

GE Appliances

# Technical Service Guide

June 2016

## 2016 Stainless Steel Tub Dishwasher

CDT835SxJ0xx

CDT865SxJ0xx

PDF820SxJ0xx

PDT825SxJ0xx

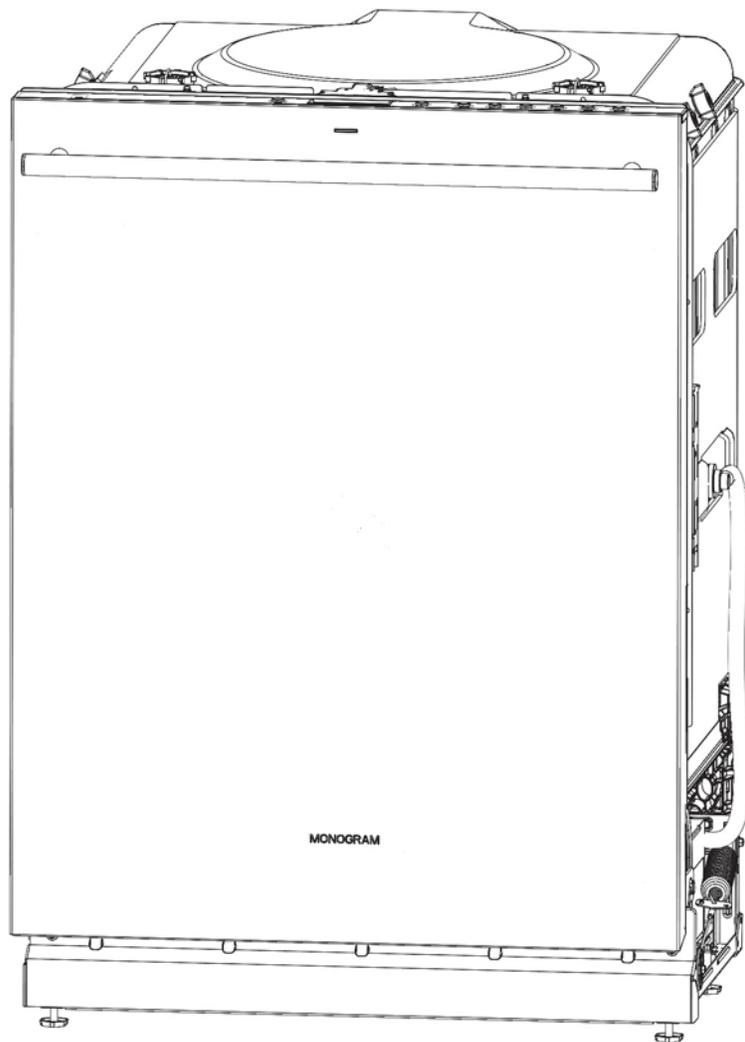
PDT845SxJ0xx

PDT846SxJ0xx

PDT855SxJ0xx

ZDT915SxJ0xx

ZDT975SxJ0xx



GE Appliances  
Louisville, Kentucky 40225

31-9256

# 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.

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# Table of Contents

Safety Information.....	2
Table of Contents.....	3
Safety Requirements .....	6
Nomenclature .....	7
Introduction .....	8
Product Specifications .....	8
Tools Needed .....	8
Electrical Specifications .....	9
Operation and Cycle Information .....	10
Target Temperatures.....	11
Cycle Details.....	12
Troubleshooting .....	13
Flashing Lights .....	13
Will Not Start.....	13
Component Locator Views.....	14
Tub and Structure.....	19
Tub Trim.....	19
Toe Kick.....	19
Junction Box and House Wiring Connection .....	19
Level Legs.....	20
Door Balance System .....	20
Hinges .....	20
Door Springs and Cables.....	20
Tub Gasket .....	22
Latch System .....	23
Latch Switch Diagnosis.....	23
Upper Rack .....	24
Lower Rack .....	26
Third Rack (some models).....	27
Door.....	29
Inner Door Vent Cover .....	31

Front Control Console.....	32
Front Control UI, Light Pipe and Buttons.....	33
Pocket Handle (Front Control Only).....	33
Top Control Panel, UI, Light Pipe and Buttons.....	33
Top Control Console Cover.....	35
Outer Door Panel.....	35
Hinges.....	35
Inner Door Panel.....	36
Door Strike.....	36
Door Gasket.....	36
Vent Parts.....	37
Detergent Dispenser.....	38
Floor Protect Pan.....	39
Sump Module.....	41
Sump Gasket.....	43
Installing Sump Module.....	43
Electronic Controls.....	44
Consumer Error Mode.....	44
On the Main Control Board CSM.....	46
Service Mode.....	47
Diagnosing Electronic Control Boards.....	48
Main Control Diagnostics.....	48
UI Diagnostics.....	50
Inverter Control Board.....	51
Inverter and Motor Diagnostics.....	52
WiFi Connect.....	56
Tub Lighting.....	58
Fill System.....	59
Water Level.....	59
Diagnostics.....	60
Flood Float and Switch.....	61
Air Gap.....	61
Water Valve Removal.....	62

Side Fill Jet Assemblies.....	62
Circulation System.....	63
Diagnostics.....	64
No Circulation (CDT835J, PDT820J and PDT835J Only).....	65
Filtration.....	66
Circulation Motor and Pump Assembly.....	67
Pressure Diverter.....	69
Turbidity Sensor and Thermistor.....	72
Conduits and Spray Arms.....	74
Lower Spray Arm and Conduit.....	75
Main Conduit.....	77
Middle Spray Arm.....	78
Clean Sweep Jets Middle Spray Arm Model (PDT846SSJ only).....	78
Middle Conduit.....	78
Bottle Wash System.....	80
Upper Spray System.....	80
Silverware Wash.....	81
Drain System.....	82
Diagnostics Single Speed Motor CDT835S, PDF829S and PDT825S.....	83
Diagnostics Variable Speed Drain Motor.....	83
Dry System.....	85
Heat Element Removal.....	87
Tub TCO PDF820S, PDT825S and CDT835S.....	87
Venting / Airflow.....	87
Power Dry Forced Air.....	88
Schematics.....	90
CDT835SxJ0xx, PDT825SxJ0xx and PDT835SxJ0xx.....	90
ZDT915SxJ0xx and ZDT915SxJ0xx.....	92
Dishwasher Warranty.....	93
Index.....	94

# 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



Brazing Glasses



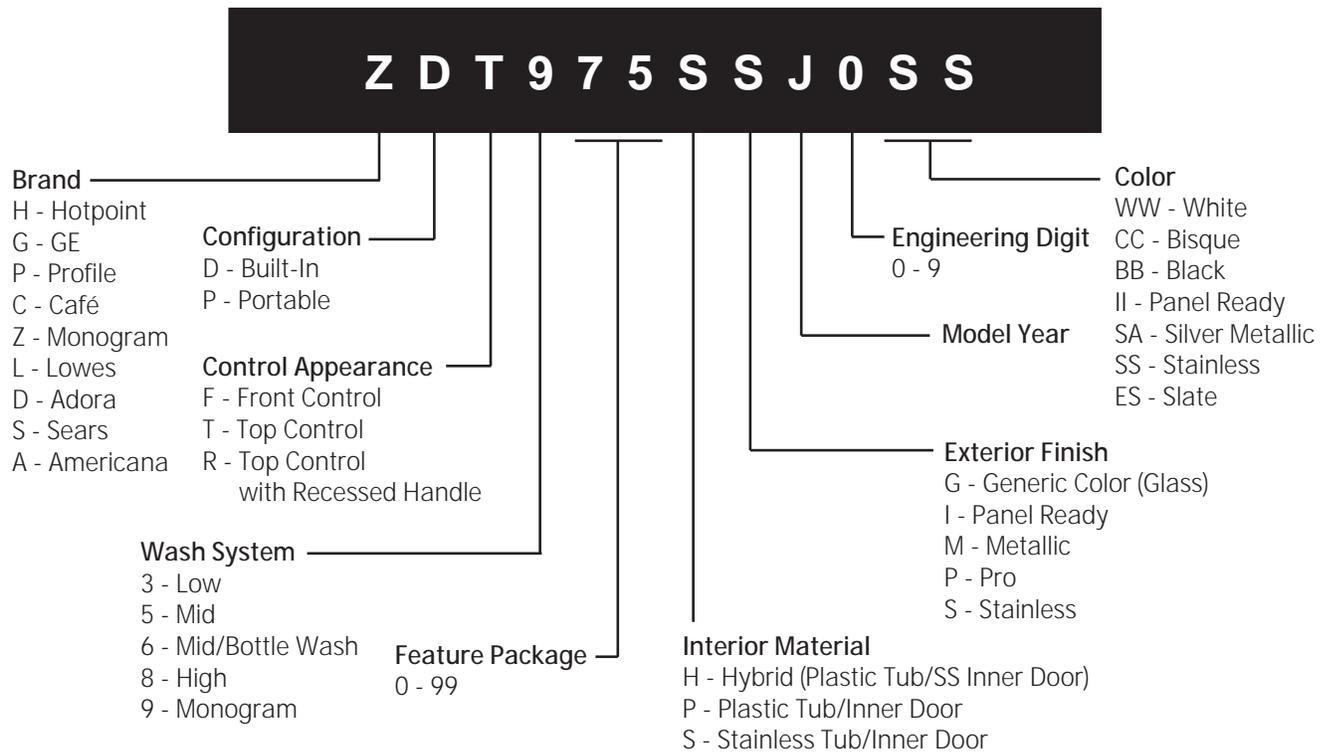
Prescription Safety Glasses  
Safety Glasses must be ANSI  
Z87.1-2003 compliant



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

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

# Nomenclature



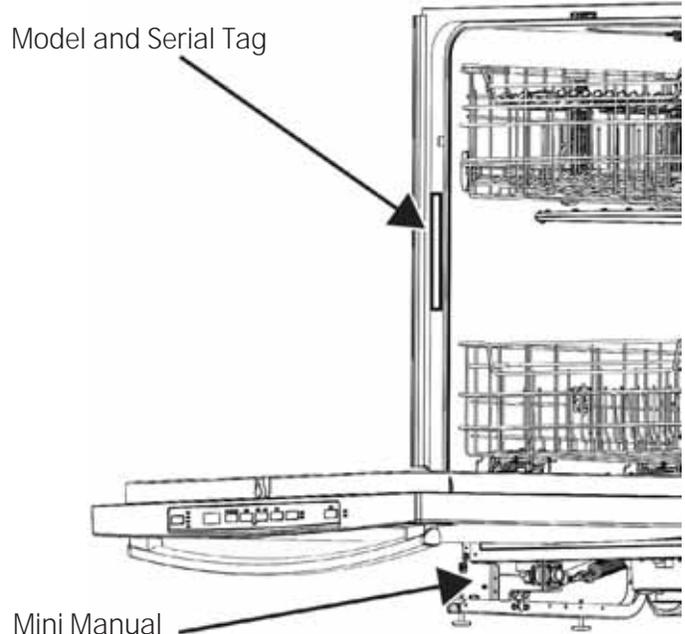
The nomenclature breaks down and explains what the letters and numbers mean in the model number.

## Serial Number

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

**Example:** MG123456S = July, 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
- Single Speed or Variable Speed Circulation and Drain Motors (depending on model)
- Clean Sweep Jets, Middle Spray Arm Model (PDT846SSJ only)
- Four Port Pressure Diverter allows zonal wash
- Dedicated Silverware Wash Jets
- Side Fill Jets
- New hinge allows easier door removal
- 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
- Piranha hard food disposer®
- 80% Recyclability

## Product Specifications

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

## Tools Needed

- 1/4" and 5/16" nut driver
- R2 Quadrex bit
- #20 and #25 Torx bits
- #2 Phillips head screw driver
- Adjustable wrench
- Allen wrench or hook tool (see **Door Removal** section in this service guide)
- Two pocket type screwdrivers
- Pliers and needle nose pliers
- Volt / Ohm meter (AC, DC, and ohms) with "Needle" Type Probes
- **Optional:** Clear door (**Part #:** WX05X20002)

# Electrical Specifications

## AC Voltage

- **Single Speed Circulation Pump:** 120 VAC, .8 amp – 3.8 LRA, 8 GPM @ 5 PSI
- **Single Speed Drain Pump:** 120 VAC, 27 ohms, .65 amp, ~70 second cycle
- **Main Control:** Input 120 VAC, Output 120 VAC, and Output 5 & 13.5 VDC
- **Tub TCO:** 120 VAC, 210°F +/- 10°F Manual Reset (Models with hidden heater do not have a tub TCO)

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

- **Hidden Heater:** 120 VAC, 14.4 ohms 7 watts, ~ 8.3 amps. (Located in variable speed pump. If bad, replace pump assembly.)
- **Hidden Heater TCO's (2):** First has auto reset, 200°F +/- 10°F reset at 163°F +/- 10°F. Second is a one-shot at 349°F +/- 10°F (Located in variable speed pump. If bad, replace pump assembly.)

## DC Voltage

- **Main Control:** Output 5 & 13.5 VDC
- **UI Control:** 5 - 13.5 VDC
- **Inverter:** 5 VDC communications with main control, 85 – 135 VDC normal run, Potential 185 VDC
- **Variable Speed Circulation Pump:** 85 – 135 VDC volts to phase windings, 185 VDC Potential, 11.68 ohms phase to phase, 1,600 – 3,500 RPM, 6-10 GPM
- **Variable Speed Drain Pump:** 88 ohms phase to phase, 85 – 135 VDC volts to phase windings, 185 VDC Potential. 2,800 – 3,150 RPM
- **Door Switch:** 13.5 VDC
- **Water Valve:** 13.5 VDC, 32 ohms, .83 GPM, ~1 minute cycle time
- **UI Control:** 13.5 VDC
- **Power Dry Fan:** 12-13.5 VDC, 6,000 RPM
- **Variable Speed Dry Fan:** 6 VDC 6k RPM and 13.5 VDC – 10k RPM
- **Detergent Cup:** 13.5 VDC, 25 ohms
- **Rinse Aid Sensor:** 5 VDC to LED, 1 VDC feedback when full, 4 VDC feedback @ low detect (below 20 ml)
- **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

- **Tub Lighting:** Top 12-14 VDC, Side 19-22 VDC

# 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.

## Auto Hot Start

If 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 overall 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°F temperature is not met. 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

Times will vary depending on options selected, incoming water temperature (120°F - 140°F is recommended), and soil level.

Rinse	15 minutes
Express	30 - 51 minutes
Light	54 - 104 minutes
eWash	62 - 212 minutes
Normal	77 - 181 minutes
Auto	111 - 201 minutes
Heavy	150 - 221 minutes

The Cycle Times table considers soil level and dry options. Times will vary depending on turbidity response and incoming water temperature.

The Cycle Times table does NOT consider the below options and how they affect cycle time:

- Selecting the Wash Temp option(s) will add up to 24 minutes to the cycle and increase temperatures 5°F.
- The Steam option adds a Pre-Wash segment to increase temperature.
- The Bottle Wash option will increase the cycle time, adding up to 23 minutes; water usage does not change.
- The Sani option increases temperature of some Circulations 5°F and changes Final Rinse to Sanitizing Rinse with 153°F target.

## Heated Dry Element Algorithm (Exposed Heater Models)

4 Pass Exposed 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



**NOTE:**

The above table is for exposed heater models.

**On Hidden Heater models, the heater is off, and does not operate during dry. The power fan is in operation during Power Dry.**

## Target Temperatures

Target temperatures are set in the control to achieve peak performance. Proper temperature can be affected by low temperature incoming water, heater not operational, and installation. The dishwasher will achieve these goals if the above considerations are true.

Exposed Heater Target / Max Temperature Limits				
Cycle	PW4	MW	PR1	FR
Rinse				
Express	120	135	135	140
Light		125	130	135
eWash		120		125
Normal		125		140
Auto		130		140
Heavy	130	135	130	145

Hidden Heater Target / Max Temperature Limits					
Cycle	PW4	MW	PR1	FR	FR w/Dry
Rinse					
Express	120	135	135	140	160
Light		125	130	135	135
eWash		120		125	125
Normal		125		140	160
Auto		130		140	160
Heavy	130	135	130	145	160

## Cycle Details

The below table 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.

Cycle Algorithm Comparisons													
Segment	Description	Diverter Position	Zonal Use	Calrod	Rinse	Express	Light	eWash	Normal		AutoSense		Heavy
									Light Soil	Heavy Soil	Light Soil	Heavy Soil	
PW1	Fill (sec) Circ (min) Drain	Pulse	No	OFF					60 7.2 Empty	60 7.2 Empty	60 7.2 Empty	60 7.2 Empty	60 7.2 Empty
PW2	Fill (sec) Circ (min) Drain	Pulse	No	OFF						60 8 Empty		60 8 Empty	60 8 Empty
PW3	Fill (sec) Circ (min) Drain	60LSA/ 60USA/ 60LSAr	No	OFF	75 4 Empty					60 5 Empty		60 5 Empty	60 5 Empty
PW4	Fill (sec) Circ (min) Drain	60LSA/ 60USA/ 60LSAr	Yes Shorten ~30%	ON depending cycle	75 5 Empty	75 3 Empty	60 4 None	60 6 Partial					60 15 Empty
Main Wash	Fill (sec) Circ (min) Drain	LSA/ SW/ USA/ LSAr	Yes will Shorten ~30%	ON		75 9 Empty	60 25 Empty	60 35 Empty	60 40 Empty	60 40 Empty	70 45 Empty	70 45 Empty	70 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		70 2 Empty	60 4 Empty		60 5 Empty	60 5 Empty	60 5 Empty	60 12 Empty	0.8 5 Empty
Sani Rinse	Fill (sec) Circ (min) Drain	60 LSA/ 60 USA	No	ON		70 8 Empty	60 13 Empty	60 15 Empty	65 16 Empty	65 16 Empty	65 30 Empty	65 30 Empty	65 30 Empty
Final Rinse	Fill (sec) Circ (min) Drain	60LSA/ 120USA	No	ON			60 13 Empty		60 15 Empty	60 15 Empty	60 30 Empty	60 30 Empty	60 30 Empty

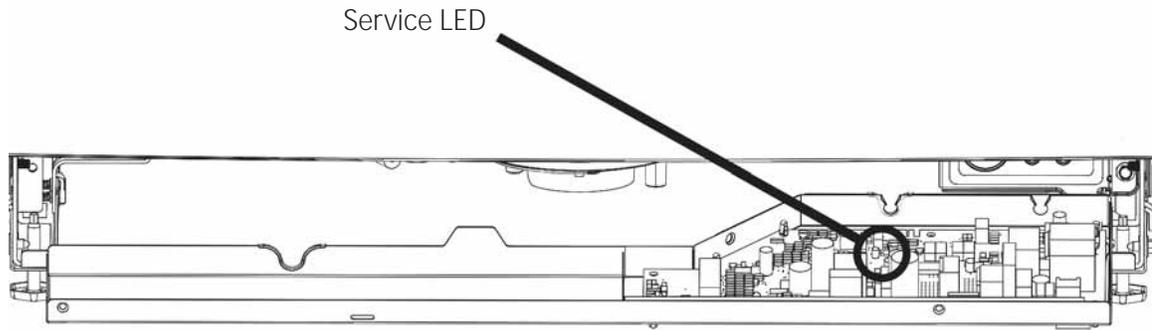
### NOTES:

- 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.
- **PW:** Pre Wash
- **PR:** Post Rinse
- **FR:** Final Rinse
- 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.
- **LSAr** (Lower Spray Arm Reverse) is part of the cycle (not an option) and active in the in some Pre-Wash and Main Wash segments of the cycle only.
- **SW:** (Silverware Wash) is part of the cycle (not an option) and active in the in some Pre-Wash and Main Wash segments of the cycle only.
- Wash zone times vary during main wash (20 seconds - 180 seconds)

# Troubleshooting

This troubleshooting section is an overview of 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 are possible 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 Controls** section of this service 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 a flashing display (some models) is an indication that the control is waiting for a start command or that the door is in the open position. If there is a leak fault detected, the dishwasher will not start until the water is not detected in the floor protect pan. No other errors will be automatically displayed 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 Consumer Error Mode.
- Start pad must be pressed within 4 seconds of closing the door (safety feature).
- Check 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.

