GE Appliances

Technical Service Guide

April 2016

2016 Stainless Steel Tub Dishwasher

DDT595SxJ0xx

GDF570SxJ0xx

GDF650SxJ0xx

GDT655SxJ0xx

GDT695SxJ0xx

GE Appliances
Louisville, Kentucky 40225

31-9253

Safety Information

IMPORTANT SAFETY NOTICE

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

WARNING

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

RECONNECT ALL GROUNDING DEVICES

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

GE Appliances
Technical Service Guide

Table of Contents

(*Continued next page*)

Safety Requirements

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

Steel Toed Work Boot

Electrically Rated Glove and Dyneema® Cut Resistant Glove Keeper

Dyneema®Cut Resistant Glove

Cut Resistant Sleeve(s)

Plano Type Safety Glasses

Prescription Safety Glasses
Safety Glasses must be ANSI Z87.1-2003 compliant

Brazing Glasses

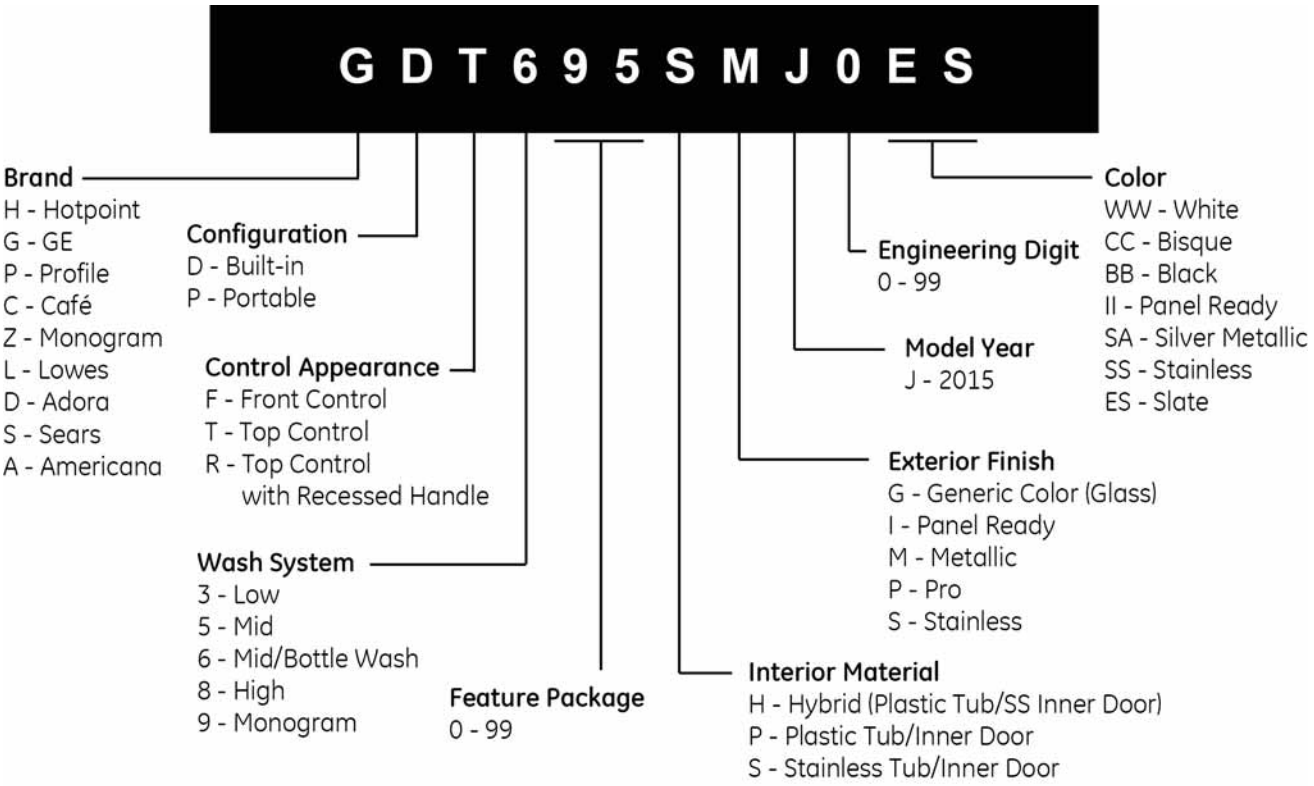
⚠ WARNING

Prior to disassembly of the dishwasher to access components, GE Factory Service technicians are REQUIRED to follow the Lockout / Tagout (LOTO) 6 Step Process:

Step 1 Plan and Prepare	Step 4 Apply LOTO device and lock
Step 2 Shut down the appliance	Step 5 Control (discharge) stored energy
Step 3 Isolate the appliance	Step 6 “Try It” verify that the appliance is locked out

Nomenclature

Model Number



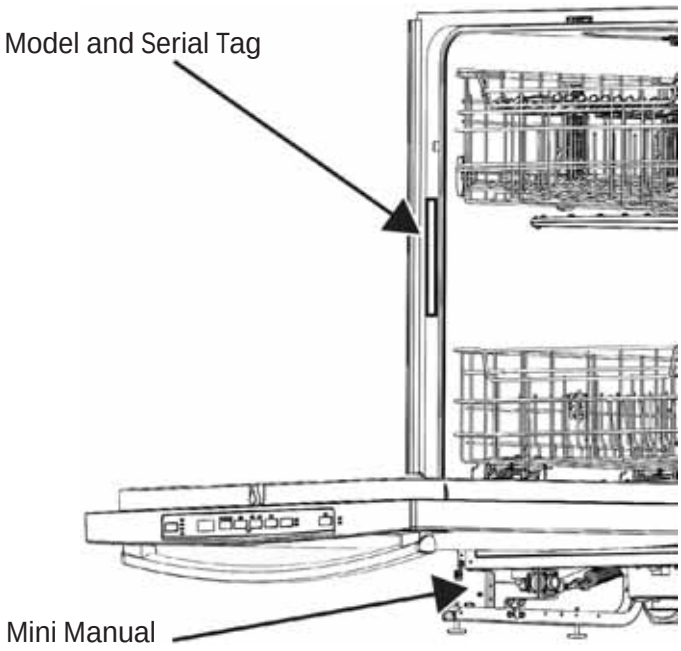
The nomenclature breaks down and explains what the letters and numbers mean in the model number.

Serial Number

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

Example: GG123456S = April, 2016

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



Introduction

Features and Benefits

- GE's most advanced wash system delivers 65% more cleaning power to each rack
- Enhanced performance ensures items are thoroughly washed and table-ready
- Diverter allows for alternating spray arms using less water
- Industry's first bottle wash jets (some models)
- New hinge allows easier door removal
- 3 Level Wash System: Lower Spray Arm and Mid Spray Arm with new Upper Spray System
- New Third Rack (some models)
- Steam Prewash (some models) loosens tough soils before any cycle, virtually eliminating the need for soaking or pre-rinsing dishes
- Power Dry Fan (some models)
- Piranha hard food disposer
- 80% Recyclability

Product Specifications

Approximate Shipping Weight (lb)	125 pounds (depending on model)
Height w/ Legs Retracted	33 3/8"
Height w/Legs Extended	34 5/8"
Overall Width	23 3/4"
Overall Depth	24"

Electrical Specifications

AC Voltage

- **Circulation Pump**: 120 VAC, .8 amp – 3.8 LRA (locked rotor amps), 8GPM @ 5PSI
- **Drain Pump**: 120 VAC, 27 ohms, .65 amp, ~70 second cycle
- **Tub TCO**: 120 VAC, 210°F +/- 10°F Manual Reset
- **Main Control**: Input 120 VAC, Output 120 VAC, and Output 5 & 13.5 VDC
-

Heater 120 VAC			
	Wet	Dry	
Watts	793	625	+/- 5%
Ohms	16.4	23.2	+/- 5%
Amps	6.6	5.2	+/- 5%

DC Voltage

- **Door Switch**: 13.5 VDC
- **Water Valve**: 13.5 VDC, 32 ohms, .83 GPM, ~1 minute cycle time
- **UI Control**: 13.5 VDC (some models have 13.5 VDC output to detergent module)
- **Power Dry Fan**: 12-13.5 VDC, 6,000 RPM
- **Detergent Cup**: 13.5 VDC, 25 ohms, 1 second to release detergent cup
- **Rinse Aid Dispenser**: 15 seconds to release rinse aid, capacity 100 ml
- **Rinse Aid Sensor**: 5 VDC to LED, 1 VDC feedback when full, 4 VDC feedback @ low detect (below 20ml)
- **Flood Switch**: 13.5 VDC, .42 amp
- **Turbidity Sensor**: 5 VDC to LED, 10K ohms
-

Thermistor Specifications (in Turbidity Sensor)	
Resistance	Temperature
20k	50°F
11k	75°F
5.8k	100°F
3.4k	125°F
2.1k	150°F
1.3k	175°F

Tools Needed

- 1/4" & 5/16" nut driver
- R2 Quadrex bit
- #15 and #20 Torx bits
- #2 Phillips head screw driver
- Adjustable wrench
- Allen Wrench or Hook Tool (see door removal)
- Two pocket type screwdrivers
- Pliers and needle nose pliers
- Volt / Ohm meter (AC, DC, and ohms) with "Needle" Type Probes (**Part #**: WX05X10013)
- Optional: Clear door (**Part #**: WX05X20002)

Operation and Cycle Information

This section of the guide provides details on segments of cycles, timing of cycles, temperature expectations, and cycling of the heater during the dry portion of a cycle.

Auto Hot Start

If the incoming water temperature is below 80°F, Auto Hot Start is initiated at the beginning of the cycle in an attempt to purge the home water lines of cooler water. Auto Hot Start can add up to 10 minutes to cycle time. One Auto Hot Start segment includes a 1 minute fill, 1 minute circulate and 70 second drain; repeating this sequence if the 80 degree temperature is not met on the next fill. The dishwasher can repeat this up to 3 times if needed. If the temperature is met in one or two segments, the cycle advances to the first prewash segment of the cycle.

Cycle Times

Cycle times will vary depending on options selected, incoming water temperature, and soil level (some models).

Incoming water temperature of 120°F to 140°F is recommended. The 4 pass heating element quickly heats the water for optimum performance.

The cycle chart below explains the segments of a cycle (cycles for all models included, not all models contain the same cycles). It details fill and drain times which depend on either a full or partial drain. It provides the circulation time in each segment, but does not include dry cycles (see the Dry System section in this guide). Times will vary depending on turbidity response and incoming water temperature.

Cycle Algorithm Comparisons											
Segment	Description	Diverter Position	Zonal Use	Calrod	Light	Normal			AutoSense		Heavy
						Fixed	Light Soil	Heavy Soil	Light Soil	Heavy Soil	
PW1	Fill (sec) Circ (min) Drain	Upper	No	OFF		60 5 Empty	60 5 Empty	60 5 Empty	60 5 Empty	60 5 Empty	60 5 Empty
PW2	Fill (sec) Circ (min) Drain	Lower	No	OFF				60 5.5 Empty		60 5.5 Empty	60 5.5 Empty
PW3	Fill (sec) Circ (min) Drain	60LSA/ 60USA	No	OFF	60 4 None			60 5 Empty		60 5 Empty	60 5 Empty
PW4	Fill (sec) Circ (min) Drain	60LSA/ 60USA	Yes Shorten ~30%	ON							60 15 Empty
Main Wash	Fill (sec) Circ (min) Drain	180USA/ 180LSA	Yes will Shorten ~30%	ON	0 20 Empty	60 41 Empty	60 40 Empty	60 40 Empty	60 45 Empty	60 45 Empty	60 45 Empty
PR1	Fill (sec) Circ (min) Drain	180LSA/ 180USA	No on Norm/ auto; Yes on Heavy	OFF				60 12 Empty	60 12 Empty	60 12 Empty	60 15 Empty
PR2	Fill (sec) Circ (min) Drain	60 LSA/ 60 USA	No	OFF	60 4 Empty	60 5 Empty	60 5 Empty	60 5 Empty	60 5 Empty	60 5 Empty	0.8 5 Empty
Sani Rinse	Fill (sec) Circ (min) Drain	Upper	No	ON							
Final Rinse	Fill (sec) Circ (min) Drain	60LSA/ 120USA	No	ON	60 13 Empty	60 15 Empty	60 15 Empty	60 15 Empty	60 30 Empty	60 30 Empty	60 30 Empty

NOTES:

- The previous chart has maximum segment parameters listed. The control will bypass some rinse cycles if the turbidity sensor detects lower soil than the selected cycle maximum parameter and temperature targets are met.
- Selecting the Wash Temp option(s) will add 5 minutes to Pre-Wash 4 (PW4) and Post-Rinse 1 (PR1). This extra time is used to heat water.
- The Steam option will change the segments Pre-Wash 4 (PW4), (increasing heater operation).
- The Bottle Wash option (some models) may increase the cycle time, adding up to 23 minutes; water usage does not change.
- Circulation has built in pauses (see **Diverter**, **Operation** in the **Circulation System** section of this guide).
- USA (Upper Spray Arm): When a number is placed before the USA, it indicates the approximate time in seconds of operation.
- LSA (Lower Spray Arm): When a number is placed before LSA, it indicates the approximate time in seconds of operation.
- PW: Pre Wash
- PR: Post Rinse
- FR: Final Rinse

Cycle Option Selected					Light	Normal Fixed	Normal Sensor	Auto	Heavy
All Zones	No Options				49 - 72	76	75	110	147
				Heated Dry	113 - 136	124	123	174	211 - 235
			Boost			140	111	134	157 - 181
		Sani				185	155	170	202 - 225
	Steam					104	118	137	157 - 180
			Boost	Heated Dry		204	175	198	221 - 245
		Sani		Heated Dry		249	219	234	266 - 289
	Steam			Heated Dry		152	182	201	221 - 244
	Steam		Boost			168	138	161	162 - 185
	Steam	Sani				212	182	197	207 - 230
	Steam		Boost	Heated Dry		232	202	225	226 - 249
	Steam	Sani		Heated Dry		276	246	261	271 - 294
One Wash Zone Selected (some models)	No Options						57	79 -	105 - 129
							24%	28%	28%
				Heated Dry			105	143	169 - 193
			Boost				78	109	115 - 139
		Sani					132	149	170 - 193
	Steam						90	106	122 - 145
			Boost	Heated Dry			142	173	179 - 203
		Sani		Heated Dry			196 - 254	213 - 252	234 - 257
	Steam			Heated Dry			154 - 213	170 - 209	186 - 209
	Steam		Boost				105 - 162	136 - 174	127 - 150
	Steam	Sani					159 - 217	176 - 215	182 - 205
	Steam		Boost	Heated Dry			169 - 226	200 - 238	191 - 214
	Steam	Sani		Heated Dry			223 - 271	240 - 279	246 - 269

Target / Max Temperature Limits				
Cycle	PW4	MW	PR1	FR
Rinse				
Light		125		135
Normal		125		140
Auto		130		140
Heavy	130	130	130	145
Heavy +AH	135	135	130	145

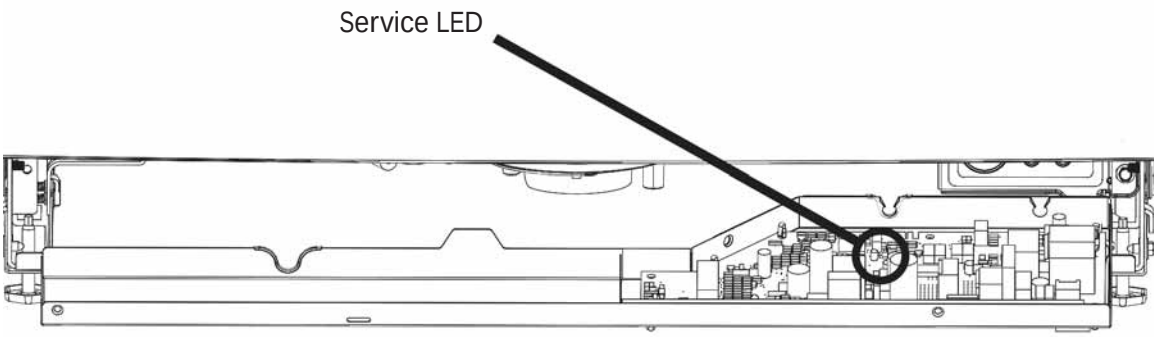
Heated Dry Element Algorithm

4 Pass Heater Algorithm, Dry Cycle	
Normal with Heated Dry	
Time (minutes)	Calrod Description
6	Calrod on
28	Calrod Pulse - 1 minute on/1 minute off
14	Calrod off - Cool Down
Normal with Temp Boost or Sani Selected	
6	Calrod on
58	Calrod Pulse - 1 minute on/1 minute off

Troubleshooting

This troubleshooting section is an overview of the diagnostic capabilities of the electronic control. The control features allow retrieval of error codes, operation of loads in service mode and further diagnostics of the electronic controls with the use of the Service LED on the main control board. Details on Consumer Error Mode and Service Mode, as well as Service LED are located in the Electronic Control section of this guide.

To view the Service LED, disconnect power, lower the control box bottom cover and reapply power to the dishwasher when the control is in a safe position.



Flashing Lights

Flashing LED's or Displays (some models) are an indication that the control is waiting for a start command or that the door is in the open position. There are no fault codes that will automatically display or cause a no-run condition. If board communications are an issue, look for a fault on the main control board Service LED. All of the above diagnostics are covered in this service guide.

Will Not Start

- Check voltage input to the dishwasher.
- Verify door switch operation, consult Fault Code Mode.
- Start pad must be pressed within 5 to 10 seconds of closing the door (Safety Feature).
- Check the main board Service LED (see **Main Control Diagnostics** in **Electronic Controls**).
- Verify that the dishwasher is not in demo mode (see table in **Main Control Diagnostics** in the **Electronic Controls** section of this guide).
- CSM (Current Sense Module) tripped. Please refer to **On the Main Control Board** CSM in the **Electronic Controls** section of this guide.

Symptom: If the dishwasher is “dead”, no LED operation, no button operation or beeping occurs.

Diagnosis: Attempt placing the dishwasher in Consumer Error Mode.

Cure: The CSM (Current Sense Module) is tripped and must be fully diagnosed. Refer to **On the Main Control Board** CSM section of this guide.

Symptom: If the start button *either* does not respond or it makes a triple beep sound *every time it’s pressed* AND all other buttons respond as normal.

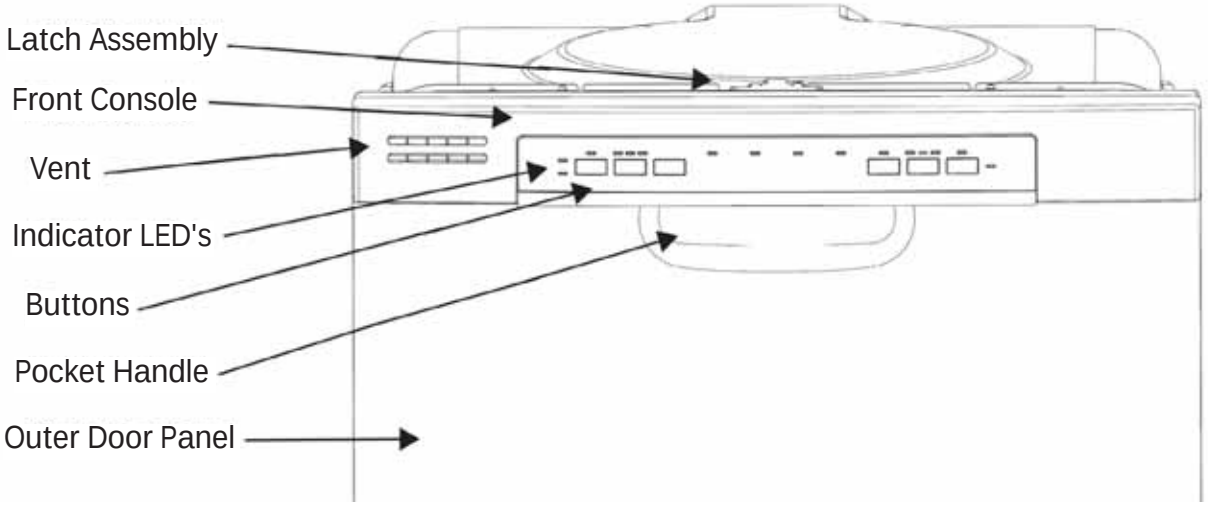
Diagnosis: The dishwasher may be in demo mode.

Cure: To exit demo mode, hold “START” and “HEATED DRY” at the same time for 5 seconds.

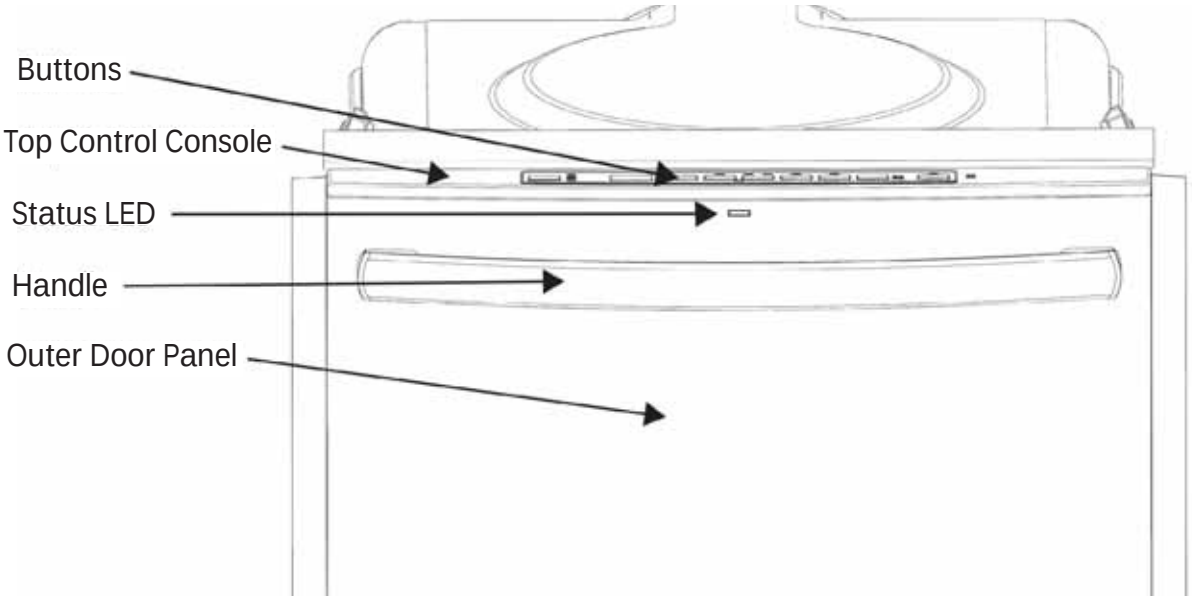
Component Locator Views

Appearances may vary throughout this service guide. Some models do not have all features shown or may be different depending the model number.

Front Control

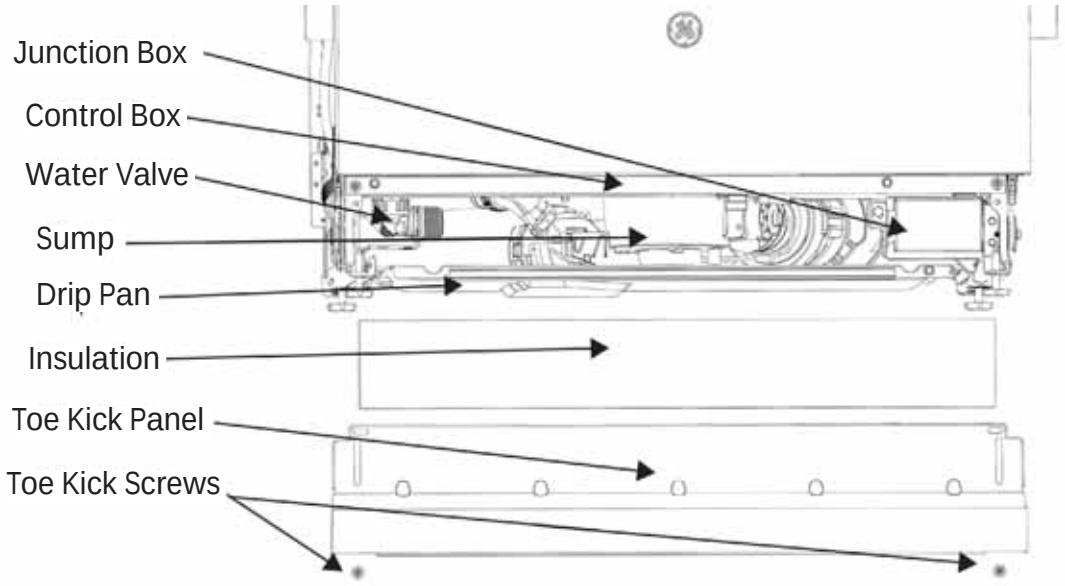


Top Control

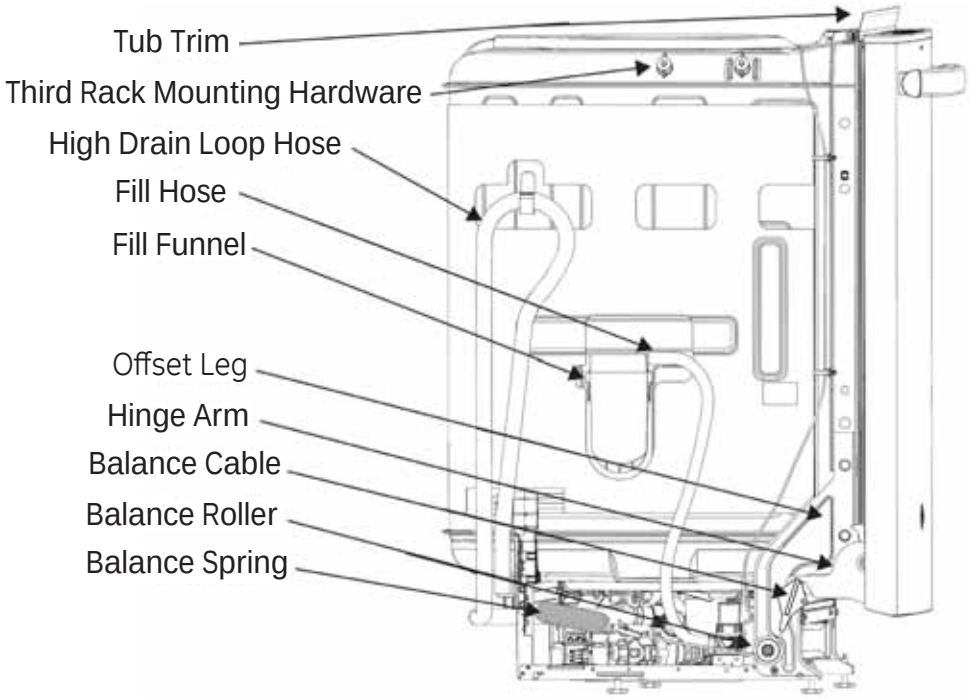


(*Continued next page*)

Toe Kick Area

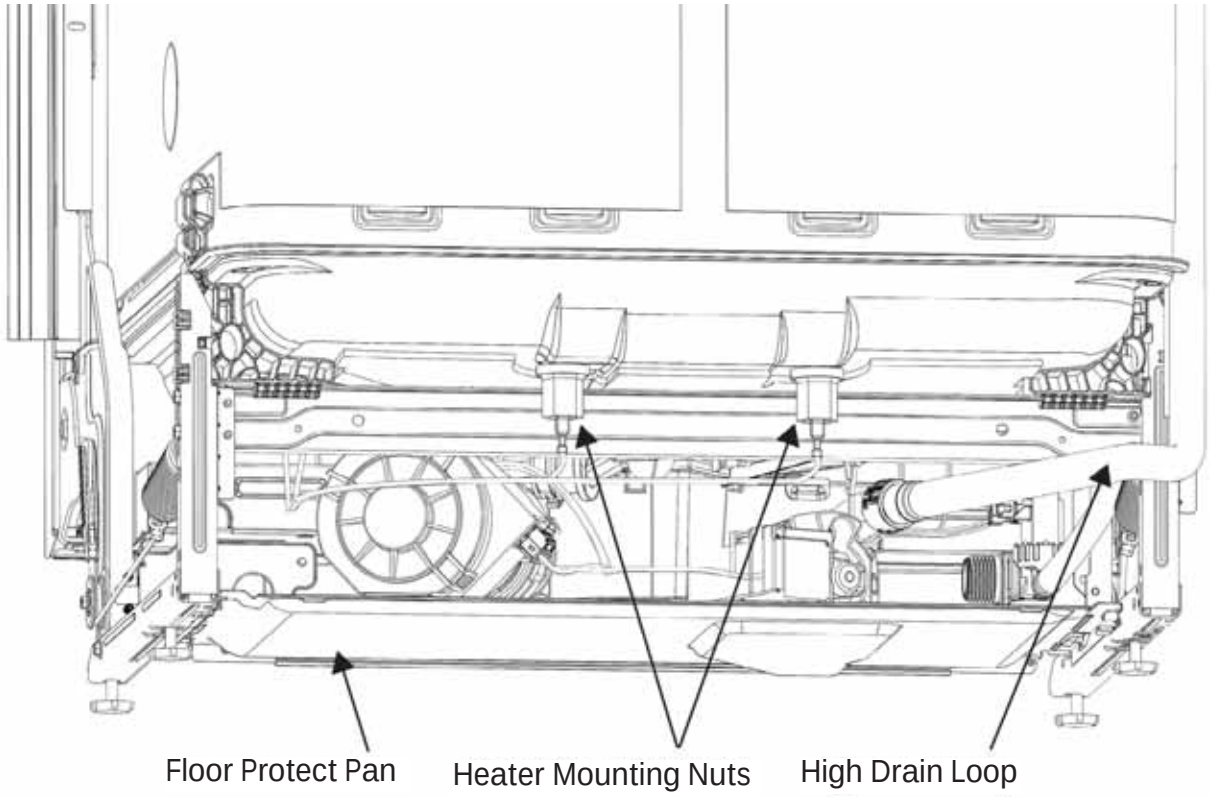


Side

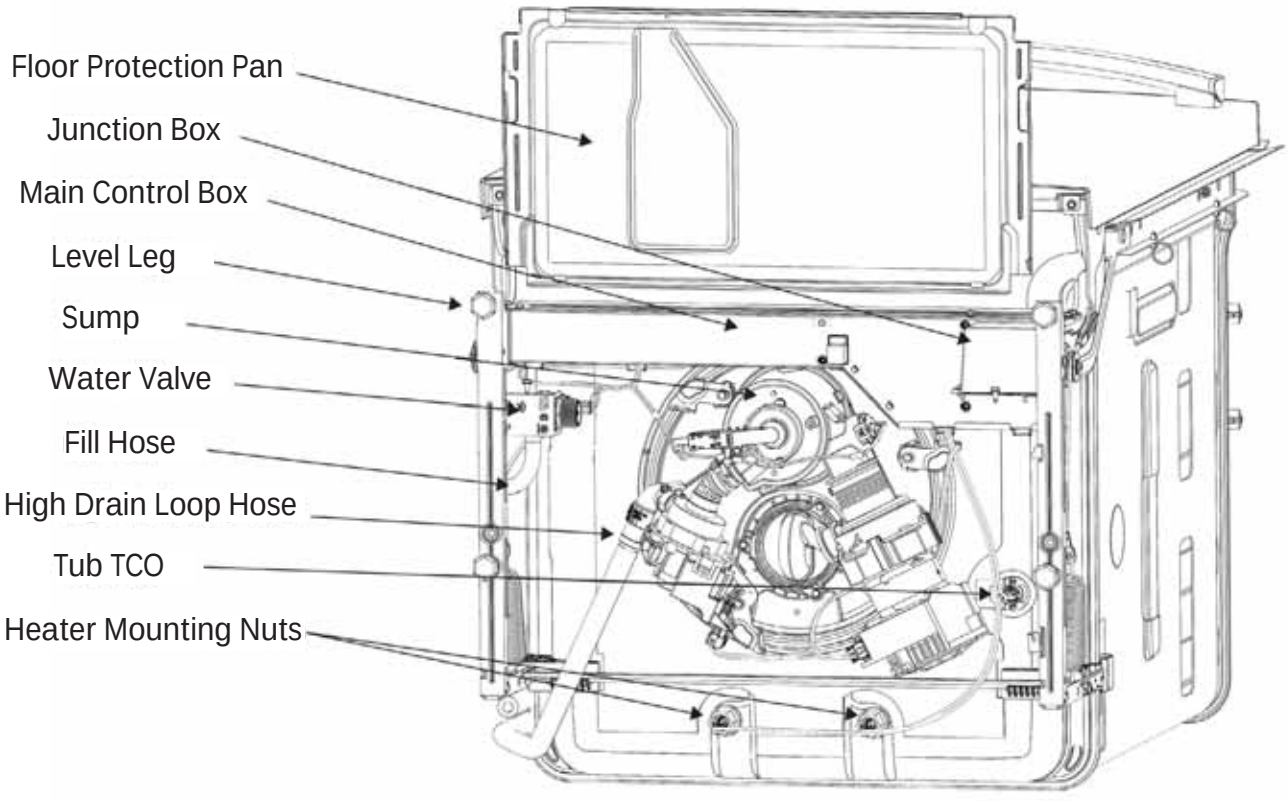


(*Continued next page*)

