2013 CAFÉ French Door Refrigerator

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2013 CAFÉ and Built-in Style French Door Refrigerator

CFE29TS
CYE23TS
PYE23PS
PYE23KS

IMPORTANT SAFETY NOTICE

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

WARNING

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

RECONNECT ALL GROUNDING DEVICES

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

GE Factory Service Employees are required to use safety glasses with side shields, safety gloves & steel toe shoes for all repairs

Dyneema® Cut Resistant Glove

Brazing Gloves

Electrically Rated Glove and Dyneema® Cut Resistant Glove Keeper

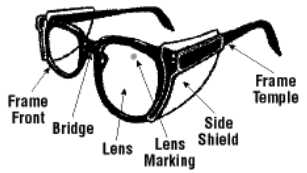
Plano Type Safety Glasses

Steel Toe Work Boot

Cut Resistant Sleeve(s)

Nitrile Gloves (wear under Cut Resistant Glove)

Brazing Glasses



Prescription Safety Glasses

Safety Glasses must be ANSI Z87.1-2003 compliant

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Café French Door 23 & 29 cu. Ft.

External Dispenser

- Cubed Ice
- Crushed Ice
- Chilled Water
- Precise Fill Chilled
- Hot Water

Filtration

- Water Filter for Ice & Water Features
- Door Mounted Water Filter
- Filter Type - Pharmaceutical
- Odor Filter
- Odor Filter Location – Case

Controls & Energy

- HMI Location - Disp
- Disp Control - LCD
- DSM Enabled
- E-star (2013)
- Sabbath

Lighting

- 7 Showcase LEDs in the FF
- 2 Freezer Showcase LEDs in the Bottom of the Left French Door
- **Splash Red Green Blue** LED Deli Pan

Interior Feature & Appearance

- Electronically Controlled Deli Drawer
- Soft Rollers for Smooth Drawer operation
- Deli Drawer has Full Extension Slide
- Café Trim on Shelves and Bins
- Quick Space Shelf
- Drop Down Egg Storage
- 3 Basket FZ with Utility Bin

Appearance

Flat Stainless Steel Café Doors
Dorian Gray Case
Hidden Hinges
Café Stainless Steel Handles

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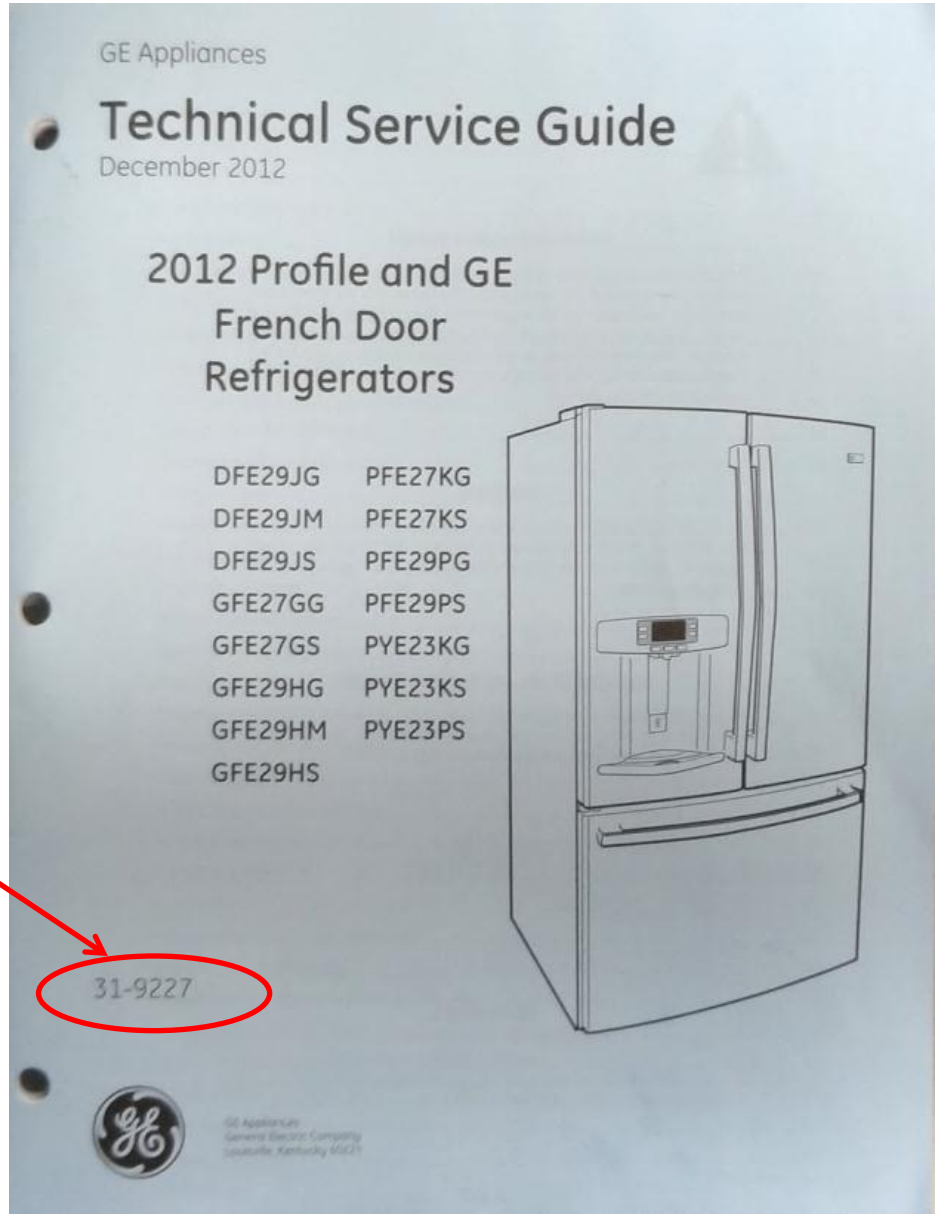
- The Café French door refrigerator uses the same cabinet and the PFE29 Profile French door refrigerator.
- The differences are in the left French door assembly. This presentation addresses these differences.
- The 23 cu. ft. Built-in Style *(BIS)* is serviced in the same way as the 29 cu. ft. cabinet. The difference is the 23 cu. ft. cabinet depth without doors is 5” less.
- Refer to Technical Service Guide **31-9227** for cabinet service.



CFE29T*D***/CYE23T*D*** BOTTOM FREEZER

DISCONNECT POWER CORD BEFORE SERVICING
IMPORTANT - RECONNECT ALL GROUNDING DEVICES
All parts of this appliance capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

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ELECTRICAL SPECIFICATIONS

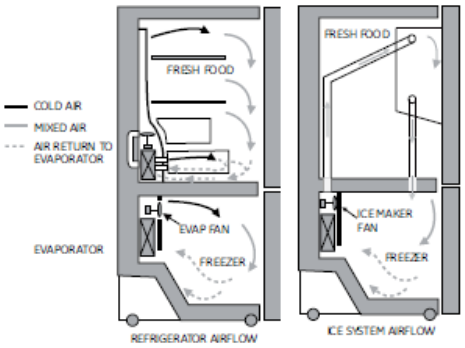
Adaptive Defrost Control
Fresh Food 32hrs
Adaptive Defrost Control
Freezer 96hrs
Thermistor kilo-ohm resistance ..... @32°F 16.3
Over temperature Thermostat ..... 140°F
Electrical Rating: 115V AC 60 Hz ..... 12 Amp

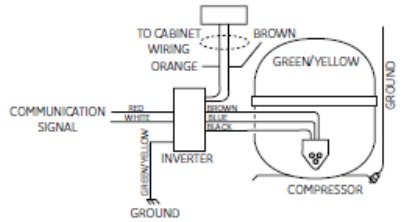
NO LOAD PERFORMANCE

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

REFRIGERANT CHARGE (R134a) ..... 5.75 ounces

AIR FLOW





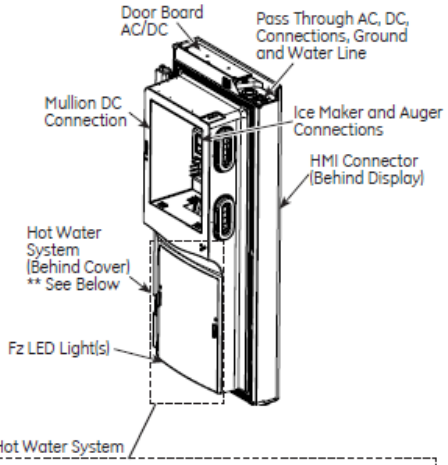
COMPRESSOR (Variable Speed)

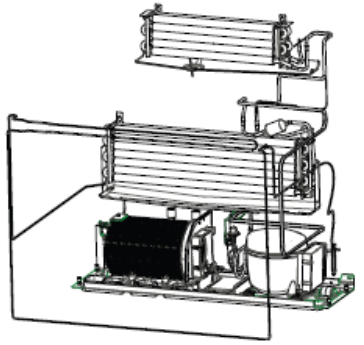
Service Diagnostic Functions

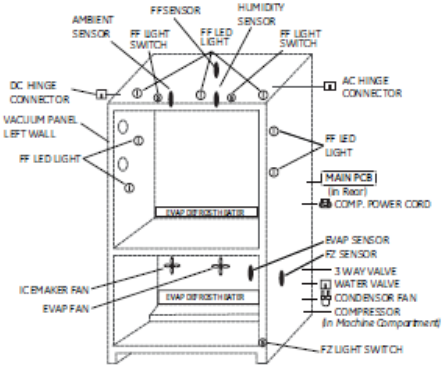
⚠ WARNING: Service Technicians Only

Entering Service Diagnostics
Enter Service mode by pressing the "Water", "Crushed", and "Cubed" buttons simultaneously for 3 seconds.
The display will show ***00*** in the FZ temperature display and ***0*** in the FF temperature display.
All the components will turn off, 3-way valve will go home, dampers will go to closed position, and the temperature display flash ***0*** in each of the FZ and FF displays.
Use the FZ or FF increase/decrease buttons from display to select the appropriate mode. Once the displays indicate the desired test mode, press any key except the temperature adjustment buttons to run test.
The test mode must be selected within 5 minutes of entering the diagnostic mode or it will time-out, normal refrigerator operation will resume.
Once a test mode is selected, the display will show the results of the mode selected.
Run test 0016 to exit diagnostics and return to normal operation.
The control will reset to normal operation if power is cycled.

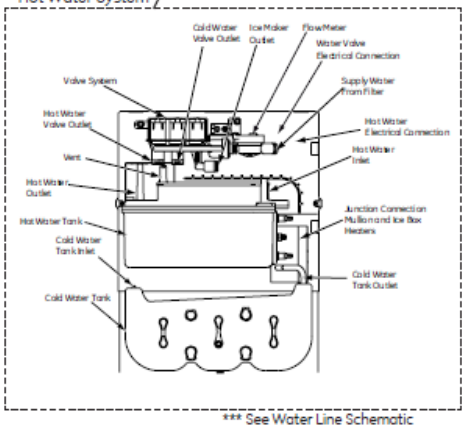
Non-dispenser needs service kit.





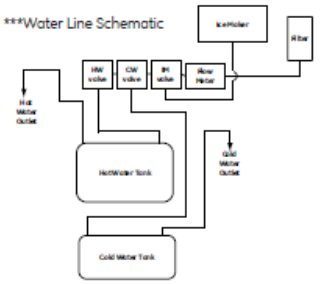


** Hot Water System



*** See Water Line Schematic

***Water Line Schematic

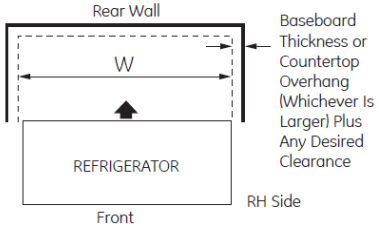


Anti-Tip Floor Bracket Installation for Built-in Style *(BIS)*

1 MEASURE CABINET OPENING AVAILABLE VS. REFRIGERATOR WIDTH

Measure width of cabinet opening where refrigerator will be placed, W.

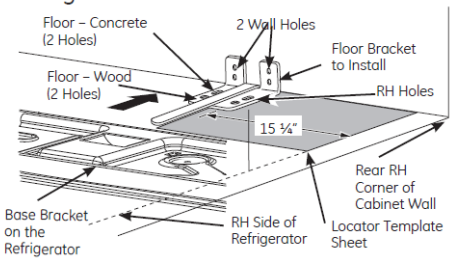
Be sure to account for any countertop overhang, baseboard thickness and any clearance desired. Width, W, should not be less than 36". The refrigerator will be placed approximately in the middle of this opening.



2 LOCATING THE ANTI-TIP FLOOR BRACKET

A Place the anti-tip floor bracket locator template (included inside the anti-tip kit) onto the floor up against the rear wall, within W, and in line with the desired location of the RH side of the refrigerator (see Figure 1).

Figure 1 – Installation Overview



B Place the anti-tip floor bracket onto the locator template with its RH floor holes lined up with the floor holes indicated on the template sheet, approximately 15 ¼" from the edge of the sheet or the RH side of the refrigerator.

B Place the anti-tip floor bracket onto the locator template with its RH floor holes lined up with the floor holes indicated on the template sheet, approximately 15 ¼" from the edge of the sheet or the RH side of the refrigerator.

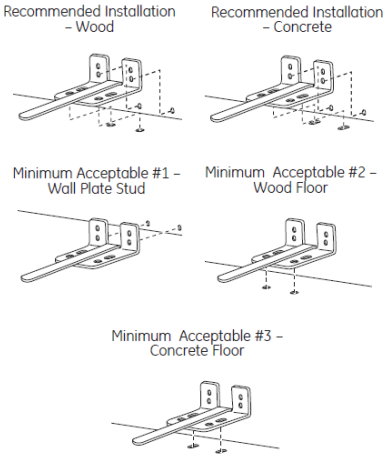
C Hold down in position and use the anti-tip floor bracket as a template for marking the holes based upon your configuration and type of construction as shown in Step 3. Mark the hole locations with a pencil, nail or awl.

NOTE:

- It is REQUIRED to use at least 2 screws to mount the floor bracket (one on each side of the anti-tip floor bracket). Both must be into either the wall or the floor. Figure 2 indicates all the acceptable mounting configurations for screws. Identify the screw holes on the anti-tip floor bracket for your configuration.

2 LOCATING THE ANTI-TIP FLOOR BRACKET (cont.)

Figure 2 – Acceptable Screw Placement Locations

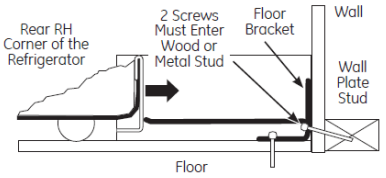


3 ANTI-TIP BRACKET INSTALLATION

A WOOD Wall and Floor Construction:

- Drill the appropriate number of 1/8" (3 mm) pilot holes in the center of each floor bracket hole being used (a nail or awl may be used if a drill is not available) AND remove the locator template from the floor.
- Mount the anti-tip floor bracket by fastening the 2, or recommended 4, #10-16 hex-head screws tightly into place as illustrated in Figure 3.

Figure 3 – Attachment to Wall and Floor



B CONCRETE Wall and Floor Construction:

- Anchors required (not provided):
  4 each 1/4" (6 mm) x 1-1/2" (38 mm) lag bolts
  4 each 1/2" (12 mm) O.D. sleeve anchors
- Drill the recommended size holes for the anchors into the concrete at the center of the holes marked in Step 2.
- Install the sleeve anchors into the drilled holes. Place the anti-tip floor bracket as indicated in Step 2. Remove the locator template from the floor.
- Install the lag bolts through the anti-tip floor bracket and tighten appropriately.

C WOOD Wall and TILE Floor Construction:

- For this special case, locate the 2 wall holes identified in Fig. 1. Drill an angled 1/8" (3 mm) pilot hole (approx. as shown in Fig. 3) in the center of each hole.
- Mount the anti-tip floor bracket using the Minimum Acceptable Installation #1, as illustrated in Fig. 2.

4 POSITIONING THE REFRIGERATOR TO ENGAGE THE ANTI-TIP FLOOR AND BASE BRACKETS

A Before pushing the refrigerator into the opening, plug the power cord into the receptacle and connect waterline (if equipped). Check for leaks.

B Locate the refrigerator's RH side and move back approximately in line with the RH side of the cabinet opening, W. This should position the anti-tip floor bracket to engage the anti-tip base bracket on the refrigerator.

C Gently roll the refrigerator back into the cabinet opening until it comes to a complete stop. Check to see if the refrigerator front lines up with the cabinet front face. If not, carefully rock the refrigerator forward and backward until engagement occurs and you notice that the refrigerator is fully pushed up against the rear wall.

D **If Applicable:** Adjust the rear (and front) wheel height settings to fully engage the rear anti-tip brackets, while also aligning the refrigerator front with the cabinet front face.

Note: If you pull the refrigerator out and away from the wall for any reason, make sure the anti-tip bracket is engaged when the refrigerator is pushed back against the rear wall.

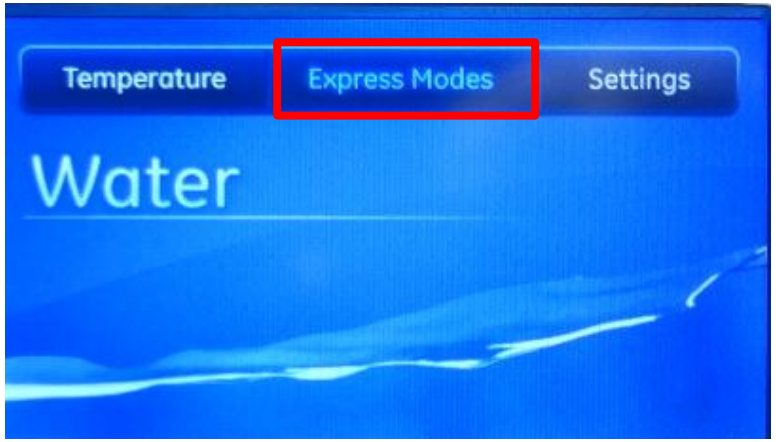
Odor Filter

Odor Remover

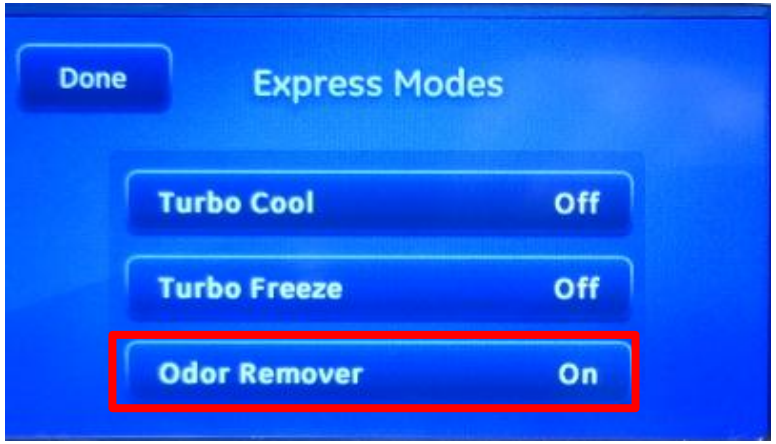
- The Odor Remover is accessible from the UI (User Interface) main screen by touching '**Express Mode**'.

'Express Mode' lettering is white when all settings are off

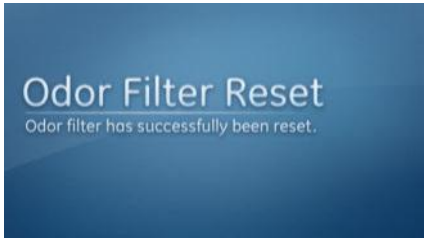
'Express Mode' lettering turns light blue when any setting is turned on.



- From the '**Express Mode**' touch '**Odor Remover**' to turn it on and off.
- Odor Remover will remain on for 4 hours then turn itself off if not manually turned off.

