when a thermistor is either shorted, open or falls outside of the normal operating range.
- A thermistor must return to the normal range and go out of range to generate another fault count.
- Any time an error code is cleared, the fault code can be set again immediately if the thermistor is still invalid.

FZ Evap. Thermistor	OPEN or short	FZ Evaporator Thermistor: This will impact defrost only as follows: 1. All FZ heater defrosts will be 20 minutes. 2. The FZ abnormal defrost flag will also be set.
FF Evap. Thermistor	OPEN or short	FZ Evaporator Thermistor: This will impact FF defrost only as follows: 1. All FF heater defrost will be 20 minutes. 2. The FF abnormal defrost flag will also be set.

N/A: Not applicable to any model. Disregard.

Fan Motors

These are the Fault Codes for Fan Motors.

Fault Code	Displayed	Fault Code Definition
F100	1 0 0	FZ Fan Feedback Missing when fan is running.
F101	1 0 1	FZ Fan Feedback Present when fan is off.
F102	1 0 2	FZ Fan cannot reach target RPM.
F103	1 0 3	Condenser Fan Feedback Missing when fan is running.
F104	1 0 4	Condenser Fan Feedback Present when fan is off.
F105	1 0 5	Condenser Fan cannot reach target RPM.
F106	1 0 6	FF Fan Feedback Missing when fan is running.
F107	1 0 7	FF Fan Feedback Present when fan is off.
F108	1 0 8	FF Fan cannot reach target RPM.
F109	1 0 9	Ice Box Fan Feedback Missing when fan is running.
F110	1 1 0	Ice Box Fan Feedback Present when fan is off.
F111	1 1 1	Ice Box Fan cannot reach target RPM.
F112	1 1 2	Deli Pan Fan Feedback Missing when fan is running.
F113	1 1 3	Deli Pan Fan Feedback Present when fan is off.
F114	1 1 4	Deli Pan Fan cannot reach target RPM.
F115	1 1 5	Odor Filter Fan Feedback Missing when fan is running.
F116	1 1 6	Odor Filter Fan Feedback Present when fan is off.
F117	1 1 7	Odor Filter Fan cannot reach target RPM.

There are 3 different fault codes that can be set per fan. They are: **Missing Feedback, Feedback Present when the fan is off, and Fan can't reach target RPM**. The setting criteria for each F Code are described below.

Missing Feedback: The Missing Feedback F Code will be set if the feedback is missing any time after the first minute the fan is started. This minute allows for the fan to start spinning. The fan will be operated at 100% speed with no RPM feedback detected.

Feedback Present when Fan is off: This F Code will be set any time after the fan has been off for 1 minute and the feedback is still present.

Fan Can't Reach Target RPM: This F Code is set anytime the fan does not obtain high speed and has been running at 100% for 2 minutes.

Defrost

These are the Fault Codes for Defrost.

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F200	2 0 0	FZ Defrost Heater on for max time.	Any time the FZ Defrost turns off based on time.
F201	2 0 1	FF Defrost Heater on for max time.	Any Time the FF Defrost turns off based on time.
F202	2 0 2	5 consecutive FZ abnormal defrosts.	5 consecutive abnormal defrosts.
F203	2 0 3	5 consecutive FF abnormal defrosts.	5 consecutive abnormal defrosts.

FZ Evap. Thermistor	OPEN or short	FZ Evaporator Thermistor: This will impact defrost only as follows: 1. All FZ heater defrosts will be 20 minutes. 2. The FZ abnormal defrost flag will also be set.
FF Evap. Thermistor	OPEN or short	FZ Evaporator Thermistor: This will impact FF defrost only as follows: 1. All FF heater defrost will be 20 minutes. 2. The FF abnormal defrost flag will also be set.

Sealed System

These are the Fault Codes for the Sealed System.

