Profile Bottom Mount French Door Refrigerator

PFSS6NKWSS – Stainless Wrap
PFSF6NKWBB – Black
PFSF6NKWWW - White

2007 Energy Star Rating

Part I – Operation & Disassembly

Please refer any technical questions on this product to:
george.schick@ge.com

imagination at work
GE Consumer & Industrial Training Team

GWS2007

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✓ **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.

Showroom Mode

- No OFF mode
- Press Energy Saver and freezer pads simultaneously for 3 seconds
- Lights and fans still operate
- No Compressor operation
- OF – OF displayed
- Press same pads a second time to return to normal operation – unplugging unit does not escape Showroom mode.

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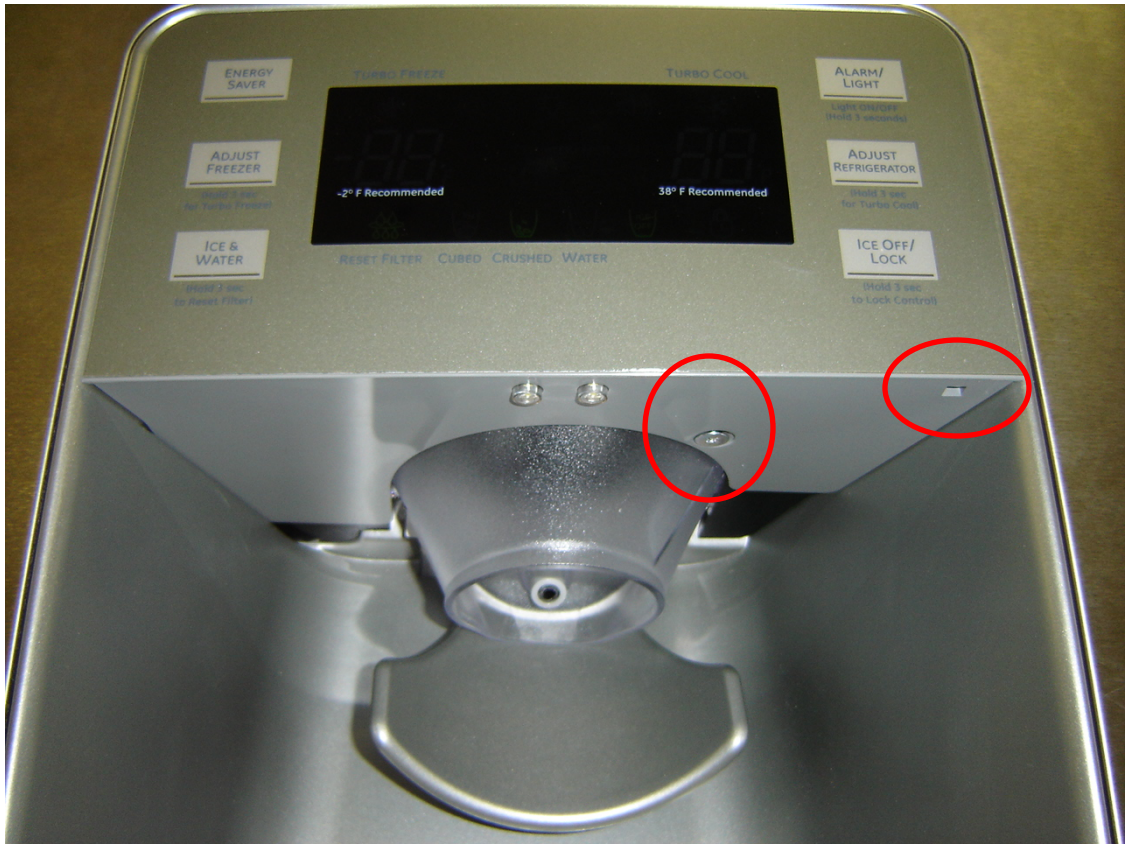
Dispenser Assembly

- Remove Phillips screw from housing
- Push small screwdriver into opening to release tab
- Grab control panel, pull to the right & then pull forward to remove.
- Disconnect one plug from assembly



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Dispenser Assembly

Remove four Phillips screws to separate control components

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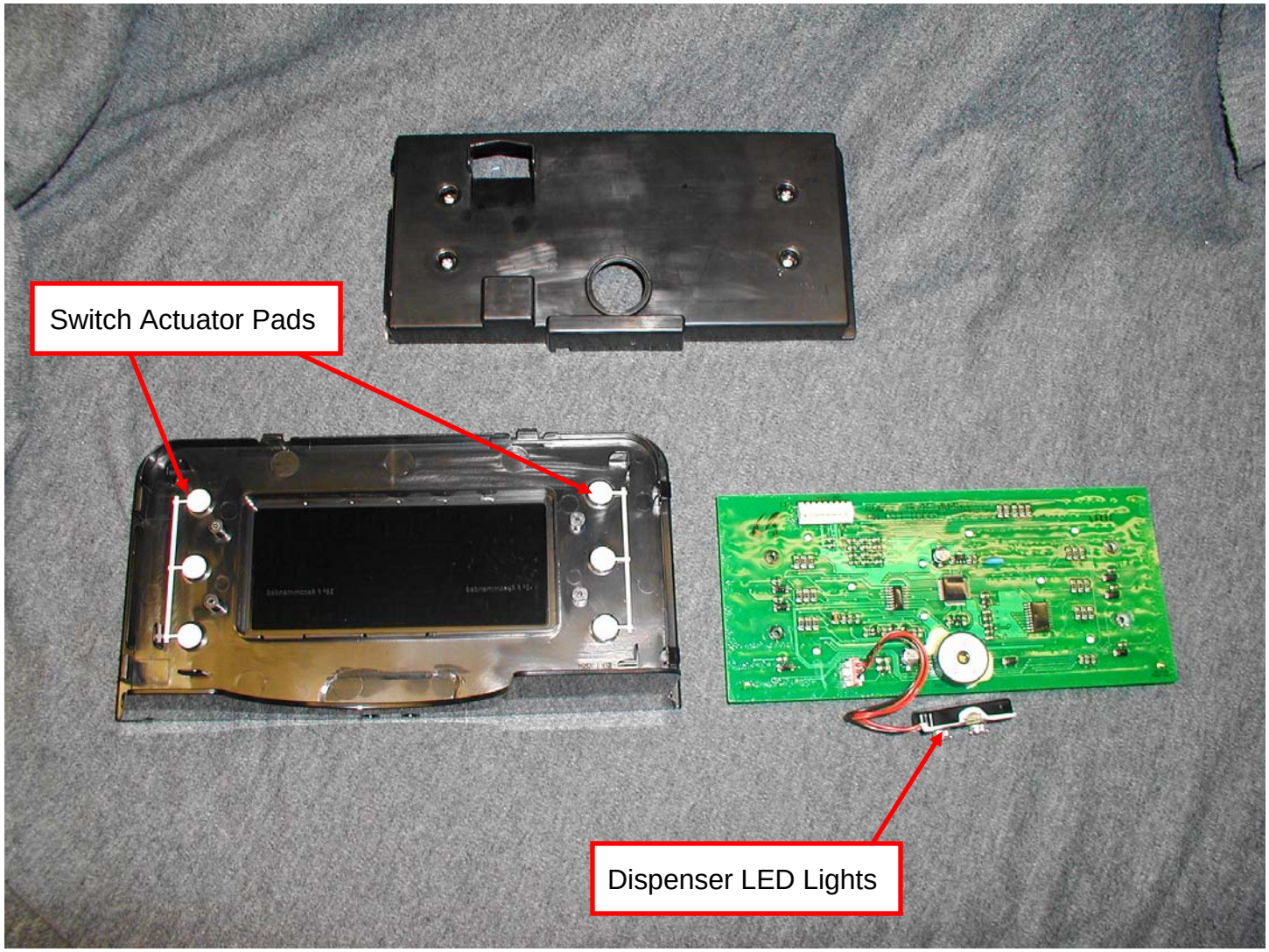
Dispenser Assembly



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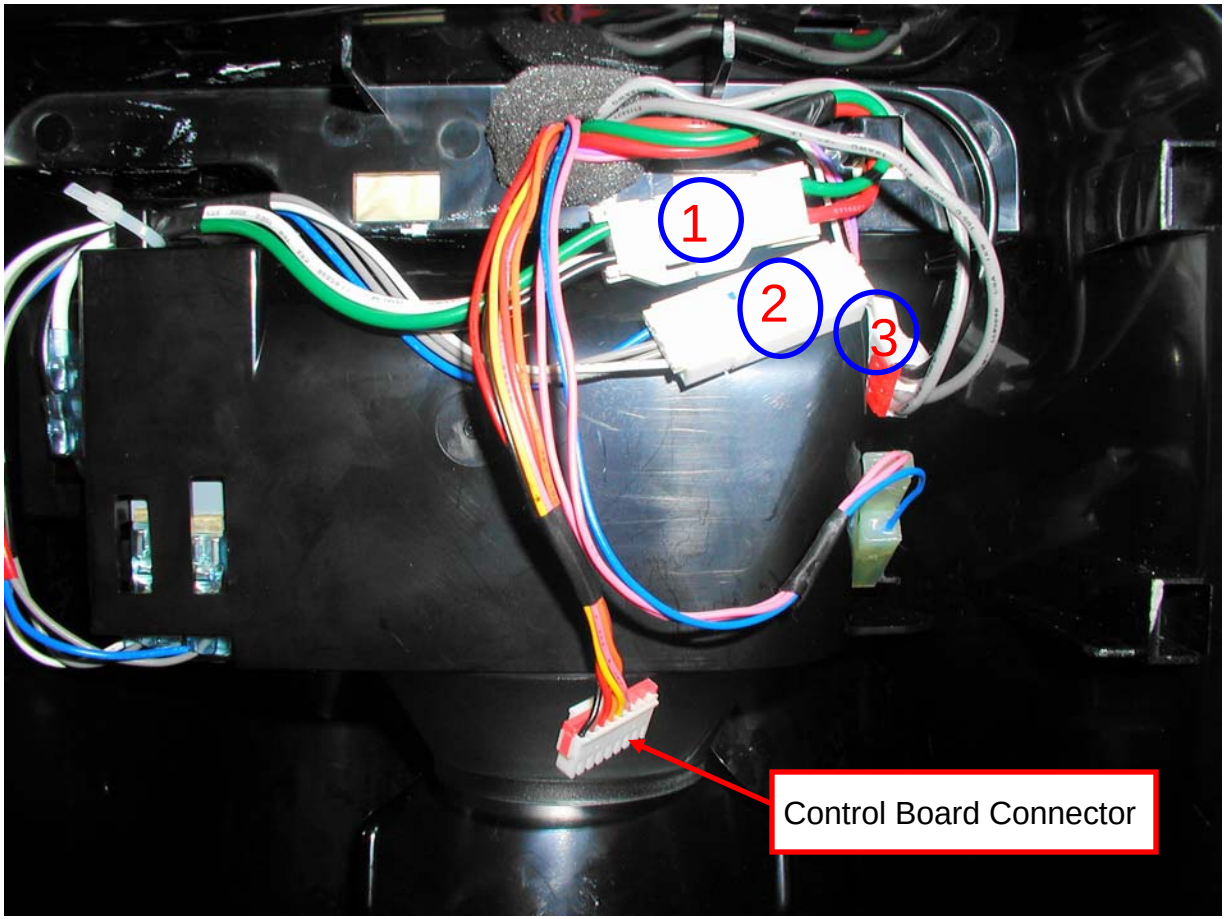
Dispenser Assembly



Disconnect three plugs

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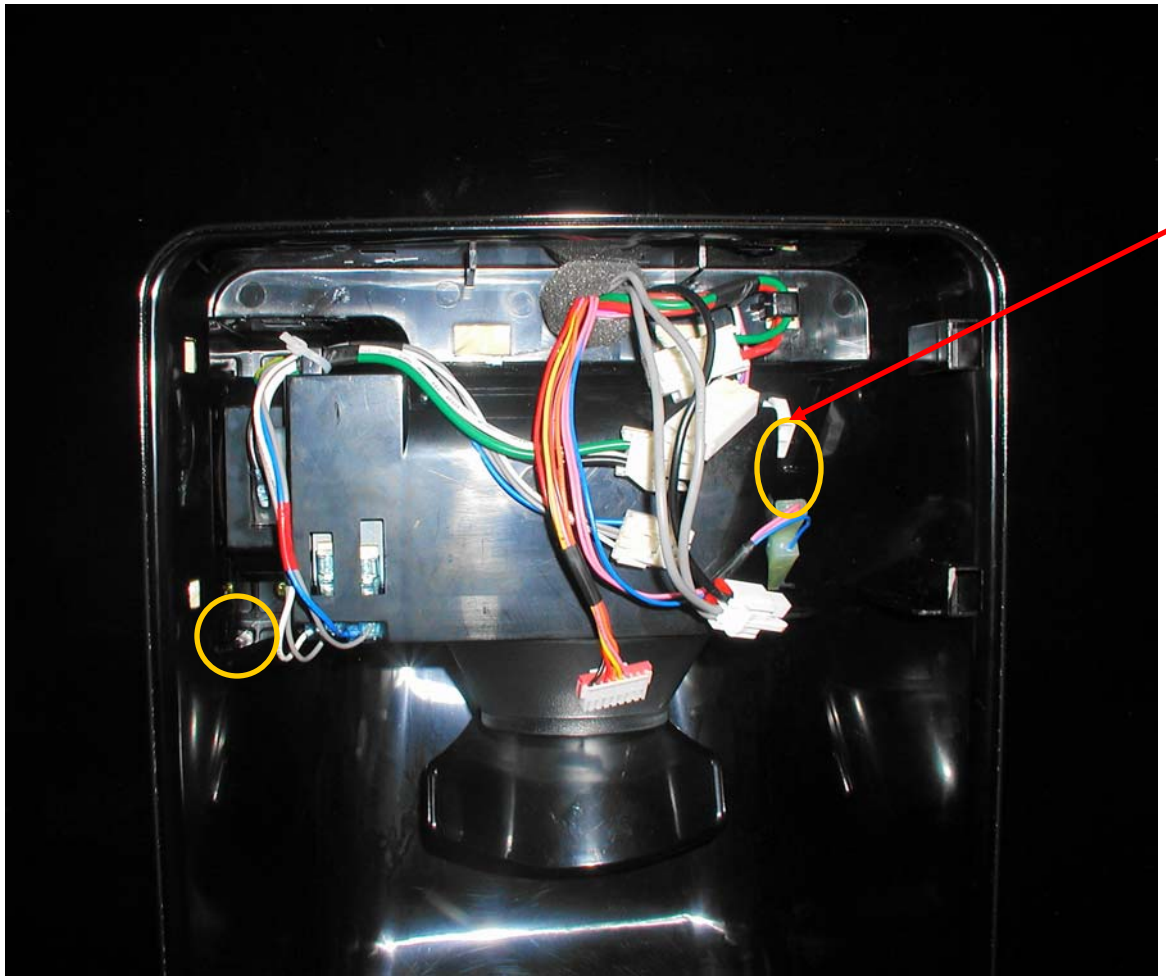
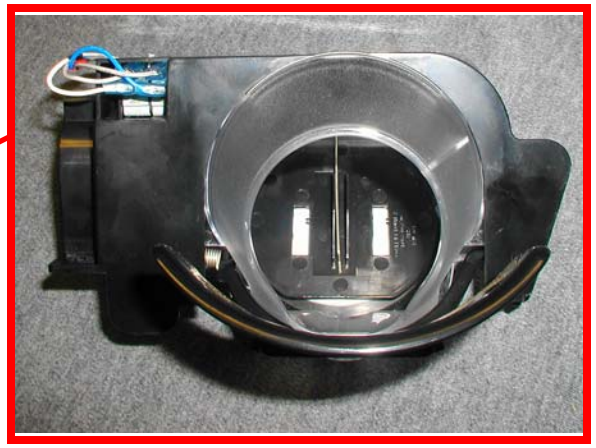
Dispenser Assembly





Dispenser Heater Logic

- Remove two Phillips screws
- Pull assembly out of frame

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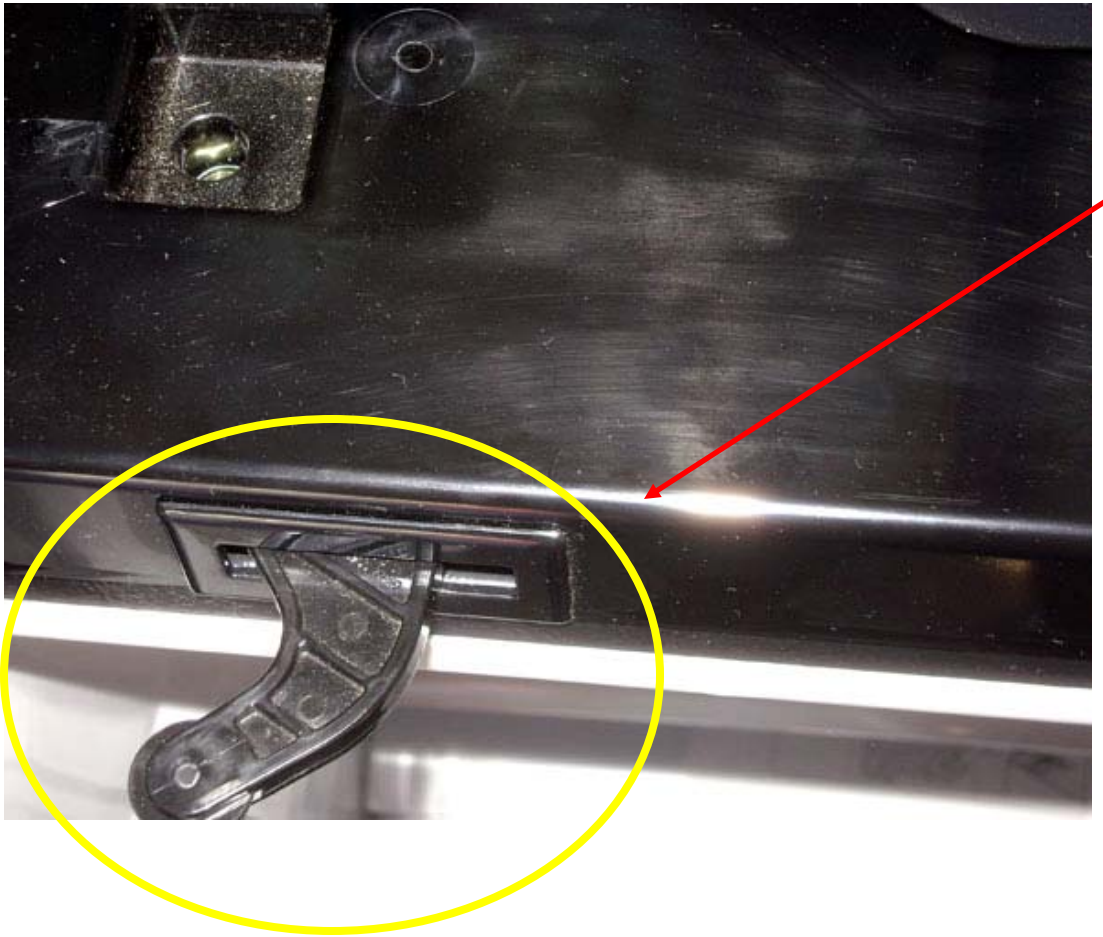
Doors Removal



Remove two closure mechanism covers
(one over each door)

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Doors Removal

Remove three Phillips screws from hinge cover

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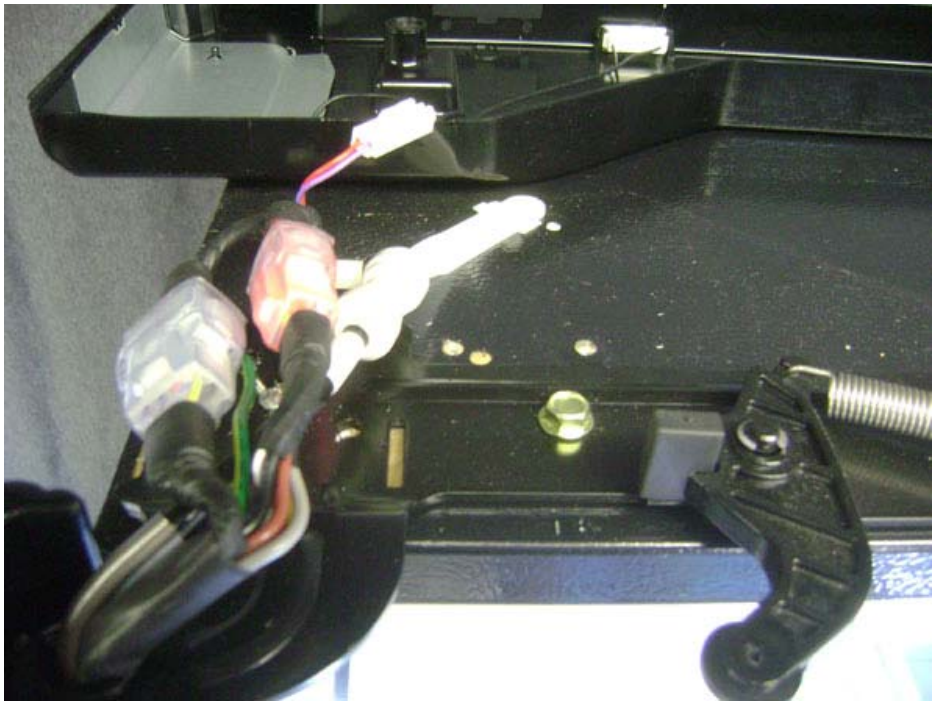
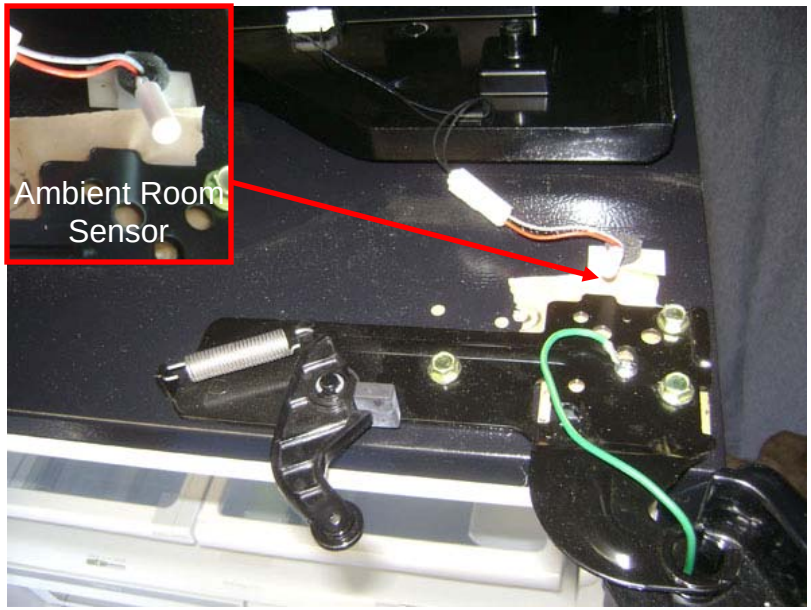
Fresh Food Doors Removal





- Disconnect plugs, door switches, water line and ground wires.
- Remove three 10mm screws from each hinge assembly.
- Lift doors off center hinge.
- Remove two 10mm screws and two Phillips screws from each center hinge assembly & remove.

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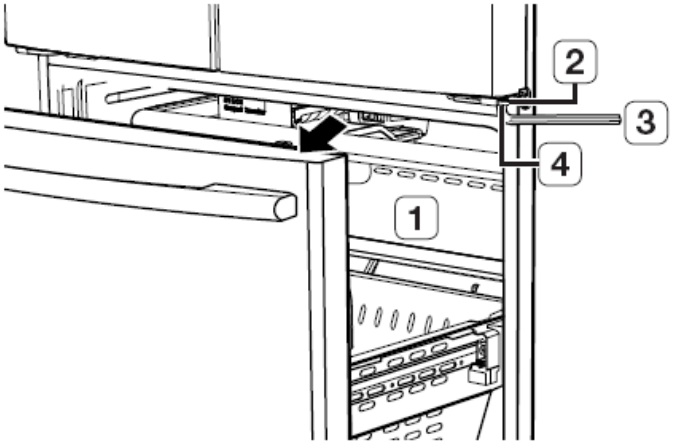
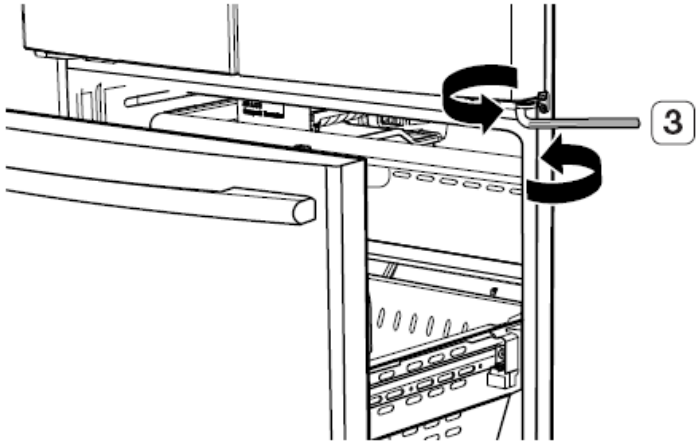
Fresh Food Doors Adjustment

1. If you open the drawer (1), you can see the lower hinge (2).
2. Insert the supplied hex wrench (3) into the shaft (4) of the lower hinge.
3. Please adjust the height turning the hex wrench (3) clockwise(↻) or counter-clockwise(↺).





when you turn the hex wrench counter-clockwise(↺), the door will move up.

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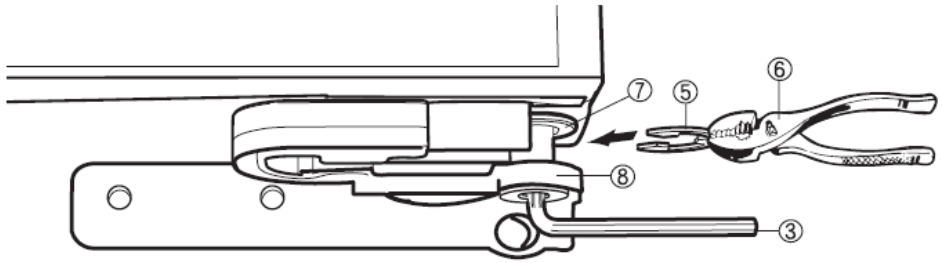
Fresh Food Doors Adjustment

1. After adjusting the doors, please insert the supplied fastener-ring (5) using a pair of pliers (6) in the gap between the hinge-grommet (7) and the lower hinge(8). The number of fastener-rings you'll need to insert depends on the gap.



Four fastener-rings are enclosed with the refrigerator.
The thickness of each fastener-ring is 0.04 inch.

Critical to have cabinet level before adjusting doors

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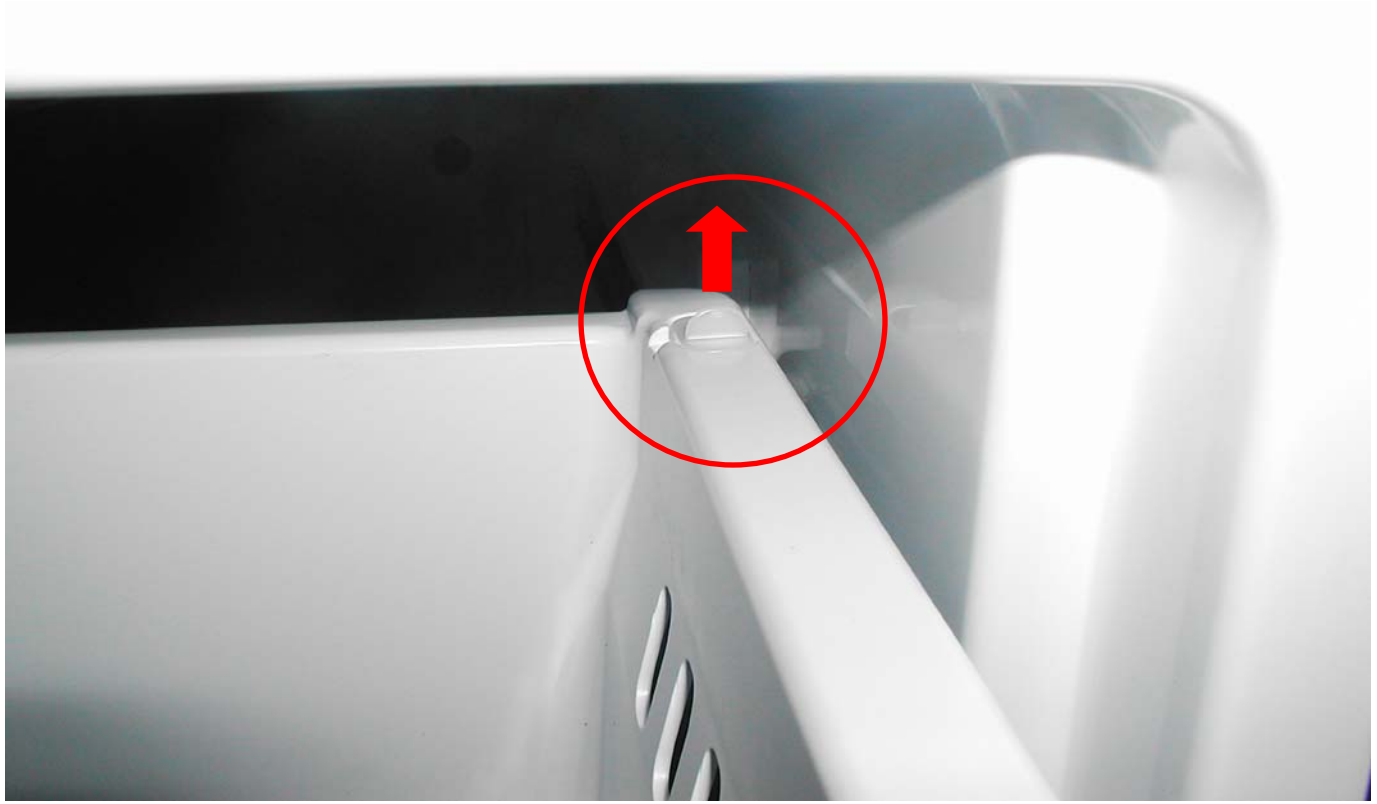
Freezer Top Bin Removal



- Pry locking tabs up & back to remove
- Lift bin from rail & remove

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Freezer Drawer Removal

- Remove drawer shelf by pulling straight up
- Remove lower bin
- Remove four 10mm screws securing drawer
- Lift drawer from rails

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Freezer Drawer Removal (Alternate)

- Pull out bottom drawer.
- Reach in freezer and depress upper tab on each side to release slides.
- Pull drawer & rail assembly out of freezer.