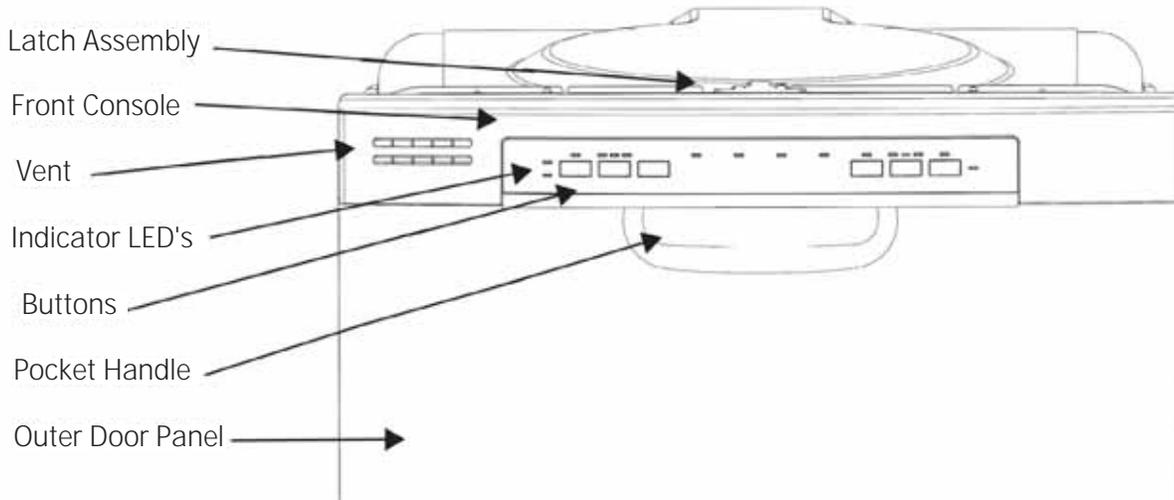
<b>Symptom:</b>	Dishwasher is "dead", no LED operation, no button operation or beeping occurs.
<b>Diagnosis:</b>	Attempt placing the dishwasher in Consumer Error Mode.
<b>Cure:</b>	The CSM ( <u>C</u> urrent <u>S</u> ense <u>M</u> odule) is tripped and must be fully diagnosed. Refer to <b>On the Main Control Board CSM</b> section of this guide.

<b>Symptom:</b>	Start button <i>either</i> does not respond or it makes a triple beep sound <i>every time it's pressed</i> <b>AND</b> all other buttons respond as normal.
<b>Diagnosis:</b>	The dishwasher may be in demo mode.
<b>Cure:</b>	To exit demo mode, hold "START" and "HEATED DRY" at the same time for 5 seconds.