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F300	N/A	N/A	
F301	3 0 1	Compressor off for 3 hours with the Cooling System turned on. (This is going to be hard to see because on some models, this will trigger a reset)	Cooling System was on and the compressor remained off for 3 hours.
F302	3 0 2	N/A	
F303	3 0 3	FF Temp Exceeded 75°F	Temperature exceeded — This fault will set if the Defrost has not ran for 1 hour and the doors have been closed for 1 hour and the FF Temp is above 50°F
F304	3 0 4	FZ Temp Exceeded 72.5°F	Temperature exceeded — This fault will set if the Defrost has not ran for 1 hour and the doors have been closed for 1 hour and the FZ Temp is above 20°F
F305	3 0 5	N/A	
F306	3 0 6	N/A	
F307	3 0 7	N/A	
F308	3 0 8	3 Way Valve Position Lost	

N/A: Not applicable to any model. Disregard.

Main Board

These are the Fault Codes for the Main Board.

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F400	N/A		
F401	N/A		
F402	N/A		
F403	4 0 3	MB SW Failure	MB Failure: Replace MB
F404	4 0 4	MB HW Failure	MB Failure: Replace MB

MB: Main Board, Cabinet

N/A: Not applicable to any model. Disregard.

Door Board

These are the Fault Codes for the Door Board.

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F500	5 0 0	Can't reach target hot water temperature.	Hot water time limit expires and temperature not reached.
F501	5 0 1	Flow meter missing.	No pulses/flow meter signal during dispense.
F502	5 0 2	Flow meter pulsing with no water dispensing.	Runs the Diagnostic test 1 minute after a dispense.
F503	5 0 3	Ice/water stops dispensing based on time (7 minute time out).	If the dispense stops due to a time out.
F504	5 0 4	Can't fill hot water tank	Hot water fill time expires without tripping the level sensor.
F505	5 0 5	N/A	
F506	5 0 6	N/A	
F507	5 0 7	Cold Water paddle switch input missing	Check paddle switch and wiring.
F508	5 0 8	Cold Water paddle switch input present	Check paddle switch and wiring.
F509	5 0 9	Hot Water T&P Switch input missing	Check T&P switch and wiring.
F510	5 1 0	Hot Water T&P Switch input present	Check T&P switch and wiring.
F511	5 1 1	Door Board Icemaker Mold temp invalid	
F512	5 1 2	Door Board Ice Box Thermistor invalid	
F513	5 1 3	Door Board HotWater1 Thermistor invalid	Thermistor temperatures do not match.
F514	5 1 4	Door Board HotWater2 Thermistor invalid	Thermistor temperatures do not match.

N/A: Not applicable to any model. Disregard.

Hot Water and Icemaker

These are the Fault Codes for Hot Water and the Icemaker.

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F515	5 1 5	DB Relay driver shorted	Replace door board.
F516	5 1 6	Hot Water Thermistor Fault	Thermistor values more than 10° difference after 30 seconds of heating.
F517	5 1 7	Hot Water AD Voltage Reference Voltage Fault	
F518	5 1 8	Hot Water Low Flow Rate — Hot Water Disabled	Slow or no water flow.
F519	5 1 9	Hot Water heating when tank not full	
F520	5 2 0	Maximum Fill Time Out — Hot Water Disabled	Tank not filled in 120 seconds.
F521	5 2 1	Maximum Purge Time Out — Hot Water Disabled	Slow or no water flow.
F522	5 2 2	Hot Water Maximum Purge Time Out — Hot Water Disabled	Slow or no water flow.
F523	5 2 3	Feature Board communication error	
F524	5 2 4	Dispense nozzle movement error	
F525	5 2 5	Brew Module not detected during brew	
F526	5 2 6	High flow during brewing	
F527	5 2 7	Low flow during brewing	
F570	5 7 0	Dispenser nozzle motor over current error	
F571	5 7 1	Air valves over current error	
F572	5 7 2	Air pump over current error	
F573	5 7 3	Feature Board hardware fault	