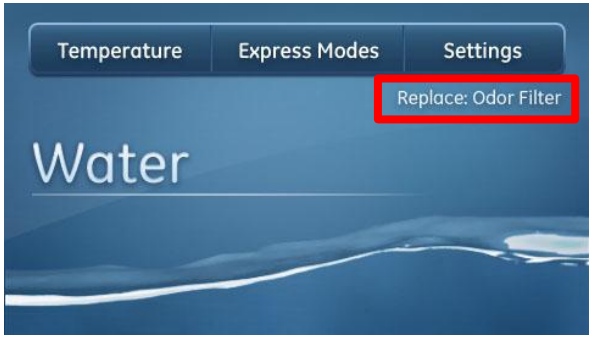


Other Odor Filter Screens

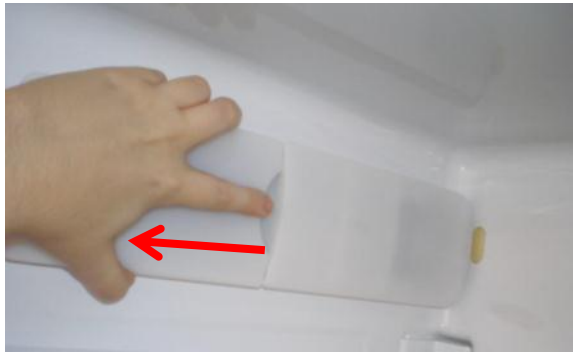


Odor Remover Filter

- The Odor Filter is located in the upper left corner of the fresh food compartment.
- GE recommends replacement of odor filters every 6 months or when odors become objectionable.
- A reminder will appear on main screen after 6 months to change the filter.

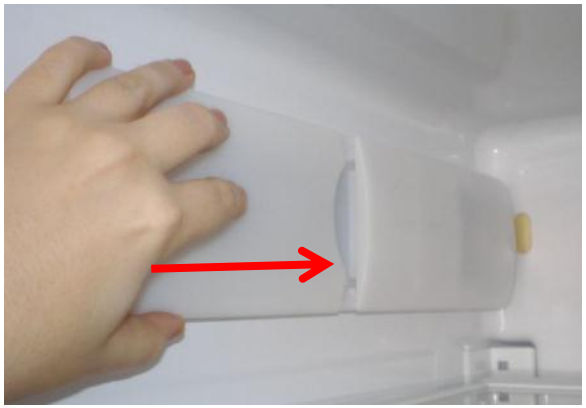


Odor Remover Filter Replacement



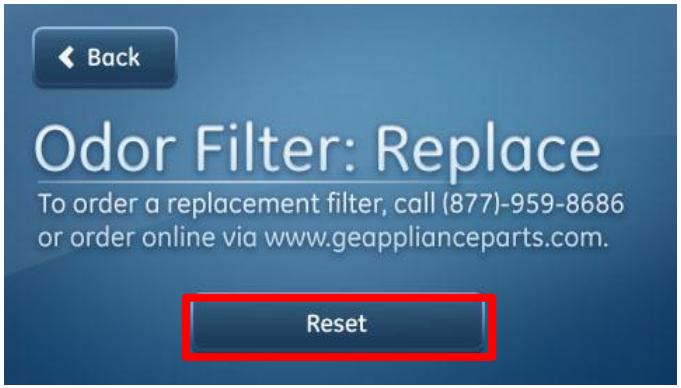
- Remove cover of odor filter by sliding front cover towards the front of the refrigerator.

- Remove old filter by pulling straight out from small tab on the top and bottom.
- Remove replacement filter from plastic package.
- Push replacement filter into the filter housing, it will snap into place.



- Replace filter cover by sliding it on from the front.
- Make sure that front edge is flush against the refrigerator wall.
- Reset the Odor Filter Replacement reminder on the UI main screen.

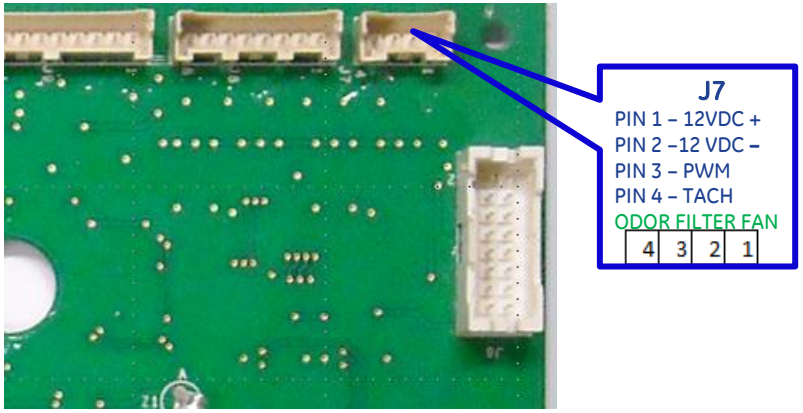
Odor Remover Filter Replacement

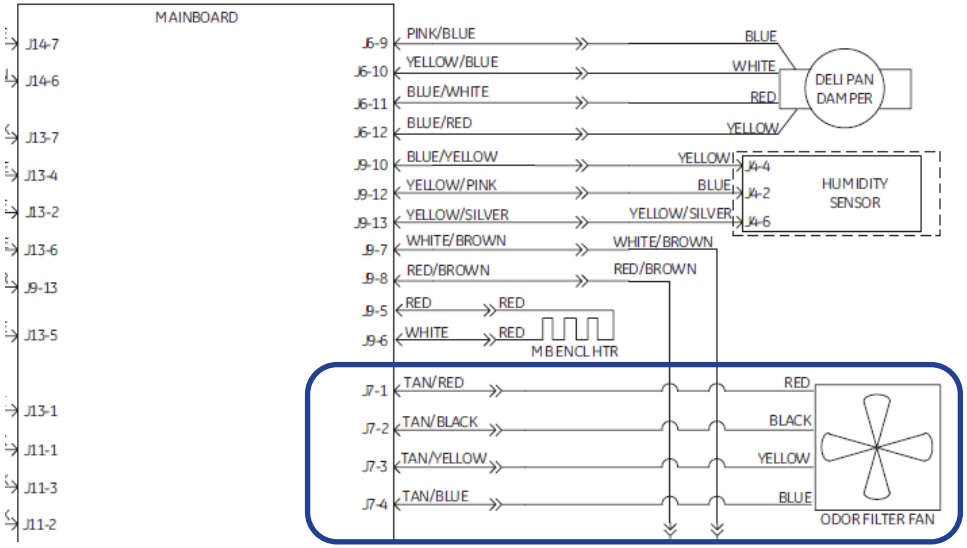


- To reset the Odor Filter reminder touch the UI screen activate it then press '**Settings**' to show the System Settings screen.
- Touch the '>' pad to scroll until the '**Odor Filter**' pad is visible on the System Settings screen.
- Touch the '**Odor Filter**' pad to show current status.
- The current status of the filter, replacement filter reordering instructions, '**Back**' pad and the '**Reset**' pad are displayed.
- By touching the '**Reset**' the Odor time is reset to 6 months.
- Press '**Back**' to return to the System Setting screen.
- From the System Setting screen touch '**Done**' to return to the UI main screen.

Odor Remover Diagnostics

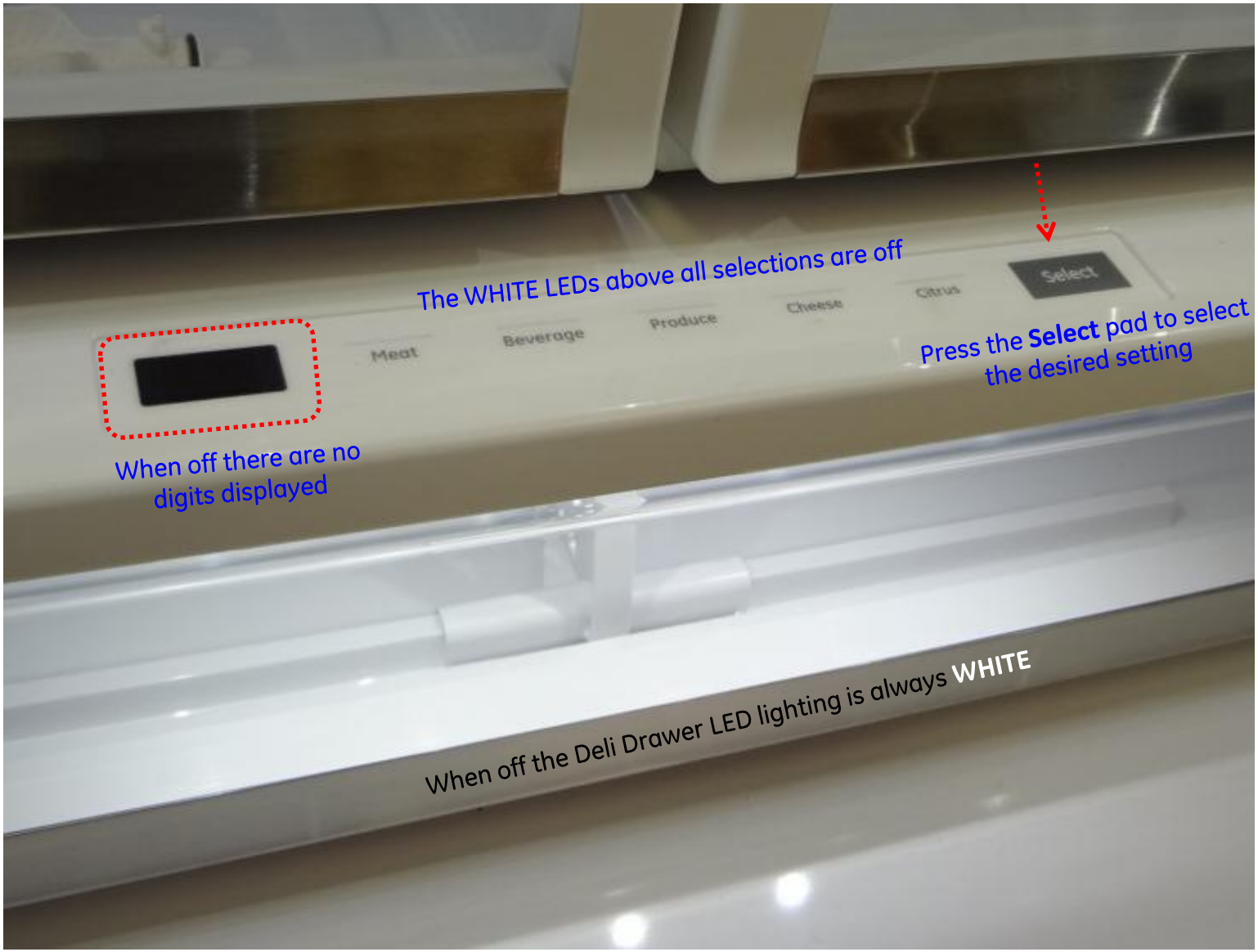
- Check to make sure filter is installed.
- Is Odor Remover Mode on? Odor filter operates for 4 hours then turns itself off. Odor remover will not remain on constantly
- Source of odor is still in refrigerator. Make sure item that source the odor has been removed from the refrigerator.
- Filter is used up. Replace with new filter.
- Odor filter fan inoperative. DC voltage can be checked at the main board