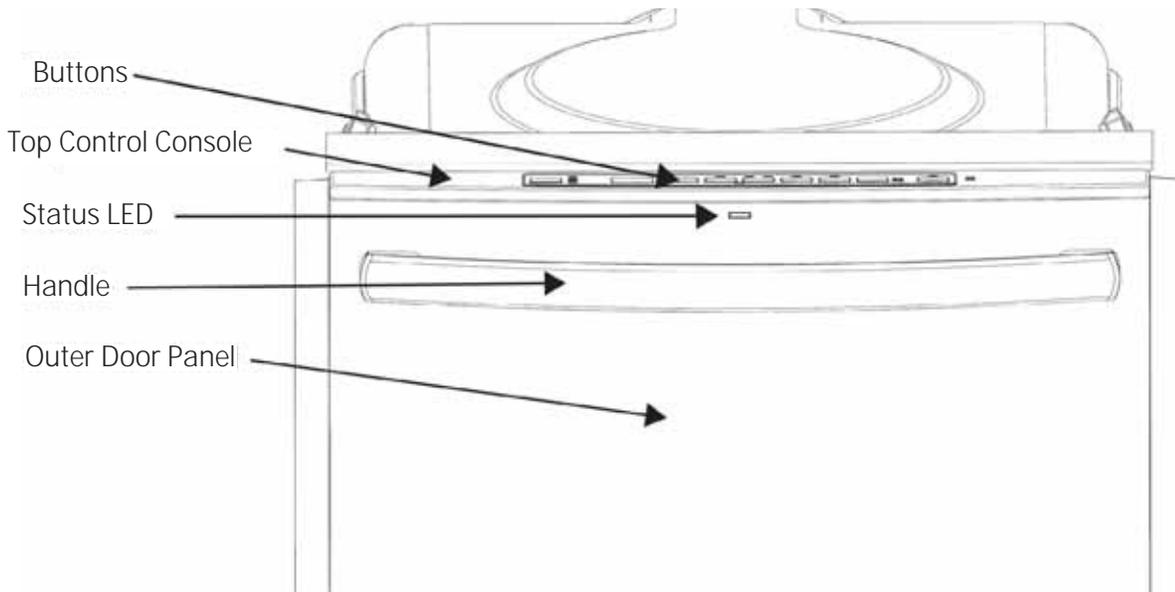
# Component Locator Views

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

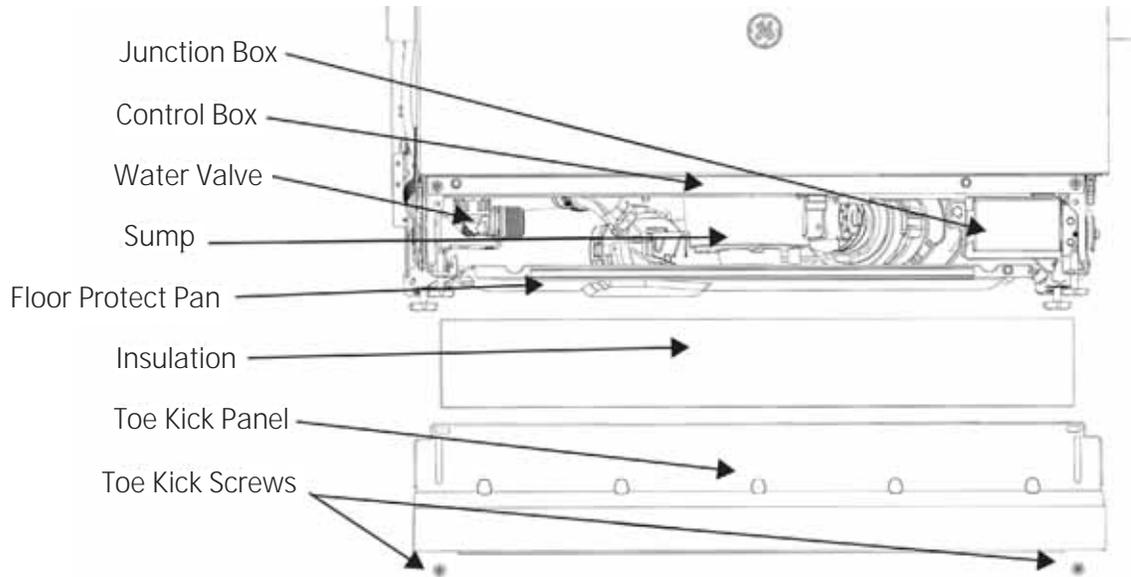
## Front Control



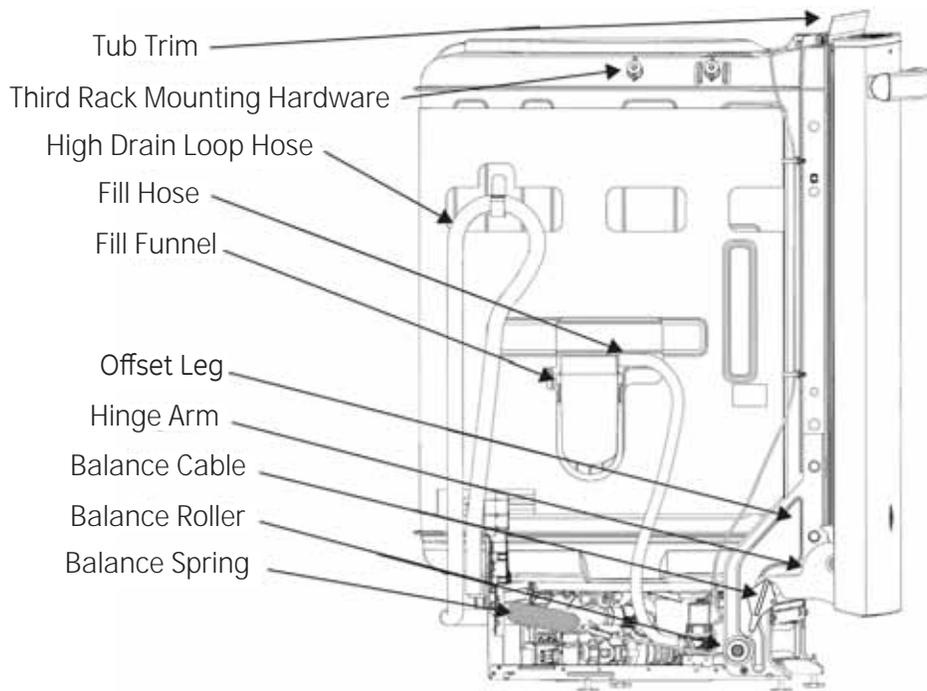
## Top Control



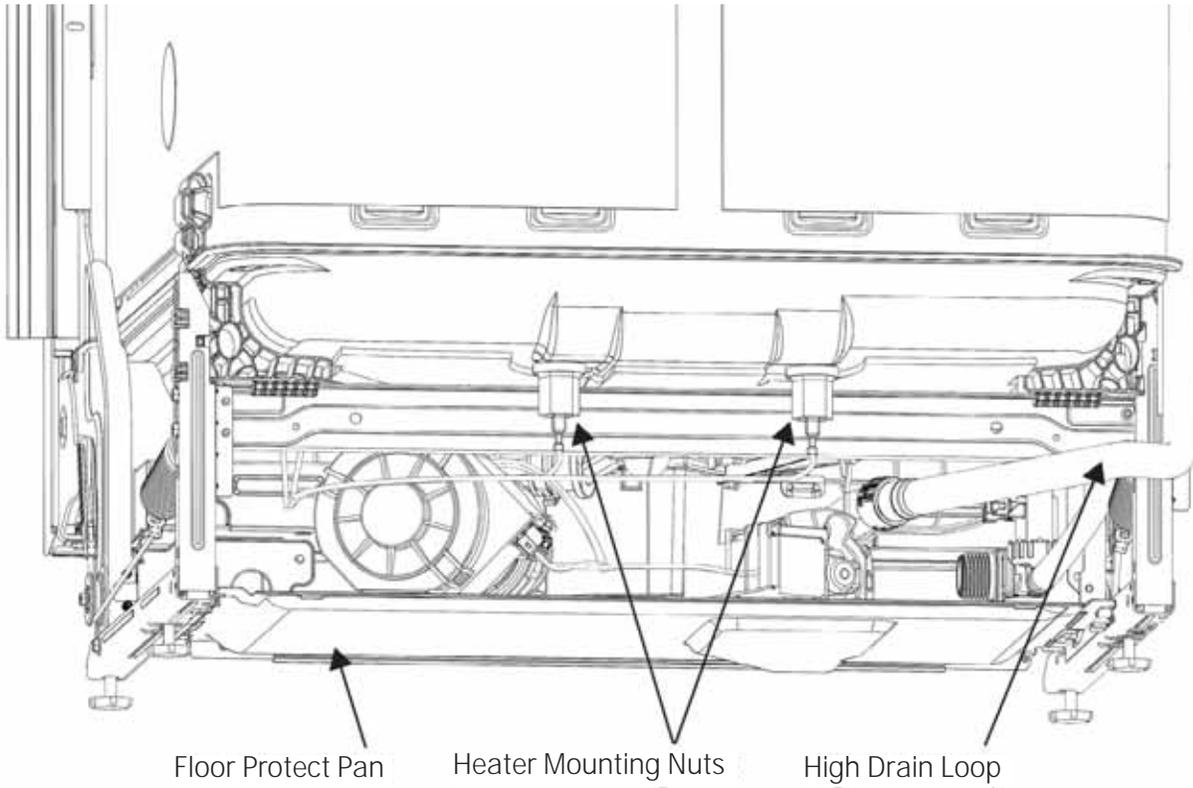
## Toe Kick Area



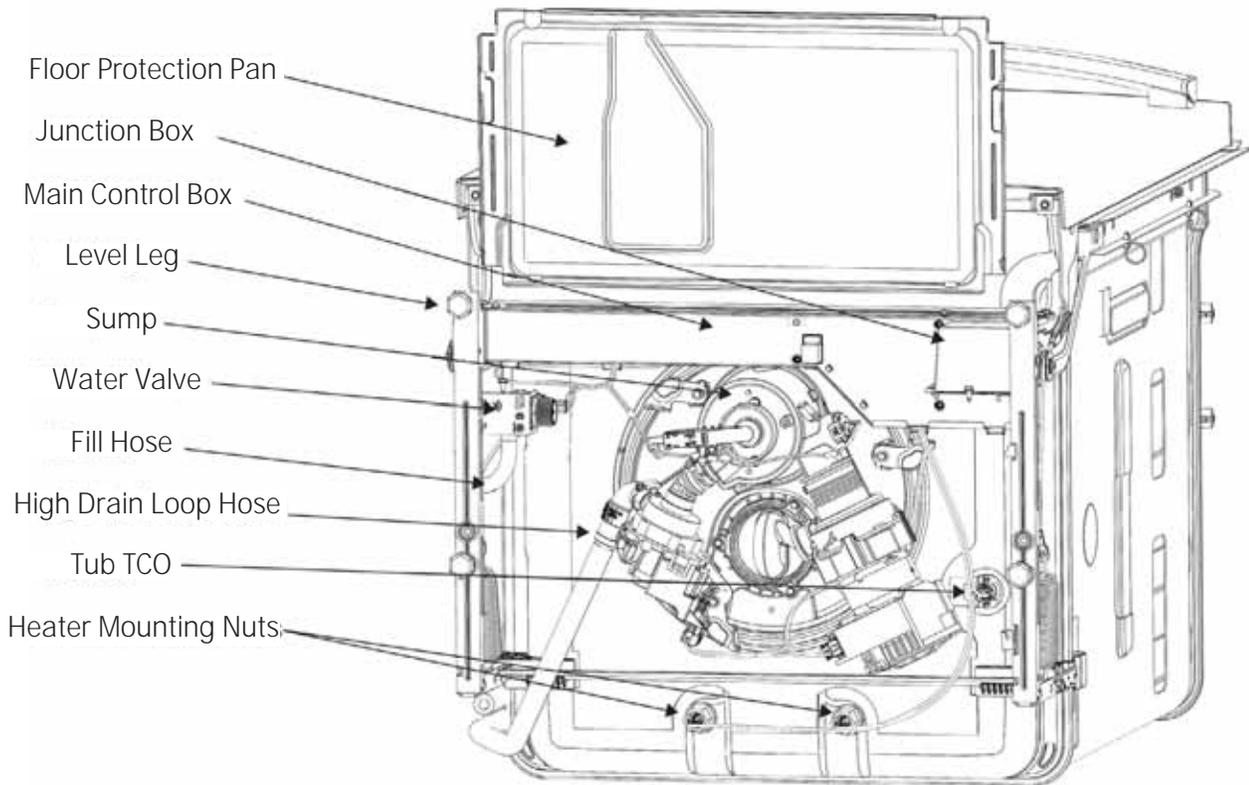
## Side



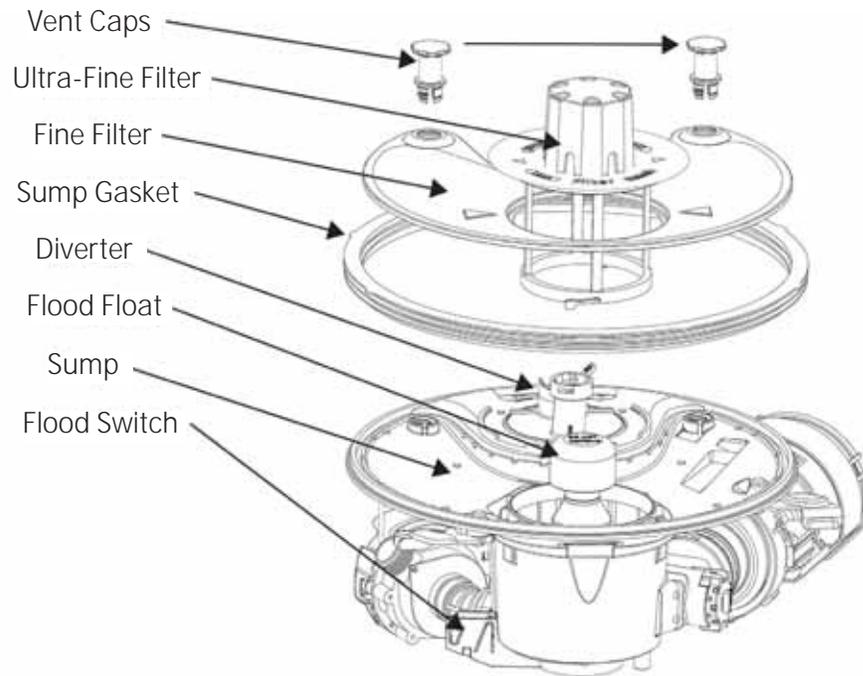
Back



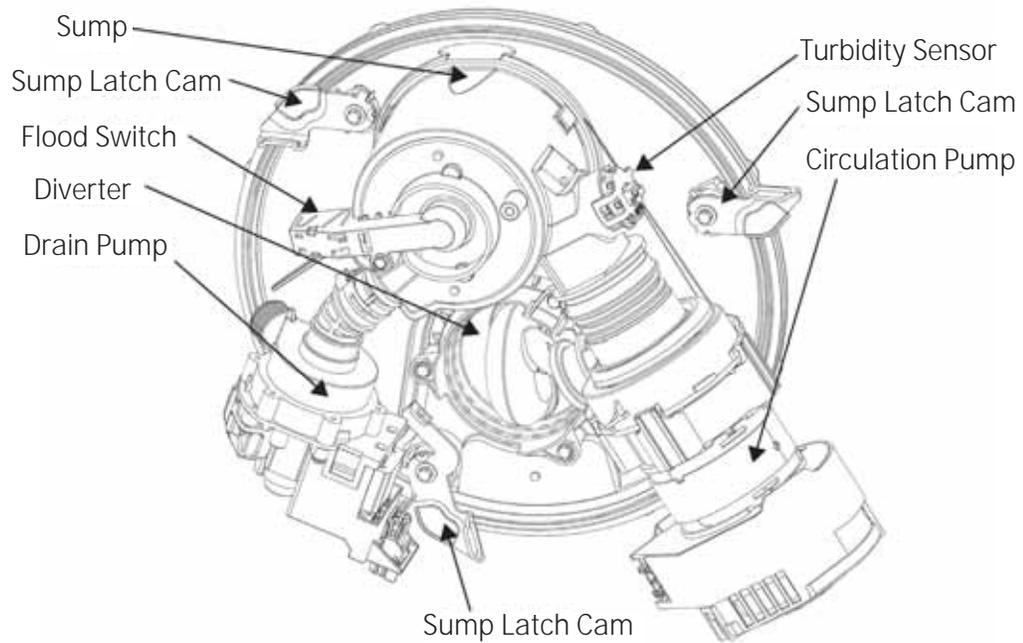
Bottom



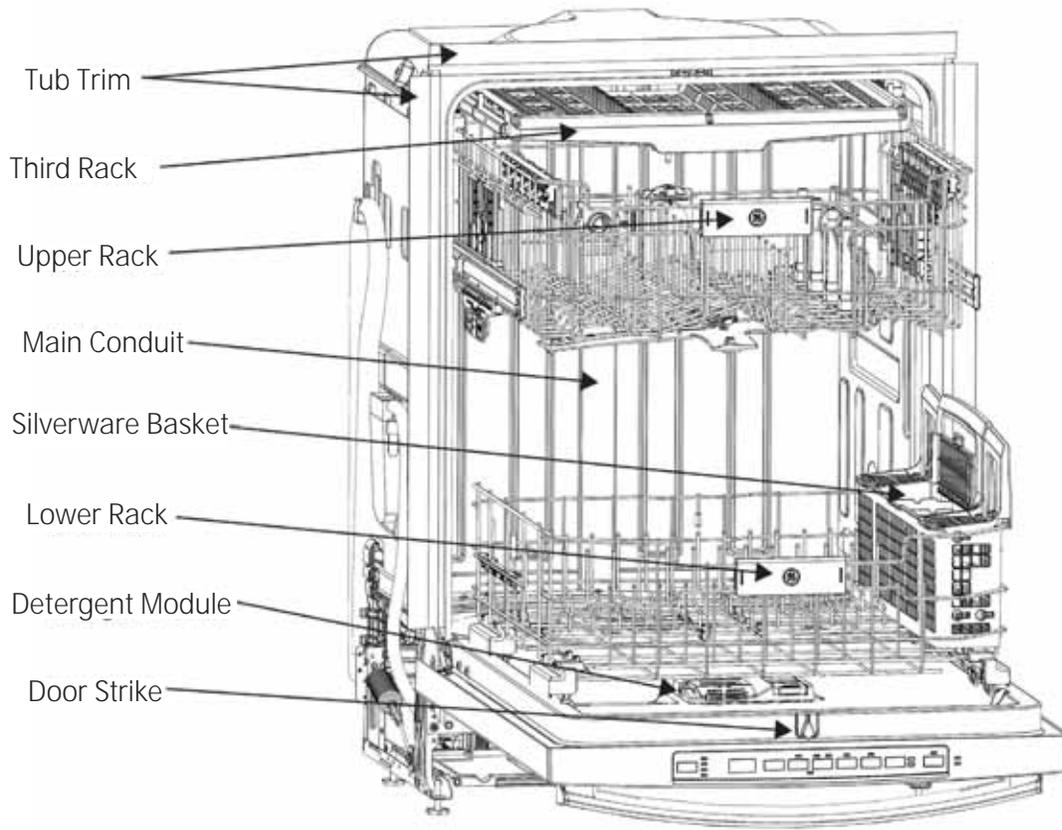
## Sump (Top)



## Sump (Bottom)



# Inside

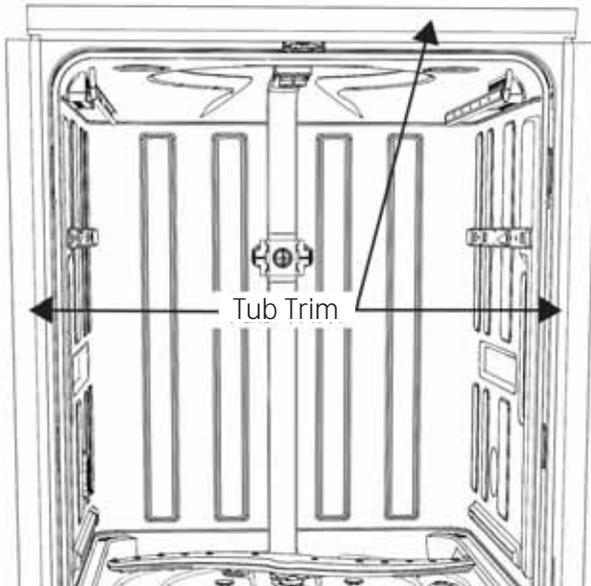


# Tub and Structure

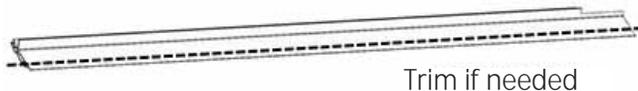
The Tub and Structure section of this guide will cover the toe kick, junction box, racks, leveling, door balance, gaskets, trim (some models), main control board, door, door components, as well as the removing and separation of the screwless appearance door. It will also cover the sump module and removal.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

## Tub Trim

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



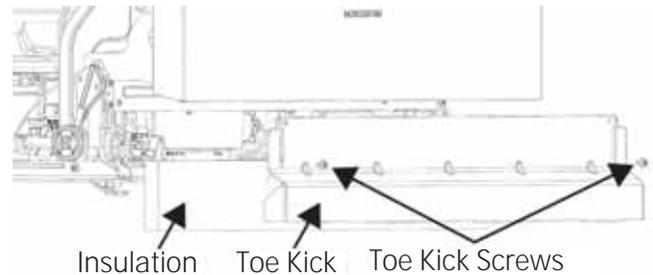
If the cutout prevents the dishwasher from being fully installed, or if the trim rolls inward preventing the door from closing, it may be trimmed to fit properly. The wiper edge must contact the cabinet to be an effective sound barrier.



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

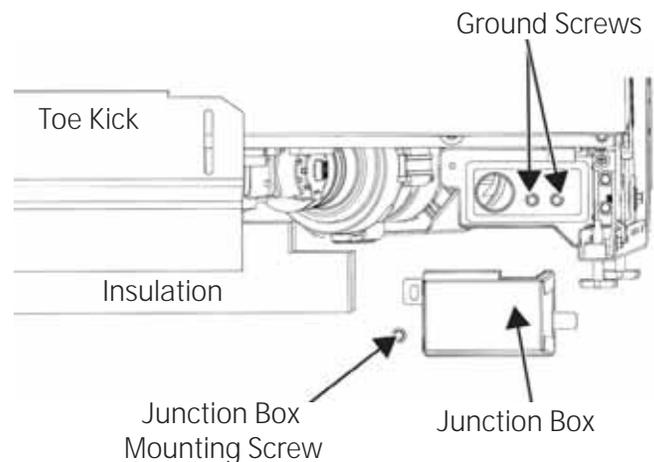
## Toe Kick

The toe kick is a decorative panel covering the machine area of the dishwasher. The panel provides a safety barrier, closing the front of the dishwasher machine compartment. The toe kick prevents injury from electrical components under the dishwasher. 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

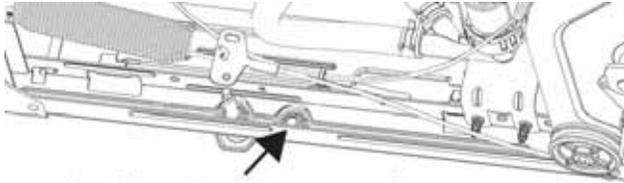
The Junction Box is located behind the toe kick on the right-hand side of the dishwasher. The junction box is where the 120 VAC house voltage connects to the dishwasher. The dishwasher may be hardwired or an optional cord may be installed (available separately, **Part #:** WX09X70910), which plugs into a wall outlet and connects to the harness plug into the control (see Installation Guide). 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 the left to release the tab. It is helpful to squeeze the top and bottom of the box when removing and installing.



## Level Legs

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

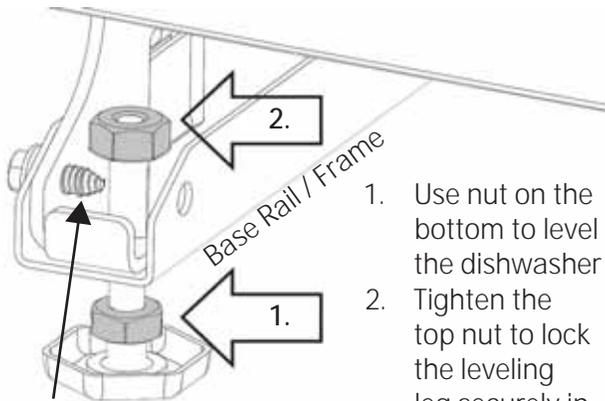
To access the level legs, remove the toe kick and insulation (some models). To raise the dishwasher, turn the level legs counter clockwise.



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 WR01X10044 nuts and WD12X10417 leveling leg if needed. 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.

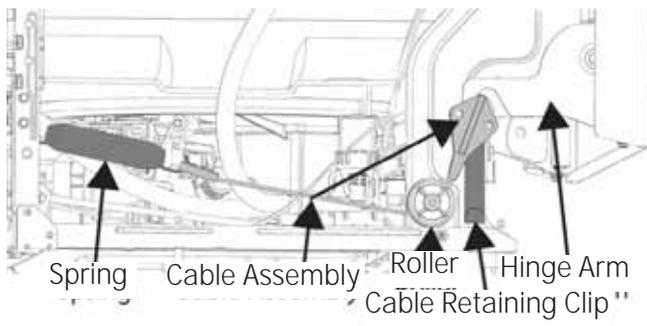


Watch for interference with frame mounting screws

1. Tighten the top nut to lock the leveling leg securely in place
2. Use nut on the bottom to level the dishwasher

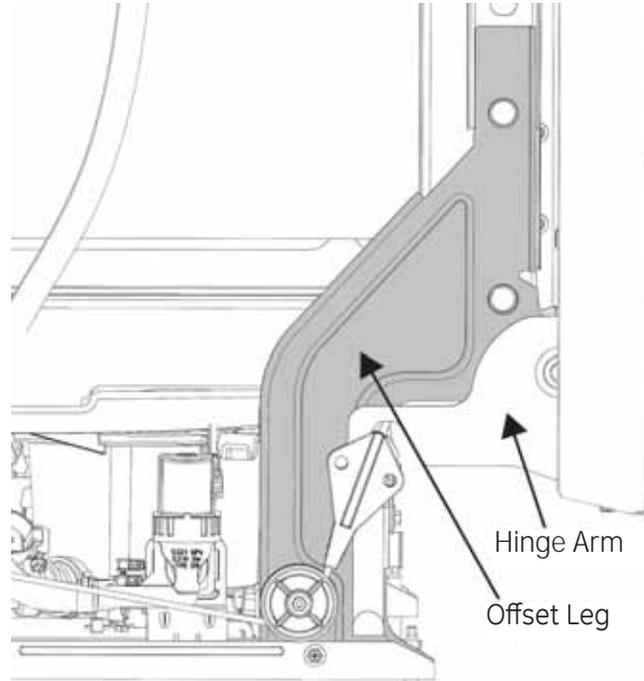
## Door Balance System

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



## Hinges

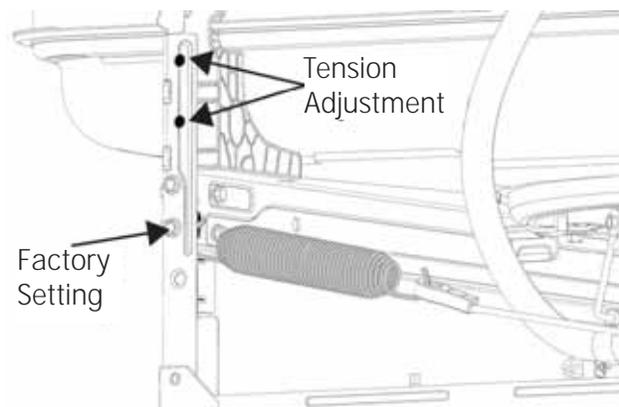
The hinge system is comprised of offset legs (part of the **Tube and Structure** system and not a replaceable part) and hinge arms. The hinge system allows the door to be removed while the dishwasher remains installed.



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

## 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.



## Springs

Depending on the weight of the panel being used, additional springs may be needed to balance the door during operation. If only one spring is being attached to the cable, the spring hook should be inserted into the middle hole on the cable and the other end of the spring should be hooked over the lowest adjustment hole on the rear tub bracket, as shown below and in the next column.



If multiple springs are required on one or both sides to balance the door, the spring hooks should be inserted into the top and bottom holes on the cable as shown below.



Integrated or custom doors are varied by design type or wood or material used. Different springs or combinations may be used. The following tables may be used as a guideline on which springs to use, depending on the weight of the panel being added. However, spring combinations may be adjusted based on personal preferences regarding door feel.

**IMPORTANT NOTE ON INTEGRATED (CUSTOM PANEL) MODELS:** To ensure optimum performance, the custom panel must not weigh more than 20 pounds.

Spring Details		
Grey	Light Duty	WD03X20445
Blue	Medium Duty	WD03X20446
Black	Heavy Duty	WD03X20316

Spring Combinations		
Panel Weight	Left Side Springs	Right Side Springs
0-5 lb	Blue	Blue
5-10 lb	Grey x 2	Blue
10-15 lb	Blue x 2	Blue
15-20 lb	Blue x 2	Black x 2

**NOTE:** For combinations requiring two different strength springs, the side used is unimportant and the table headings above can be used as reference only. For example, a panel weighing 8 pounds would require two gray springs and one blue spring. The gray springs may be installed on the left side and the blue spring on the right side, or the two gray springs may be installed on the right side and the blue spring on the left.

**IMPORTANT:** Adjust both balance springs to the same amount of tension to prevent excessive door twisting during use.

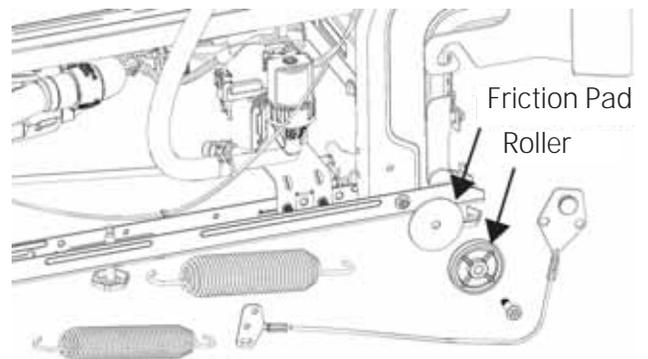
## Cable

The cable connects the spring(s) to the hinge arm assembly, and is routed under the pulley.

**TIP:** If the door does not open easily or falls too quickly, check the spring cable routing. The cable is held in place by "shoulders" on the roller. Check to be sure the cable has not slipped over the roller shoulders.

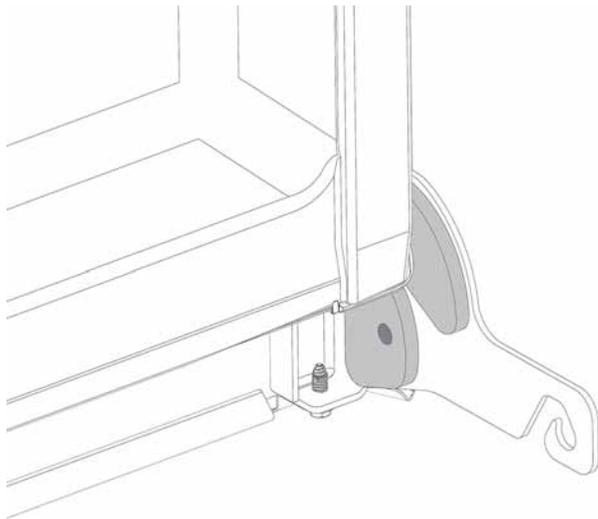
## Roller

The roller is secured by a 1/4 in. hex head shoulder screw. There is a friction pad between the roller and offset leg.

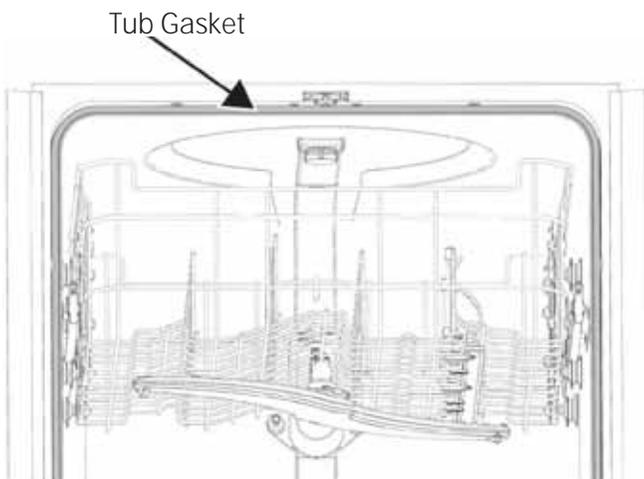


## Hinge Friction Pad

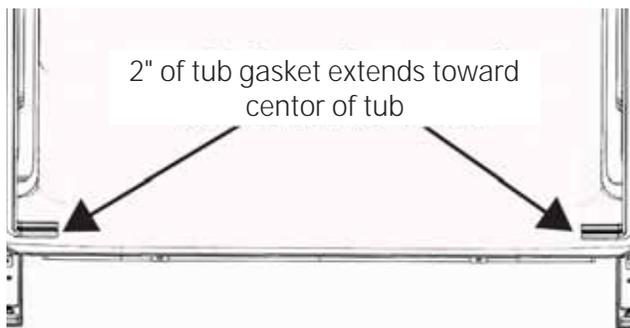
Friction pads have been added between the hinge arm and offset leg assembly for dampening and a softer feel to the door opening and closing.