Back

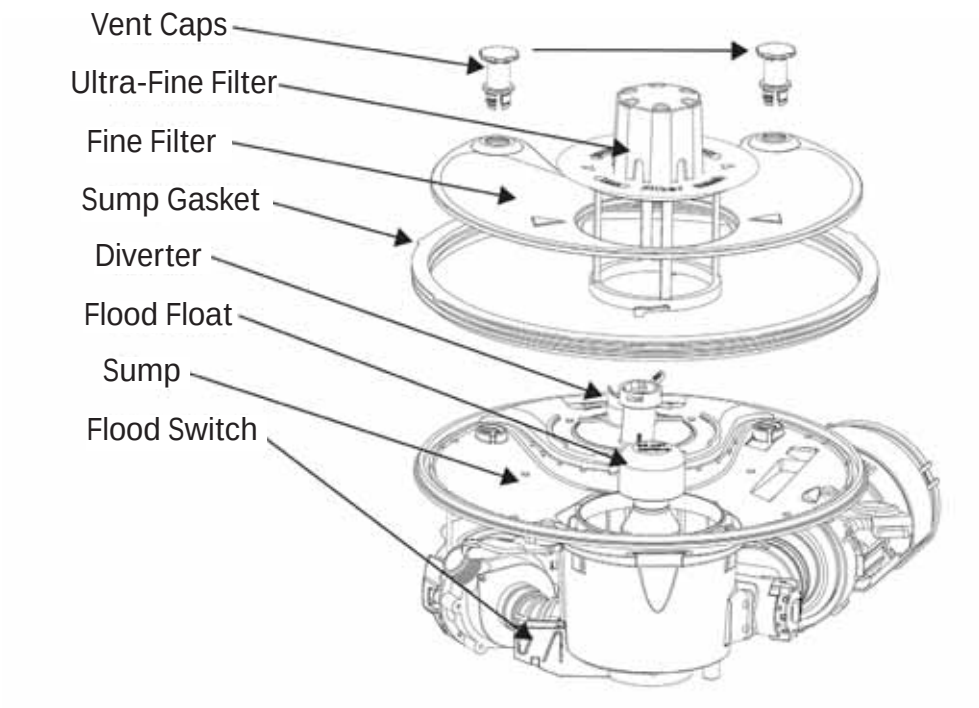


Bottom

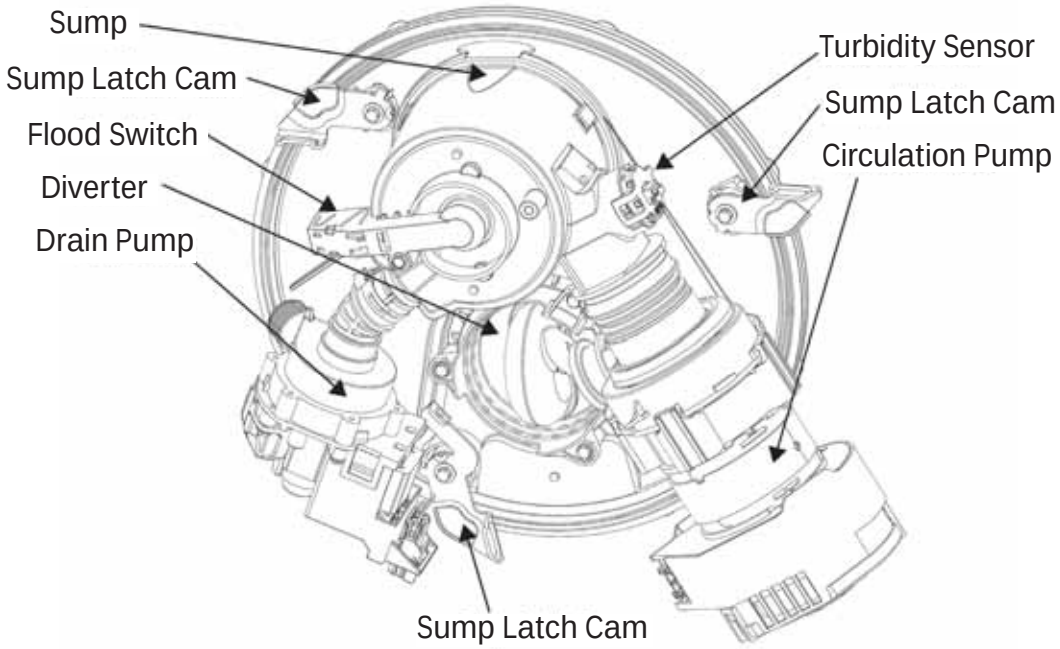


(*Continued next page*)

Sump (Top)

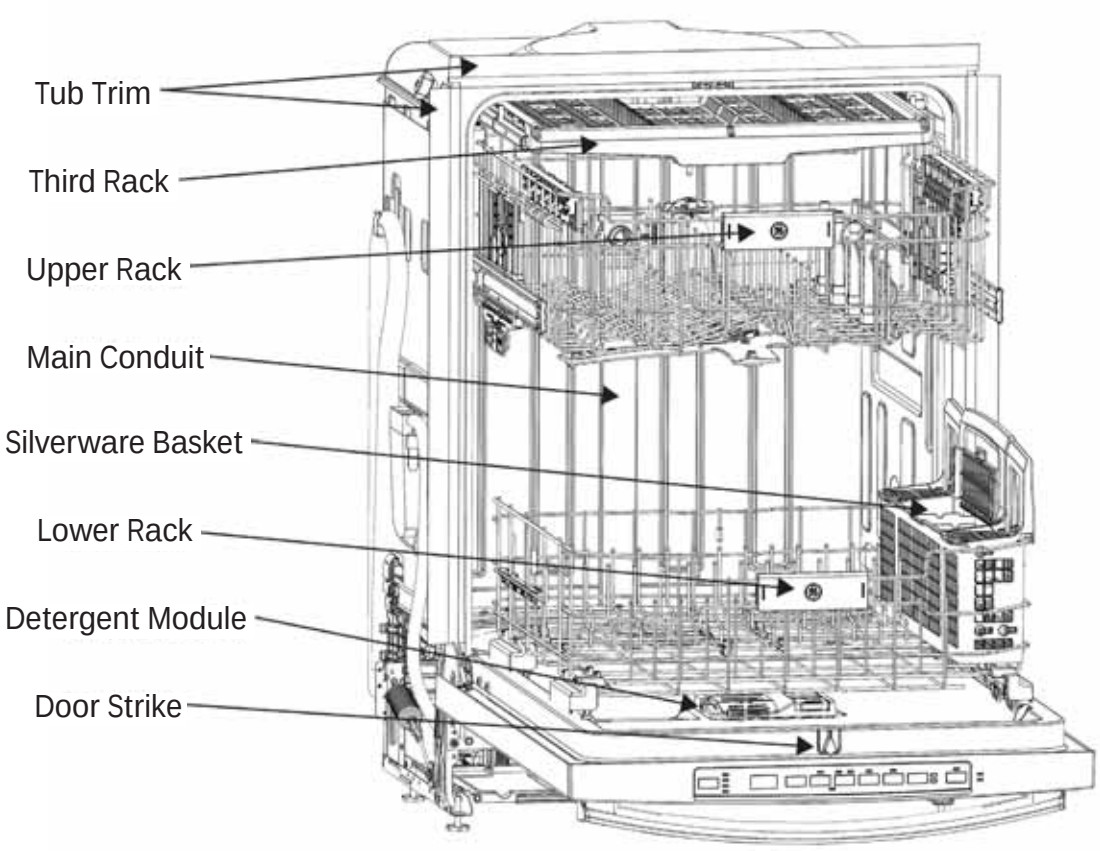


Sump (Bottom)



(*Continued next page*)

Inside

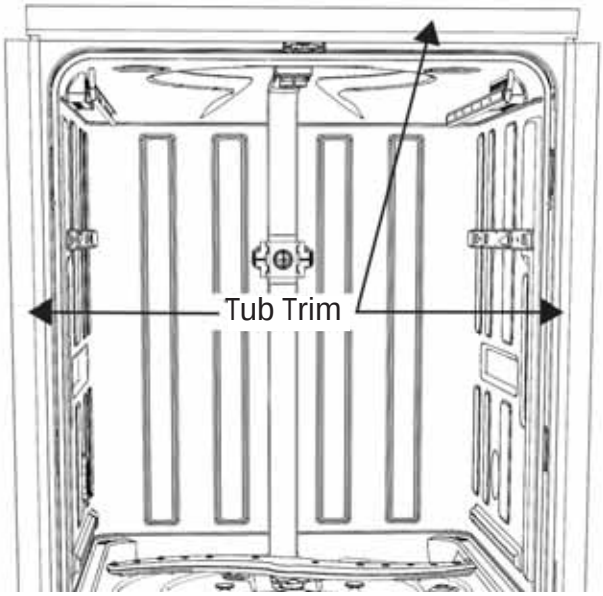

Tub Trim
Third Rack
Upper Rack
Main Conduit
Silverware Basket
Lower Rack
Detergent Module
Door Strike

Tub and Structure

The Tub and Structure section of this guide will cover the toe kick, junction box, racks, leveling, door balance, gaskets, trim (some models), main control board, door, door components, as well as the removing and separation of the screwless appearance door. It will also cover the sump module and removal. Details of the sump components will be covered in the Circulation System or Drain System sections of this guide.

Tub Trim (some models)

Some models include tub trim which clips to the plastic tub to reduce sound levels and provides a cleaner appearance to the installation.

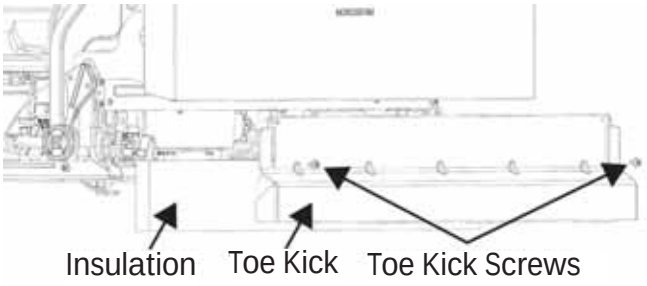


If the cutout prevents the dishwasher from being fully installed, or if the trim rolls inward preventing the door from closing, it may be trimmed to fit properly. The wiper edge must contact the cabinet to be an effective sound barrier.

WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

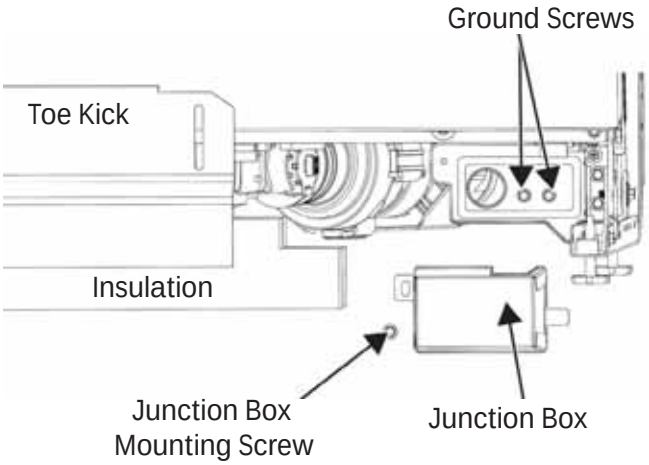
Toe Kick

The toe kick panel is a safety and decorative panel covering the machine area of the dishwasher. The panel provides a safety barrier, closing the front of the dishwasher machine compartment. To remove the panel, remove two 1/4 in. hex head screws and pull the panel away from the dishwasher.



Junction Box and House Wiring Connection

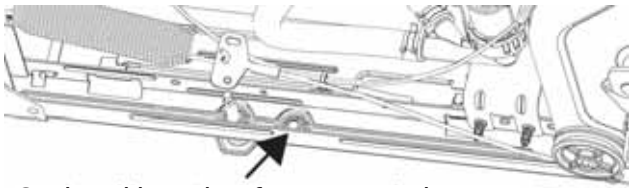
The junction box is located behind the toe kick on the right hand side of the dishwasher. The junction box is where the 120 VAC house voltage connects to the dishwasher. The dishwasher may be hardwired or an optional cord may be installed (available separately, Part #: WX09X70910), which plugs into a wall outlet and connects to the harness plug into the control (see the Installation Guide provided with the appliance). The cover is held in place with a 1/4 in. hex head screw on the left side, and tab on the right side. To remove the cover, remove the screw and pull out and to left to release the tab. It is helpful to squeeze the top and bottom of the box when removing and installing.



Leveling Legs

There are four leveling legs located on the base rails of the dishwasher.

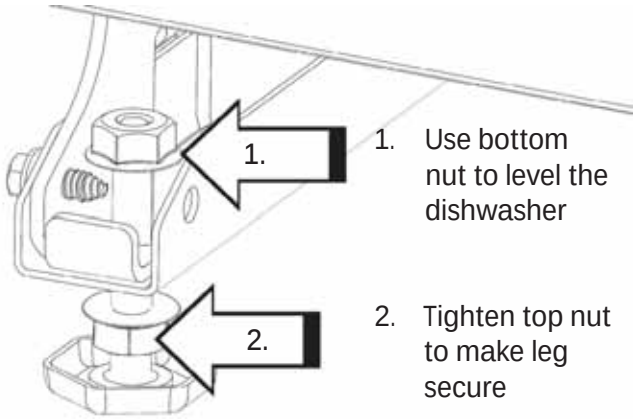
To access the level legs, remove the toe kick and insulation (some models). To raise the dishwasher, turn the level legs counter clockwise.



Optional location for rear Level Leg

If a level leg will not keep the dishwasher level because the support rail is stripped, the dishwasher may be repaired by using two 1/2 in. hex nuts with 1/4 in. with a - 20 thread size as jam nuts. Rear level legs have the optional location to repair.

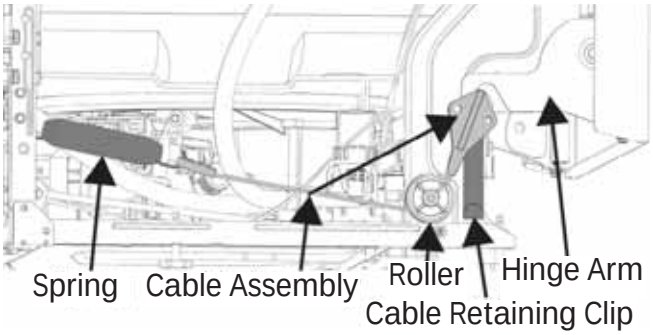
Place one nut on the leg and install the new leg onto the dishwasher damaged frame. Use the bottom nut to level the dishwasher. When it is level, use the remaining nut on the top to firmly secure the leg to the base rail or frame.



1. Use bottom nut to level the dishwasher
2. Tighten top nut to make leg secure

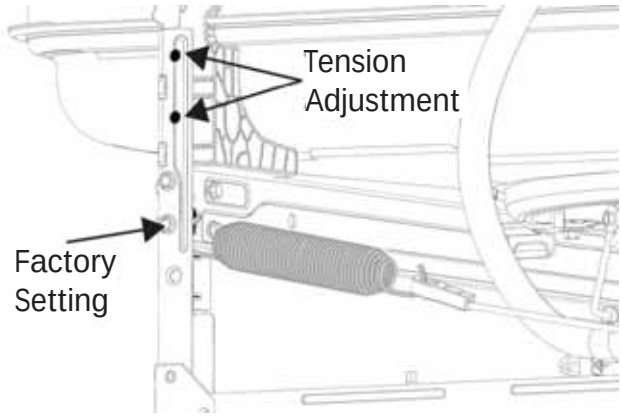
Door Balance System

The door balance system is comprised of springs, cables, rollers and hinge arms.



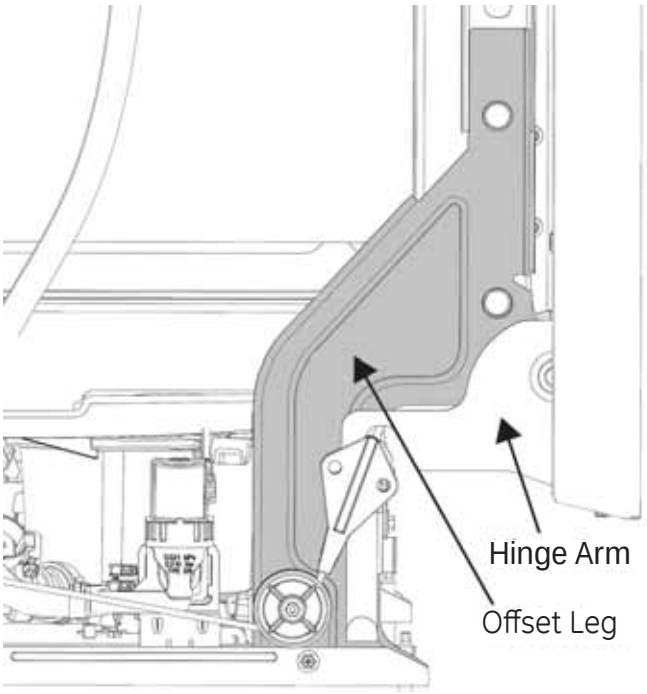
Door Springs and Cables

The spring is adjustable as it attaches to the rear of the leg base assembly. There are two holes in the leg and factory setting on a support screw. Higher connection on the rear frame on the leg causes more tension on the spring. The spring connects to a cable which connects to the hinge arm using a roller as a tensioner.



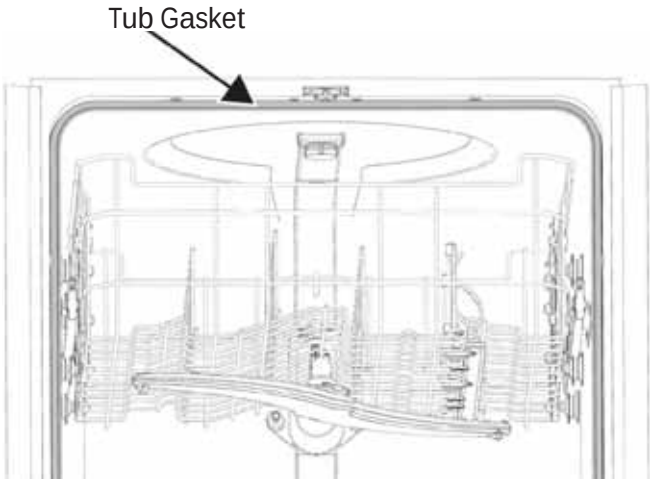
Hinges

The hinge system is comprised of offset legs (part of the tub and structure system and not a replaceable part) and hinge arms. The hinge system allows the door to be removed while the dishwasher remains installed.

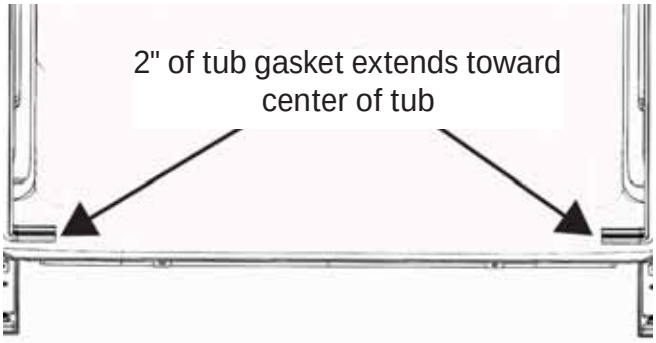


Information on door removal can be found under the Door section later in this guide.

Tub Gasket



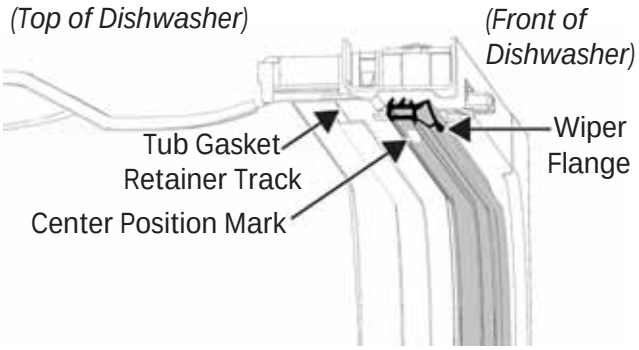
The tub gasket seals the top and sides of the tub to the door. The retainer is part of the stainless steel tub. The seal pushes into the retainer area of the tub, and no sealant or RTV is used to install the tub gasket. When installing the tub gasket, there will be a 2 inch extension at the bottom of the tub on each side.



To Remove Tub Gasket: Pull the gasket from the retainer area.

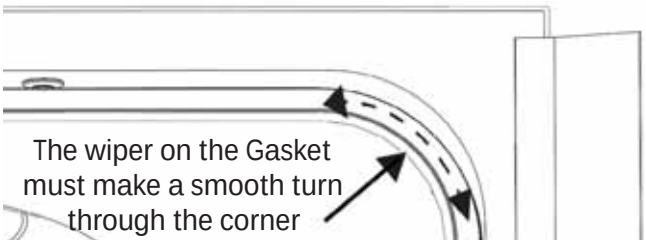
Tub Gasket Installation

1. The center of the gasket has a mark which is placed pointing to the inside of the dishwasher. This position will orient the gasket wiper to face the inside of the dishwasher and to the inner door.



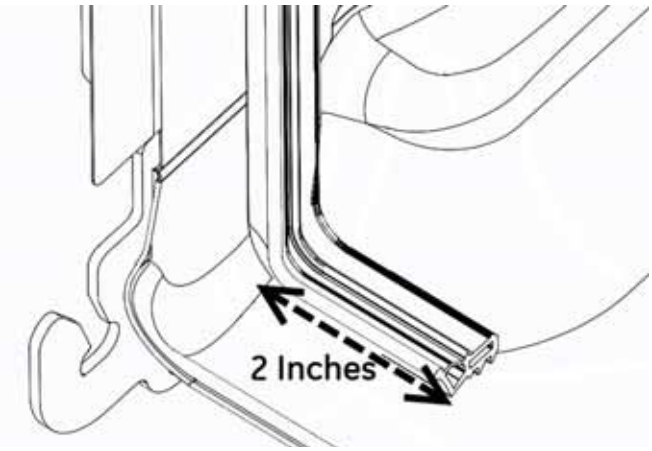
2. Start by placing the mark down and align with the tub latch. Push the gasket into the track, working outward to the top corners.

3. Push the gasket into the track through the corners, making sure the wiper portion of the gasket does not turn inward or outward causing the gasket to not have an even plane around the corners. Stretching the gasket may cause the gasket to roll in or out, which will cause the new gasket to leak. If the gasket wiper rolls in or out, pull the gasket out of the track and reinsert into place.



(*Continued next page*)

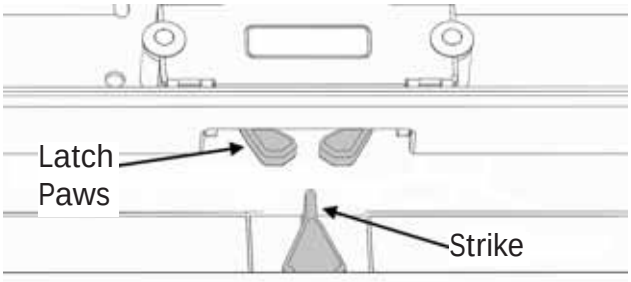
4. Continue to push the gasket into the track to the bottom of the tub and extending the gasket 2 inches to the center of the tub.



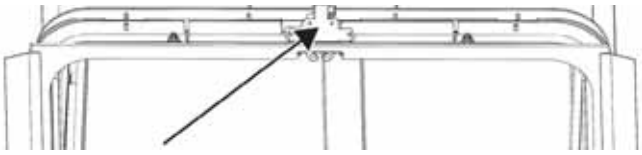
5. Always run the dishwasher to test for leaks.

Latch System

The door switches are rated at 13.5 VDC. The door latch switches open and close the line and neutral break relays on the main control. The latch assembly is located on top of the tub. A strike on the door activates the switches, and the latch assembly holds the door in when the door is latched closed.



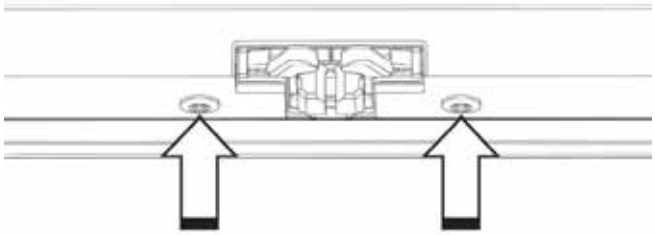
The dishwasher must be pulled out 6 to 8 inches from its installed position to replace the latch switch.



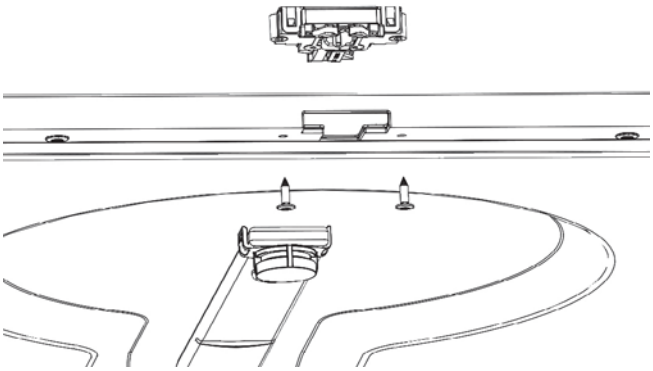
Latch Switch

To Replace the Door Latch / Switch Assembly

1. Remove power to the dishwasher.
2. Remove the dishwasher from its installed position, approximately 6 to 8 inches.
3. Remove two screws, (R2 Robertson / Carpenters Bit or #2 Phillips screwdriver).



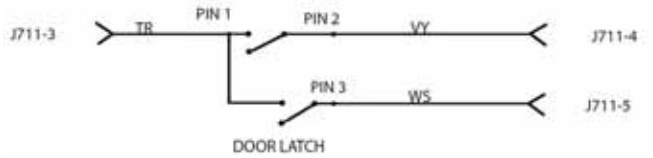
4. Disconnect the wiring to the switch.



Latch Switch Diagnosis

Diagnoses can be accomplished in Consumer Error Mode (see Consumer Error Mode) or with an ohm meter at the main control board as described below.

1. Access the main board.
2. Locate and disconnect connector J711.
3. Check continuity from pin 3 (**tan** and **red**) to pin 4 (**violet** and **yellow**) and pin 3 (**tan** and **red**) to pin 5 (**white** and **silver**). Both should be open when the door is open and closed when the door is closed.

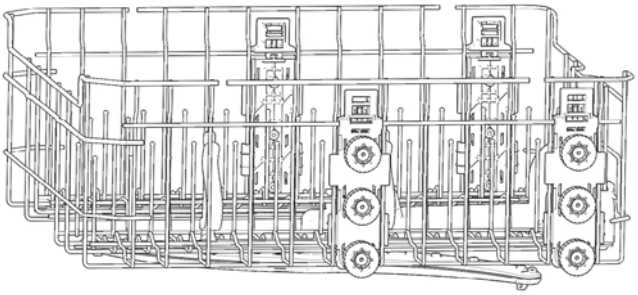


Racks

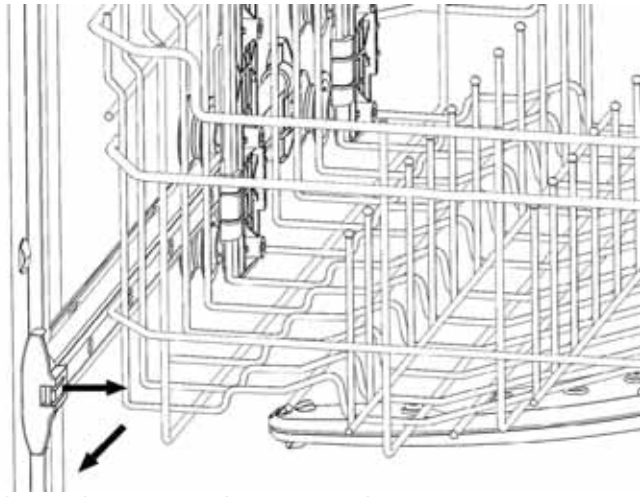
Upper Rack

Two upper rack configurations are available, depending on the model: Wheels on Rails or Full Extension Rails.

- Wheels on Rails



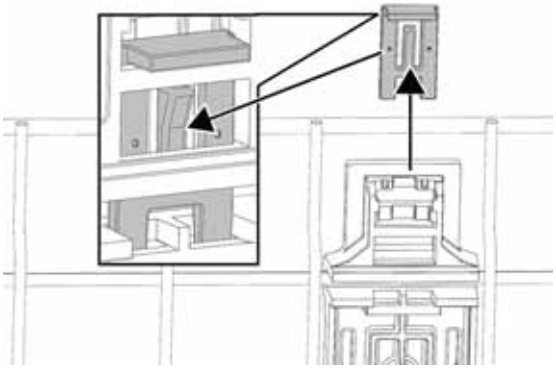
To remove the rack from the dishwasher, pull the rail assembly out a few inches for easier access. Press the tab on the end cap to the center of the dishwasher and pull the end cap off the rail.



The rack may now be removed.

Upper Rack Rollers and Brackets

The upper rack roller brackets are locked into place with a clip. The clip must be removed to remove the roller brackets from the rack. Press in on the tab and lift the locking clip.

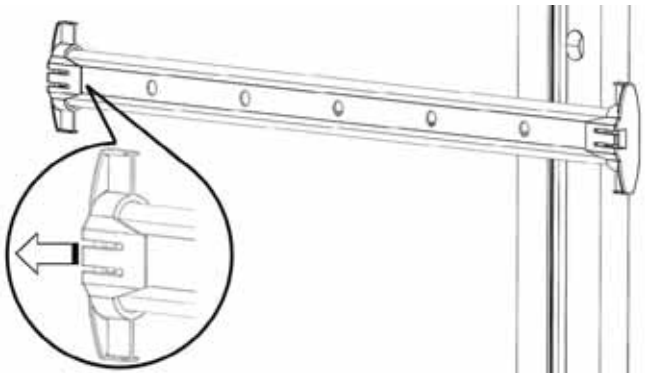


Tub Rollers

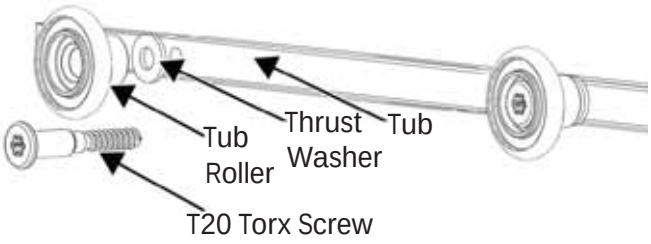
The tub rollers are attached to the tub with a screw in each roller.

To Remove the Tub Rollers

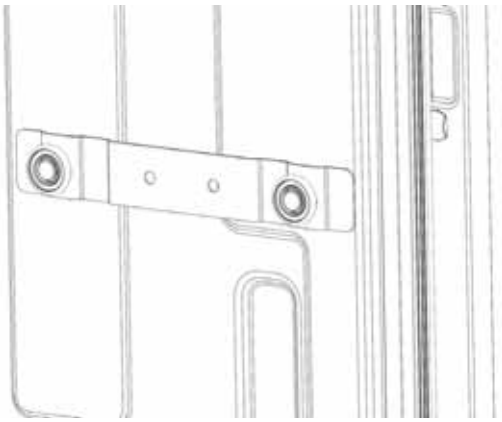
1. Remove the upper rail by removing the rear end cap.



2. Remove the T20 Torx screw securing each roller to the tub.



Model GDF570SGJ upper rack rollers mounted to the tub are permanently attached to a bracket which is toxed to the tub assembly. These rollers are non-replaceable.



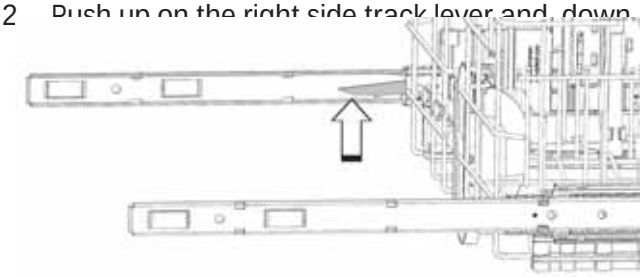
(*Continued next page*)

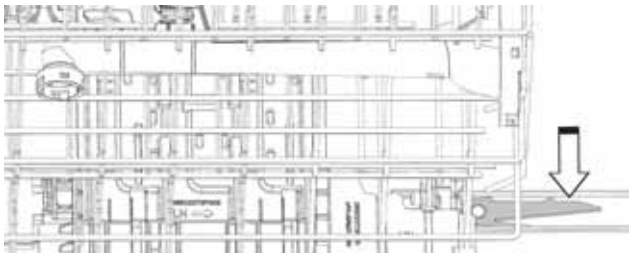
• Full Extension Rails

To remove the upper rack and full extension rails:

1. Extend to the full outward position.

2 Push up on the right side track lever and, down



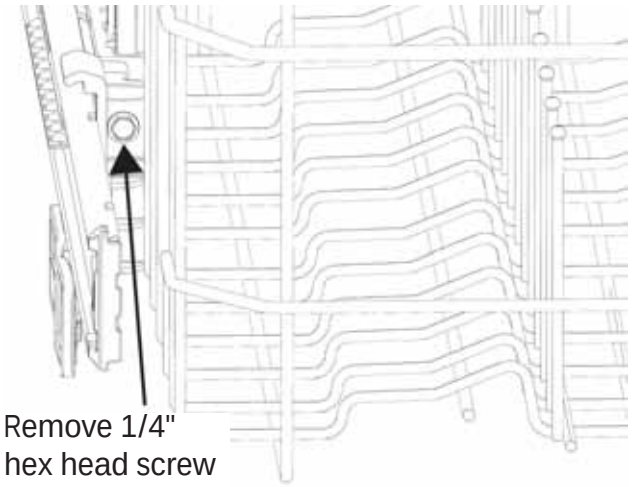


3. Pull the rack off of the inner track.

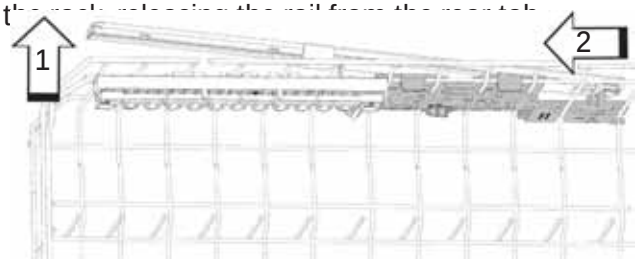
When reinstalling the rack, guide the tracks onto the rails and push it all the way in to lock it in place.