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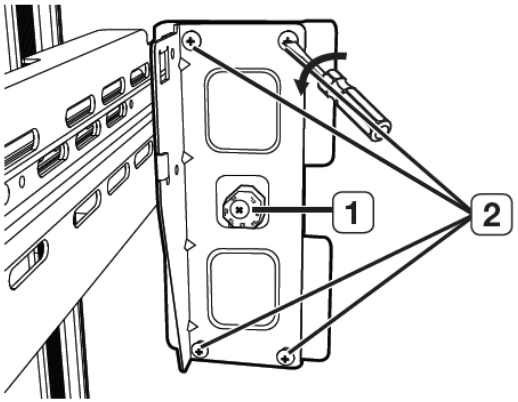
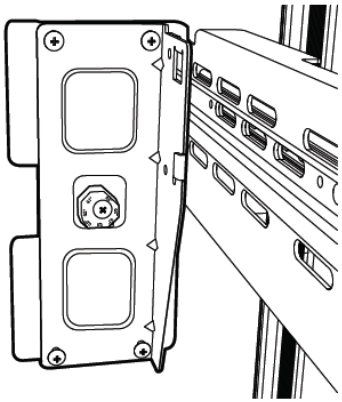
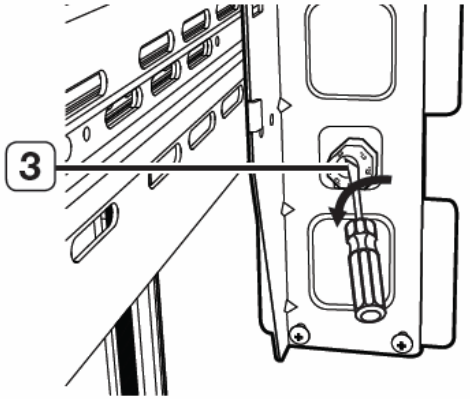
Freezer Drawer Adjustment

1. Locate the height-adjuster (1) in the freezer drawer.
   Unscrew the four Phillips screws (2) slightly to loosen the door.





2. Loosen the controller screw(3) with a Phillips screwdriver.



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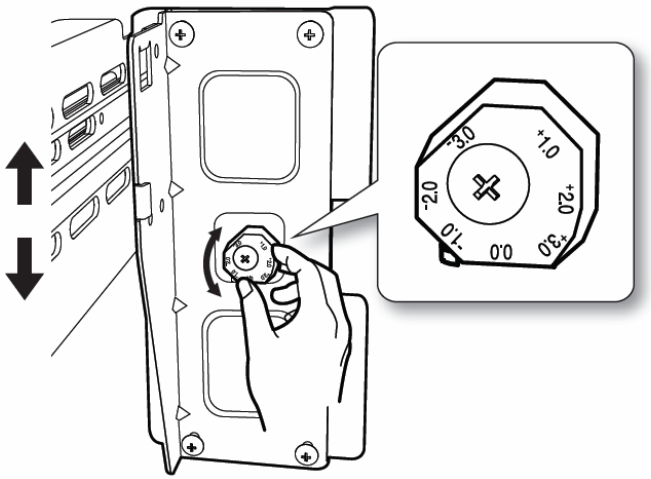
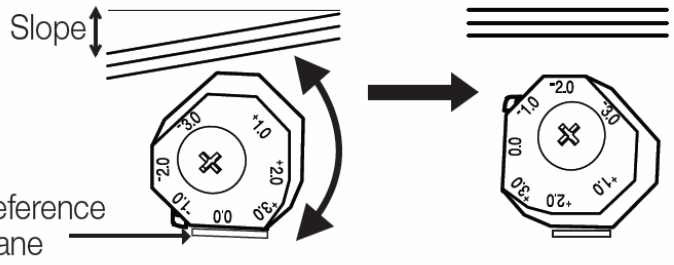
Freezer Drawer Adjustment

3. Find the best level to align the door slope.



Example) The slope is about 2mm (0.08inch) as shown below.



- Rotate the Height Adjuster to +2.0 to reduce the door slope.

→ After adjustment, tighten the screws (2)&(3) in reverse order.

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Level Cabinet

- Remove two Phillips screws from kick plate to remove.
- Adjust levelers on either side to level cabinet.
- Level cabinet critical for proper door alignment.

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Ice Bucket

- To remove ice bucket, pull level towards front
- Slide bucket out of machine

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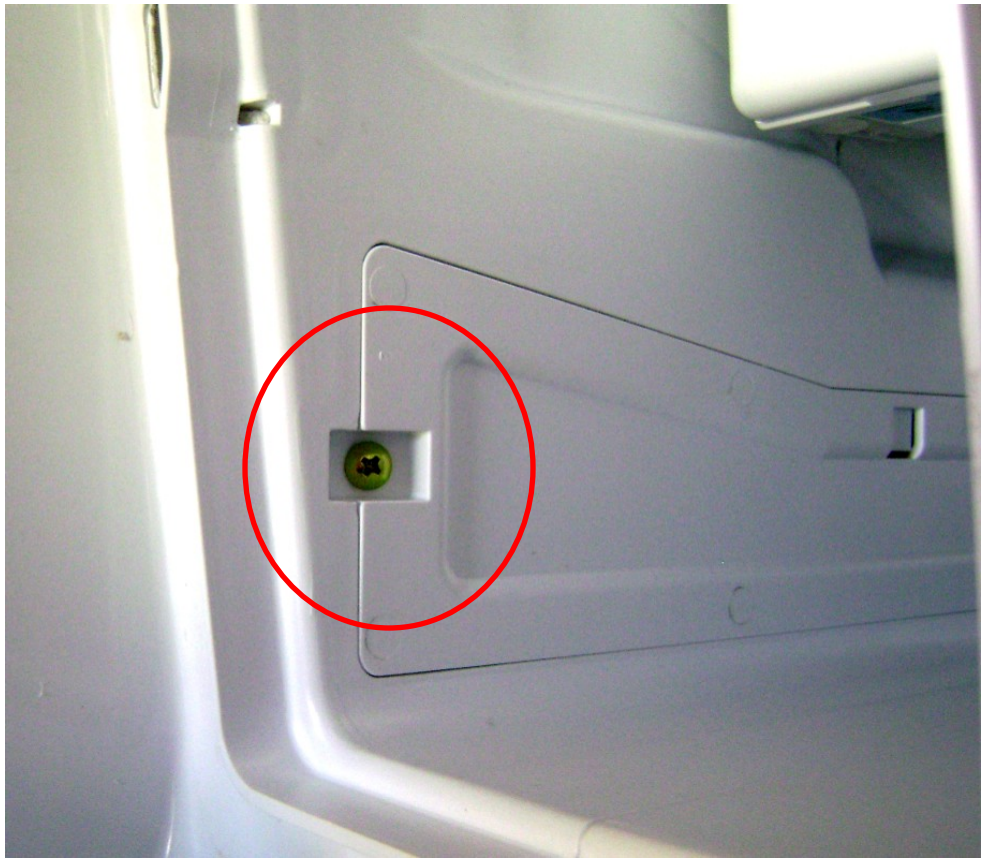
Ice Maker



- To expose Icemaker & auger motor connections:
- Remove one Phillips screw
- Slide plastic panel out of machine

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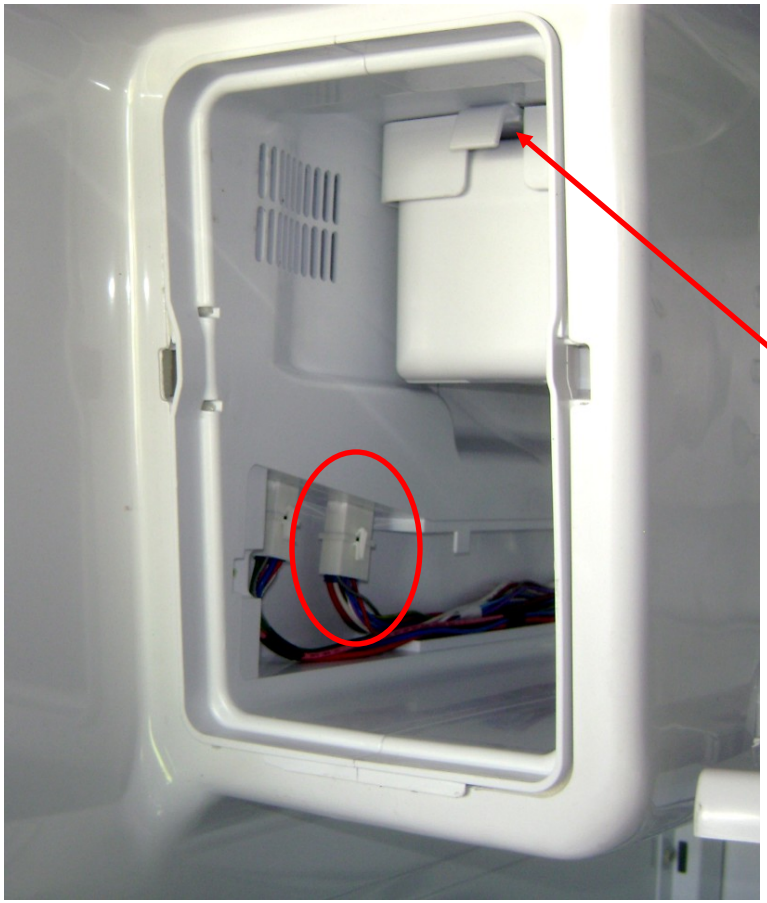
Ice Maker



Ice Room Fan Logic

- To remove Icemaker, disconnect electrical plug
- Press on tab and slide towards front

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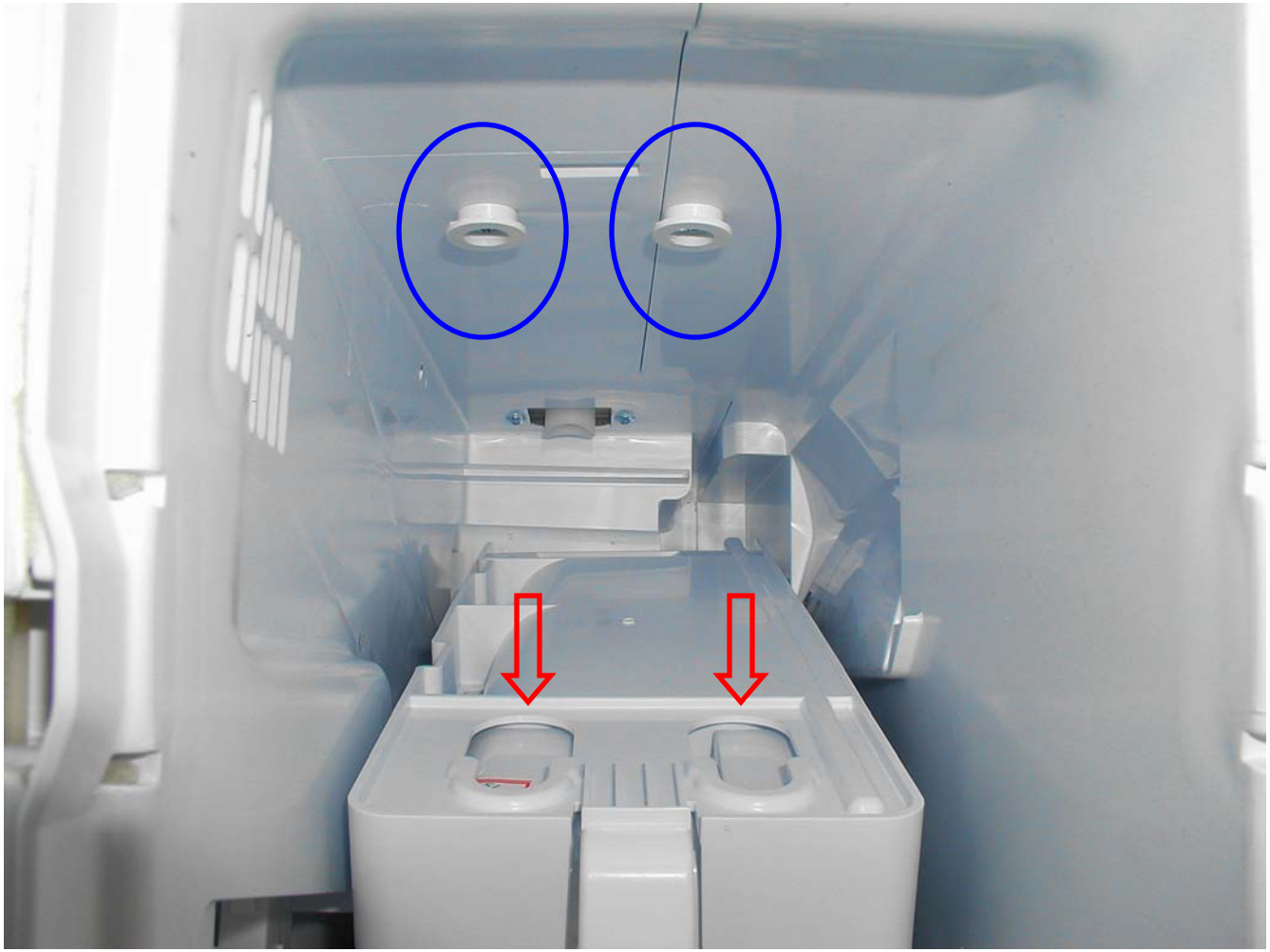
Ice Maker



Slide Icemaker forward to disengage tabs from key slots

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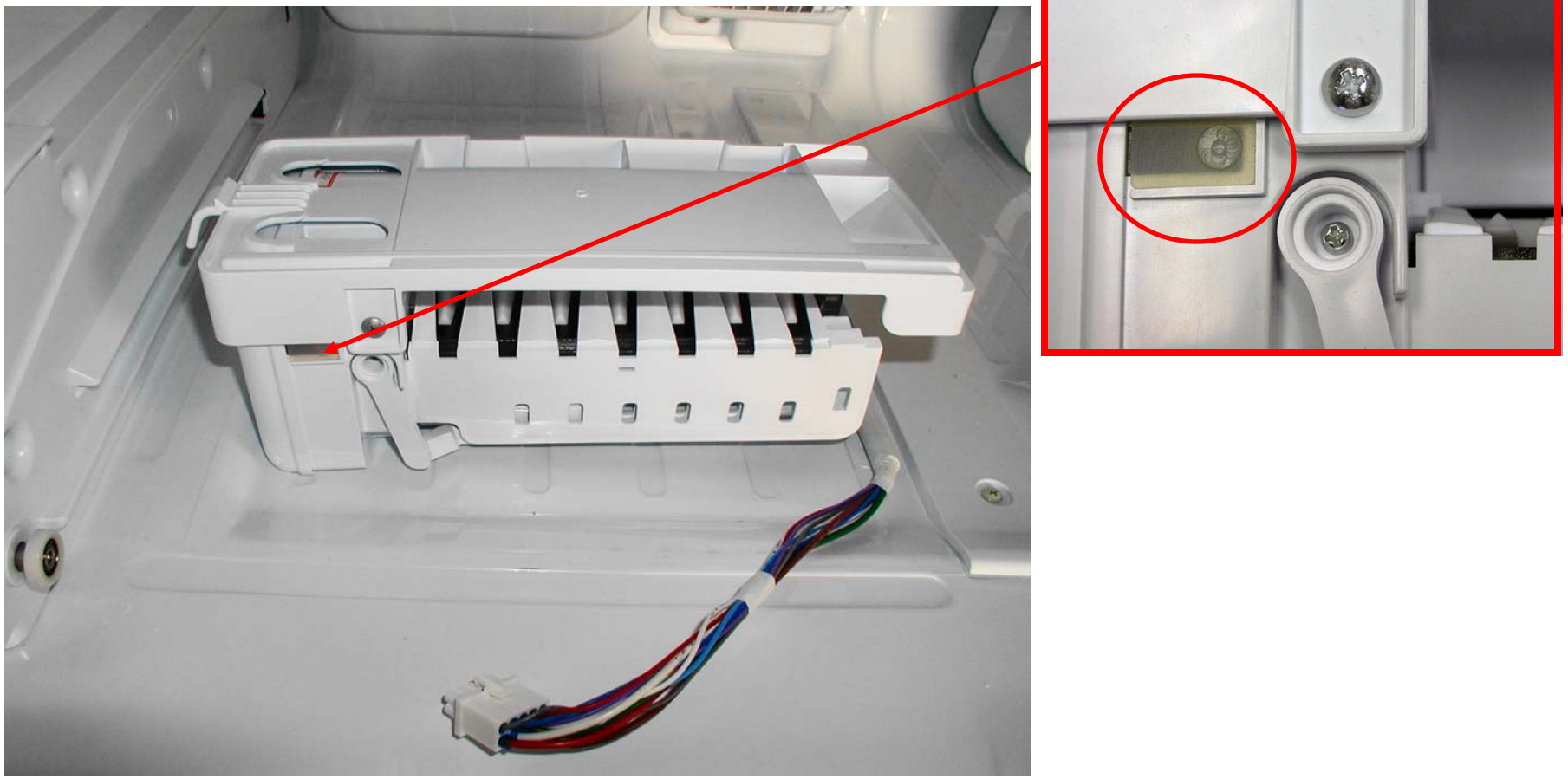
Ice Maker



- Press & hold button approximately 3 seconds to activate cycle
- Icemaker Part # --- WR30X10097

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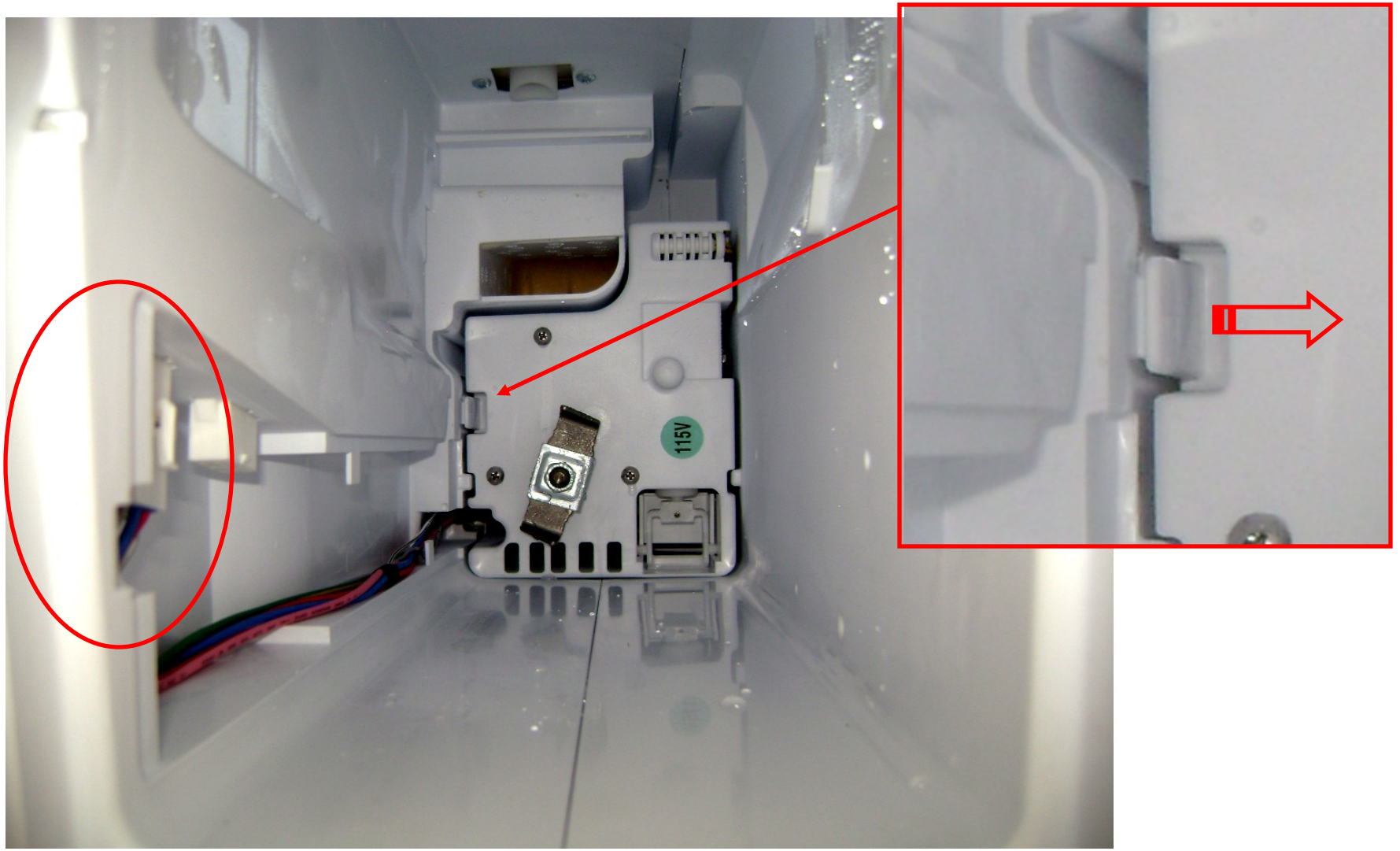
Auger Mechanism



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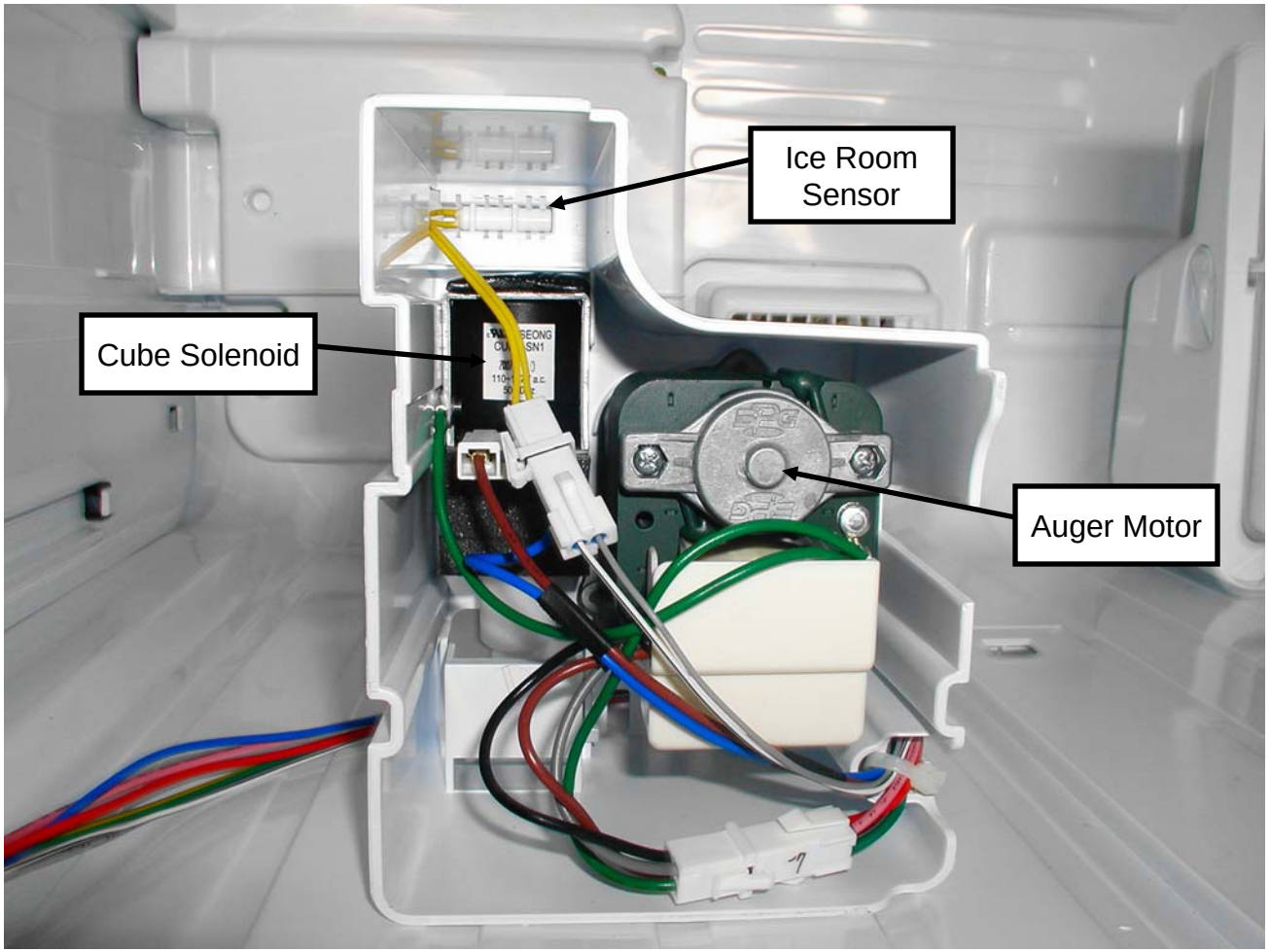
Auger Mechanism



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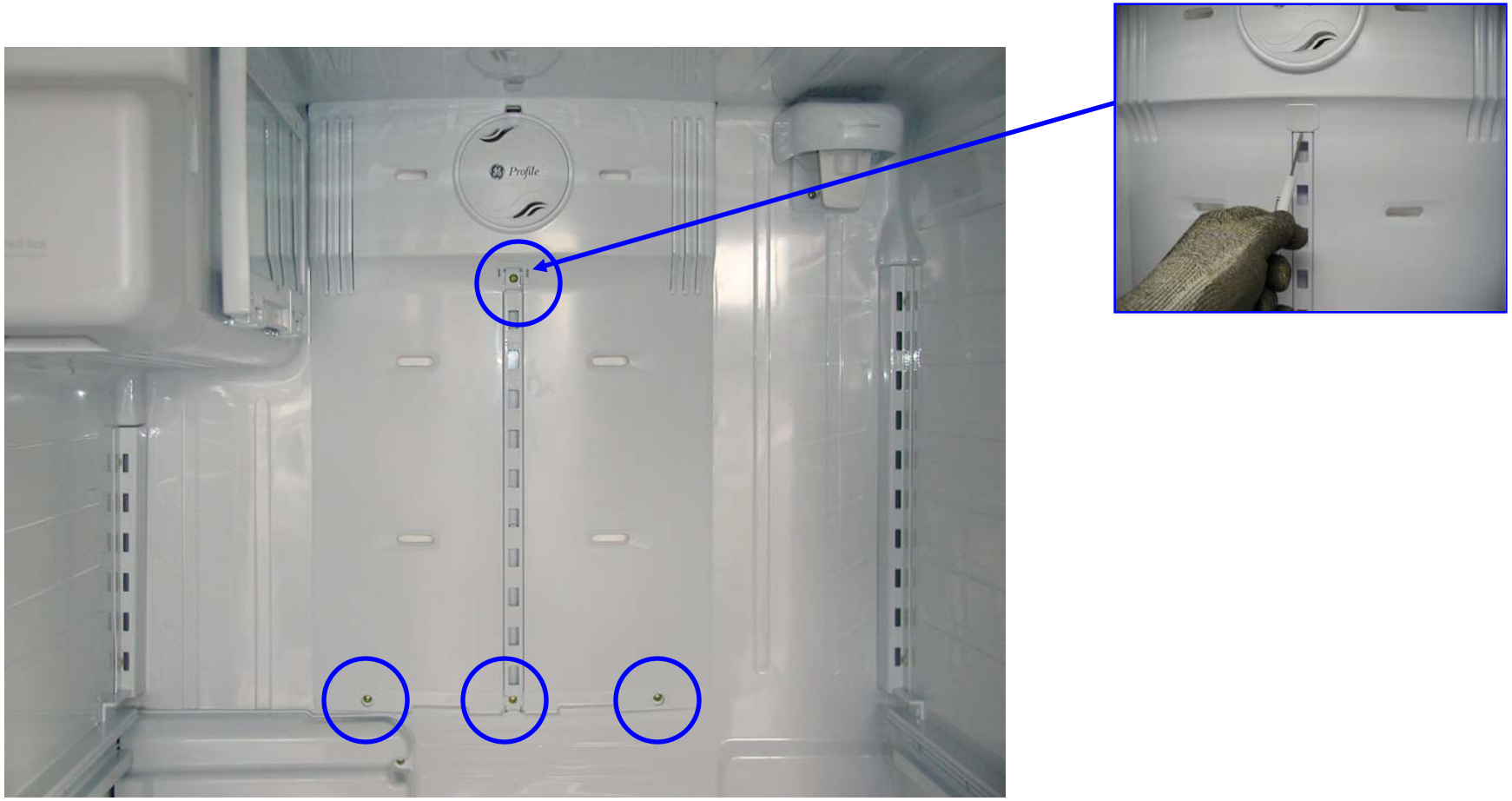
Fresh Food Evaporator Cover



- Remove Insert from top of center rail
- Remove four Phillips screws securing cover

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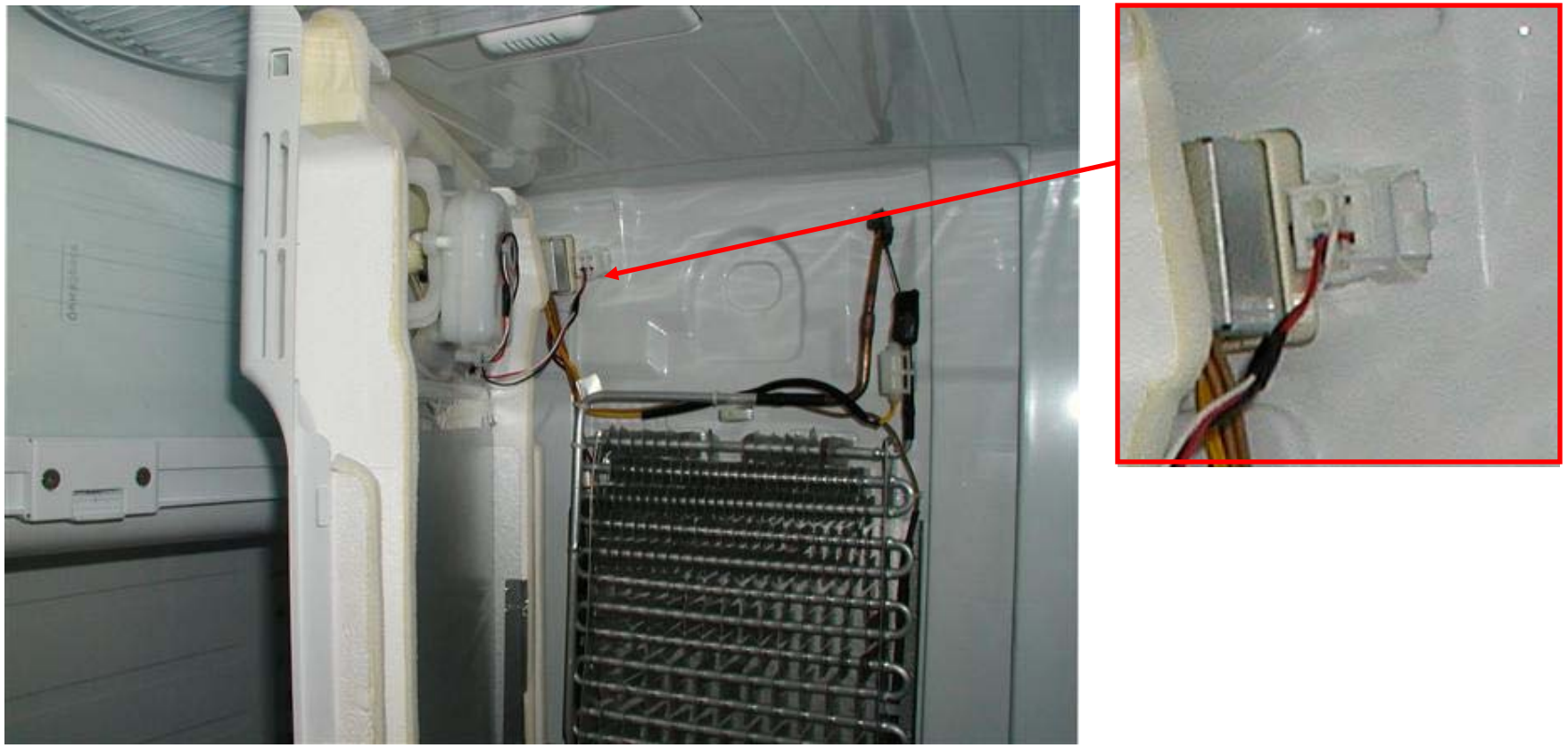
Fresh Food Evaporator Cover



- Un-snap cover at bottom
- Pivot cover approximately 75 degrees
- Un-plug four pin connector at upper left