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F600	6 0 0	N/A	
F601	6 0 1	FF Icemaker stuck in Harvest Fix Mode	After 10 minutes, if the icemaker is stuck in Harvest Fix Mode.
F602	6 0 2	FF Icemaker enters Harvest Fix Mode 3 out of 10 harvests	Icemaker went into Harvest Fix Mode 3 out of 10 harvests.
F603	6 0 3	FF Icemaker enters fault mode	After entering into Harvest Fault.
F604	6 0 4	FF Icemaker no water supply detected	Icemaker cycling without filling.
F605	6 0 5	FF Icemaker continues to sense bucket full after ice dispense	Feeler arm sensor continues to signal an Ice Bucket Full position even after 24 seconds crushed or 15 seconds cube ice dispense.
F606	6 0 6	FF Icemaker Mold heater not heating	Icemaker mold thermistor does not detect a 3°F temperature rise within 90 seconds.
F650	6 5 0	N/A	If the multi-fill algorithm is active.
F651	6 5 1	FZ Icemaker stuck in Harvest Fix Mode	After 10 minutes, if the software is stuck in Harvest Fix Mode.
F652	6 5 2	FZ Icemaker enters Harvest Fix Mode 3 out of 10 harvests	Icemaker went into Harvest Fix Mode 3 out of 10 harvests.
F653	6 5 3	FZ Icemaker enters Fault Mode	After entering into Harvest Fault.
F654	6 5 4	FZ Icemaker no water supply detected	
F655	6 5 5	FZ Icemaker Mold heater not heating	

Interaction

These are the Fault Codes for Interaction.

Fault Code	Displayed	Fault Code Definition	Setting Criteria
F700	7 0 0	Stuck keys On ICID/ACM/ (Dispenser Boards)	Stuck Key is present on ICID/ ACM. Only send once per each stuck key.
F701	7 0 1	Stuck keys on Internal Temp Board	Stuck Key is present on Internal Temp.Only send once per each stuck key.
F702	7 0 2	Stuck keys on Deli Pan	Stuck Key is present on Deli Pan. Only send once per each stuck key.
F703	7 0 3	Key inputs on Temp Board and Door Closed	FF Door is closed and a key input is detected.
F704	7 0 4	Key inputs on Deli Pan Board and Door Closed	FF Door is closed and a key input is detected.
F705	7 0 5	Auto fill communication error	AutoFill Module not communicating properly.
F706	7 0 6	Auto fill wrong version	The version of the Auto fill module is not compatible with the ACM version.
F707	7 0 7	ACM/Comm communication error	COM module not communicating properly.
F708	7 0 8	COM wrong version	COM version is not compatible with the ACM.
F709	7 0 9	Cold Water Cup Switch input missing and 0x70 message is received from COM (ACM Only)	Dispense message is received and 30 seconds later the Cup Switch input is still not present.
F710	7 1 0	Cold Water Cup Switch input present and no dispense message is received from COM (ACM Only)	Cup Switch input is present for 30 seconds and no dispense message has been received.
F711	7 1 1	Hot Water Cup Switch input missing and dispense message is received that requires the cup switch (ACM Only)	Dispense message is received and 30 seconds later the Cup Switch input is still not present.
F712	7 1 2	Hot Water Cup Switch input present and no dispense message is received (ACM Only)	Cup Switch input is present for 30 seconds and no dispense message has been received.
F713	7 1 3	FF Door open for 15 minutes without closing	Usage or door switch.
F714	7 1 4	FF Door open for 60 minutes in the last 24 hours	Usage or door switch.
F715	7 1 5	50 FF Door openings in the last 24 hours	Usage or door switch.
F716	7 1 6	FZ Door open for 15 minutes without closing	Usage or door switch.