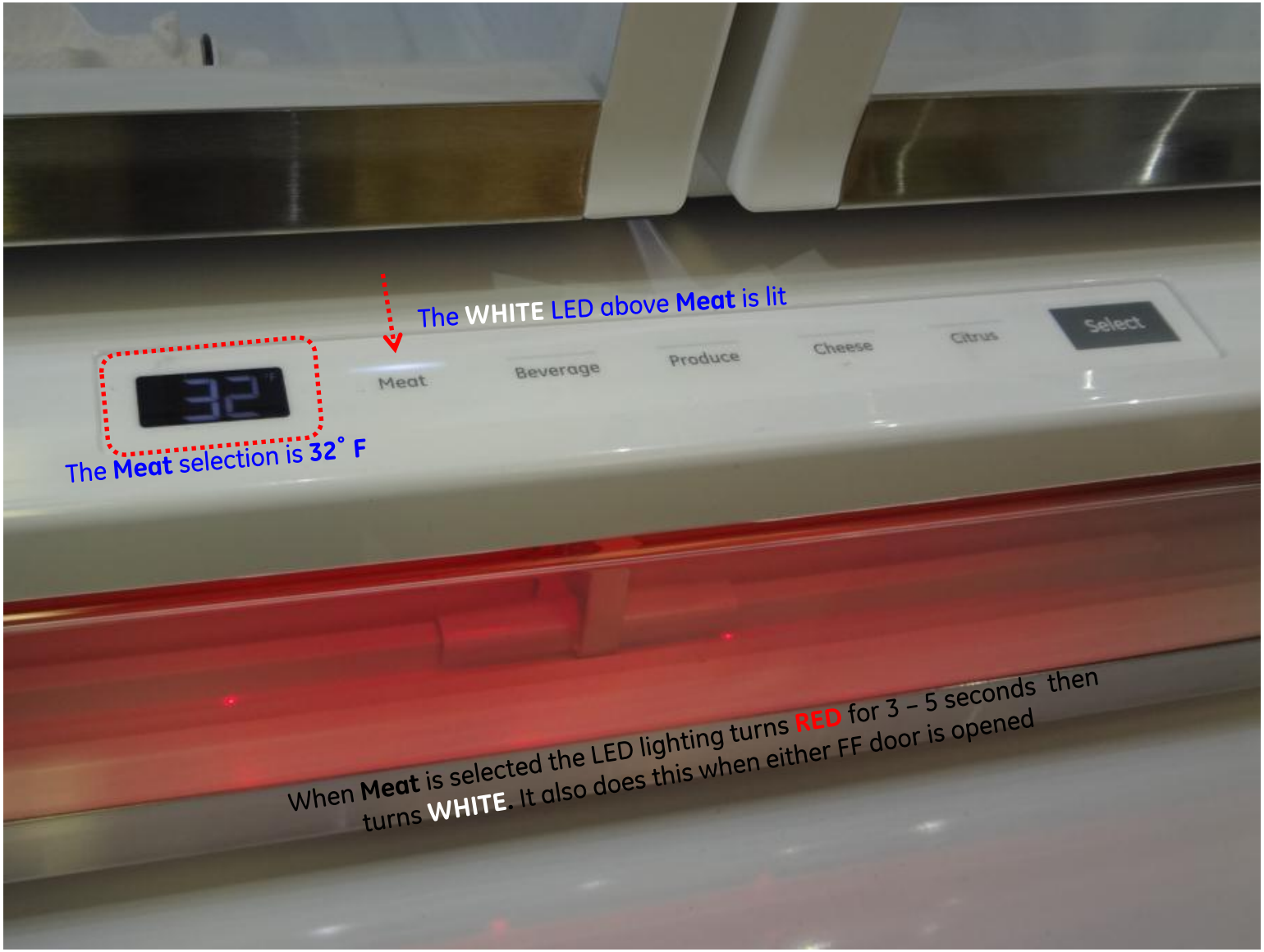


Deli Drawer

Deli Control Turned Off

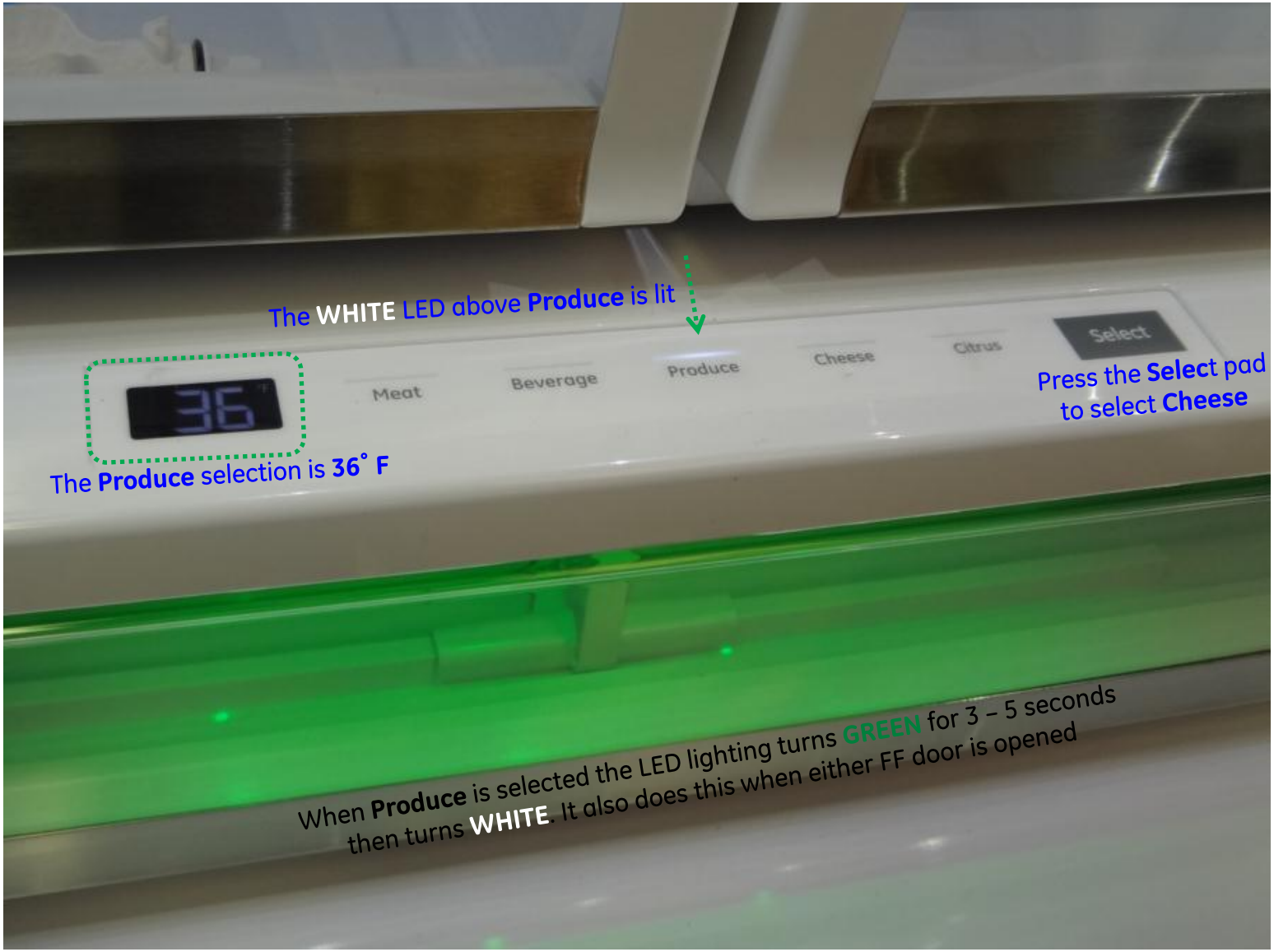


Deli Control - Meat Selected



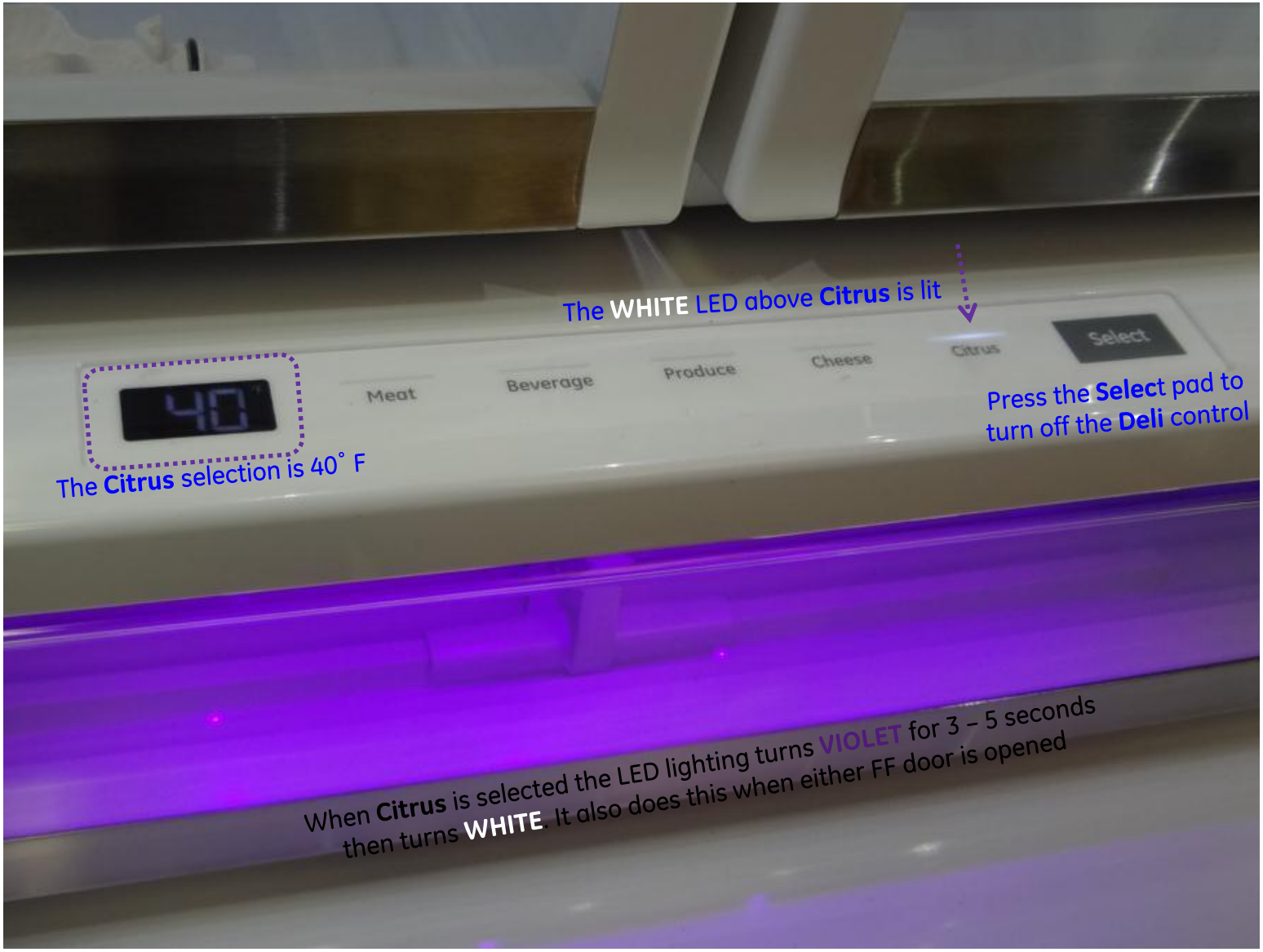
Deli Control - Beverage Selected

Deli Control - Produce Selected



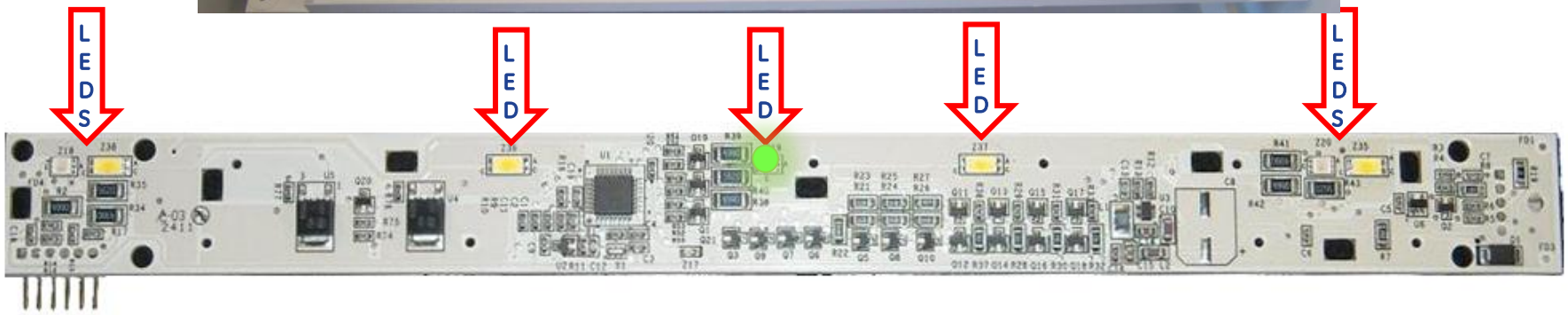
Deli Control - Cheese Selected

Deli Control – Citrus Selected



Deli Board On Cover

- The deli pan board sends the customer setting to the main board to control the pan temperatures based on the deli thermistor value.
- Temperature is controlled by opening or closing the deli damper, varying fan speeds and turning on a 5 watt heater as needed.
- The consumer presses a single button (tactile switch) to scroll through the settings.
- Blinking LED in the center of the board indicates the 12 VDC power supply is present.
- The other LEDs on the board are for the Deli bin white and colored lighting.
- The replacement Deli board will come with new overlay because the overlay is adhered to the Deli board.



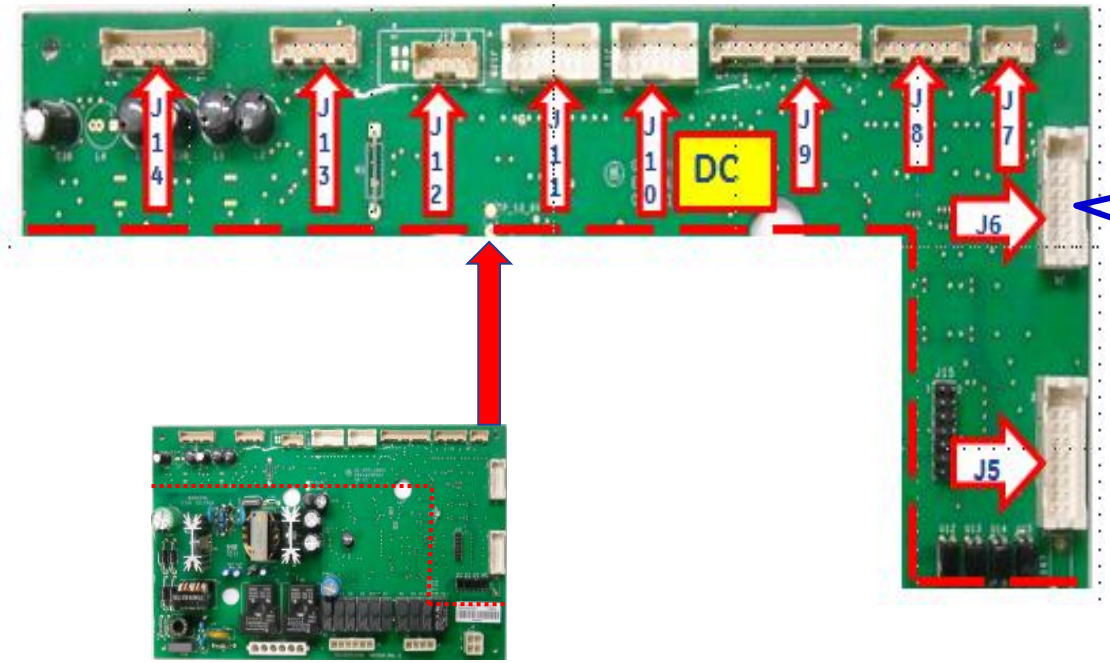
Deli Pan Set Points

FF Set Point					
46	OFF	OFF	OFF	OFF	ON
45	OFF	OFF	OFF	OFF	ON
44	OFF	OFF	OFF	ON	ON
43	OFF	OFF	OFF	ON	ON
42	OFF	OFF	ON	ON	ON
41	OFF	OFF	ON	ON	ON
40	OFF	ON	ON	ON	ON
39	OFF	ON	ON	ON	ON
38	ON	ON	ON	ON	ON
37	ON	ON	ON	ON	ON
36	ON	ON	ON	ON	ON
35	ON	ON	ON	ON	ON
34	ON	ON	ON	ON	ON
DP Setting	Meat	Deli	Produce	Cheese	Citrus
	32	34	36	38	40

Table 13: Deli Pan Selectable Modes depending on FF Set Point

The selections that show 'OFF' are not available at the fresh food set points on the left. Example is meat is not available when fresh food temp is set to 39˚F or higher.

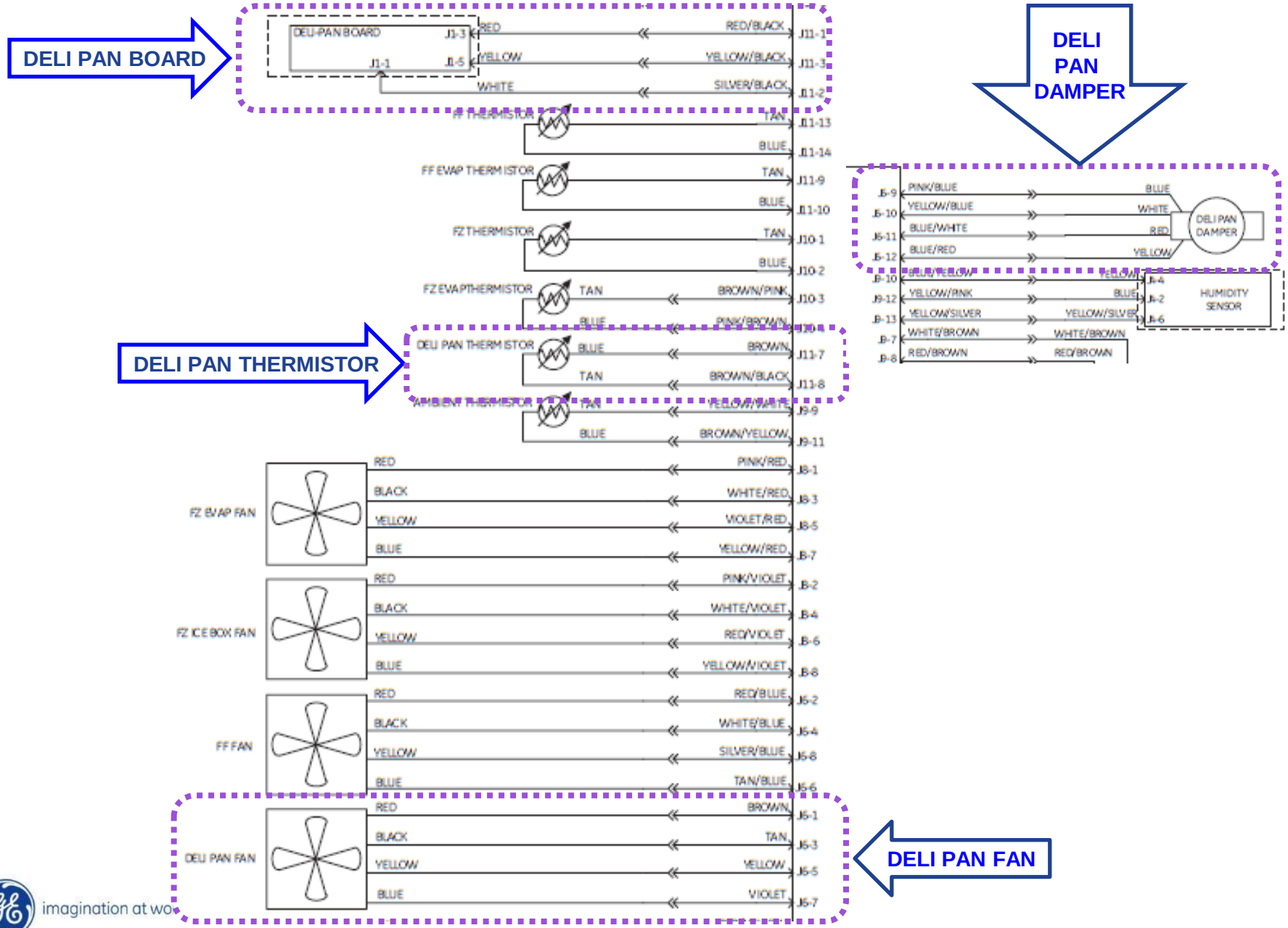
Main Control Board Deli Connector



J6

PIN 1 – DELI FAN 12VDC +
PIN 2 – FF FAN 12VDC +
PIN 3 – DELI FAN 12VDC –
PIN 4 – FF FAN 12 VDC –
PIN 5 – DELI FAN RPM
PIN 6 – FF FAN RPM
PIN 7 – DELI FAN PWM
PIN 8 – FF FAN PWM
PIN 9 - DELI DAMPER
PIN 10 – DELI DAMPER
PIN 11 - DELI DAMPER
PIN 12 – DELI DAMPER

Main Board Deli Connectors on Schematic



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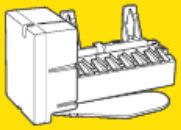
Hot Water System

Important! Consumer Removable Label

Ice Production

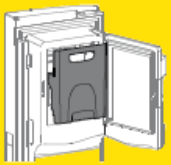
Installation
- Make sure the icemaker is turned to the ON position ONLY AFTER the water line is connected and the water is turned on.

Installation
- Newly installed refrigerators may need up to 24 hours to cool and for ice production to begin.



Normal Use
- Normal ice production = 100 cubes in 24 hours.

To fill bucket to maximum capacity after installation, dispense 3–4 cubes at 12 hours and 18 hours. Allow 1–2 days for the bucket to completely fill with ice.



1–2 days

Water Dispense

Installation
- After installation, press the dispenser arm for at least five minutes to remove trapped air from the water line and flush the filter.

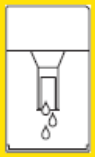
Troubleshooting
- If your water dispense rate slows over time, replace the filter with the bypass plug and dispense. If rate improves, filter is clogged. Replace filter.

Filter Bypass Plug

Installation
- The water in the tank needs 24 hours to chill after installation. High usage conditions will not allow time for the water to chill.

Normal Use
- After water dispenses, a few drops of water are normal. Minimize by removing the glass more slowly from the dispenser.

24 Hours to Chill



Few Drips Normal

Ice Dispense

Normal Use
- During ice dispense, hold the top of the glass up to reduce ice spray.

For more information, refer to the Owner's Manual for this refrigerator.

After starting the icemaker throw away 24 hours of ice production to avoid odor and taste problems.

Hands Free Auto-Fill

(Not all features are on all models)

Normal Use
- Place container in center of dispenser tray and remove hand, then press auto-fill button to initiate dispense.
- To stop water flow, simply press cancel button on LCD.
- For large containers, pull out tray for added stability.

Troubleshooting
- If container is not detected, try repositioning. Container should be centered under dispenser.
- Certain types of containers are not compatible with auto-fill If container will not fill properly, try a different container.

Hot Water Dispense

(Not all features are on all models)

Important Facts about HOT WATER
- Water coming from dispenser is very hot and can scald and burn. Read all warnings prior to use.
- Always use a container that is suitable for hot liquids.
- Maximum single hot water dispense is 10 oz. For more hot water, restart hot water feature on LCD screen.
- HOT WATER works best with household water pressure of 40 to 100 psi.
- HOT WATER will time out if unused and may require short reheat time.

To Dispense Hot Water
- Press HOT WATER button.
- Select desired water temperature on LCD screen (90, 150, 170, 185, or Custom).
- When hot water is ready (indicated on screen and by sound) hold container with left hand centered in recess.
- To dispense hot water, rotate hot water knob counter-clockwise and push in. Knob must be held during dispense.

Installer: Leave these instructions with the consumer. 239D4120P002 Pub no. 31-45494 10-12 GE

Recess Component Location

Turn & Push switch Control Knob *(T&P Switch)*

Recess LED Lights

USB Port to Upload Photos

Speaker

Recess LED Lights

Hot Water Outlet Tube

Chilled Water outlet Tube

Slide Out Tray

Ice & Chilled Water Actuator

HOT WATER SELECTION

Press 'Hot Water' button to enter Standby Mode then onto the selection screen

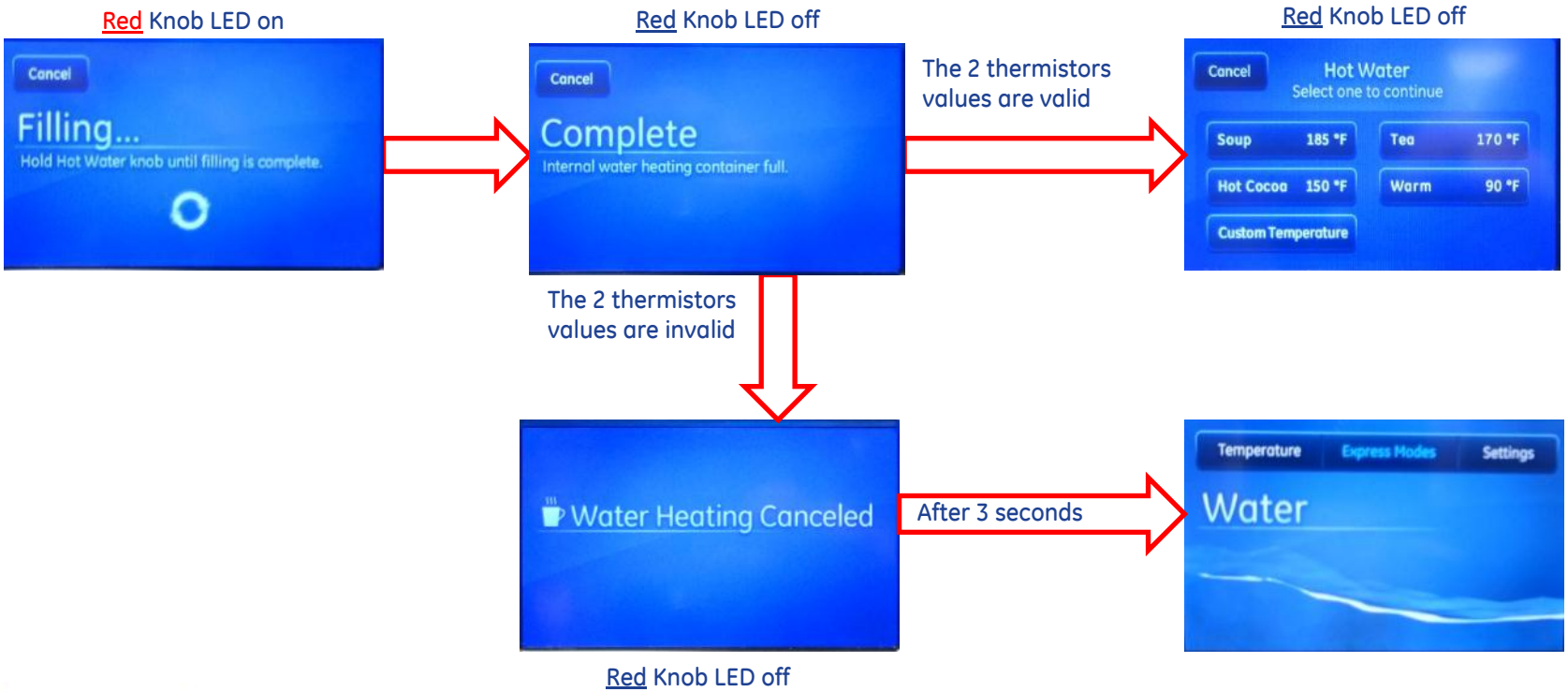
- When the '**Hot Water**' button is pressed the control goes to the Fill Check Mode to ensure the tank is full and fill it if it was not full.
- If the tank is not full it goes into the '**Hot Water Setup**' to fill the tank.
- If the tank is full the control displays the "**Hot Water**' screen.
- With a full tank the control will check both Hot Water thermistors for valid readings the control goes into the Standby Mode waiting for consumer to select a '**Hot Water**' setting .
- The consumer has the option to select between 4 predetermined set points or a custom temperature from 90˚ to 185˚ F in 5˚increments.

The **BLUE** LED ring surrounding the 'Hot Water' button will be lit for the duration of all Hot Water functions.

Thermistor Check Mode

Thermistor Check mode

- After the tank is filled and both isolation and hot water valve are off the water temperature in the hot water tank is monitored by 2 thermistors.
- The control checks the readings of the two thermistors in the hot water tank.
- If the 2 thermistors are valid the UI will display the '**Hot Water**' screen and goes to the Standby Mode.
- If either of the 2 thermistors are not valid it will display '**HOT WATER CANCELLED**' screen on the UI for 3 sec. set an error code then go the HOME screen.
- After temperature is selected the control then monitors both thermistors looking for them to be within 10˚ F within the first 30 seconds of heating.
- For the remainder of the heating time the control continues to monitor the temp ensuring the difference remains less than 10˚ F.