## Tub Gasket



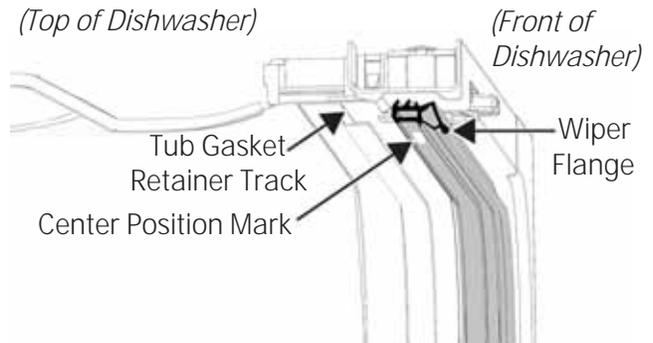
The Tub Gasket seals the top and sides of the tub to the door. The retainer is part of the stainless steel tub. The seal pushes into the retainer area of the tub, and no sealant or RTV is used to install the tub gasket. When installing the tub gasket, there will be a 2 in. extension at the bottom of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



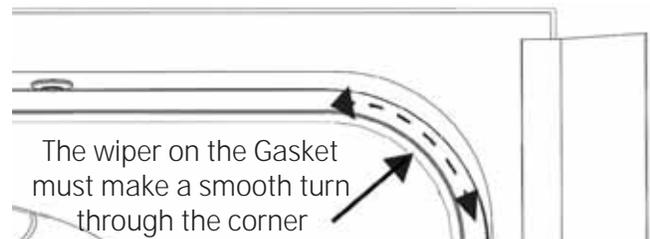
**Tub Gasket Removal:** Pull the gasket from the retainer area.

## 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.

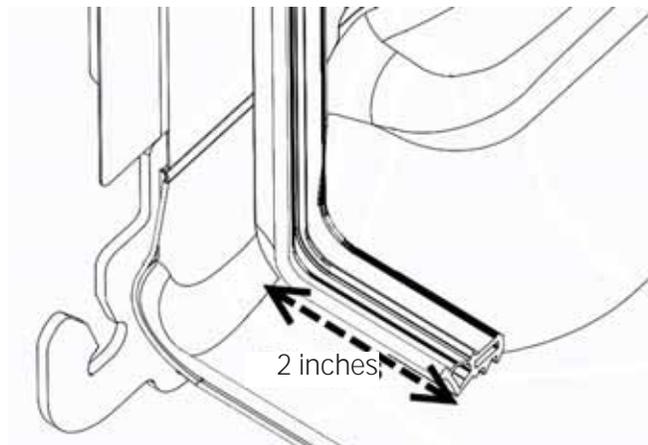


2. Start by placing the mark down and align it with the tub latch. Push the gasket into the track, working outward to the top corners.
3. Push the gasket into the track through the corners, making sure the wiper portion of the gasket does not turn inward or outward causing the gasket to not have an even 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)

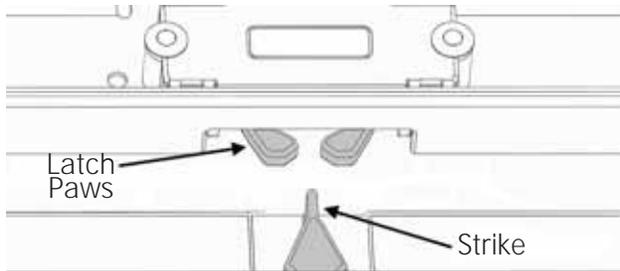
- Continue to push the gasket into the track to the bottom of the tub and extending the gasket 2 in. to the center of the tub..



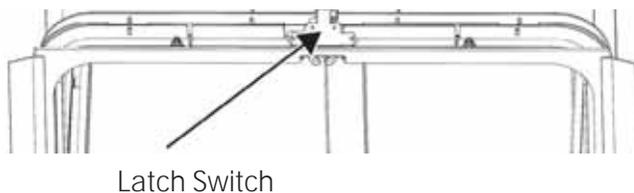
- Always run the dishwasher to test for leaks.

### 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.

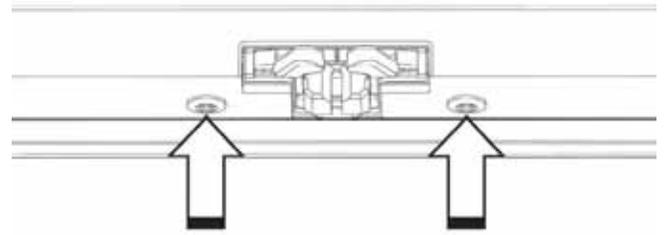


The dishwasher must be pulled out 6 to 8 inches from its installed position to replace the latch switch.

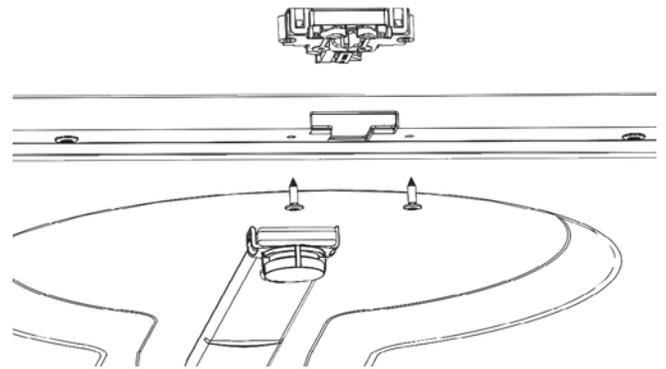


### Door Latch / Switch Assembly Replacement

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



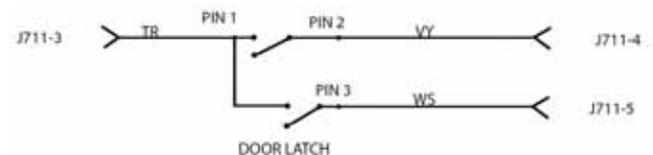
- Disconnect the wiring to the switch.



### Latch Switch Diagnosis

Diagnoses can be accomplished in Consumer Error Mode (see **Consumer Error Mode** in the **Electronic Controls** section of this service guide), or with an ohm meter at the main control board as described below.

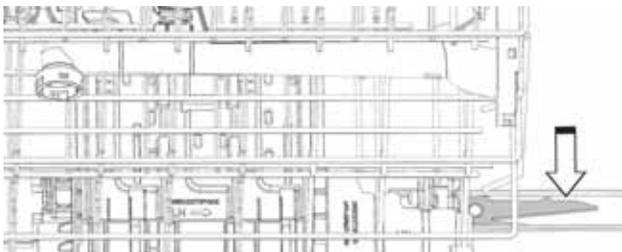
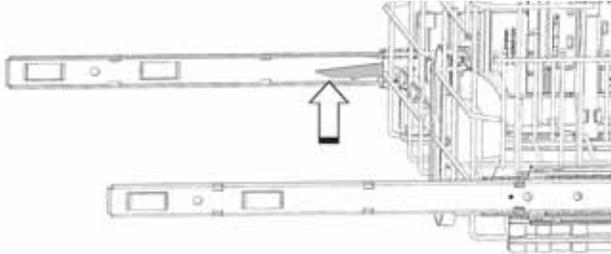
- Access the main board.
- Locate and disconnect connector J711.
- Check continuity from pin 3 (**tan** and **red**) to pin 4 (**violet** and **yellow**) and pin 3 (**tan** and **red**) to pin 5 (**white** and **silver**). Both should be open when the door is open and closed when the door is closed.



## Upper Rack

### Full Extension Rails Removal

1. Extend to the full outward position.
2. Push up on the right side track lever and down on the left side lever.

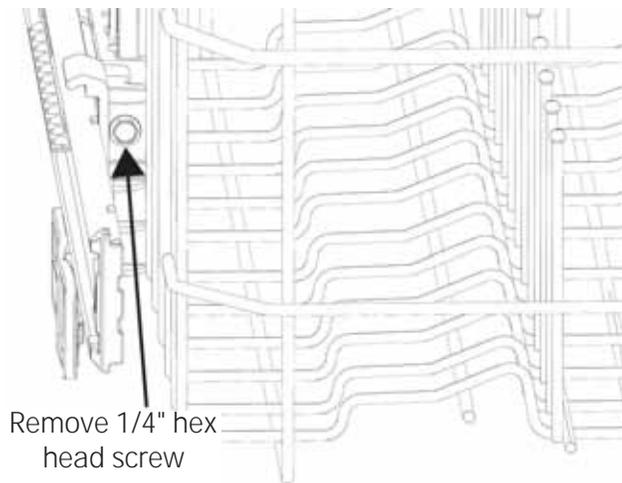


3. Pull the rack off of the inner track.

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

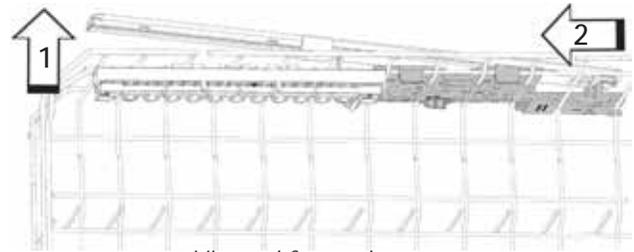
**Rails:** The rails are attached to the stainless steel tub and are a non-replaceable part.

**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.



Remove 1/4" hex head screw

Pull out 1/2 in. and slide the rail toward the front of the rack, releasing the rail from the rear tab.

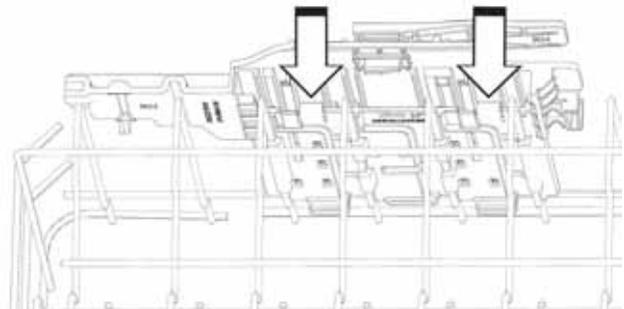


*Viewed from above*

### Adjustable Bracket

To remove the adjustable rack bracket from the rack bracket:

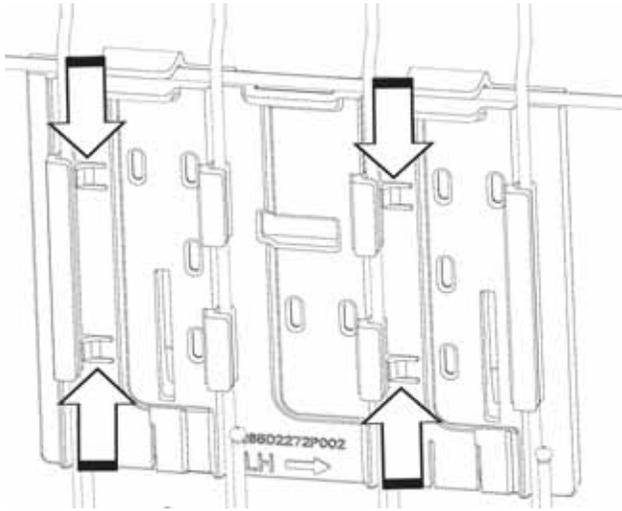
1. Remove the rack and rail.
2. Place the rack on a protective surface, upside down.
3. Push in on the adjusting lever to slide it all the way down.
4. Use a flat blade screwdriver to release 2 tabs and allow the adjustable bracket to slide off the rack bracket.



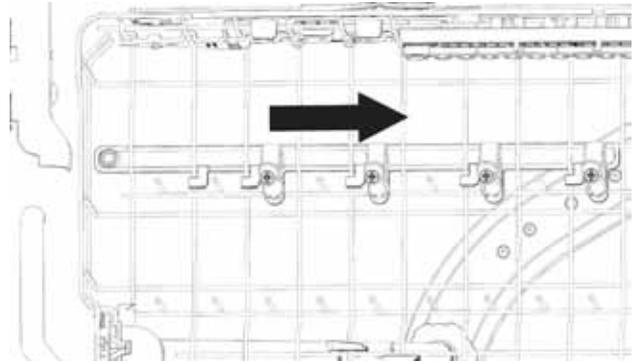
*(Continued next page)*

## Stationary Bracket

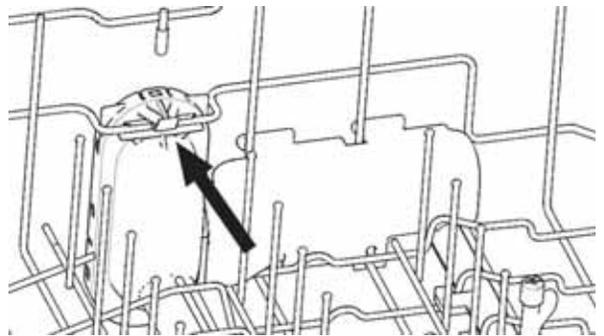
The bracket is snapped onto the rack, and can be removed by pressing in on 4 tabs to release and sliding the bracket to the front of the rack, then pivoting the bracket off of the rack.



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



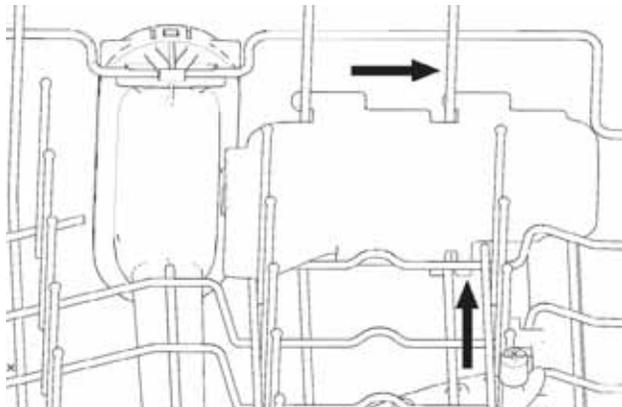
4. To the remove Mid Conduit, push on the tab and slide the conduit to the back of the rack.



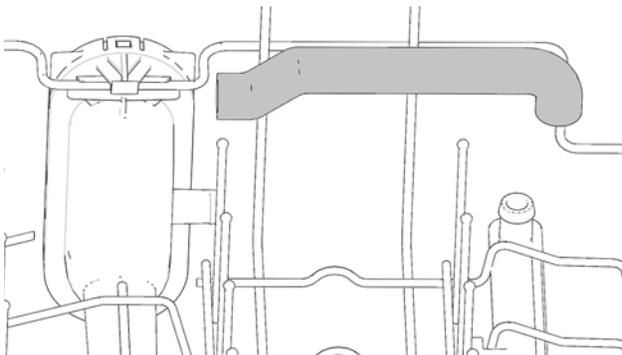
## Bottle Wash Components

To remove the Bottle Wash Components:

1. Remove the cover by releasing the clip at the bottom and slide the cover to the right.



2. Disconnect the hose.

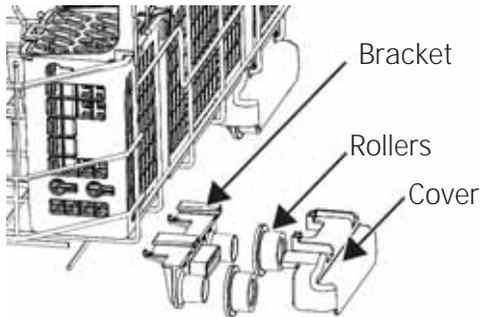


## Lower Rack

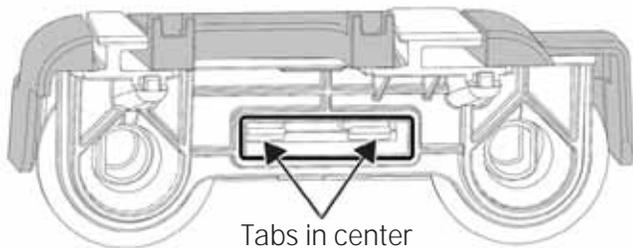
### Roller Assembly

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

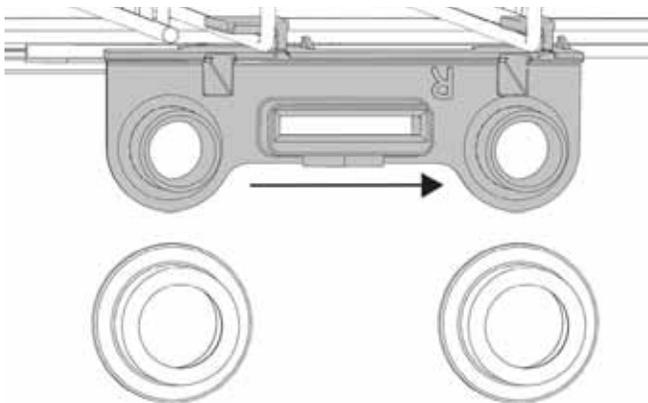
The lower rack roller assemblies consist of brackets, rollers, and covers (left or right, two per side) as well as rollers (four per side).



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.

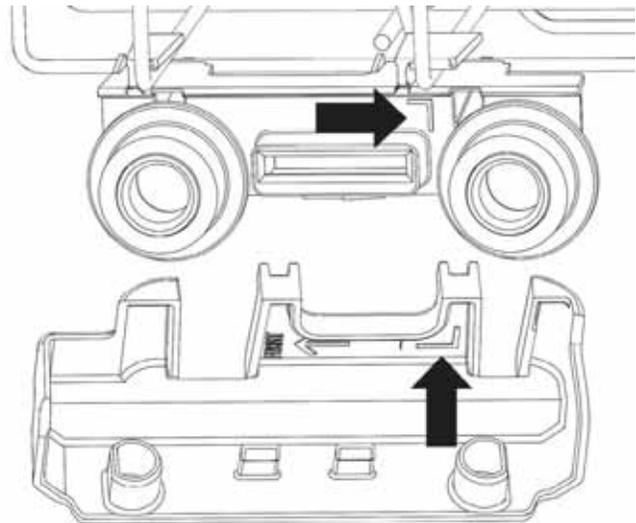


The rollers will slide off the bracket and the bracket (shaded grey in the image below) is pushed to the rear of the rack to remove.

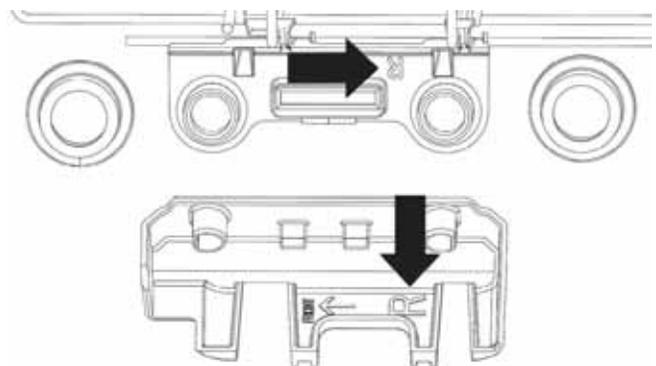


The left and right brackets and covers are different part numbers and are marked L or R (left or right) on the inside to insure proper installation.

### Left Side



### Right Side



### Silverware Baskets

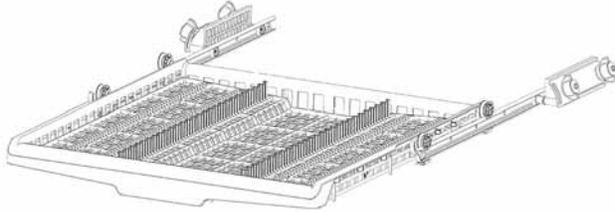
All models have a silverware basket clipped to the bottom rack and use a feature referred to as **Silverware Wash**. Please see the **Circulation System** section of this service guide for more information.