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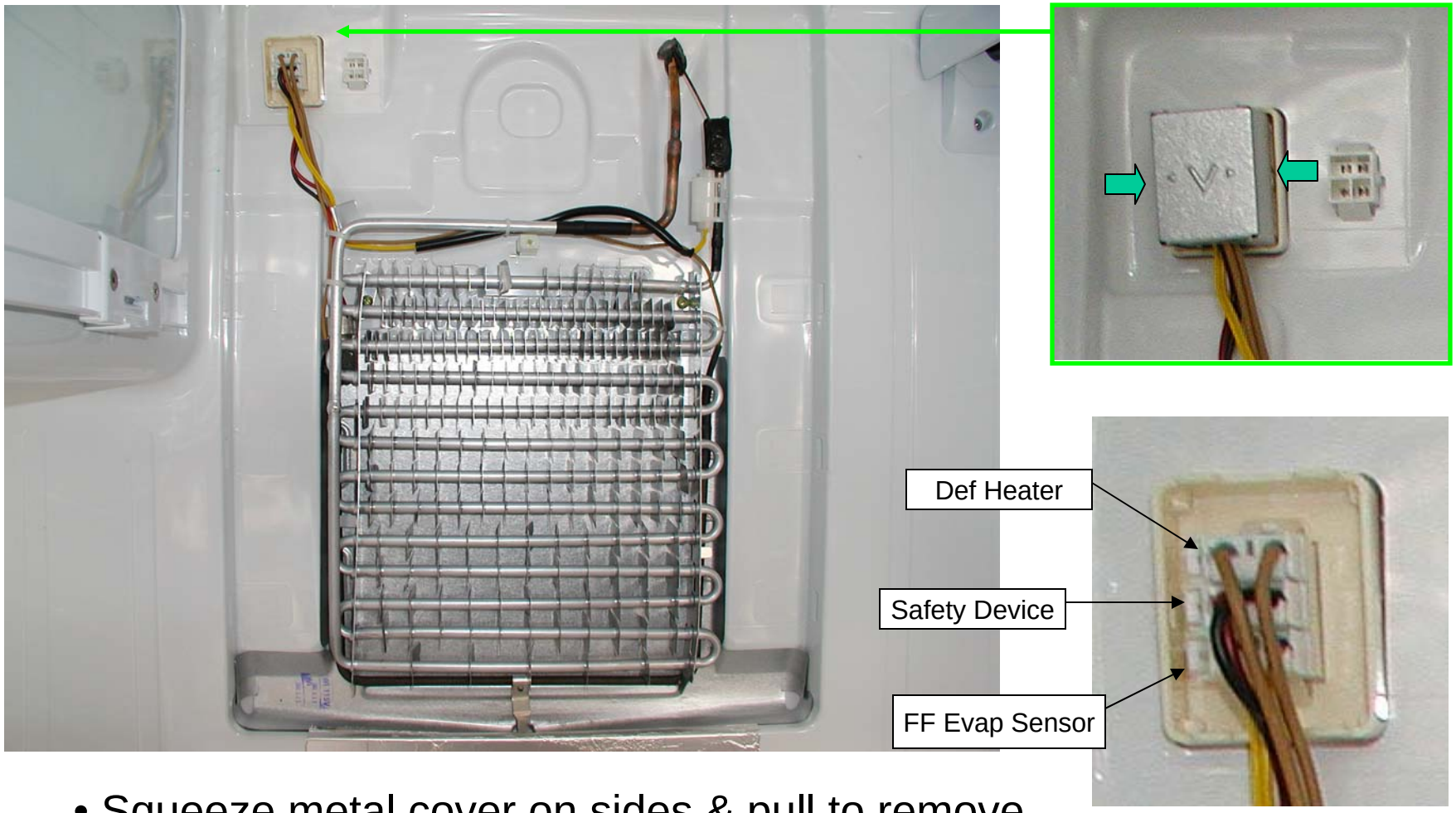
Fresh Food Evaporator Assembly



- Squeeze metal cover on sides & pull to remove
- Remove either of three plugs under cover as needed

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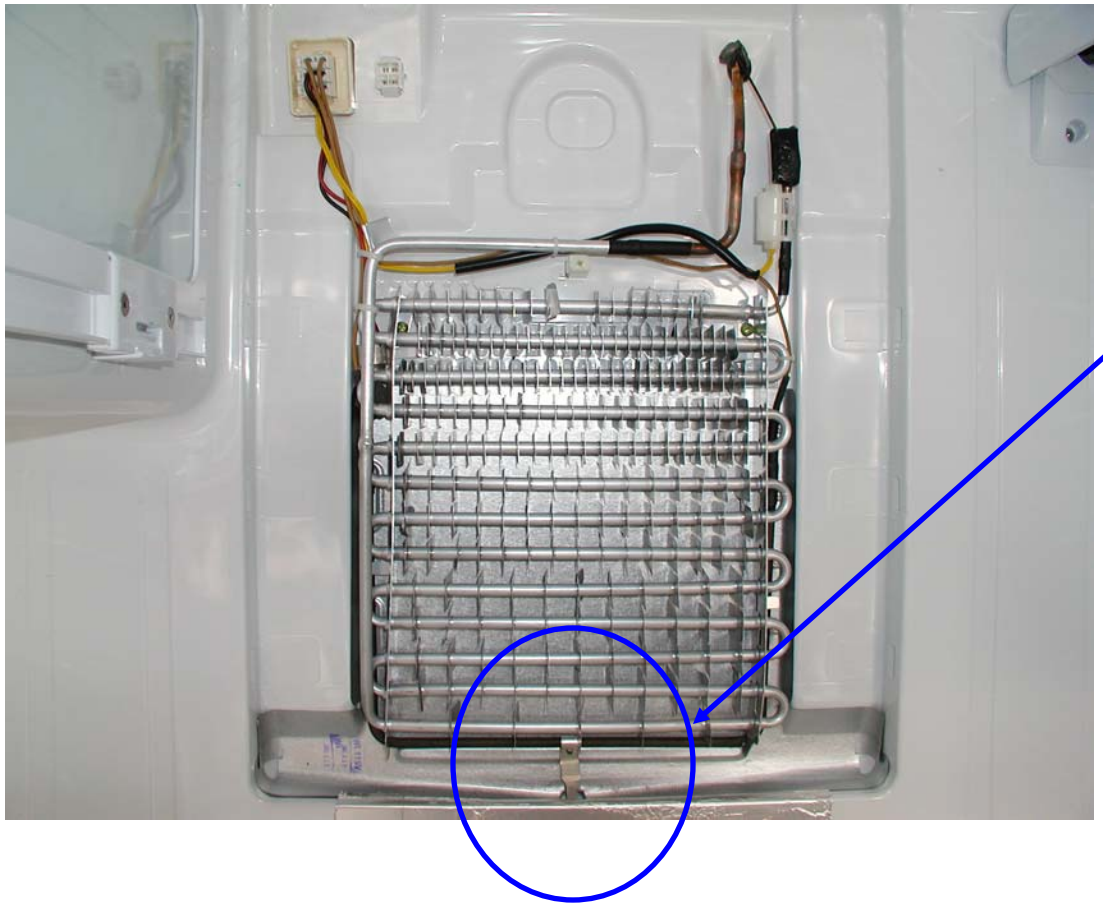
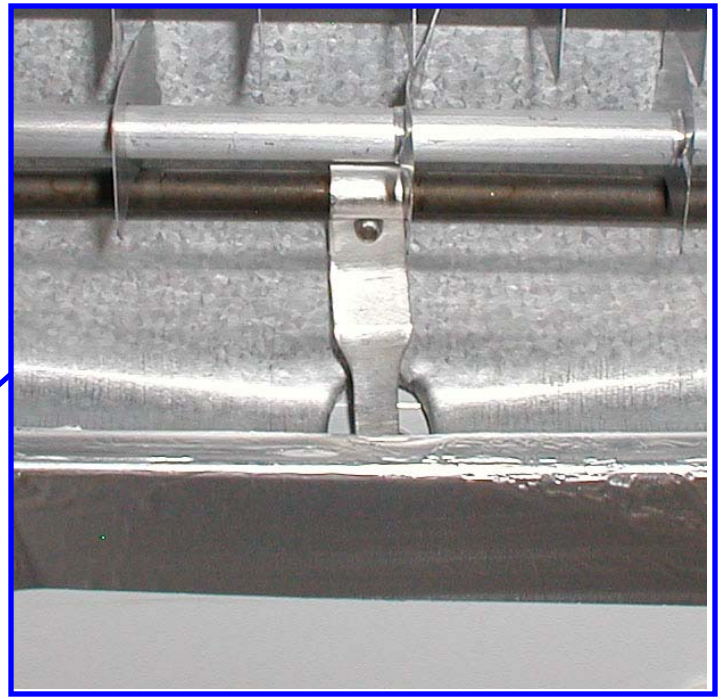
Fresh Food Drain Probe





Drain Probe transfers heat from defrost heater to drain opening

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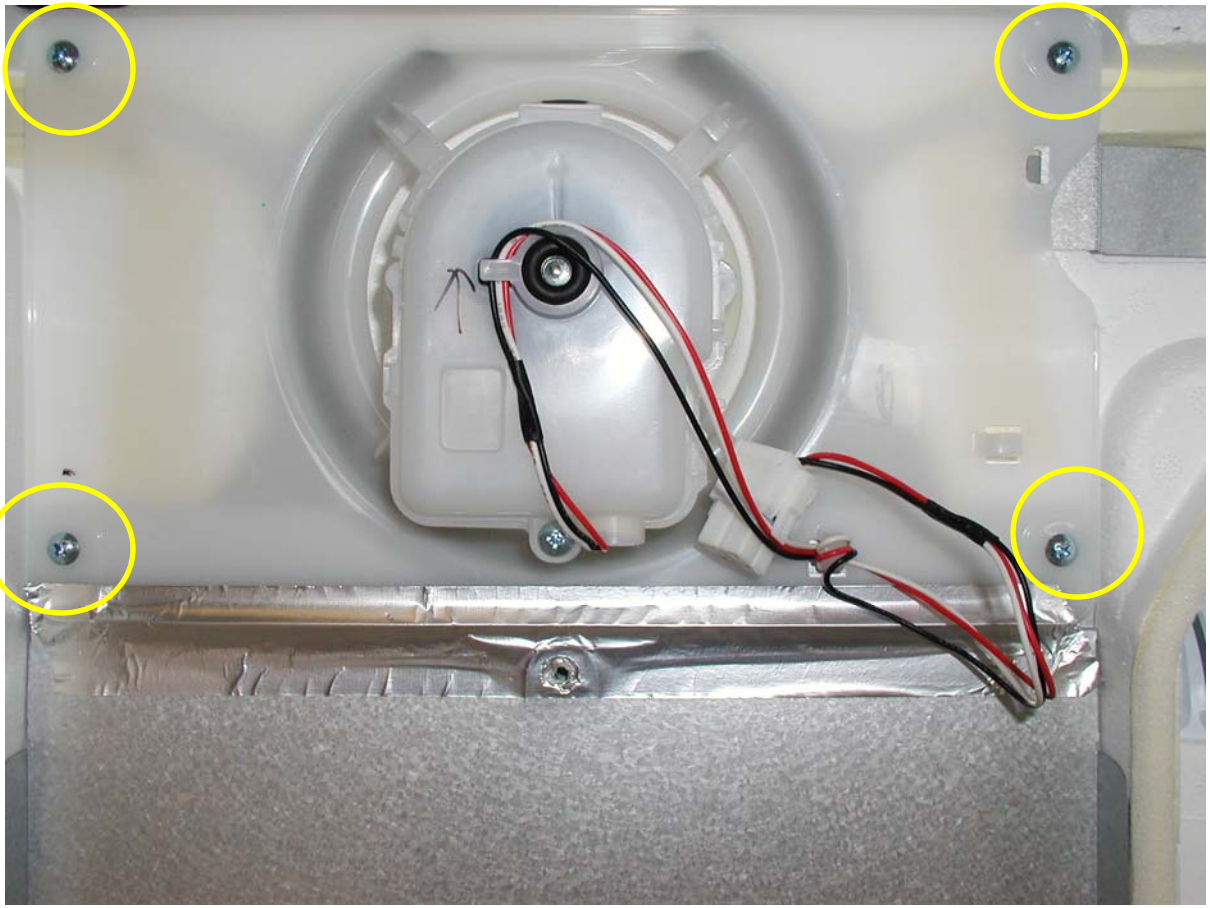
Fresh Food Evaporator Fan



FF Evap Fan Logic

Mounted to the backside of the evaporator cover with four Phillips screws

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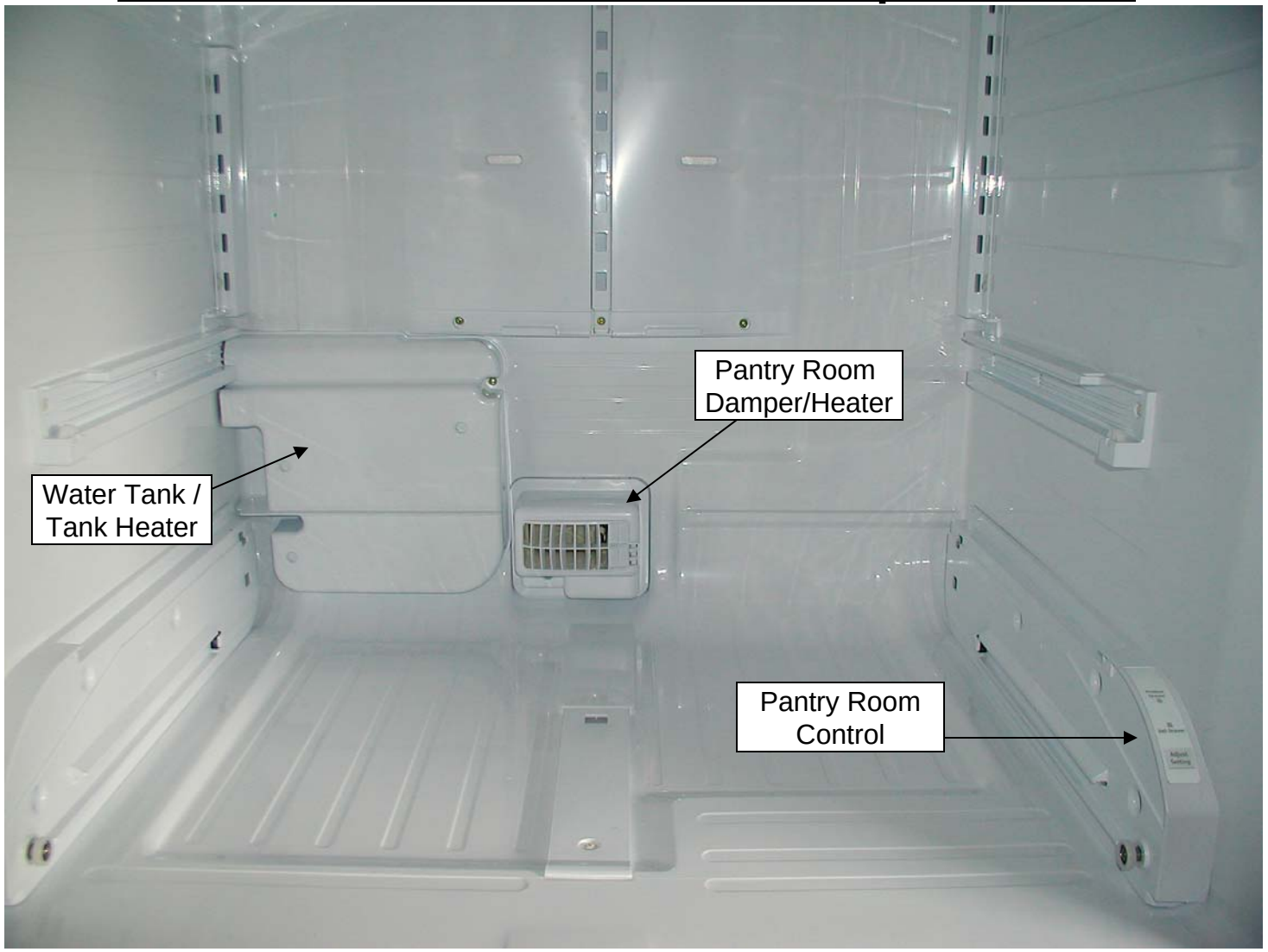
Other Fresh Food Components



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Water Tank Water / Tank Heater

- Remove two Phillips screws securing tank to rear wall
- Pivot tank assembly a few inches & disconnect two wire heater plug

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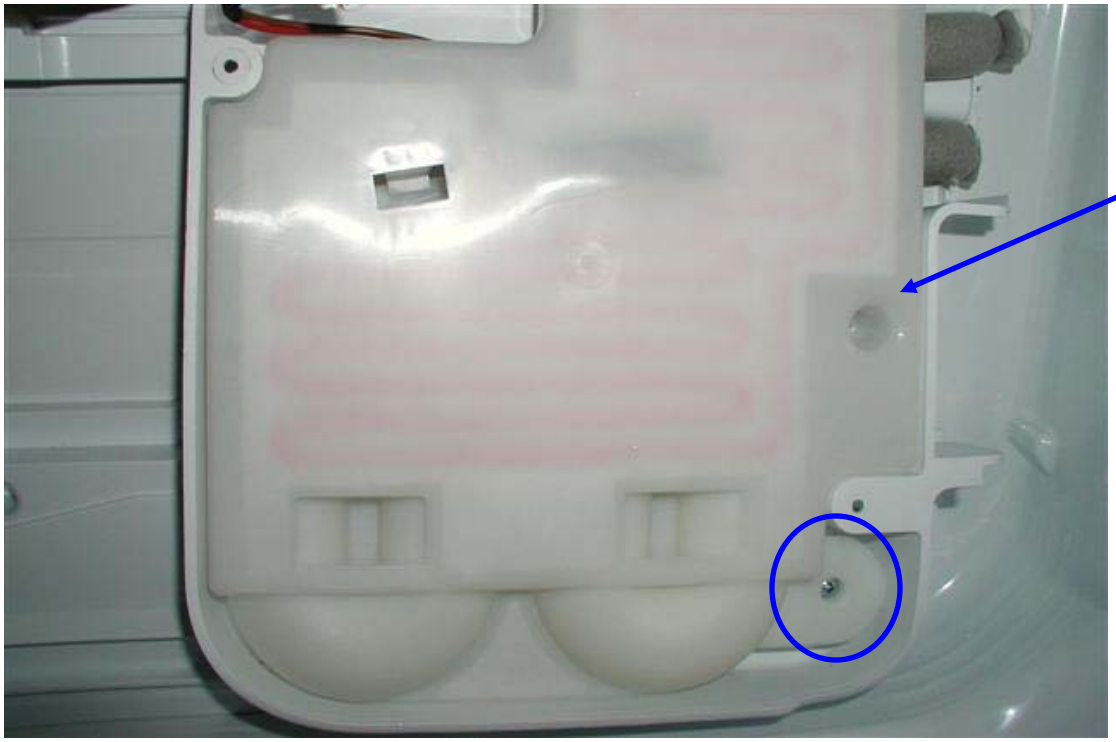
Water Tank Water / Tank Heater



- Remove one Phillips screw securing tank heater to tank cover
- Tank heater is a separate component

Tank Heater Logic

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Water Tank

- Remove two Phillips screws to remove tank from cover
- Tank and tubes are replaceable
- One tube feeds through to water valve & the other to an opening in the top of the refrigerator

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Pantry Room Damper, Heater & Sensor

- To remove damper / Sensor assembly, remove one Phillips screw securing component to rear wall

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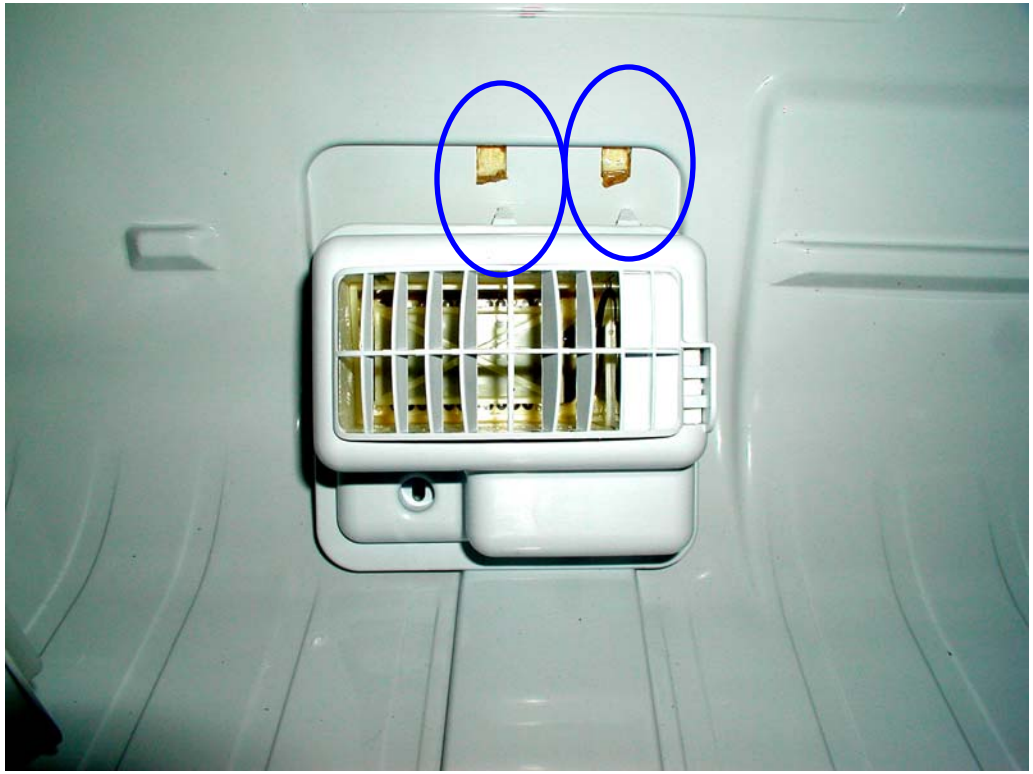
Pantry Room Damper, Heater & Sensor



- After removing screw, pull assembly down to release two tabs at top
- Disconnect two plugs from rear wall

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Pantry Room Control

- To access control board, remove three Phillips screws from slide housing
- Pull assembly forward to release rear tabs from side wall

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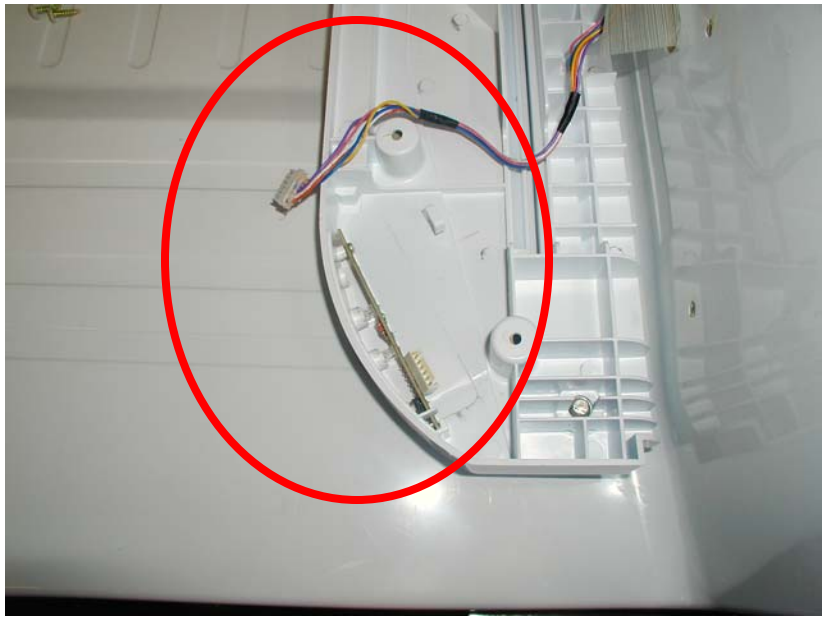
Pantry Room Control



- Disconnect plug from control board
- One Phillips screw holds board to frame assembly

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FF Light & Sensor Assembly

- Pry clear plastic cover down from rear
- Remove two Phillips screws to drop light sensor assembly
- Remove two plugs to disconnect

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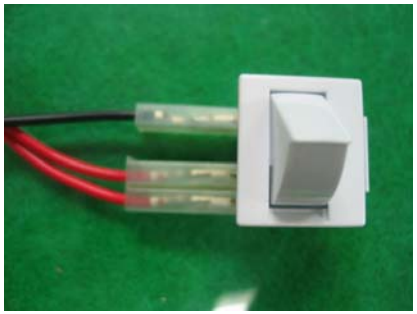
FF Door Switch

Early Production	Later Production
	

- Black wire on early production is not connected to any circuit
- It was added to protect terminal
- Plug will be changed in later production and black wire will be removed

Schematic

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Freezer Evaporator Cover

- To remove freezer evaporator cover, remove two Phillips screws
- Pull up at bottom of cover to release

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Freezer Evaporator Cover

- Carefully allow cover to drop a few inches to expose connections
- Disconnect three plugs that connect cover components to rear wall

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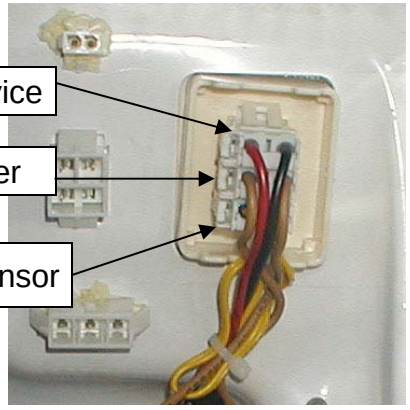
Freezer Evaporator Assembly



- Squeeze metal cover on sides & pull to remove
- Remove either of three plugs under cover as needed

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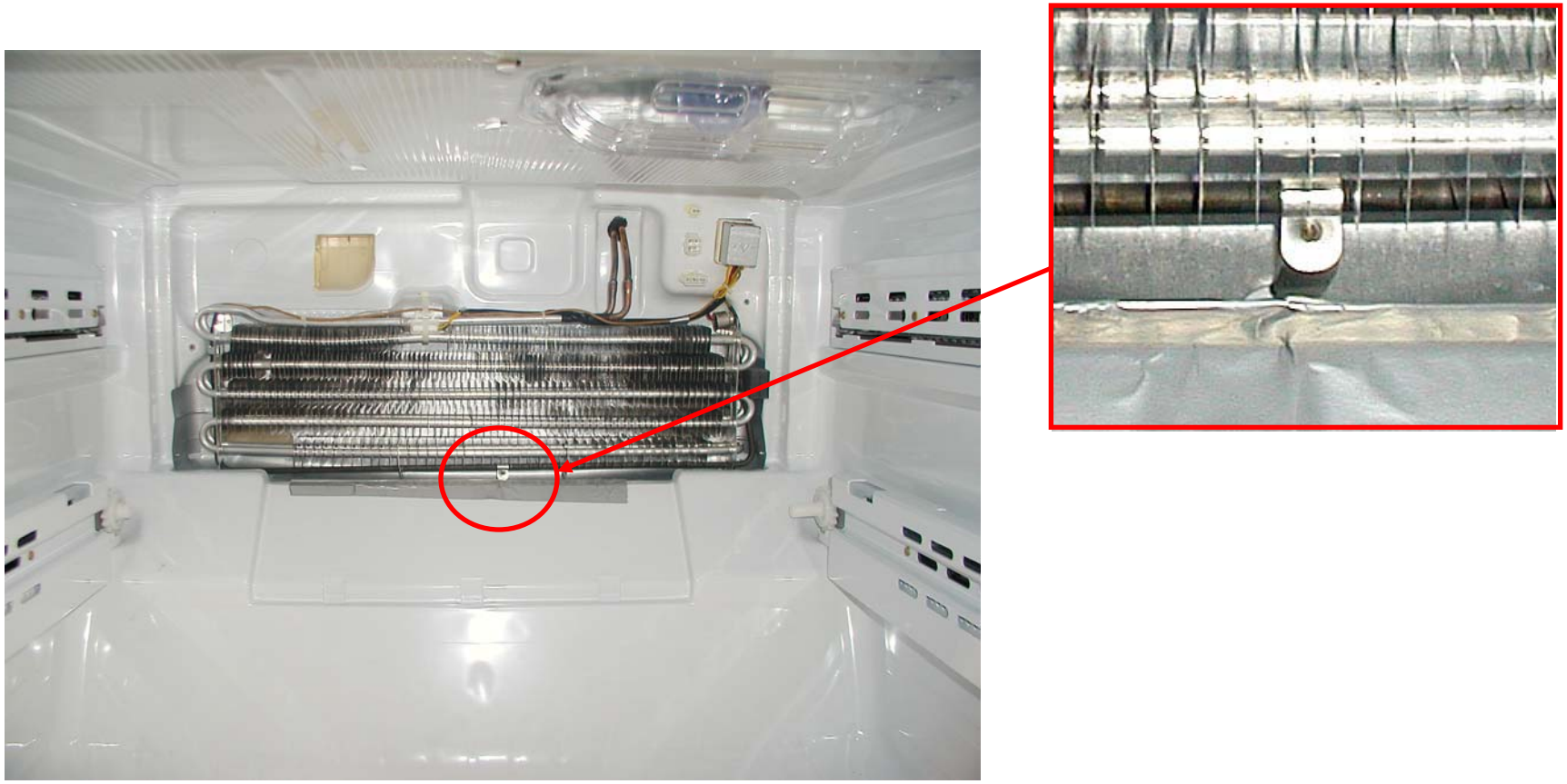
Freezer Drain Probe



Drain Probe transfers heat from defrost heater to drain opening

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Freezer Evaporator Fan

FZ Evap Fan Logic

Mounted to the backside of the evaporator cover with four Phillips screws

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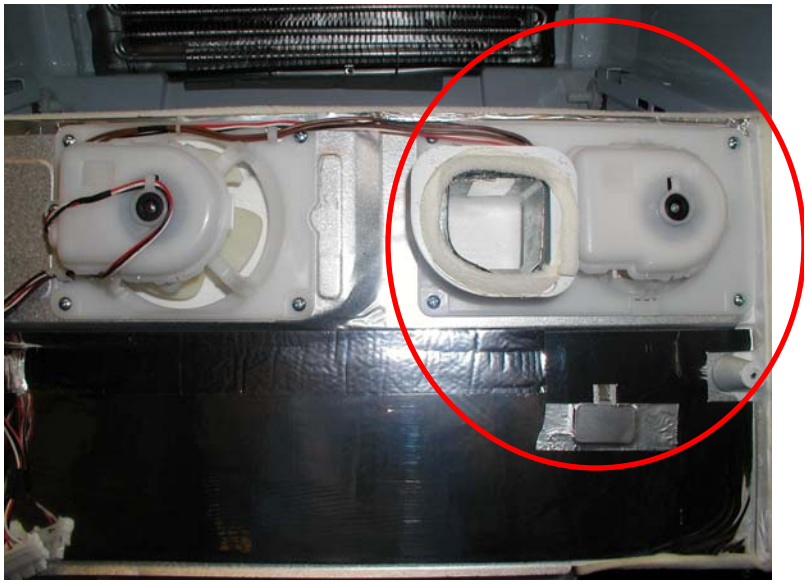
Ice Room Fan Motor / Ice Duct Heater



Mounted to the backside of the evaporator cover with four Phillips screws

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Freezer Light & Sensor

- Pry glass down from the rear to access bulb
- Pry sensor from top of Frz comparment to access.
- Disconnect two wire plug to remove