HOT WATER OPTIONS

imagination at work

Hot Water Dispenser

The '**Turn and Push**' (T & P) switch is used to:

- Fill the hot water tank if it is not full such as when unit is first installed.
- Dispense the hot water once it is heated and ready to dispense.
- Purge the water tank during the **Purge Mode** if the water temperature in the tank is higher than the consumer desired water temperature.

NOTE: The consumer must continuously hold the T & P switch for the above operations to happen.

The **RED LED** around the 'Turn and Push' (T & P) switch is either turned off, turned on solid or pulsed depending on the hot water operation mode. **BLUE** LED is on during any hot water operation

Turn and Push
(T & P) switch

Hot Water Operation Notes

- The flow of the water during the fill, dispense, and purge modes is monitored by a 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.
- If the Hot Water feature is deactivated the icemaker & chilled water systems are still active.
- The controls must measure ¼ oz. per second while dispensing a minimum of 5 ounces of 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 oz. is greater than 45 seconds.
- 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 chilled 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 time of 1 minutes will be displayed on the screen.
- 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.

Hot Water Operation Notes

- While heating water if the consumer presses one of the buttons on the user interface; Water, Crushed, Cubed, Lock, Precise Fill, and 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.

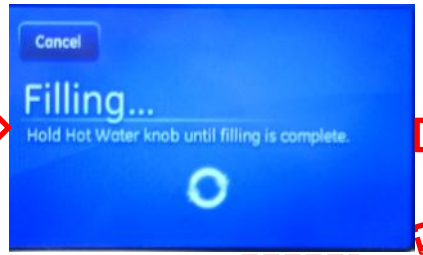
- The Hot Water system is not active while the control is in 'Sabbath', 'Demo' or 'Service' modes.
- The USB uploading is disabled while the control is in Hot Water Dispense Mode (dispensing hot water).
- If a Hot Water system fault occurs the UI screen will display 'Hot Water Canceled'. (See mini-manual 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 go from 45 sec. to 15 sec. skipping 30 sec.)*
- 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 works best with household water pressure of 40 to 100 PSI.

Fill Check & Fill Mode

Note: bypassed if tank is full

RED Knob LED pulsing .
Time out 30 sec to **'Setup Canceled'**

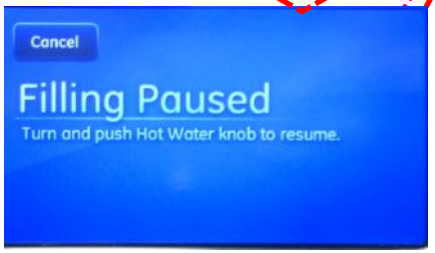


RED Knob LED on
Time out 30 sec to
'Setup Canceled'

If knob is released Before filled

Release T&P switch

Red knob LED off
Displayed for 3 seconds then to home.
Displays if a hot water system error occurs



RED Knob LED pulsing .
Time out 30 sec. to **'Setup Canceled'**

Turn and Push
(T & P) switch

RED LED
Solid or Pulses

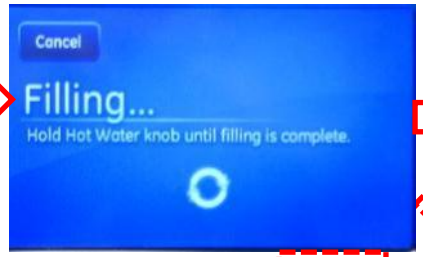
Fill Check Mode

- A float switch is used to determine if the tank is full. If the float switch contact is open, the tank is full. If the float switch contact is closed it is not full however there may still be water in the tank so the fill time may be short.
- If the tank is not full or float switch is closed, the LCD screen will display '**Hot Water Set up**' and the control pulses the RED LED around the T & P switch, starts the Delay Timer of 30 seconds then checks for the T & P switch to be activated before timer times out then displays the **'Setup Canceled'** screen for 3 seconds .
- When the T & P switch is activated, the control will start the **Maximum Fill Timer of 120** seconds the control turns on the RED LED around the T & P switch.
- The main board will activate the isolation water valve, the door board will activate the Hot Water valve to fill the hot water tank, and the LCD screen will display the **'Filling'.**
- If the T & P switch is released while the tank is being filled the control pulses the RED LED around the T & P switch, starts a 30 sec. timer, the Maximum Fill timer will stop counting, both isolation and hot water valves are deactivated and the screen displays '**Filling Paused**'.
- If the T & P switch is reactivated within the 30 second, the control turn on the **red** LED around the T & P switch, resumes filling and restart the count of the Maximum Fill Timer from the point the T & P switch was released.
- When the tank is full the float switch contact opens and the **'Complete'** screen is displayed for 3 seconds then displays the **'Hot Water'** screen.

Fill Mode

Note: bypassed if tank is full *(continued)*

RED Knob LED pulsing .
Time out 30 sec to **'Setup Canceled'**

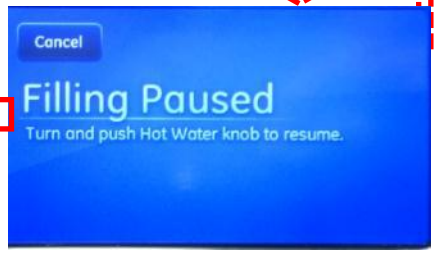


RED Knob LED on
Time out 30 sec to
'Setup Canceled'

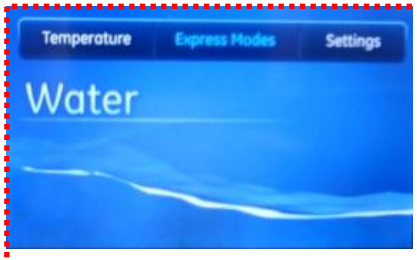
If knob is released Before filled

Release T&P switch

Red knob LED off
Displayed for 3 seconds then to
'Home Screen'.
Displays if a hot water system error occurs



RED Knob LED pulsing .
Time out 30 sec. to **'Setup Canceled'**



Home Screen

Turn and Push
(T & P) switch

Red LED
Solid or Pulses

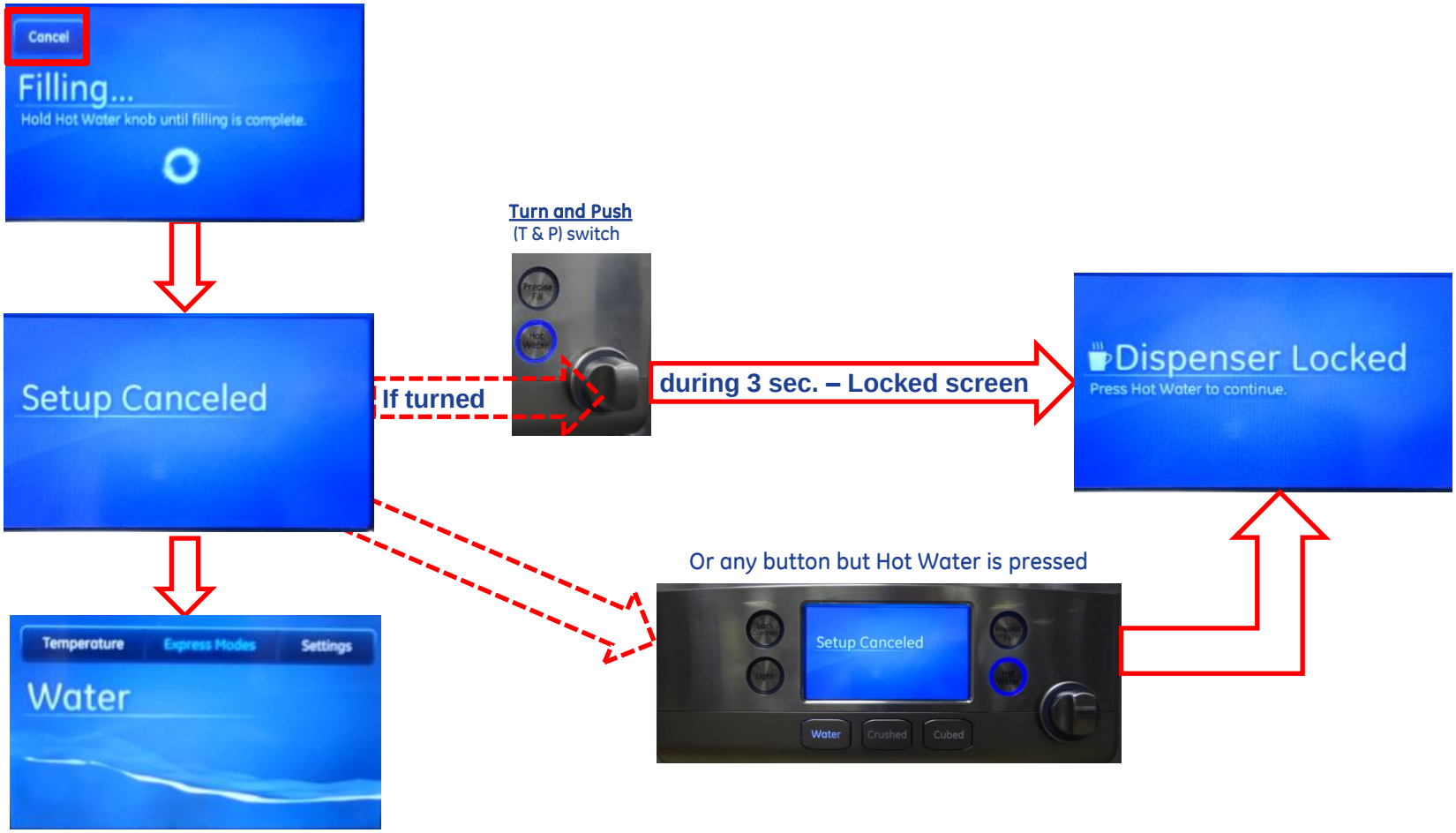
Cancel Screen any time
Cancel **is pressed, time expires**
or any system
error occurs

Fill Check Mode *(continued)*

- If the 30 sec. Delay Timer expires before the T & P switch is reactivated, the control turns off the **RED** LED around the T & P switch and the LCD screen will display '**Setup Canceled**' for 3 seconds then go to the UI home screen.
- If the Maximum Fill Timer is expired while T & P switch is activated, the control turns off the **RED** LED around the T & P switch, isolation water valve, the Hot Water valve and the LCD screen will display '**Setup Canceled**' for 3 seconds then go to the refrigerator home screen.
- When the tanks is full the **RED** LED turns off, UI sounds a tone, the isolation & Hot Water valves are deactivated and the LCD screen will display '**Complete**' for 3 seconds and run the Thermistor Check Mode.
- During the 3 seconds, if the consumer presses the Hot Water button, the control will display the '**Hot Water**' screen, If 'Cancel' pad is pressed on the LCD screen the during the filling operation the LCD screen will display '**Setup Canceled**' for 3 seconds then go to the UI home screen.

Fill Mode

Note: bypassed if tank is full *(continued)*



Fill Check Mode *(continued)*

- To cancel the filling operation press the 'Cancel' button on the LCD screen. The LCD screen will display '**Set up Canceled**'. for 3 seconds then go to the refrigerator HOME screen.
- During the 3 second, if the consumer presses any of the buttons on the UI except for the **'Hot Water'** button, the control will activate that feature. If the T & P switch is activated, the LCD screen will display '**Dispenser Locked, press hot water to continue**.'.

HOT WATER IS READY!!

Heating & Dispensing Mode

Red Knob LED off

Standby Mode

The control estimates the time it will take to heat the water to the target temperature.

Red Knob LED off
Timer count down

IF

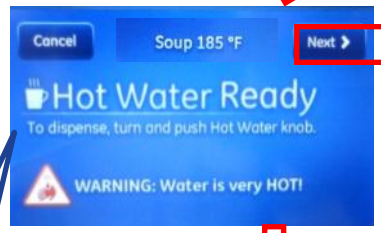
If T&P switch is activated while heating.

Red Knob LED off

Turn and Push
(T & P) switch

Blue LED on

Red LED
Solid or
Pulses



PRESS

Red Knob LED pulsing

Turn the T&P knob CCW
then push and hold to dispense
a maximum of 10 oz. hot water

Red Knob LED pulsing

Red Knob LED on

Red Knob LED on

Red Knob LED off
Control tone

Press Done to go to home screen or it will go to home screen 3 sec. after releasing T&P knob.
Blue 'Hot Water' LED turns off

Turn the T&P knob CCW
then push and hold to dispense
a maximum of 10 oz. hot water

The countdown time is only an estimate in 15 min. intervals. Countdown can hold at any time for more than 15 sec. or skip intervals.

Purge Mode

- If the consumer makes a Hot Water selection with the water temperature in the tank hotter than the selected temperature the **Purge Mode** will be activated.
- 2 options are available: **'Use Hot Water'** to dispense 10 oz. of the water already hot or **'Empty Tank'** to use the Purge Mode.

or depending on how hot the water 30 sec. timeout

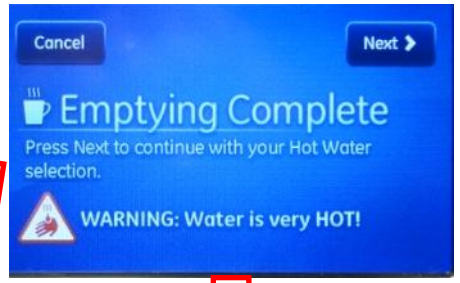
RED LED Pulsing

Cancel Screen any time Cancel is pressed, time expires or any system error occurs

Recess LED lights on

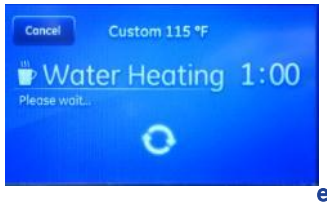
RED LED on solid

Recess LED lights on



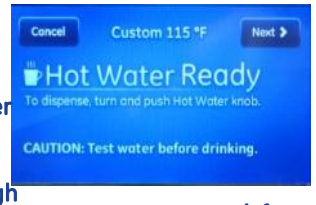
If user release T&P switch before complete
RED LED Pulsing
Recess LED lights on

RED LED off



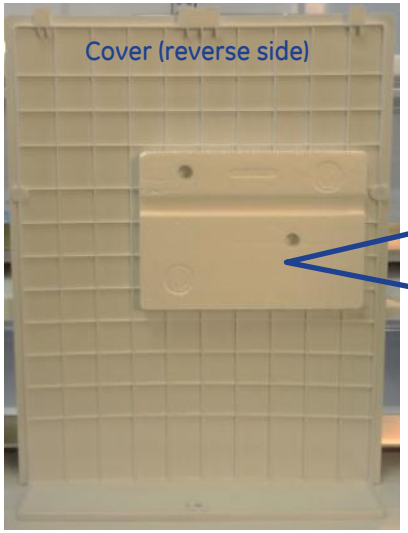
Or if water is hot enough

RED LED on pulsing



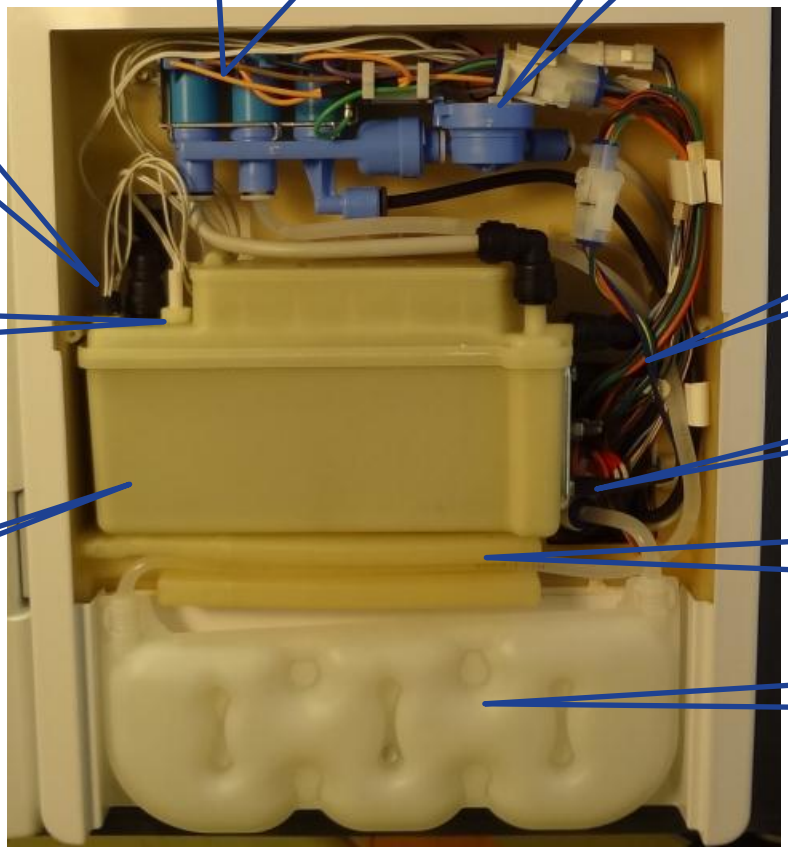
Water Tank and Valve Compartment Access

Remove the 3 - T20 screws and slide the cover downward.



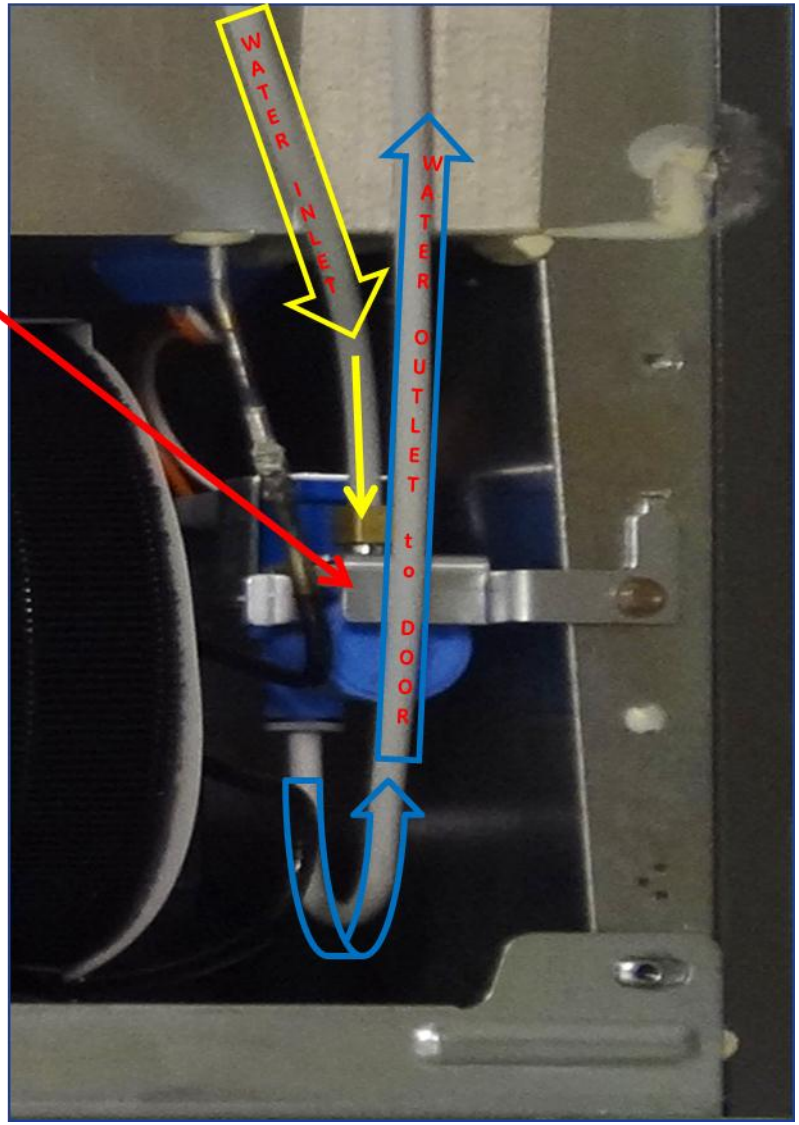
Hot Water Tank Insulation
Note: insulation only comes with the cover, Not available separately

Water Tank and Valve Compartment Component Location



Isolation Valve

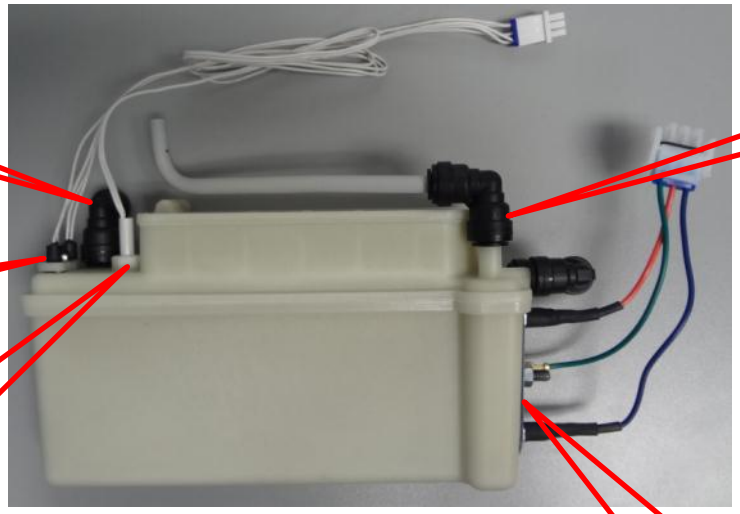
- Household water supply is plumbed to the water inlet tube located on the back of the unit which connects to the isolation valve.
- When icemaker, chilled water or hot water is dispensed the isolation valve opens simultaneously with the selected valve inside the left fresh food door.
- The isolation valve feeds the left door through the top hinge to the filter manifold on the right edge of the door.