## Third Rack (some models)

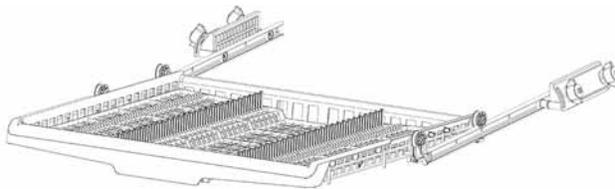
The third rack is designed to place silverware, cutlery and other utensils at the top of the dishwasher for easier access.

### Basket and Frame Assembly Removal

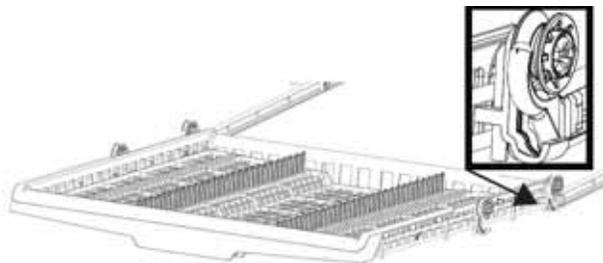
1. Pull the rack out to full extension.



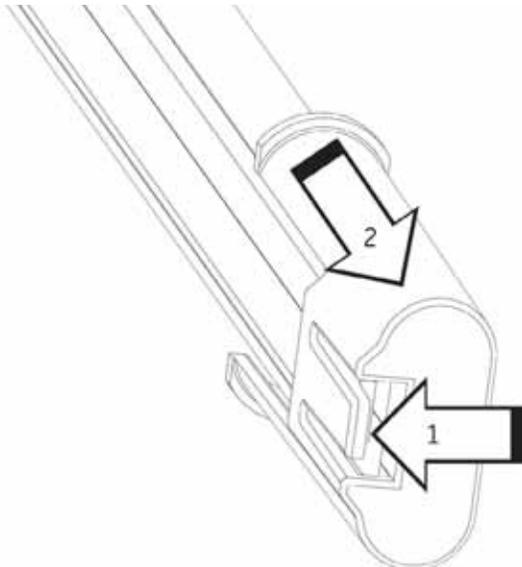
2. Lift and continue to pull the rack out.



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



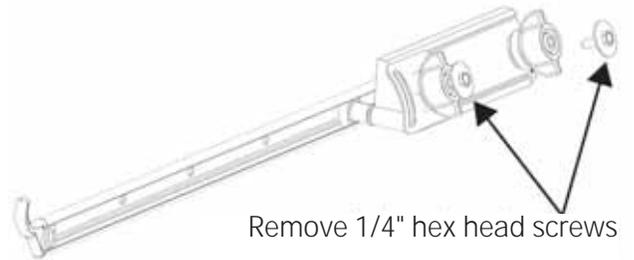
The rails may be removed by releasing the rear end cap. Push the tab and remove the endcap.



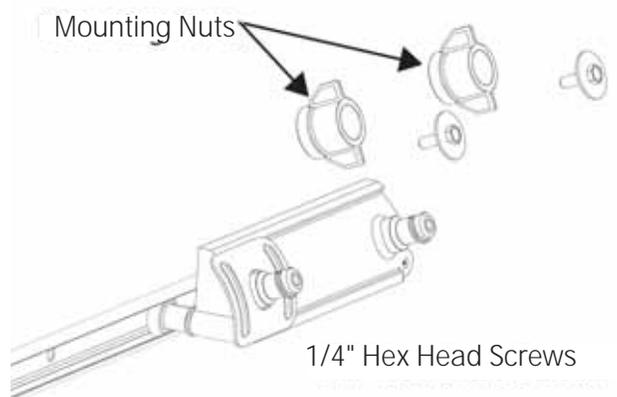
### Third Rack Brackets

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

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

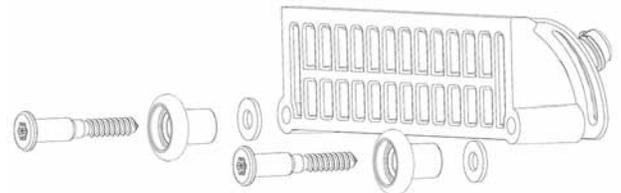


3. Remove two mounting nuts.



4. Remove the bracket from inside the dishwasher.

**Third Rack Rail Rollers** are secured to the bracket with T20 Torx head screws.



(Continued next page)

## Monogram Third Rack

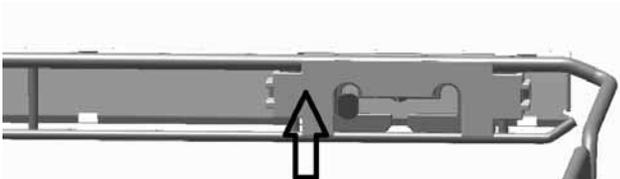
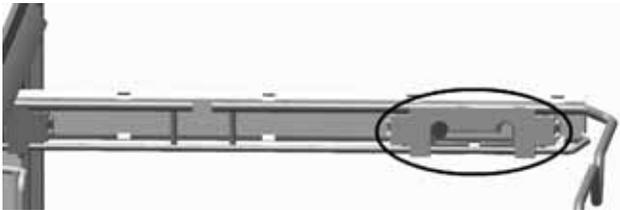
ZDT975S has a two tray basket system with full extension rails.

### Monogram Third Rack Removal

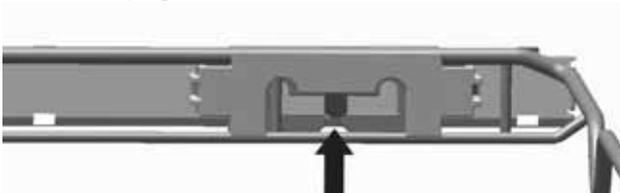
1. Pull the third rack and track system to its full outward extension. There are four locking pegs on the tub mounted slides.



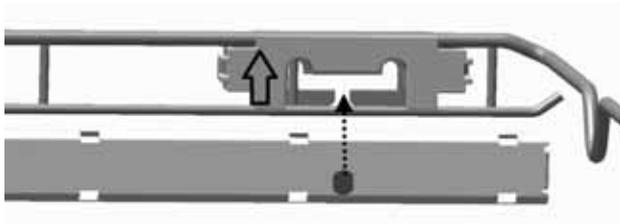
2. Lift the frame from the slides attached to the tub.



3. Slide the frame to the front or back, depending on the peg location.

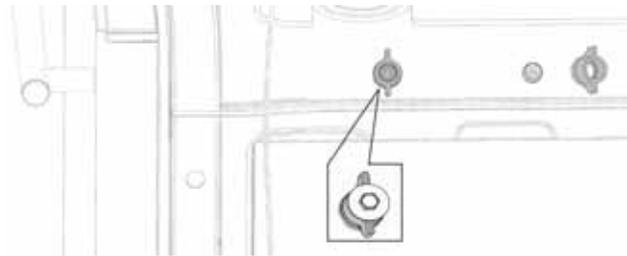


4. Lift the frame off of the slide system.

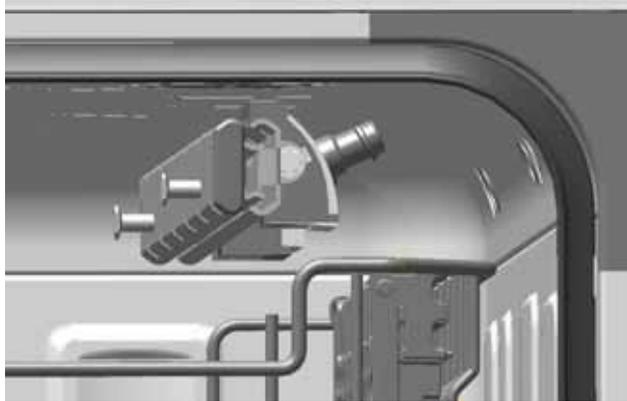


### Removing Monogram Slide Rails from the Tub

1. The dishwasher will have to be removed to access the mounting hardware.
2. Remove the two 1/4 in. hex head screws (one on each side). Then remove the mounting nuts.



3. The slide system will remove from inside the tub.



4. The brackets (two on each side) are secured to the slide with a 1/4 in. hex head screw. Lift the bracket up to disengage from the slide. The bracket has a seal attached and available with the bracket.



## Door

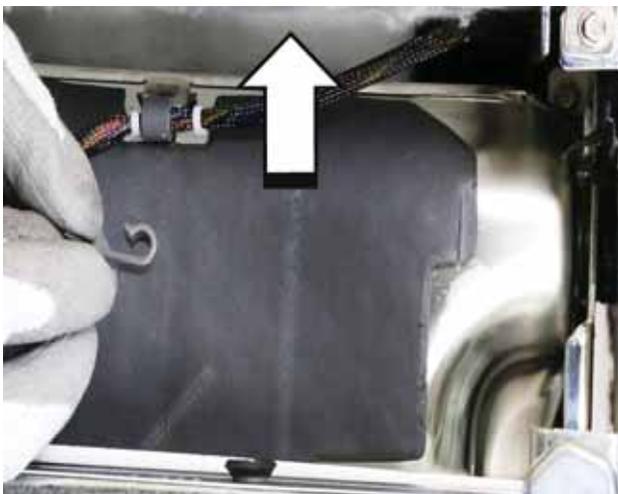
The Door has DC voltage only and contains a UI (User Interface) Board with all tactile switches on the board. Some models have a 7-segment display, others have LED indicator lights. The door also houses the detergent module, bottom door seal and a passive venting system (see the **Dry System** section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

### Door Removal

1. Remove power to the dishwasher, then 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.

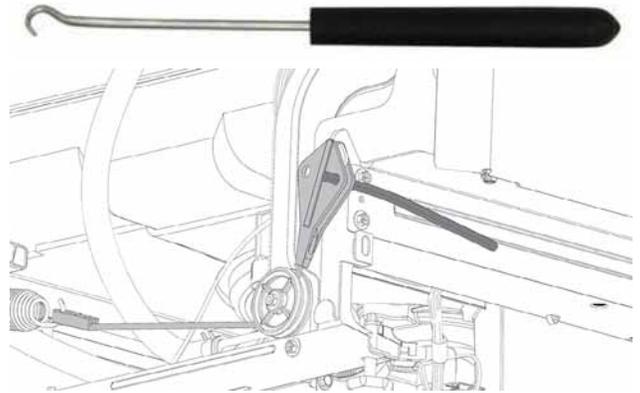


4. Release the wire clip holding the harness to the tub. Push up on the wire harness to release the harness.

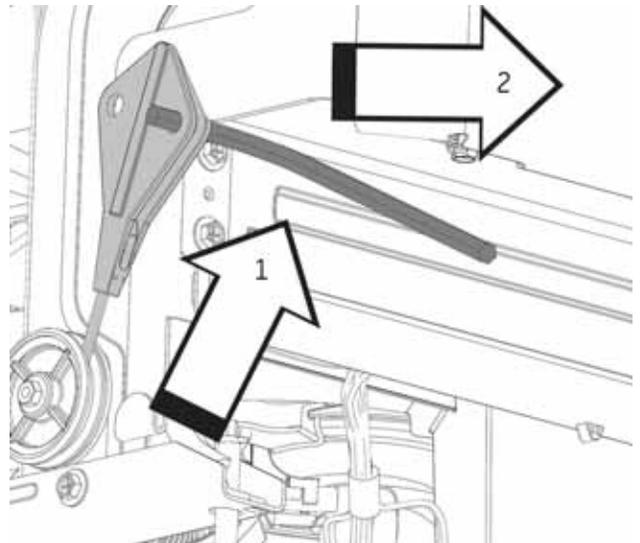


**WARNING:** GE Factory Service Technicians are **REQUIRED** to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

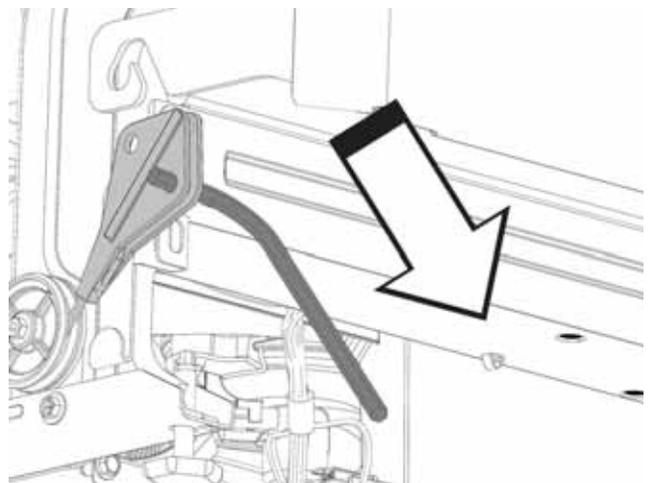
5. Locate the door balance cable and insert an Allen wrench or tool formed into a hook (as shown below).



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.

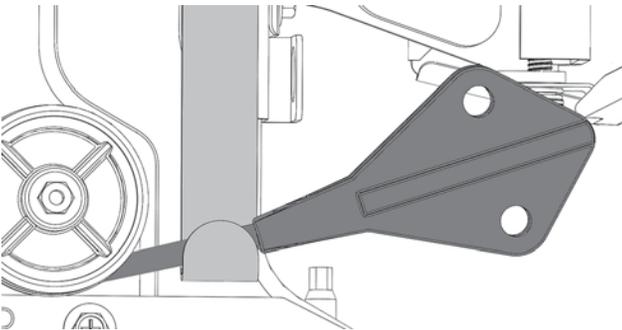


- Slide the cable into the cable clip to prevent the spring from disconnecting from the cable.



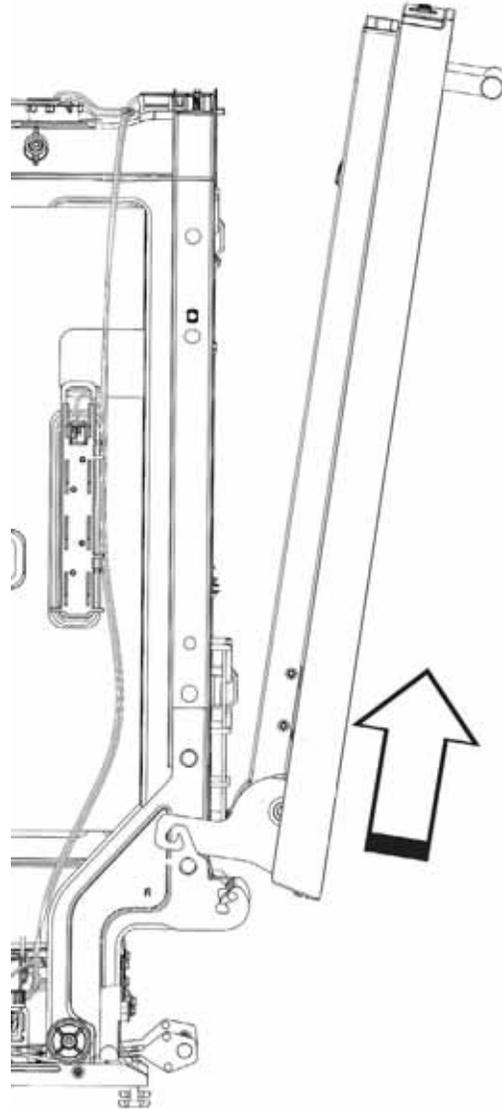
**Caution:** If the cable is released before it is secured in the clip, the spring and cable may become disconnected. Depending on the model and installation, reconnecting may require the dishwasher to be removed from the installation.

The cable seated correctly into the clip is shown below.



- Repeat steps 5 through 8 on the opposite side.

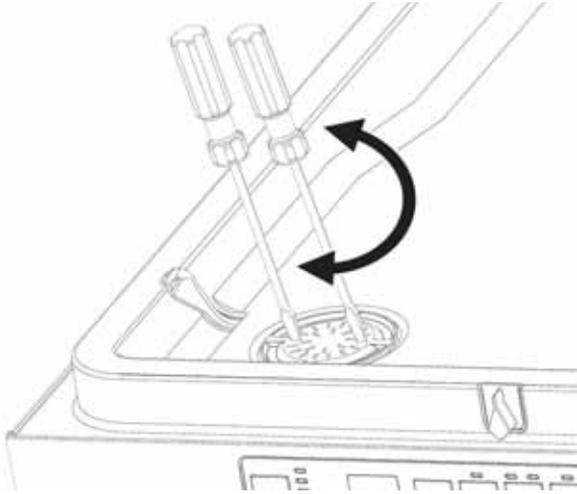
- Standing in front of the dishwasher, open the door a few inches, then lift the door and hinge arms off of the offset leg.



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

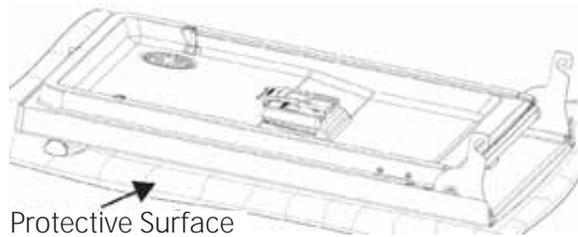
## Inner Door Vent Cover

The inner door vent cover must be removed to remove the power vent conduit and fan. Insert two pocket-style flat-blade screwdrivers into the vent, then turn counter-clockwise to remove.

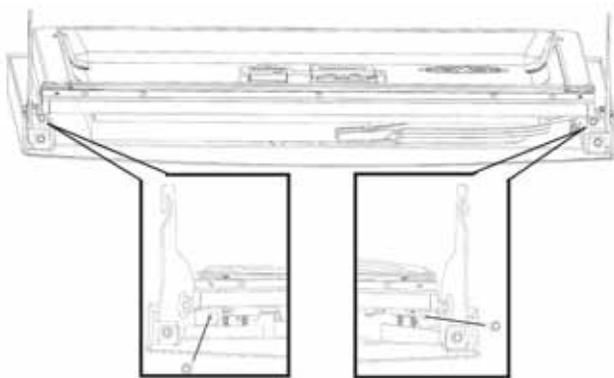


### To Separate the Door

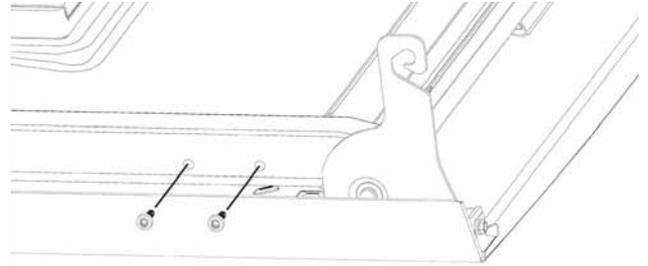
1. Remove the door.
2. Place the door with the outer door facing down on a protective surface.



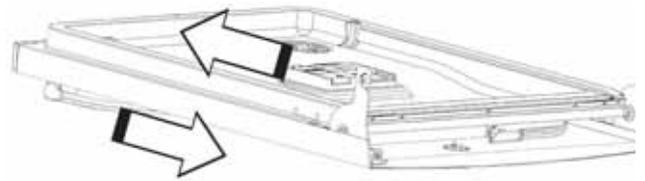
3. Remove two 1/4 in. hex head screws inside the bottom of the door.