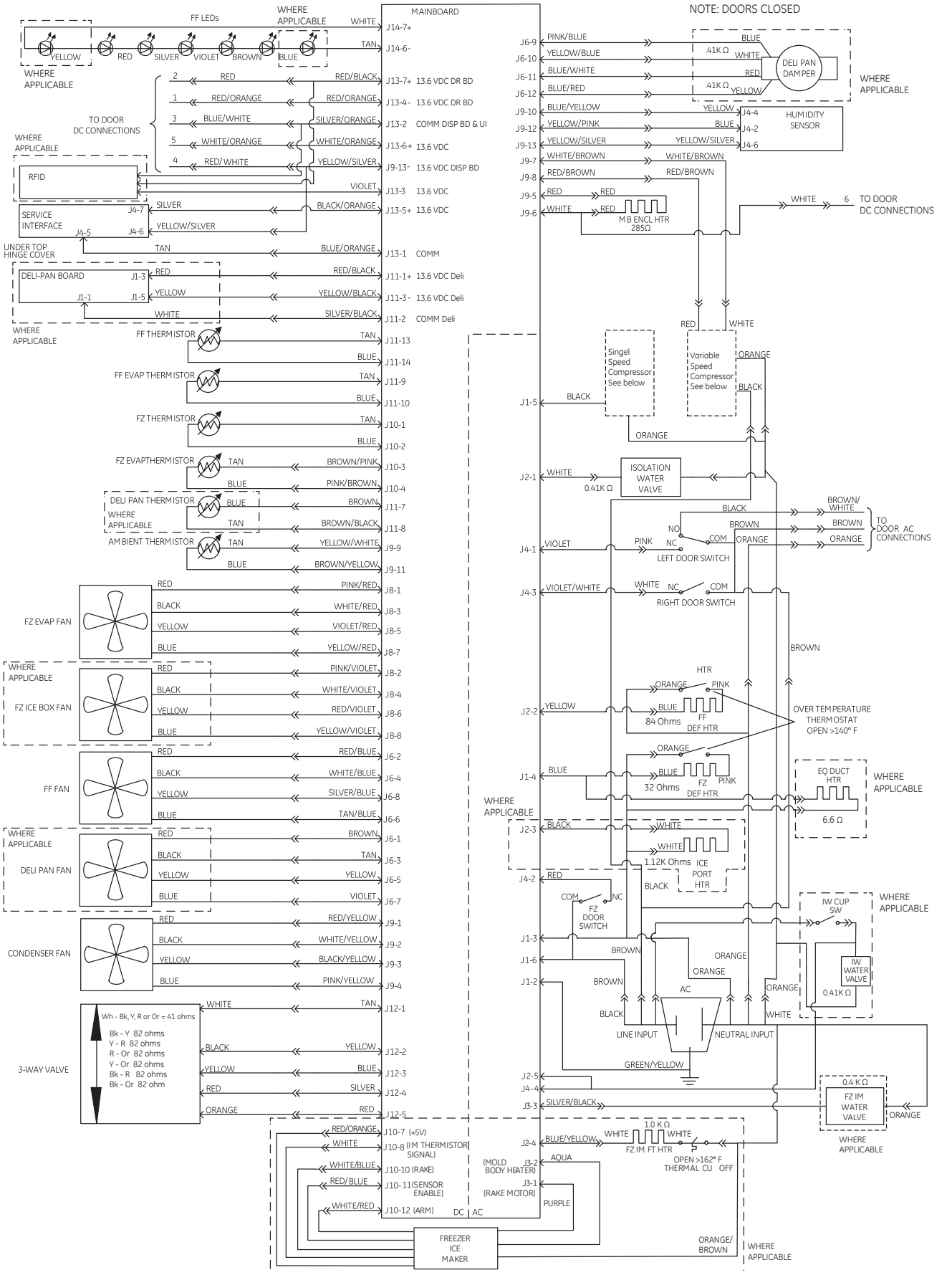
Fault Code	Displayed	Fault Code Definition	Setting Criteria
F717	7 1 7	FZ Door open for 60 minutes in the last 24 hours	Usage or door switch.
F718	7 1 8	50 FZ Door openings in the last 24 hours	Usage or door switch
F720	7 2 0	N/A	
F721	7 2 1	N/A	
F722	7 2 2	Display board error	
F800	8 0 0 — 8 0 5	N/A	

ACM: (Appliance Communication Module) Energy Management Accessory

N/A: Not applicable to any model. Disregard.