Hot Water Tank and Water Valve

Hot Water Outlet Tube

Water Inlet Tube
from valve to hot water tank

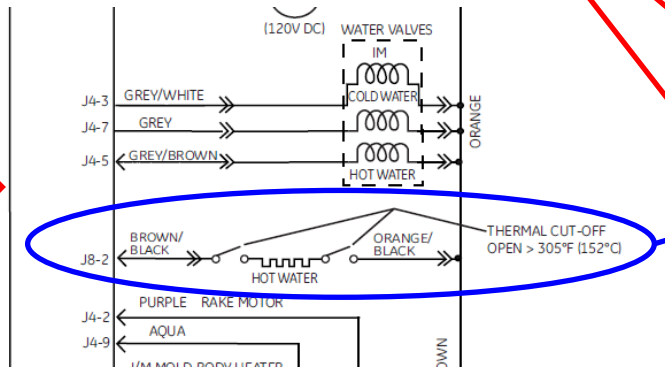


Hot Water Thermistors

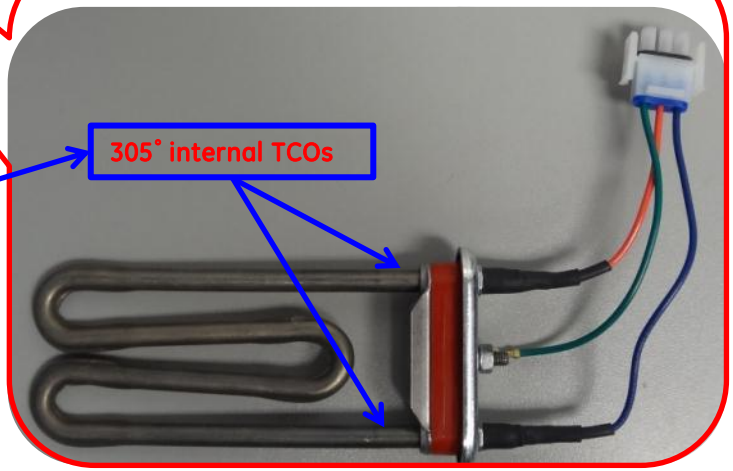
Hot Water Tank Filled Switch

Water Valve **Flow Meter**

Door Board



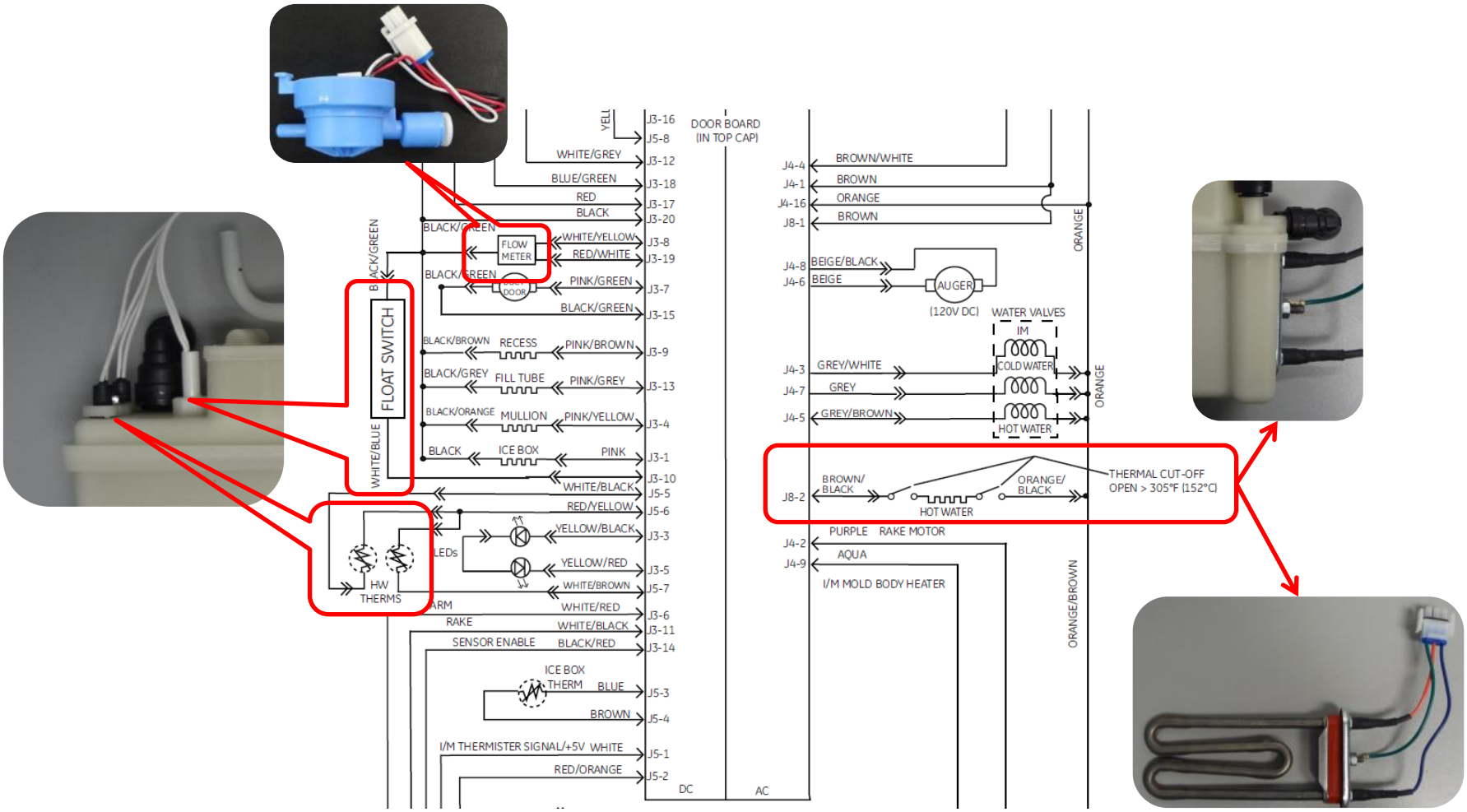
750 Watt Hot Water Tank Heater



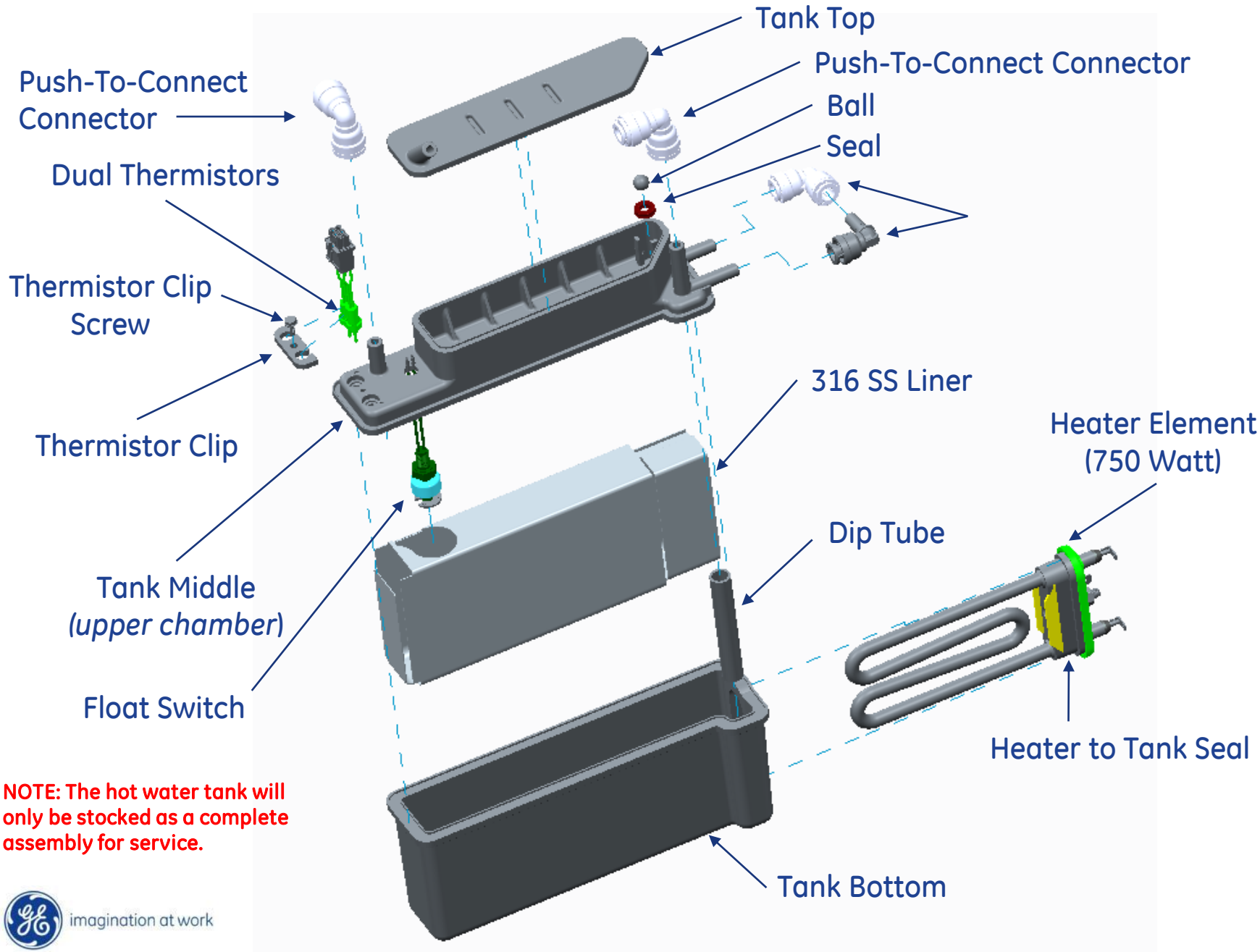
Even though the TCOs are rated at 305 F˚ they will trip very quickly if the heater is not complete submersed in water because they are located inside the Calrod heater where shown above.

NOTE: The hot water tank will only be stocked as a complete assembly for service.

Hot Water Tank and Water Valve



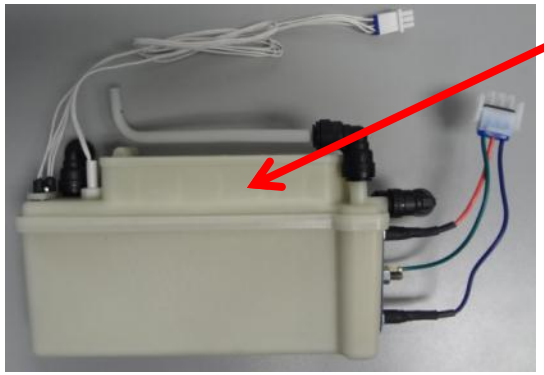
Hot Water Tank Construction

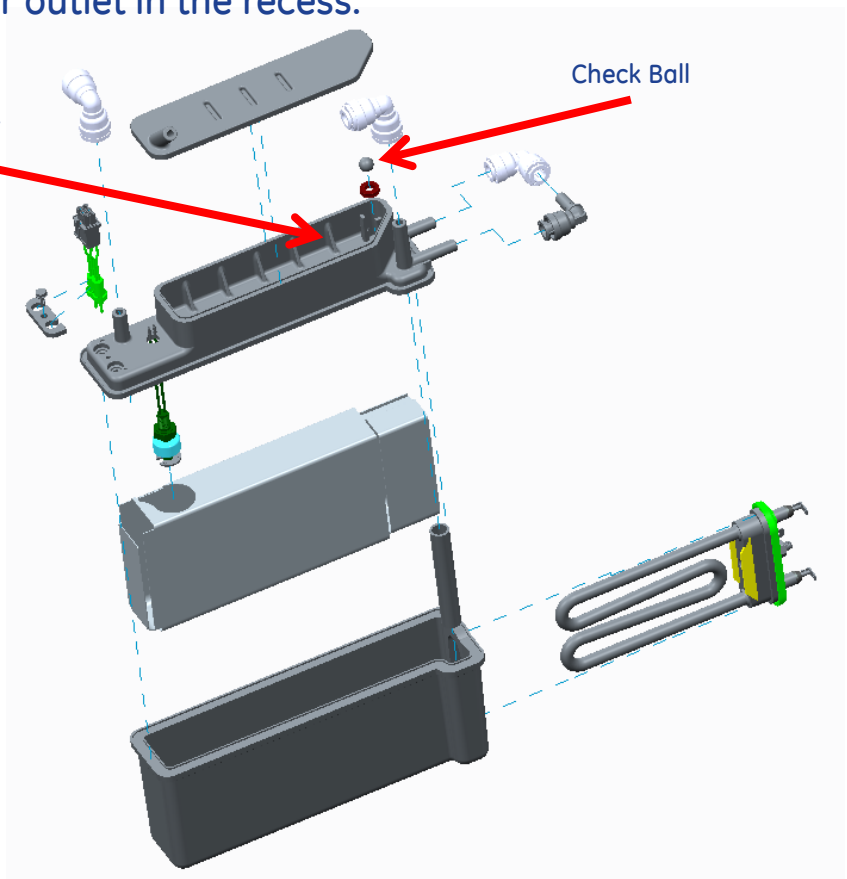


NOTE: The hot water tank will only be stocked as a complete assembly for service.

Hot Water Tank

- The upper reservoir of the hot water tank assembly is an expansion area for the water to expand into as it is heated floating the check ball.
- As the hot water is dispensed most the water is drawn from the reservoir by the venturi located in the water inlet. The check ball will drop closing the top chamber so no air is drawn into the dispensed water.
- When dispensing has been completed the water that is still in hot water *(tube from the hot water tank to the hot water outlet at the recess)* drains back into the tank.
- As the water drains back into the tank it floats up the check ball and collects the excess water in the top chamber.
- This process minimizes drips from the hot water outlet in the recess.



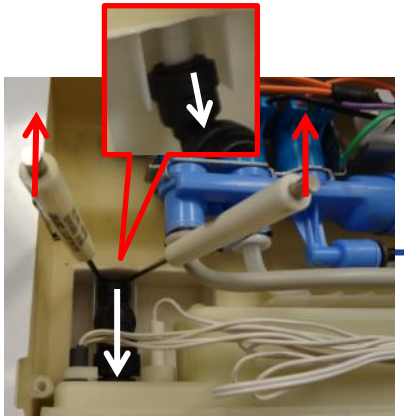


NOTE: The hot water tank will only be stocked as a complete assembly for service.

Hot Water Tank Removal & Installation

Remove access panel from the Left FF inner door panel to expose both water tanks and water valve.

REMOVAL



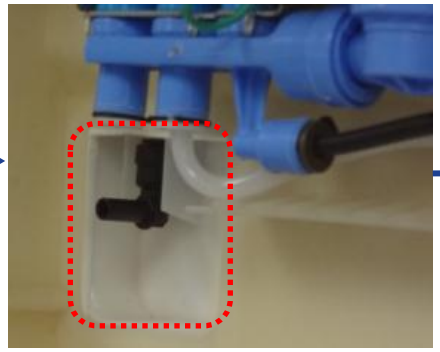
Use 2 small screwdrivers and pry downward to release collet and slide quick connector down from the hot water tube.

Remove water valve's locking clip from the Hot Water tank port then release tubing. Reinstall the clip on the valve.

Disconnect both connectors to the Hot Water Tank then remove tank from the door.

Separate the 2 – 90˚ quick connectors

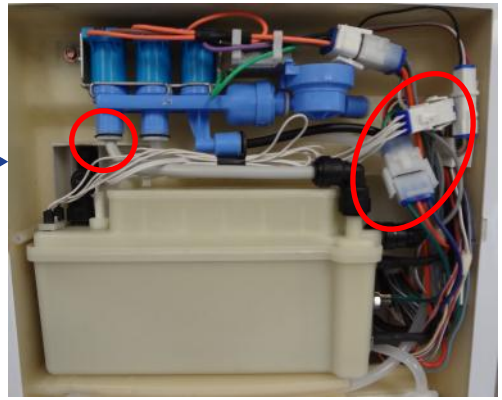
INSTALLATION



Install the 90˚ male to female connector on the door hot water tube, making sure it is fully seated

Push the female end or the connector on the tank onto the male end of connector just installed on the hot water line.

To prevent leaking make sure the connector seats fully.



Reconnect both electrical connectors and the tank inlet tube to the water valve connector.