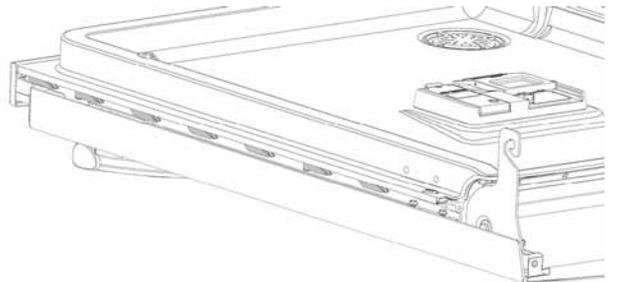
4. Remove four T25 Torx screws (two each side) that secure the inner door to the hinge assemblies.



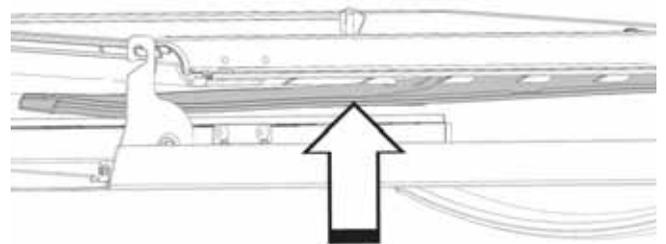
5. Slide the inner panel toward the top and the outer panel to the bottom to disengage the attachment strips. **NOTE:** The hinges are secured to the outer door panel.



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

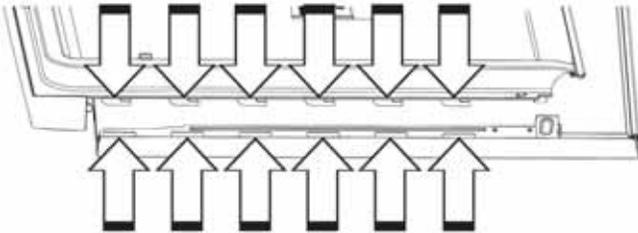


7. Support the vent conduit while lifting the inner door from the outer door panel.



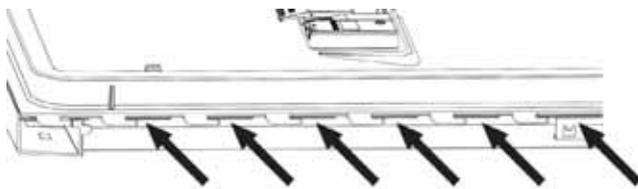
## To Reassemble the Door

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

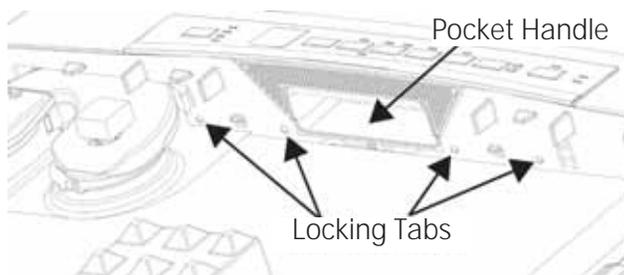
3. Press firmly together while sliding the inner panel onto the outer panel using care making sure the outer panel mates properly to the front or top console. The below illustration has a portion of the door sectioned or cut out to show outer door panel engaged with the attach tabs of the inner door.



4. Reinstall the screws and reinstall the door.

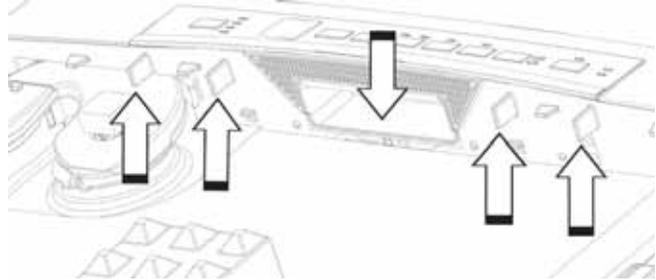
## Front Control Console

The Front Control Console is held in place by four tabs on the pocket handle.

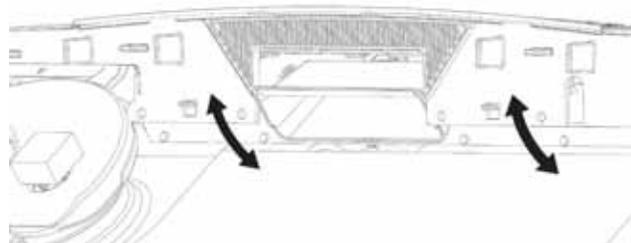


## Front Control Console Removal

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

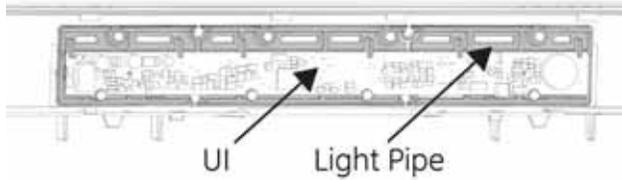


3. Tilt the bottom upward. When both sides are released, rotate the console to release the tabs at the top of the console.



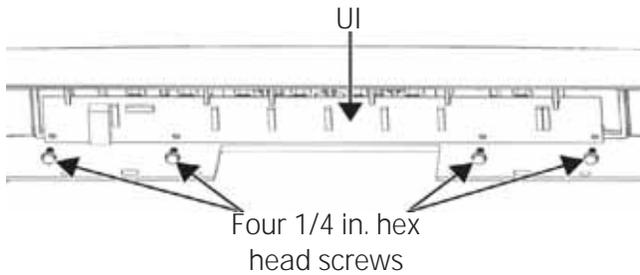
## Front Control UI, Light Pipe and Buttons

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

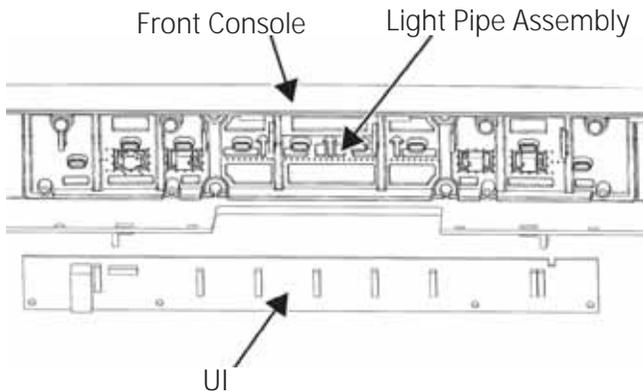


### UI Removal

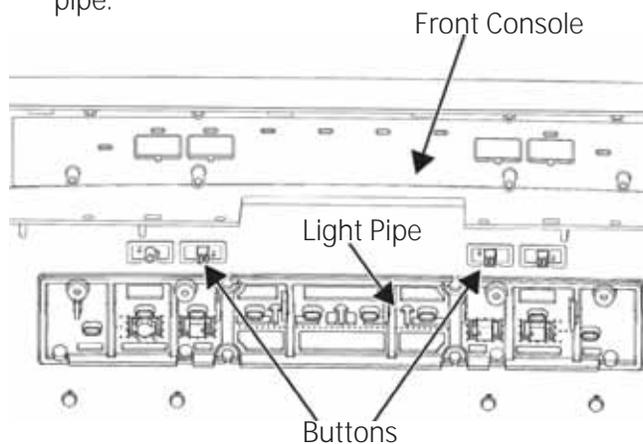
- Remove four 1/4 in. hex head screws at the bottom of the UI Board.



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

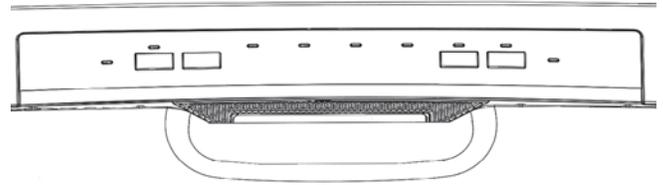


- To remove the light pipe assembly, remove four 1/4 in. hex head screws at the top of the light pipe.

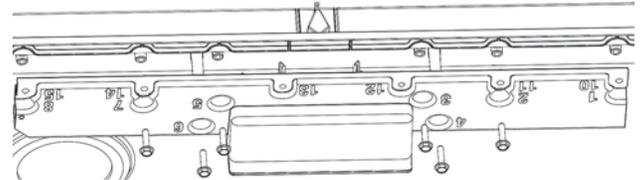


- The light pipe and buttons may now be removed.

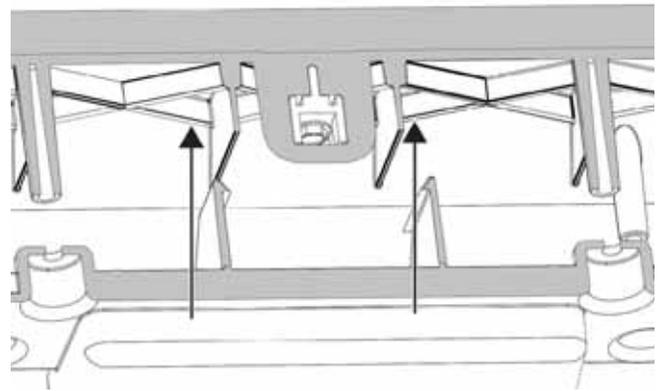
## Pocket Handle (Front Control Only)



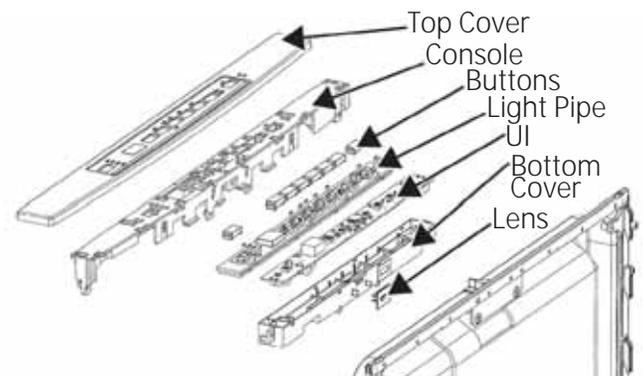
The pocket handle is attached to the inner door panel. The front control console must be removed as previously described in **Front Control Console Removal**. Remove six 1/4 in. hex head screws.



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



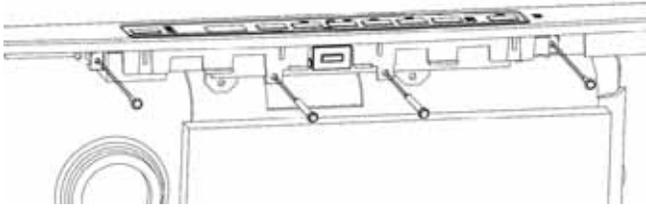
## Top Control Panel, UI, Light Pipe and Buttons



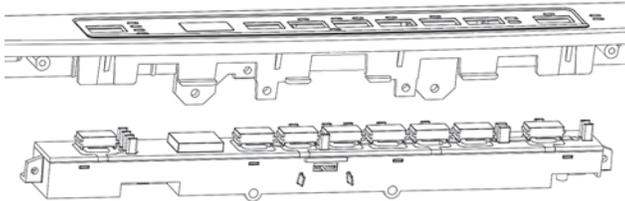
(Continued next page)

## Access the UI, Control Covers, Buttons and Light Pipe

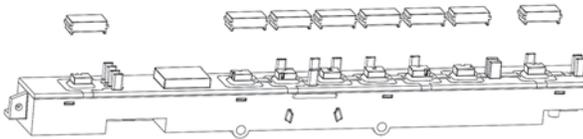
1. Remove and separate the door.
2. Remove four 1/4 in. hex head screws.



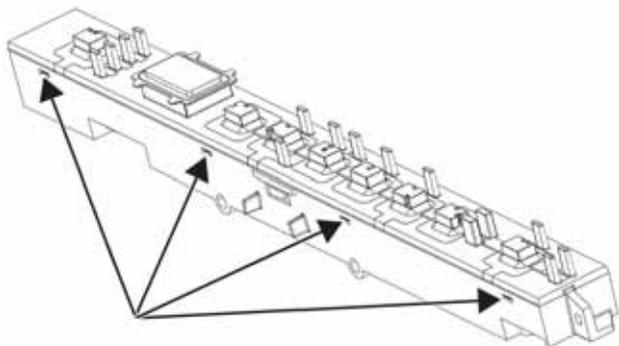
3. The control and bottom cover will drop down from the control panel.



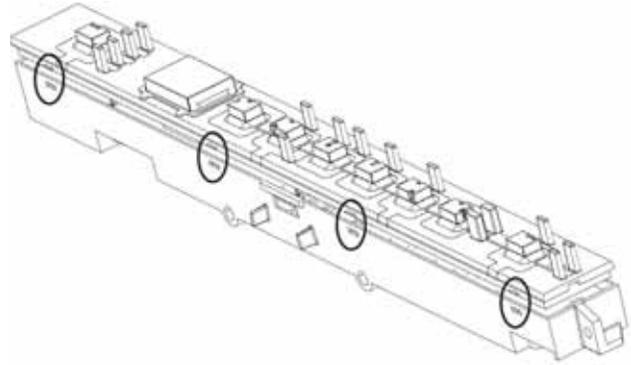
4. The buttons, and light pipe with silicone pad will be removed from the bottom cover to access the UI.



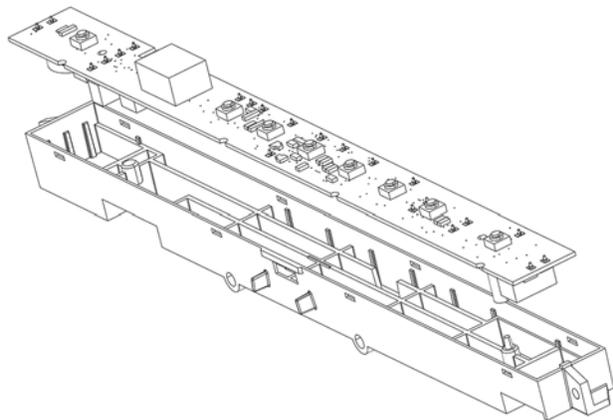
5. The light pipe separates from the bottom cover with tabs. A small screwdriver may be needed to start the first tab.



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.



- 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 four 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

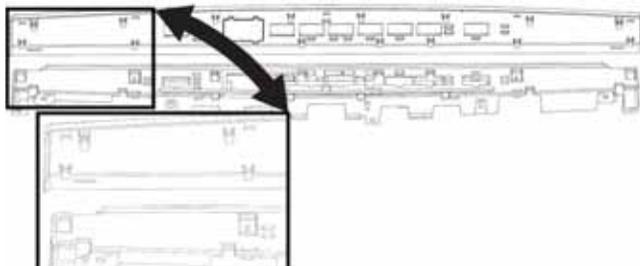
### Top Control Console Cover Removal

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.

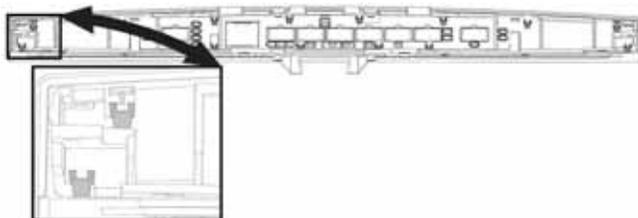


### New Top Cover Installation

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.



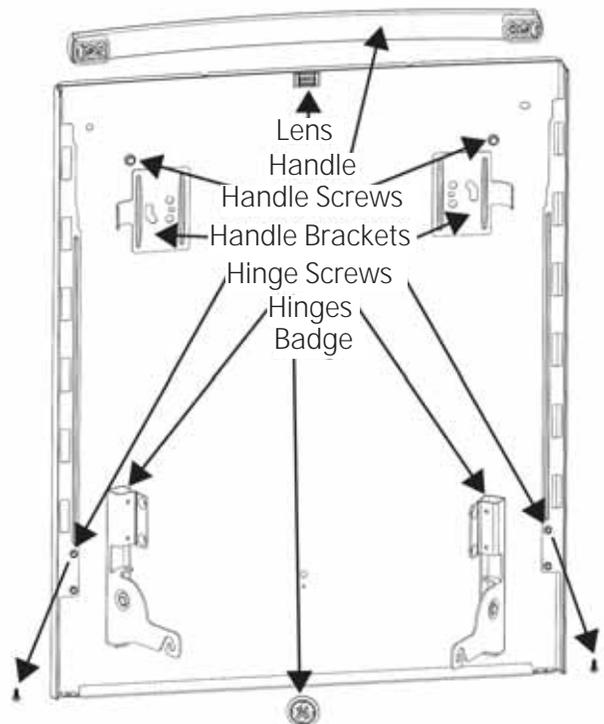
2. Position the tabs on the cover into the slots on the console.



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, 1/4 -28 thread size screws holding the handle.

## Hinges

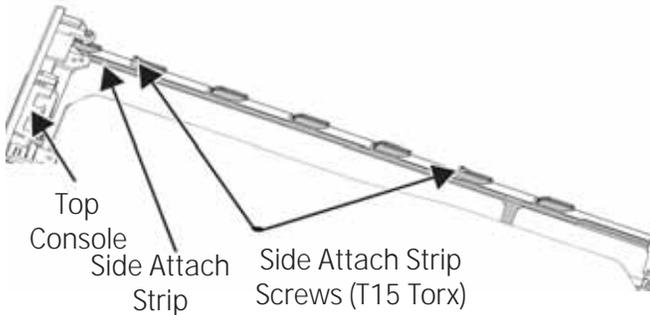
To remove hinges from the outer door panel, remove six 1/4 in. hex head screws.



## Inner Door Panel

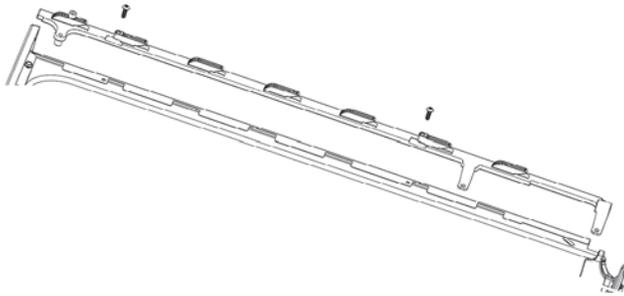
### SS Door Attach Strips

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



### Side Attachment Strip(s) Removal

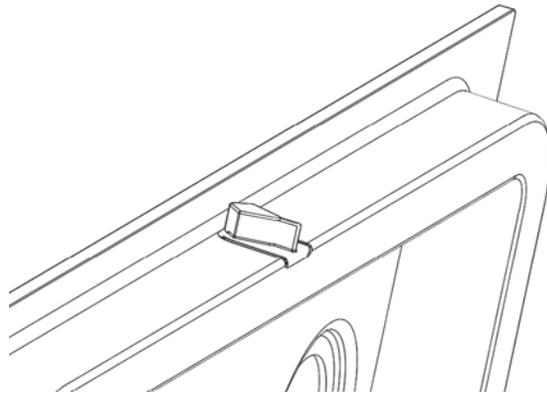
1. Remove and separate the inner and outer door panels.
2. Remove the front control console or top control panel.
3. Remove the two T15 Torx screws on the side attach strips.
4. Slide the strip inward to remove.