Schematics

Cabinet - All Models



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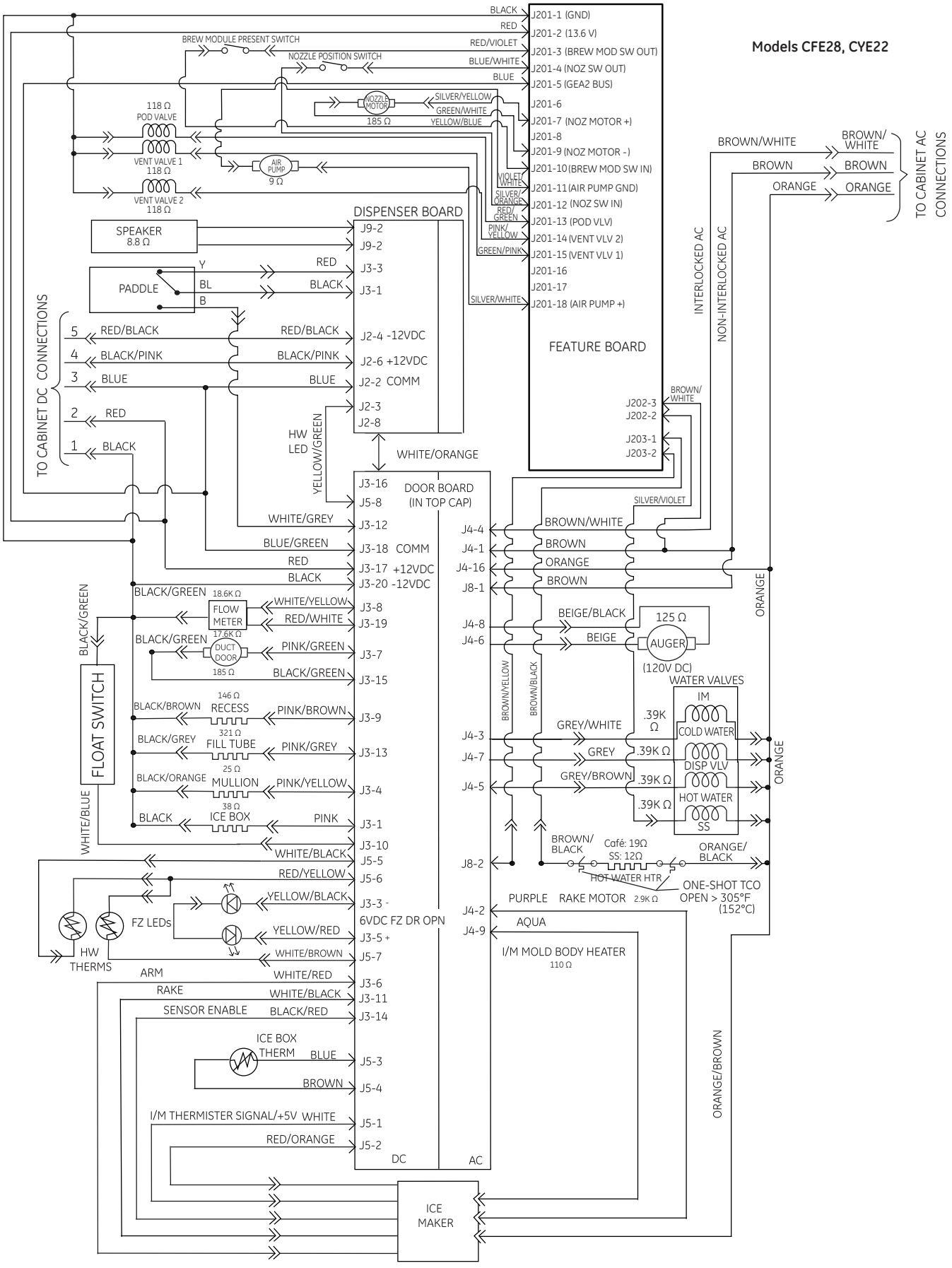
Dispenser and Door Boards - Cafe Models