Rails: The rails are attached to the stainless steel tub and are a non-replaceable part.

Tracks: Removal of the tracks from the upper rack is accomplished by removing the one 1/4 in. hex head screw from the front of the adjustable bracket.

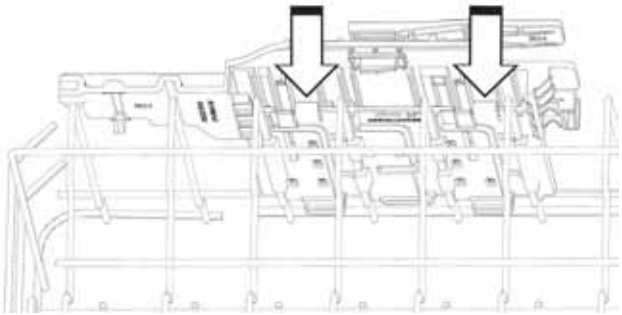


Pull out 1/2 in. and slide the rail toward the front of t

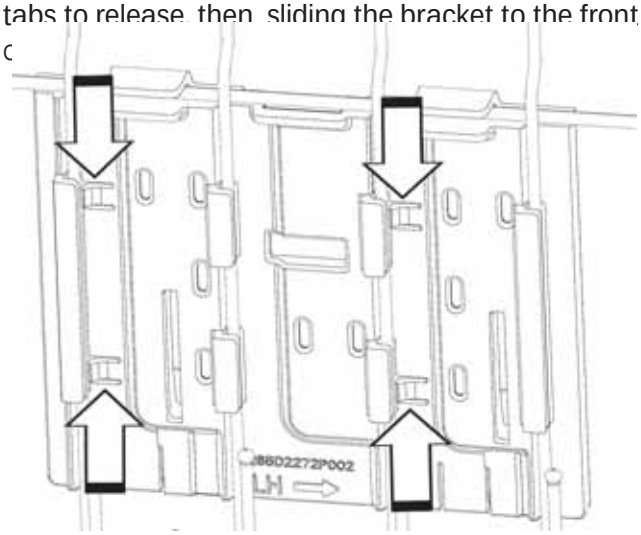


Adjustable Bracket: To remove the adjustable rack bracket from the rack bracket:

1. Remove the rack and rail.
2. Place the rack on a protective surface, upside down.
3. Push in on the adjusting lever to slide it all the way down.
4. Use a flat blade screwdriver to release 2 tabs and allow the adjustable bracket to slide off the

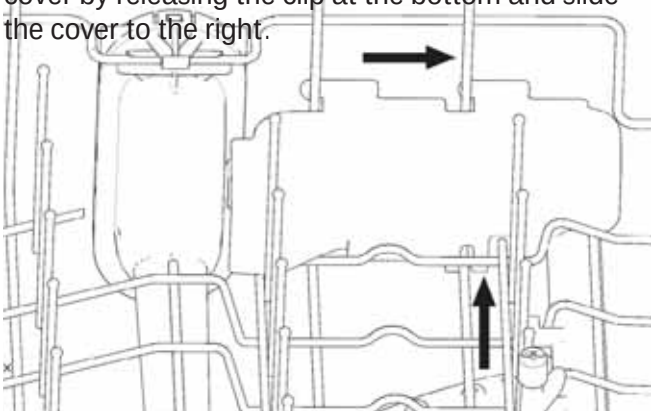


Stationary Bracket: The bracket is snapped onto the rack, and can be removed by pressing in on 4 tabs to release, then, sliding the bracket to the front c

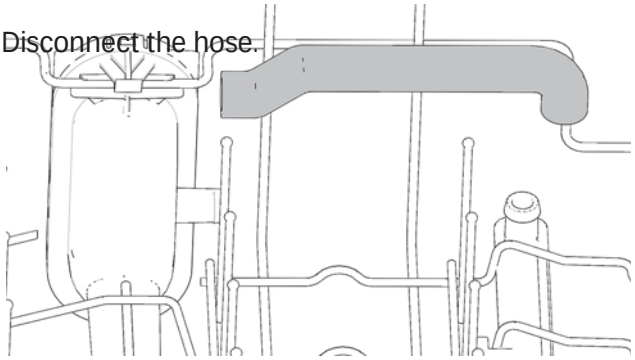


Bottle Wash Components (some models)

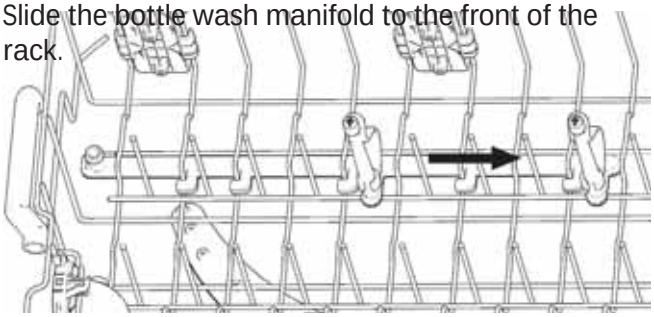
To remove the bottle wash components, remove the cover by releasing the clip at the bottom and slide the cover to the right.



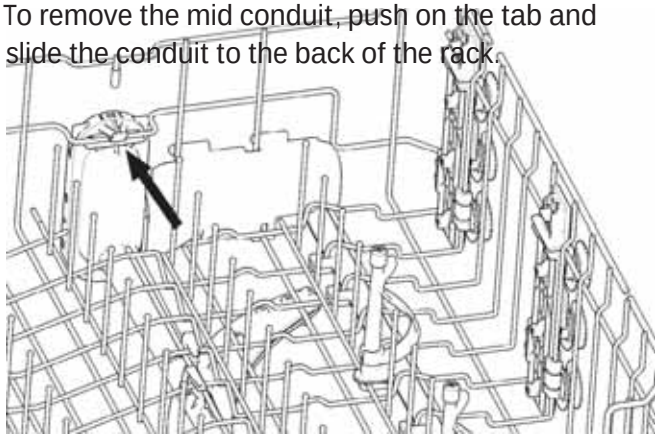
Disconnect the hose.



Slide the bottle wash manifold to the front of the rack.



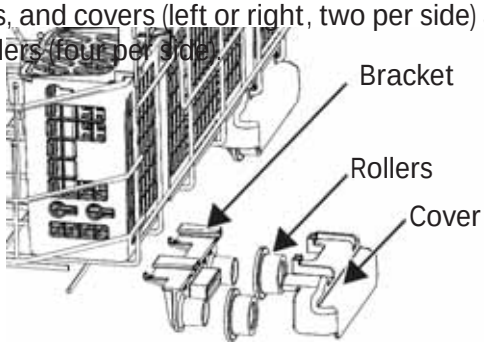
To remove the mid conduit, push on the tab and slide the conduit to the back of the rack.



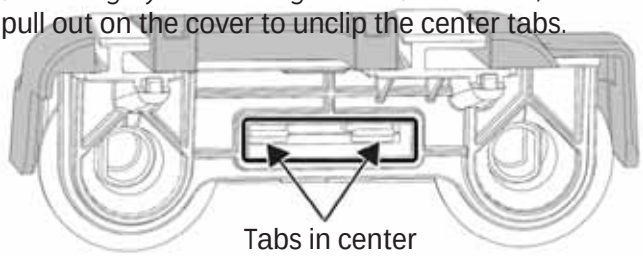
Lower Rack

Several lower racks are available with different tine configurations; consult the Owner's Manual for details on the lower racks.

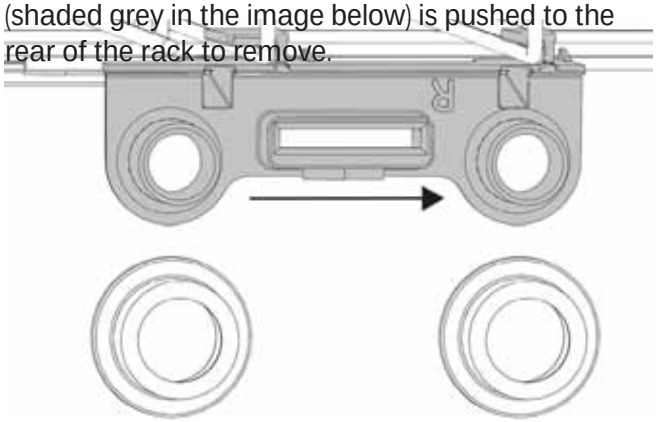
The lower rack roller assemblies consist of brackets, rollers, and covers (left or right, two per side) as well as rollers (four per side).



To remove the lower rack rollers, lift up on the cover (shaded grey in the image below) to release; then pull out on the cover to unclip the center tabs.

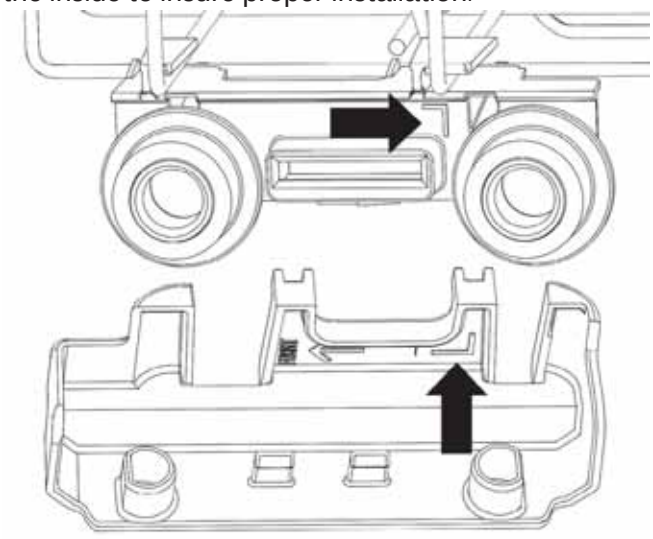


The rollers will slide off the bracket and the bracket (shaded grey in the image below) is pushed to the rear of the rack to remove.

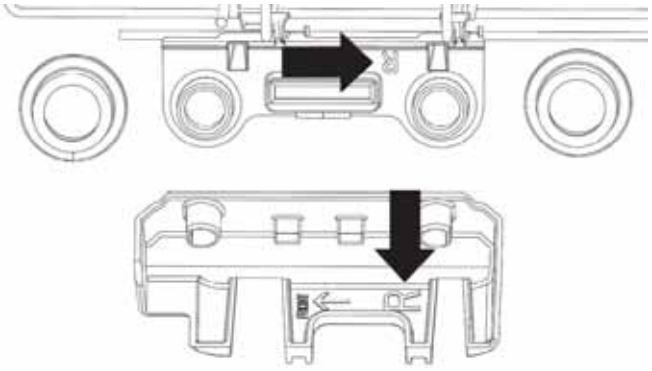


(*Continued next page*)

The left and right brackets and covers are different part numbers and are marked L or R (left or right) on the inside to insure proper installation.



Right Side



Silverware Baskets

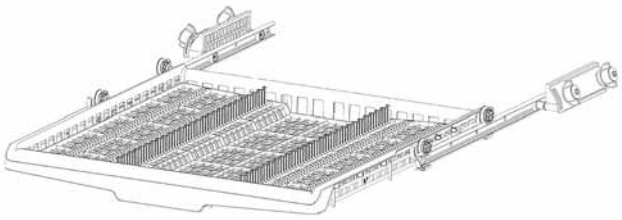
There are a variety of silverware baskets and configurations available. Consult the Owner's Manual for silverware basket information.

Third Rack (some models)

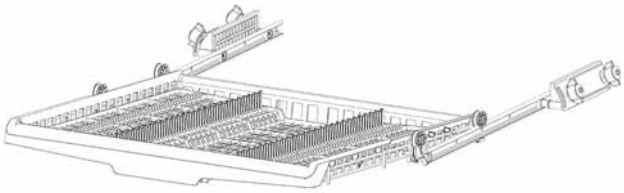
The third rack is designed to place silverware, cutlery and other utensils at the top of the dishwasher for easier access.

To Remove the Basket and Frame as an Assembly:

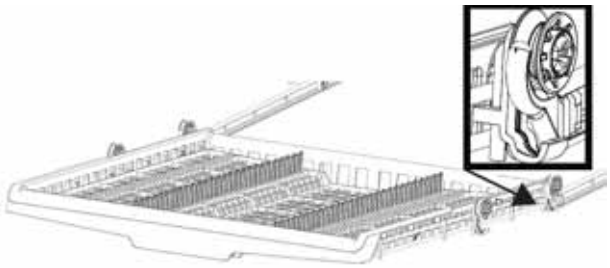
1. Pull the rack out to full extension.



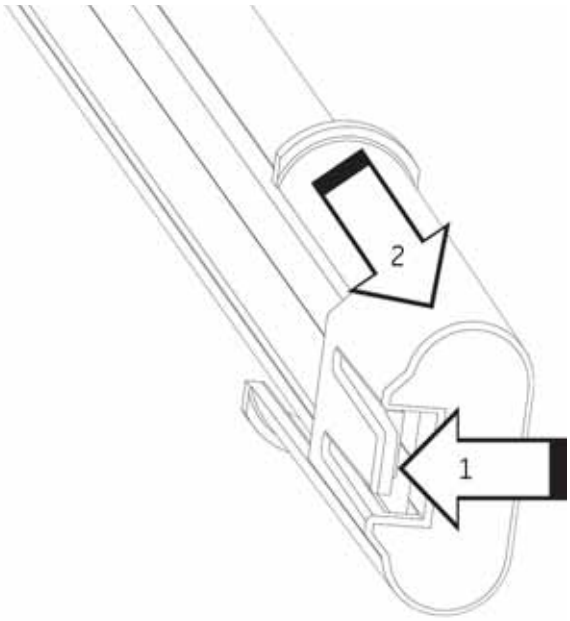
2. Lift and continue to pull the rack out.



3. When rear rollers contact the stop, lift and continue to pull the rack off the rails.



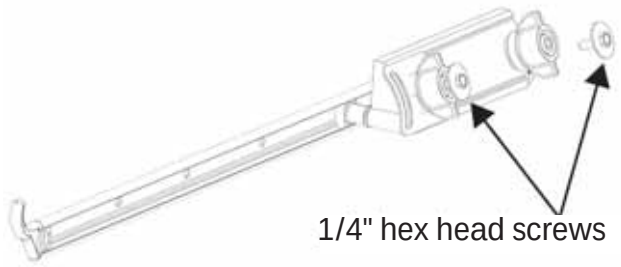
The rails may be removed by releasing the rear end cap. Push the tab and remove the endcap.



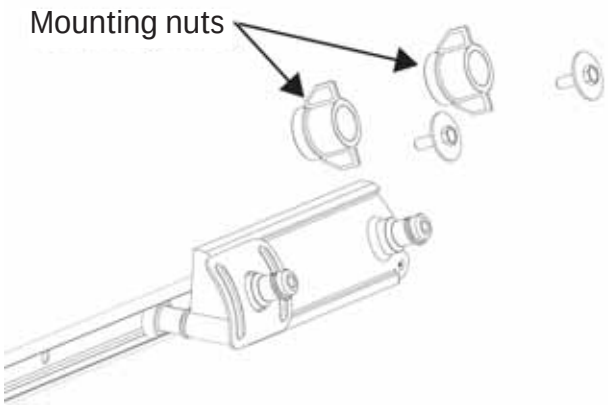
Third Rack Brackets

To remove the brackets the dishwasher must be removed from installation.

1. Remove the basket and the frame.
2. Remove two 1/4 in. hex head screws.

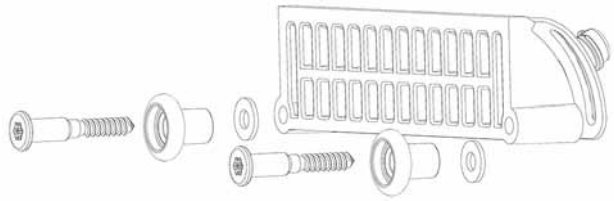


3. Remove the two mounting nuts.



4. Remove the bracket from inside the dishwasher.

Third Rack Rail Rollers are secured to the bracket with T-20 Torx head screws.



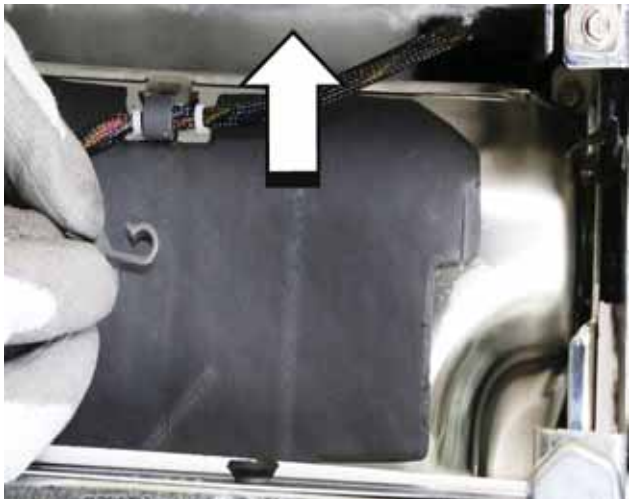
Door

The door has DC voltage only and has a screwless appearance. The door contains a UI (User Interface) Board with all tactile switches on the board. Some models have a 7-segment display, others have LED indicator lights. The door also houses the detergent module, bottom door seal and a venting system (see the Dry System section in this guide).

Door Removal

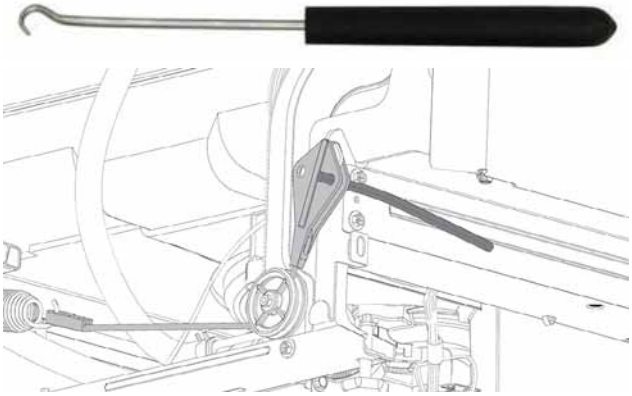
1. Remove power to the dishwasher, close and latch the door.
2. Remove the toe kick and insulation, if applicable.
3. Disconnect the door wire harness at the bottom of the main control cover.

4. Release the wire clip holding the harness to the tub. Push up on the wire harness to release the harness.

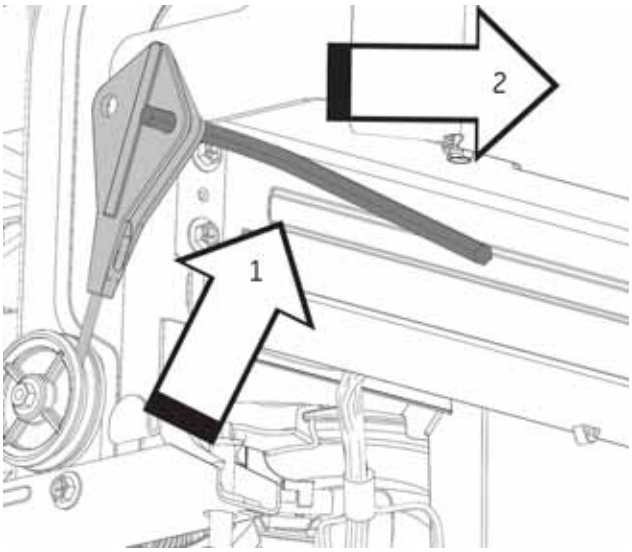


WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

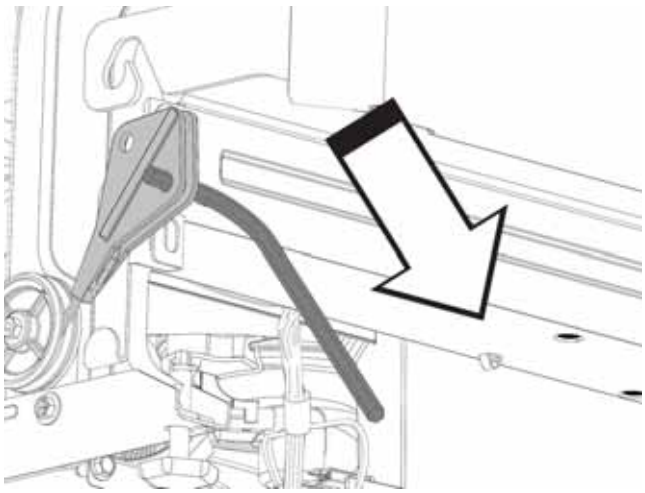
5. Locate the door balance cable and insert an Allen wrench or tool formed into a hook (as shown below).



6. Lift the cable up and slide forward.



7. Slide the cable down and away from the dishwasher. Do not release tension from the cable.

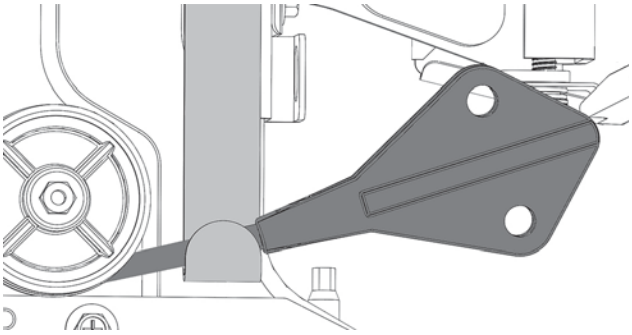


(*Continued next page*)

8. Slide the cable into the cable clip to prevent the spring from disconnecting from the cable.

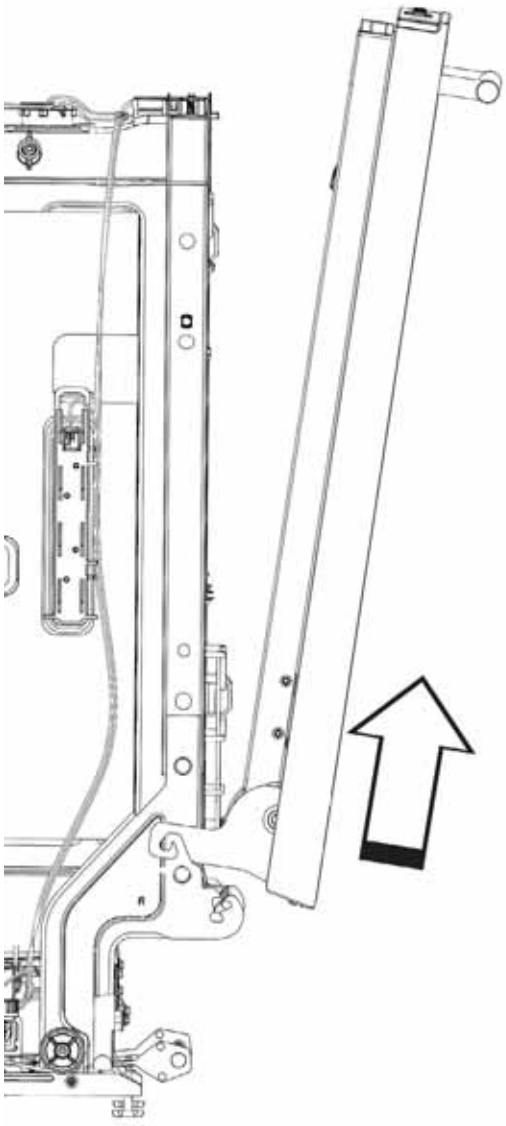
CAUTION: If the cable is released, the spring and cable may become disconnected. Depending on the model and installation, reconnecting may require the dishwasher to be removed from installation.

The cable seated correctly into the clip is shown below.



9. Repeat steps 5 through 8 on the opposite side.

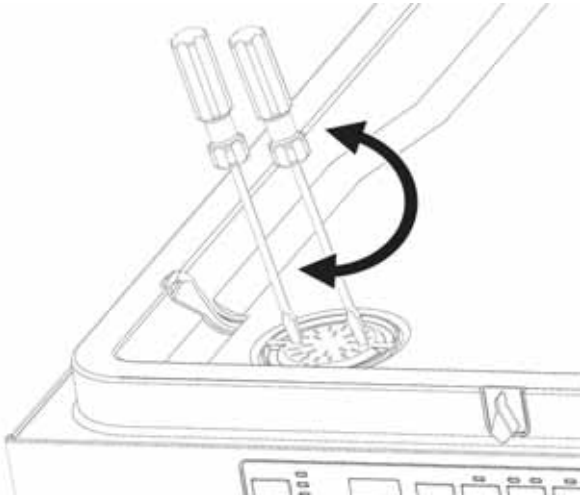
10. Standing in front of the dishwasher, open the door a few inches, then lift the door and hinge arms off of the offset leg.



When installing the door onto the dishwasher, make sure the hinge pins located on the hinge arms are placed fully on the offset legs (both sides).

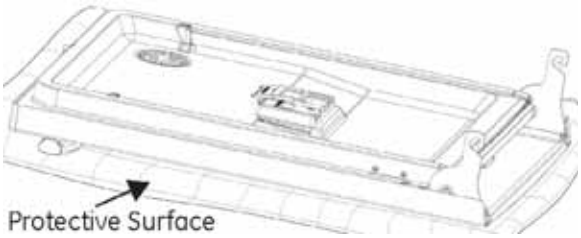
Inner Door Vent Cover

The inner door vent cover must be removed on model GDF570SxJ to allow the front control console to be removed from the inner door. Insert two pocket style flat blade screwdrivers into the vent, then turn counter clockwise to remove.

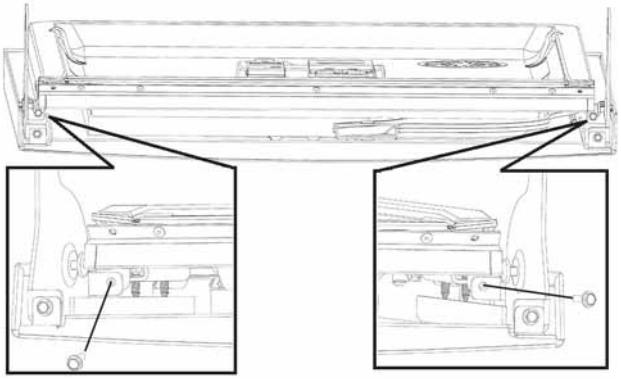


To Separate the Door:

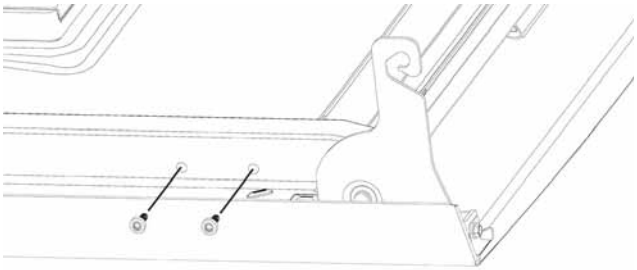
1. Remove the door.
2. Place the door with the outer side on to a protective surface.



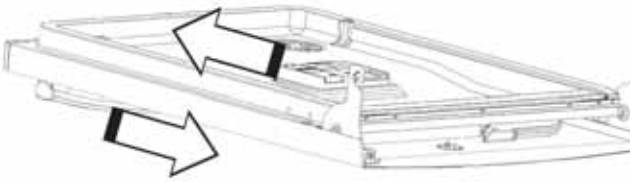
3. Remove two 1/4 in. hex head screws inside the bottom of the door.



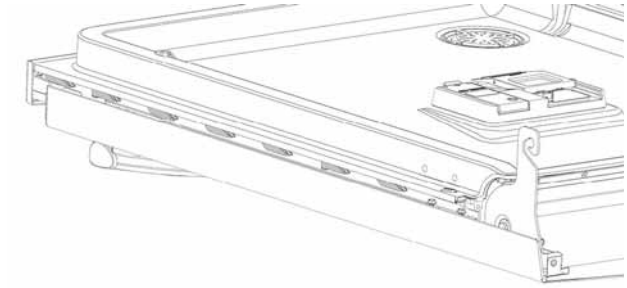
4. Remove four T-25 Torx screws (two each side) that secure the inner door to the hinge assemblies.



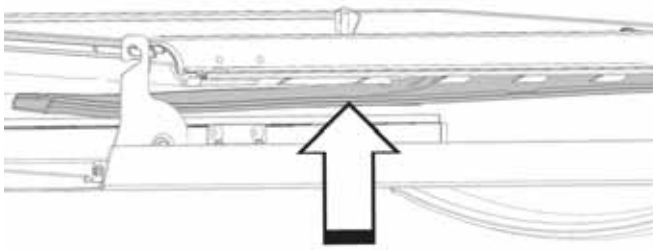
5. Slide the inner panel toward the top and the outer panel to the bottom to disengage the attachment strips. NOTE: The hinges are secured to the outer door panel.



6. The attachment strips will disengage from the outer panel.

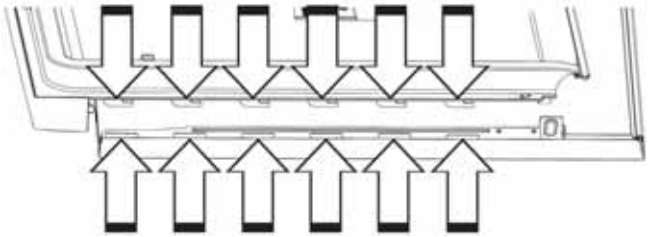


7. Support the vent conduit while lifting the inner door from the outer door panel.



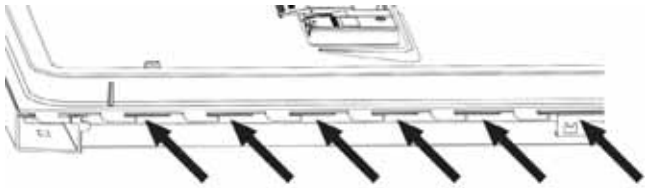
To Reassemble the Door:

1. Place the outer panel face down on a protected surface.
2. Place the inner door face up, and position six attachment tabs into the cutouts of the outer panel.



Outer door has cutouts to receive inner door tabs

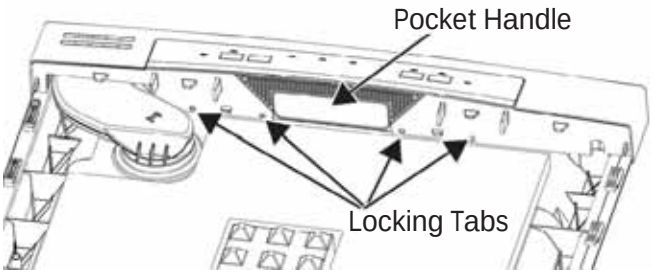
3. Press firmly together while sliding the inner panel onto the outer panel. Use care to make sure that the outer panel mates properly to the front console or top console. The below illustration has a portion of the door sectioned or cut out to show the outer door panel engaged with the attach tabs of the inner door.



4. Reinstall screws and reinstall the door.

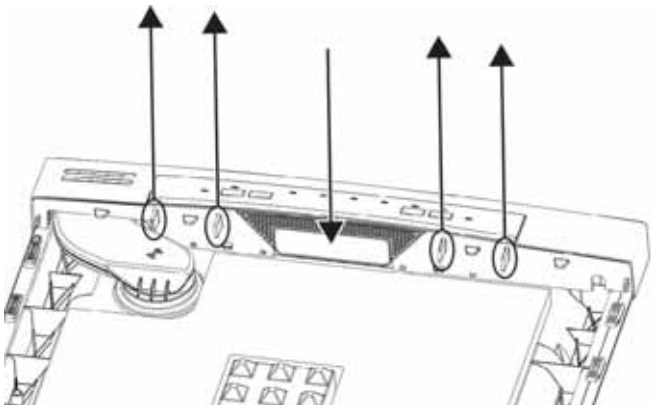
Front Control Console

The front control console is held in place by four tabs on the pocket handle.

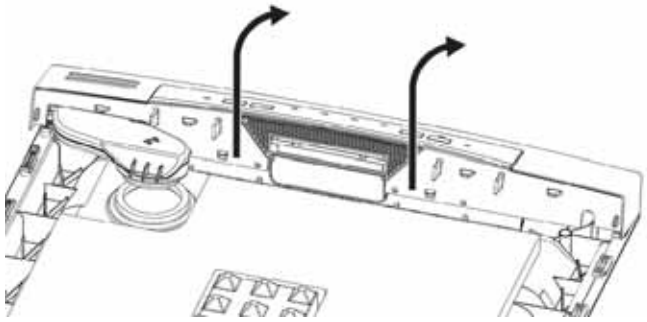


Front Control Console Removal

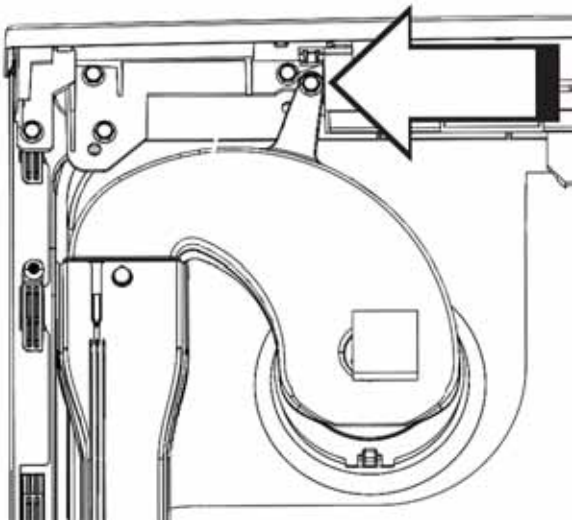
1. Remove the door and separate the inner and outer door panels.
2. Remove the vent cover from the inner door.
3. Push down on the pocket handle, then lift up and away from the console on the tabs to release the console from the pocket handle.