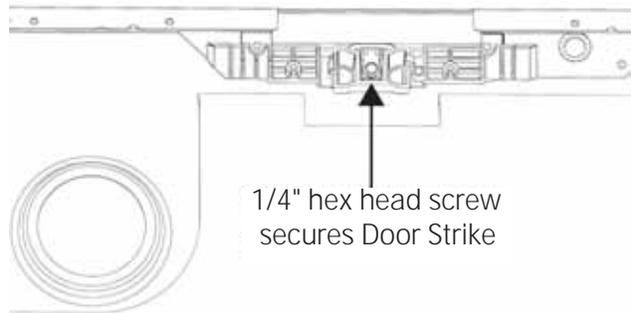
To Remove the Top Attachment Strip, the Door Strike must be removed first (see top of page, right side).

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

## Door Strike

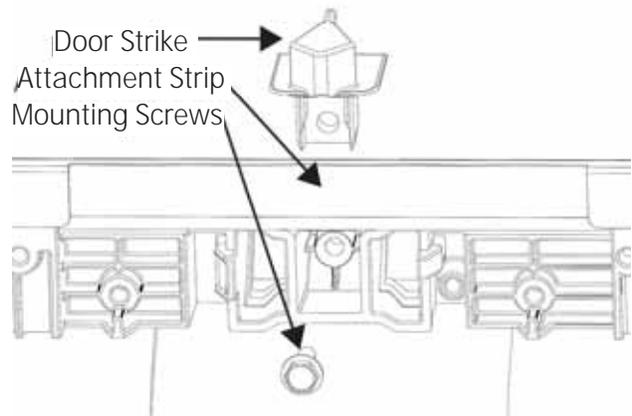


With the UI and Console (pocket handle on front control models) removed, there is clear access to the 1/4 in. hex head screw that secures the strike to the inner door and top attach strip.



1/4" hex head screw secures Door Strike

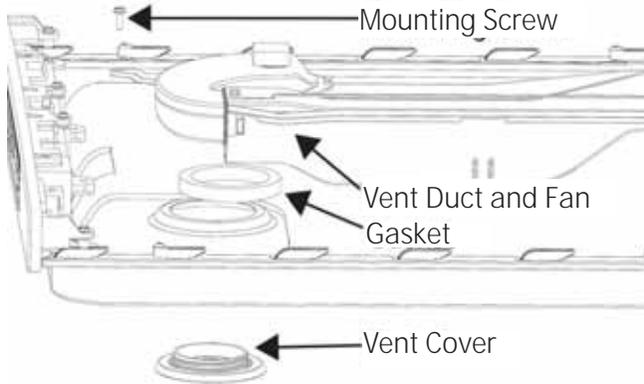
Remove the 1/4 in. hex head screw, remove the door strike. Top attachment strip may now be removed



## Door Gasket

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

## Vent Parts

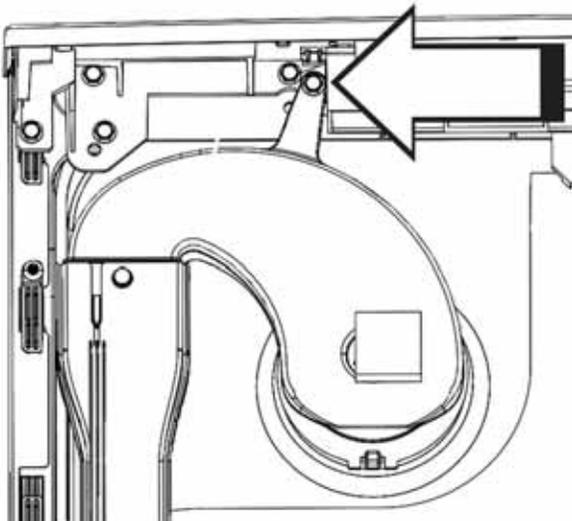


### Power Dry Models

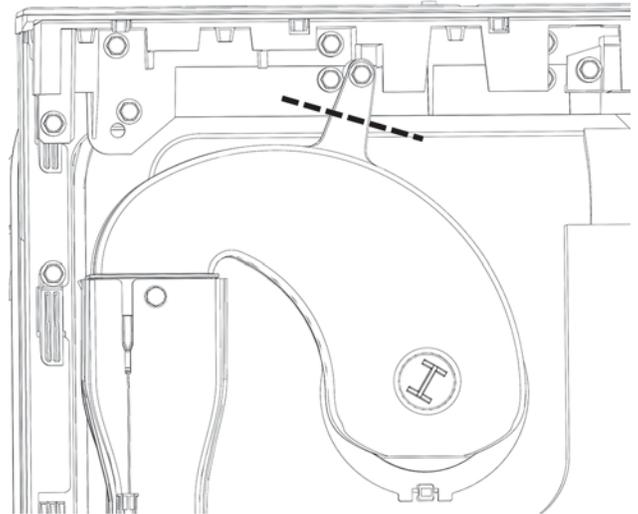
Power Dry Models have a 13.5 VDC fan and ducting to the bottom of the door. The Power Dry system must be removed to access the door control components. Operation, specifications and diagnoses will be covered in the **Dry System** section of this service guide.

### Power Dry System Removal

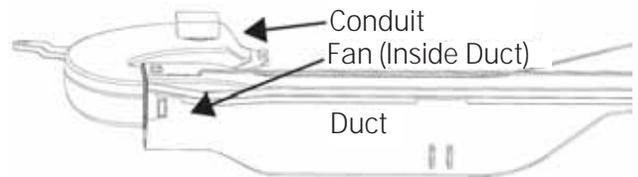
1. Remove the inner door vent cover.
2. Disconnect the wire harness from the fan to the UI control.
3. Remove the 1/4 in. hex head screw.



If alignment causes a binding on the tab, it can be removed, the purpose for the tab is to aid assembly in the factory. The vent cover provides the main attachment for the venting assembly.

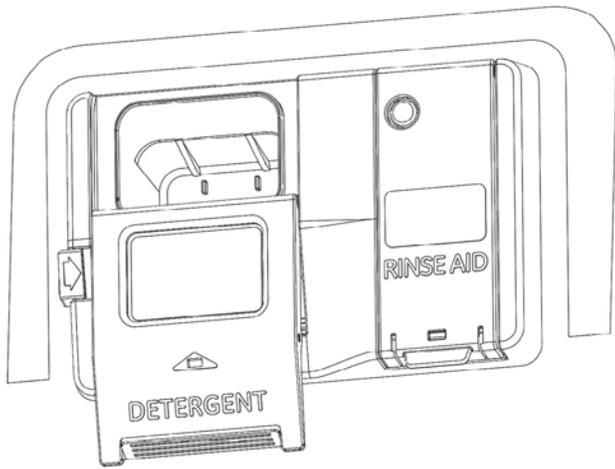


4. The vent conduit, fan and the duct are removed as an assembly.



**NOTE:** Vent fan and diagnostics may be found in the **Dry System** section of this service guide.

## 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.

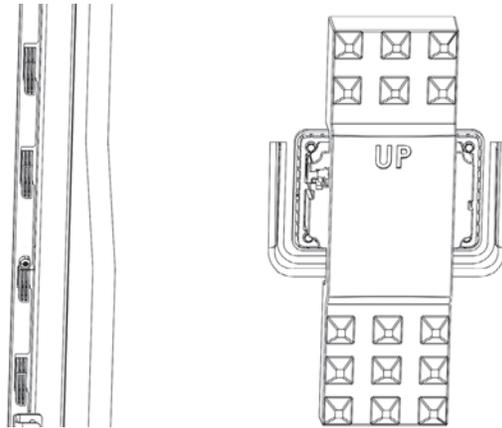
A sensor is used to detect rinse aid level and advise the consumer when the level is low. The rinse aid sensor is covered on the next page.

### Diagnosing Detergent Module

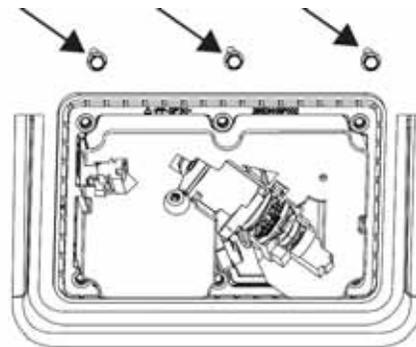
1. Remove power, then remove and separate the door.
2. The inner panel may be set into the dishwasher and latched in the closed position.
3. Reapply power.
4. Place the dishwasher into Service Mode (see **Service Mode** section in this service guide), then activate the detergent test to check for 13.5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

### Detergent Module Removal

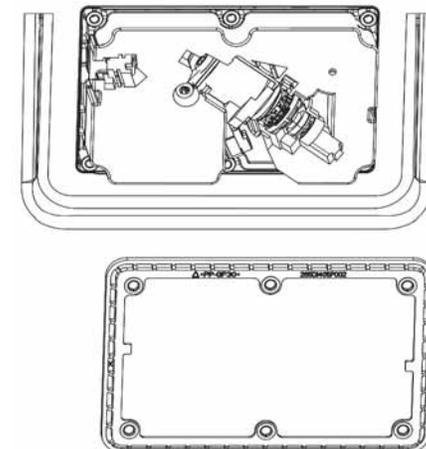
1. Remove power to the dishwasher.
2. Remove and separate the door.
3. Remove the EPS cover. Double back tape is used to secure and is reusable (when reinstalling the EPS cover, UP must be toward the top of the door).



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 to 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.

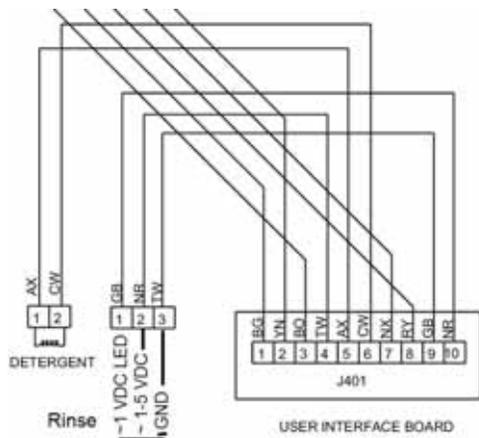
## Diagnosing Rinse Aid Sensor

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 - pin 3).

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

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

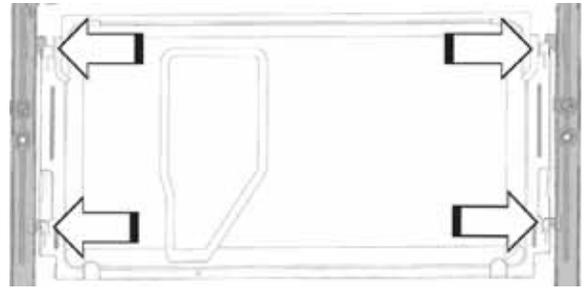


## Notes:

Voltages may be checked for 50 seconds immediately after the door is closed. False readings may occur if 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 consumer's 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.

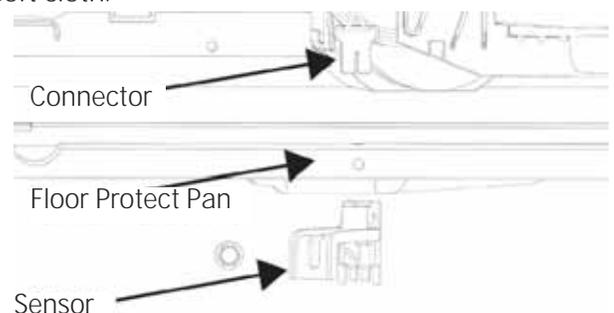
If water is detected when the dishwasher is running a cycle, the dishwasher enters a drain mode for up to 70 seconds and cancels the cycle. The LCD screen (some models) displays Leak Detected. The Owner's Manual or Use & Care book advises the consumer to call for service. If water is detected in an idle 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.

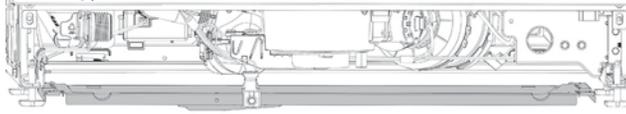
If the consumer tries to restart the dishwasher with water still detected, the dishwasher will not restart.

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



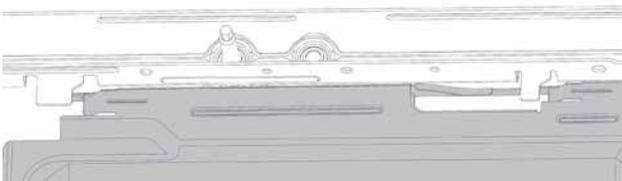
HEATING ELEMENT, DRAIN PUMP, WASH PUMP & FLOOR PROTECT PAN ARE INTENTIONALLY NOT GROUNDED AND MAY PRESENT A RISK OF ELECTRICAL SHOCK ONLY DURING SERVICING. DO NOT CONTACT WHILE APPLIANCE IS ENERGIZED.

#### 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 four 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.

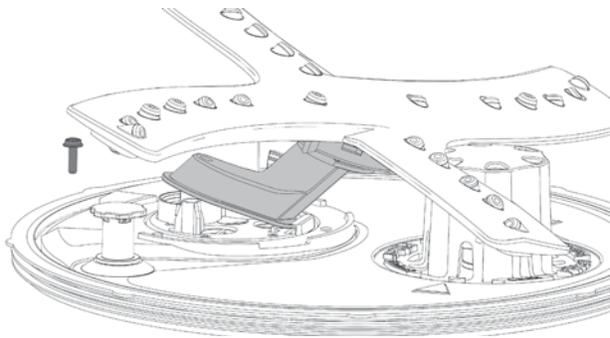


## Sump Module

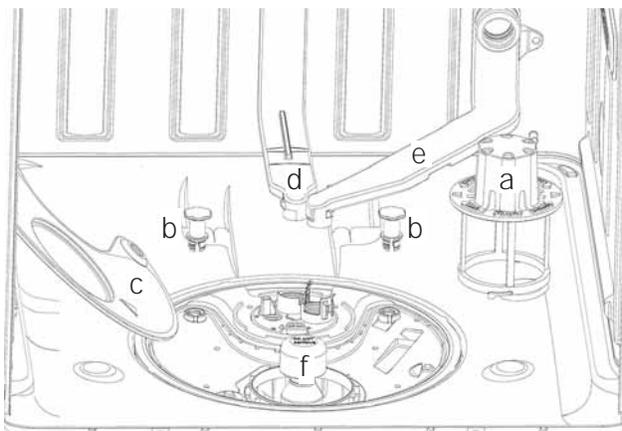
The sump module is front serviceable with the dishwasher remaining in the installed location. This section of the service guide only covers the sump removal. Components and diagnostics of the sump module may be found in the **Fill System**, **Circulation System** or **Drain System** sections of this 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 **Door Removal** in the **Door** section of this service guide).
5. Remove the lower spray arm (see **Lower Spray Arm and Conduit** section of this service guide).

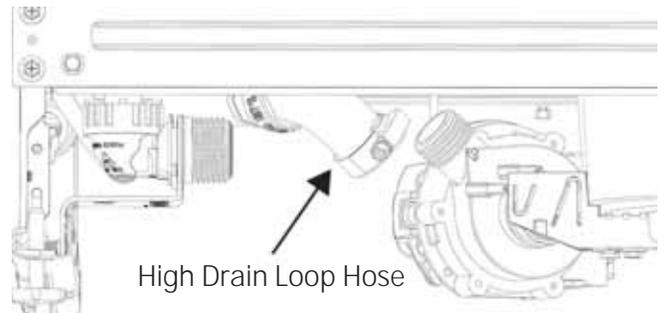


6. Remove the ultra-fine filter (a), two vent caps (b), fine filter (c), main conduit (d), silverware conduit (e) and flood float (f).

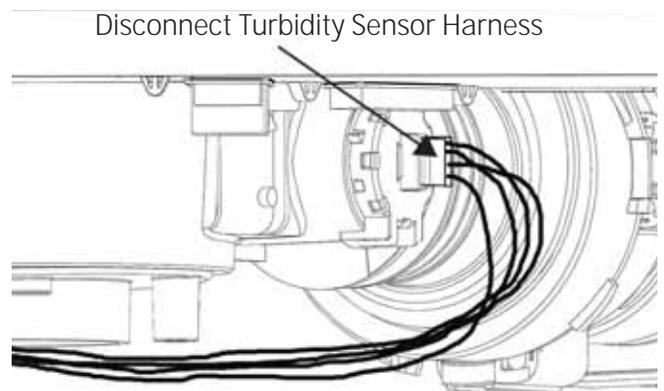


7. Remove the main conduit (see the **Circulation System** section of this service guide).

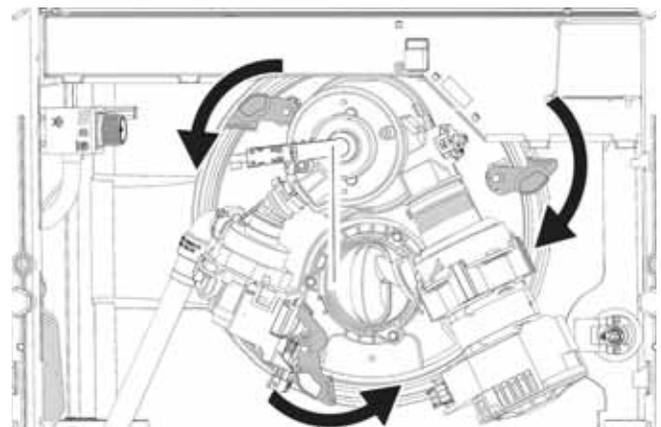
8. Loosen the high drain loop hose clamp (1/4 in. hex head) and remove the hose from the drain pump (there will be a small amount of water in the sump, pump and hose).



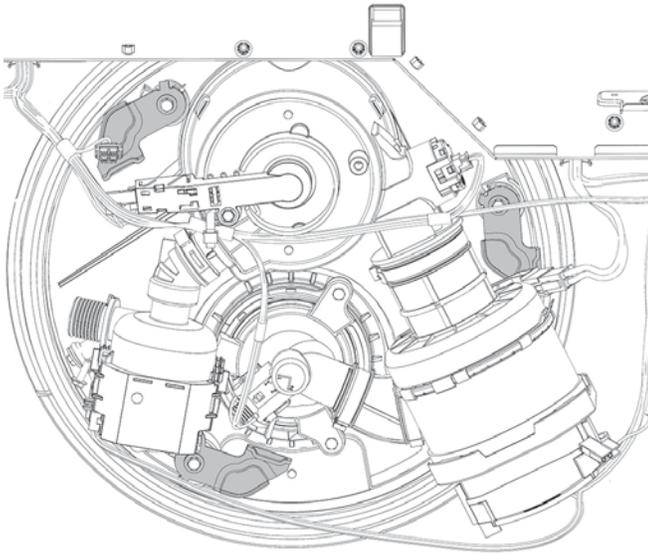
9. Disconnect the turbidity sensor wiring (some models).