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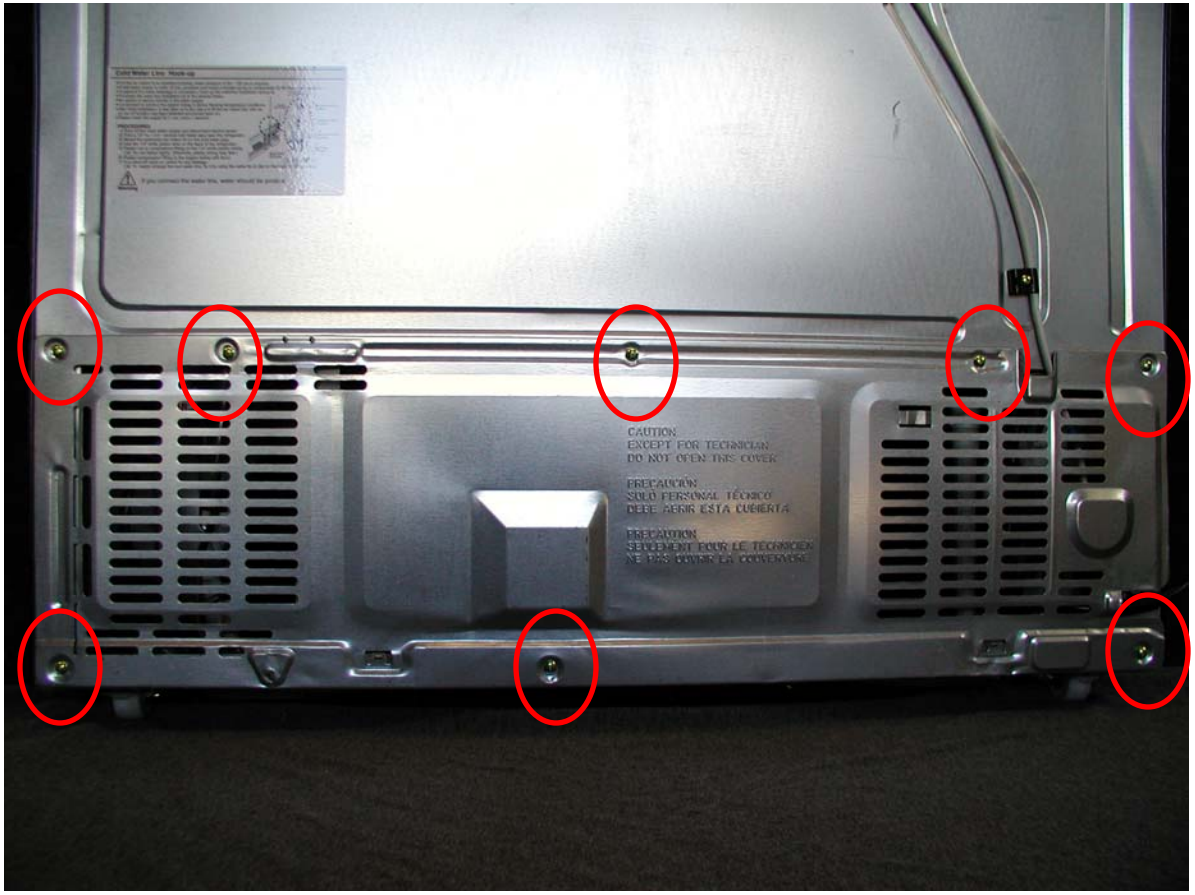
Machine Compartment



Remove eight Phillips screws to release machine compartment cover

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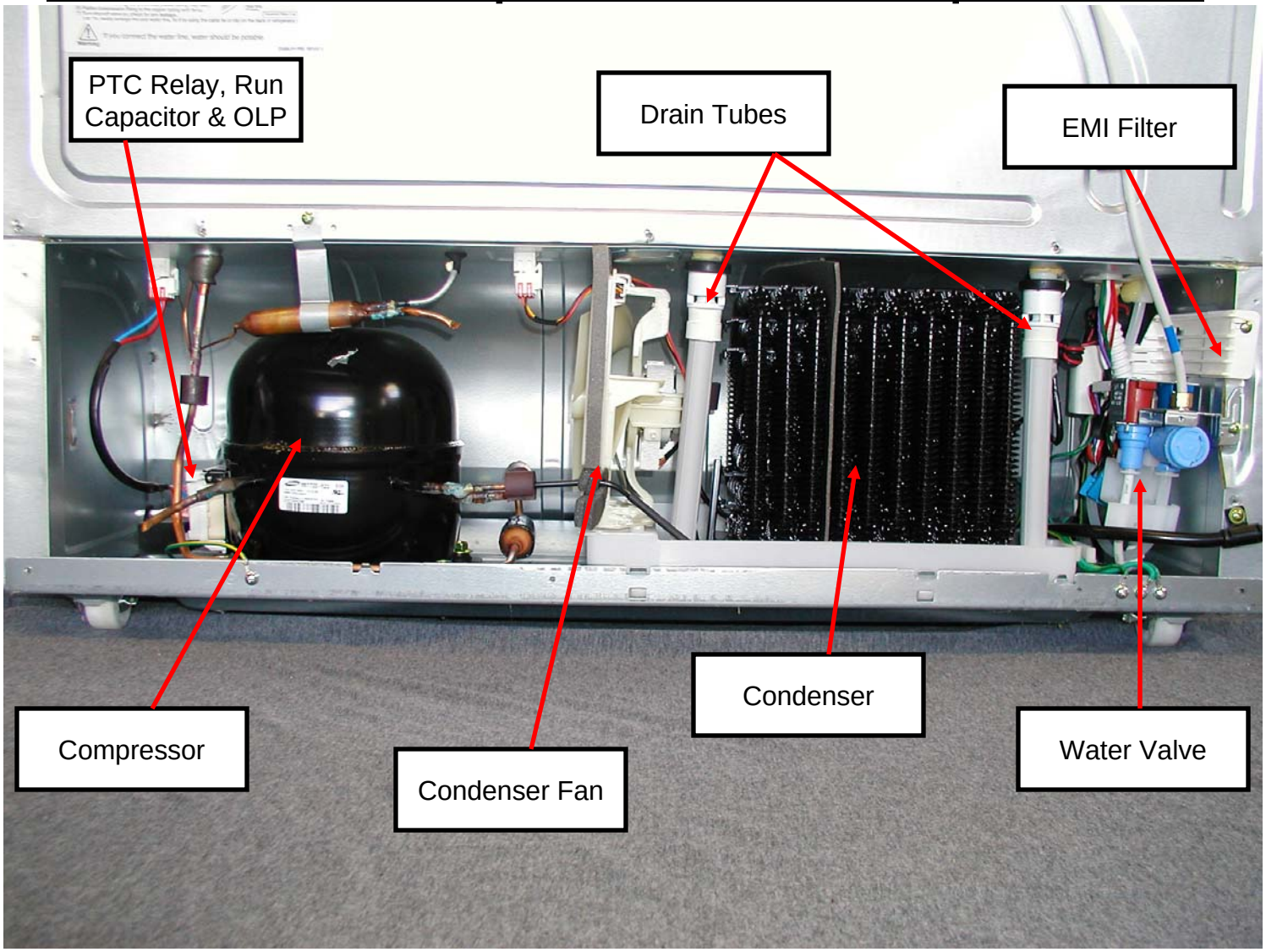
Machine Compartment Components



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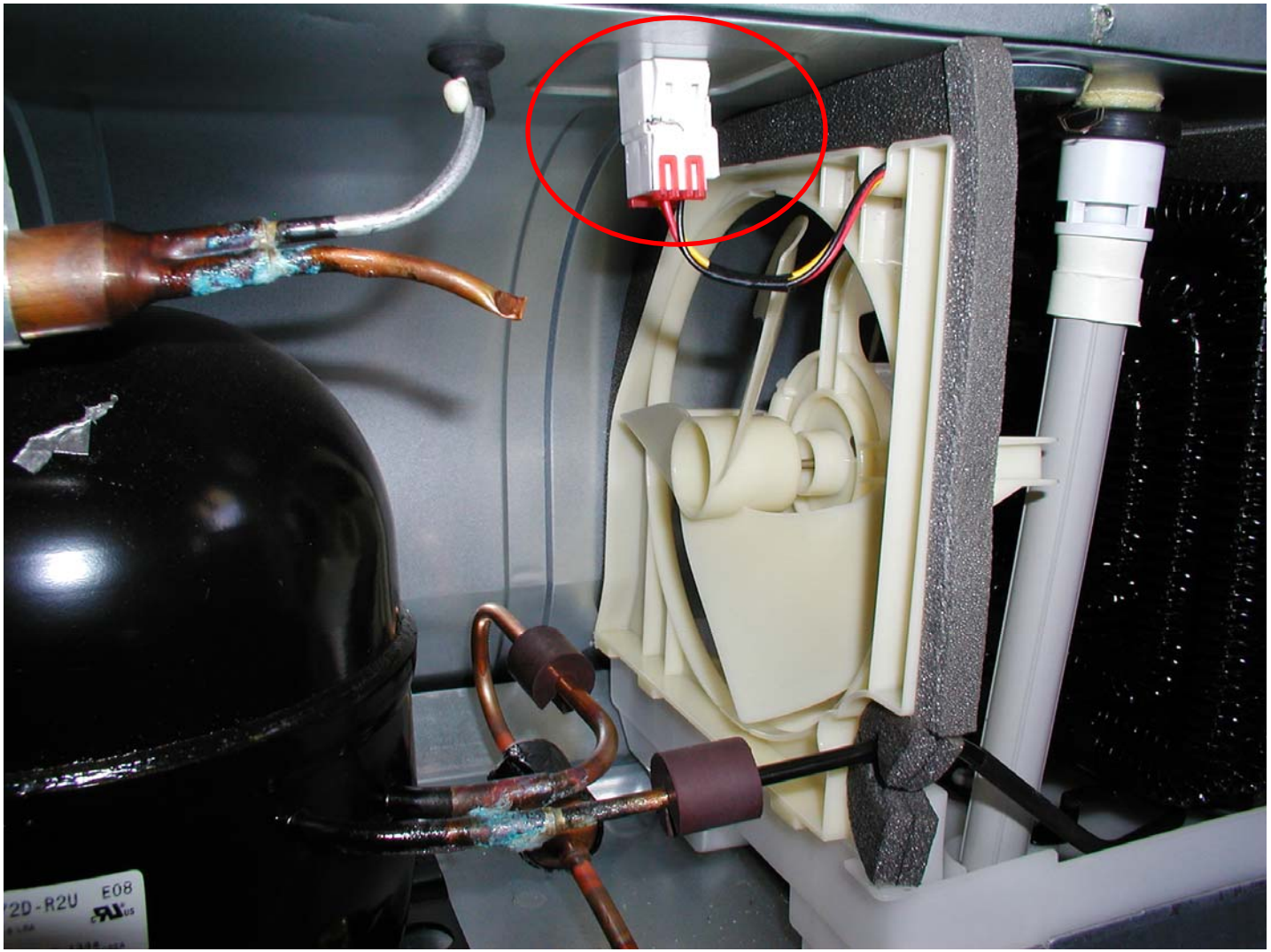
Condenser Fan Motor



Cond Fan Logic

To remove condenser fan, begin by removing overhead electrical plug

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Condenser Fan Motor Removal

- Lift up on tab & slide assembly towards rear to release interlocks
- Lift up assembly and slide bottom to left to clear tubing

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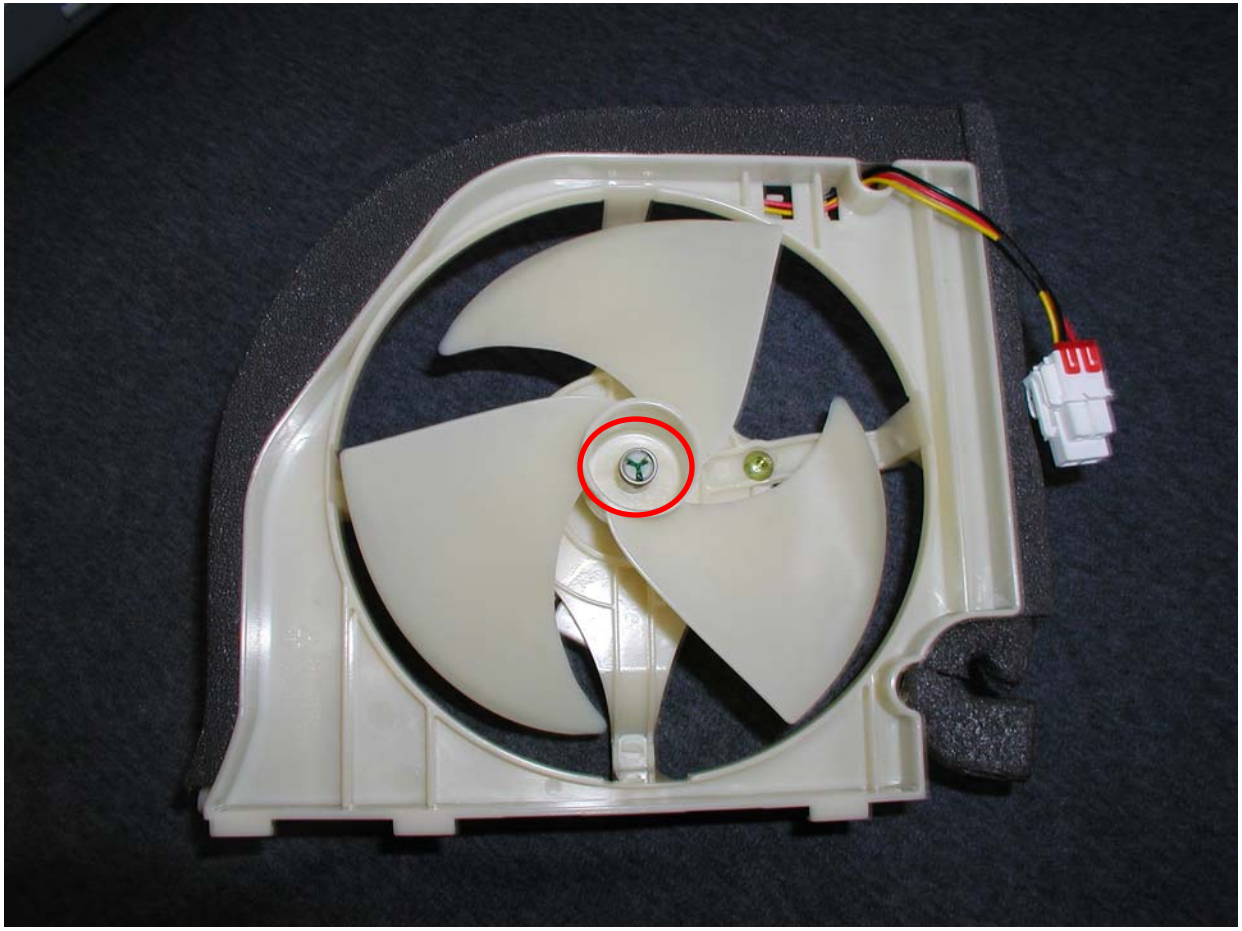
Condenser Fan Motor Assembly



- Assembly comes as one part number minus blade
- Pry off spring clip with a flat blade screwdriver
- Pull blade straight off motor shaft

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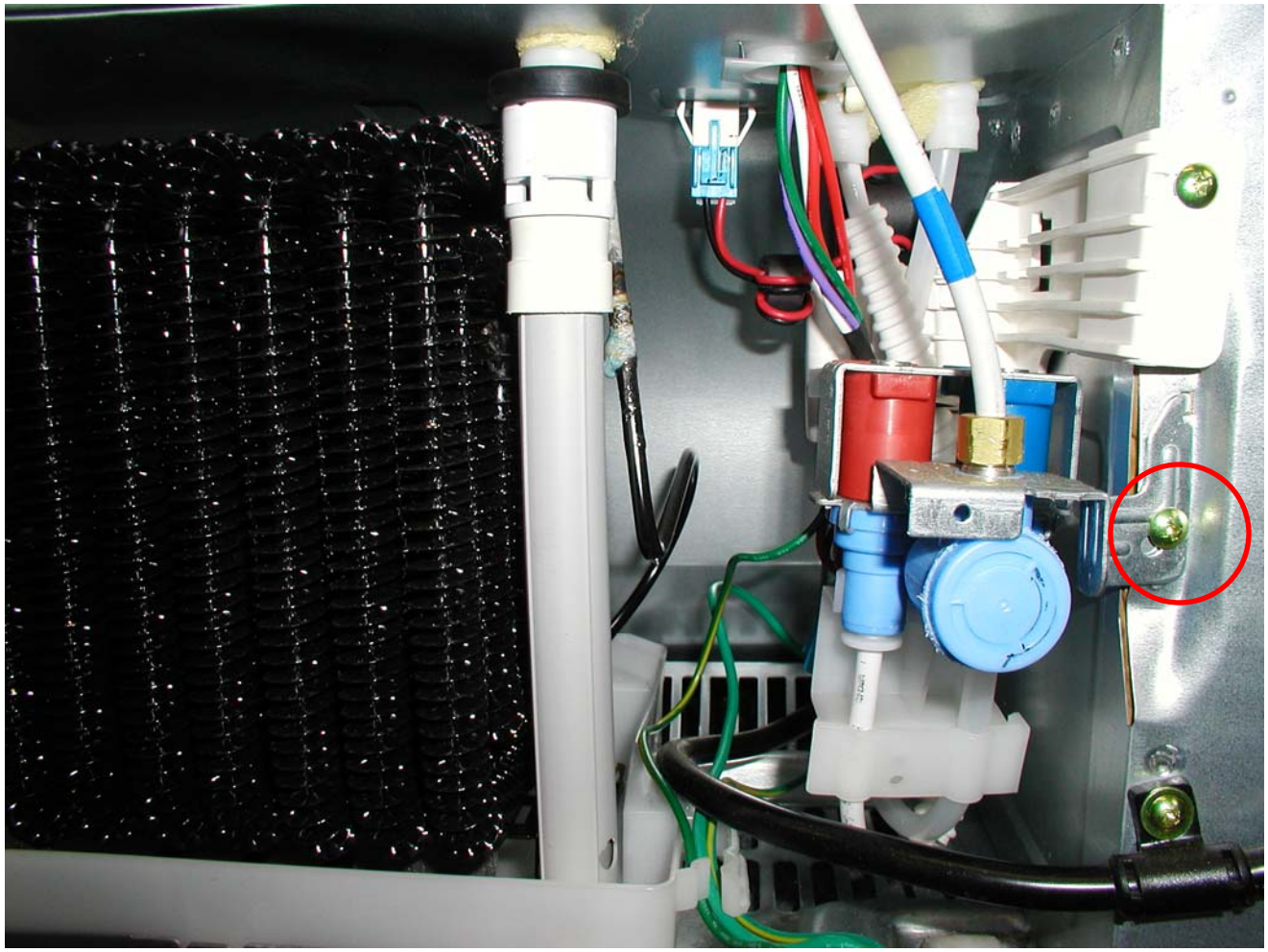
Water Valve Assembly



Release water valve assembly from cabinet by removing one Phillips screw

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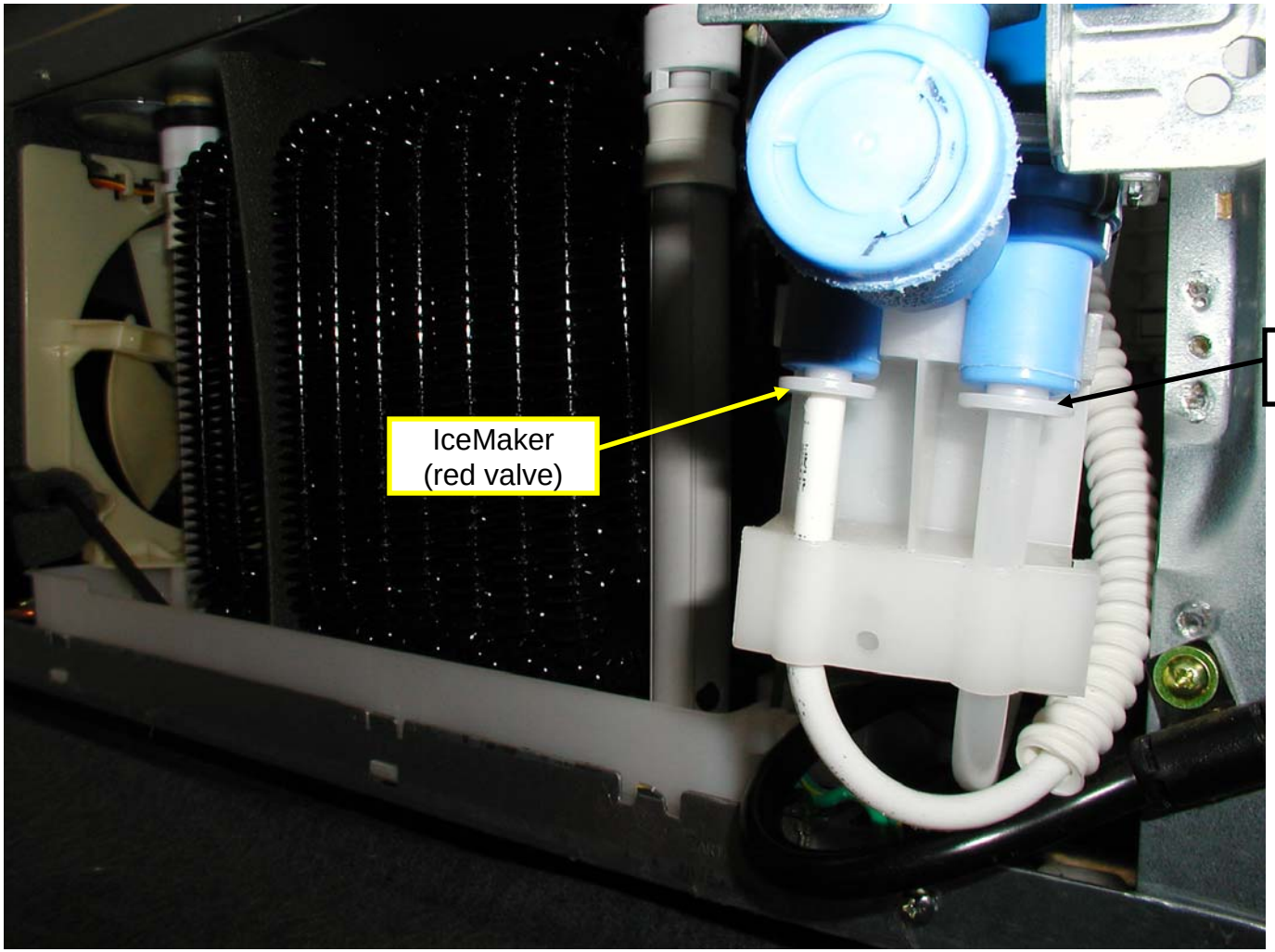
Water Valve Assembly



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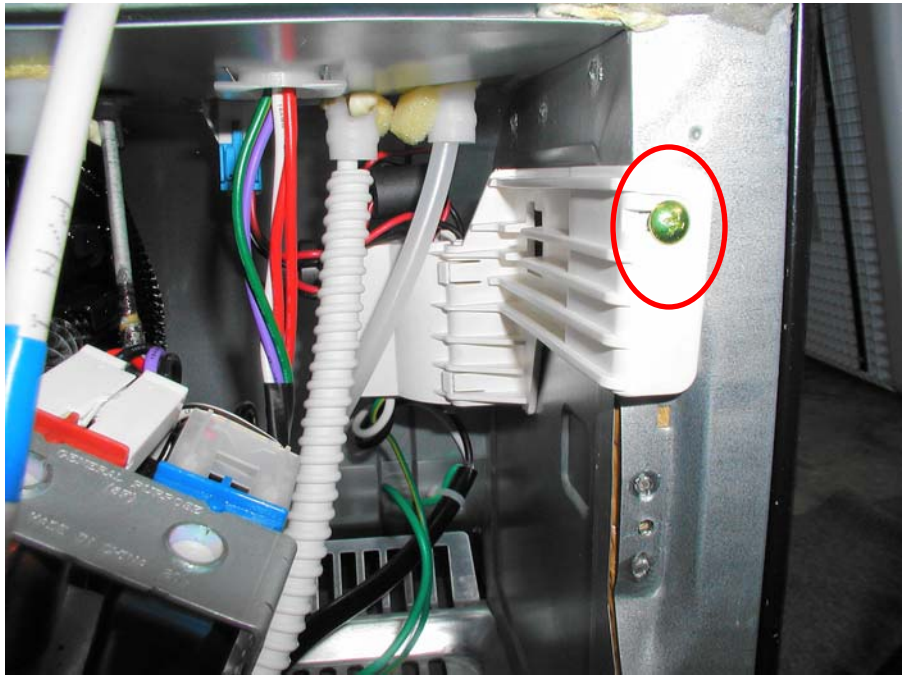
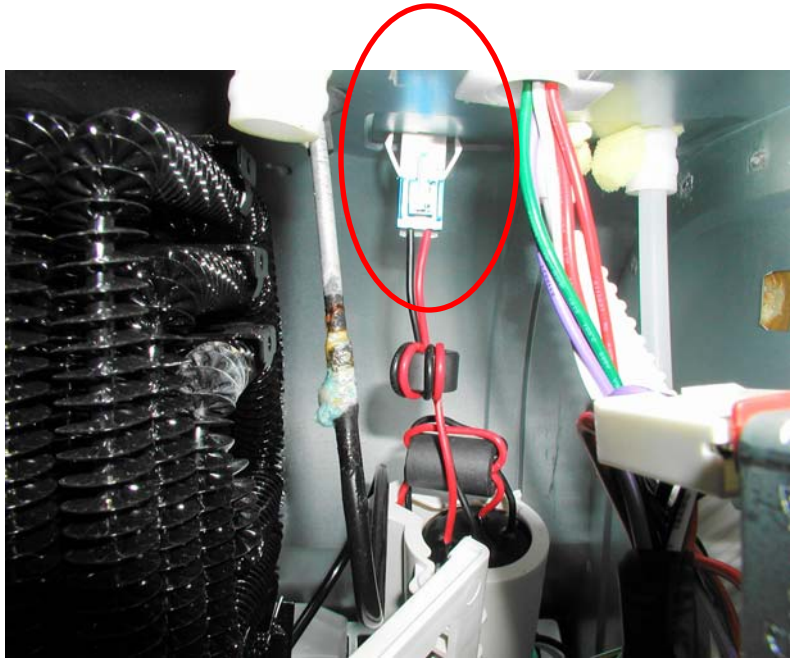
EMI Filter





- To remove EMI filter assembly:
- Remove one Phillips screw
- Disconnect AC in plug from cabinet

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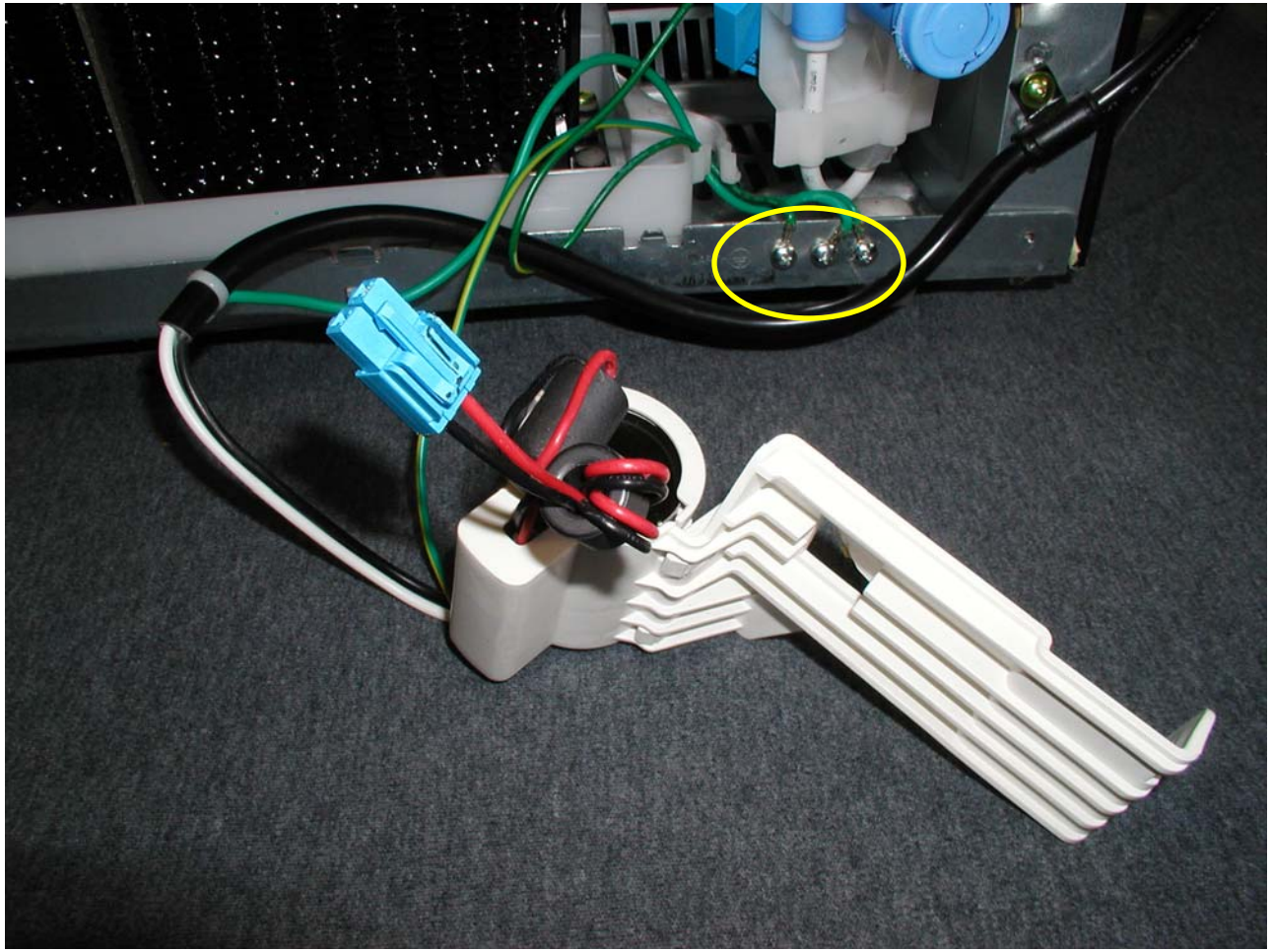
EMI Filter



Note three ground wires; one from ac cord, one from EMI filter & one from cabinet wiring harness