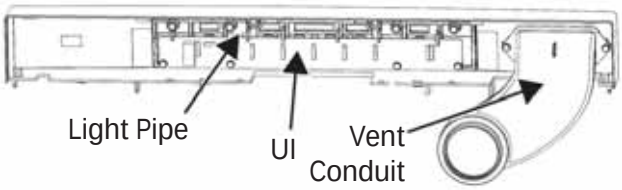
4. Tilt the bottom upward. When both sides are released, rotate the console to release the tabs at the top of the console.



For models with power vent, the vent assembly mounts to the Inner Door as shown below.



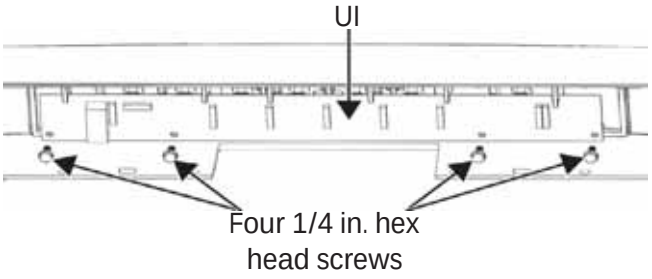
Front Control UI, Light Pipe and Buttons



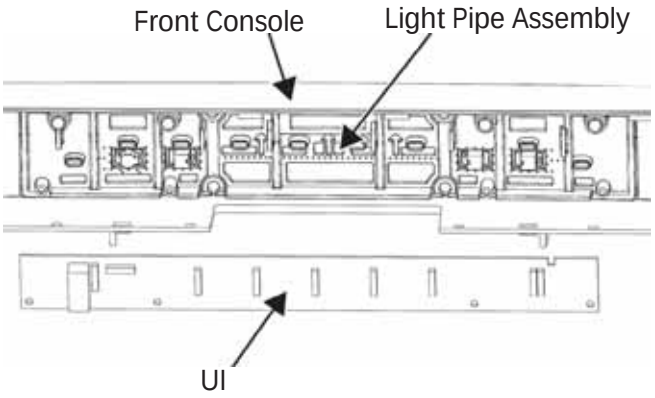
The front control console must be removed and separated to access the UI, light pipe and buttons.

UI Removal

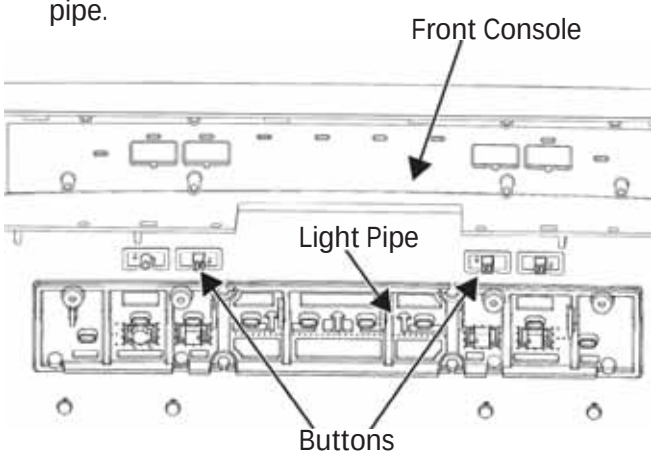
- Remove four 1/4 in. hex head screws at the bottom of the UI Board.



- Tip the bottom of the UI to release from top tabs

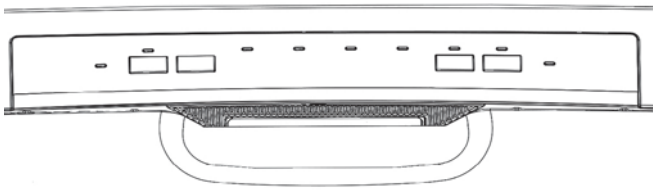


- To remove the light pipe assembly, remove four 1/4 in. hex head screws at the top of the light pipe.

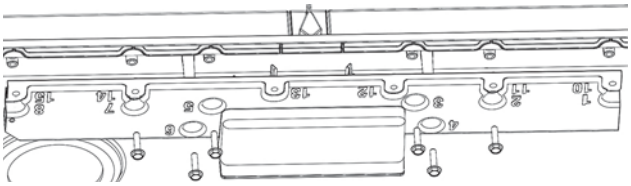


- The Light pipe and buttons may now be removed

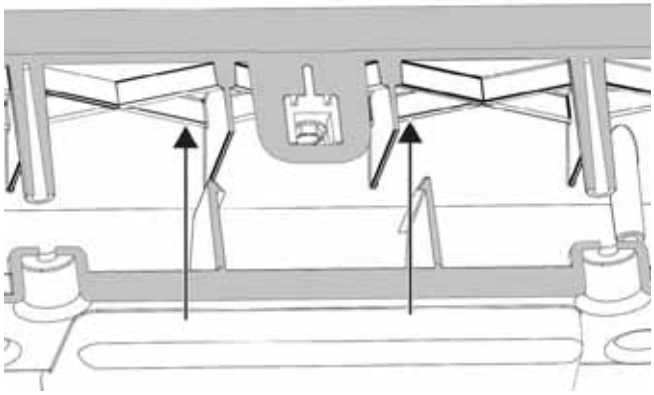
Pocket Handle (Front Control Only)



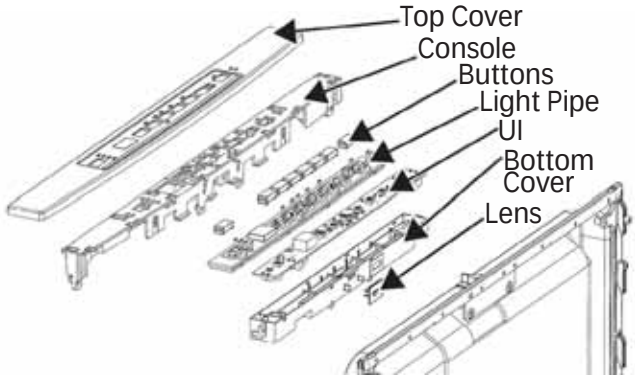
The pocket handle is attached to the inner door panel. The front control console must be removed as previously described in **Front Control Console Removal**. Remove six 1/4 in. hex head screws.



The pocket handle is also clipped to the top attachment strip of SS inner doors.



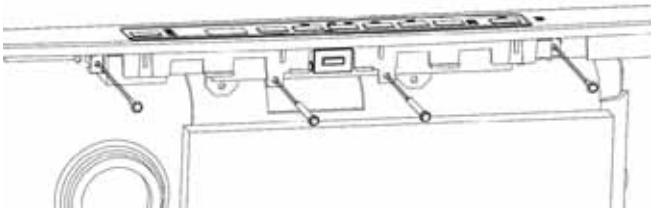
Top Control Panel, UI, Light Pipe and Buttons



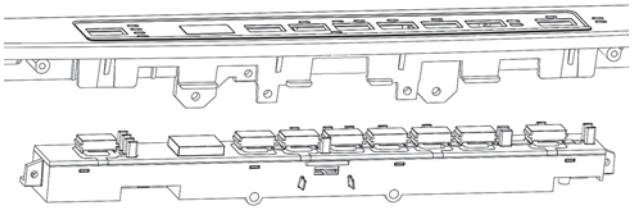
(*Continued next page*)

Access the UI, Control Covers, Buttons and Light Pipe

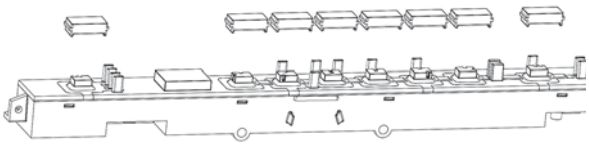
1. Remove and separate the door.
2. Remove four 1/4 in. hex head screws.



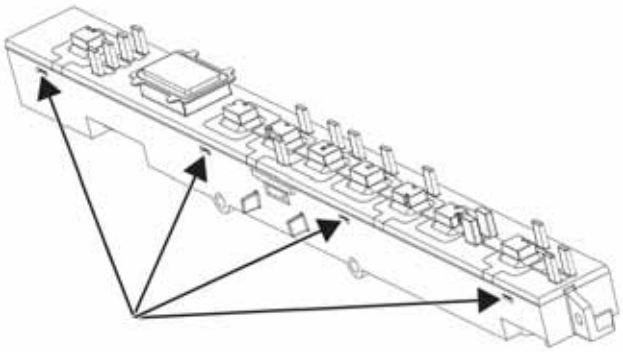
3. The control and bottom cover will drop down from the control panel.



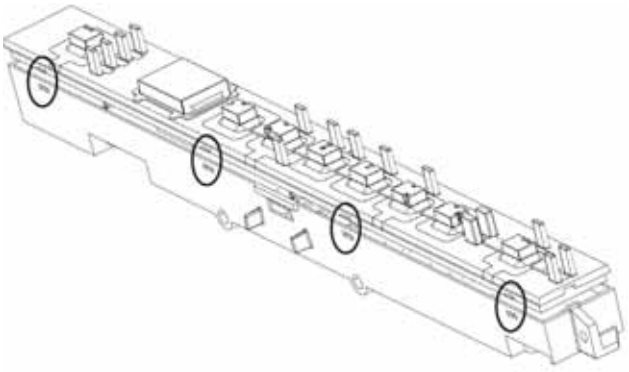
4. The buttons, and light pipe with silicone pad will be removed from the bottom cover to access the UI.



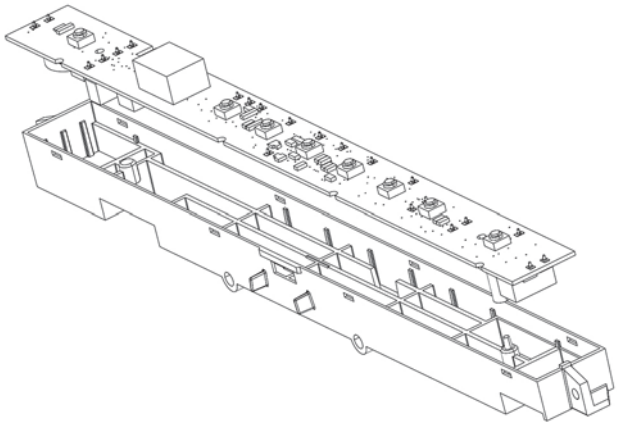
5. The light pipe separates from the bottom cover with tabs. A small screwdriver may be needed to start the first tab.



6. The light pipe may be flexed by twisting to release the remaining tabs (four each side).



7. With the light pipe removed, the UI may be lifted out of the bottom cover.



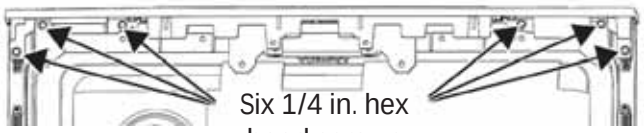
NOTE:

- When replacing UI control boards, the new UI Board must be configured as per instructions included with the replacement. If the personality is not set by using the 4 jumpers, the buttons, LED's or cycles will not function properly.
- Diagnostics for both front and top control UI's are found in the electronic section of this guide.

Top Control Console Cover

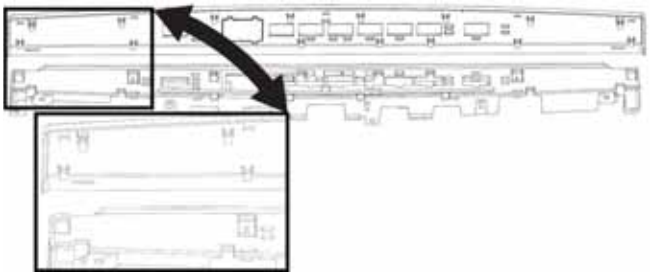
Top Control Console Cover Removal

1. Remove and separate the door.
2. Remove the bottom cover, UI, light pipe and buttons.
3. Remove the top console and cover as an assembly. There are six 1/4 in. hex head screws, securing the assembly to the inner door (note the length of the screws). A new cover should be replaced in the event the cover is loose or must be removed. The tabs are likely to break on removal.

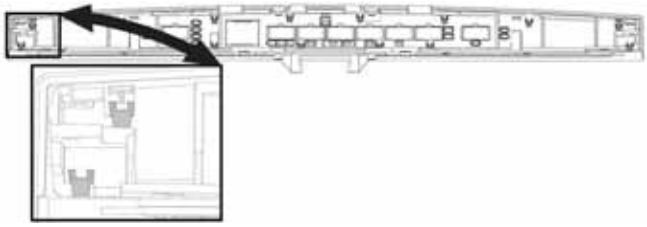


Installing a New Top Cover

1. The top cover is secured with sixteen tabs, and the console has cutouts or slots to allow the top cover to click-lock together.



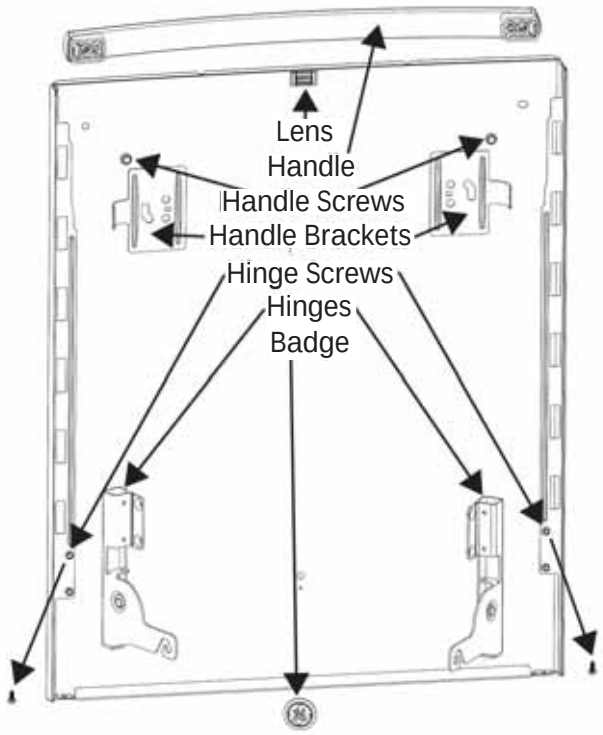
2. Position the tabs on the cover into the slots on the console.



3. Press the top and console securely together and slide the parts to engage the tabs into the slots. Start from one end and work across to the other end. A series of five audible clicks will be heard as the cover and console snap together.

Outer Door Panel

Components



Bar Handle

The bar handle is attached to the outer door panel. The handle is an assembly with end caps pre-attached.

Bar Handle Removal

1. Remove and separate the door.
2. Remove two 3/8 in. hex head screws holding the handle.

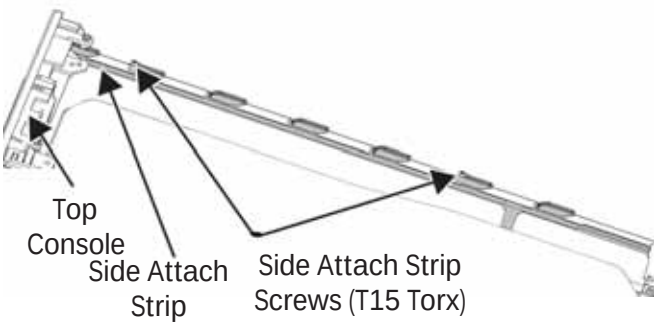
Hinges

To remove the hinges from the outer door panel, remove six 1/4 in. hex head screws.

Inner Door Panel

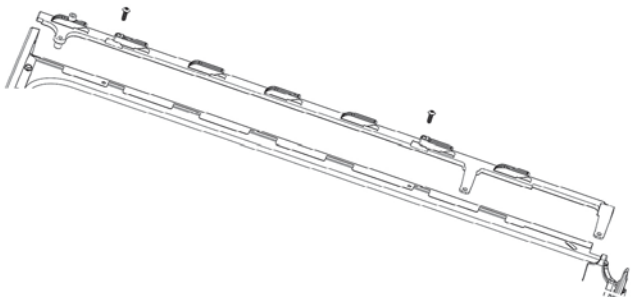
SS Door Attach Strips

Attachment strips are used to help secure the inner and outer door panels.



Side Attachment Strip(s) Removal

1. Remove and separate the inner and outer door panels.
2. Remove the front control console or top control panel.
3. Remove the two T15 Torx screws on the side attach strips.
4. Slide the strip inward to remove.

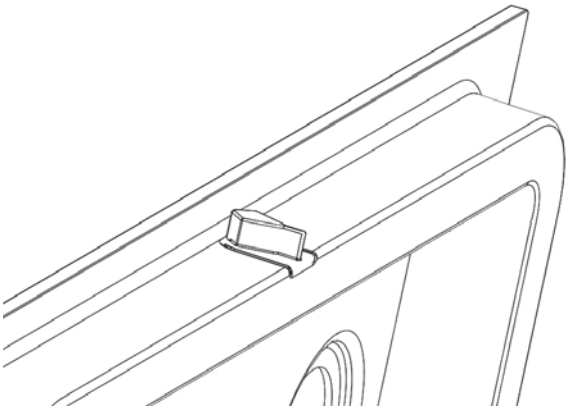


Top Attachment Strip Removal

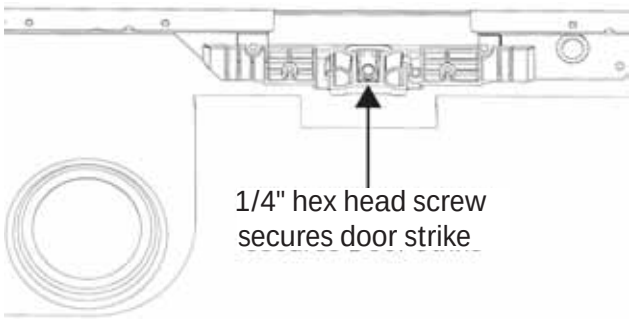
The door strike must be removed first (see **Door Strike** section, in this service guide).

The top attach strip may now be removed by sliding the strip down (the side attachment strips must be removed first).

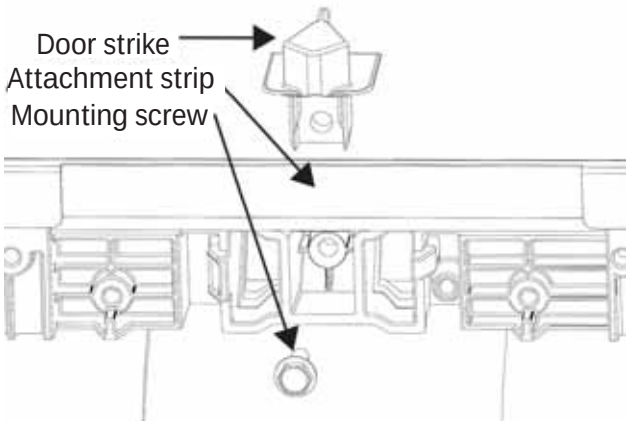
Door Strike



With the UI and Console (pocket handle on front control models) removed, there is clear access to the 1/4 in. hex head screw that secures the strike to the inner door and top attach strip.



Remove the 1/4 in. hex head screw, remove the door strike. Top attachment strip may now be removed



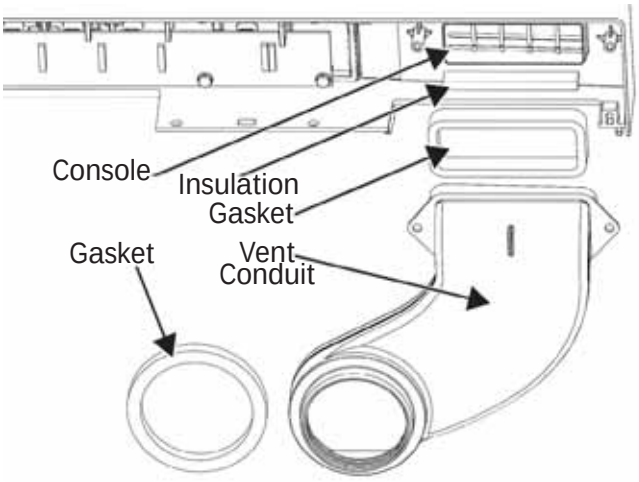
Door Gasket

The inner door panel must be replaced to replace the door gasket (bottom of the door).

Vent Parts

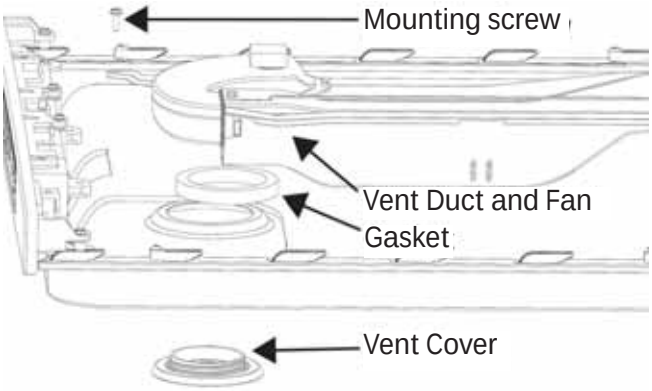
Front Control Model (GDF570SxJxx only)

Model GDF570SxJ has a passive vent through the Control Panel. All other models have a Power Dry system.



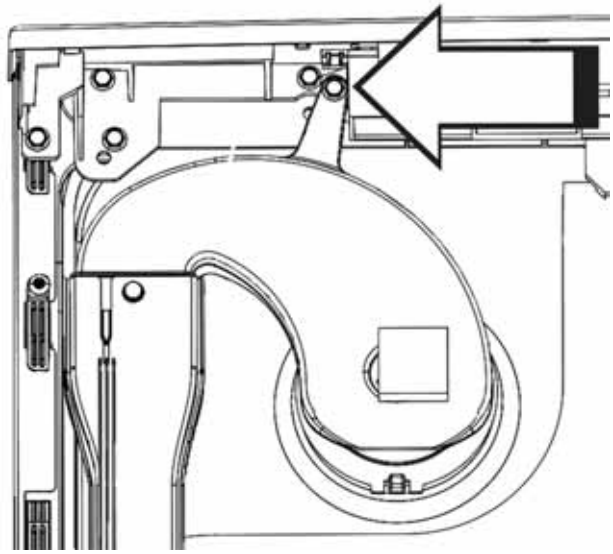
Power Dry Models

Power Dry Models have a 13.5 VDC fan and ducting to the bottom of the door. The Power Dry system must be removed to access the door control components. Operation, specifications and diagnostics will be covered in the Dry System section of this service guide.

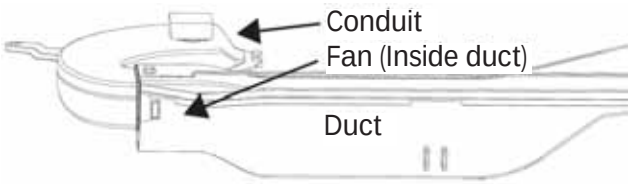


Power Dry System Removal

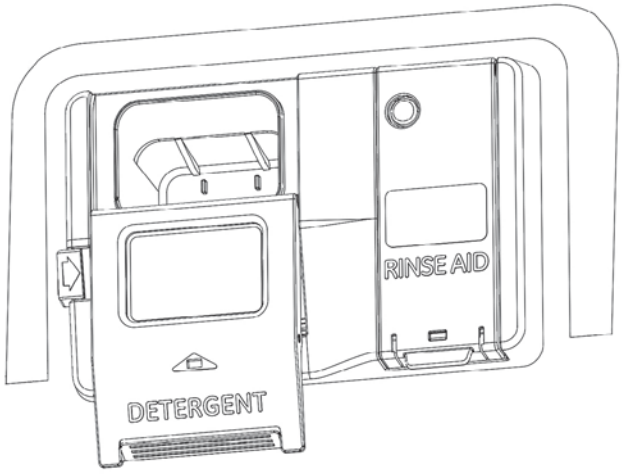
1. Remove the inner door vent cover.
2. Disconnect the wire harness from the fan to the UI control.
3. Remove the 1/4 in. hex head screw.



4. The vent conduit, fan and the duct are removed as an assembly.



Detergent Dispenser



The detergent module is Solenoid operated, using 13.5 VDC (from the UI) to activate the solenoid.

Some models have a rinse agent dispenser. The dispenser holds 3.5 oz. (100 ml) of rinse agent. Under normal conditions, this will last approximately one month.

The module receives 13.5 VDC for 1 second to activate the detergent cup. To activate the rinse aid, the module receives 13.5 VDC for a period of 15 seconds.

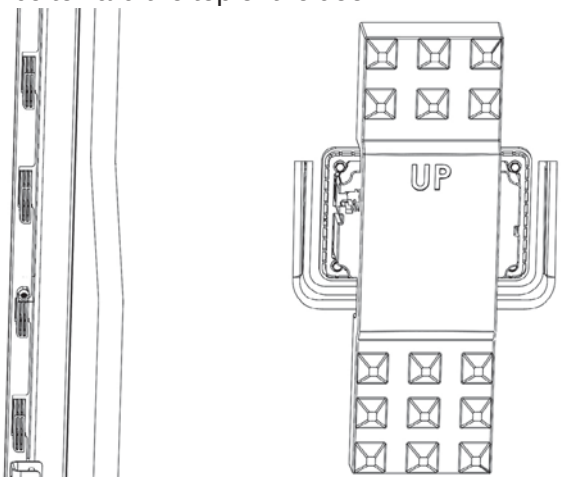
A sensor is used to detect rinse aid level and advise the consumer when the level is low. The rinse aid sensor is covered on the next page.

To Diagnose Detergent Module

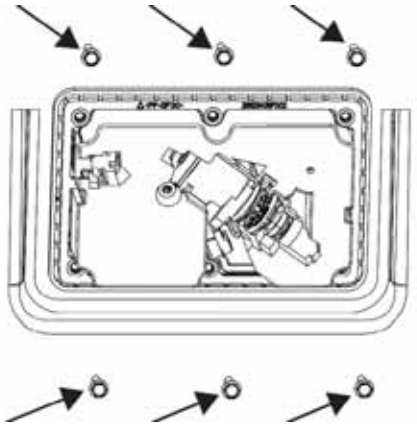
1. Remove power, then remove and separate the door.
2. The inner panel may be set into the dishwasher and latched in the closed position.
3. Reapply power.
4. Place the dishwasher into Service Mode (see **Service Mode** section in this guide), then activate the detergent test to check for 13.5 VDC to the detergent module. Service Mode will provide a 15 second activation time. The resistance for the detergent module solenoid is 32Ω (+ or – 10%).

Detergent Module Removal

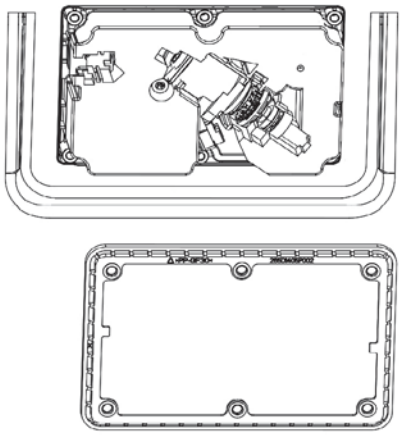
1. Remove power to the dishwasher.
2. Remove and separate the door.
3. Remove the EPS cover. The double backed tape is used to secure and is reusable. When reinstalling the EPS cover, the UP indicator must be toward the top of the door.



4. Remove six 1/4 in. hex head screws.



5. The mounting plate removes from inside the door.



6. The detergent module can now be removed from the inner door panel.

(*Continued next page*)

Rinse Aid Sensor

This sensor works the same as a turbidity sensor, ~ 1 VDC is sent to an LED inside the rinse tank, the “photo sensor” sends a signal back to the control.

- .5 - 2 VDC signal indicates a level below 20 ML. Three consecutive "low" readings are needed to trigger a low reading.
- 3 – 5 VDC signal indicates a 20 ML to full level.
- Sensing is activated by the door closing.
- Sensing cycle is ~ 50 seconds long.
- Control will indicate full after one full reading.

To turn indicator off, press the Pre-Soak or Steam button (depending on model) seven times within 5 seconds. Repeat this process to turn the Low Rinse Aid indicator back on.

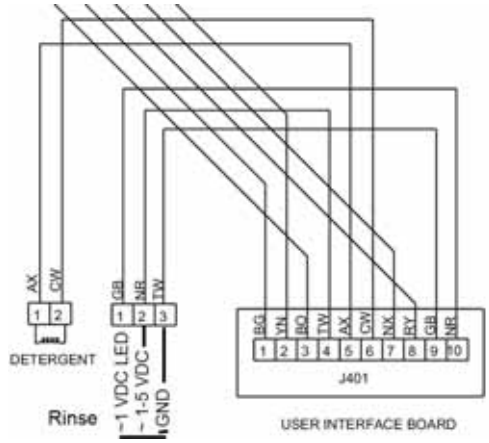
Diagnosing Rinse Aid Sensor

Open the door for one minute, then close the door to initiate the rinse sensor sensing mode.

LED Operation: Check for ~1 VDC green/black – tan/white (pin 1 and pin 3).

Sensor Operation: .5 - 5 VDC from blue/red – tan/white (pin 2 and pin 3).

- ~ .5 – 2 VDC would indicate a low or empty reading.
- ~ 3 - 5 VDC would indicate full or mostly full reading.

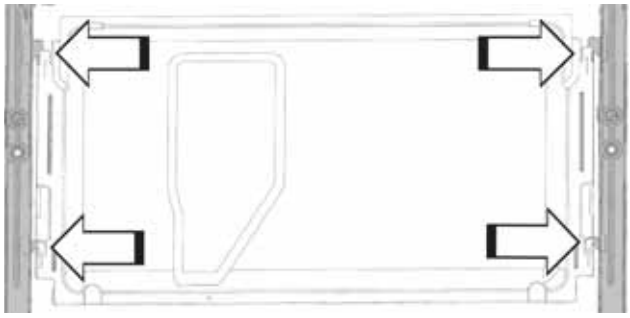


NOTES:

Voltages may be checked for 50 seconds immediately after the door is closed. False readings may occur if the door is not opened to 90° and not left in this position for 1 minute.

Floor Protect Pan

Floor protection is offered as a feature on many of the 2016 Stainless Steel Tub Dishwashers. This feature will hold 24 ounces of water on a level dishwasher, protecting the consumers’ floor. The pan is held in place with 4 tabs.



Some models have a moisture sensor that will alert the consumer of a leak under the dishwasher and advise that they call for service.

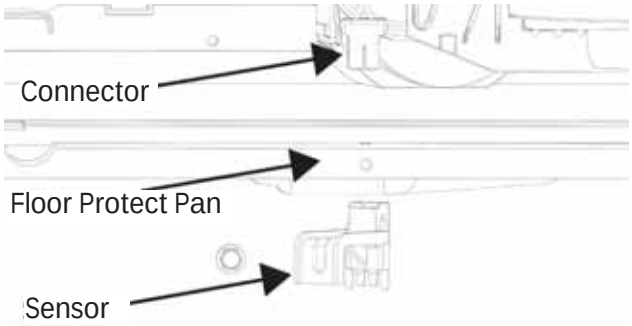
If water is detected when the dishwasher is running a cycle, the dishwasher enters a drain mode for up to 70 seconds and cancels the cycle. The LCD screen (some models) displays Leak Detected. The Owner’s Manual or Use & Care book advises the consumer to call for service. If water is detected in an idle state (no cycle running), then the dishwasher will indicate Leak Detected and will not start.

A 5 VDC signal is sent to the moisture sensor. If enough water leaks into the pan it will short across the sensor probes, returning 5 VDC back to the control. This will alert the consumer of a leak.

The fault may reset if no water is detected. It is possible for the water to evaporate and the dishwasher would restart with no water detected. Only active faults are displayed on the control.

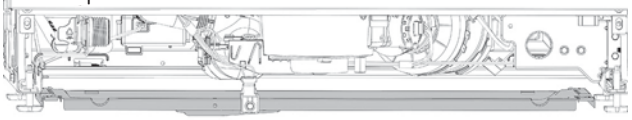
If the consumer tries to restart the dishwasher with water still detected, the dishwasher will not restart.

A physical inspection should be completed to determine the source of the leak, with repairs performed as needed. The moisture sensor may have to be cleaned and dried, by wiping it with a soft cloth.



When installed correctly, the Floor Protect Pan is grounded through the dishwasher structure. If it is not installed correctly, disconnect power before servicing the dishwasher.

Floor Protect Pan is not installed correctly and placed on floor under the dishwasher

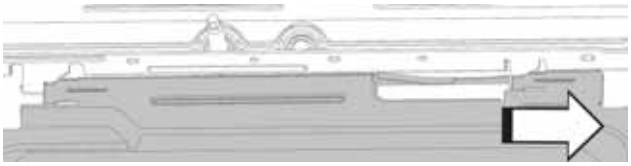


⚠ WARNING

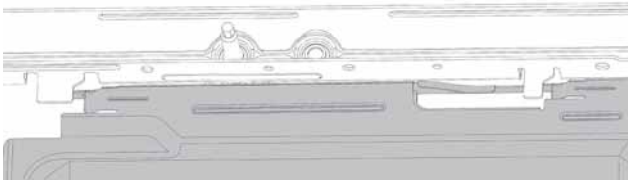
HEATING ELEMENT, DRAIN PUMP, WASH PUMP & FLOOR PROTECT PAN ARE INTENTIONALLY NOT GROUNDED AND MAY PRESENT A RISK OF ELECTRICAL SHOCK ONLY DURING SERVICING. DO NOT CONTACT WHILE APPLIANCE IS ENERGIZED.