Models CFE28, CYE22



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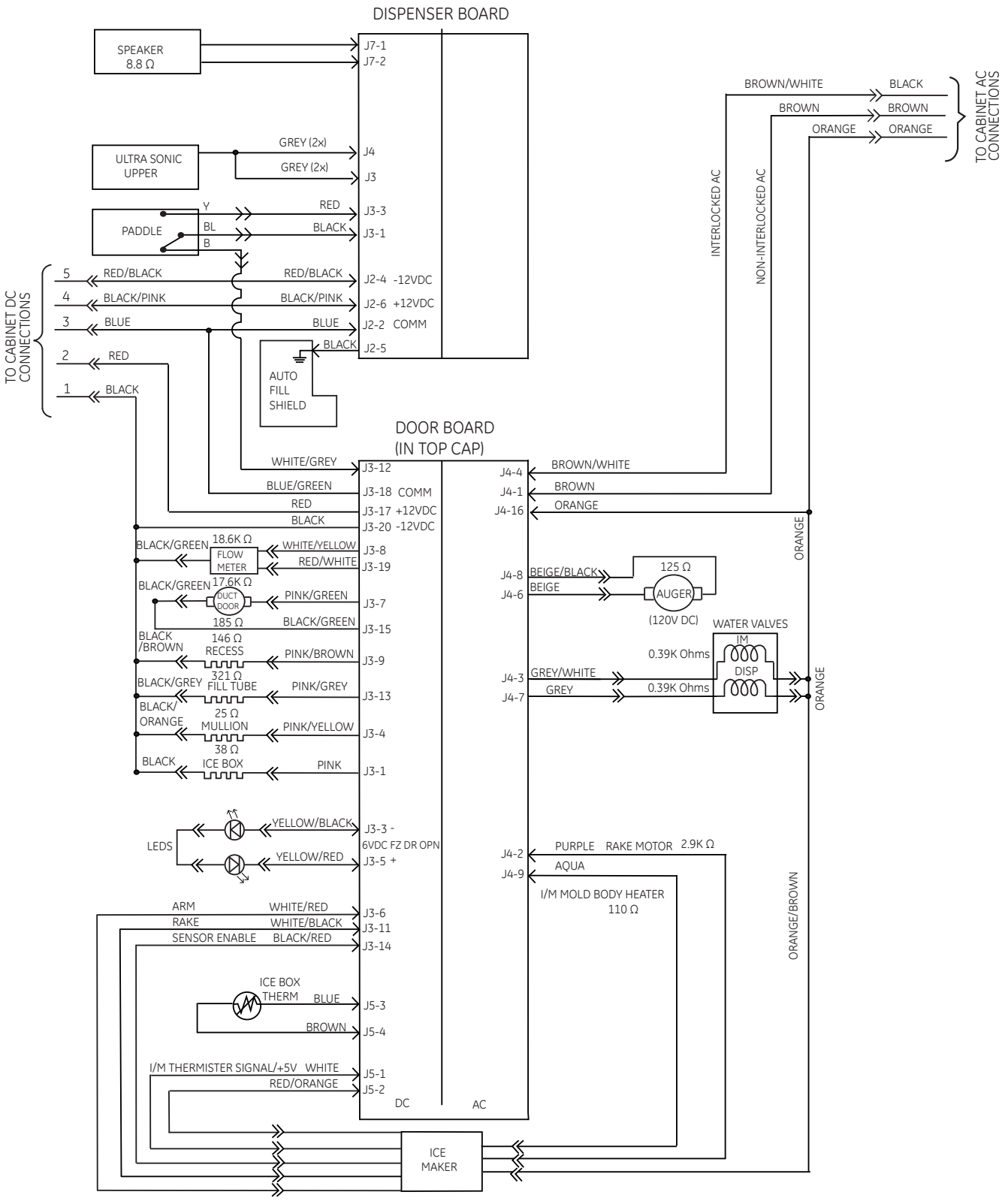
Door - Profile Models