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Drain Tubes

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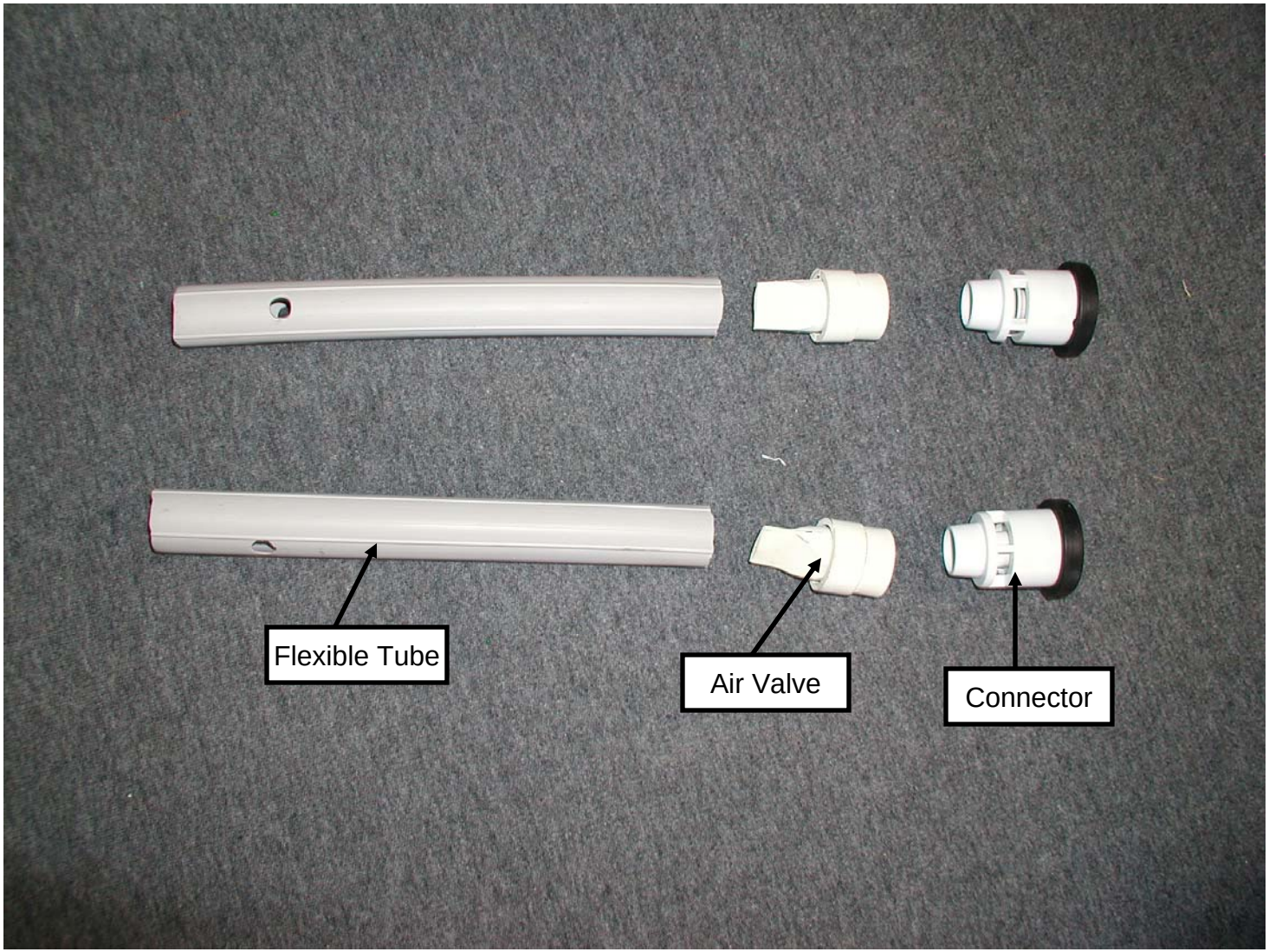
Drain Tubes



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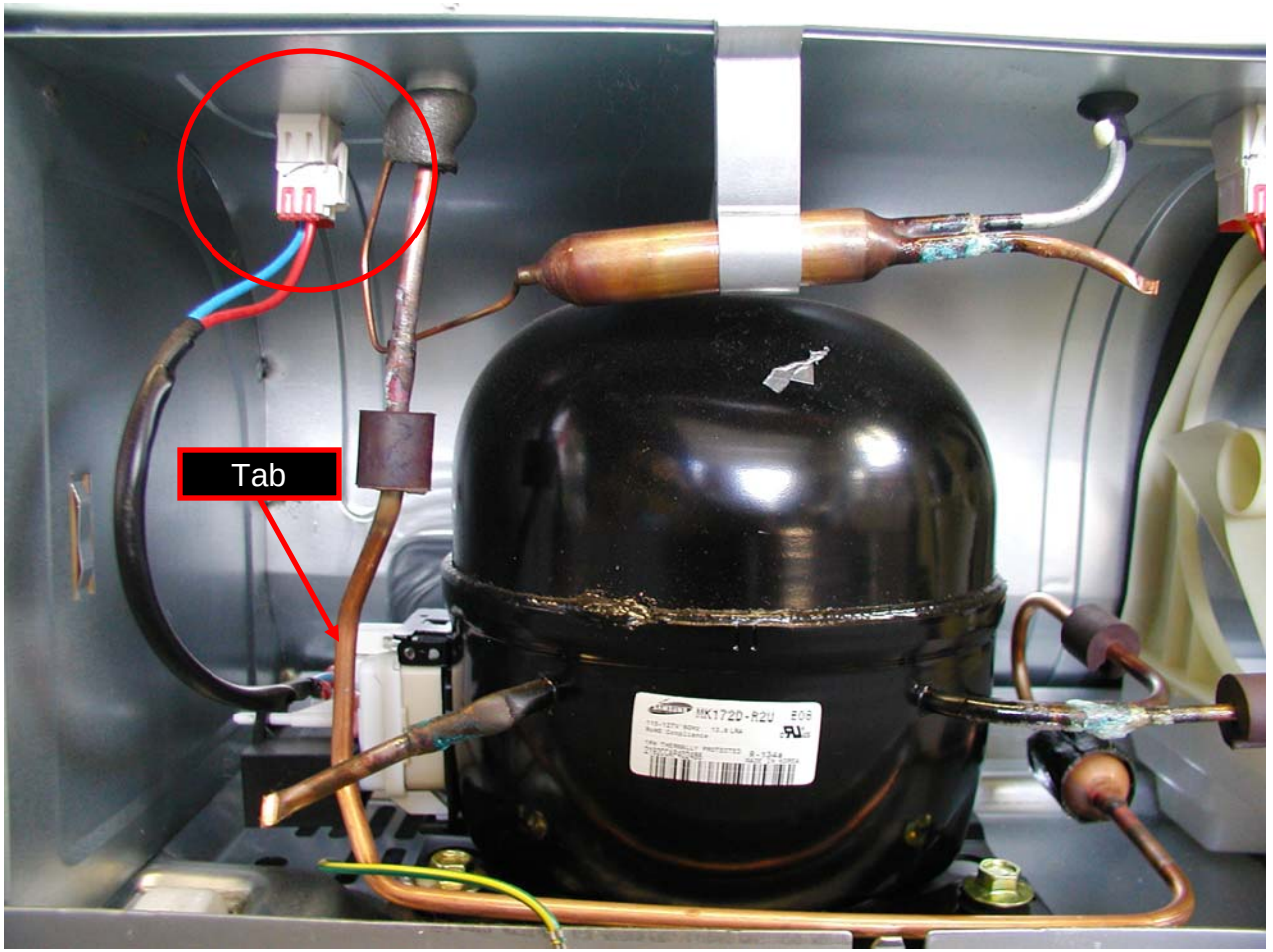
Compressor Assembly



- Press down on tab
- Pull components from compressor pins

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Compressor Assembly

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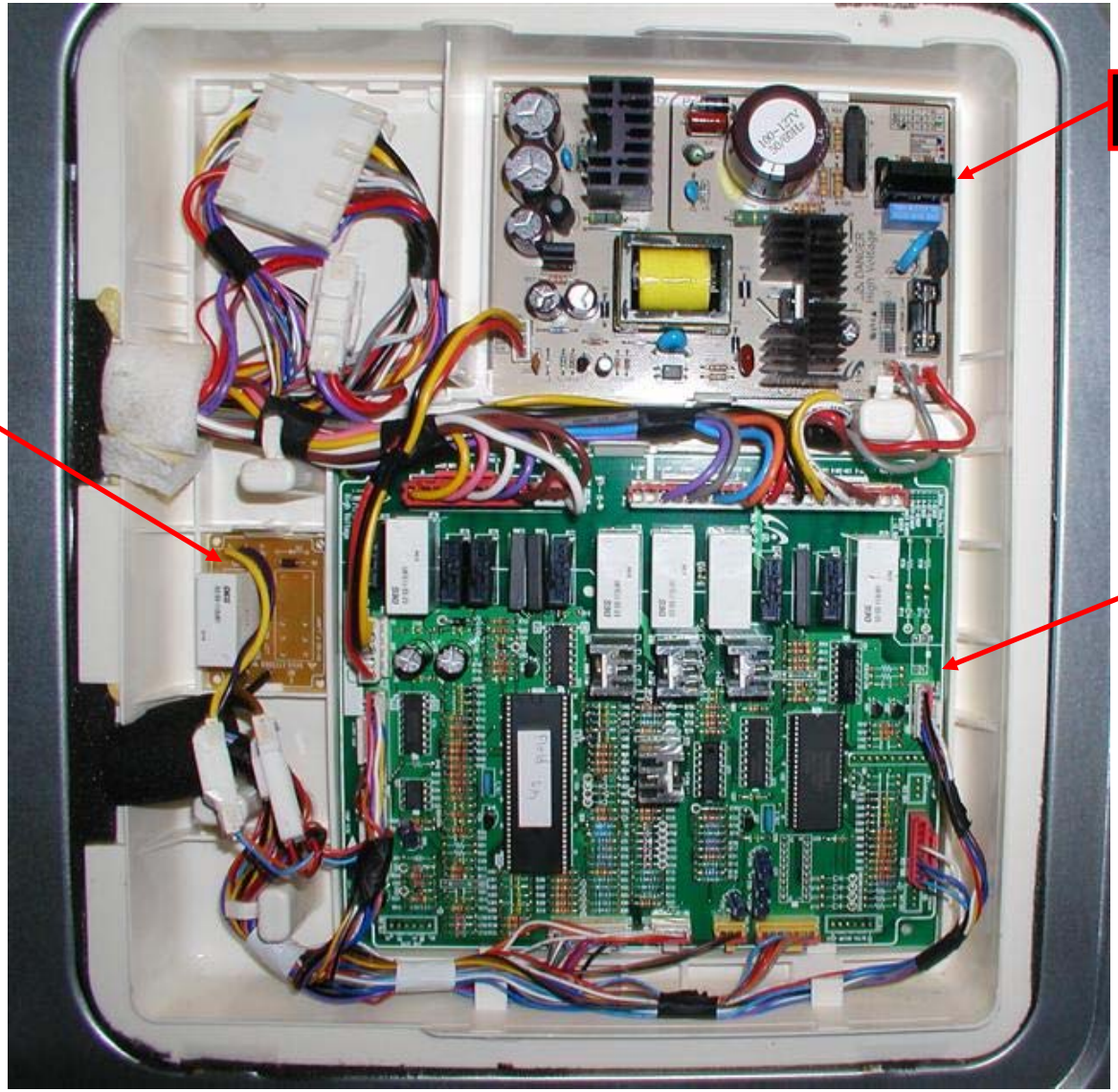
Electronic Boards



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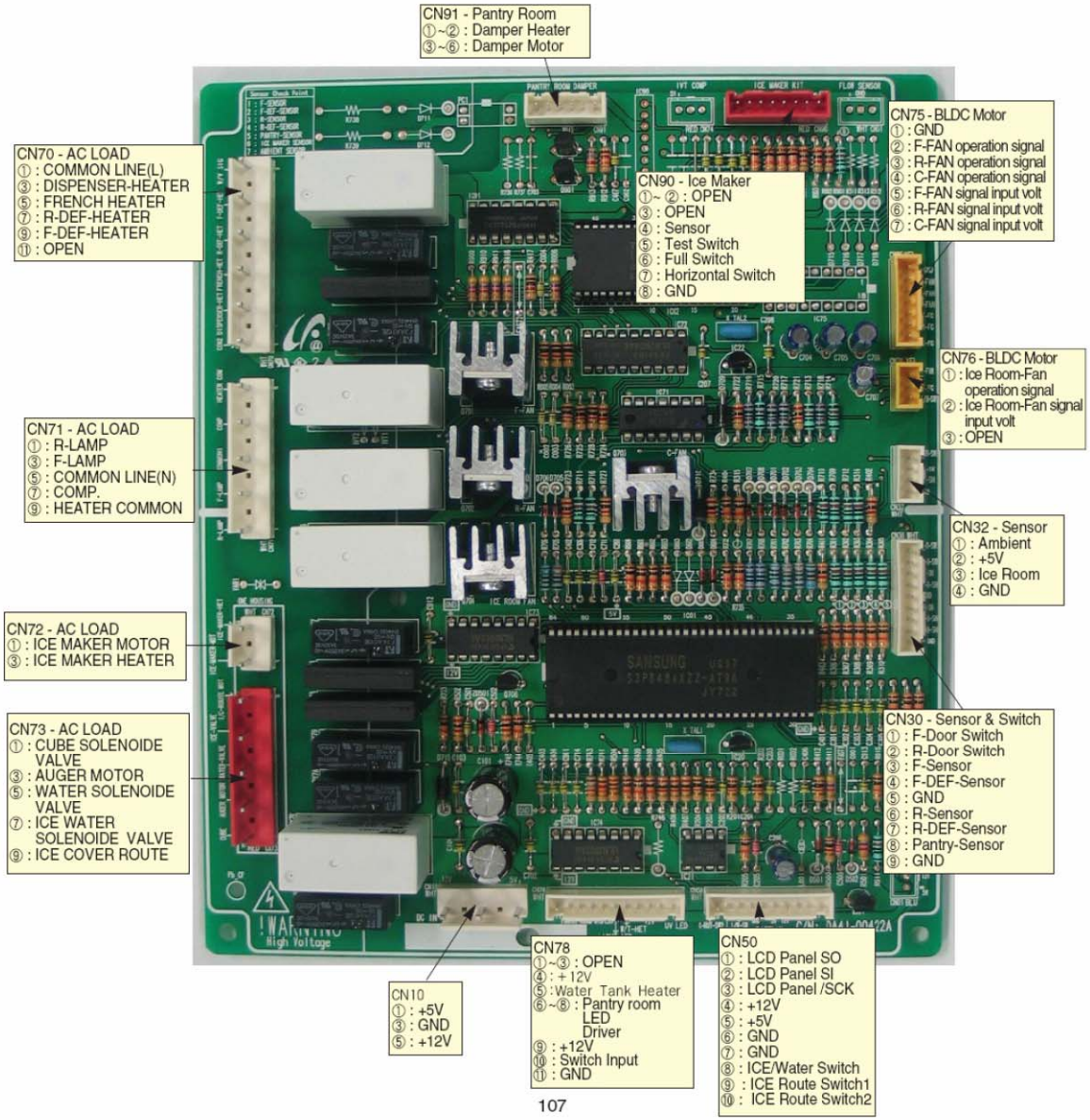
TOP



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End of Part I

Questions ?

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Profile Bottom Mount French Door Refrigerator

Part II

Operation & Diagnostics

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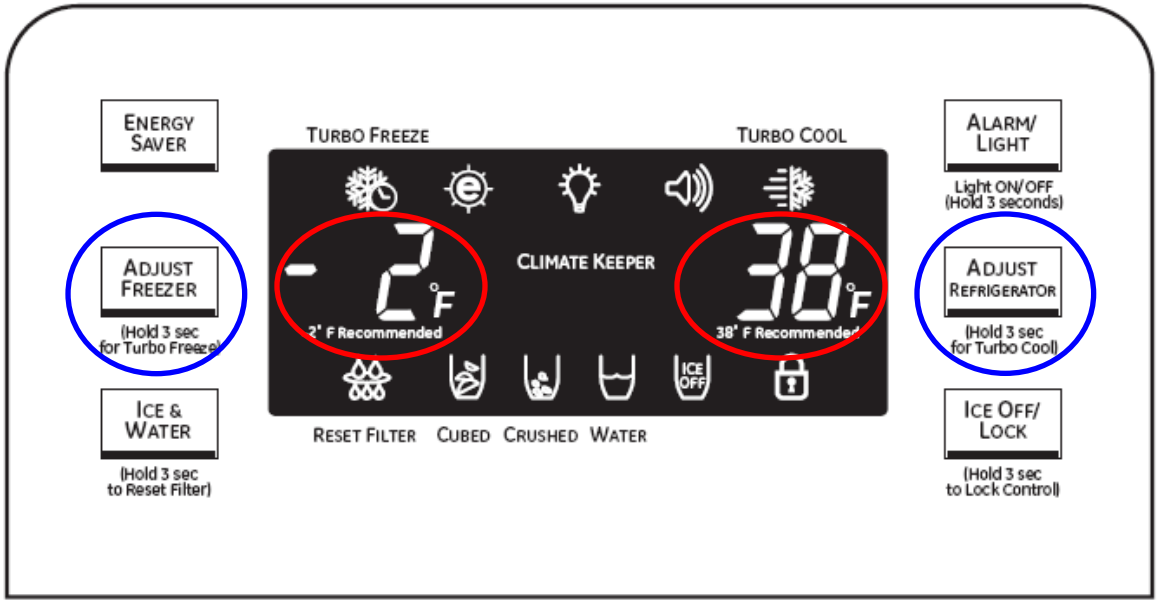
Control Panel Operation



- Factory Preset temperatures of -2° F & 38° F.
- Press & release Adjust Freezer or Adjust Refrigerator pads continuously until desired temperature is displayed.

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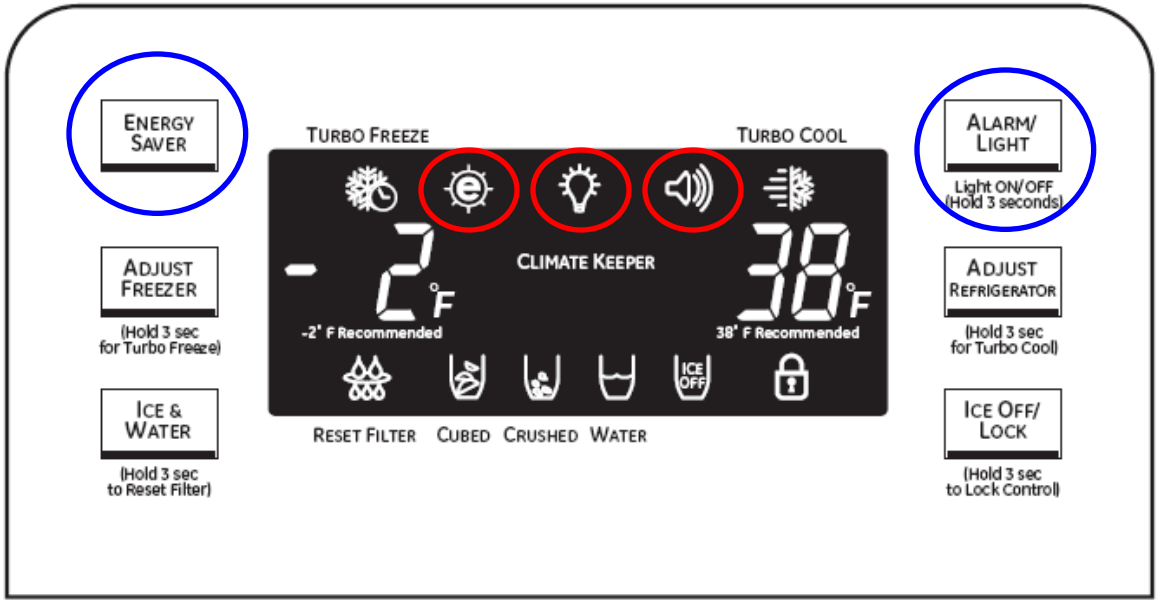
Control Panel Operation



- Energy Saver Pad – Turns Articulating Mullion Heater on & off
- Door Alarm will sound an alarm is door is open for more than 3 minutes
- Holding alarm/light pad for 3 seconds turns on dispenser lights

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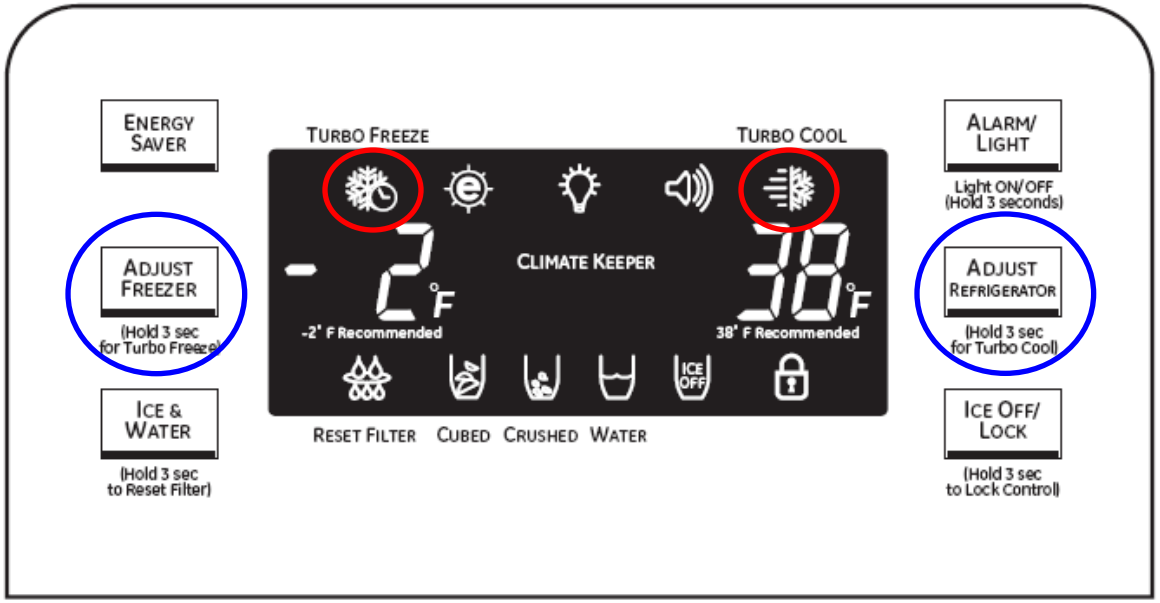
Control Panel Operation



- Press & Hold Adjust Freezer pad for 3 seconds to engage Turbo Freeze
- Press & Hold Adjust Refrigerator pad for 3 seconds to engage Turbo Cool

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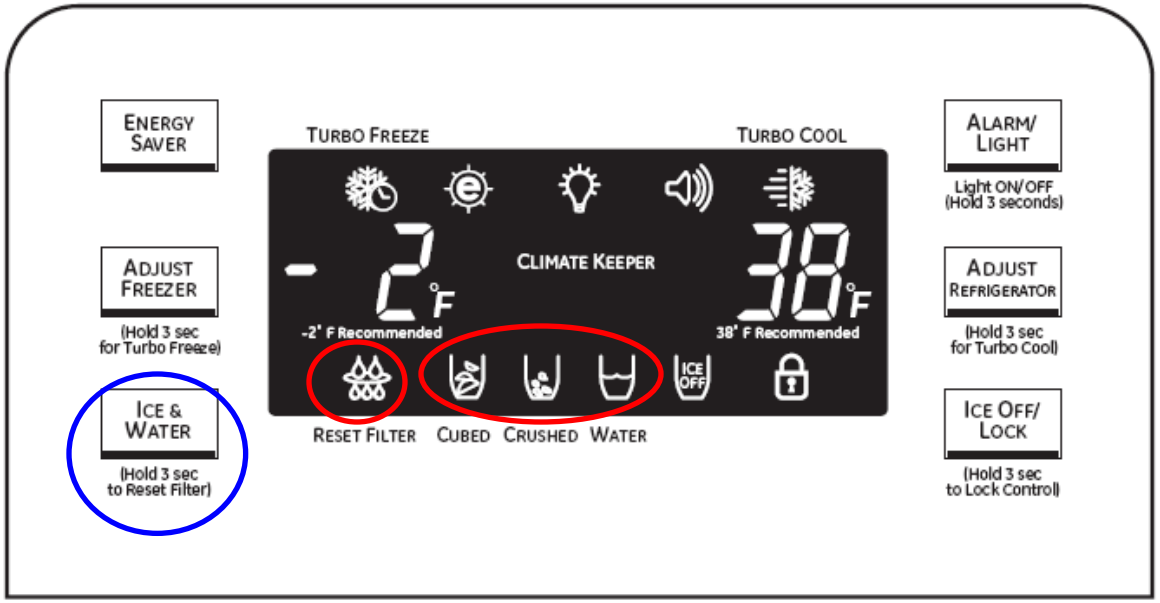
Control Panel Operation



- Press the Ice & Water pad to toggle between cubed ice, crushed ice and water
- Press & hold the same pad for 3 seconds to reset water filter

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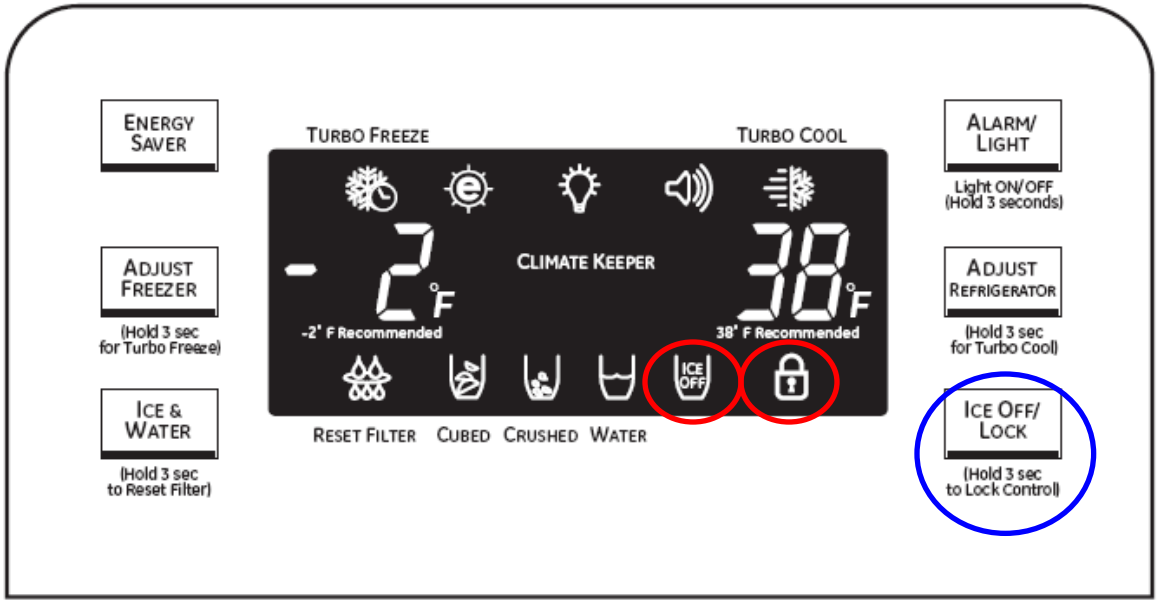
Control Panel Operation



- Press the Ice Off pad to turn off Ice Maker operation
- Press & hold the same pad for 3 seconds to lock the control panel & dispenser

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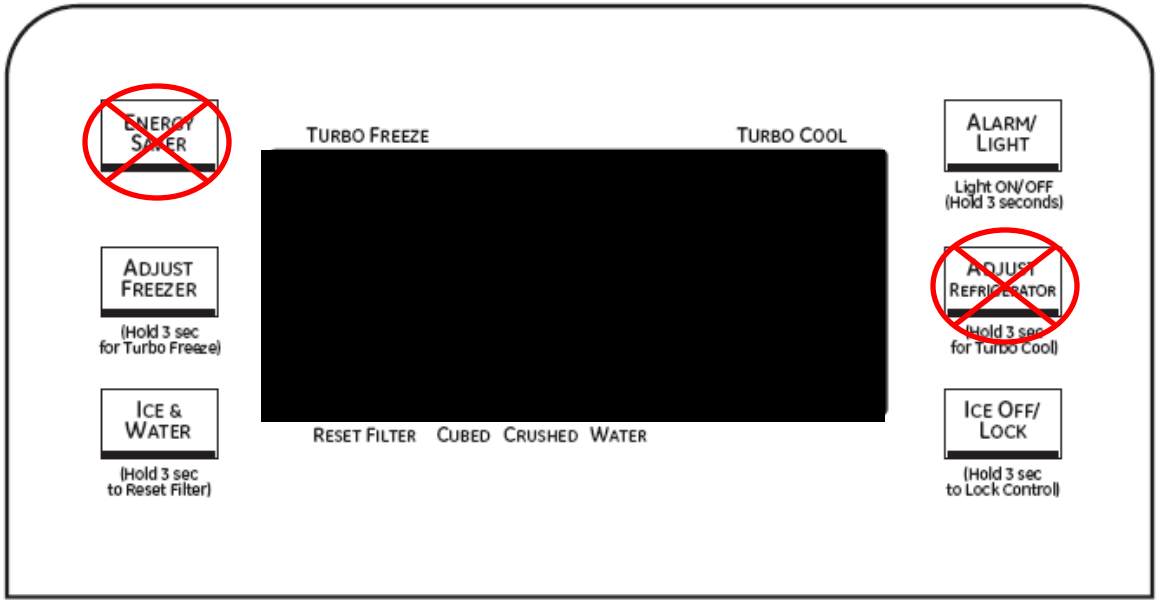
Test Mode – Manual Operation / Manual Defrost



To energize test mode:

Press energy saver & adjust refrigerator pads simultaneously for 8 seconds.