Door Control Board

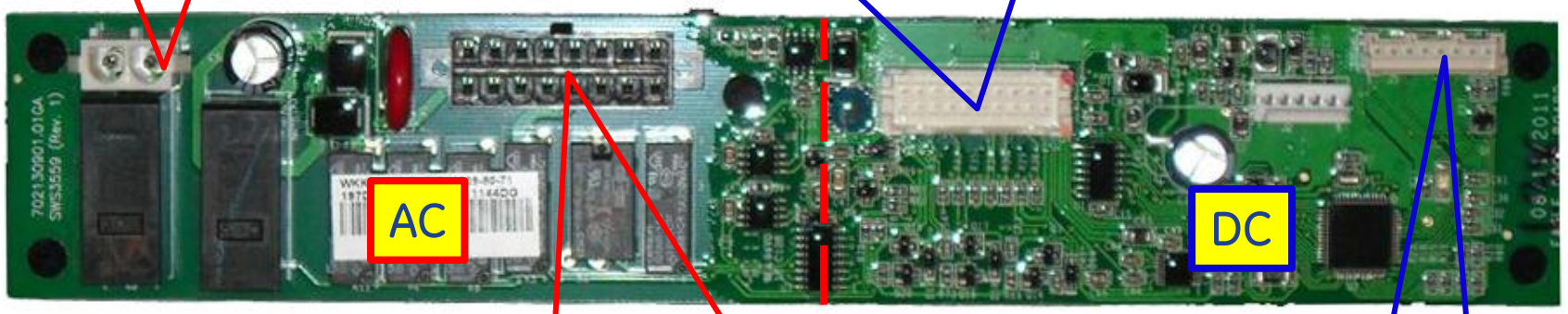
J8
Hot Water Tank Heater Connector
PIN 1 – L1 120 VAC POWER SUPPLY
PIN 2 - 120 VAC to HOT WATER TANK HEATER

2	1

J3

PIN 1 - ICE BOX GASKET HTR
PIN 3 – FZ LED –
PIN 4 – ART. MULLION
PIN 5 - FZ LED +
PIN 6 – IM FEELER ARM SENSOR
PIN 7 - DUCT DOOR MTR +
PIN 8 – FLOW METER
PIN 9 – RECESS HTR
PIN 10 – HOT WTR FLOAT SWITCH
PIN 11 – IM EJECTOR RAKE SENSOR
PIN 12 – PADDLE SWITCH
PIN 13 – IM FILL TUBE HTR
PIN 14 – IM SENSOR GROUND
PIN 15 – DUCT DOOR MTR –
PIN 16 – USER INTERFACE
PIN 17 - 12VDC SUPPLY +
PIN 18 – GEABUS *(COMMUNICATION)*
PIN 19 – FLOW METER 5VDC
PIN 20 – BOARD GOUND 12VDC –

1	3	5	7	9	11	13	15	17	19
2	4	6	8	10	12	14	16	18	20



J4

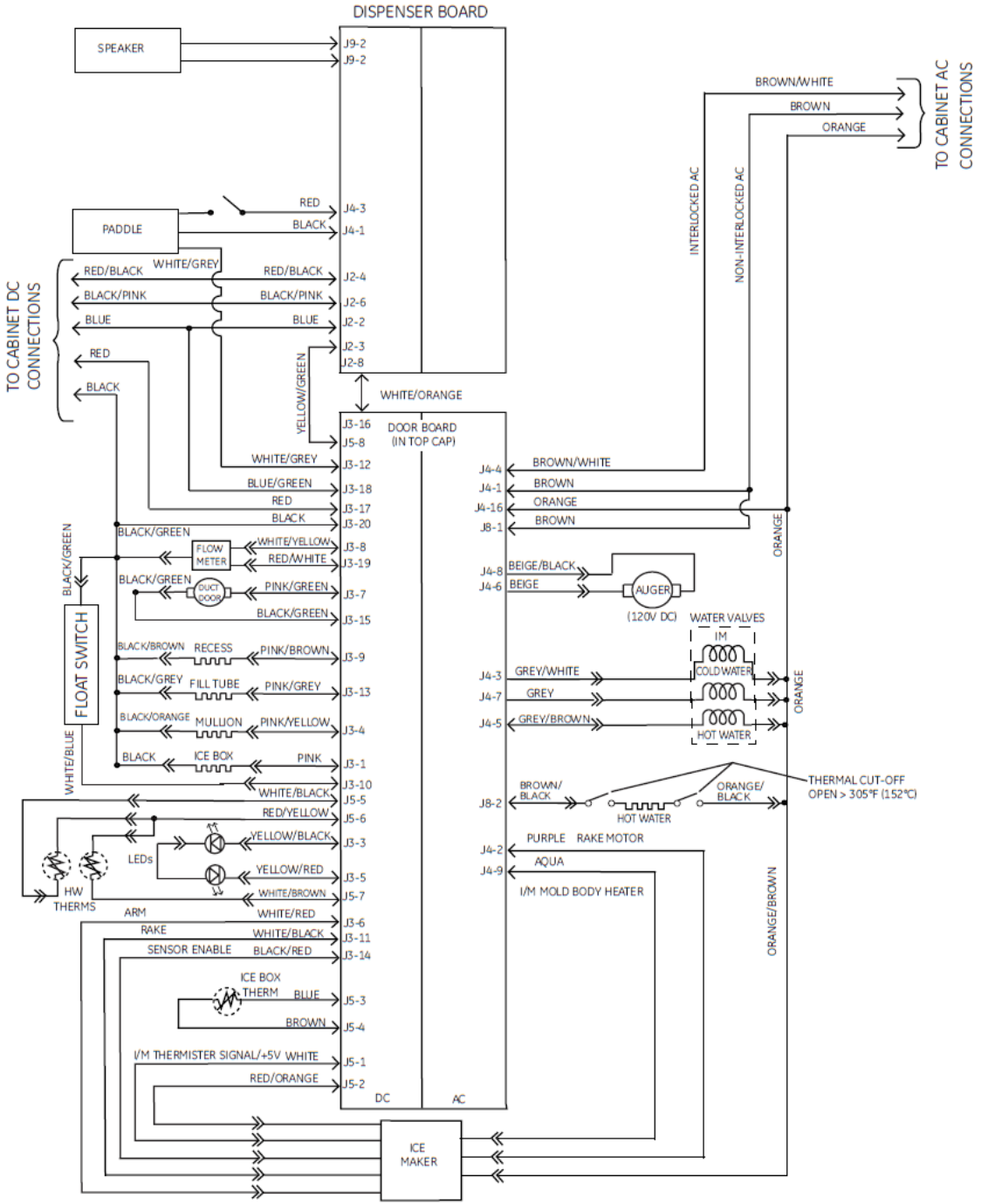
PIN 1 – L1 A/C POWER SUPPLY
PIN 2 – IM RAKE MOTOR
PIN 3 – IM WATER VALVE
PIN 4 – SWITCHED L1 AUGER INPUT
PIN 5 – HOT WATER VALVE
PIN 6 – AUGER MOTOR 120 VDC
PIN 7 – CHILLED WATER VALVE
PIN 8 – AUGER MOTOR 120 VDC
PIN 9 - IM MOLD HEATER
PIN 16 – A/C NEUTRAL

16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

J5

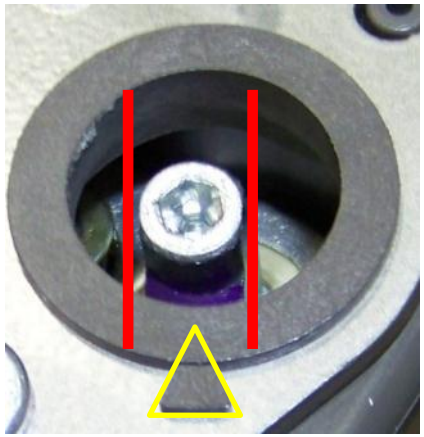
PIN 1 – IM THERMISTOR
PIN 2 – 5VDC
PIN 3 – ICE BOX THERM
PIN 4 – 5VDC
PIN 5 – HOT WATER THERM 1
PIN 6 – 5VDC
PIN 7 - HOT WATER THERM 2
PIN 8 – HOT WATER LED

1	2	3	4	5	6	7	8


DISPENSER BOARD
SPEAKER
J9-2
J9-2
PADDLE
RED
BLACK
J4-3
J4-1
RED/BLACK
WHITE/GREY
RED/BLACK
J2-4
BLACK/PINK
BLACK/PINK
J2-6
BLUE
BLUE
J2-2
J2-3
J2-8
TO CABINET DC CONNECTIONS
RED
BLACK
YELLOW/GREEN
WHITE/ORANGE
J3-16
J5-8
DOOR BOARD (IN TOP CAP)
WHITE/GREY
J3-12
BLUE/GREEN
J3-18
RED
J3-17
BLACK
J3-20
BLACK/GREEN
FLOW METER
WHITE/YELLOW
RED/WHITE
J3-8
J3-19
BLACK/GREEN
DUCT DOOR
PINK/GREEN
J3-7
BLACK/GREEN
J3-15
BLACK/GREEN
FLOAT SWITCH
BLACK/BROWN
RECESS
PINK/BROWN
J3-9
BLACK/GREY
FILL TUBE
PINK/GREY
J3-13
BLACK/ORANGE
MULLION
PINK/YELLOW
J3-4
BLACK
ICE BOX
PINK
J3-1
J3-10
WHITE/BLACK
J5-5
WHITE/BLUE
RED/YELLOW
J5-6
YELLOW/BLACK
J3-3
LEDs
YELLOW/RED
J3-5
HW THERMS
WHITE/BROWN
J5-7
ARM
WHITE/RED
J3-6
RAKE
WHITE/BLACK
J3-11
SENSOR ENABLE
BLACK/RED
J3-14
ICE BOX THERM
BLUE
J5-3
BROWN
J5-4
I/M THERMISTER SIGNAL/+5V
WHITE
J5-1
RED/ORANGE
J5-2
DC
AC
ICE MAKER
INTERLOCKED AC
NON-INTERLOCKED AC
BROWN/WHITE
BROWN
ORANGE
TO CABINET AC CONNECTIONS
J4-4
J4-1
J4-16
J8-1
BROWN/WHITE
BROWN
ORANGE
BROWN
ORANGE
J4-8
J4-6
BEIGE/BLACK
BEIGE
AUGER
(120V DC)
WATER VALVES
IM
COLD WATER
HOT WATER
J4-3
J4-7
J4-5
GREY/WHITE
GREY
GREY/BROWN
ORANGE
J8-2
BROWN/ BLACK
ORANGE/ BLACK
HOT WATER
THERMAL CUT-OFF OPEN > 305°F (152°C)
J4-2
J4-9
PURPLE
RAKE MOTOR
AQUA
I/M MOLD BODY HEATER
ORANGE/BROWN

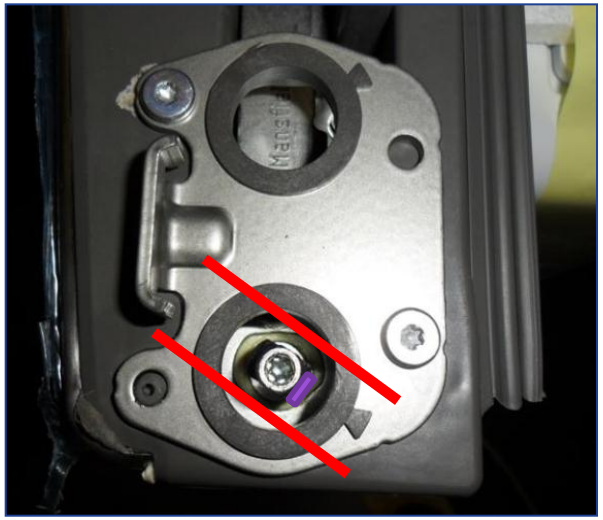
Door Closer Alignment for Reinstallation

- Use a 5/32" Allen key or ¼" nutdriver (*could be either*) to align lower hinge pin properly on the door.
- Align the parallel surfaces of the hinge pin with the arrow on the hinge bushing making sure the purple mark is facing the arrow.
- With the pin set properly in this location the door can now be remounted on the case hinge with the door 90˚ to the cabinet.

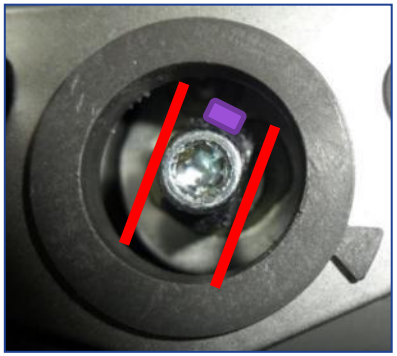


Orientation of purple mark with arrow

INCORRECT



CORRECT

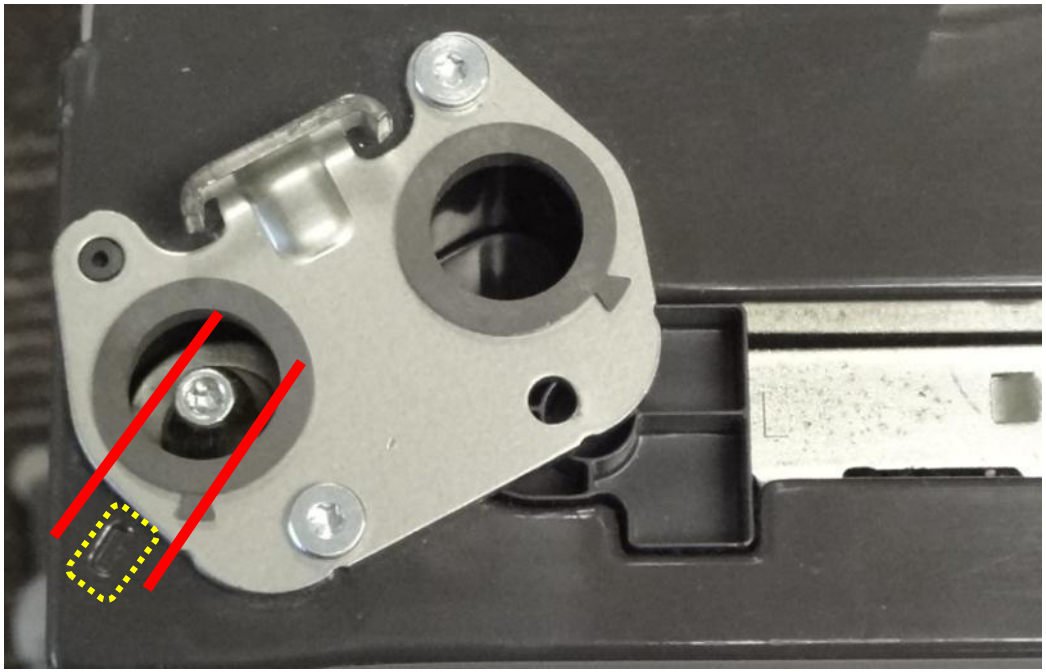


INCORRECT

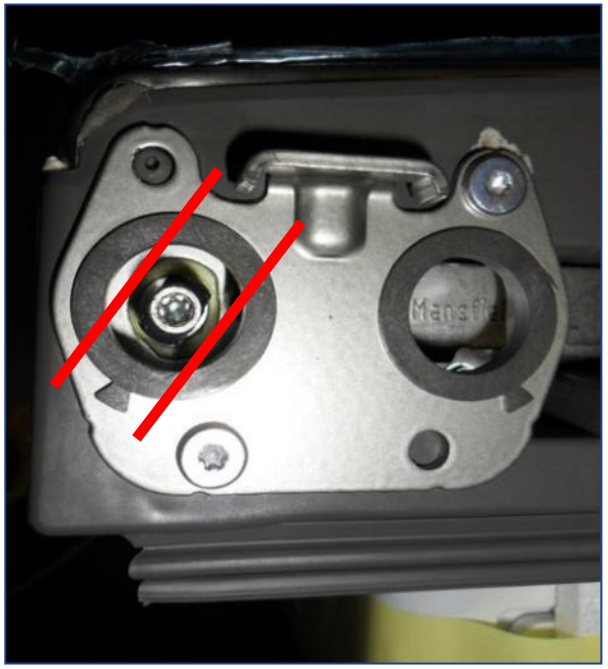
Note: Turn the closer pin on the right door counterclockwise and the one on the left door clockwise.

Bottom FF Door Hinge

Café Door



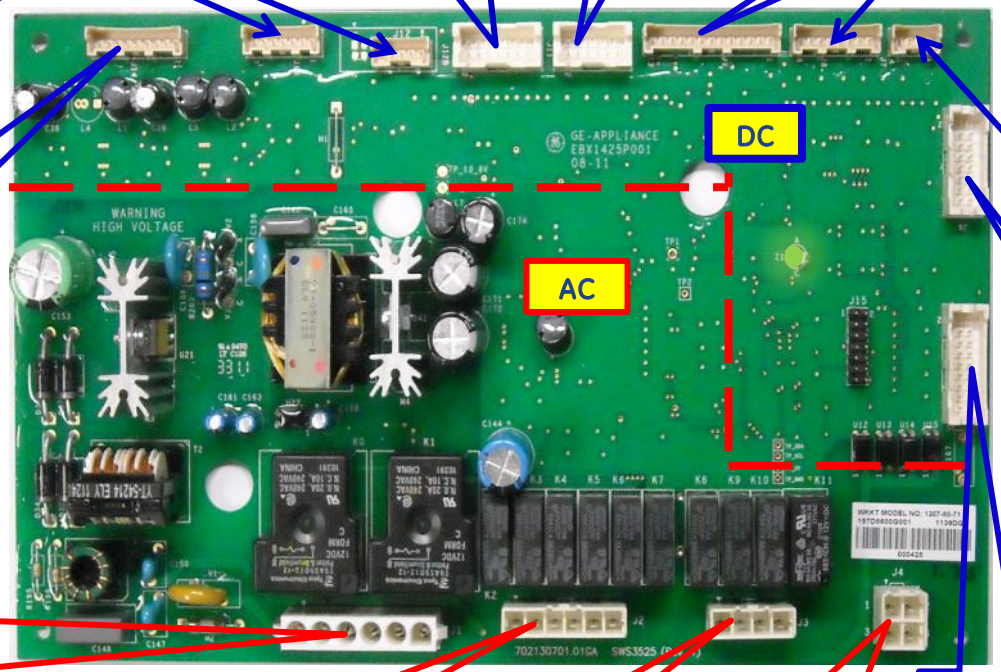
Profile, GE & Adora Door



The Café French Door refrigerator uses the same hinge, closer and door stop as the Profile, GE and Adora models.
The difference is the mounting of the door stop to work with the flat FF doors.
Because of the different position of the door stop there is a hinge pin alignment embossed into the door end cap for correct positioning of the hinge pin.
The same procedure is used to reset the door closer should it get out of position and door does not close properly.

Main Control Board

Main Control Board



J12
PIN 8 – TWX B
PIN 10 – TWX A
PIN 12 – TWX B
PIN 14 – TWX A
PIN 16 – 12 VDC +
3 WAY VALVE

8	10	12	14	16

J11
PIN 1 – DELI 12VDC +
PIN 2 – DELI BUS
PIN 3 – DELI 12VDC –
PIN 7 – DELI THERM 5VDC +
PIN 8 – DELI THERM
PIN 9 – FF EVAP THERM
PIN 10 – FF EVAP THERM 5VDC +
PIN 13 –FF THERM
PIN 14 – FF THERM 5VDC +

1	3	5	7	9	11	13
2	4	6	8	10	12	14

J10
PIN 1 – FZ THERM
PIN 2 – FZ THERM 5VDC +
PIN 3 – FZ EVAP THERM
PIN 4 – FZ EVAP THERM 5VDC +

1	3	5	7	9	11
2	4	6	8	10	12

J9
PIN 1 – COND FN 12VDC +
PIN 2 – COND FN 12VDC –
PIN 3 – COND FN PWM
PIN 4 – COND FN TACH
PIN 5 – MAIN BRD HTR –
PIN 6 – MAIN BRD HTR +
PIN 7 – INVERTER –
PIN 8 – INVERTER +
PIN 9 – ROOM THERM
PIN 10 – HUMIDITY SENS 5VDC +
PIN 11 – ROOM THERM +
PIN 12 – HUMIDITY SENS SIGNAL
PIN 13 – HUMIDITY SENS –

13	12	11	10	9	8	7	6	5	4	3	2	1

J13
PIN 1 – GEABUS ZIGBEE
PIN 2 – GEABUS UI
PIN 4 – DOOR 12VDC –
PIN 5 – 12 VDC +
PIN 6 – UI 12VDC +
PIN 7 – DOOR BRD 12VDC +

7	6	5	4	3	2	1

J8
PIN 1 – FZ FAN 12VDC +
PIN 2 – ICE BOX FAN 12 VDC +
PIN 3 – FZ FZN 12VDC –
PIN 4 – ICE BOX 12VDC –
PIN 5 – FZ FAN PWM
PIN 6 – ICE BOX FAN PWM
PIN 7 – FZ FAN RPM
PIN 8 – ICE BOX RPM

8	7	6	5	4	3	2	1

J14
PIN 6 – FF LED LIGHTS –
PIN 7 – FF LED LIGHTS +

9	8	7	6	5	4	3	2	1

J7
PIN 1 – 12VDC +
PIN 2 –12 VDC –
PIN 3 – PWM
PIN 4 – TACH
ODOR FILTER FAN

4	3	2	1

J6
PIN 1 – DELI FAN 12VDC +
PIN 2 – FF FAN 12VDC +
PIN 3 – DELI FAN 12VDC –
PIN 4 – FF FAN 12 VDC –
PIN 5 – DELI FAN RPM
PIN 6 – FF FAN RPM
PIN 7 – DELI FAN PWM
PIN 8 – FF FAN PWM
PIN 9 - DELI DAMPER
PIN 10 – DELI DAMPER
PIN 11 - DELI DAMPER
PIN 12 – DELI DAMPER