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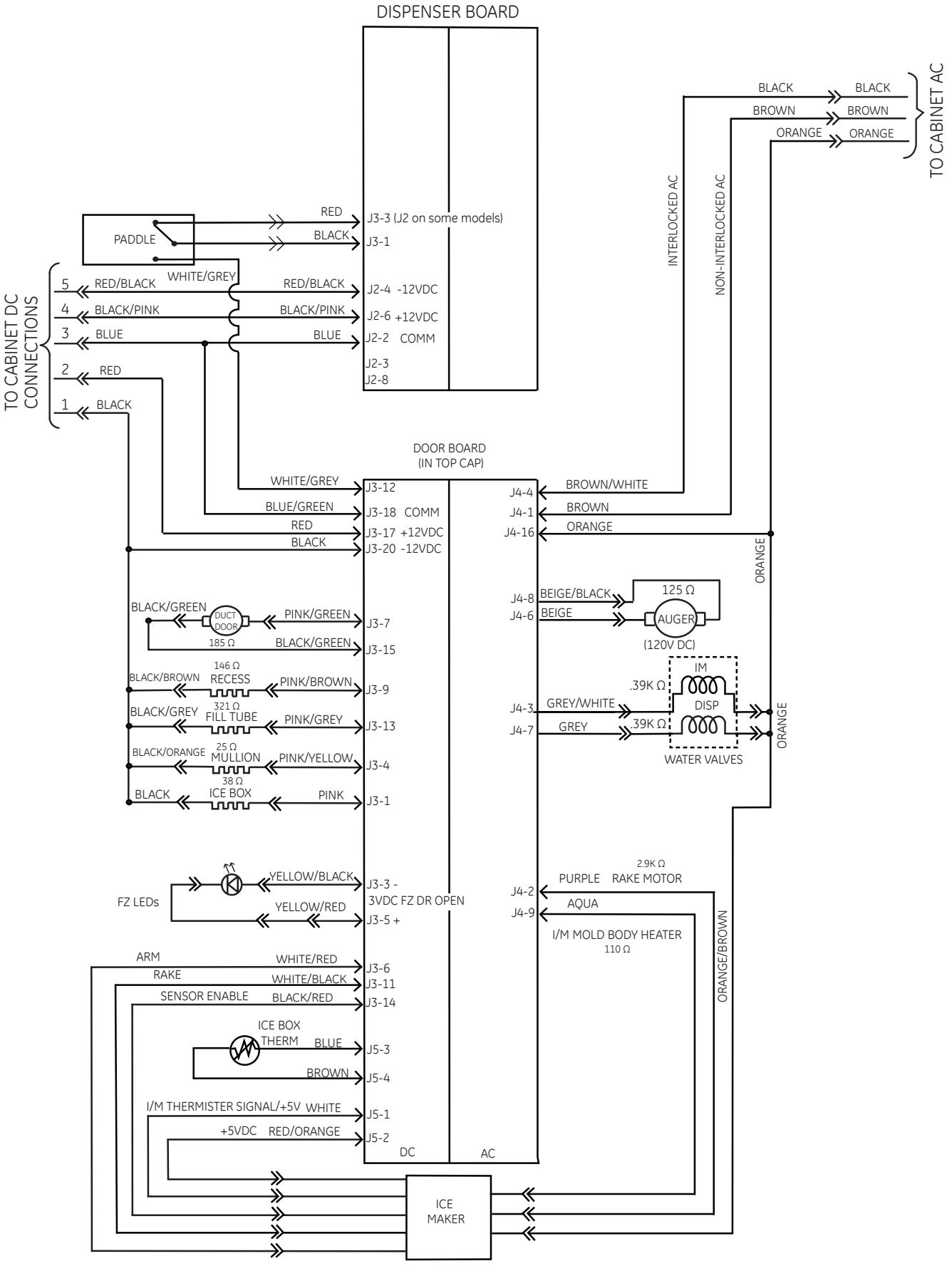
Door - GE/Adora Models