Floor Protect Pan Removal

1. Disconnect power to the dishwasher.
2. Remove the toe kick panel and insulation (depending model).
3. Slide the pan to the front of the dishwasher, this will disengage the 4 tabs.



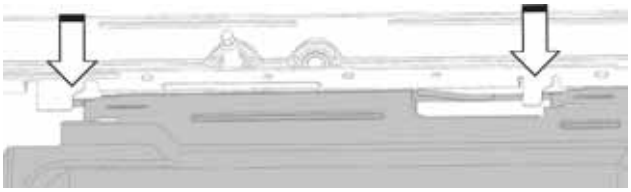
4. The pan will drop to the floor and can be removed from under the dishwasher.



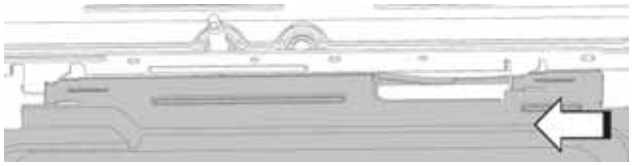
Floor Protect Pan Installation

1. Slide the pan under the dishwasher until the mounting tabs are close to engaging.

2. Lift the pan upward until it contacts the base rail tabs.



3. Slide the pan to the back of the dishwasher to engage the tabs and lock the pan in place.



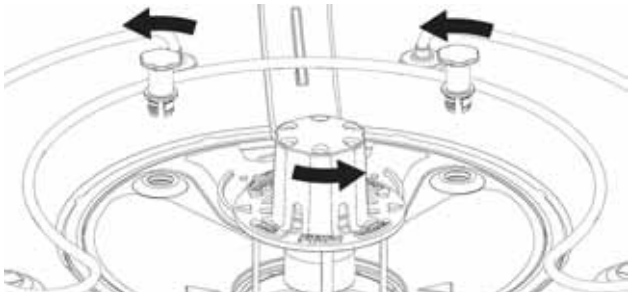
Sump Module

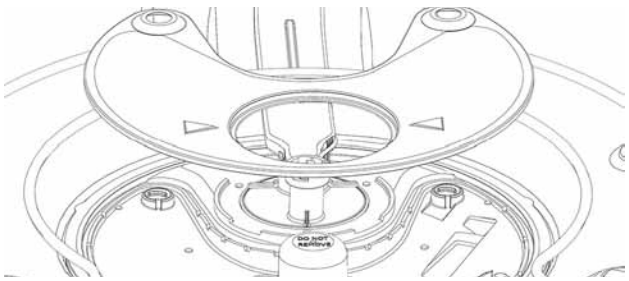
The sump module is front serviceable with the dishwasher remaining in the installed location. This section of the guide only covers the sump removal. Components and diagnostics of the sump module may be found in the Fill System, Circulation System or Drain System sections of this service guide.

Sump Module Removal

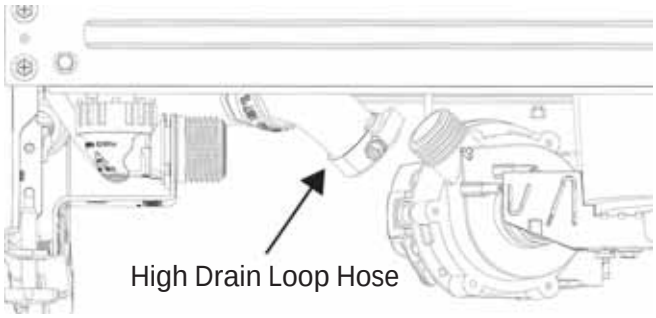
1. Remove power to the dishwasher.
2. Remove the upper and lower racks.
3. Remove the toe kick.
4. Remove the door (see the Door Removal section of this service guide).
5. Remove the lower spray arm (turn the locking nut counter clockwise).

6. Remove the fine filter, vent caps and coarse filter (turn counter clockwise to remove).

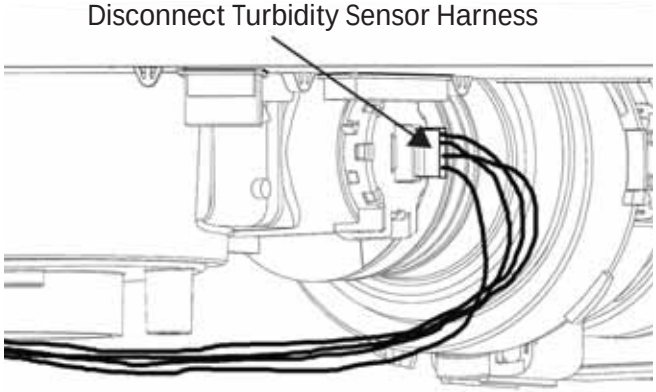




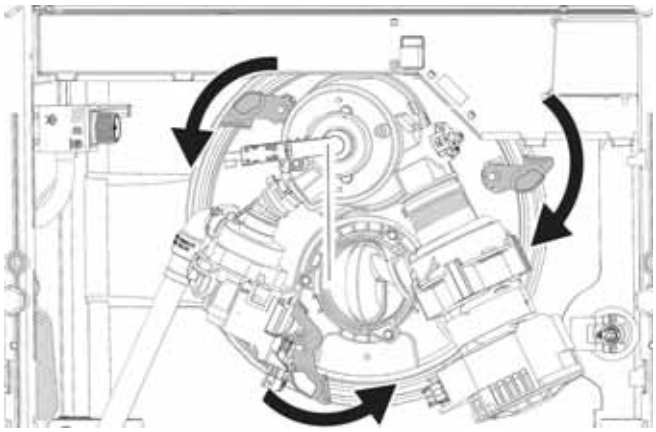
7. Remove the main conduit (see the Circulation System section of this service guide).
8. Loosen the high drain loop hose clamp (1/4 in. hex head) and remove the hose from the drain pump (there will be a small amount of water in the sump, pump and hose).



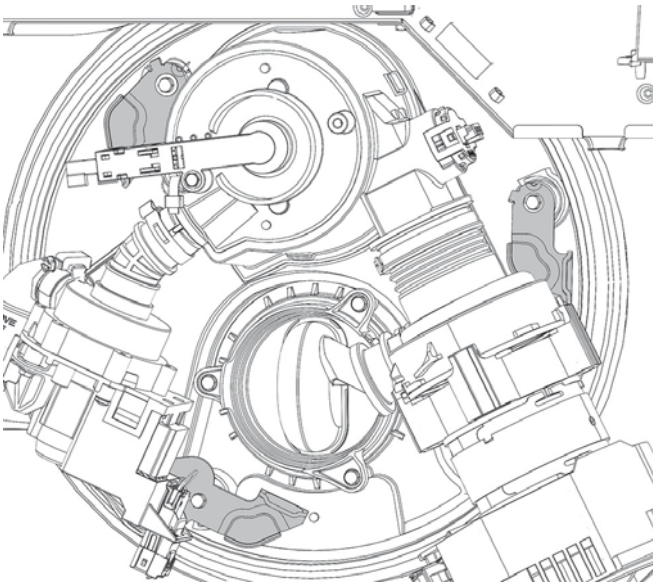
9. Disconnect the turbidity sensor wiring (some models).



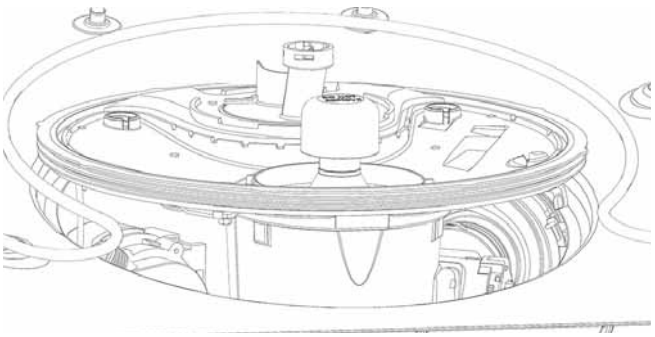
10. Unlatch three sump clips. All three latches can be reached from the front of the dishwasher in most installations. If the dishwasher does not have the legs extended, the dishwasher may have to be removed from its installed position.



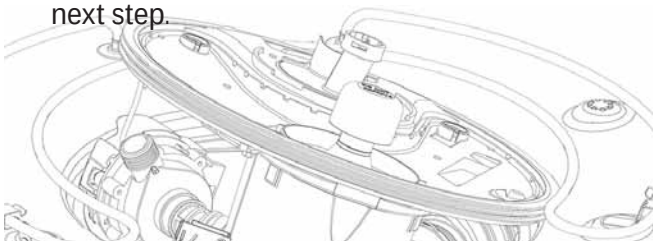
The sump latches below are shown in the release position. Each latch has a stop point built in. Turn the latches to a stop point when unlatching and latching.



11. Push the sump from the bottom into the tub.

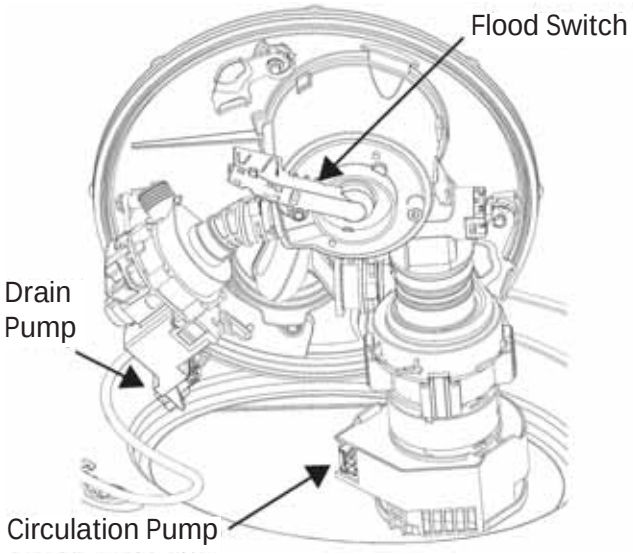


12. Grasp the sump from inside. Use care and DO NOT USE THE FLOOD FLOAT OR STEP AS A HANDLE. Tilt and lift to bring the sump into the tub. Bring the drain pump up and in first. This allows access to disconnect the wiring in the next step.



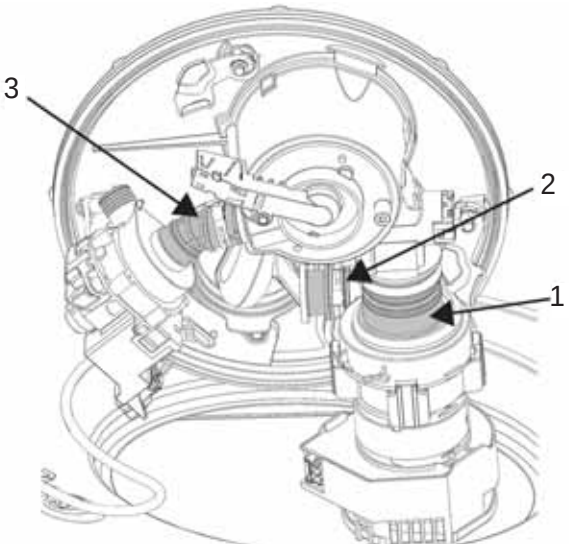
NOTE: It is important to route the wire harnesses in the same locations to prevent future damage to the harness.

13. Disconnect the circulation pump wiring, drain pump wiring and flood switch wiring.



14. The sump is now free to remove.

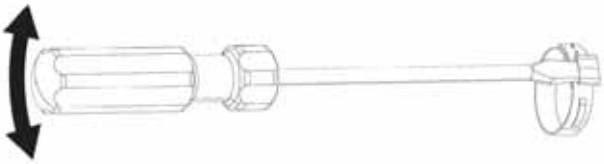
NOTE: Clamp kit (Part #: WD35X10382) can be used to replace any or all clamps on the sump assembly. The three hoses located on the sump are not available as individual parts. The circulation in flow hose (1) is molded to the circulation pump. The hose between the circulation pump and diverter (2) is molded to the diverter. The hose connecting the sump to the drain pump (3) has the hose molded to the drain pump.



Sump Gasket

Stressing or softening the gasket ribs (see below) will make a new gasket seat easier. Lubricating with a small amount of rinse agent or water will also ease installation.

Single Use Clamp Removal Tip: Use a small screwdriver inserted into the ear of the clamp and move the handle back and forth to loosen the clamp. The clamp can be removed and discarded when the component is removed.



WARNING: Using diagonal pliers to cut clamps may cause damage to the hoses.

Installing Sump Module

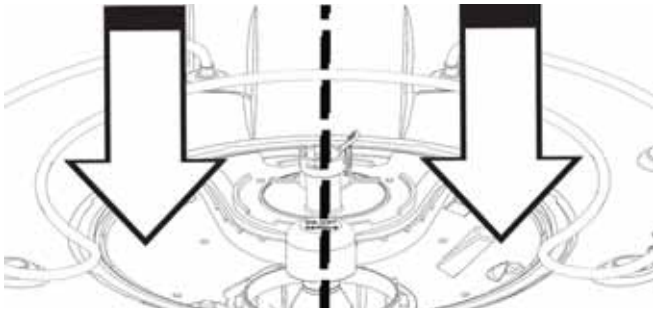
While inserting the sump assembly back into the tub, use care to ensure the sump assembly wiring and components are not pinched between the sump and the tub.

NOTE: Using rinse aid or water on the sump gasket will aid sump installation.

1. Reconnect wiring to the pumps and flood switch. Do not connect the turbidity sensor until after the sump module is back in place (step 5) to prevent damage to the connector.

2. Align the flood switch and diverter on the sump module to the main conduit (see alignment marking in the step 3 illustration). Some adjusting or twisting is OK. Do not use the flood switch to make adjustments.

3. Press firmly into place, using both hands to push down on the sump module.



4. Latch the three sump latch cams. The latch cams must not be used to pull the sump module into place.

5. Connect the turbidity sensor and high drain loop hose.

The main control board is located under the dishwasher. It is supplied with 120 VAC from the consumers home. Outputs include 120 VAC to the heating element, wash and drain motors. The control also supplies 13.5 VDC to the fill system, door switches, turbidity sensor (some models), and UI board.

CSM (Current Sense Module) Introduction: A CSM is a protective device that is located on the main control of GE Dishwashers. This device is designed to trip if current leakage to ground is above 20mA ± 5mA if detected. The CSM functions similar to commercially available GFCIs, if tripped the dishwasher will be non responsive. CSM details are found in the On the Main Control Board CSM section in this service guide.

NOTE: The dishwasher MUST be grounded and never operated without a ground connection.

Consumer Error Mode

To Enter Consumer Error Mode: With the dishwasher in Standby Mode (not running a cycle), press and hold the Cycle Select and Start buttons simultaneously for 5 seconds.

On entry into the Consumer Error Mode, the control reports the door status for 10 seconds.

- All LEDs are solidly illuminated, if the door is detected as closed.
- All LEDs are flashing, if the door is detected as open.
- The SSD (7-segment display) will indicate the UI software version (without a decimal). For example, software version 8.08 will display as 808.

After the door check, the control will enter a mode to display any error codes that are currently detected by the control.

LED	Error Type	Error Causes
Start	Communications Failure	User Interface control unable to communicate with machine control.
Heated Dry	Wash Temperature Error	Minimum wash temperature of 120°F was not reached in 3 of the past 5 wash cycles.
Wash Boost	Thermistor Error	Control detecting short or open circuit at thermistor.
Clean	Turbidity Sensor Error	Control detecting short or open circuit at turbidity sensor. May also occur on models without turbidity sensor.
Lock	Always Illuminated	Illuminates when Error Code Display Mode is active.

If any of the above LED's illuminate, it indicates the fault condition is present. These fault displays cannot be cleared manually; they will be automatically cleared by the control when the fault condition is no longer present.

Consumer Error Mode will time out after 5 minutes.

ANY KEY PRESSES OTHER THAN CYCLE SELECT WILL EXIT THIS MODE.

Service Mode

Entering Service Mode

NOTE: Entering Service Mode resets the CSM.

The dishwasher must be in Consumer Error Mode to enter Service Mode. Entering Service Mode will reset the CSM, allowing loads to be checked for the cause of the CSM to trip. The control will blink the Normal LED (light on model GDF510PxJxx) every few seconds for the number of times corresponding to the load being tested.

While in Consumer Error Mode

- Press and hold the Cycle Select pad for 5 seconds.
- Press Cycle Select to select or increment each test.
- Press Start, to start and stop each test.

LED Blink #	Load to Control	Timeout / Notes
1	Drain Pump	Attempts to empty. Takes approximately 75 seconds from normal level.
2	Water Valve	Attempts to fill to normal level. Takes approximately 1 minute.
3	Circulation Pump	Runs for approximately 2 minutes, pressing Start button will alternate lower spray arm to mid and upper spray systems (there will be a one or eight second pause, see diverter operation).
4	Heater	Turns on heater for a maximum of 2 minutes.
5	Detergent Module	Turns on detergent module solenoid for a maximum of 2 minutes.

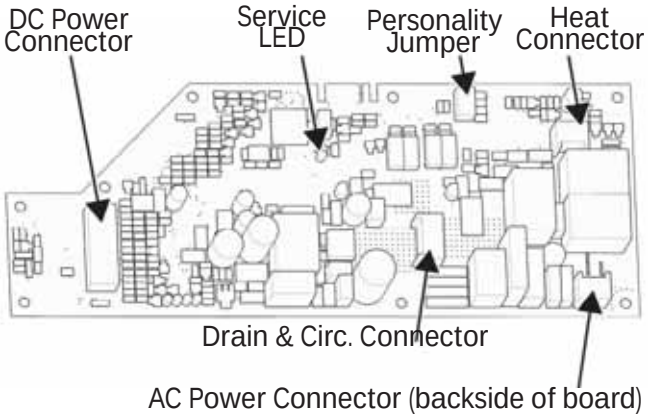
Service Mode will exit after 5 minutes of Inactivity.

Exit Service Mode by pressing and holding the Cycle Select and Start pads for 5 seconds, or by pressing any other pad.

Diagnosing Electronic Control Boards

Diagnosing the main control and UI control are covered in this section. Many components can be checked from the main control, which can be accessed with the door on or removed if needed. Some connectors are located through the bottom cover to allow easy access to the AC supply connector, door harness and RJ45 connector.

WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.



Main Control Diagnostics

Diagnostics are aided with the addition of a green Service LED on the machine control board that indicates the status of the control board. To view the LED, disconnect power and place the main control in the service position (see the **To Access Main Control Board** section), then repower the dishwasher to view the Service LED.

Blink Pattern	Meaning
1x per 3 seconds	Dishwasher in not running a cycle, select a cycle and press **Start**.
2x per 3 seconds	Dishwasher is in Delay Start and waiting to start a cycle. The cycle will begin once the delay expires.
3x per 3 seconds	Dishwasher is running a cycle.
4x per 3 seconds	Dishwasher is paused, close the door and press **Start** to resume the cycle.
5x per 3 seconds	Dishwasher has completed a cycle and the Clean Light is on (door has not been opened).
6x per 3 seconds	Dishwasher is in Demo Mode. To exit Demo Mode, press and hold **Start** and **Heated Dry** for 5 seconds.
7X per 3 seconds	Current Sense Module is tripped. See the CSM section of this guide.
1x per second	Communications lost between control boards. Check connections, replace UI or MC as needed.
Flashing rapidly (4x per second)	Software error, replace MC.
Steady off	Dishwasher is not powered, check supply voltage, replace MC as needed.
Steady On	UI personality not set, communications lost between UI and MC.

On the Main Control Board CSM

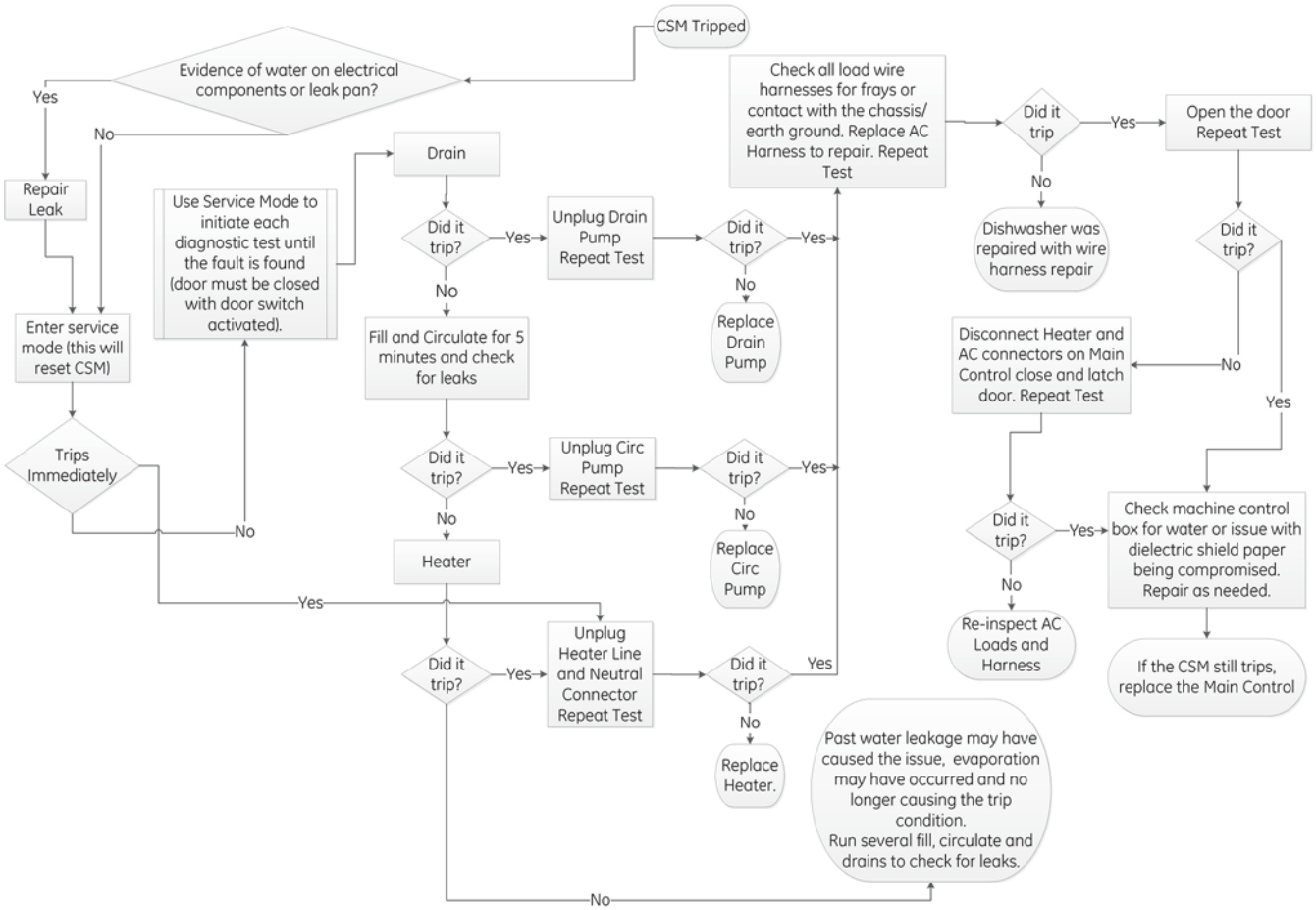
A CSM is a protective device that is part of GE Dishwashers and located on the main control board. This device is designed to trip if current leakage to ground is above 20mA ± 5mA is detected. The CSM functions similar to commercially available GFCIs, if tripped the dishwasher is non-responsive. Entering ***Consumer Error Mode*** will allow the door status check with LED's flashing for 10 seconds with the door open or on solid for 10 seconds, if the door is closed. If there are active error codes logged, they will be displayed at this time. Specific errors are displayed with LED's. Other error codes may assist with diagnosing (see Consumer Error Mode). The Service LED on the main control will flash 7 times in 3 seconds if the CSM is in a tripped condition. The CSM is reset when ***Service Mode*** is entered.

The cause of tripping is likely external to the board itself. The board should only be replaced after all other diagnostic tests have been completed and all other potential causes have been ruled out. Potential causes of current leakage to ground could be due to water leaking onto a live component, a component malfunction, or a fault within the wiring harness. If water caused the CSM to trip, the leak must be repaired. The dishwasher may run until a leak causes the trip to reoccur. Resetting the CSM without fixing the underlying issue will likely result in a repeat call. Always perform a visual inspection of the exposed heating element, looking specifically for cracks, splits, or swelling of the sheath.

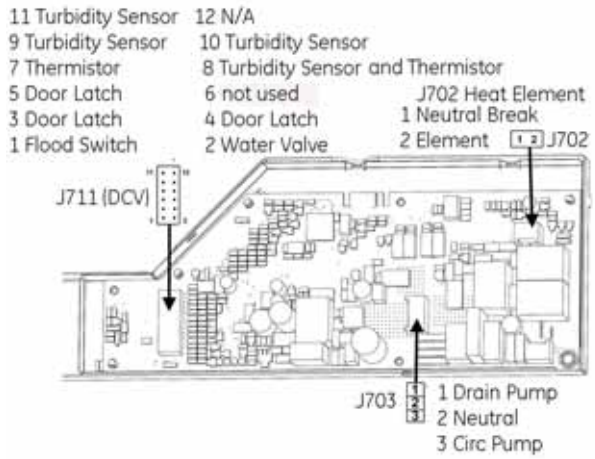
The Service LED on the Main Control will flash seven (7) times within three (3) seconds if the CSM is in a tripped condition. To view the Service LED, access the main control, place in a safe position and reapply power to the dishwasher.

CSM Diagnostics

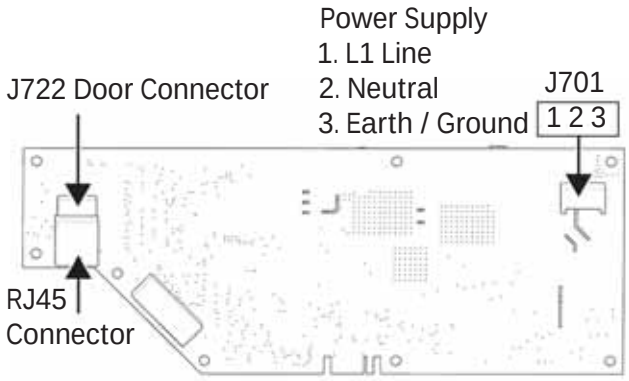
NOTE: Normal water level must be present when checking the circulation pump, drain pump, and the heater.



Top Side of Main Control



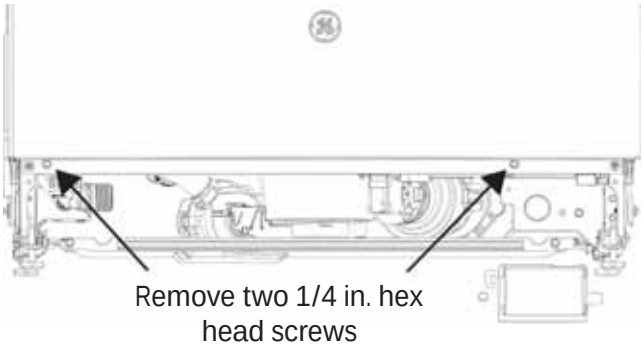
Bottom Side of Main Control



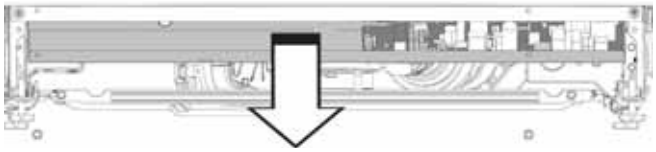
WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

To Access Main Control Board:

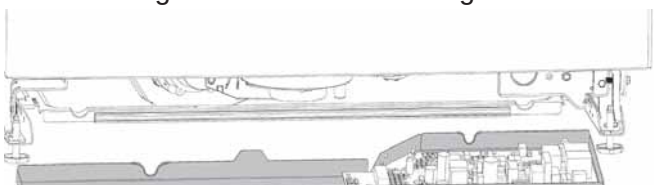
1. Remove power to the dishwasher.
2. Remove the toe kick panel.
3. Remove the door (optional).
4. Remove the junction box cover.
5. Remove two 1/4 in. hex head screws on the control box.



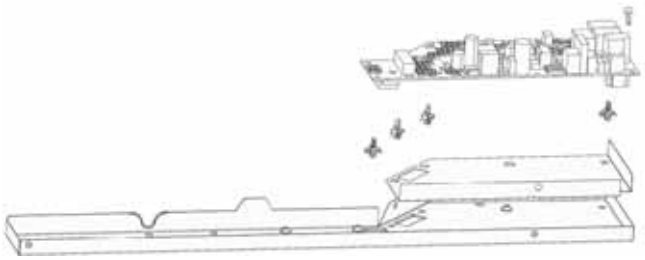
6. Pull down on the bottom cover at the front of control box. While pulling down on the front of the bottom cover, slide the cover forward to clear the back lip and junction box bracket.



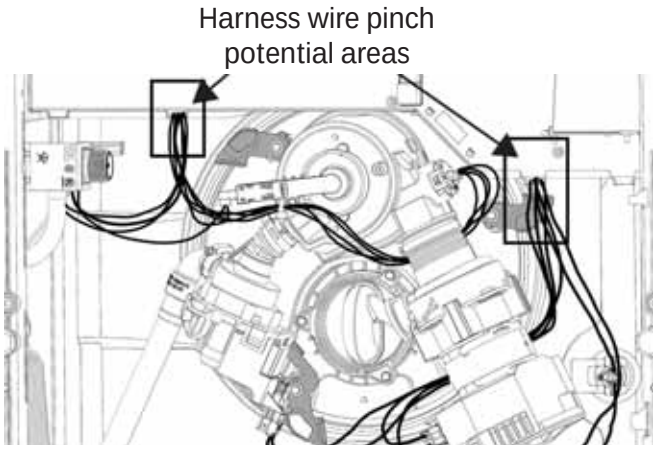
7. Pull cover and control forward, taking care not to damage the board or the wiring.



8. To remove the control board from the bottom cover, remove the ground screw and release the four standoffs.



9. Use care when reinstalling the main control board to prevent wire pinching. Make sure the harnesses are routed properly, through the access ports in the control area and above the sump hoses.

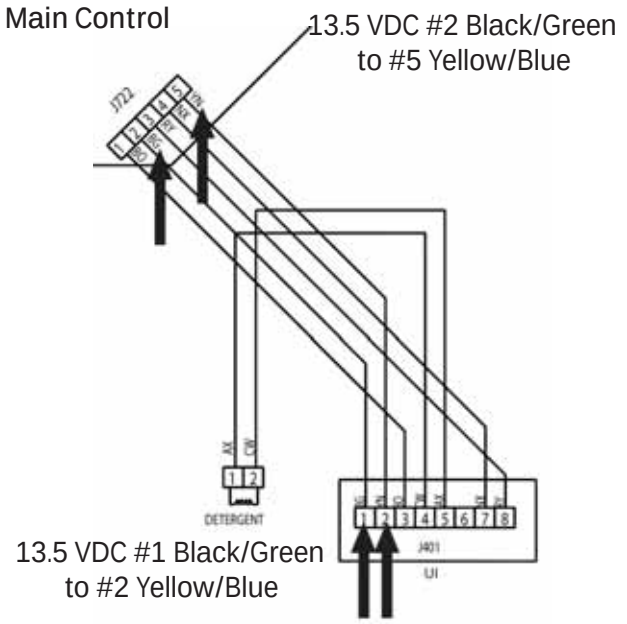


UI Diagnostics

- No display or LED's will light.
- Check for 120 VAC entering the main control. If no voltage is found, check the home breaker.
- Check the Service LED on the main control for a flash pattern. Use the table below to translate and repair (using the Service LED as a reliable diagnostic tool).

Blink Pattern	Meaning
1x per 3 seconds	Dishwasher in not running a cycle, select a cycle and press Start.
2x per 3 seconds	Dishwasher is in Delay Start and waiting to start a cycle. The cycle will begin once the delay expires.
3x per 3 seconds	Dishwasher is running a cycle.
4x per 3 seconds	Dishwasher is paused, close the door and press Start to resume the cycle.
5x per 3 seconds	Dishwasher has completed a cycle and the Clean Light is on (door has not been opened).
6x per 3 seconds	Dishwasher is in Demo Mode. To exit Demo Mode, press and hold Start and Heated Dry for 5 seconds.
7X per 3 seconds	Current Sense Module is tripped. See the CSM section of this guide.
1x per second	Communications lost between control boards. Check connections, replace UI or MC as needed.
Flashing rapidly (4x per second)	Software error, replace MC.
Steady off	Dishwasher is not powered, check supply voltage, replace MC as needed.
Steady On	UI personality not set, communications lost between UI and MC.

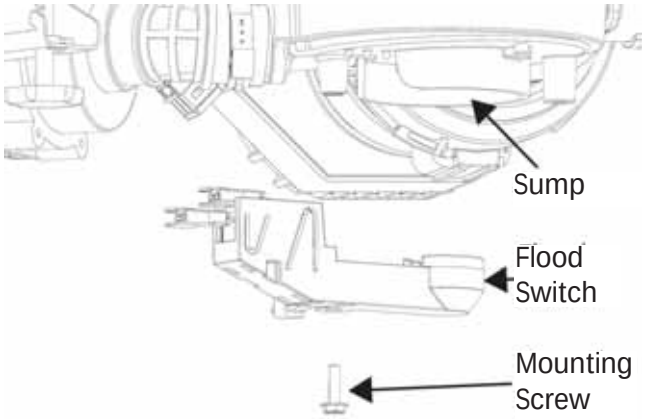
- Attempt to enter Consumer Error Mode. If LED's light, the CSM is tripped. Consult On the Main Control Board CSM section of this service guide to diagnose and repair.
- Check the door harness connections.
- For all models, the UI operational voltage is output from the main control on connector J722 pin 2 black/green to pin 5 yellow/black. If 13.5 VDC is not found here, replace the main control.