Display panel will go blank

Press any Pad within 15 seconds to initiate test mode

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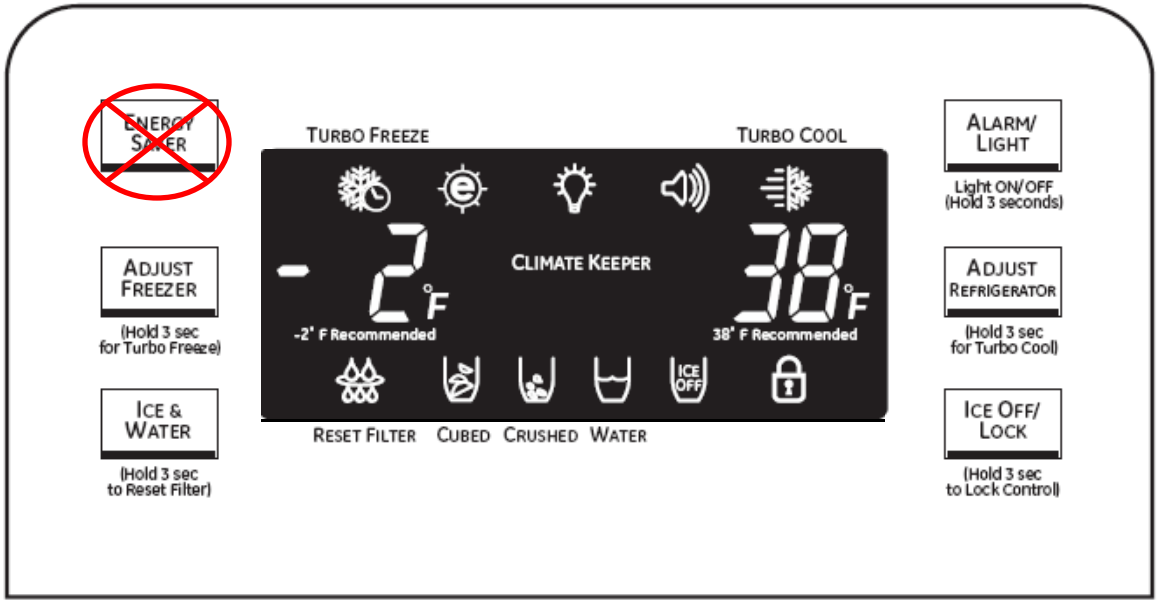
Test Mode – Manual Operation / Manual Defrost



If <u>any</u> pad is pressed within 15 seconds it will generate the following sequence:

1st press - Manual operation – Compressor & Fans (FF) Displayed
2nd press - Manual Defrost – Fresh Food Compartment (rd) Displayed
3rd press - Manual Defrost – FF & Frz Compartments (Fd) Displayed
Cancel – (Display Off)
Normal Operation is restored

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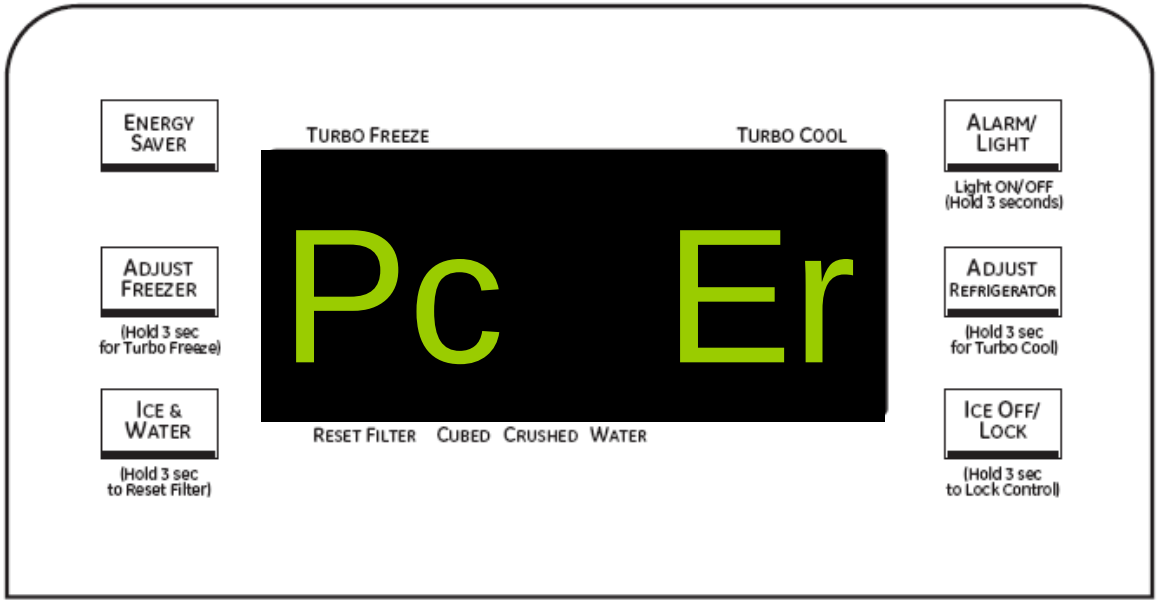
Display Function – Communication Error



- No communication for 10 seconds after request between the Control Panel & Main Board.
- Control will flash Pc Er until communication error is corrected.
- Refrigerator operates normally.
- Caused by: Communication circuit failure on main board
  Communication circuit failure on control panel board
  Loose connection

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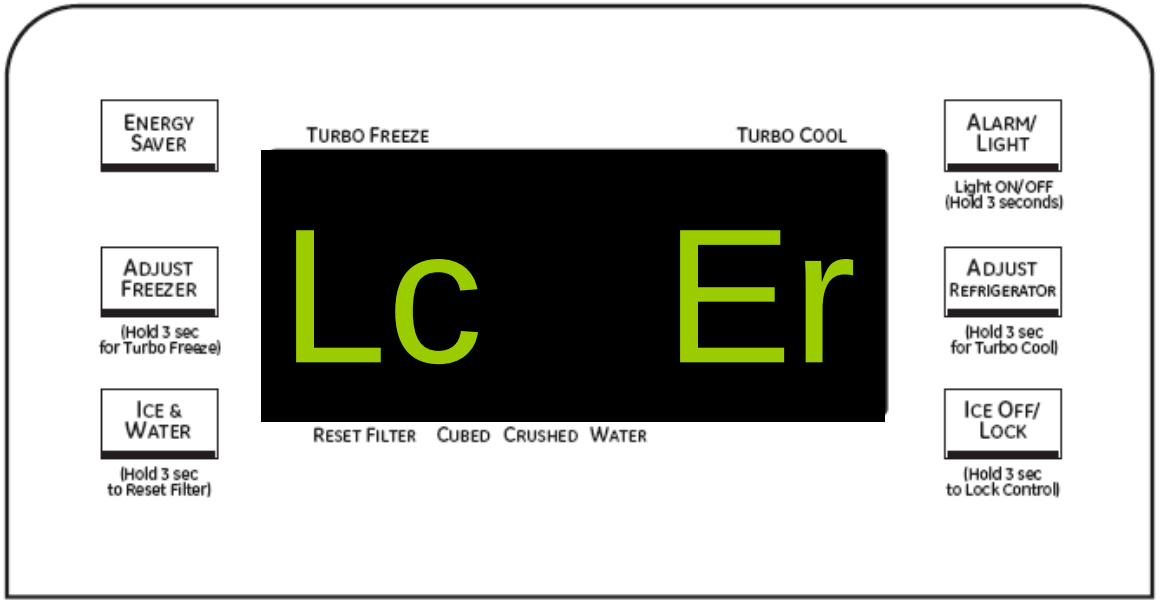
Display Function – Communication Error



- No communication for 20 seconds after request between IC Chips on Main Board.
- Control will flash Lc Er until communication error is corrected.
- Pantry Room control will also flash until communication error is corrected.
- Refrigerator operates normally.
- Caused by communication circuit failure on main board.

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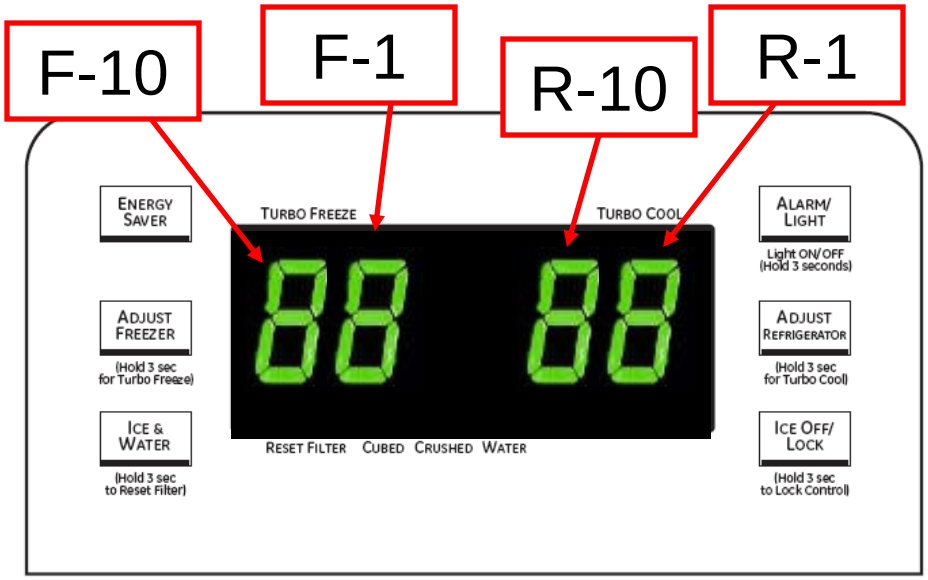
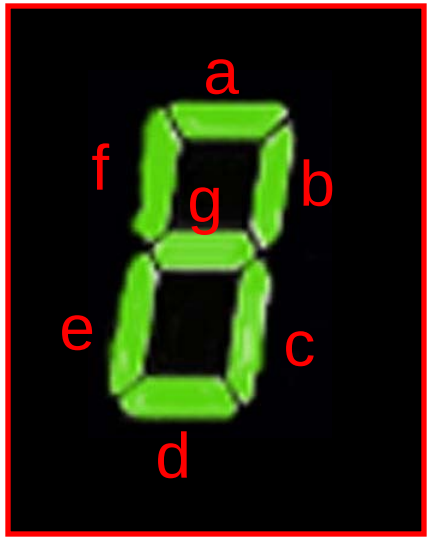
Failure & Load Condition Displays



Individual segments of a particular figure "8" will flash to indicate failure or load conditions



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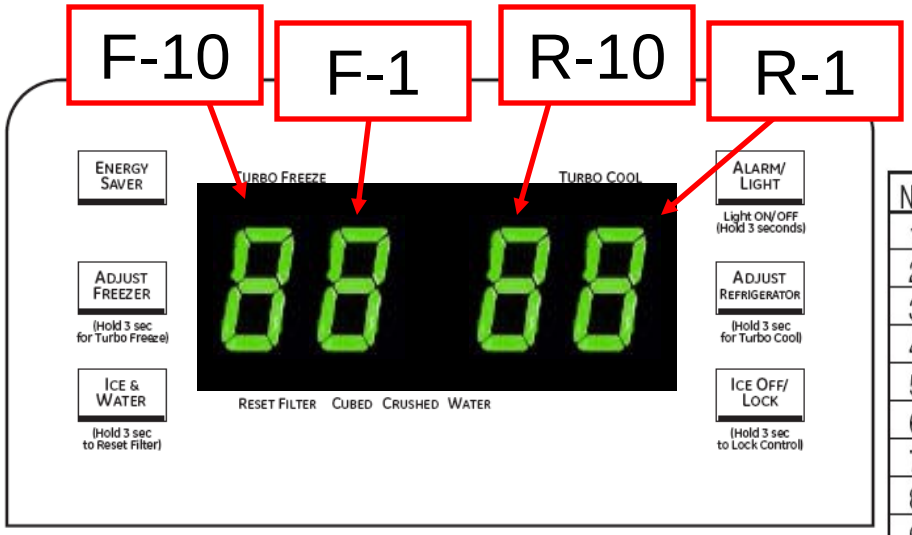
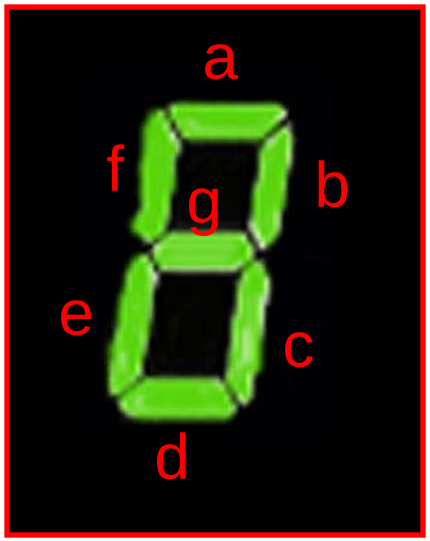
Failure Condition Displays





NO	Trouble item	Display LED	Trouble contents
1	Ice Maker Sensor Error	R-1-ⓐ	ICE MAKER SENSOR part error
2	R-Sensor Error	R-1-ⓑ	R SENSOR part error
3	R-DEF-Sensor Error	R-1-ⓒ	R defrost SENSOR part error
4	R-FAN Error	R-1-ⓓ	R inner part error
5	Ice Maker Error	R-1-ⓔ	ICE MAKER operation error
6	R-DEF, Heater Error	R-1-ⓖ	R defrost part error
7	Ambient-Sensor Error	F-1-ⓐ	external SENSOR part error
8	F-Sensor Error	F-1-ⓑ	F SENSOR part error
9	F-DEF-Sensor Error	F-1-ⓒ	F defrost SENSOR part error
10	F-FAN Error	F-1-ⓓ	F inner fan motor part error
11	C-FAN Error	F-1-ⓔ	machine room fan motor part error
12	Ice Room-Sensor Error	F-1-ⓕ	ICE ROOM SENSOR part error
13	F-DEF.-Heater Error	F-1-ⓖ	F defrost part error
14	Ice Room FAN Error	F-10-ⓑ	ICE ROOM inner fan motor part error
15	Pantry-Damper-Heater Error	R-10-ⓐ	Damper Heater open/wire error
16	Pantry-Sensor Error	R-10-ⓑ	Pantry Room SENSOR part error
17	Panel↔Main Micom Error	F-10-ⓖ	Panel↔Mai Micom communication error
18	L↔M communication Error	F-10-ⓕ	LOAD↔Main Micom communication error
19	Water Tank-Heaer Error	R-10-ⓖ	Water Tank Heater open/wire error

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Failure Conditions – Initial Power Up

- Upon initial power up.
- Failure conditions will flash on the display.

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Failure Conditions – Initial Power Up

- Pressing Energy Saver & Alarm/Light pads will return display to normal.
- Failure condition still present.
- Need to correct or replace faulty component.

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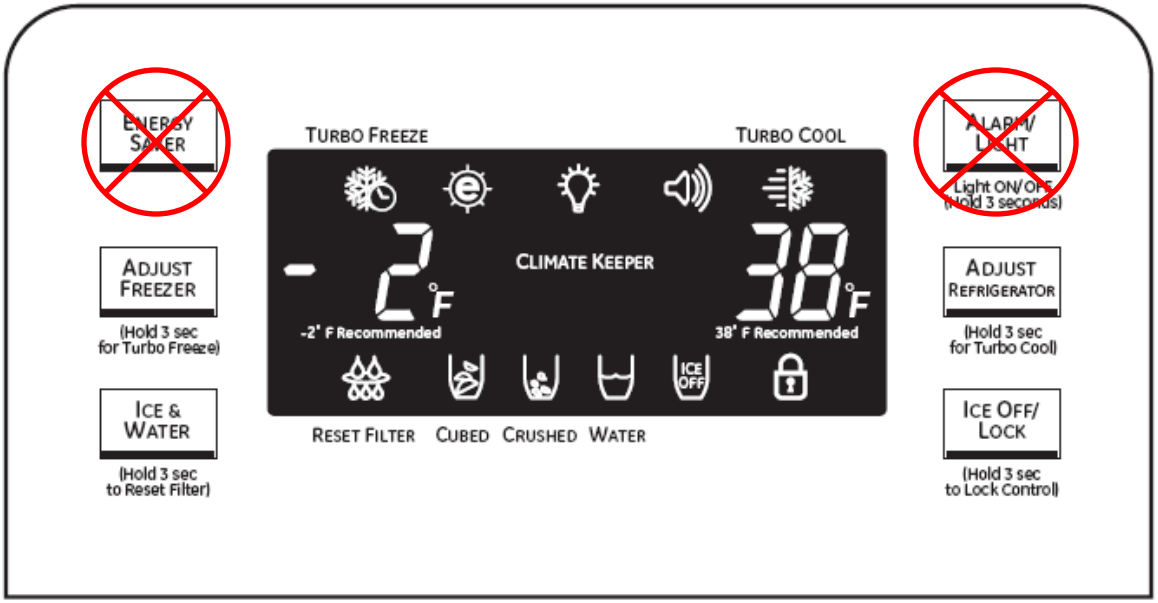
Self Diagnostics – During Normal Operation



- Pressing Energy Saver & Alarm/Light pads for 6 seconds will cause display to beep & flash.
- Continue to hold pads for an addition 2 seconds to enter the self-diagnostic mode.
- If any failure functions are present, those segments will now begin to flash.

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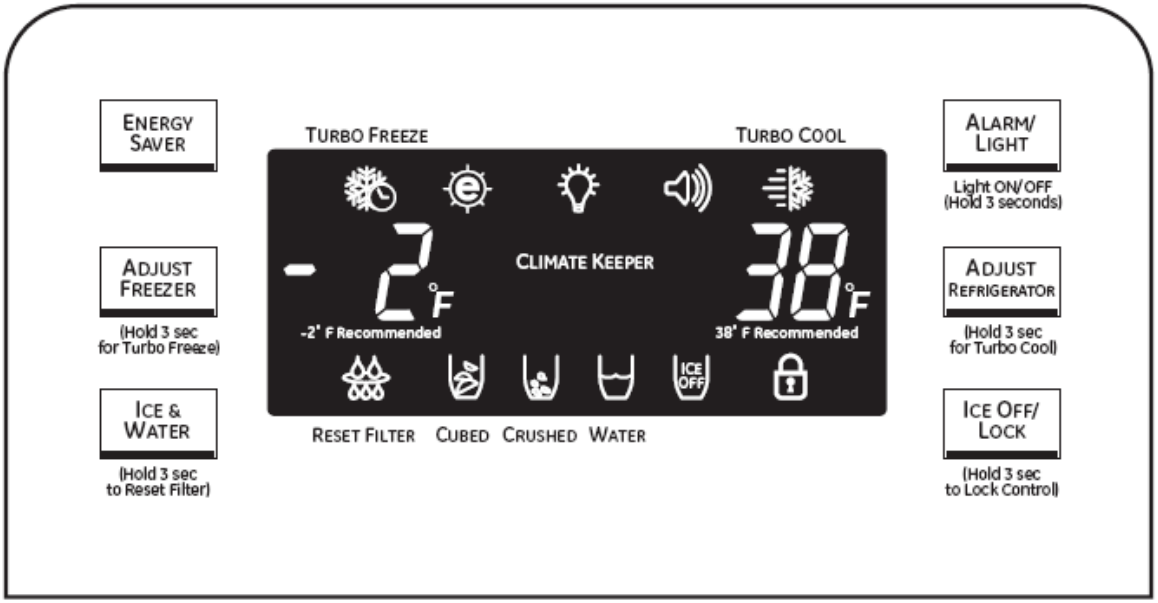
Self Diagnostics – During Normal Operation



- Diagnostic mode will be displayed for 30 seconds.
- Panel will then return to normal display.

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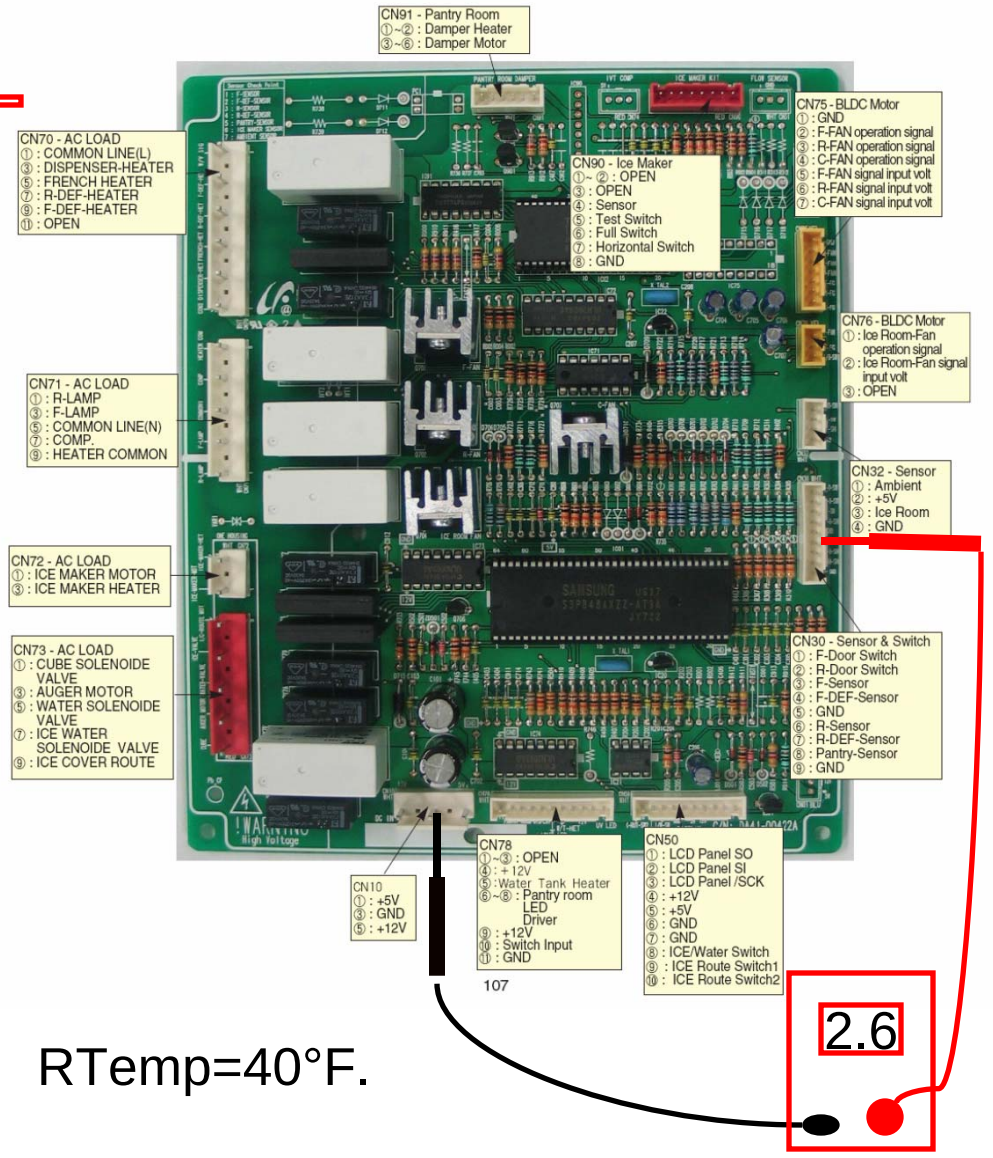
Self Diagnostics – During Normal Operation

LED	Item	Trouble contents	Diagnostic method
R-1-ⓐ	Ice Maker Sensor Error	Display error : separation of sensor housing part, contact error, disconnection, short circuit Display error of detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN90 #3↔CN90#4 : shall be between 4.5V~1.0V.
R-1-ⓑ	R-Sensor Error		When checking the voltage of MAIN PCB CN30#6↔CN75#1:shall be between 4.5V~1.0V
R-1-ⓒ	R-DEF-Sensor Error		When checking the voltage of MAIN PCB CN30#7↔CN75#:shall be between 4.5V~1.0V
R-1-ⓓ	R-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, separation of motor wire, motor error	Voltage of MAIN PCB CN75 Orange ↔ Gray shall be between 7V~12V
R-1-ⓔ	Ice Maker Error	Display error : ice making kit is harvested more than 3 times and level error ** Apply to the applicable Ice Maker model.	After replacing ice maker, check the operation by turning the appliance ON again.
R-1-ⓖ	R-DEF. Error	Display error : separation of fresh food compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error : the defrosting does not finish though fresh food compartment defrost is heating continuously for more than 80 minutes.	After separating MAIN PCB CN70,CN71 from PCB, check the resistance value between CN70 White ↔ CN71 Orange shall be 102 ohm ± 7%. (Resistant value is varied by the input power) Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
F-1-ⓐ	Ambient-Sensor Error	Display error : sensor housing separation, contact error, disconnection, short circuit Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN32#1↔#4 : shall be between 4.5V~1.0V.
F-1-ⓑ	F-Sensor Error		When checking the voltage of MAIN PCB CN30#3↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓒ	DEF-Sensor Error		When check the voltage of MAIN PCB CN30#4↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓓ	F-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN75 Yellow ↔ Gray shall be between 7V~12V.
F-1-ⓔ	C-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN75 Sky-blue ↔ Gray shall be between 7V~12V.
F-1-ⓕ	Ice Room Sensor Error	Display error : sensor housing separation,contact error, disconnection, short circuit. Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F (-50°C)	When check the voltage of MAIN PCB CN32#3↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓖ	F-DEF. Error	Display error : separation of freezer compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error : the defrosting does not finish though fresh food compartment compartment defrost is heating continuously for more than 70 minutes.	After separating MAIN PCB CN70,CN71 from PCB, check the resistant value between CN70 brown ↔ CN71 Orange shall be 102 ohm ± 7%. (Resistant value is varied by input power) Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
F-10-ⓑ	Ice Room-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN76 Black ↔ CN75 Gray : shall be between 6V~12V.
R-10-ⓐ	Pantry-Damper-Heater Error	Display error when open error is detected by damper heater : separation of Damper Heater housing part, contact error, disconnection, short circuit	After separating MAIN PCB CN91from PCB, check the resistant value between Black ↔ brown wire shall be 145 ohm ± 7%. Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
R-10-ⓑ	Pantry-Sensor Error	Display error : separation of sensor housing, contact error, disconnection, short circuit. Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN30#8 ↔ #9 : shall be between 4.5V~1.0V.
R-10-ⓖ	Water Tank-Heater Error	Display error when open error is detected by Water Tank Heater : separation of Water Tank Heater housing part,contact error, disconnection, short circuit	After separating MAIN PCB CN78from PCB, check the resistant value between Black ↔ brown wire shall be 48 ohm 7%. Check 0 Ohm : heater short, ∞Ohm : wire / bimetal Open.
F-10-ⓖ	Panel↔Main communication Error	Display "oP/LC-Er" in the panel with alarm : MICOM MAIN ↔ LOAD communication error MICOM MAIN ↔ PANEL communication error	Actually, it is desirable to recheck the condition with the oscilloscope after replacing Main and Panel PCB.
F-10-ⓕ	Load↔Main communication Error		



RTemp=40°F.

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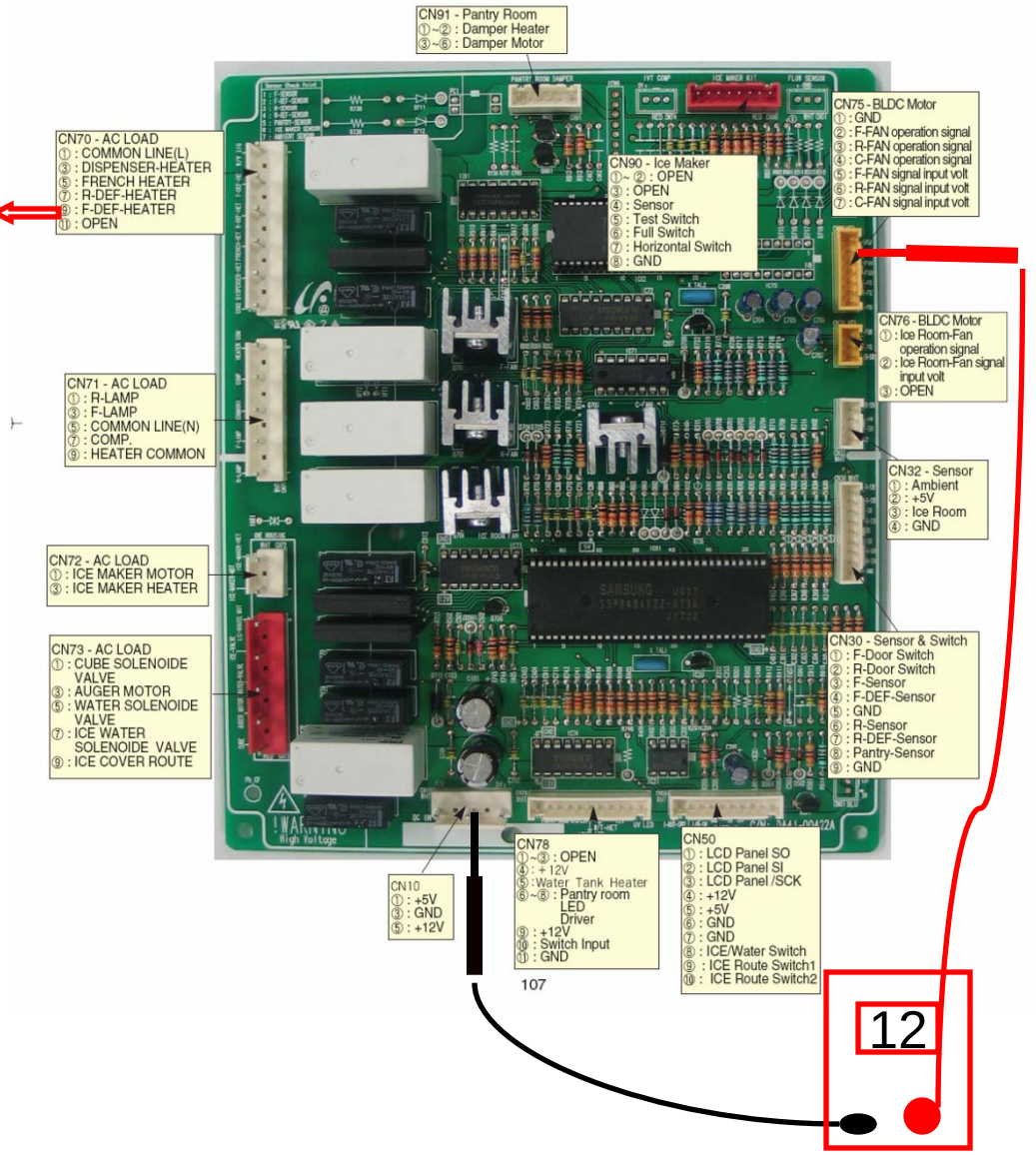
Self Diagnostics – During Normal Operation

LED	Item	Trouble contents	Diagnostic method
R-1-ⓐ	Ice Maker Sensor Error	Display error : separation of sensor housing part, contact error, disconnection, short circuit Display error of detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN90 #3↔CN90#4 : shall be between 4.5V~1.0V.
R-1-ⓑ	R-Sensor Error		When checking the voltage of MAIN PCB CN30#6↔CN75#1:shall be between 4.5V~1.0V
R-1-ⓒ	R-DEF-Sensor Error		When checking the voltage of MAIN PCB CN30#7↔CN75#:shall be between 4.5V~1.0V
R-1-ⓓ	R-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, separation of motor wire, motor error	Voltage of MAIN PCB CN75 Orange ↔ Gray shall be between 7V~12V
R-1-ⓔ	Ice Maker Error	Display error : ice making kit is harvested more than 3 times and level error ** Apply to the applicable Ice Maker model.	After replacing ice maker, check the operation by turning the appliance ON again.
R-1-ⓖ	R-DEF. Error	Display error : separation of fresh food compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error : the defrosting does not finish though fresh food compartment defrost is heating continuously for more than 80 minutes.	After separating MAIN PCB CN70,CN71 from PCB, check the resistance value between CN70 White ↔ CN71 Orange shall be 102 ohm ± 7%. (Resistant value is varied by the input power) Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
F-1-ⓐ	Ambient-Sensor Error	Display error : sensor housing separation, contact error, disconnection, short circuit Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN32#1↔#4 : shall be between 4.5V~1.0V.
F-1-ⓑ	F-Sensor Error		When checking the voltage of MAIN PCB CN30#3↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓒ	DEF-Sensor Error		When check the voltage of MAIN PCB CN30#4↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓓ	F-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN75 Yellow ↔ Gray shall be between 7V~12V.
F-1-ⓔ	C-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN75 Sky-blue ↔ Gray shall be between 7V~12V.
F-1-ⓕ	Ice Room Sensor Error	Display error : sensor housing separation,contact error, disconnection, short circuit. Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F (-50°C)	When check the voltage of MAIN PCB CN32#3↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓖ	F-DEF. Error	Display error : separation of freezer compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error : the defrosting does not finish though fresh food compartment compartment defrost is heating continuously for more than 70 minutes.	After separating MAIN PCB CN70,CN71 from PCB, check the resistant value between CN70 brown ↔ CN71 Orange shall be 102 ohm ± 7%. (Resistant value is varied by input power) Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
F-10-ⓑ	Ice Room-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN76 Black ↔ CN75 Gray : shall be between 6V~12V.
R-10-ⓐ	Pantry-Damper-Heater Error	Display error when open error is detected by damper heater : separation of Damper Heater housing part, contact error, disconnection, short circuit	After separating MAIN PCB CN91from PCB, check the resistant value between Black ↔ brown wire shall be 145 ohm ± 7%. Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
R-10-ⓑ	Pantry-Sensor Error	Display error : separation of sensor housing, contact error, disconnection, short circuit. Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN30#8 ↔ #9 : shall be between 4.5V~1.0V.
R-10-ⓖ	Water Tank-Heater Error	Display error when open error is detected by Water Tank Heater : separation of Water Tank Heater housing part,contact error, disconnection, short circuit	After separating MAIN PCB CN78from PCB, check the resistant value between Black ↔ brown wire shall be 48 ohm 7%. Check 0 Ohm : heater short, ∞Ohm : wire / bimetal Open.
F-10-ⓖ	Panel-Main communication Error	Display "oP/LC-Er" in the panel with alarm : MICOM MAIN ↔ LOAD communication error MICOM MAIN ↔ PANEL communication error	Actually, it is desirable to recheck the condition with the oscilloscope after replacing Main and Panel PCB.
F-10-ⓕ	Load-Main communication Error		