Warranty

For US Customers, all warranty service provided by our Factory Service Centers or an authorized Customer Care® technician. To schedule service, visit us on-line at GEAppliances.com, or call 800.GE.CARES (800.432.2737). Please have serial number and model number available when calling for service. In Canada, call 800.5613344.

Staple your receipt here. Proof of the original purchase date is needed to obtain service under the warranty.

Servicing your refrigerator may require the use of the onboard data port for diagnostics. This gives a GE Factory Service technician the ability to quickly diagnose any issues with your appliance and helps GE improve its products by providing GE with information on your appliance. If you do not want your appliance data to be sent to GE, please advise your technician NOT to submit the data to GE at the time of service.

For The Period Of:	*GE Appliances Will Replace:*
One Year *From the date of the original purchase*	***Any part*** *of the refrigerator which fails due to a defect in materials or workmanship. During this* ***limited one-year warranty****, GE will also provide,* ***free of charge****, all labor and in-home service to replace the defective part.*
Thirty Days *(Water filter, if included) From the original purchase date of the refrigerator*	*Any part of the water filter cartridge which fails due to a defect in materials or workmanship. During this* ***limited thirty-day warranty****, GE will also provide, free of charge, a replacement water filter cartridge.*
Five Years *From the date of the purchase*	*Any part of the sealed refrigerator system (the compressor, condenser, evaporator on all connecting tubing) which fails due to a defect in materials or workmanship. During this limited five-year sealed refrigerator system warranty, GE will also provide, free of charge, all labor and related service to replace the defective part in the sealed refrigerating system.*

What GE Will Not Cover:

- **Service trips to your home to teach you how to use the product.**
- **Improper installation, delivery or maintenance.**
- **Failure of the product if it is abused, misused, modified or used for other than the intended purpose or used commercially.**
- **Loss of food due to spoilage.**
- **Replacement of house fuses or resetting of circuit breakers.**
- **Damage to finish, such as surface rust, tarnish, or small blemishes not reported within 48 hours of delivery.caused after delivery.**
- **Replacement of the water filter cartridge, if included, due to water pressure that is outside the specified operating range or due to excessive sediment in the water supply.**
- **Replacement of the light bulbs, if included, or water filter cartridge, if included, other than as noted above.**
- **Damage to the product caused by accident, fire, or acts of God.**
- **Incidental or consequential damage caused by possible defects with this appliance.**
- **Product not accessible to provide required service.**
- **Damage caused by a non-GE brand water filter.**

EXCLUSION OF IMPLIED WARRANTIES – Your sole and exclusive remedy is product repair as provided in this Limited Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law.

For US Customers: This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. If the product is located in an area where service by a GE Authorized Servicer is not available, you may be responsible for a trip change or you may be required to bring the product to an Authorized GE Service location for service. Proof of original purchase date is needed to obtain service under the warranty. In Alaska, the warranty excludes the cost of shipping or service calls to your home.

Some states do not allow the exclusion or limitation of incidental or consequential damages. 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, consult your local or state consumer affairs office or your state's Attorney General.

Warrantor: General Electric Company. Louisville, KY 40225

For Customers in Canada: This warranty is extended to the original purchaser and any succeeding owner for products purchased in Canada for home use within Canada. In-home warrant service will be provided in areas where it is available and deemed reasonable by Mabe to provide.

Warrantor Canada: MC Commercial, Burlington, Ontario, L7R 586

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