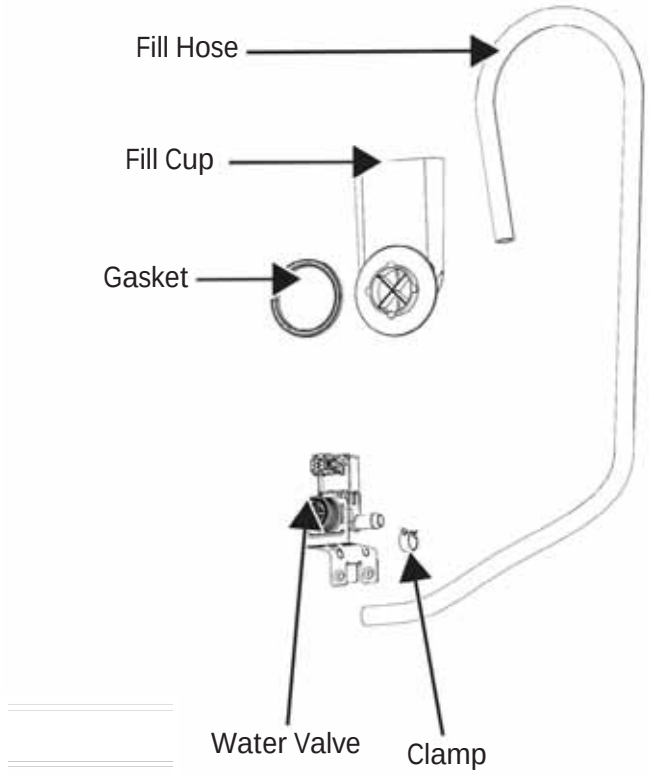
UI operational voltage is input at the UI control on connector J401 pin 1 black/green to pin 2 yellow/blue. If voltage is not found here, but was found in the previous step, check and replace the door harness (if needed). If 13.5 VDC is found and the control does not function in consumer error mode, replace the UI.

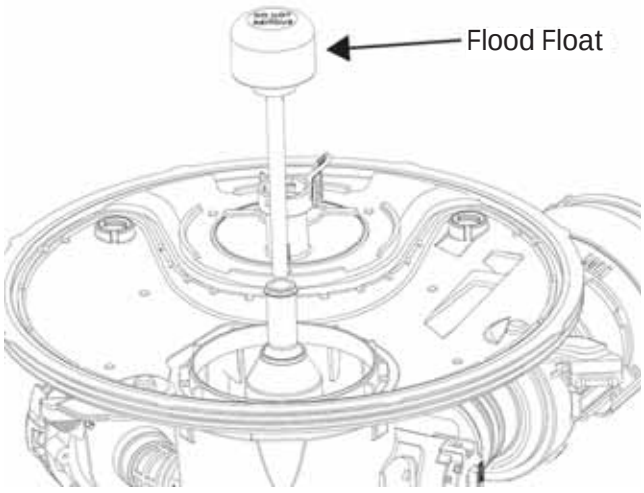
Fill System

The dishwasher has a fill volume of approximately .83 gallons of water and is a DC volt circuit. The water valve is rated at 13.5 VDC, resistance is 32 ohms and has a flowrate of .83 GPM. The fill time is 1 minute. The water valve is located in the front left corner, under the dishwasher. As with past GE Dishwashers, it is secured to the left base leg assembly. The flood float is located in the sump. The flood switch is located on the bottom of the sump. The switch will open the fill circuit, should the fill level reach a near flood condition.



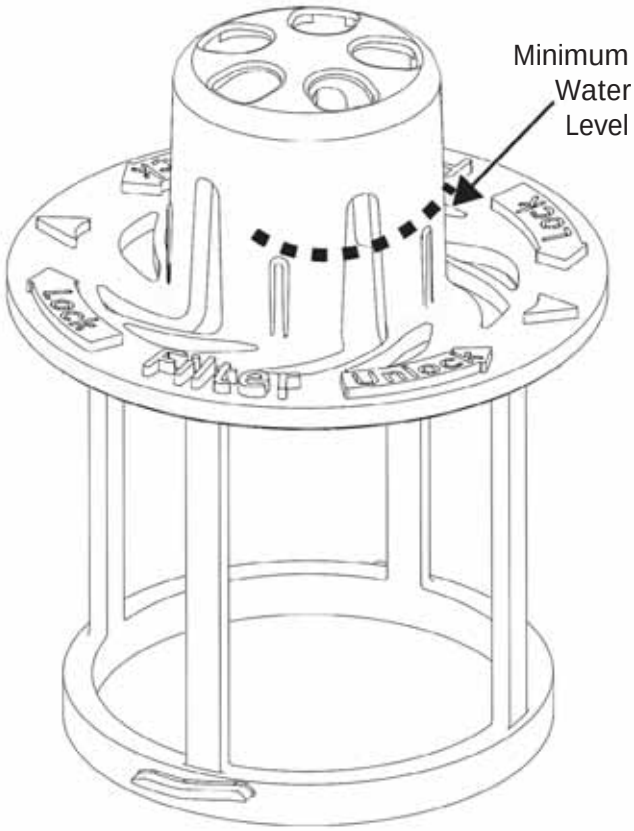
Components

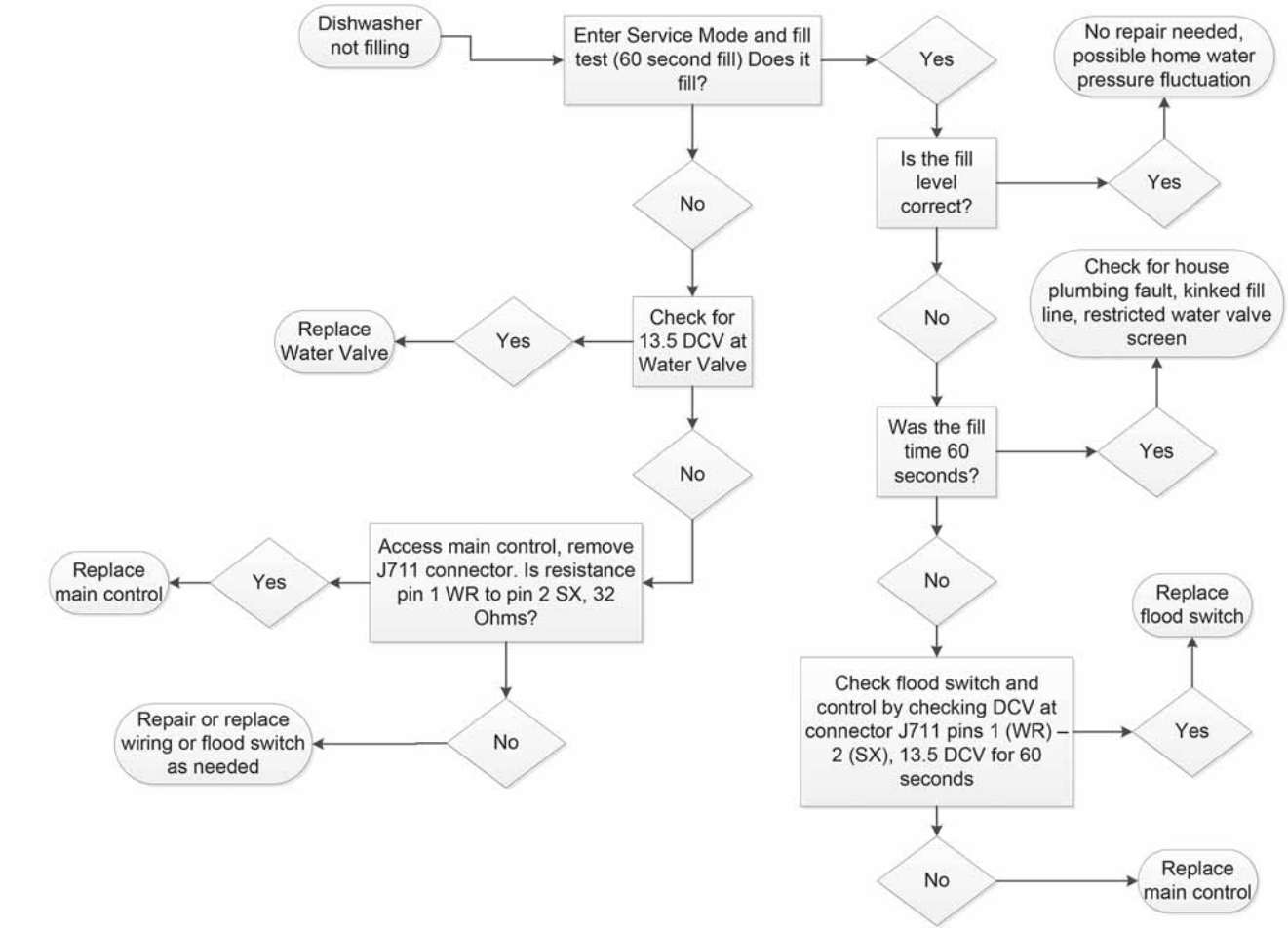


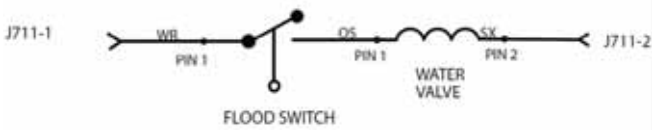


Water Level

To check for proper water level, place the dishwasher in Service Mode and run the Fill Test (see the Service Mode section in this service guide). Water must reach the level shown below.




Dishwasher not filling
Enter Service Mode and fill test (60 second fill) Does it fill?
Yes
No repair needed, possible home water pressure fluctuation
Is the fill level correct?
Yes
No
Check for 13.5 DCV at Water Valve
Yes
Replace Water Valve
No
Check for house plumbing fault, kinked fill line, restricted water valve screen
Was the fill time 60 seconds?
Yes
No
Access main control, remove J711 connector. Is resistance pin 1 WR to pin 2 SX, 32 Ohms?
Yes
Replace main control
No
Replace flood switch
Check flood switch and control by checking DCV at connector J711 pins 1 (WR) – 2 (SX), 13.5 DCV for 60 seconds
Yes
Repair or replace wiring or flood switch as needed
No
No
Replace main control


J711-1
WR
PIN 1
OS
PIN 1
SX
PIN 2
J711-2
WATER VALVE
FLOOD SWITCH

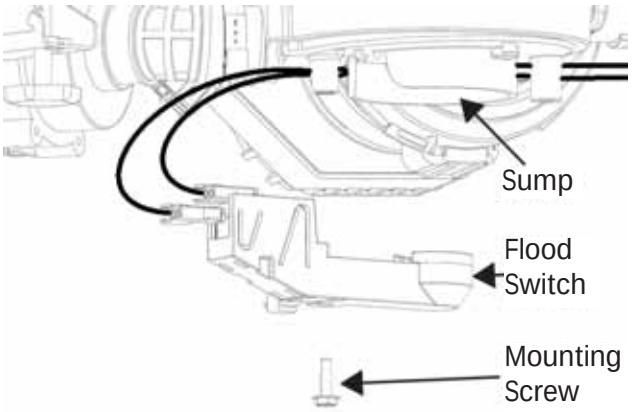
Flood Float and Switch

The Flood Float is located in the sump. The Flood Switch is located on the underside of the sump. They will open the fill circuit, should water reach a near flood condition.

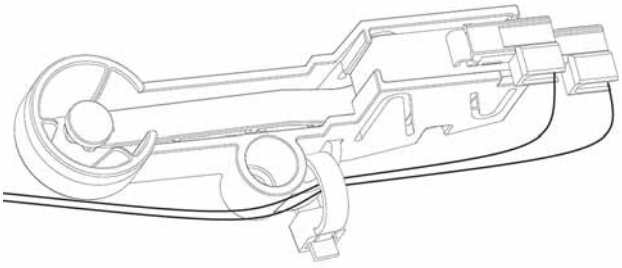
Flood Switch Removal

If the dishwasher is installed with the level legs extended, the 1/4 in. hex head screw may be removed without removing the sump.

1. Remove power to the dishwasher.
2. Remove the toe kick.
3. Remove the floor protection pan (where applicable). See the Floor Protect Pan section of this service guide.

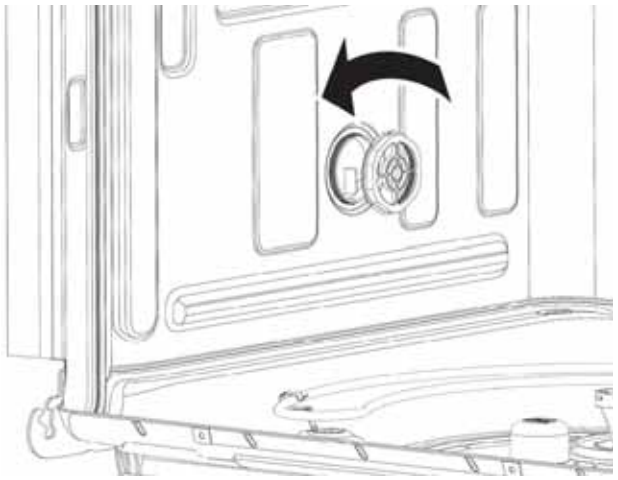


4. Some installations may allow flood switch removal without removing the sump. (See the Sump Module Removal section of this service guide if needed).
5. The flood switch may now be removed by removing the 1/4 in. hex head screw.

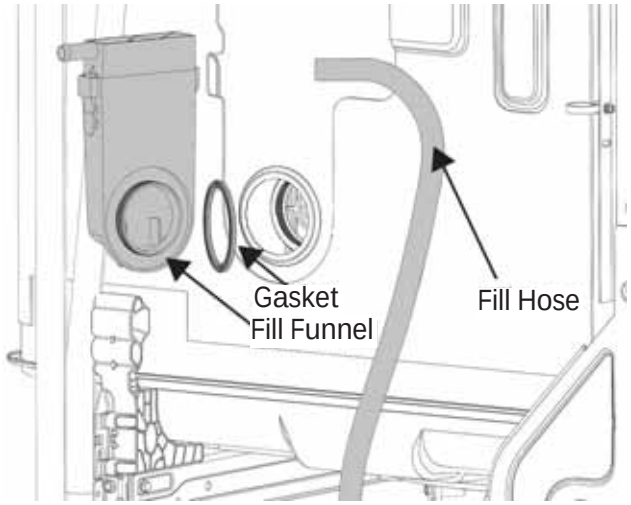


Fill Funnel and Hose

The Fill Funnel is located on the left side of the dishwasher tub and must be removed from installation to gain access. Remove by turning the mounting nut counterclockwise from inside the tub.



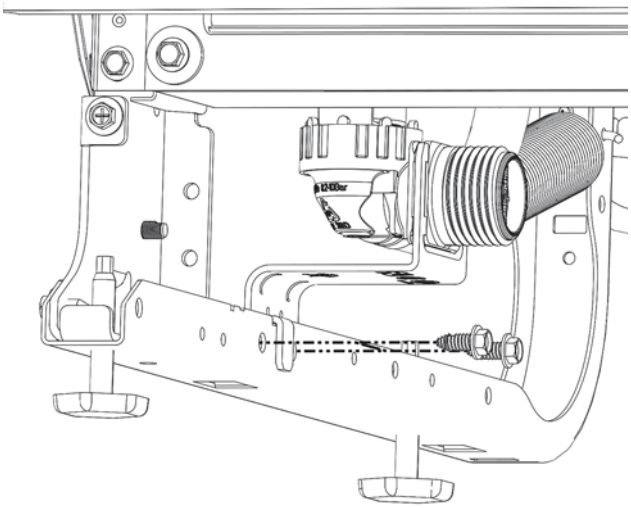
The fill funnel may now be removed from the outside of the tub. There is a gasket between the fill funnel and tub. The fill hose connects the water valve to the fill funnel.



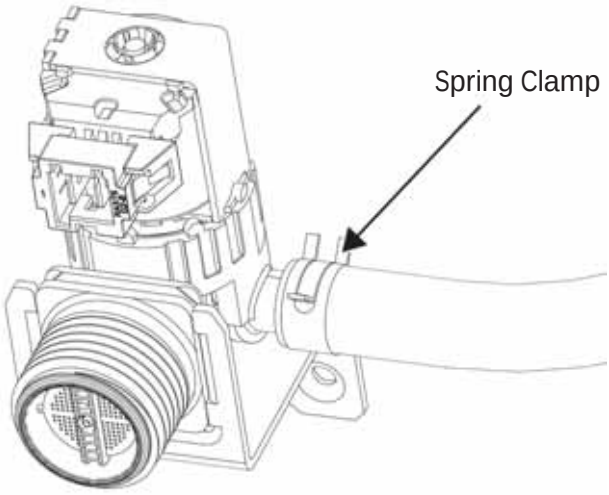
Fill Valve

Water Valve Removal

1. Remove power to the dishwasher.
2. Remove the toe kick.
3. Remove two 1/4 in. hex head screws from the bracket to the leg assembly.



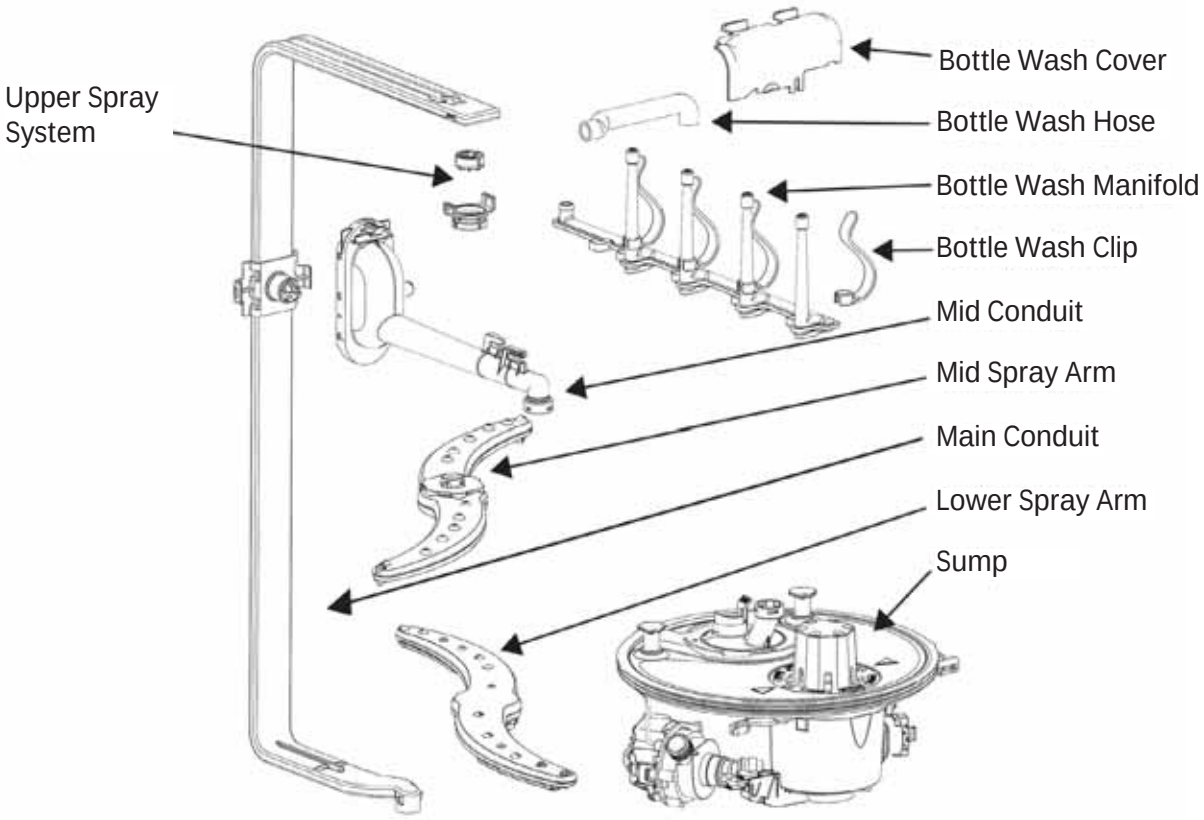
4. Slide the bracket off of the leg.
5. Remove the wire harness.
6. Remove the fill hose by using pliers to remove tension on the spring clamp.



Circulation System

With only .83 gallons of water, filtration is the start of improved performance. Water is cleaned through the Fine and Ultra-Fine filters before it enters the main pump. Water must also flow through the Piranha Hard-Food Disposal and finally into the wash pump assembly. Clean filtered water then flows into the diverter system which directs it to either the lower spray arm or mid spray arm and upper sprayer (some models). Water is jetted through more jets and with more power due to different wash zones created by the diverter.

This section will discuss wash system filtration, operation, components, removal procedures and diagnostics. The new 2015 Plastic Tub Dishwasher features alternating spray arms allowing low water use, helping energy efficiency. A diverter system is used to isolate the wash arms and is controlled by cycling the wash pump as described later in this section. Some models have a wash zone feature which allows the consumer the flexibility of washing in the lower or upper racks only. Using this feature will shorten the cycle time by 30%. Filtration has been greatly improved to allow clean filtered water to circulate during wash. The fine and ultra-fine filters are consumer removable and cleanable. The 4 pass Calrod heater allows for better heating of water (see Dry System section in this guide for more details).



Specifications

- Single Speed Circulation Pump: 120 VAC, .8 amp – 3.8 LRA, 8 GPM @ 5PSI
- 4 Pass Heater: 120 VAC, 18 ohm wet – 23.4 ohm dry, 6.7 amp wet -5.125 dry, Watts 800 wet /650 dry +/- 5%
- Detergent Cup: 13.5 VDC, 32 ohms, .5 second to release detergent cup, 15 seconds to release Rinse Aid (see the Door section of Tub and Structure in this service guide).
- Turbidity Sensor: 5 VDC to LED, 10K ohms
- Thermistor (in turbidity sensor)
- Spray Arm Rotation:

Spray Arm	RPM
Lower	40 RPM CW +/- 10%
Middle	30 RPM CCW +/- 10%

Diagnostics

Clear Door Diagnostic Tool

The Clear Door (Part #: WX05X20002) provides technicians with a tool to accurately diagnose 2012 and newer dishwashers. Viewing the wash zones not only include more accuracy, it will reduce diagnostic time, reduce repeat calls and will increase technician confidence. There may also be situations where the clear door can be used to show a consumer the dishwasher is operating properly.

Poor wash results can be due to many different things. The clear door allows operation and visibility of spray arms including rotation, slow or non-rotation, leaks between wash components, restrictions and spray jet pattern.

Proper spray arm speeds have a tolerance of =/- 5 RPM. The lower spray arm turns clockwise at approximately 40 RPM. The mid spray arm turns approximately 30 RPM counter clockwise. The upper sprayer (some models) cannot be counted but can be viewed for proper operation.

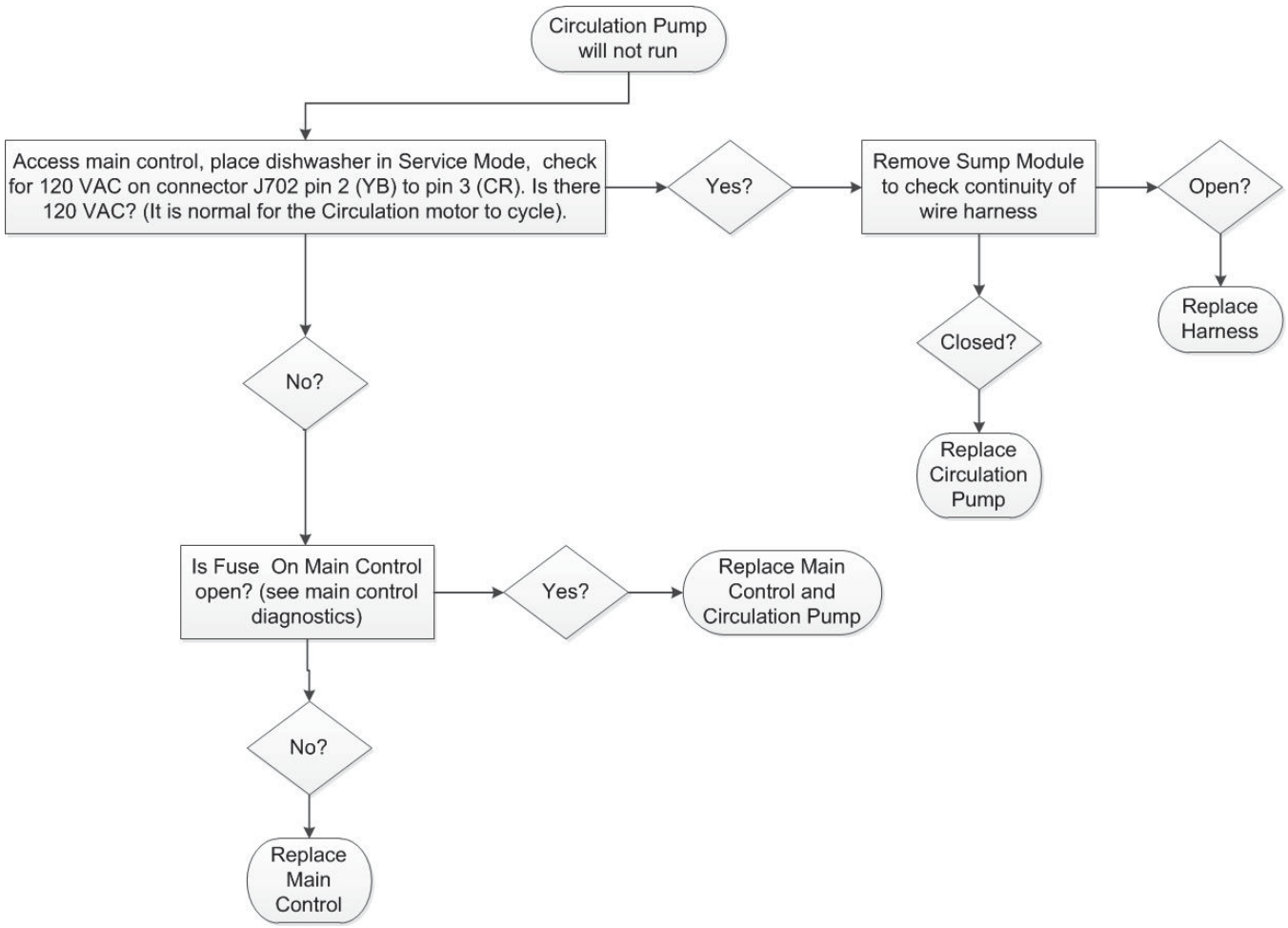
To Use WX05X20002 Clear Door

1. Place the dishwasher in service mode to fill, circulate and drain. Details on Consumer Error Mode and Service Mode can be found in dishwasher mini manuals and service guides. All models have the same entry directions. Different controls have different ways to communicate results and progress.
2. Remove the bottom rack for an unobstructed view of the lower spray arm.
3. Enter Consumer Error Mode.
4. Enter Service Mode.
5. Open the dishwasher door all the way to 90 degrees.
6. Place the WX05X20002 Clear Door into the tub opening starting at the bottom.

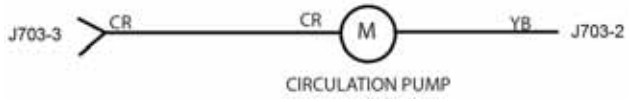
WARNING: To prevent any damage, do not close the dishwasher door when the clear door is in use.

7. The clear door has a latch strike. When pushed into the latched position, it will activate the door switch assembly. The dishwasher may not start if the door is installed to low.
8. Initiate Fill; the dishwasher will fill for 60 seconds.
9. Initiate the circulate test to view the circulation system in action.
10. Service mode will initiate a 2 minute circulate test 30 seconds lower CW, 2 - 3 seconds lower CCW (will not reach full speed unless dishwasher is in a main wash cycle) and 30 seconds upper spray system. This pattern will repeat.
11. Use a flashlight for better visibility. Look for leaks in all areas including between the wash components.
12. Determine potential areas for further inspection and diagnoses.
13. Initiate drain; the dishwasher will drain for approximately 70 seconds.
14. Remove the WX05X20002 Clear Door.
15. Proceed with any inspections, diagnoses and repairs as detailed in the No Circulation flow chart. Some components may cause different symptoms depending on the severity of part fault.

No Circulation Flow Chart



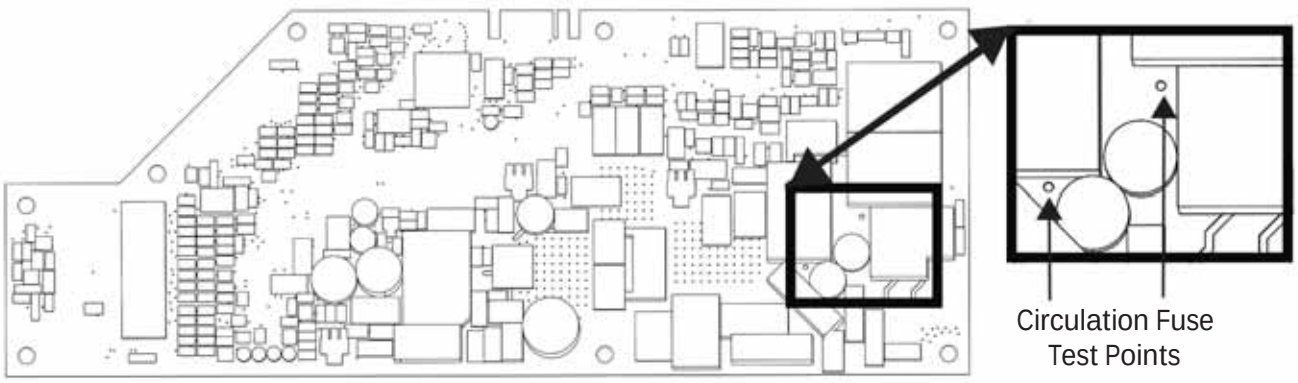
Circulation Strip Circuit

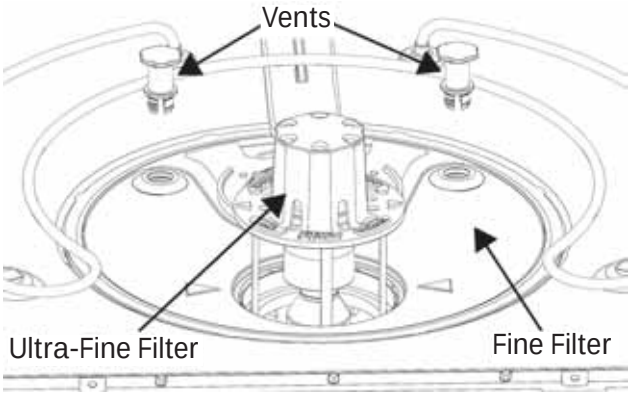


Circulation Motor Fuse

A circulation pump motor fuse is located on the main control board. If found open while testing for no circulation pump operation, the main control and circulation pump must be replaced.

If 120 VAC is not found at Main Control J703-2 to J703-3, check the fuse at the points shown in the below illustration. If an open circuit is seen, replace the main control and circulation pump.

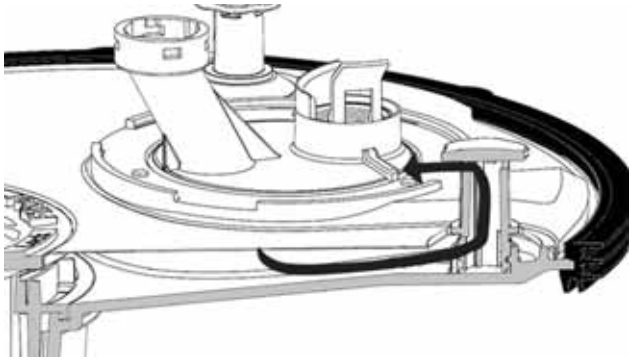




Good filtration is key to good wash performance.

The Ultra-Fine filter is consumer removable with a twist lock design. The Owner's Manual advises the consumer to remove and clean every 60 days or more frequently depending on use. NOTE: Using brushes or scouring pads will damage the filter.

The Vent Caps allow for air under the filter to escape and prevent air locks in the wash and drain pumps. They should also be inspected and cleaned as needed. Allowing the air to escape improves water flow into the pump and prevents possible cavitation.

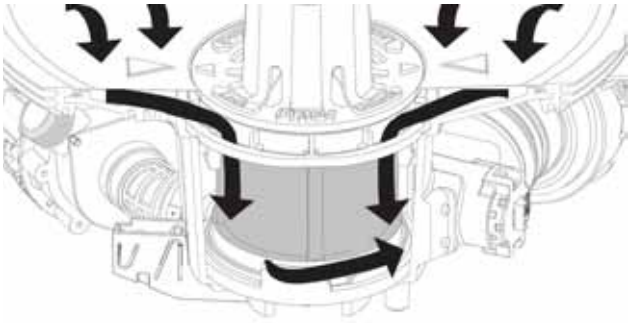


Vent Caps are twist lock; counter-clockwise to remove, clockwise to secure.