2	1
4	3
6	5
8	7
10	9
12	11
14	13
16	15

J1
PIN 2 – AC GROUND
PIN 3 – AC NEUTRAL
PIN 4 – FZ DEFROST HTR
PIN 5 – *S SPD COMP*
PIN 6 – AC LINE 1

1	2	3	4	5	6

J2
PIN 1 – ISOLATION VALVE
PIN 2 – FF DEFROST HTR
PIN 3 – ICE PORT HTR
PIN 5 – ICE DUCT HTR

1	2	3	4	5	6

J3
PIN 1 – FZ IM RAKE MTR
PIN 2 – FZ IM HTR
PIN 3 – FZ IM WTR VALVE
FOR MODELS WITH FZ IM

1	2	3	4

J4
PIN 1 – LEFT FF DOOR
PIN 2 – FZ DRAWER
PIN 3 – RT FF DOOR
DOOR SW INPUTS WHEN OPENED

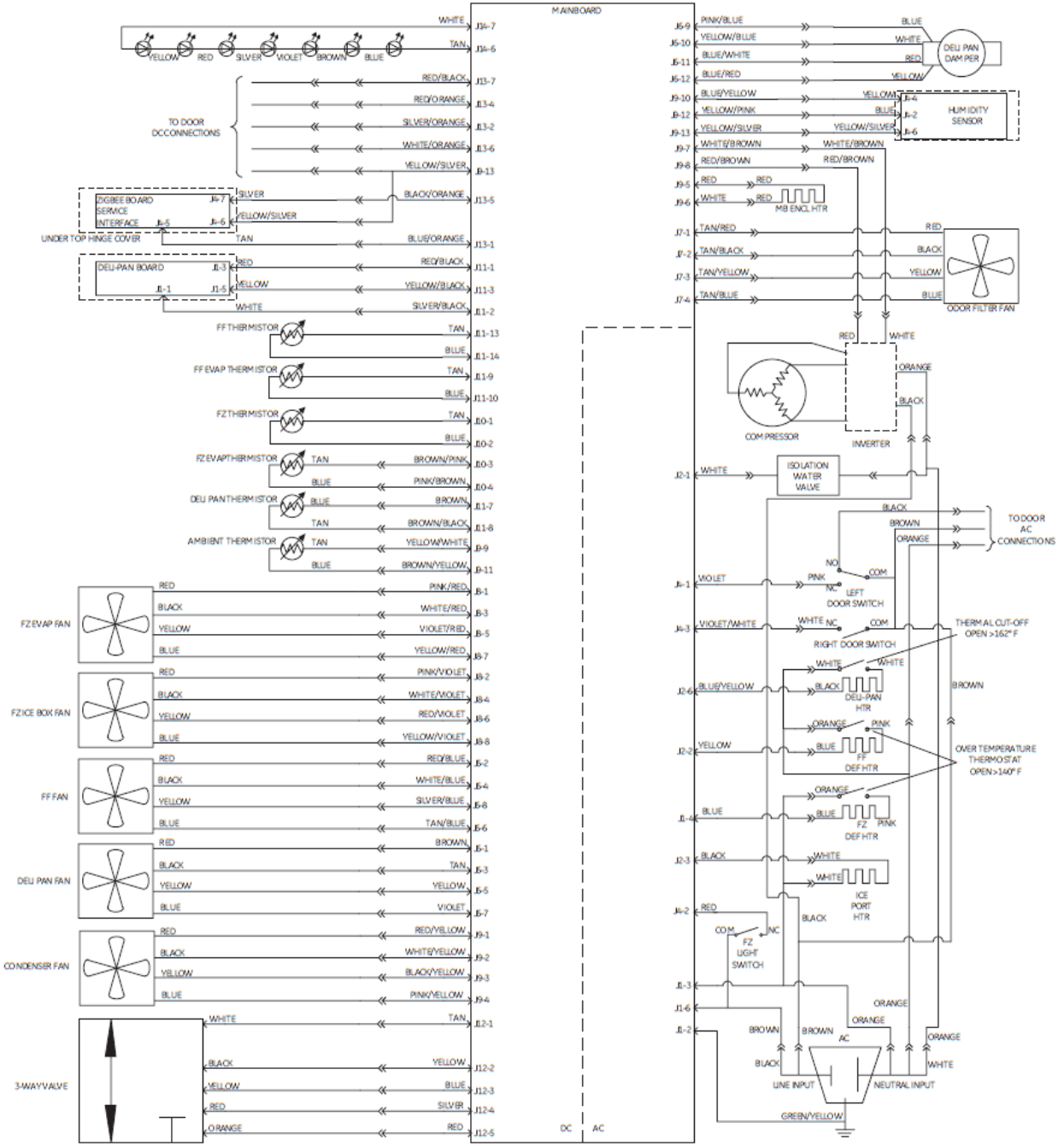
1	2
3	4

J5 MODEL ID

Extra PWM Out	2	1	Extra PWM Gnd
Personality 0	4	3	Personality Com.
Personality 1	6	5	Personality Com.
Personality 2	8	7	Personality Com.
Personality 3	10	9	Personality Com.
Personality 4	12	11	Personality Com.
Personality 5	14	13	Personality Com.
Personality 6	16	15	Personality Com.
Personality 7	18	17	Personality Com.

imagination at work

CFE29T*D***/CYE23T*D*** BOTTOM FREEZER



CFE29T*D***/CYE23T*D*** BOTTOM FREEZER

DISCONNECT POWER CORD BEFORE SERVICING
IMPORTANT - RECONNECT ALL GROUNDING DEVICES
All parts of this appliance capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

IMPORTANT SAFETY NOTICE
This information 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.

ELECTRICAL SPECIFICATIONS

Adaptive Defrost Control Fresh Food	32hrs
Adaptive Defrost Control Freezer	96hrs
Thermistor kilo-ohm resistance	@32°F 16.3
Over temperature Thermostat	140°F
Electrical Rating: 115V AC 60 Hz	12 Amp

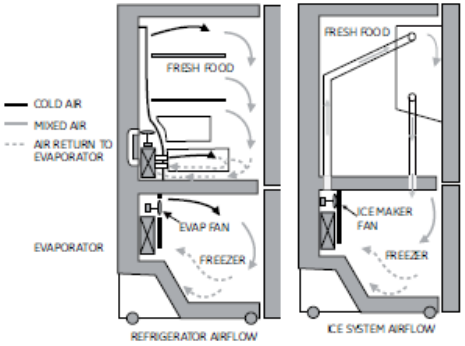
NO LOAD PERFORMANCE

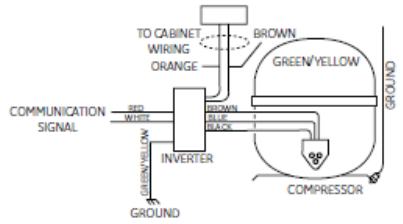
Control Position 37/0 and Ambient of 65°F to 90°F

Run Time, % @ 65°F	30 to 55
Run Time, % @ 90°F	55 to 95

REFRIGERANT CHARGE (R134a) ..... 5.75 ounces

AIR FLOW





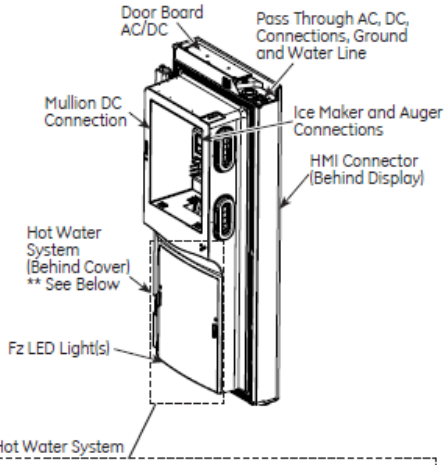
COMPRESSOR (Variable Speed)

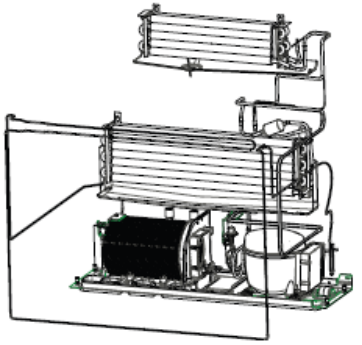
Service Diagnostic Functions

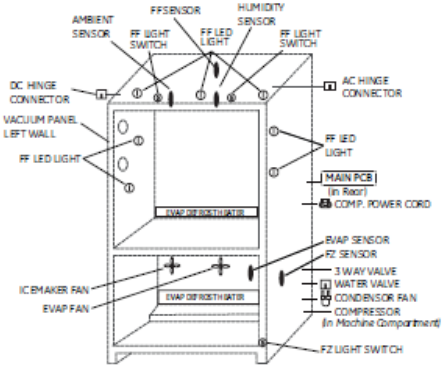
⚠ WARNING: Service Technicians Only

Entering Service Diagnostics
Enter Service mode by pressing the "Water", "Crushed", and "Cubed" buttons simultaneously for 3 seconds.
The display will show ***00*** in the FZ temperature display and ***0*** in the FF temperature display.
All the components will turn off, 3-way valve will go home, dampers will go to closed position, and the temperature display flash ***0*** in each of the FZ and FF displays.
Use the FZ or FF increase/decrease buttons from display to select the appropriate mode. Once the displays indicate the desired test mode, press any key except the temperature adjustment buttons to run test.
The test mode must be selected within 5 minutes of entering the diagnostic mode or it will time-out, normal refrigerator operation will resume.
Once a test mode is selected, the display will show the results of the mode selected.
Run test 0016 to exit diagnostics and return to normal operation.
The control will reset to normal operation if power is cycled.

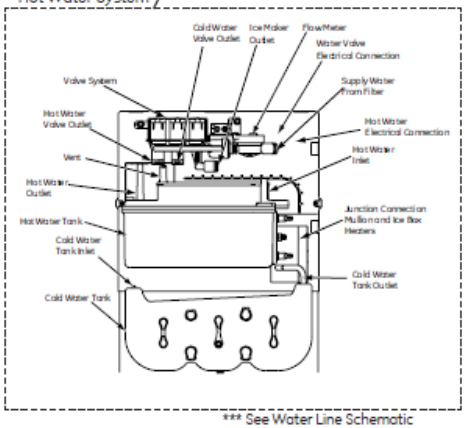
Non-dispenser needs service kit.





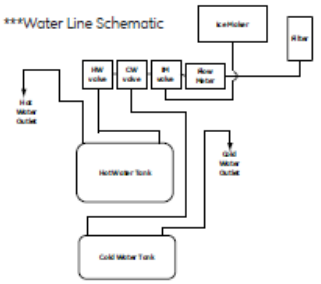


** Hot Water System



*** See Water Line Schematic

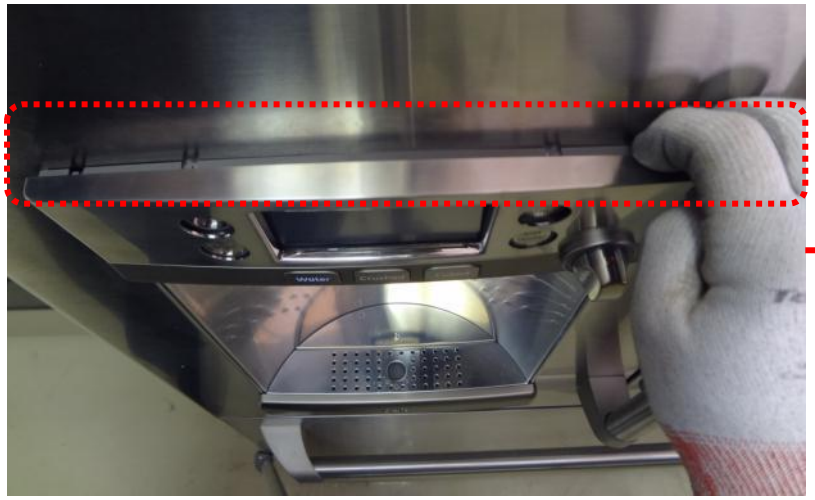
***Water Line Schematic



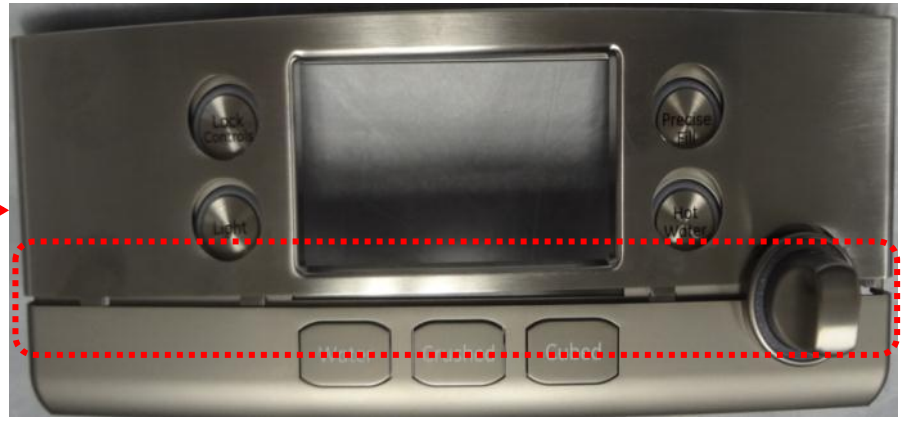
Control Panel & On Board Diagnostics

Control Assembly Removal

- **Remove power from the refrigerator, (remember LOTO)**

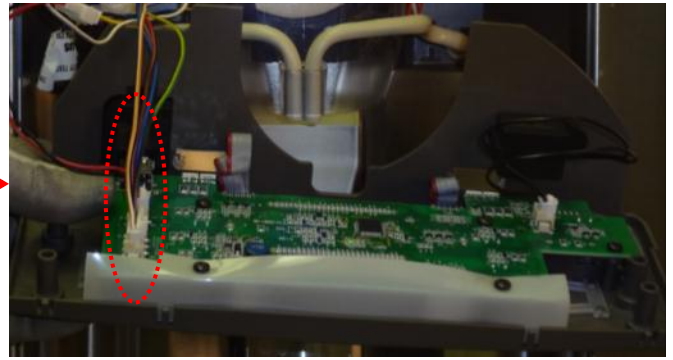


Push up while pulling out at the top of the Display Cover to release the top tabs.



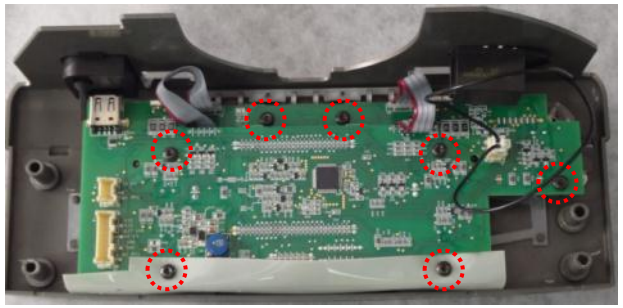
Gently pull up to disengage the bottom of the Display Cover

Remove 4 – ¼" hex screws to remove the Control Assembly

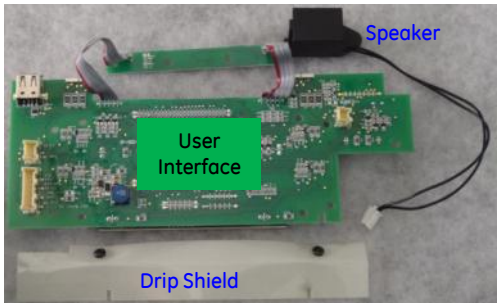


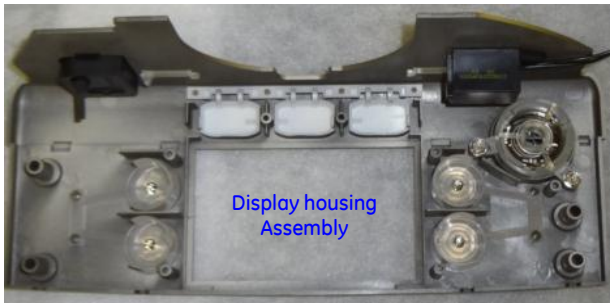
Disconnect the 2 connectors from the left side of the UI

User Interface Replacement

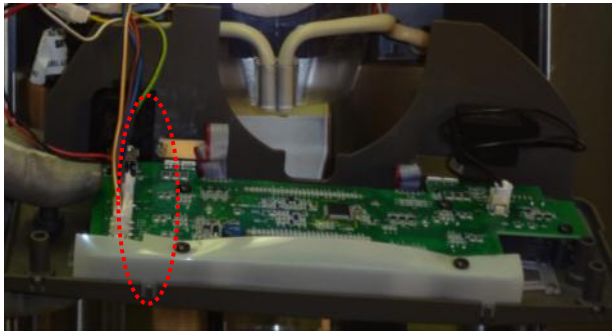


Remove 6 - T15 Torx screws.





Transfer User Interface parts onto new Display Housing Assembly with the T15 screws



Re connect the 2 connectors from the left side of the UI

Install 4 – ¼" hex screws to attach the Control Assembly

Insert tabs the Display Cover into slots on the Display Housing and push down.

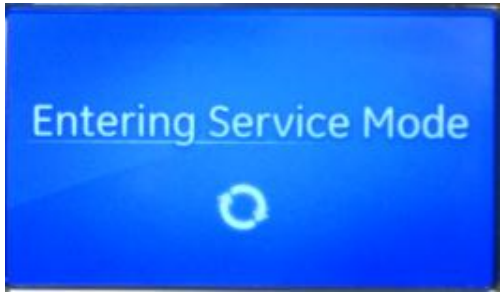
Push the Display Cover to snap the top into place

Service Diagnostics

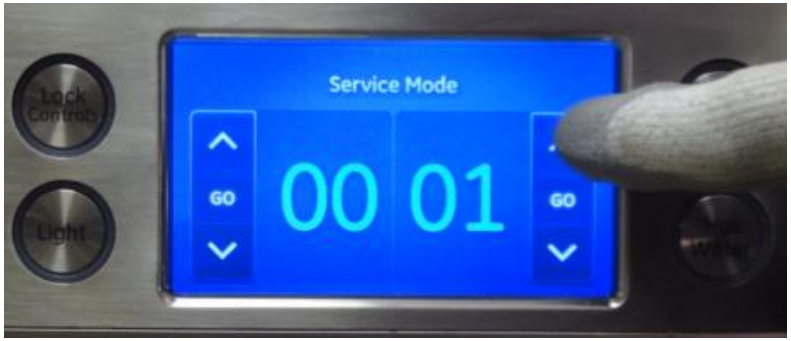
Press and hold ‘Water’, ‘Crushed’ & ‘Cubed’ Pads together for 3 seconds to enter Service Mode

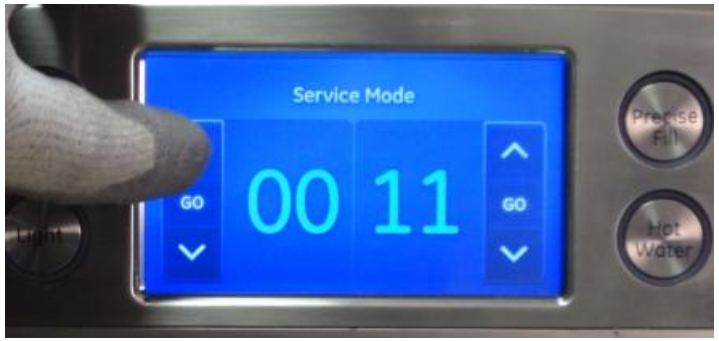
Service Diagnostics

- Select 'Yes' to enter service mode.
- Use the up and down arrows/buttons on the right of the display to scroll through the diagnostic tests.



- The display will show '00' in the FZ temperature display and '00' in the FF temperature display.
- All the components will turn off, 3-way valve will go home, dampers will go to closed position.
- The up and down pads on the right will count up the right FF digit and the left up and down pad count up and down the left FF digit.