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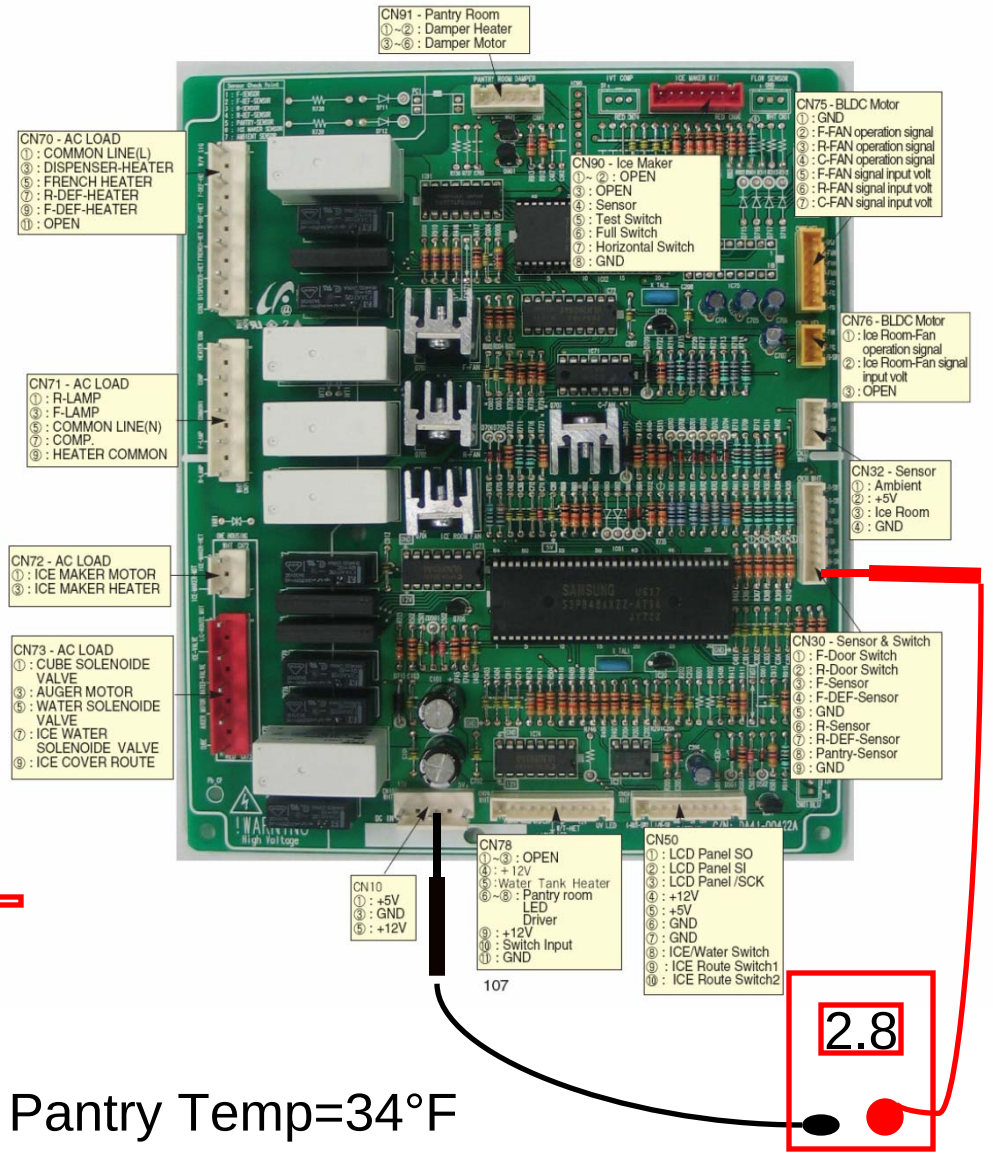
Self Diagnostics – During Normal Operation

LED	Item	Trouble contents	Diagnostic method
R-1-ⓐ	Ice Maker Sensor Error	Display error : separation of sensor housing part, contact error, disconnection, short circuit Display error of detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN90 #3↔CN90#4 : shall be between 4.5V~1.0V.
R-1-ⓑ	R-Sensor Error		When checking the voltage of MAIN PCB CN30#6↔CN75#1:shall be between 4.5V~1.0V
R-1-ⓒ	R-DEF-Sensor Error		When checking the voltage of MAIN PCB CN30#7↔CN75#:shall be between 4.5V~1.0V
R-1-ⓓ	R-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, separation of motor wire, motor error	Voltage of MAIN PCB CN75 Orange ↔ Gray shall be between 7V~12V
R-1-ⓔ	Ice Maker Error	Display error : ice making kit is harvested more than 3 times and level error ** Apply to the applicable Ice Maker model.	After replacing ice maker, check the operation by turning the appliance ON again.
R-1-ⓖ	R-DEF. Error	Display error : separation of fresh food compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error : the defrosting does not finish though fresh food compartment defrost is heating continuously for more than 80 minutes.	After separating MAIN PCB CN70,CN71 from PCB, check the resistance value between CN70 White ↔ CN71 Orange shall be 102 ohm ± 7%. (Resistant value is varied by the input power) Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
F-1-ⓐ	Ambient-Sensor Error	Display error : sensor housing separation, contact error, disconnection, short circuit Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN32#1↔#4 : shall be between 4.5V~1.0V.
F-1-ⓑ	F-Sensor Error		When checking the voltage of MAIN PCB CN30#3↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓒ	DEF-Sensor Error		When check the voltage of MAIN PCB CN30#4↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓓ	F-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN75 Yellow ↔ Gray shall be between 7V~12V.
F-1-ⓔ	C-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN75 Sky-blue ↔ Gray shall be between 7V~12V.
F-1-ⓕ	Ice Room Sensor Error	Display error : sensor housing separation,contact error, disconnection, short circuit. Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F (-50°C)	When check the voltage of MAIN PCB CN32#3↔CN75#1:shall be between 4.5V~1.0V
F-1-ⓖ	F-DEF. Error	Display error : separation of freezer compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error : the defrosting does not finish though fresh food compartment compartment defrost is heating continuously for more than 70 minutes.	After separating MAIN PCB CN70,CN71 from PCB, check the resistant value between CN70 brown ↔ CN71 Orange shall be 102 ohm ± 7%. (Resistant value is varied by input power) Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
F-10-ⓑ	Ice Room-FAN Error	Display error during operation of applicable fan motor : Feed Back signal line contact error, motor wire separation, motor error	Voltage of MAIN PCB CN76 Black ↔ CN75 Gray : shall be between 6V~12V.
R-10-ⓐ	Pantry-Damper-Heater Error	Display error when open error is detected by damper heater : separation of Damper Heater housing part, contact error, disconnection, short circuit	After separating MAIN PCB CN91from PCB, check the resistant value between Black ↔ brown wire shall be 145 ohm ± 7%. Check 0 Ohm : heater short, ∞ Ohm : wire / bimetal Open.
R-10-ⓑ	Pantry-Sensor Error	Display error : separation of sensor housing, contact error, disconnection, short circuit. Display error by detecting temperature of sensor: more than 149°F (+65°C) or less than -58°F(-50°C)	When checking the voltage of MAIN PCB CN30#8 ↔ #9 : shall be between 4.5V~1.0V.
R-10-ⓖ	Water Tank-Heater Error	Display error when open error is detected by Water Tank Heater : separation of Water Tank Heater housing part,contact error, disconnection, short circuit	After separating MAIN PCB CN78from PCB, check the resistant value between Black ↔ brown wire shall be 48 ohm 7%. Check 0 Ohm : heater short, ∞Ohm : wire / bimetal Open.
F-10-ⓖ	Panel↔Main communication Error	Display "oP/LC-Er" in the panel with alarm : MICOM MAIN ↔ LOAD communication error MICOM MAIN ↔ PANEL communication error	Actually, it is desirable to recheck the condition with the oscilloscope after replacing Main and Panel PCB.
F-10-ⓕ	Load↔Main communication Error		



Pantry Temp=34°F

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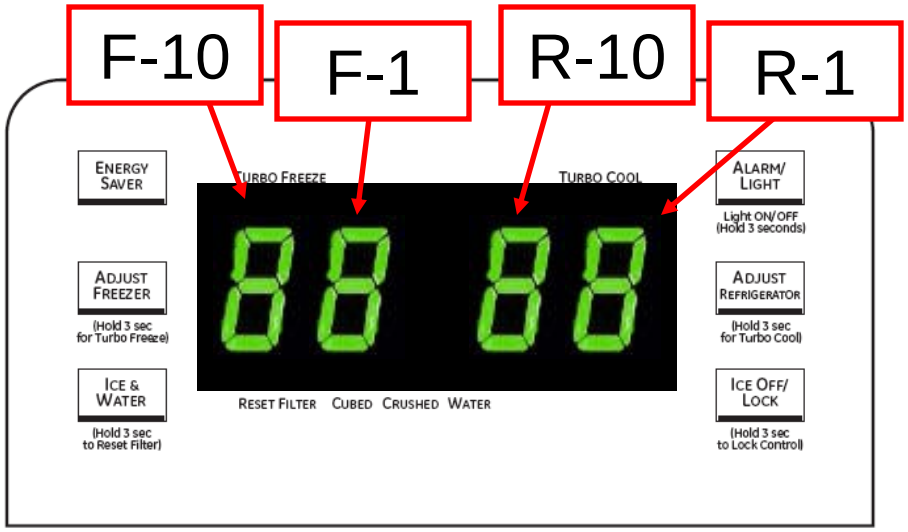
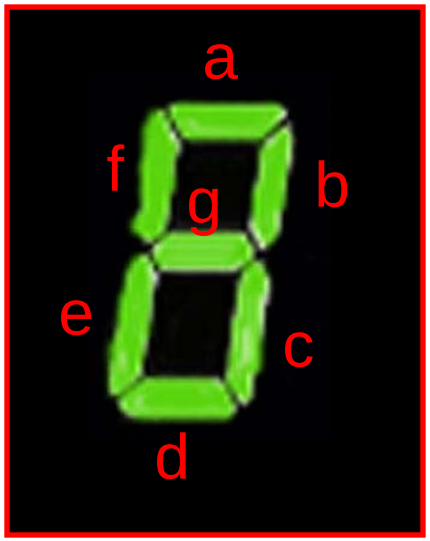
Load Condition Displays





Display LED	Display contents	Operation contents
R-1-ⓐ	R-FAN High	When fresh food compartment fan high operates, applicable LED ON
R-1-ⓑ	R-FAN Low	When fresh food compartment fan low operates, applicable LED ON
R-1-ⓒ	R-DEF Heater	When fresh food compartment defrost heater operates, LED ON
R-1-ⓓ	Start Mode	Initial power ON refrigerator, LED ON
R-1-ⓔ	Overload condition	When ambient temperature is more than 93 °F(34°C), LED ON
R-1-ⓕ	Low temperature condition	When ambient temperature is less than 72 °F(22°C), LED ON
F-1-ⓔⓕ	ALL LED Off	Normal Condition / When ambient temperature is between 73°F (23°C) ~ 91 °F(33°C), LED ON
R1-ⓖ	Exhibition Mode	Display mode, LED ON
F-1-ⓐ	COMP.	When compressor operates, applicable LED ON
F-1-ⓑ	F-FAN High	When freezer compartment fan high operates, applicable LED ON
F-1-ⓒ	F-FAN Low	When freezer compartment fan low operates, applicable LED ON
F-1-ⓓ	F-DEF Heater	When freezer compartment defrost heater operates, LED ON
R-10-ⓔ	C-FAN High	When compressor fan high operates, applicable LED ON
R-10-ⓕ	C-FAN Low	When compressor fan low operates, applicable LED ON
F-10-ⓖ	French Heater	When french heater operates, applicable LED ON
F-1-ⓖ	Dispenser Heater	When dispenser heater operates LED ON
F-10-ⓐ	Water Tank Heater	When water tank heater operates LED ON
F-10-ⓓ	Ice Room-FAN High Ice	When Ice room fan high operates LED ON
F-10-ⓔ	Ice Room-FAN Low	When Ice room fan low operates LED ON

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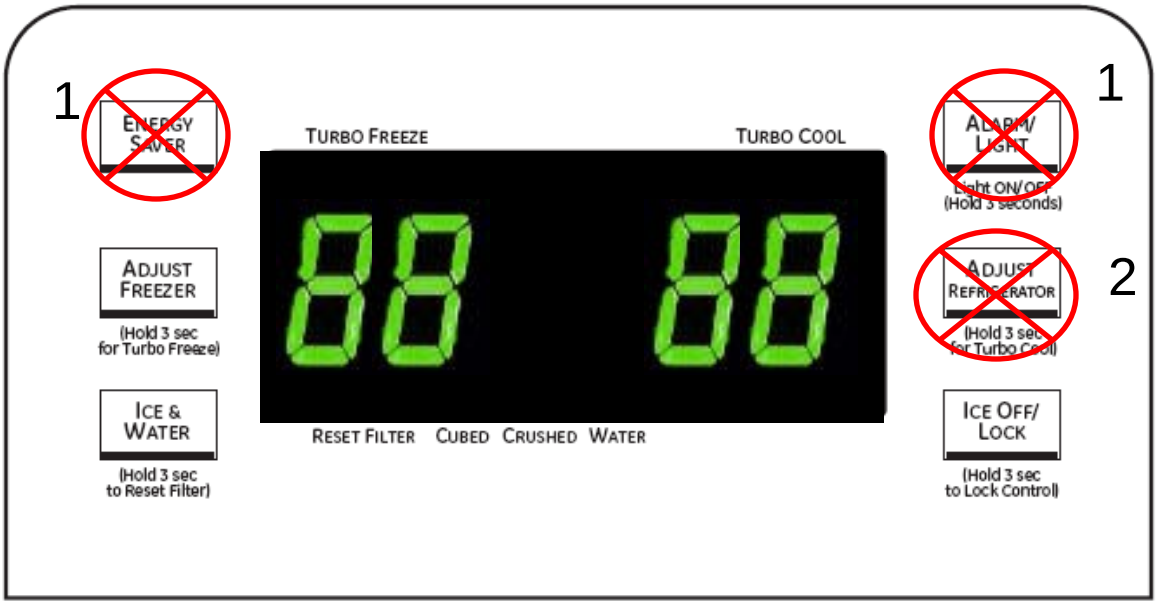
Load Condition Displays



- Press Energy Saver & Alarm/Light pads simultaneously for 6 seconds.
- Display will beep & start to flash.
- Immediately remove fingers from previous pads and press the adjust Refrigerator pad.
- Load condition mode will then be energized.

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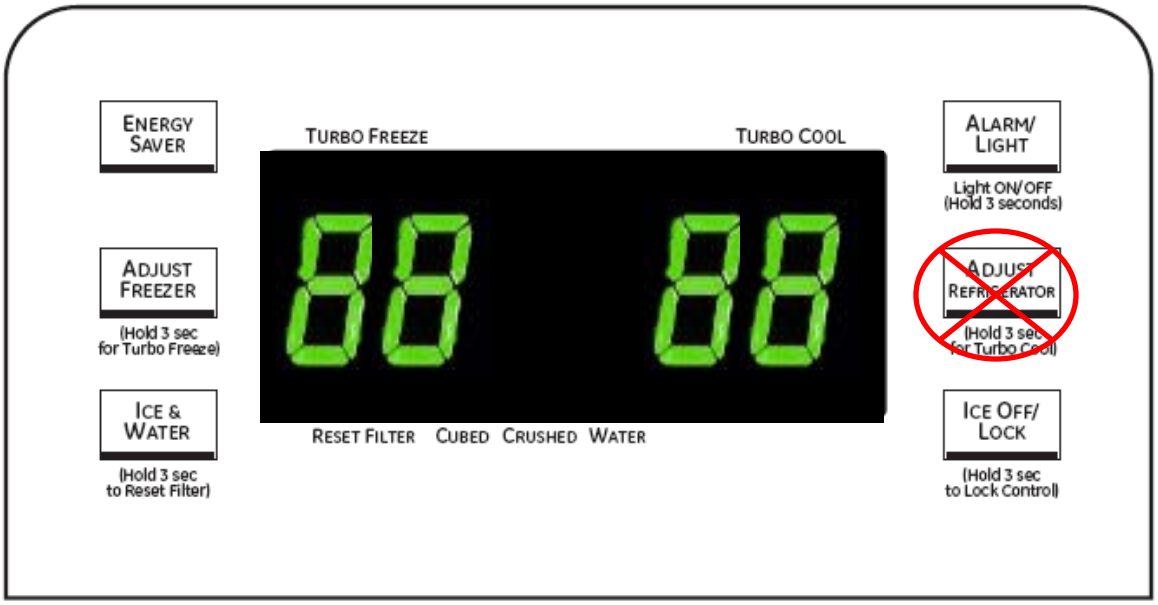
Load Condition Displays



- Segments of the figure “8”s will blink on & off corresponding to the loads that the main board has energized.
- Note: Just because the board has a load energized, does not mean that the component is functioning.
- This could be a very important diagnostic aid.

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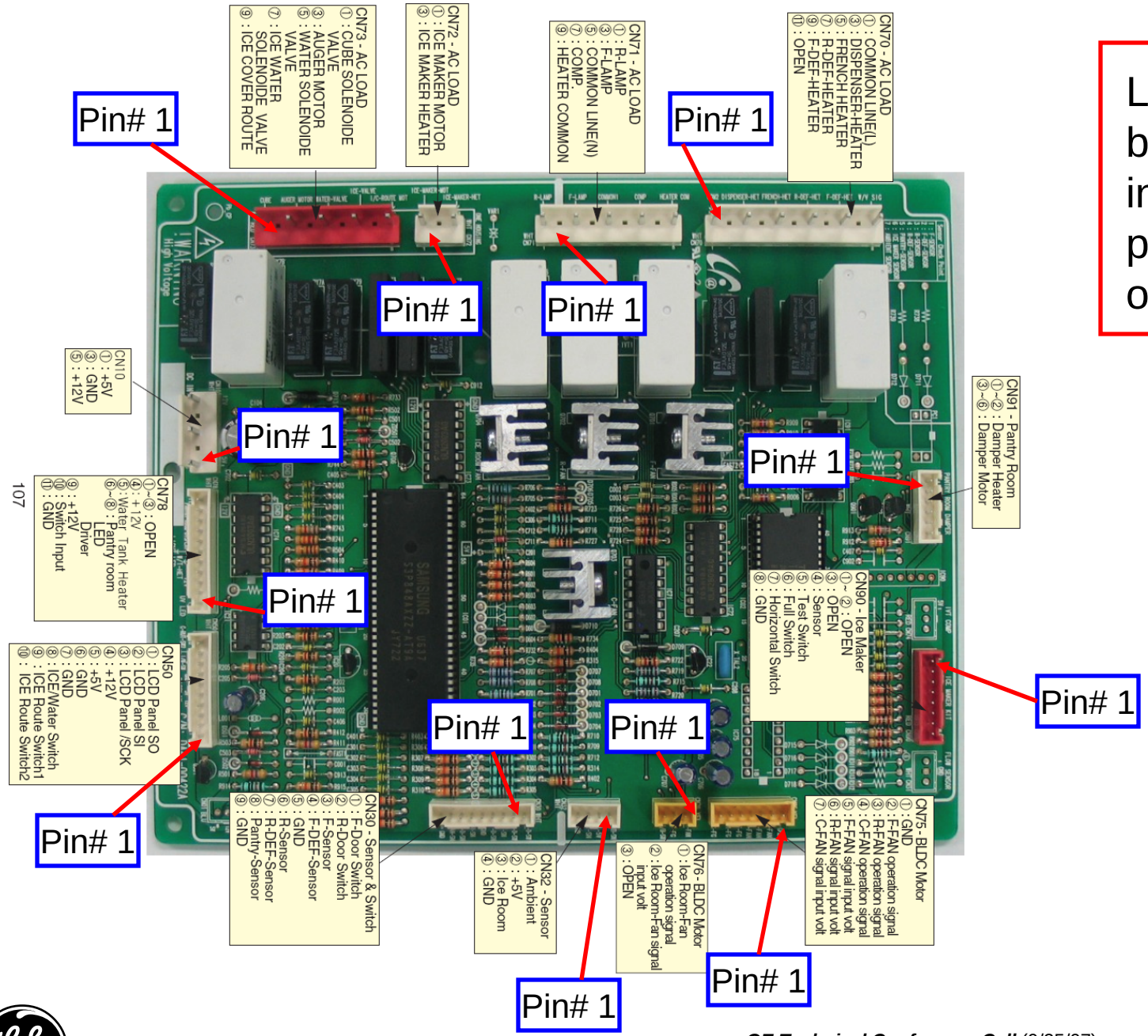

Looking from behind the plugs into the board, pin#1 is always on the right side.

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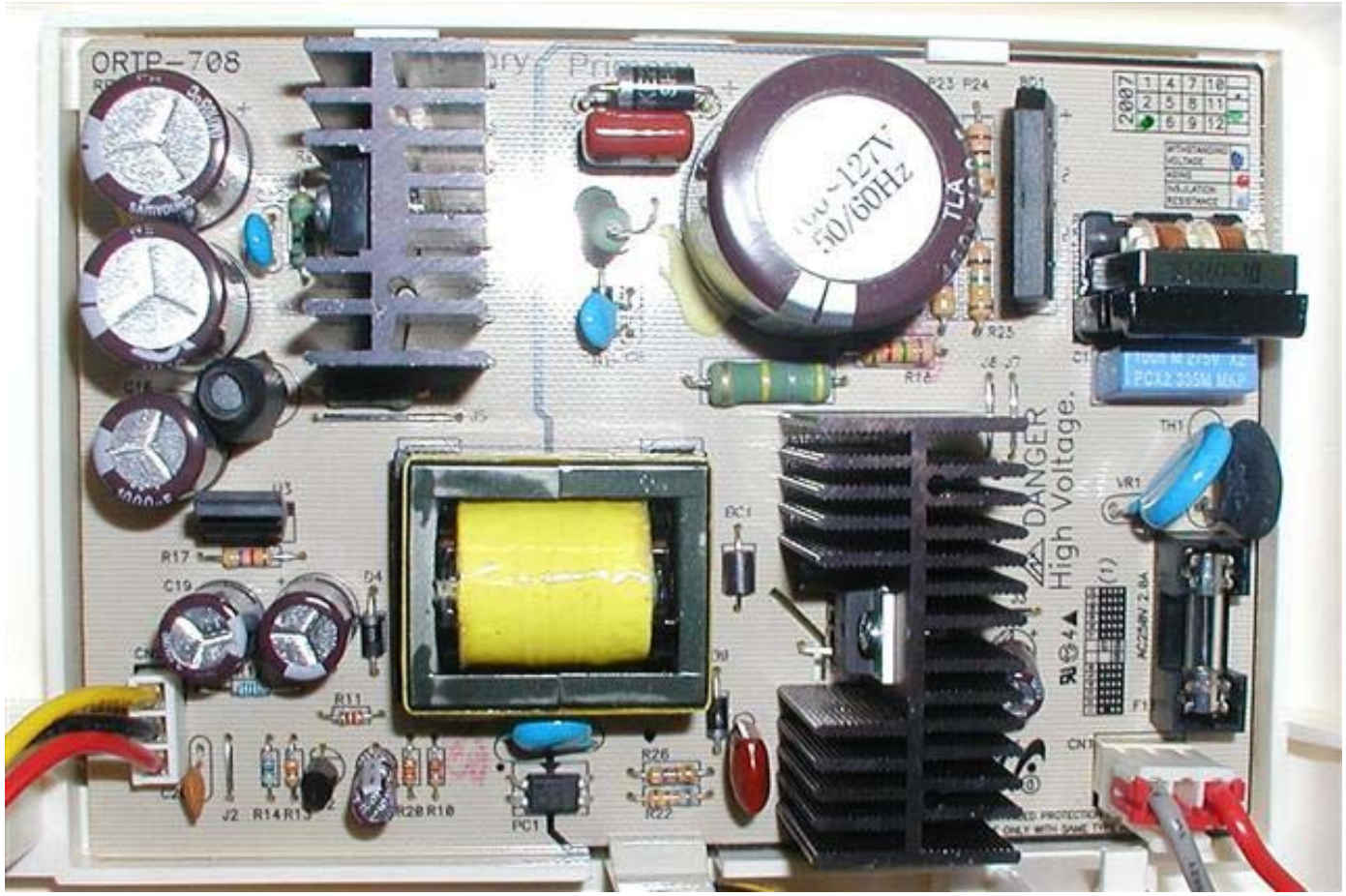

CN2
Yellow – 12vdc
Black – DC Ground
Red – 5vdc

CN1
Grey – Neutral
Red - L1

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Sensor Resistance / Voltage Checks

˚C	˚F	Voltage	Resistance	˚C	˚F	Voltage	Resistance	˚C	˚F	Voltage	Resistance
-50	-58	4.694	153319	-5	23	3.107	16419	40	104	1.153	2997
-49	-56.2	4.677	144794	-4	24.8	3.057	15731	41	105.8	1.124	2899
-48	-54.4	4.659	136798	-3	26.6	3.006	15076	42	107.6	1.095	2805
-47	-52.6	4.641	129294	-2	28.4	2.955	14452	43	109.4	1.068	2714
-46	-50.8	4.622	122248	-1	30.2	2.904	13857	44	111.2	1.040	2627
-45	-49	4.602	115631	0	32	2.853	13290	45	113	1.014	2543
-44	-47.2	4.581	109413	1	33.8	2.802	12749	46	114.8	0.988	2462
-43	-45.4	4.560	103569	2	35.6	2.751	12233	47	116.6	0.963	2384
-42	-43.6	4.537	98073	3	37.4	2.700	11741	48	118.4	0.938	2309
-41	-41.8	4.514	92903	4	39.2	2.649	11271	49	120.2	0.914	2237
-40	-40	4.490	88037	5	41	2.599	10823	50	122	0.891	2167
-39	-38.2	4.465	83456	6	42.8	2.548	10395	51	123.8	0.868	2100
-38	-36.4	4.439	79142	7	44.6	2.498	9986	52	125.6	0.846	2036
-37	-34.6	4.412	75077	8	46.4	2.449	9596	53	127.4	0.824	1973
-36	-32.8	4.385	71246	9	48.2	2.399	9223	54	129.2	0.803	1913
-35	-31	4.356	67634	10	50	2.350	8867	55	131	0.783	1855
-34	-29.2	4.326	64227	11	51.8	2.301	8526	56	132.8	0.762	1799
-33	-27.4	4.296	61012	12	53.6	2.253	8200	57	134.6	0.743	1745
-32	-25.6	4.264	57977	13	55.4	2.205	7888	58	136.4	0.724	1693
-31	-23.8	4.232	55112	14	57.2	2.158	7590	59	138.2	0.706	1642
-30	-22	4.199	52406	15	59	2.111	7305	60	140	0.688	1594
-29	-20.2	4.165	49848	16	60.8	2.064	7032	61	141.8	0.670	1547
-28	-18.4	4.129	47431	17	62.6	2.019	6771	62	143.6	0.653	1502
-27	-16.6	4.093	45146	18	64.4	1.974	6521	63	145.4	0.636	1458
-26	-14.8	4.056	42984	19	66.2	1.929	6281	64	147.2	0.620	1416
-25	-13	4.018	40938	20	68	1.885	6052	65	149	0.604	1375
-24	-11.2	3.980	39002	21	69.8	1.842	5832	66	150.8	0.589	1335
-23	-9.4	3.940	37169	22	71.6	1.799	5621	67	152.6	0.574	1297
-22	-7.6	3.899	35433	23	73.4	1.757	5419	68	154.4	0.560	1260
-21	-5.8	3.858	33788	24	75.2	1.716	5225	69	156.2	0.546	1225
-20	-4	3.816	32230	25	77	1.675	5039	70	158	0.532	1190
-19	-2.2	3.773	30752	26	78.8	1.636	4861	71	159.8	0.519	1157
-18	-0.4	3.729	29350	27	80.6	1.596	4690	72	161.6	0.506	1125
-17	1.4	3.685	28021	28	82.4	1.558	4526	73	163.4	0.493	1093
-16	3.2	3.640	26760	29	84.2	1.520	4369	74	165.2	0.481	1063
-15	5	3.594	25562	30	86	1.483	4218	75	167	0.469	1034
-14	6.8	3.548	24425	31	87.8	1.447	4072	76	168.8	0.457	1006
-13	8.6	3.501	23345	32	89.6	1.412	3933	77	170.6	0.446	978
-12	10.4	3.453	22320	33	91.4	1.377	3799	78	172.4	0.435	952
-11	12.2	3.405	21345	34	93.2	1.343	3670	79	174.2	0.424	926
-10	14	3.356	20418	35	95	1.309	3547	80	176	0.414	902
-9	15.8	3.307	19537	36	96.8	1.277	3428	81	177.8	0.404	877
-8	17.6	3.258	18698	37	98.6	1.253	3344	82	179.6	0.394	854
-7	19.4	3.208	17901	38	100.4	1.213	3204	83	181.4	0.384	832
-6	21.2	3.158	17142	39	102.2	1.183	3098	84	183.2	0.375	810

Ice Maker Sensor

ERROR Code

Resistance Check (CN90 Unplugged)
CN90 Pin# 4 to Pin# 8
Voltage Check (CN90 Connected)
CN90 Pin# 4 to CN10 Pin# 3

R Sensor

ERROR Code

Resistance Check (CN30 Unplugged)
CN30 Pin# 6 to CN10 Pin# 3
Voltage Check (CN30 Connected)
CN30 Pin# 6 to CN10 Pin# 3

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Sensor Resistance / Voltage Checks

˚C	˚F	Voltage	Resistance	˚C	˚F	Voltage	Resistance	˚C	˚F	Voltage	Resistance
-50	-58	4.694	153319	-5	23	3.107	16419	40	104	1.153	2997
-49	-56.2	4.677	144794	-4	24.8	3.057	15731	41	105.8	1.124	2899
-48	-54.4	4.659	136798	-3	26.6	3.006	15076	42	107.6	1.095	2805
-47	-52.6	4.641	129294	-2	28.4	2.955	14452	43	109.4	1.068	2714
-46	-50.8	4.622	122248	-1	30.2	2.904	13857	44	111.2	1.040	2627
-45	-49	4.602	115631	0	32	2.853	13290	45	113	1.014	2543
-44	-47.2	4.581	109413	1	33.8	2.802	12749	46	114.8	0.988	2462
-43	-45.4	4.560	103569	2	35.6	2.751	12233	47	116.6	0.963	2384
-42	-43.6	4.537	98073	3	37.4	2.700	11741	48	118.4	0.938	2309
-41	-41.8	4.514	92903	4	39.2	2.649	11271	49	120.2	0.914	2237
-40	-40	4.490	88037	5	41	2.599	10823	50	122	0.891	2167
-39	-38.2	4.465	83456	6	42.8	2.548	10395	51	123.8	0.868	2100
-38	-36.4	4.439	79142	7	44.6	2.498	9986	52	125.6	0.846	2036
-37	-34.6	4.412	75077	8	46.4	2.449	9596	53	127.4	0.824	1973
-36	-32.8	4.385	71246	9	48.2	2.399	9223	54	129.2	0.803	1913
-35	-31	4.356	67634	10	50	2.350	8867	55	131	0.783	1855
-34	-29.2	4.326	64227	11	51.8	2.301	8526	56	132.8	0.762	1799
-33	-27.4	4.296	61012	12	53.6	2.253	8200	57	134.6	0.743	1745
-32	-25.6	4.264	57977	13	55.4	2.205	7888	58	136.4	0.724	1693
-31	-23.8	4.232	55112	14	57.2	2.158	7590	59	138.2	0.706	1642
-30	-22	4.199	52406	15	59	2.111	7305	60	140	0.688	1594
-29	-20.2	4.165	49848	16	60.8	2.064	7032	61	141.8	0.670	1547
-28	-18.4	4.129	47431	17	62.6	2.019	6771	62	143.6	0.653	1502
-27	-16.6	4.093	45146	18	64.4	1.974	6521	63	145.4	0.636	1458
-26	-14.8	4.056	42984	19	66.2	1.929	6281	64	147.2	0.620	1416
-25	-13	4.018	40938	20	68	1.885	6052	65	149	0.604	1375
-24	-11.2	3.980	39002	21	69.8	1.842	5832	66	150.8	0.589	1335
-23	-9.4	3.940	37169	22	71.6	1.799	5621	67	152.6	0.574	1297
-22	-7.6	3.899	35433	23	73.4	1.757	5419	68	154.4	0.560	1260
-21	-5.8	3.858	33788	24	75.2	1.716	5225	69	156.2	0.546	1225
-20	-4	3.816	32230	25	77	1.675	5039	70	158	0.532	1190
-19	-2.2	3.773	30752	26	78.8	1.636	4861	71	159.8	0.519	1157
-18	-0.4	3.729	29350	27	80.6	1.596	4690	72	161.6	0.506	1125
-17	1.4	3.685	28021	28	82.4	1.558	4526	73	163.4	0.493	1093
-16	3.2	3.640	26760	29	84.2	1.520	4369	74	165.2	0.481	1063
-15	5	3.594	25562	30	86	1.483	4218	75	167	0.469	1034
-14	6.8	3.548	24425	31	87.8	1.447	4072	76	168.8	0.457	1006
-13	8.6	3.501	23345	32	89.6	1.412	3933	77	170.6	0.446	978
-12	10.4	3.453	22320	33	91.4	1.377	3799	78	172.4	0.435	952
-11	12.2	3.405	21345	34	93.2	1.343	3670	79	174.2	0.424	926
-10	14	3.356	20418	35	95	1.309	3547	80	176	0.414	902
-9	15.8	3.307	19537	36	96.8	1.277	3428	81	177.8	0.404	877
-8	17.6	3.258	18698	37	98.6	1.253	3344	82	179.6	0.394	854
-7	19.4	3.208	17901	38	100.4	1.213	3204	83	181.4	0.384	832
-6	21.2	3.158	17142	39	102.2	1.183	3098	84	183.2	0.375	810