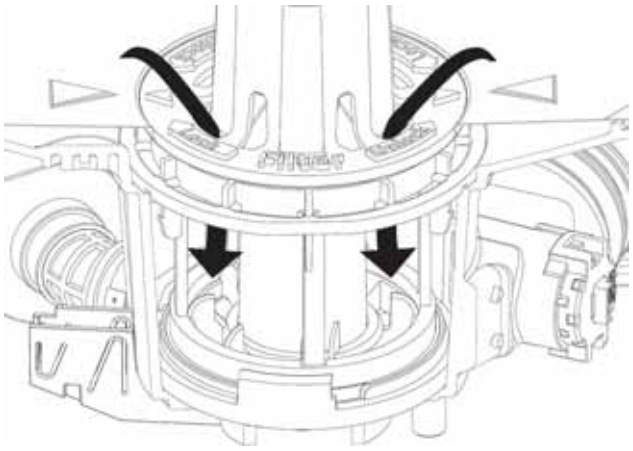
The Fine Filter is located on the sump assembly and should be cleaned each year or as needed for optimum performance. To remove the fine filter, remove the two vents at the rear of the filter and lift up on the filter.

Water is filtered as water flows through both fine and ultra-fine filters. Clean filtered water provides for improved washability.

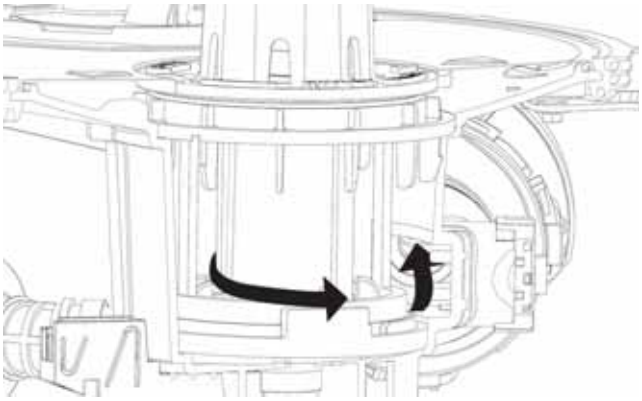
The Fine Filter water path is shown below. Water passes through the fine filter and flows on the outside of the ultra-fine filter, passes through the turbidity sensor and into the circulation pump.



The ultra-fine filter water path is shown below. Water enters the top of the filter, into the sump and through the ultra-fine filter mesh screen. The water mixes with the water that has passed through the fine filter, passes the turbidity sensor and into the circulation pump.



Clean filtered water then passes through the turbidity sensor, then enters the circulation pump.

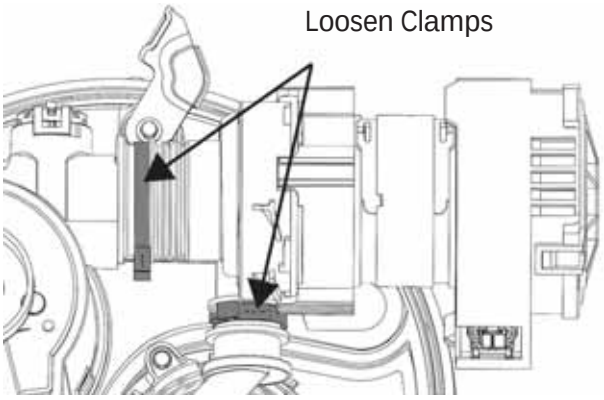


Circulation Motor and Pump Assembly

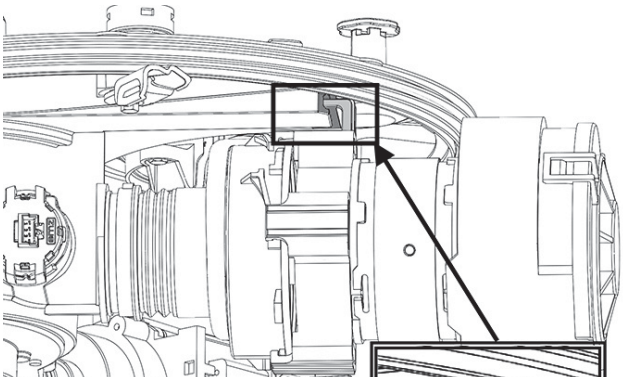
The circulation motor is a DC Brushed Motor, it has onboard AC to DC rectification. Resistance cannot be properly checked on this motor because of the rectifier and diodes inside the motor shield.

Circulation Pump Motor Assembly Removal

1. Disconnect power to the dishwasher.
2. Remove the toe kick panel.
3. Remove the door.
4. Remove the sump module (see the Tub and Structure section of this guide for sump removal instructions).
5. Loosen the inlet and outlet wash motor clamps.



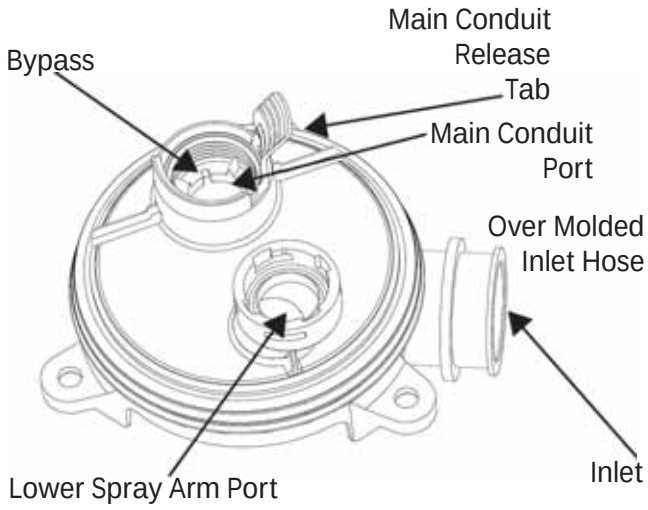
6. Slide the wash motor off of the hanger, and remove and discard the one time use clamps.



WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

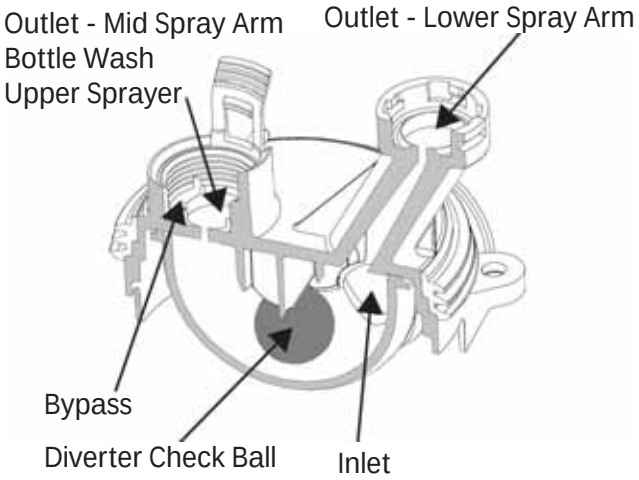
Diverter

The Diverter is the key component which allows low water use, by alternating water to the lower spray arm or mid spray arm, bottle wash (some models) and upper spray system (some models). It is important to note the "Bypass" in the rear port of the diverter, which allows for water to bypass the check ball in the diverter as described in the next section.



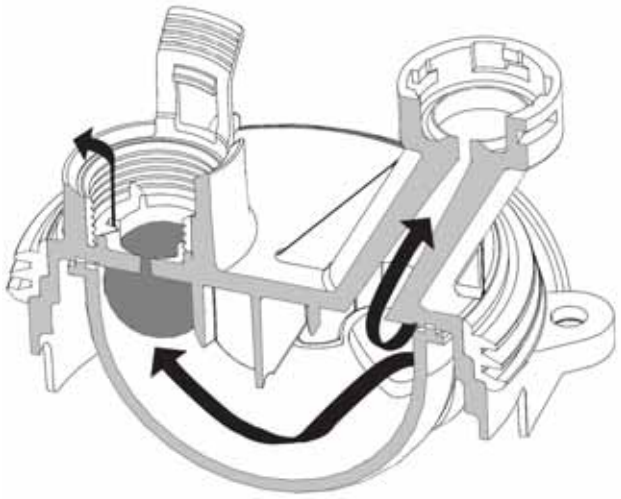
Operation

- The "Bypass" allows water to bypass the check ball in the diverter as described in the next step. The dishwasher is in Off or Standby mode, no pump operation. The check ball is at the bottom of the diverter.

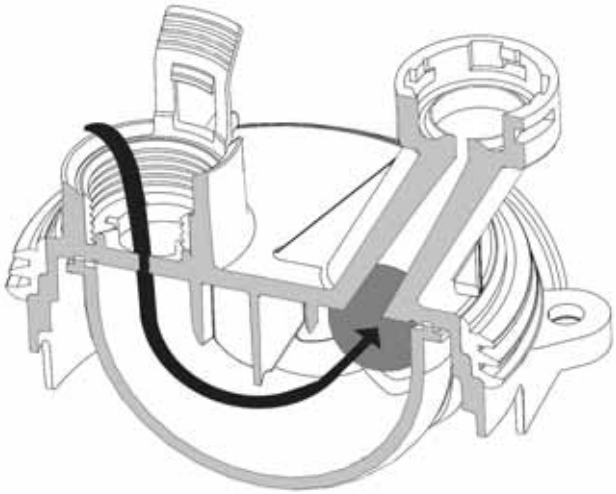


(*Continued next page*)

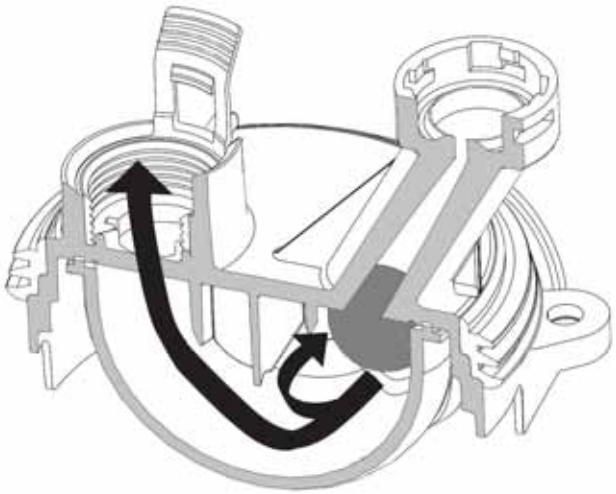
- The wash pump turns on, water flows to the lower spray arm, and the check ball blocks the rear port or upper spray conduit. At the same time, low pressure and low volume water enters the main conduit, filling the conduit with no actual spray from the mid and upper wash components.



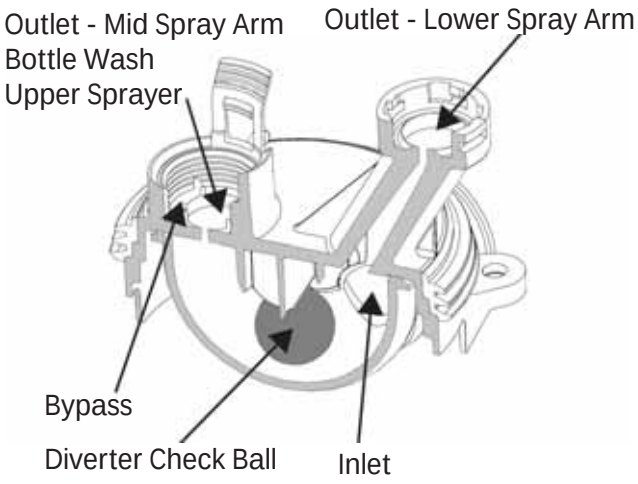
- The wash pump cycles off for one second. Water that is in the rear conduit forces the check ball to the lower spray port.



- The wash pump cycles on, and water pressure keeps the check ball positioned to block water entering the lower spray arm. Water flows to the mid spray arm and upper sprayer.



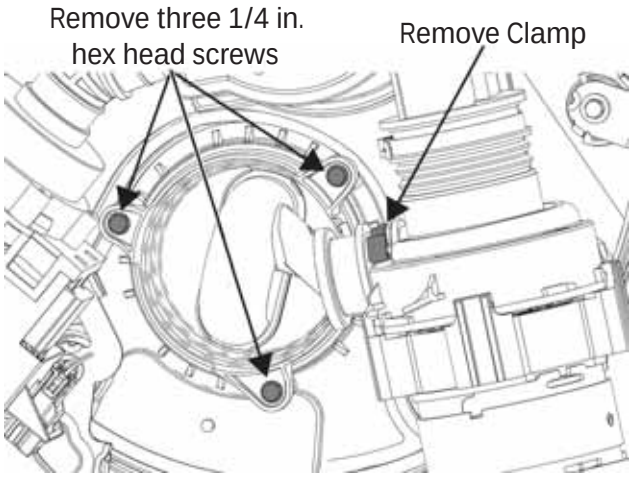
- The wash pump cycles off for eight seconds. The water pressure in the spray arms equalizes, and the check ball is in the bottom or home position.



- When the wash pump starts, the check ball again seals the rear port or upper spray arms. The cycle repeats.

Diverter Removal

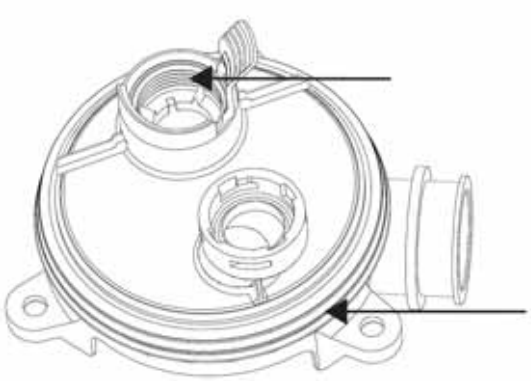
1. Disconnect power to the dishwasher.
2. Remove the toe kick and insulation pieces, if applicable.
3. Remove the door.
4. Remove the sump assembly.
5. Remove three 1/4 in. hex head screws securing the diverter to the sump.
6. Loosen the clamp on the diverter inlet hose to the circulation pump. Slide the diverter and hose from the circulation pump.



7. Remove and discard the one time clamp.

Clamp Removal Tip: Use a small screwdriver inserted into the ear of the clamp and move the handle back and forth to loosen the clamp. The clamp can be removed and discarded when the component is removed. The clamp kit (Part #: WD35X10382) has all six clamps located on the sump module.

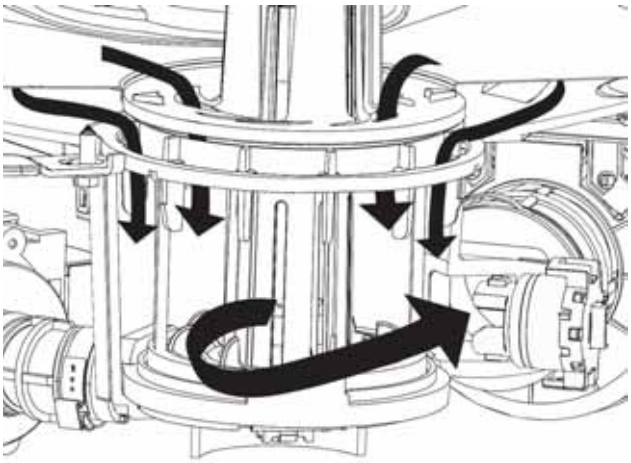
NOTE: Using a rinse aid or water on the diverter seal will aid diverter installation.



Turbidity Sensor and Thermistor

Operation

The Turbidity Sensor measures the amount of suspended particles of the filtered wash water. The sensor assembly contains a LED transmitter which emits light and a receptor (similar to a photo-cell) which receives light. The wash water passes between the transmitter and receptor, the control interprets these readings to determine the soil level and if any prewash or rinse cycles may be skipped. The cycle design sets parameters to a maximum cycle length; and the turbidity response will shorten the overall cycle length if the soil level is below the cycle preset specifications. By measuring several times during a cycle to monitor soil levels, energy can be saved by removing unneeded rinses, thus shortening the overall cycle time.



If the turbidity sensor fails open or shorted, the control will default to the maximum fills and circulation time that the control is programmed for.

Thermistor

The Thermistor is located inside the turbidity sensor. The thermistor monitors water temperature in the tub. If the thermistor opens or shorts it will cause an error (see Consumer Error Mode). If it fails in open or shorted, the control will default to the longest time algorithm.

Thermistor Specifications

VOLTAGE	RESISTANCE	TEMPERATURE
.95	20066	50°F
1.56	10450	75°F
2.25	5824	100°F
2.91	3411	125°F
3.48	2081	150°F
3.91	1330	175°F

Turbidity Sensor Calibration

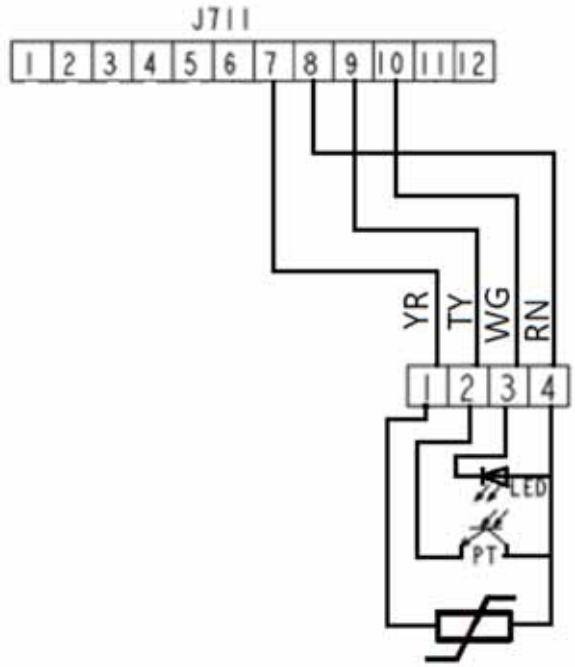
Calibration occurs every 100 cycles. After the final rinse but before dry, the control will add three extra rinse cycles. The first cycle will fill, circulate two minutes and drain. The second cycle will be a fill and drain. The third cycle will be a fill, circulate, calibrate and drain. The cycle will now advance to dry and complete.

Replacement controls will enter a calibration at the end of the first cycle that the control completes, as mentioned above. If the first cycle is interrupted and calibration does not occur, calibration will retry on the next cycle, until it is completed. Calibration will not occur on demand.

Turbidity Sensor Diagnostics

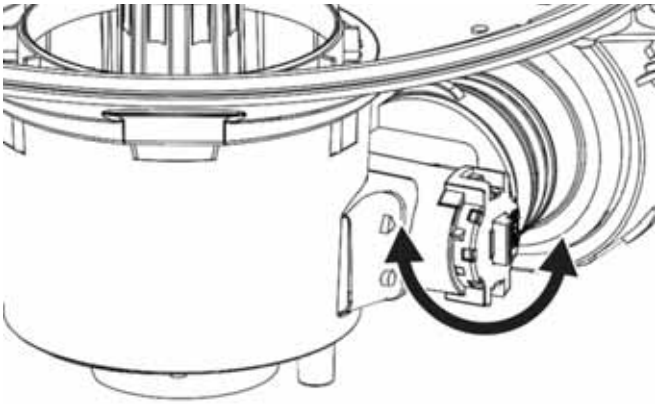
If the turbidity sensor fails open or shorted, the control will default to the maximum fills and circulation time that the control is programmed for. Use Diagnostic Fault Code Display Mode to look for Turbidity Sensor Faults.

To check the thermistor, access the Main Control (see To Access Main Control Board section), check resistance on connector J711, pin 7, YR to pin 10, WG. The sensor may also be removed and the two outside terminals may be checked. Use the table to the left to calculate the correct resistance reading.

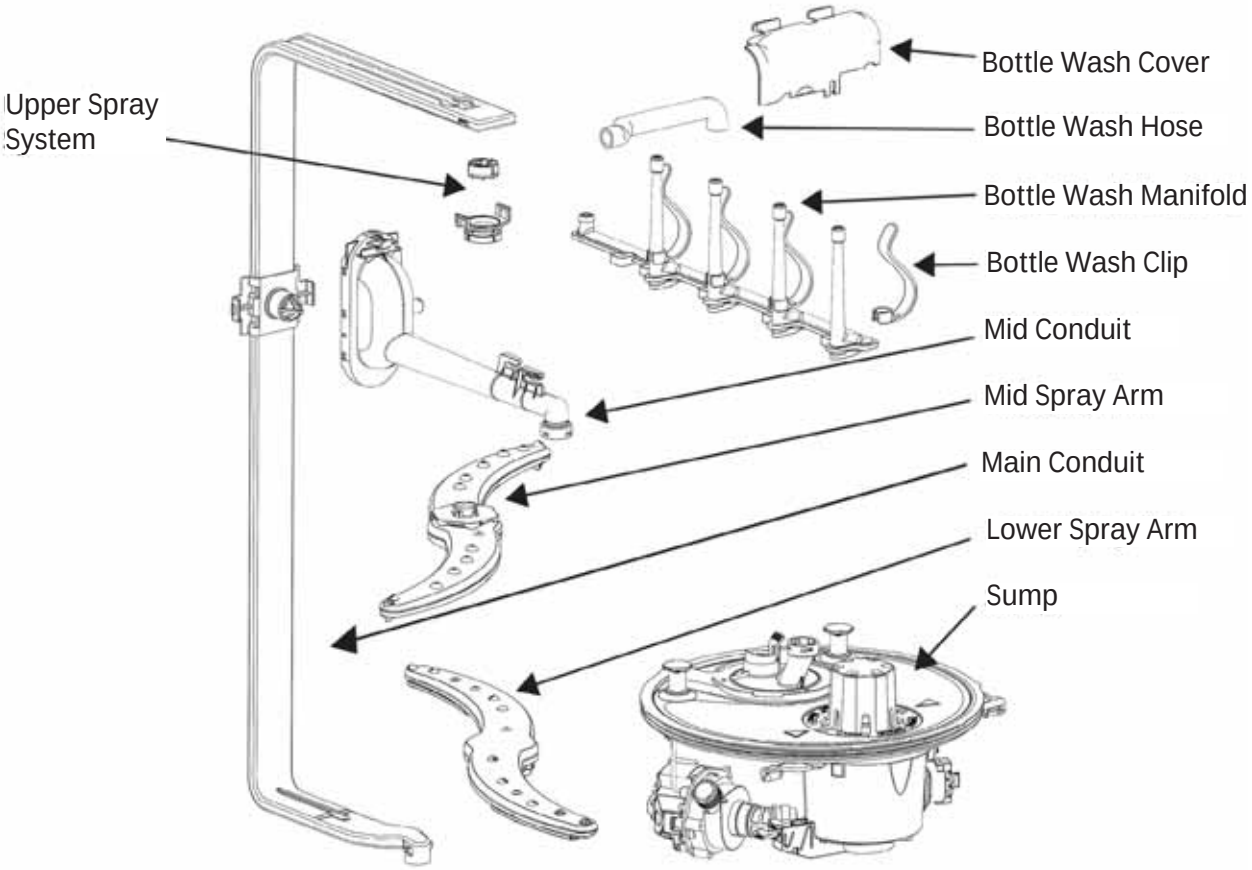


Turbidity Sensor Removal

To remove the sensor, empty the sump of water. Disconnect the wire harness, turn the sensor counter-clockwise and pull from the sump. To reinstall, push in and turn clockwise.



Conduits and Spray Arms

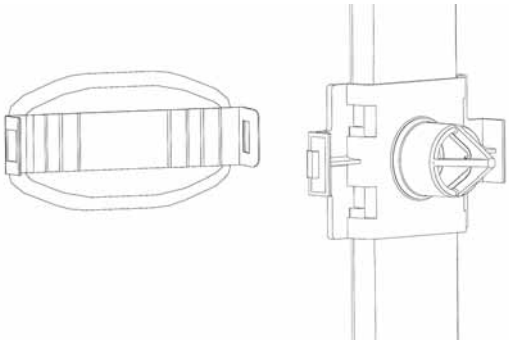


Main Conduit

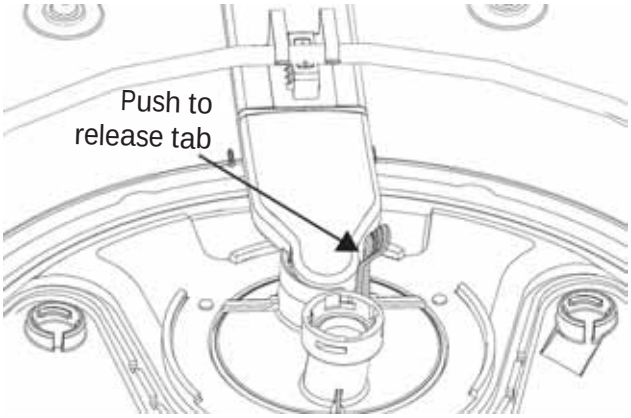
The Main Conduit supplies water to the mid spray arm, bottle wash (on some models) and the upper spray system (on some models).

Main Conduit Removal

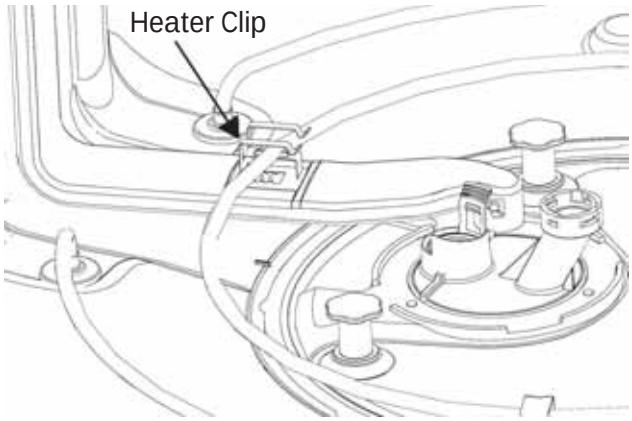
1. Remove both lower and upper racks.
2. Remove the lower spray arm.
3. Remove the mid spray arm docking port by releasing the tabs on each side of the docking cone. The docking cone will remain attached to the main conduit.



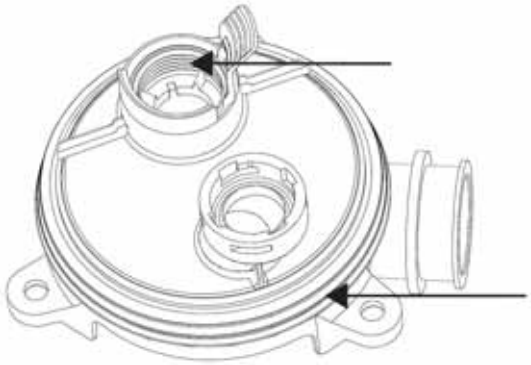
4. Push on the tab and pull up on the conduit to release from the diverter.



5. Disengage the heater clip and flex the main conduit to complete the removal.



NOTE: Using rinse aid or water on the main conduit seal in the diverter will aid main conduit installation.



Spray Arms

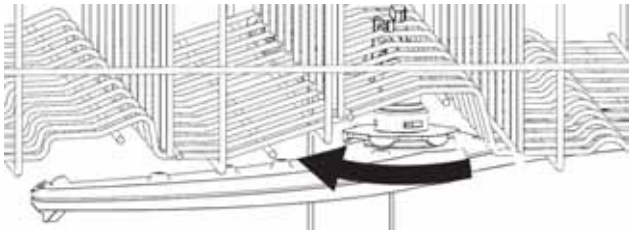
Lower and Mid Spray Arms are twist lock design and are the similar size and shape. The lower spray arm has heat shields on the bottom and is attached to the diverter. It is possible to reverse the spray arms, which will result in poor washability complaints. Care must be taken to reassemble in the proper position. Some models have an upper spray system which is also twist lock.

Lower Spray Arm

The Lower Spray Arm provides an upward directed water flow, which turns clockwise when in operation. The arm, bearing, and nut come as a complete assembly and has a twist lock design. To remove, turn the nut counter clockwise. Only the lower spray arm has heat shields.

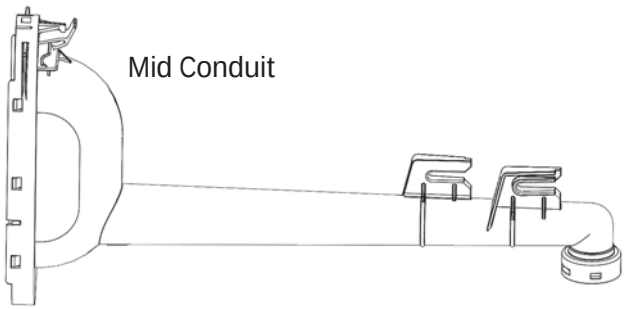
Middle Spray Arm

The Mid Spray Arm provides an upward directed spray pattern to the upper rack. To remove the mid spray arm, turn the nut clockwise (looking down through the upper rack).

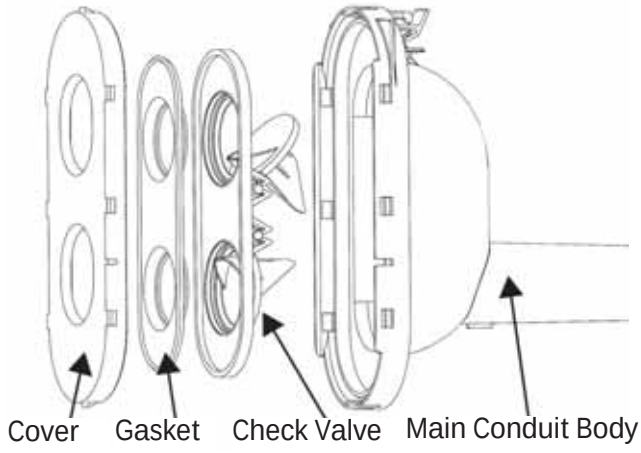


Middle Conduit

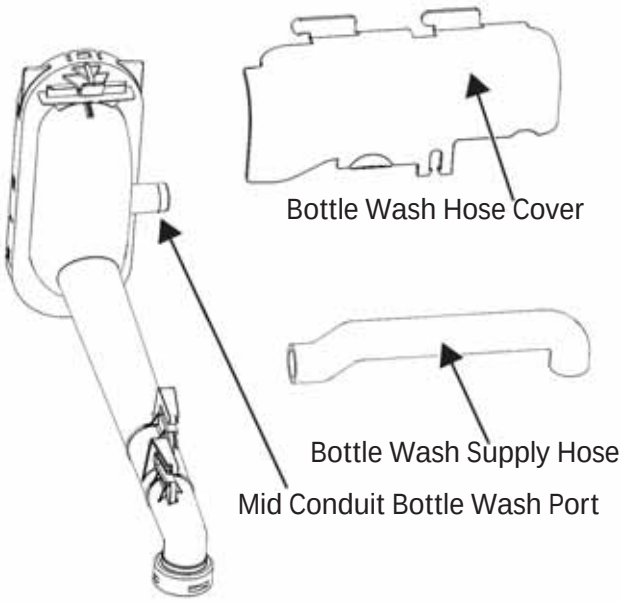
The Mid-level Conduit supplies water from the main conduit to the mid spray arm and bottle wash feature (some models). All models have adjustable racks. An adjustable conduit is used to allow proper engagement of the main conduit to the mid conduit in both rack positions.



The adjustable conduit has an internal check valve to block wash water from exiting the wash system, keeping water directed into the mid spray arm. The middle conduit is replaced as an assembly, and individual parts for the assembly are not available separately.



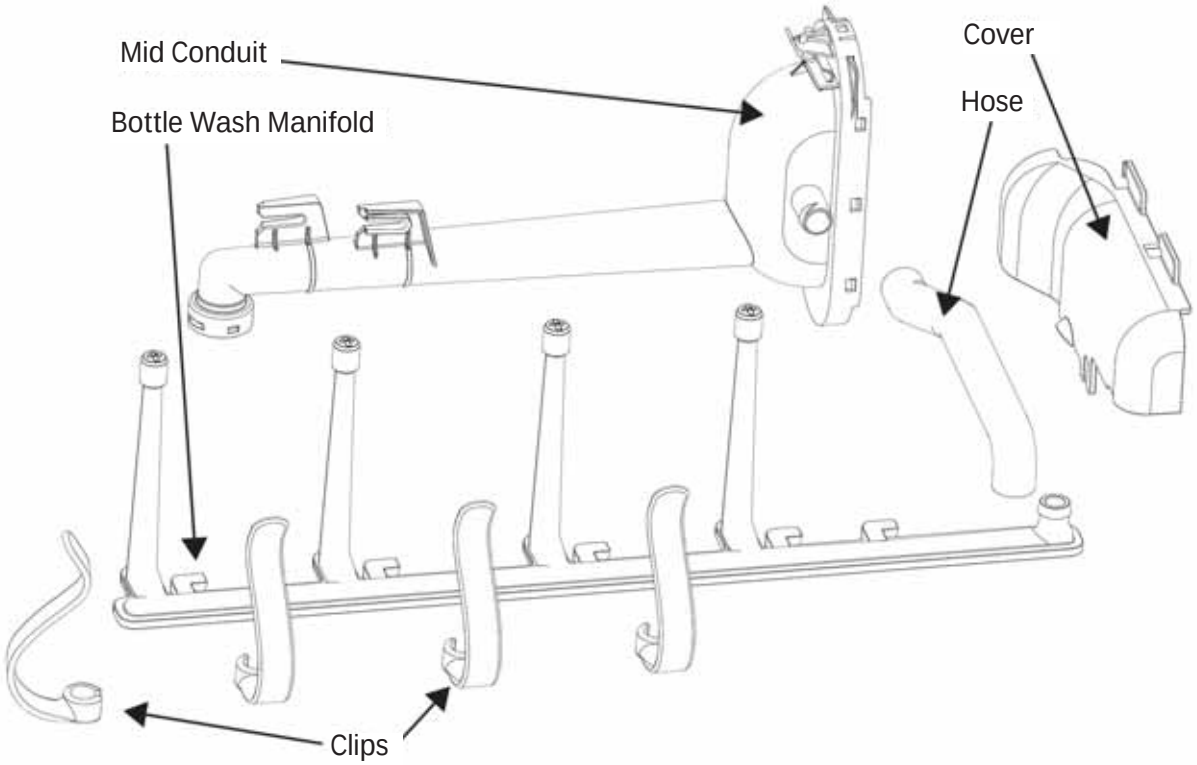
Some models have a port on the right side to allow water flow to the bottle wash feature.