Service Diagnostics Tests

FZ Display	FF Display	Mode	Comments
00	00	Get F Codes	See F Code test Section
00	01	Clear F Codes	Clears all the stored codes
00	02	Dispenser Self-Test Mode	Turns on all LEDs and 7 Segments on the Dispenser board for testing.
00	06	COM Version	Return the Com Version (Only on LCD Models)
00	07	Degrees C Mode	Changes the System to be Degrees C
00	08	Degrees F Mode	Changes the System to be Degrees F
00	11	Join Zigbee™ Network	Join a energy management Network
00	12	Leave Zigbee™ Network	Leave a energy management Network
00	13	Get Zigbee™ Network Status	Check the energy management Network status
00	14	Force FF and FZ Defrost	Starts a FF and FZ defrost
00	15	Exits All Defrost	Forces the Heated Defrost to the Idle State
00	16	Exit All Tests	Resets all boards in the system

MB = Main Board, Cabinet
DB = Door Board, LH Door

Service Diagnostics Tests

FZ Display	FF Display	Mode	Comments
00	00	Get F Codes	See F Code test Section
00	01	Clear F Codes	Clears all the stored codes
00	02	Dispenser Self-Test Mode	Turns on all LEDs and 7 Segments on the Dispenser board for testing.
00	06	COM Version	Return the Com Version (Only on LCD Models)
00	07	Degrees C Mode	Changes the System to be Degrees C
00	08	Degrees F Mode	Changes the System to be Degrees F
00	11	Join Zigbee™ Network	Join a energy management Network
00	12	Leave Zigbee™ Network	Leave a energy management Network
00	13	Get Zigbee™ Network Status	Check the energy management Network status
00	14	Force FF and FZ Defrost	Starts a FF and FZ defrost
00	15	Exits All Defrost	Forces the Heated Defrost to the Idle State
00	16	Exit All Tests	Resets all boards in the system

MB = Main Board, Cabinet
DB = Door Board, LH Door

Service Diagnostics Tests

FZ Display	FF Display	Mode
00	24	FF1 Thermistor Test
00	25	FF2 Thermistor Test
00	26	FF Evaporator Thermistor Test
00	27	FZ Cabinet Thermistor Test
00	28	FZ Evaporator Thermistor Test
00	29	Ambient Temp Test
00	30	Deli pan Thermistor Test
00	31	Ice Mold Body (MB) Thermistor Test
00	32	Conv Drawer 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

MB = Main Board, Cabinet
DB = Door Board, LH Door

Comments

- 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 temp insert a decimal between the 2 right digits.
- The example reading below of -1077 would be read as -10.77˚ F.

Service Diagnostics Tests

FZ Display	FF Display	Mode	Comments
00	43	Cycle Duct Door	Opens the Duct Door for 10 seconds and then closes it
00	44	Cycle FF Damper	Opens the Damper for 30 seconds and then closes it
00	45	Cycle Conv Drawer Damper	Opens the Damper for 30 seconds and then closes it
00	46	Cycle QC/Deli damper	Opens the Damper for 30 seconds and then closes it
00	47	FF Fan Test	Turns the Fan on 75% duty cycle and displays the RPM
00	48	FZ Fan Test	Turns the Fan on 75% duty cycle and displays the RPM
00	49	Condenser Fan Test	Turns the Fan on 75% duty cycle and displays the RPM
00	50	Ice Box Fan Test	Turns the Fan on 75% duty cycle and displays the RPM
00	51	Deli/QC Fan test	Turns the Fan on 75% duty cycle and displays the RPM
00	**52**	**Odor Remover Fan**	**Turns the Fan on 75% duty cycle and displays the RPM**
00	53	FF Defrost Heater Test	Turns on the Load
00	54	Deli pan/QC heater Test	Turns on the Load
00	55	Isolation Valve Test	Turns on the Load
00	56	Ice Port Heater Test	Turns on the Load
00	57	Ice Duct Liner Htr / SxS Water Valve Test	Turns on the Load
00	58	MB Icemaker Water Valve Test	Turns on the Load
00	59	MB Icemaker Rake Motor Test	Turns on the Load
00	60	FZ Defrost heater Test	Turns on the Load

MB = Main Board, Cabinet
DB = Door Board, LH Door

Service Diagnostics Tests

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

Service Diagnostics Tests

FZ Display	FF Display	Mode	Comments
00	61	Compressor Relay Test	Turns on the Load
00	63	IMX Power Relay Test (Normally Closed Relay)	Turns on the Load
00	64	Double Drawer Mullion heater 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**
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	73	Read Conv Drawer/ IM Input Status	Returns the Status (0 = Closed, 1 = Open)
00	74	Read MB Icemaker Rake Status	Returns the Status (0 = not home, 1 = Home)
00	75	Read MB Icemaker Arm Status	Returns the Status (0 = not Full, 1 = Full)
00	76	Read DB Icemaker Rake Status	Returns the Status (0 = not home, 1 = Home)
00	77	Read DB Icemaker Arm Status	Returns the Status (0 = not Full, 1 = Full)
00	78	Read DB Cold Water Cup Switch	Returns the Status (0 = Not Pressed)
00	**79**	**Read DB Hot Water Cup Switch**	**Returns the Status (0 = Not Pressed)**
00	**80**	**Read DB Hot Water Level Switch 1**	**Returns the Status (0 = Not Full)**
00	81	Read DB Hot Water Level Switch 2	Returns the Status (0 = Not Full)

MB = Main Board, Cabinet
DB = Door Board, LH Door

Service Diagnostics Tests

FZ Display	FF Display	Mode	Comments
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 Gasket Heater	Turns on the Load
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 • 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 • 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
00	98	MB Icemaker Heater Test	Turns on the Load
00	99	DB Icemaker Full Cycle Test	Icemaker Heater will come on and the Instantaneous Ice Mold Body Thermistor reading will be returned.
01	00	MB Icemaker Full Cycle Test	IM heater comes on & the Icemaker Mold Body reading returned

MB = Main Board, Cabinet
DB = Door Board, LH Door

Service Diagnostics Failure Codes

Once in diagnostic mode with ZEROS in the temperature displays, press “GO” on (LCD models) or any other button, other than temperature setting, (LED models) to retrieve any stored error codes.

FZ Display	FF Display	Mode	Comments
00	**00**	**Get F Codes**	**See F Code Section**
00	**01**	**Clear F Codes**	**Clears all the stored codes by pressing GO (LCD models) or any other button on (LED models) other than temperature.**
00	02	Dispenser Self-Test Mode	Turns on all LEDs and 7 Segments on the Dispenser board for testing.
00	06	COM Version	Return the Com Version (Only on LCD Models)
00	07	Degrees C Mode	Changes the System to be Degrees C
00	08	Degrees F Mode	Changes the System to be Degrees F
00	11	Join Zigbee™ Network	Join a energy management Network
00	12	Leave Zigbee™ Network	Leave a energy management Network
00	13	Get Zigbee™ Network Status	Check the energy management Network status
00	14	Force FF and FZ Defrost	Starts a FF and FZ defrost
00	15	Exits All Defrost	Forces the Heated Defrost to the Idle State
00	16	Exit All Tests	Resets all boards in the system

To scroll through failure codes, press the Up arrow for the FF temperature adjustment. To return to previously displayed failure code, press the down arrow for the FF temperature adjustment. FF controls are on the right of the display.

Once the Failure codes display is activated, the display will show the Failure codes according to the following:

•The most recent failure code will be displayed first.

•A failure code value of zero (“**00 00**”) will be displayed if there are no failure occurrences present within the system.

•The user Interface will display one failure code at a time along with 3 sets/rows of data for each failure code:

- •Number of days since last occurrence
- •Number of occurrences
- •Number of hours since last occurrence

• LED models, the failure code will be displayed to the user for 3 seconds, then number of occurrences for 3 seconds, followed by number of days since last occurrence for 3 seconds.

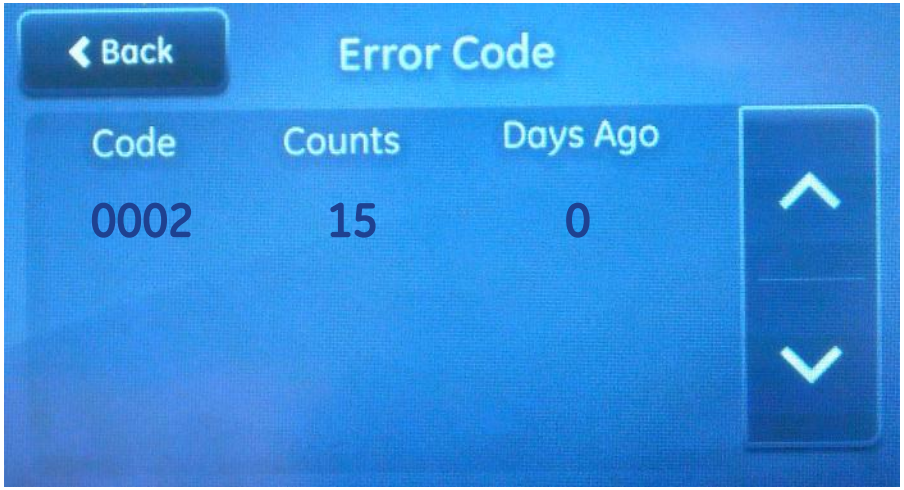
•Each failure code display period lasts a total of 12 seconds and then repeats unless user presses a specific button to move to next failure code or exits diagnostics mode.

•If the user doesn’t press a specific button to move to next failure code or exit diagnostics mode, the process starts over with the failure code being displayed again:

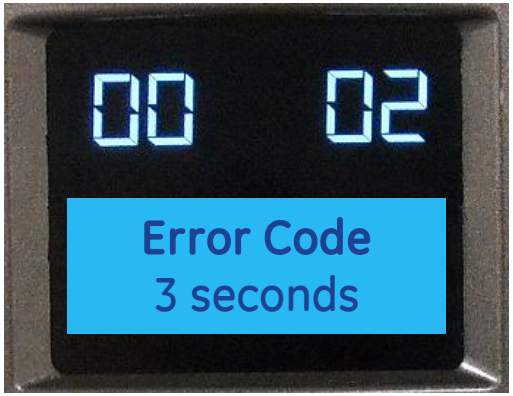
Row of Data	Data Description	Value Displayed				Duration of Displayed Value
1	Failure Code	#	#	#	#	3 seconds
2	Number of Occurrences	#	#	#	**o**	3 seconds
3	Number of Days Since Last Occurrence	#	#	#	**d**	3 seconds
Repeat if no action from user						

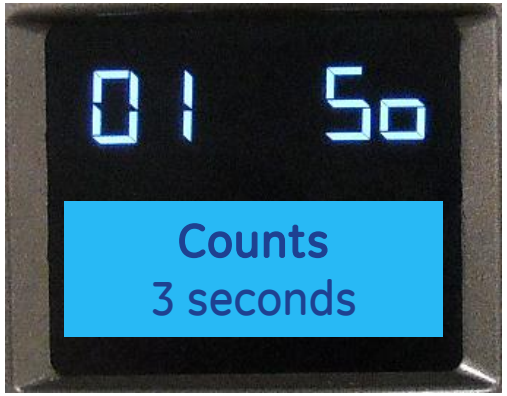
Failure Codes Display

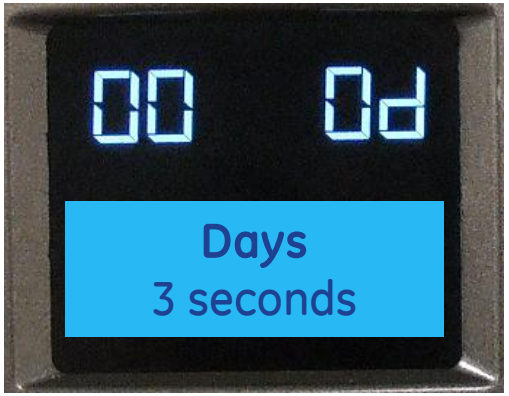
LCD Models



LED Models







Example - Fresh Food Thermistor, 15 times today

Thermistor Failure Codes

Group	Value	Displayed	Failure Code Definition
Thermistors (1 – 99)	F1	0 0 0 1	FF1 Thermistor Invalid
	F2	0 0 0 2	FF2 Thermistor Invalid
	F3	0 0 0 3	FZ Cabinet Thermistor Invalid
	F4	0 0 0 4	FZ Evaporator Thermistor
	F5	0 0 0 5	FP/Deli Pan Thermistor Invalid
	F6	0 0 0 6	FF Evaporator Thermistor Invalid
	F7	0 0 0 7	Convertible Drawer Thermistor Invalid
	F8	0 0 0 8	Ambient Temperature Invalid
	F9	0 0 0 9	Ambient Humidity Invalid
	F10	0 0 1 0	Ice mold Body Thermistor (MB) Invalid

- When the Software has determined a Thermistor is invalid a F code is logged into memory.
- The thermistor must return to the normal Range and go out of Range to be called again.
- Any time the error code is cleared, the Fault can set again immediately if the thermistor is still invalid.
- The software also will to check to see if the thermistor/sensor should be there based on the model before generating the Failure code. (IE on a non-Bottom Freezer, the ambient Temp and the Ambient Humidity sensor are not present so the F Code will not be generated for those sensors.

Fan Motor Failure Codes

Group	Value	Displayed	Failure Code Definition
Fans (100 – 199)	F100	0 1 0 0	FZ Fan Feedback Missing when Fan is running.
	F101	0 1 0 1	FZ Fan Feedback Present when Fan is off.
	F102	0 1 0 2	FZ Fan cannot reach target RPM.
	F103	0 1 0 3	Condenser Fan Feedback Missing when Fan is running.
	F104	0 1 0 4	Condenser Fan Feedback Present when Fan is off.
	F105	0 1 0 5	Condenser Fan cannot reach target RPM.
	F106	0 1 0 6	FF Fan Feedback Missing when Fan is running.
	F107	0 1 0 7	FF Fan Feedback Present when Fan is off.
	F108	0 1 0 8	FF Fan cannot reach target RPM.
	F109	0 1 0 9	Ice Box Fan Feedback Missing when Fan is running.
	F110	0 1 1 0	Ice Box Fan Feedback Present when Fan is off.
	F111	0 1 1 1	Ice Box Fan cannot reach target RPM.
	F112	0 1 1 2	Deli Pan/FP Fan Feedback Missing when Fan is running.
	F113	0 1 1 3	Deli Pan/FP Fan Feedback Present when Fan is off.
	F114	0 1 1 4	Deli Pan/FP Fan cannot reach target RPM.
	F115	0 1 1 5	Odor Filter Fan Feedback Missing when Fan is running.
	F116	0 1 1 6	Odor Filter Fan Feedback Present when Fan is off.
	F117	0 1 1 7	Odor Filter Fan cannot reach target RPM.

- There are 3 different F 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 1st 1 minute the fan is started. This 1 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 Failure Codes

Group	Value	Displayed	Failure Code Definition	Setting Criteria
Defrost 200 thru 299	F200	0 2 0 0	FZ Defrost Heater on for Max Time.	Any time the FZ Defrost Turns off based on Time
	F201	0 2 0 1	FF Defrost Heater on for Max Time.	Any Time the FF defrost turns off based on Time
	F202	0 2 0 2	5 consecutive FZ abnormal defrosts.	5 consecutive abnormal defrosts.
	F203	0 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 Failure Codes

Group	Value	Displayed	Failure Code Definition	Setting Criteria
Sealed System / Miscellaneous 300 thru 399	F300	0 3 0 0	Excessive Compressor Run Time.	Compressor ran for 5 hours Note: The initial cycle at power-up is ignored.
	F301	0 3 0 1	Compressor off for 3 hours with 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	0 3 0 2	FF No Freeze Limit Tripped.	FF crossed the No Freeze Limit. Only call once it crosses. It needs to return to normal and then cross again to call the FCode handler again.
	F303	0 3 0 3	FF Temp Exceeded.	
	F304	0 3 0 4	FZ Temp Exceeded.	
	F305	0 3 0 5	Dampers Stuck Closed.	
	F306	0 3 0 6	Damper Stuck Open.	

Main Board Failure Codes

Group	Value	Displayed	Failure Code Definition	Setting Criteria
Main Board 400 - 499	F400	0400	DC Voltage out of Range	Main Board Failure
	F401	0401	Ice/water stops dispensing based on time (7 Minute Timeout).	Only on SXS models where the Mainboard owns the Water and Auger Relays

Door Board Failure Codes

Group	Value	Displayed	Failure Code Definition	Setting Criteria
Door Board 500 thru 599	F500	0 5 0 0	Can't reach Target Hot Water Temp.	Hot Water time limit expires and temperature not reached.
	F501	0 5 0 1	Flow meter Missing.	No pulses/flow meter signal during Dispense.
	F502	0 5 0 2	Flow meter pulsing with no water dispensing.	Wait 1 minute after a dispense is over before running this diagnostic
	F503	0 5 0 3	Ice/water stops dispensing based on time (7 Minute Timeout).	If the Dispense stops due to timeout
	F504	0 5 0 4	Can't Fill Hot water Tank	Hot water fill time expires without tripping the level sensor.
	F505	0 5 0 5	Overcurrent Flag1 Tripped	Ice Box Gasket Heater
	F506	0 5 0 6	Overcurrent Flag2 Tripped	Recess, Mullion or Fill Tube Heater
	F507	0 5 0 7	Cold Water Cup Switch Input missing	Cup Switch message is received and 30 seconds later the Cup Switch input is still not present
	F508	0 5 0 8	Cold Water Cup Switch Input present	Cup Switch input is present for 30 seconds and no Cup Switch message has been received
	F509	0 5 0 9	Hot Water Cup Switch Input missing	Hot Water message is received and 30 seconds later the Cup Switch input is still not present
	F510	0 5 1 0	Hot Water Cup Switch Input present	Cup Switch input is present for 30 seconds and no Cup Switch message has been received
	F511	0 5 1 1	Door board Ice Mold Temp Invalid.	
	F512	0 5 1 2	Door board Ice Box Invalid.	
	F513	0 5 1 3	Door board HotWater1 Thermistor Invalid.	Thermistor temps do not match
	F514	0 5 1 4	Door board HotWater2 Thermistor Invalid.	

Icemaker Failure Codes

Group	Value	Displayed	Failure Code Definition	Setting Criteria
Ice Maker 600 thru 699	F600	0 6 0 0	FF Icemaker Multi-fill 3 times the last 10 fills?	If the multi-fill algo is active 3 times in the last 5 fills
	F601	0 6 0 1	FF Icemaker Stuck in Harvest Fix Mode.	After 10 minutes, if the software is stuck in Harvest Fix Mode.
	F602	0 6 0 2	FF Icemaker enters harvest fix mode 3 out of 10 harvests.	Icemaker logic went into Harvest fix 3 out of 10 harvests
	F603	0 6 0 3	FF Icemaker enters Fault Mode	After enter into Harvest Fault
	F650	0 6 5 0	FZ Icemaker Multi-fill 3 times the last 10 fills?	If the multi-fill algo is active 3 times in the last 5 fills
	F651	0 6 5 1	FZ Icemaker Stuck in Harvest Fix Mode.	After 10 minutes, if the software is stuff in Harvest Fix Mode.
	F652	0 6 5 2	FZ Icemaker enters harvest fix mode 3 out of 10 harvests.	Icemaker logic went into Harvest fix 3 out of 10 harvests
	F653	0 6 5 3	FZ Icemaker enters Fault Mode	After enter into Harvest Fault

Interaction Fault Codes

Group	Value	Displayed	Failure Code Definition	Setting Criteria
External Interaction (700 thru 799)	F700	0 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	0 7 0 1	Stuck Keys on Internal Temp Board	Stuck Key is present on Internal Temp. Only send once per each stuck key.
	F702	0 7 0 2	Stuck Keys on Deli Pan	Stuck Key is present on Deli Pan. Only send once per each stuck key
	F703	0 7 0 3	Key inputs on Deli Pan Temp Board and Door Closed	FF Door is closed and a Key Input is detected
	F704	0 7 0 4	Key Inputs on Deli Pan/FP Board and Door Closed	FF Door is closed and a key input is detected
	F705	0 7 0 5	Auto fill Communication Error	AutoFill Module not communicating properly
	F706	0 7 0 6	Auto fill wrong version	The Version of the Auto fill module is not compatible with the ACM Version
	F707	0 7 0 7	ACM/Comm Communication Error	COM Module not communicating properly
	F708	0 7 0 8	COM Wrong Version	COM Version is not compatible with the ACM
	F709	0 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	0 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	0 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	0 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	0 7 1 3	FF Door open for 15 minutes without closing	Usage or door switch
	F714	0 7 1 4	FF Door open for 60 min. in the last 24 hours	Usage or door switch
	F715	0 7 1 5	50 FF Door Openings in the last 24 hours.	Usage or door switch
	F716	0 7 1 6	FZ Door open for 15 minutes without closing	Usage or door switch
	F717	0 7 1 7	FZ Door open for 60 min. in the last 24 hrs.	Usage or door switch
	F718	0 7 1 8	50 FZ Door Openings in the last 24 hours.	Usage or door switch

ACM (Appliance Communication Module) Energy Management Accessory

Service Diagnostics Exit

- After diagnostics is complete Service Diagnostics must be exited.
- Use ‘00’ ‘16’ then press GO.
- The UI will exit Service Diagnostics then reboot all of the boards then go the home screen.

This concludes the presentation.

Thanks for your attention