R Def Sensor

ERROR Code

Resistance Check (CN30 Unplugged)
CN30 Pin# 7 to CN10 Pin# 3
Voltage Check (CN30 Connected)
CN30 Pin# 7 to CN10 Pin# 3

Ambient Sensor

ERROR Code

Resistance Check (CN32 Unplugged)
CN32 Pin# 1 to CN32 Pin# 4
Voltage Check (CN32 Connected)
CN32 Pin# 1 to CN10 Pin# 3

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Sensor Resistance / Voltage Checks

˚C	˚F	Voltage	Resistance	˚C	˚F	Voltage	Resistance	˚C	˚F	Voltage	Resistance
-50	-58	4.694	153319	-5	23	3.107	16419	40	104	1.153	2997
-49	-56.2	4.677	144794	-4	24.8	3.057	15731	41	105.8	1.124	2899
-48	-54.4	4.659	136798	-3	26.6	3.006	15076	42	107.6	1.095	2805
-47	-52.6	4.641	129294	-2	28.4	2.955	14452	43	109.4	1.068	2714
-46	-50.8	4.622	122248	-1	30.2	2.904	13857	44	111.2	1.040	2627
-45	-49	4.602	115631	0	32	2.853	13290	45	113	1.014	2543
-44	-47.2	4.581	109413	1	33.8	2.802	12749	46	114.8	0.988	2462
-43	-45.4	4.560	103569	2	35.6	2.751	12233	47	116.6	0.963	2384
-42	-43.6	4.537	98073	3	37.4	2.700	11741	48	118.4	0.938	2309
-41	-41.8	4.514	92903	4	39.2	2.649	11271	49	120.2	0.914	2237
-40	-40	4.490	88037	5	41	2.599	10823	50	122	0.891	2167
-39	-38.2	4.465	83456	6	42.8	2.548	10395	51	123.8	0.868	2100
-38	-36.4	4.439	79142	7	44.6	2.498	9986	52	125.6	0.846	2036
-37	-34.6	4.412	75077	8	46.4	2.449	9596	53	127.4	0.824	1973
-36	-32.8	4.385	71246	9	48.2	2.399	9223	54	129.2	0.803	1913
-35	-31	4.356	67634	10	50	2.350	8867	55	131	0.783	1855
-34	-29.2	4.326	64227	11	51.8	2.301	8526	56	132.8	0.762	1799
-33	-27.4	4.296	61012	12	53.6	2.253	8200	57	134.6	0.743	1745
-32	-25.6	4.264	57977	13	55.4	2.205	7888	58	136.4	0.724	1693
-31	-23.8	4.232	55112	14	57.2	2.158	7590	59	138.2	0.706	1642
-30	-22	4.199	52406	15	59	2.111	7305	60	140	0.688	1594
-29	-20.2	4.165	49848	16	60.8	2.064	7032	61	141.8	0.670	1547
-28	-18.4	4.129	47431	17	62.6	2.019	6771	62	143.6	0.653	1502
-27	-16.6	4.093	45146	18	64.4	1.974	6521	63	145.4	0.636	1458
-26	-14.8	4.056	42984	19	66.2	1.929	6281	64	147.2	0.620	1416
-25	-13	4.018	40938	20	68	1.885	6052	65	149	0.604	1375
-24	-11.2	3.980	39002	21	69.8	1.842	5832	66	150.8	0.589	1335
-23	-9.4	3.940	37169	22	71.6	1.799	5621	67	152.6	0.574	1297
-22	-7.6	3.899	35433	23	73.4	1.757	5419	68	154.4	0.560	1260
-21	-5.8	3.858	33788	24	75.2	1.716	5225	69	156.2	0.546	1225
-20	-4	3.816	32230	25	77	1.675	5039	70	158	0.532	1190
-19	-2.2	3.773	30752	26	78.8	1.636	4861	71	159.8	0.519	1157
-18	-0.4	3.729	29350	27	80.6	1.596	4690	72	161.6	0.506	1125
-17	1.4	3.685	28021	28	82.4	1.558	4526	73	163.4	0.493	1093
-16	3.2	3.640	26760	29	84.2	1.520	4369	74	165.2	0.481	1063
-15	5	3.594	25562	30	86	1.483	4218	75	167	0.469	1034
-14	6.8	3.548	24425	31	87.8	1.447	4072	76	168.8	0.457	1006
-13	8.6	3.501	23345	32	89.6	1.412	3933	77	170.6	0.446	978
-12	10.4	3.453	22320	33	91.4	1.377	3799	78	172.4	0.435	952
-11	12.2	3.405	21345	34	93.2	1.343	3670	79	174.2	0.424	926
-10	14	3.356	20418	35	95	1.309	3547	80	176	0.414	902
-9	15.8	3.307	19537	36	96.8	1.277	3428	81	177.8	0.404	877
-8	17.6	3.258	18698	37	98.6	1.253	3344	82	179.6	0.394	854
-7	19.4	3.208	17901	38	100.4	1.213	3204	83	181.4	0.384	832
-6	21.2	3.158	17142	39	102.2	1.183	3098	84	183.2	0.375	810

F Sensor

ERROR Code

Resistance Check (CN30 Unplugged)
CN30 Pin# 3 to CN10 Pin# 3
Voltage Check (CN30 Connected)
CN30 Pin# 3 to CN10 Pin# 3

F Def Sensor

ERROR Code

Resistance Check (CN32 Unplugged)
CN30 Pin# 4 to CN10 Pin# 3
Voltage Check (CN32 Connected)
CN30 Pin# 4 to CN10 Pin# 3

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Sensor Resistance / Voltage Checks

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-50	-58	4.694	153319	-5	23	3.107	16419	40	104	1.153	2997
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-47	-52.6	4.641	129294	-2	28.4	2.955	14452	43	109.4	1.068	2714
-46	-50.8	4.622	122248	-1	30.2	2.904	13857	44	111.2	1.040	2627
-45	-49	4.602	115631	0	32	2.853	13290	45	113	1.014	2543
-44	-47.2	4.581	109413	1	33.8	2.802	12749	46	114.8	0.988	2462
-43	-45.4	4.560	103569	2	35.6	2.751	12233	47	116.6	0.963	2384
-42	-43.6	4.537	98073	3	37.4	2.700	11741	48	118.4	0.938	2309
-41	-41.8	4.514	92903	4	39.2	2.649	11271	49	120.2	0.914	2237
-40	-40	4.490	88037	5	41	2.599	10823	50	122	0.891	2167
-39	-38.2	4.465	83456	6	42.8	2.548	10395	51	123.8	0.868	2100
-38	-36.4	4.439	79142	7	44.6	2.498	9986	52	125.6	0.846	2036
-37	-34.6	4.412	75077	8	46.4	2.449	9596	53	127.4	0.824	1973
-36	-32.8	4.385	71246	9	48.2	2.399	9223	54	129.2	0.803	1913
-35	-31	4.356	67634	10	50	2.350	8867	55	131	0.783	1855
-34	-29.2	4.326	64227	11	51.8	2.301	8526	56	132.8	0.762	1799
-33	-27.4	4.296	61012	12	53.6	2.253	8200	57	134.6	0.743	1745
-32	-25.6	4.264	57977	13	55.4	2.205	7888	58	136.4	0.724	1693
-31	-23.8	4.232	55112	14	57.2	2.158	7590	59	138.2	0.706	1642
-30	-22	4.199	52406	15	59	2.111	7305	60	140	0.688	1594
-29	-20.2	4.165	49848	16	60.8	2.064	7032	61	141.8	0.670	1547
-28	-18.4	4.129	47431	17	62.6	2.019	6771	62	143.6	0.653	1502
-27	-16.6	4.093	45146	18	64.4	1.974	6521	63	145.4	0.636	1458
-26	-14.8	4.056	42984	19	66.2	1.929	6281	64	147.2	0.620	1416
-25	-13	4.018	40938	20	68	1.885	6052	65	149	0.604	1375
-24	-11.2	3.980	39002	21	69.8	1.842	5832	66	150.8	0.589	1335
-23	-9.4	3.940	37169	22	71.6	1.799	5621	67	152.6	0.574	1297
-22	-7.6	3.899	35433	23	73.4	1.757	5419	68	154.4	0.560	1260
-21	-5.8	3.858	33788	24	75.2	1.716	5225	69	156.2	0.546	1225
-20	-4	3.816	32230	25	77	1.675	5039	70	158	0.532	1190
-19	-2.2	3.773	30752	26	78.8	1.636	4861	71	159.8	0.519	1157
-18	-0.4	3.729	29350	27	80.6	1.596	4690	72	161.6	0.506	1125
-17	1.4	3.685	28021	28	82.4	1.558	4526	73	163.4	0.493	1093
-16	3.2	3.640	26760	29	84.2	1.520	4369	74	165.2	0.481	1063
-15	5	3.594	25562	30	86	1.483	4218	75	167	0.469	1034
-14	6.8	3.548	24425	31	87.8	1.447	4072	76	168.8	0.457	1006
-13	8.6	3.501	23345	32	89.6	1.412	3933	77	170.6	0.446	978
-12	10.4	3.453	22320	33	91.4	1.377	3799	78	172.4	0.435	952
-11	12.2	3.405	21345	34	93.2	1.343	3670	79	174.2	0.424	926
-10	14	3.356	20418	35	95	1.309	3547	80	176	0.414	902
-9	15.8	3.307	19537	36	96.8	1.277	3428	81	177.8	0.404	877
-8	17.6	3.258	18698	37	98.6	1.253	3344	82	179.6	0.394	854
-7	19.4	3.208	17901	38	100.4	1.213	3204	83	181.4	0.384	832
-6	21.2	3.158	17142	39	102.2	1.183	3098	84	183.2	0.375	810

Ice Room Sensor

ERROR Code

Resistance Check (CN32 Unplugged)
CN32 Pin# 3 to CN10 Pin# 3
Voltage Check (CN32 Connected)
CN32 Pin# 3 to CN10 Pin# 3

Pantry Sensor

ERROR Code

Resistance Check (CN30 Unplugged)
CN30 Pin# 8 to CN30 Pin# 9
Voltage Check (CN30 Connected)
CN30 Pin# 8 to CN10 Pin# 3

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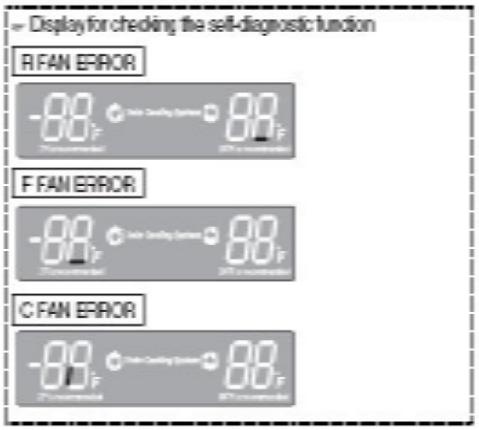
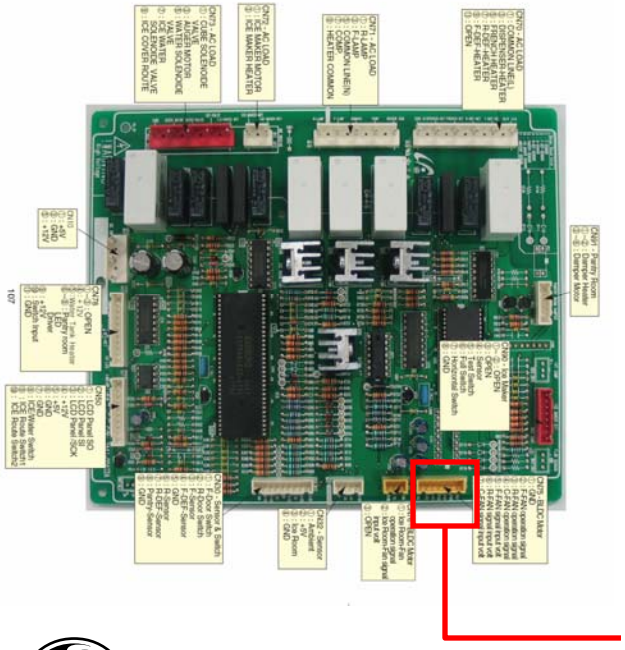
Operational Fan Checks





CN75

Note: All fan voltage checks will be from CN10 Pin# 3

Check voltage to fans:

F Fan – CN75 Pin#2 7~12 VDC
R Fan – CN75 Pin#3 7~12 VDC
C Fan – CN75 Pin#4 7~12 VDC

Check voltage from fans (indicates fans are turning):

F Fan – CN75 Pin#5 2~3 VDC
R Fan – CN75 Pin#6 2~3 VDC
C Fan – CN75 Pin#7 2~3 VDC

Fan Schematics

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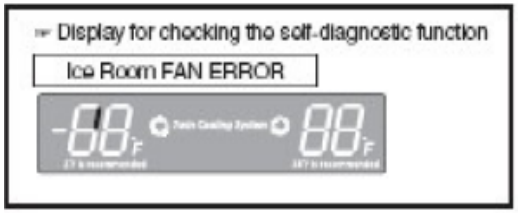
Ice Room Fan Checks



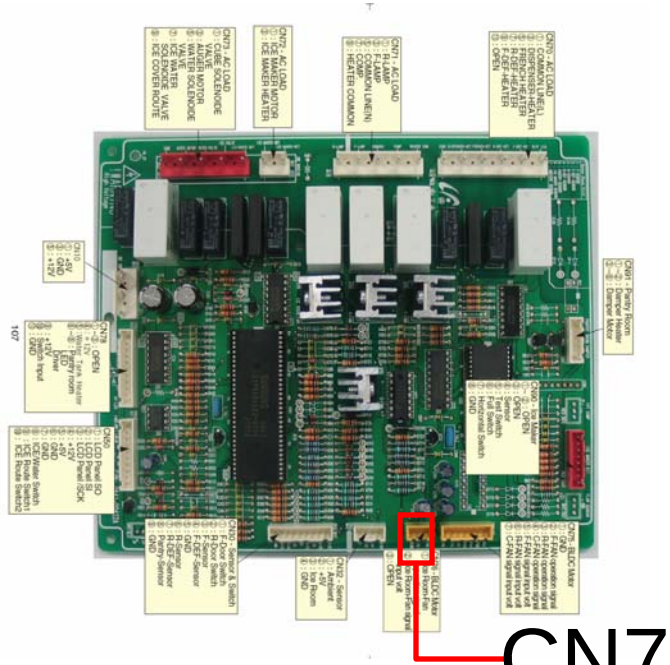
Note: All fan voltage checks will be from CN10 Pin# 3

Check voltage to fan:

IR Fan – CN76 Pin#1 7~12 VDC

Check voltage from fan (indicates fans are turning):

IR Fan – CN76 Pin#2 2~3 VDC



Ice Room Fan Schematic

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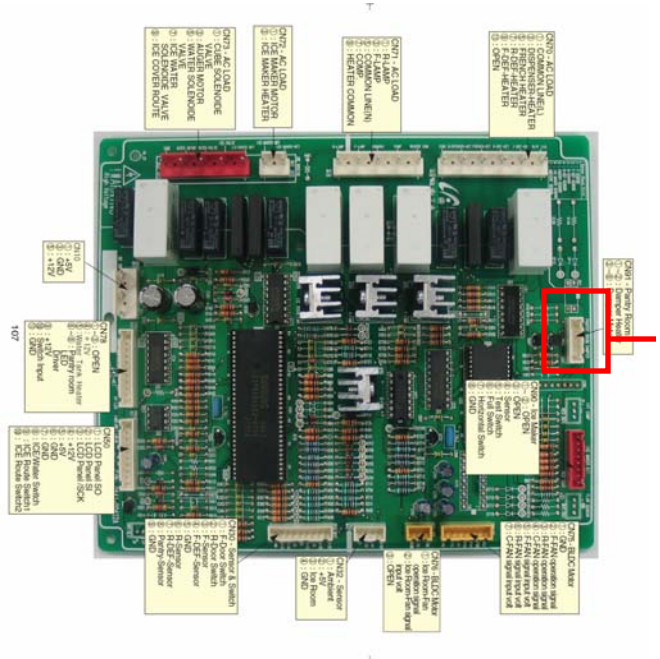
Pantry Room Damper Heater

ERROR Code

With CN91 Unplugged from board, read resistance between pins 1 & 2 of plug. Heater should read approx 145 ohms.

When heater is energized, there should be approx 12vdc between pins 1 & 2 of CN91. (Plug connected to board)



CN91

Damper / Heater Schematic

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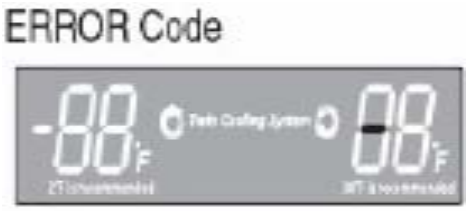
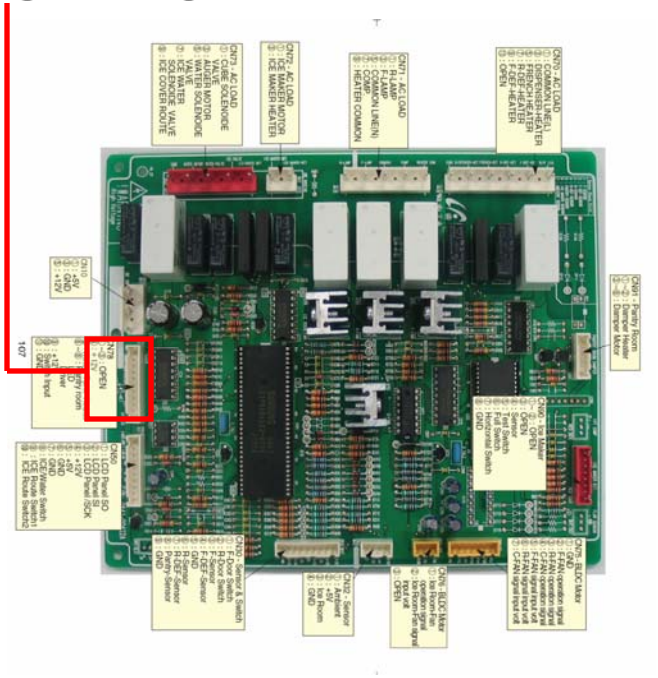
Water Tank Heater



With CN78 Unplugged from board, read resistance between pins 4 & 5 of plug. Heater should read approx 48 ohms.

When heater is energized, there should be approx 12vdc between pins 4 & 5 of CN78. (Plug connected to board)

CN78



Water Tank Heater Schematic

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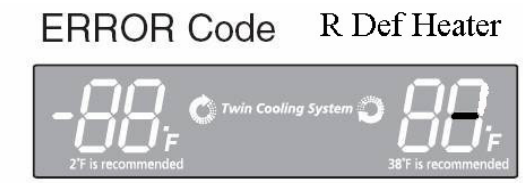
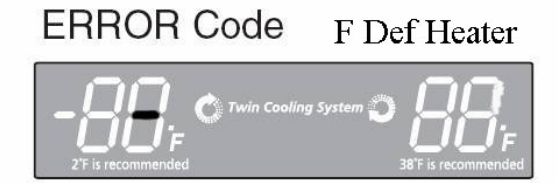
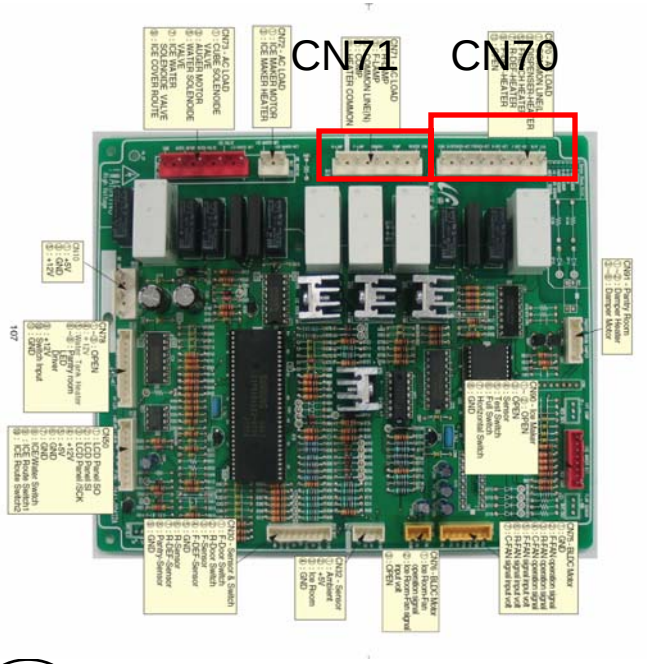
Defrost Heaters







With CN70 Unplugged from board, read resistance between pin# 9 to CN71 Pin#9.
F Def Heater should read approx 59 ohms.
(In parallel with ice duct heater 3600 ohms.)

With CN70 Unplugged from board, read resistance between pin# 7 to CN71 Pin#9.
R Def Heater should read approx 120 ohms.

Note: If heaters are at issue, try to energize by using Test Mode – Manual Operation (Phase II, Slide 7 & 8).

Defrost Heater Schematic

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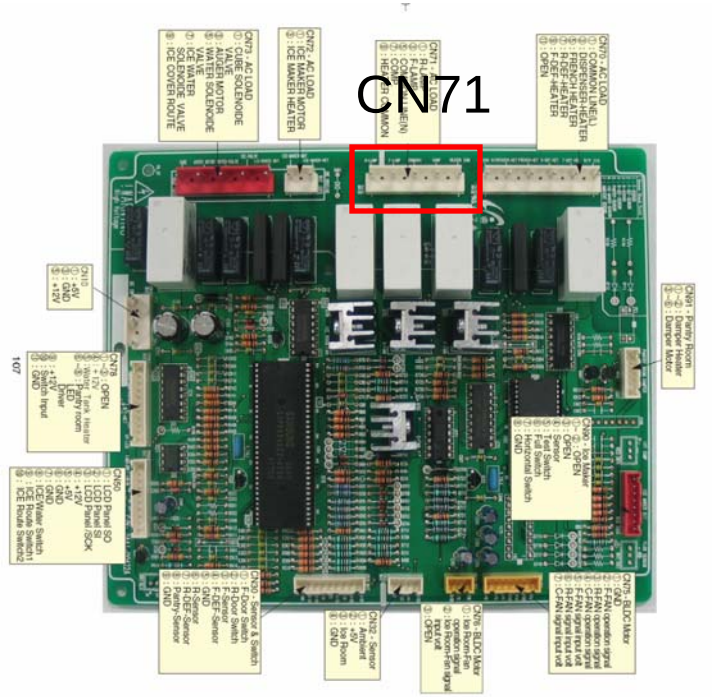
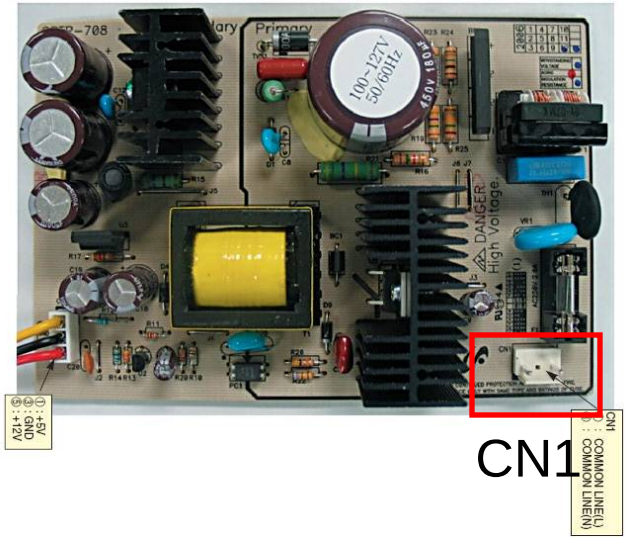
Compressor

*** 5 Minute Delay start with a cold cabinet ***





Compressor utilizes a “Switched Neutral” circuit. L1 side is always “hot”. Read between CN1 pin# 1 (L1) on power supply board to CN71 pin# 7. Should read 120vac if board wants compressor to run.

Compressor Schematic

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End of Presentation

Thank You

Any Questions ?

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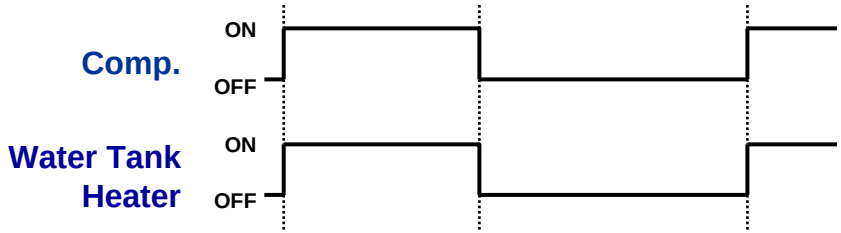
Water tank heater logic

Ambient Temp.	FF Setting Notch	Water Tank Heater Diagram
Under 15℃ (under 54.5℉)	34, 36, 38℉	
Under 22℃ (under 71.6℉)	34, 36℉	
Under 33℃ (under 91.4℉)	34℉	

Return

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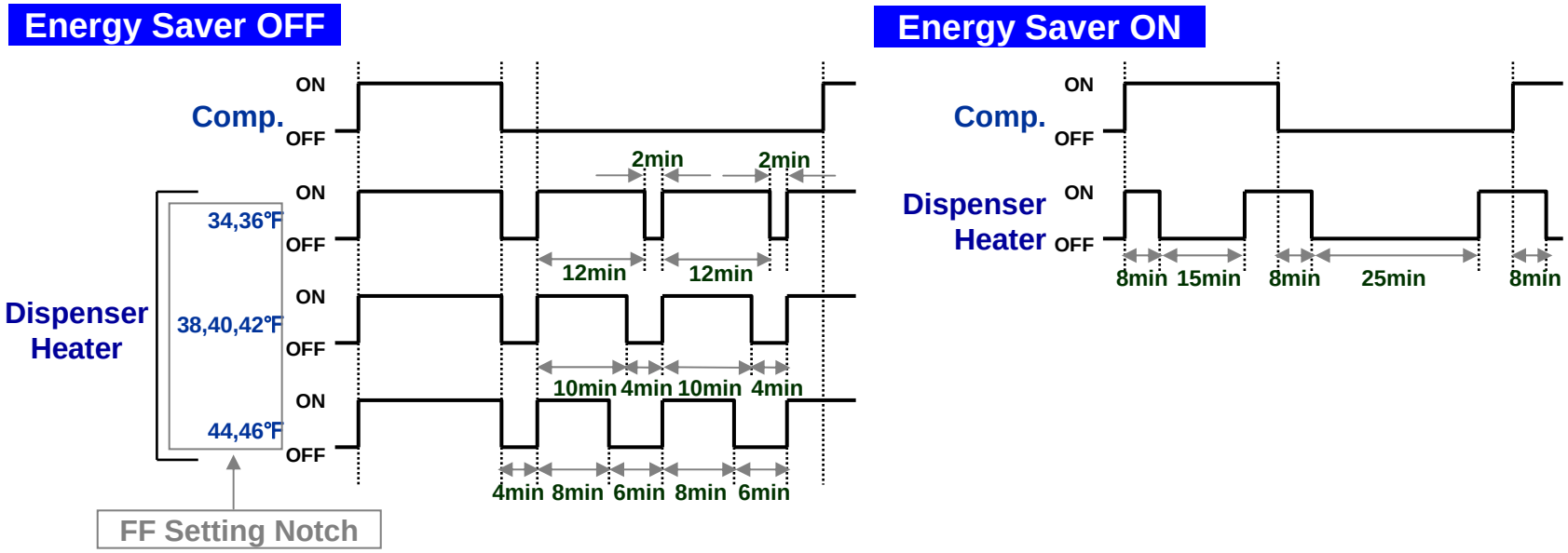
Dispenser heater logic



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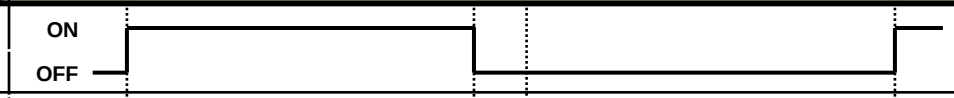
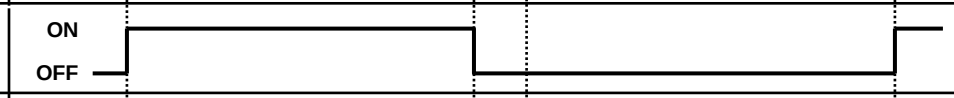
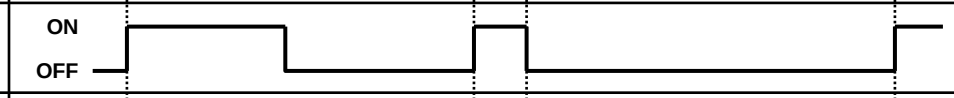
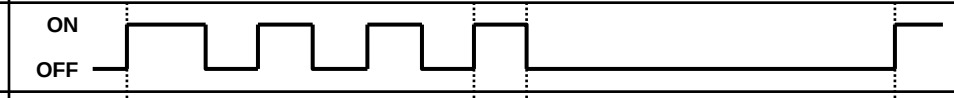
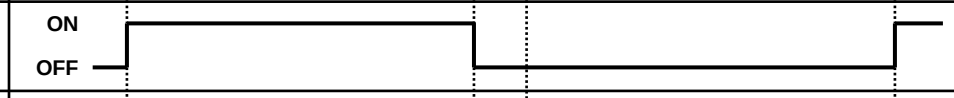
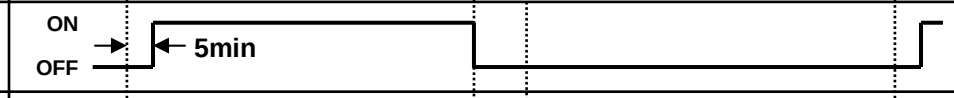
Fan logic

		Diagram	Control Factor
Compressor			FZ Room Sensor Temp.
FZ Fan			
FF Fan			FF Room Sensor Temp.
ICE Fan			ICE Room Sensor Temp.
C Fan	19℃↑		Ambient Temp. & Comp. ON/OFF
	18~16℃		
	15℃↓		

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