Bottle Wash System (some models)

The Bottle Wash is designed to wash sports bottles, baby bottles, or any dishwasher safe container with a smaller mouth which blocks water from entering the container using normal spray arm jets. This feature insures clean containers. Water is active anytime that the upper spray arm is operational.

Selecting the bottle wash option on the control changes the wash algorithm. The upper spray arm and bottle wash jets are cycled for a longer time, and 23 minutes is added to most cycles when selected. Illustrations for the bottle wash system and removal may be found in the Upper Rack section of this service guide.

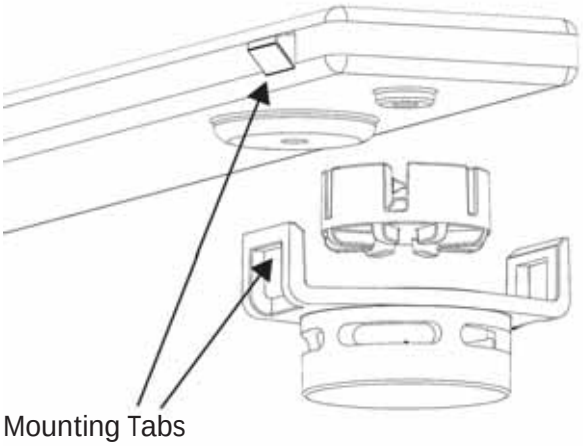


Upper Spray System

The upper sprayer provides a gentle shower down to the top rack.

The spray bracket is attached to the main conduit by means of tabs.

To remove the upper spray system, use a small screwdriver to release the spray system bracket tabs from the main conduit.



Drain System

Operation

The Drain Pump is a 120 VAC synchronous motor, resistance of the motor windings is 27 ohms + or — 10%. Drain water will back flush the fine filter through the coarse filter, allowing food particles to settle through the floor plate and into the drain pump. It is normal for the drain pump to start and stop several times during each drain cycle; this is normal. To ensure proper drain, the drain pump will pause several times in each drain cycle. This is done to protect against air locks and allow for peak performance.

Drain Cycle Algorithm

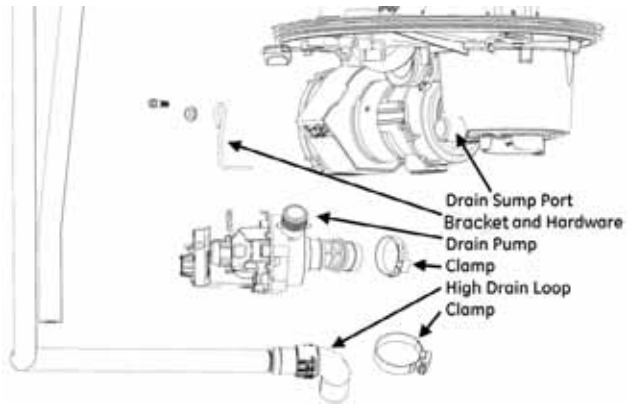
- 3 seconds on
- 1.5 seconds off
- 3 seconds on
- 1.5 seconds off
- 15 seconds on
- Repeat above steps
- 60 seconds on

Some Cycles have a Partial Drain, which Changes the Algorithm to:

- 3 seconds on
- 1.5 seconds off
- 3 seconds on
- 1.5 seconds off
- 15 seconds on

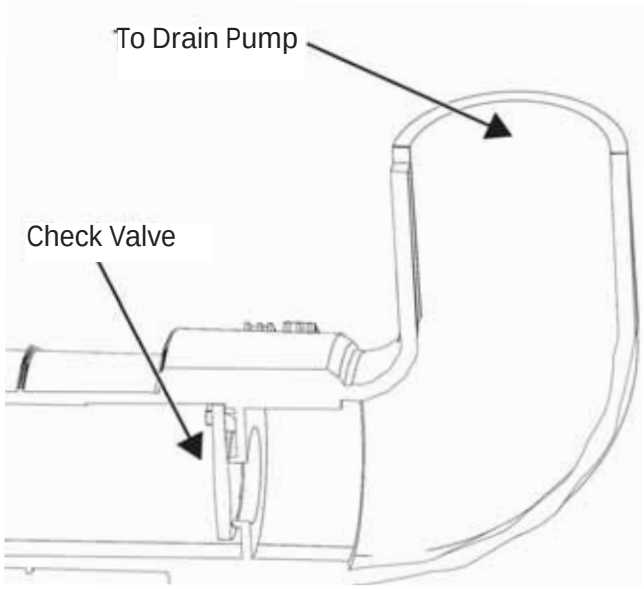
A 12 foot drain hose accessory is available separately, (Part #: GPF12). The drain pump has a maximum height capability of 72 inches (poor drain will result if drain hose is higher than 72 inches).

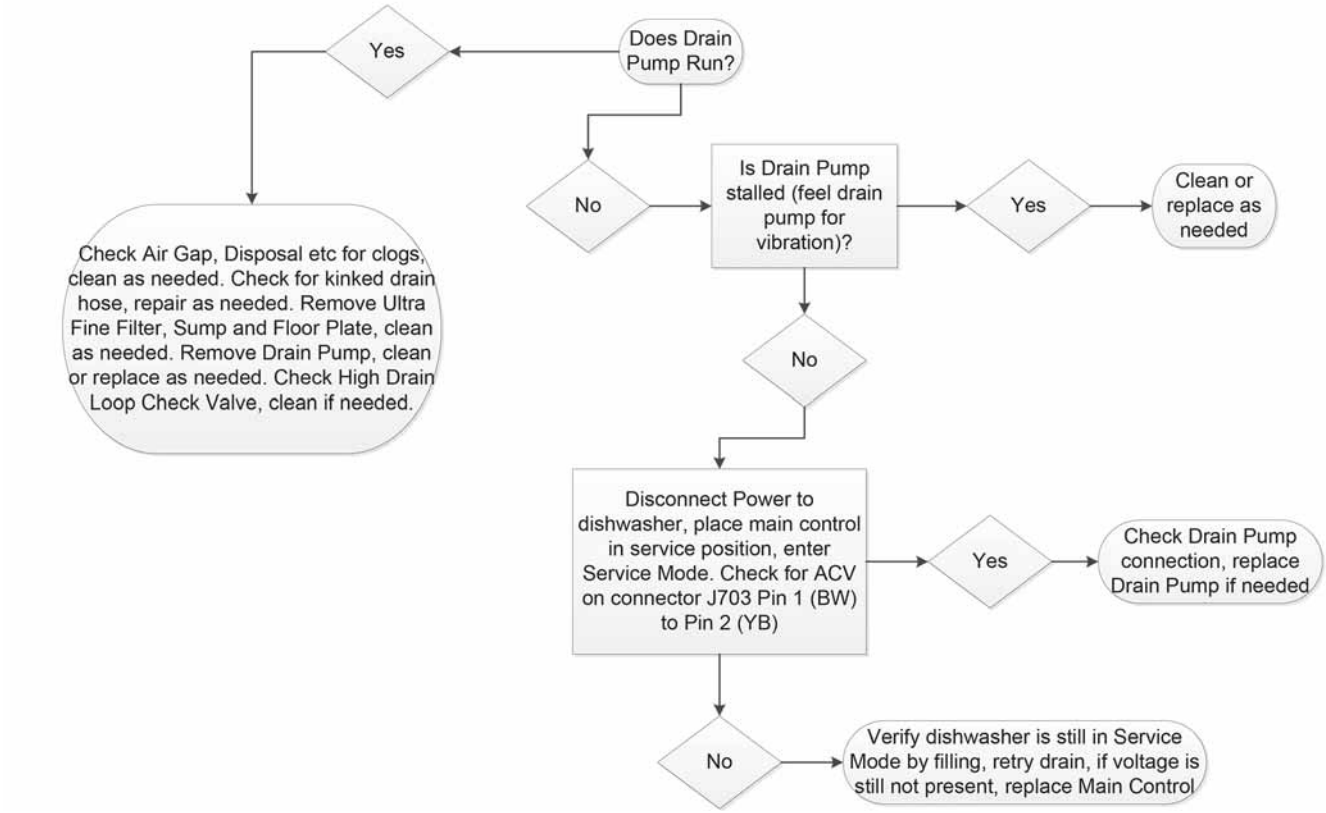
Drain Components



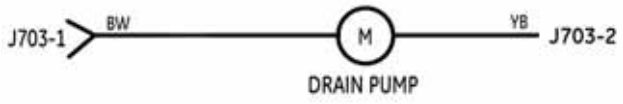
The Drain Pump is located on the sump assembly and uses a hose to connect the sump to the drain pump. A wire hanger is used to secure the pump to the sump. The High Drain loop is connected to the drain pump outlet and secured to the side of the tub with molded channels in the tub. The drain hose is connected to the drain loop, and to the house drain system. Installation requires the drain hose to provide for a second high drain loop.

- Inside the High Drain Loop is a Check valve preventing drain water reentering the dishwasher.



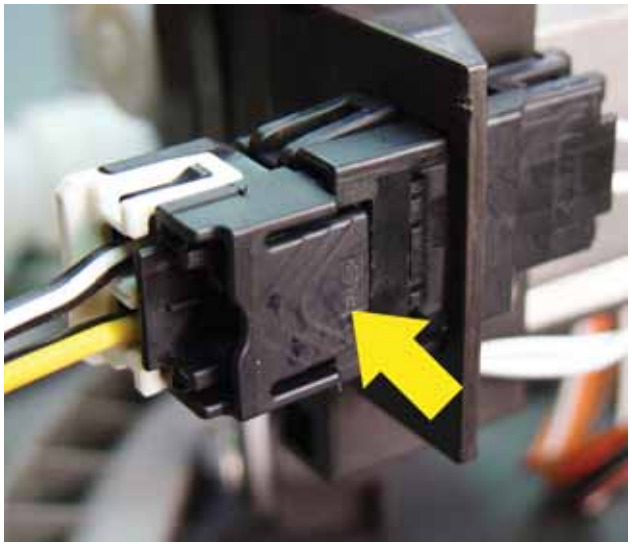


Drain Pump Strip Circuit

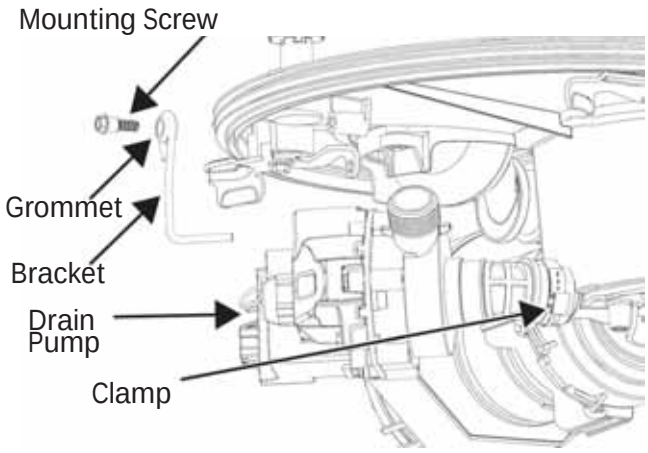


Drain Pump Removal or Replacement

1. Remove power to the dishwasher.
2. Remove the door (consult Door Removal section of this service guide).
3. Remove the sump assembly (see Sump Removal section of this service guide).
4. To remove the harness connector, press in on the tab, then pull to remove the connector.

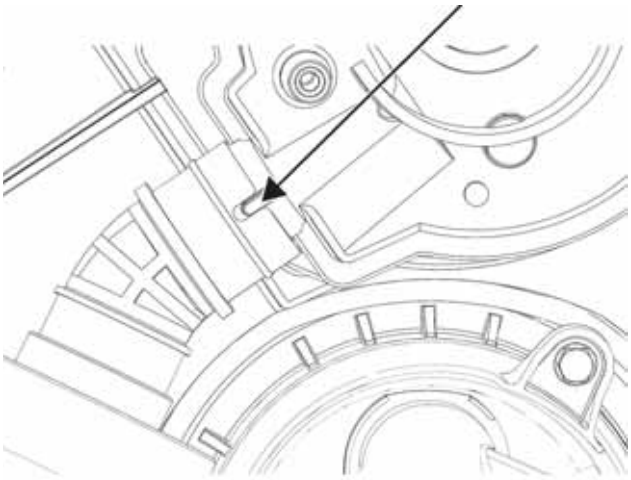


5. Loosen or remove the Drain Pump Bracket.
6. Loosen the hose clamp and discard, remove or replace the drain pump.



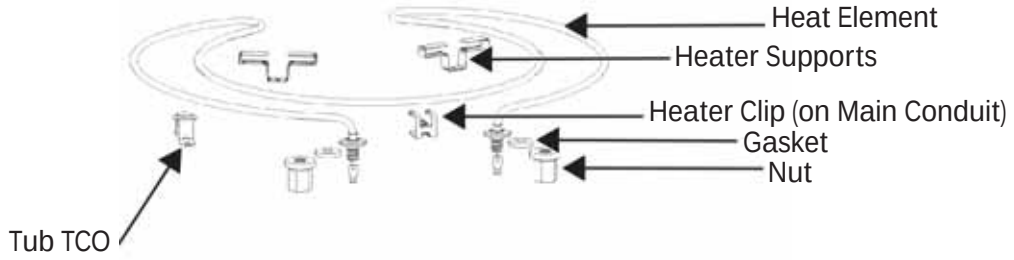
7. Use new clamp included with the new pump or the clamp kit (Part #: WD35X10382) when reinstalling.

When reassembling, position the hose properly onto the locating feature on the sump.



Dry System

Introduction and Operation



The dual wattage 4 pass Calrod Heater serves both to heat the water during a wash cycle and to heat the air during the dry cycle. Heat and air circulation are required for good dry performance. Air circulation is natural convection with air entering through the fill funnel, then exiting through the vent. During dry, the heat element cycles after an initial 6 minute ON time to 60 seconds OFF, 60 seconds ON for 28 minutes during a Normal cycle with no wash boost options selected. Boost wash options will change the time needed due to hotter temperatures in rinse for options and cycle selected. The below table represents a normal cycle with heated dry option only selected.

Heated Dry Element Algorithm

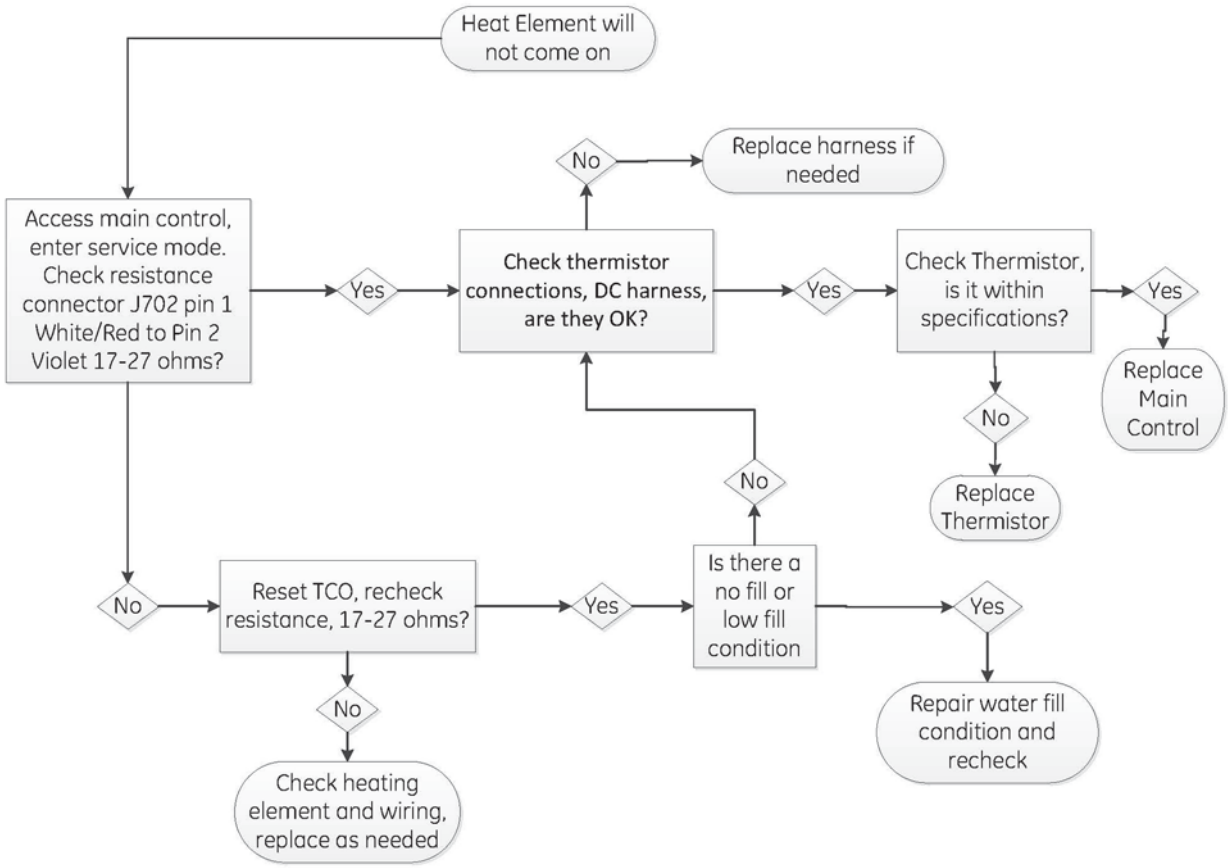
4 Pass Heater Algorithm, Dry Cycle	
Normal with Heated Dry	
Time (minutes)	Calrod Description
6	Calrod on
28	Calrod Pulse - 1 minute on/1 minute off
14	Calrod off - Cool Down
Normal with Temp Boost or Sani Selected	
6	Calrod on
58	Calrod Pulse - 1 minute on/1 minute off

Specifications

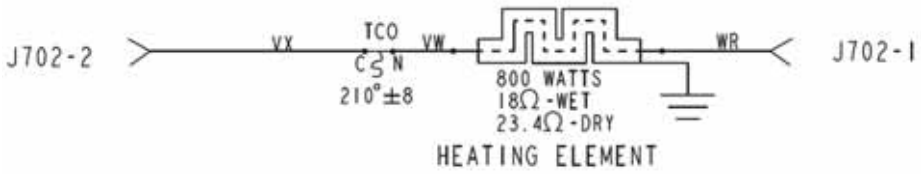
The Calrod Heating element is rated at 120 VAC.

Heater 120 VAC			
	Wet	Dry	
Watts	793	625	+/- 5%
Ohms	16.4	23.2	+/- 5%
Amps	6.6	5.2	+/- 5%

Diagnostics



Strip Circuit



WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

- Heating Element

Dual wattage occurs due to the heat level in the element raising the resistance of the internal element. As water quenches the heat on the case, resistance lowers and wattage rises.

Heat Element Removal

The heater may be removed by one of two methods. The first method requires door and sump removal to gain access to the element nuts. The second method requires the dishwasher be removed from its installation.

Element Removal Without Uninstalling the Dishwasher

1. Disconnect power to the dishwasher.
2. Remove the lower rack.
3. Remove the door (see **Door Removal**).
4. Remove the sump assembly (see **Sump Removal**).
5. Disconnect the two wire leads to the heater.
6. Remove the two 15/16 in. heater nuts.
7. Remove the heater from inside the dishwasher.

Element Removal by Uninstalling the Dishwasher

1. Disconnect power to the dishwasher.
2. Remove the lower rack.
3. Remove the door (see **Door Removal**).
4. Remove the dishwasher from its installed position and place on its back.

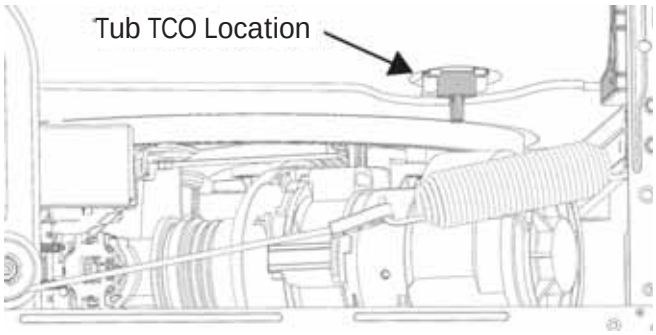
WARNING: If the door is not removed and the dishwasher is not placed on its back, there is a TIP RISK.

5. Disconnect the two wire leads to the heater.
6. Remove the two 15/16 in. heater nuts.
7. Remove the heater from inside the dishwasher.

Tub TCO

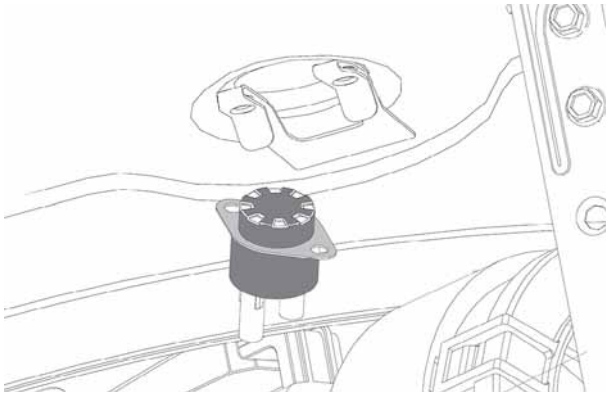
If the TCO is open, the thermistor must be checked. If the thermistor checks good, then the water level should be checked. A low water level may cause overheating of stainless steel tubs. The TCO is located on the right side of the tub, approximately 16 inches from the front of the tub.

The TCO is in a series circuit with the Calrod Heater.



No water or low water may cause the Tub TCO to trip. Always check for proper water level if the TCO is open.

The TCO is secured in place with a slide-in mounting clip.

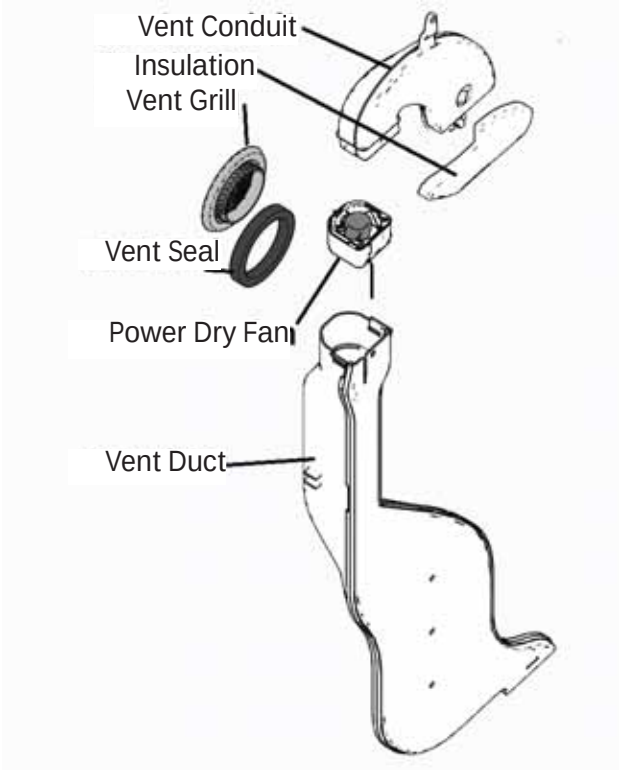


Venting / Airflow

To remove the vent, the door must be removed and separated (see the **Door** section of **Tub and Structure** in this service guide).

Power Dry Forced Air

This design also uses the 4 Pass Heater and adds a powered vent fan located in the door (see the Door section of this service guide for removal instructions).



Operation

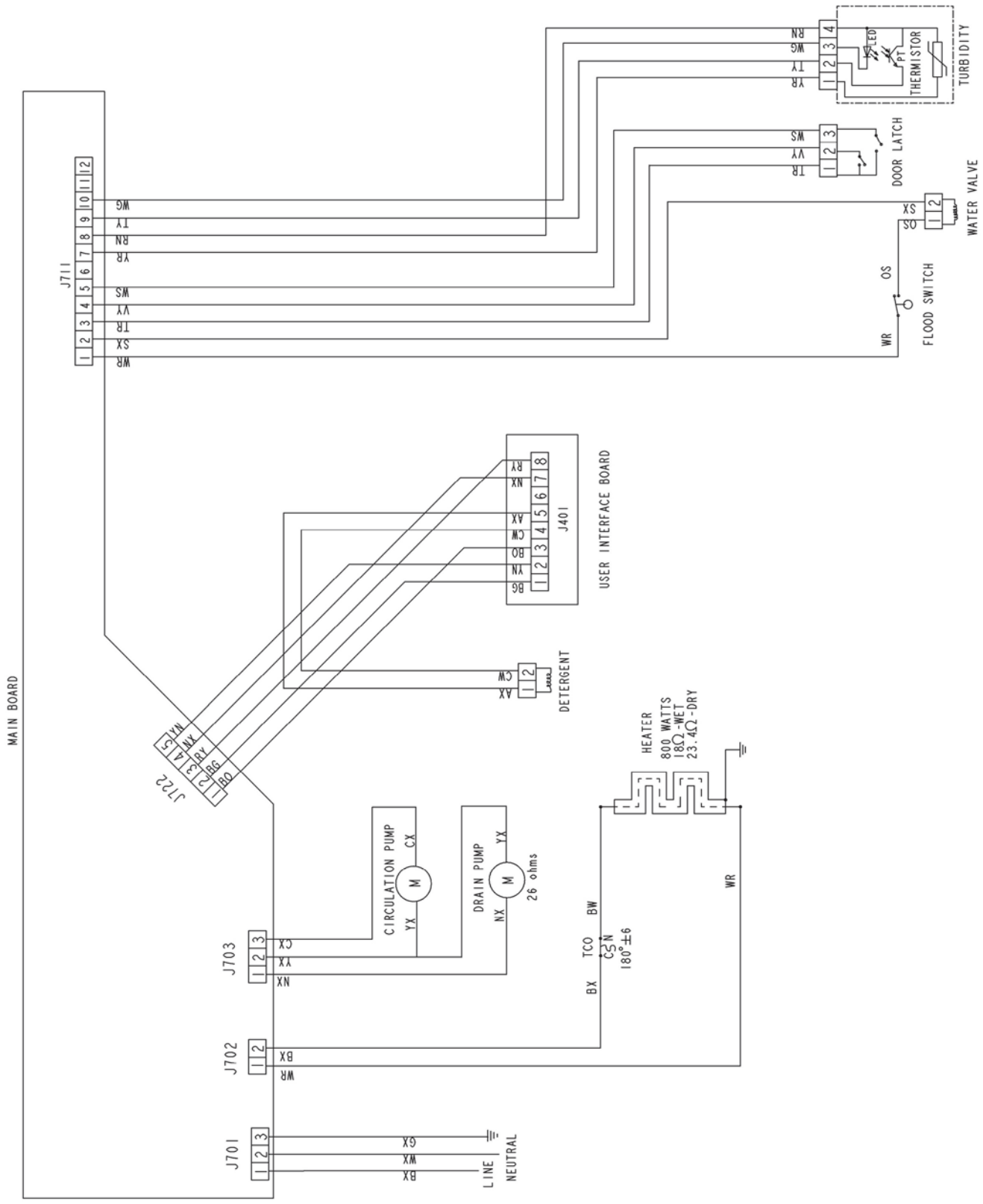
Heater operation is the same as the passive system. The fan is a brushless motor and operated by 13.5 VDC and runs at 6,000 RPM. There are no consistent resistance readings to make a viable ohm check. A power dry cycle is 50 minutes, then the Clean light comes on. If the consumer does not open the door, the fan will run an extra 90 minutes before shutting off. If the consumer opens the door, the fan will shut off and not restart should the door be closed and latched.

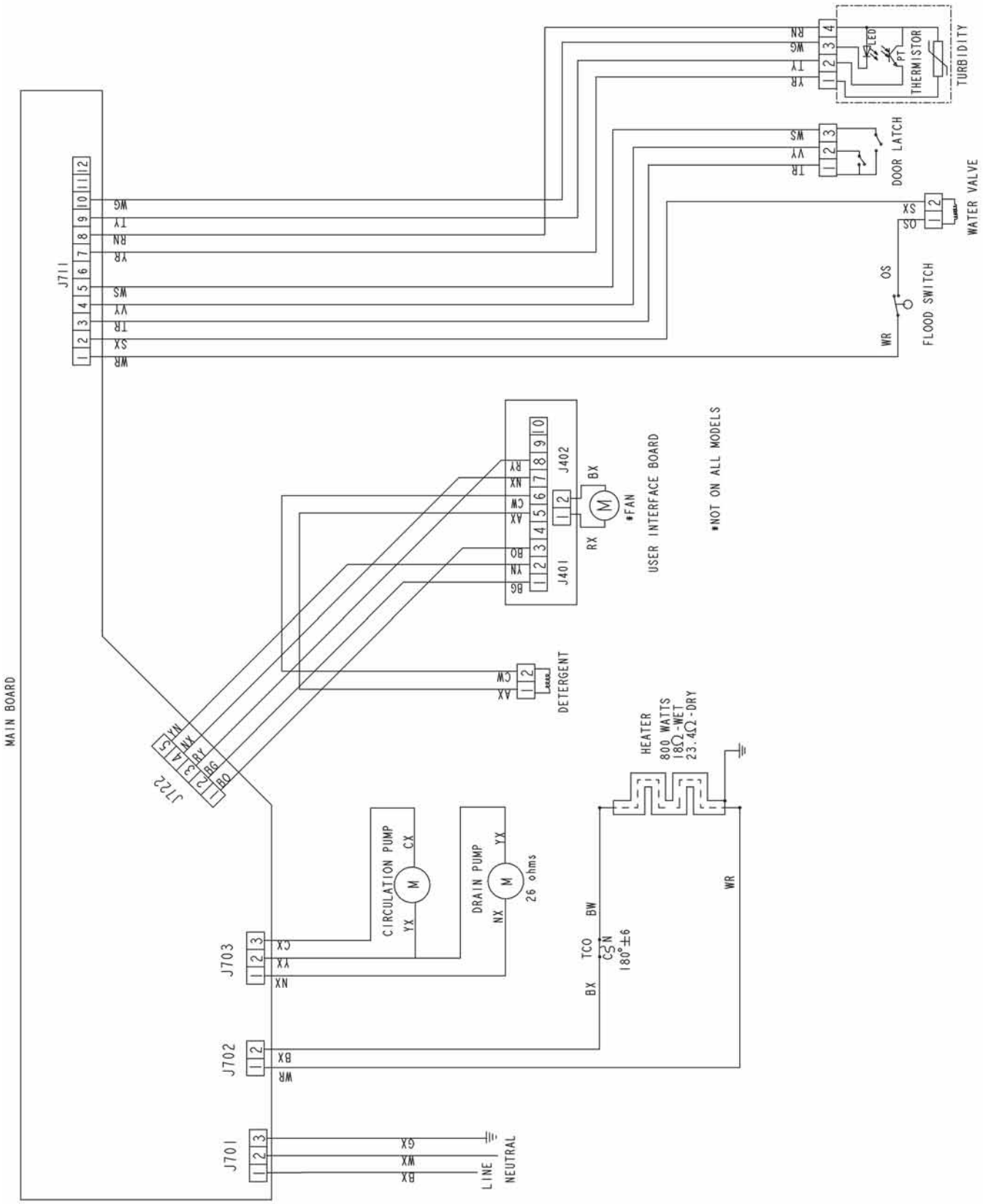
Diagnostics

The door will have to be removed and separated. The door can be plugged back in and put into Service Mode to make voltage checks. 12 – 14 VDC can be checked at the UI board, connector J402 (2 pin connector) from red to black.

Schematics

GDF570SxJ0xx




MAIN BOARD
J711
J122
J401
J402
J703
J702
J701
USER INTERFACE BOARD
*NOT ON ALL MODELS
*FAN
DETERGENT
HEATER
800 WATTS
18Ω-WET
23.4Ω-DRY
CIRCULATION PUMP
DRAIN PUMP
26 ohms
TCO
180°±6
DOOR LATCH
WATER VALVE
FLOOD SWITCH
TURBIDITY
THERMISTOR
LED
PT
LINE
NEUTRAL

Dishwasher Warranty

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

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

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

For The Period Of:	*GE Will Replace:*
One Year *From the date of the original purchase*	*Any part of the dishwasher which fails due to a defect in materials or workmanship. During this limited one-year warranty. GE will also provide, free of charge, all labor and in-home service to replace the defective part.*

What GE Will Not Cover (for customers in the United States):

- Service trips to your home to teach you how to use the product.
- Improper installation, delivery or maintenance.
- Failure of the product if it is abused, misused, **modified or used for other than the intended** purpose or used commercially.
- Replacement of house fuses or resetting of circuit breakers.
- Product not accessible to provide required service.
- **Damage to the product caused by accident, fire, floods or acts of God.**
- Incidental or consequential damage caused by possible defects with this appliance.
- Cleaning or servicing or the air gap device in the drain line.
- Damage caused after delivery, including damage from items dropped on the door.

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

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

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

Warrantor: General Electric Company. Louisville, KY 40225

What GE Will Not Cover (for customers in the Canada):

- Service trips to your home to teach you how to use the product.
- Improper installation.
  If you have an installation problem, contact your dealer or installer. You are responsible for providing adequate electrical, exhausting and other connecting facilities.
- Failure of the product if it is abused, misused, **modified or used for other than the intended** purpose or used commercially.
- Replacement of house fuses or resetting of circuit breakers.
- **Damage to the product caused by accident, fire, floods or acts of God.**
- Damage caused after delivery.

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

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

WARRANTOR IS NOT RESPONSIBLE FOR CONSEQUENTIAL DAMAGES.

Warrantor: MC Commercial, Burlington, ON, L7R 5B6

Index

T

U

W