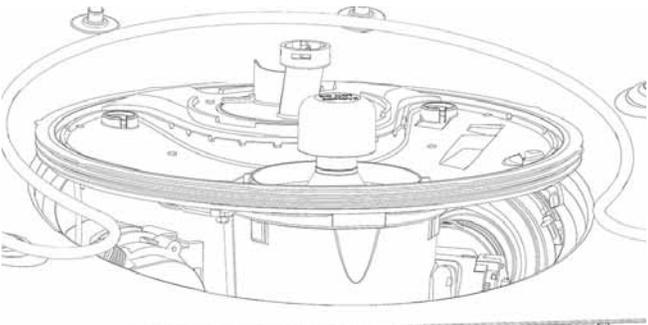
10. Unlatch three sump clips. All three latches can be reached from the front of the dishwasher in most installations. If the dishwasher does not have the legs extended, the dishwasher may have to be removed from its installed position.



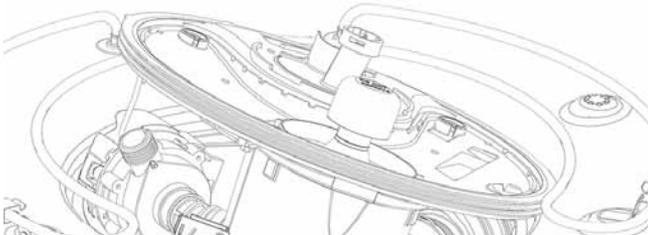
11. The sump latches below are shown in the release position. Each latch has a stop point built in. Turn the latches to a stop point when unlatching and latching.



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

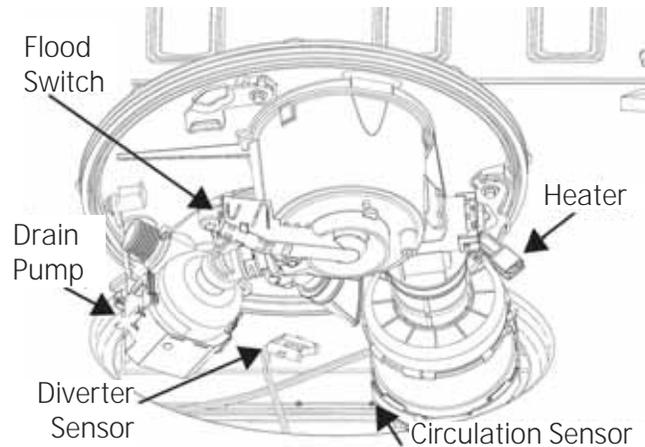


13. Grasp the sump from inside, using care NOT to use the flood switch as a handle. Tilt and lift to bring the sump into the tub. Bring the drain pump up and in first. This allows access to disconnect the wiring in the next step.



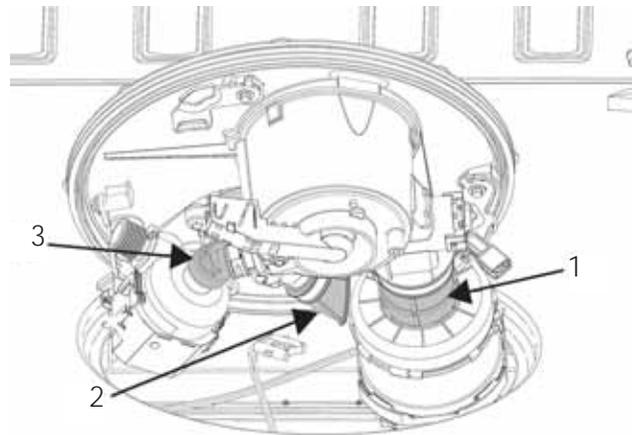
**NOTE:** It is important to route the wire harnesses in the same locations to prevent future damage to the harness.

14. Disconnect the circulation pump, heater, drain pump, diverter sensor and flood switch wiring.



15. The sump is now free to remove.

**NOTE:** A 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.

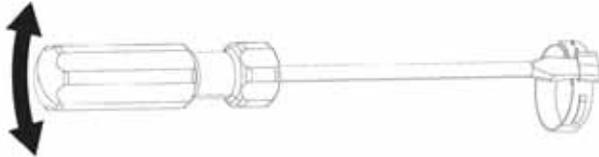


## Sump Gasket

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 the clamps may cause damage to the hoses.

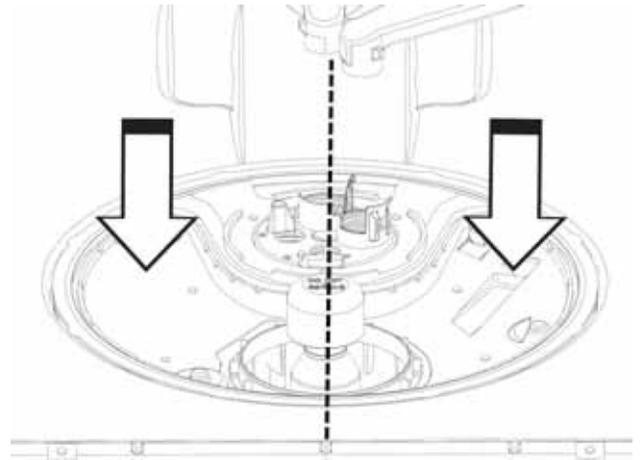
## Installing Sump Module

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

**TIP:** 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. Some adjusting or twisting is OK.

3. Press the sump firmly into place, using both hands to push down on the sump module.  
**NOTE:** Do not use the flood switch to adjust or twist the sump into place.



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.

# Electronic Controls

The Main Control Board is located under the dishwasher. It is supplied 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), UI board and detergent module in the door.

The main control has a **CSM** (Current Sense Module) located on the control. If the CSM detects a ground path, the dishwasher will be non-responsive.

**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.

**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). Example: Software version 8.08 will display as "808".

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

## Front Control PDF820SxJ0xx

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 that a 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.

Fault Codes for LCD, Top Control Models are found on next page.

Consumer Error Mode will time out after 5 minutes.

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

## Top Control LCD Models

Fault Code	Description	Cause / Action or Check
F2	Communication Failed	User Interface control unable to communicate with machine control
F3	Configuration Error (inverter not found)	Inverter not detected on inverter equipped model
F5	Inverter Found On Incorrect MC Personality	MC personality has not been configured correctly
F6	Wireless Module (On some models)	Communication lost with wireless module
F16	High Water Temperature	Check thermistor (replace as needed), replace MB
F33	Door Switch Error	Check door switch and wiring
F34	Leak Pan Detected Error	Check for water leak in the floor protect pan
F36	CSM Tripped	See On the Main Control Board CSM section of this guide
F48	Turbidity Sensor High	Check turbidity sensor harness, replace sensor
F49	Turbidity Sensor Low	Check turbidity sensor harness, replace sensor
F50	Temperature Sensor High	Check thermistor and harness, replace MB
F51	Temperature Sensor Low	Check thermistor and harness, replace MB
F52	Turbidity Sensor Calibration Failure	Check turbidity sensor and harness
F64	Inverter Error Received	Check inverter and harness
F65	Inverter No Water Detected	Check inverter and harness
F80	Absent Water Flow (turbidity based)	Check turbidity sensor harness, replace sensor
F96	No Water In Tub (turbidity based)	Check turbidity sensor harness, replace sensor
F97	Absent Heat Source	Check heater and thermistor
F98	Non-draining Sump (turbidity based)	Check drain pump operation, turbidity sensor harness, replace sensor
F99	Minimum Wash Temp Not Met	Check heater and thermistor
F112	Key Stuck	Check buttons, console and light pipe, replace UI
F128	Low Rinse Aid	Fill rinse aid tank
F144	Inverter Error Detected	Check harnessing, replace inverter
F145	Inverter has detected incorrect AC Voltage	Check house voltage, harnessing, then replace inverter if all is OK
F146	Circulation Pump Error	Check harnessing, and replace the circulation pump if needed
F147	Drain Pump Error	Check harnessing, replace drain pump if needed
F148	Open TCO in circulation or drain motor	Check harness, replace affected motor
F149	Poor connection or harness to inverter	Check connections and harness, replace inverter if needed

## On the Main Control Board CSM

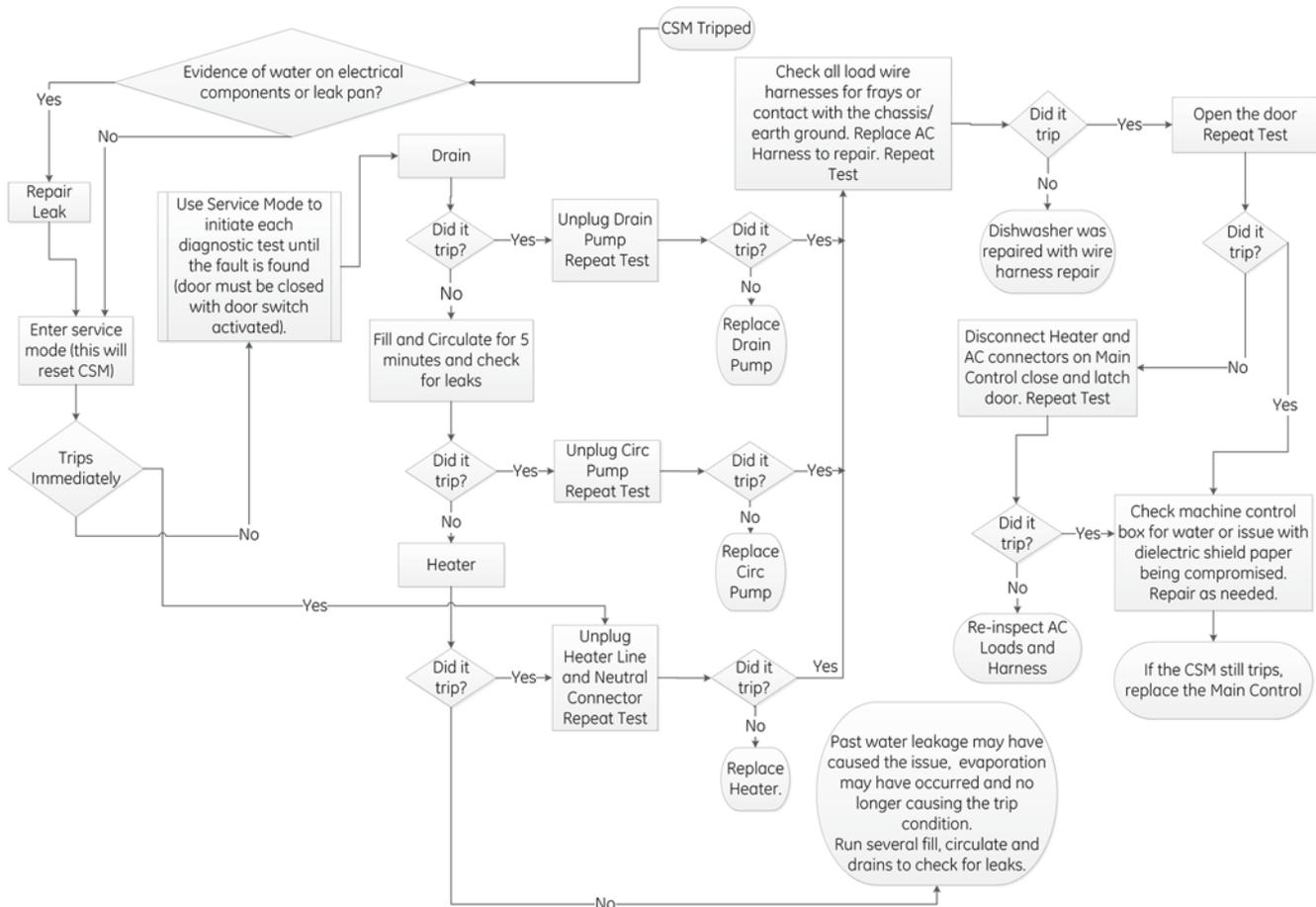
A CSM is a protective device that is part of GE Dishwashers, and is located on the main control board. This device is designed to trip if current leakage to ground is above  $20\text{mA} \pm 5\text{mA}$  is detected. The CSM functions similar to commercially available GFCIs; if tripped, the dishwasher is non-responsive. Entering **Consumer Error Mode** will allow the door status check. If the door is open, the LED's will flash for 10 seconds. If the door is closed, the LED's will remain solid for 10 seconds. 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** in the **Electronic Controls** section of this service guide). 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.



## 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 what caused the CSM to trip. The control will blink the Normal LED every few seconds for the number of times corresponding to the load being tested. On models PDF820SxJ0xx and PDT825SxJ0xx. The display will scroll the test corresponding to the proper test on models CDT835SxJ0xx CDT865SxJ0xx, PDT845SxJ0xx, PDT846SxJ0xx, PDT855SxJ0xx, ZDT915SxJ0xx and ZDT975SxJ0xx.

### While in Consumer Error Mode

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

### PDF820SxJ0xx and PDT825SxJ0xx

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 <b>Pressure Diverter, Operation</b> ).
4	Heater	Turns on heater for a maximum of 2 minutes.
5	Detergent Module	Turns detergent dispense solenoid on for a maximum of 2 minutes.
6	Fan	Actuates fan for 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.

### LCD Display Models Show the Load to Control in the Display:

- CDT835SxJ0xx
- PDT855SxJ0xx
- CDT865SxJ0xx
- ZDT915SxJ0xx
- PDT845SxJ0xx
- ZDT975SxJ0xx

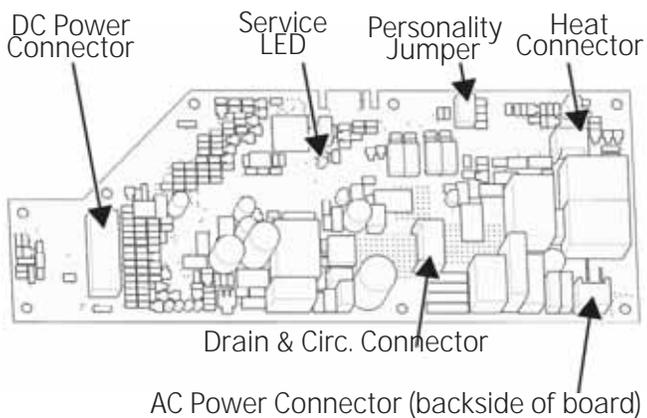
Load to Control	Timeout / Notes
Drain Pump	Attempts to empty. Takes approximately 75 seconds from normal level.
Water Valve	Attempts to fill to normal level. Takes approximately 1 minute.
Circulation Pump	Runs for approximately 2 minutes. Pressing the Start button will alternate wash zones, see <b>Pressure Diverter, Operation</b> ).
Heater	Turns on heater for a maximum of 2 minutes. Hidden heater models will fill and run the circulation pump with the heater.
Detergent Module	Turns detergent dispense solenoid on for a maximum of 2 minutes.
Fan	Actuates fan for 2 minutes. Monogram models will run in max speed.

## Diagnosing Electronic Control Boards

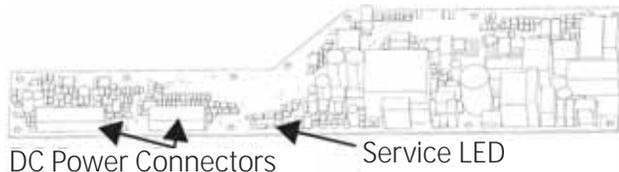
Diagnosing the main control and UI control are covered in this section. Many components can be checked from the main control, which can be accessed with the door on or removed, if needed. Some connectors are located through the bottom cover to allow easy access to AC supply connector, door harness and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

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

### Single Speed Motor Main Control



### Variable Speed Motor Main Control



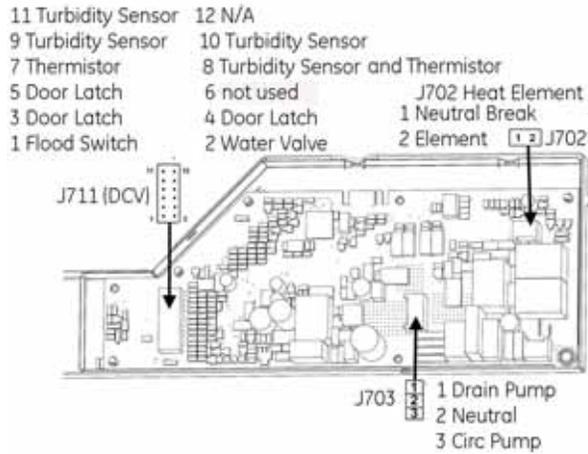
## Main Control Diagnostics

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 service position (under **To Access Main Control Board**, found on the next page), then repower the dishwasher to view the Service LED.

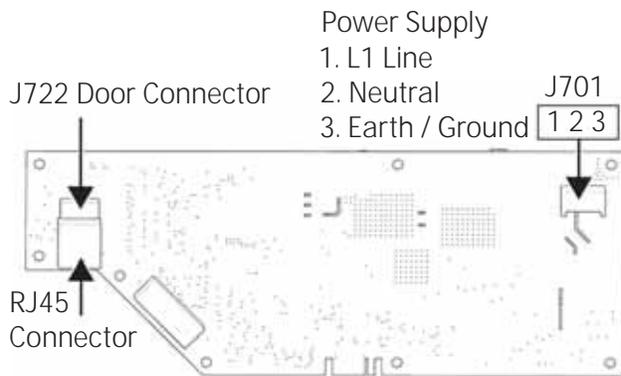
Blink Pattern	Meaning
1x per 3 seconds	Dishwasher is not running a cycle, select a cycle and press <b>Start</b> .
2x per 3 seconds	Dishwasher is in Delay Start and waiting to start a cycle. The cycle will begin once the delay expires.
3x per 3 seconds	Dishwasher is running a cycle.
4x per 3 seconds	Dishwasher is paused, close the door and press <b>Start</b> 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 <b>Start</b> and <b>Heated Dry</b> 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.

(Continued next page)

**Top Side of Main Control (CDT835J, PDT820J and PDT835J Only)**



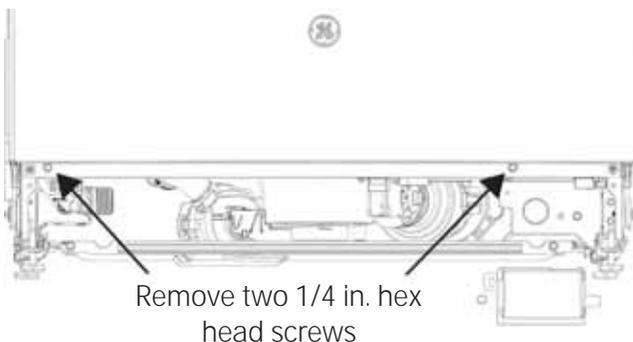
**Bottom Side of Main Control**



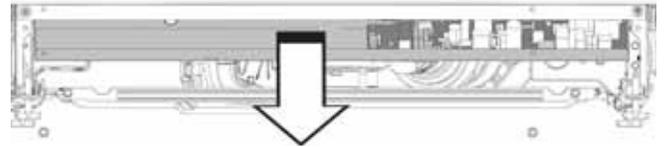
**WARNING: GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.**

**To Access Main Control Board**

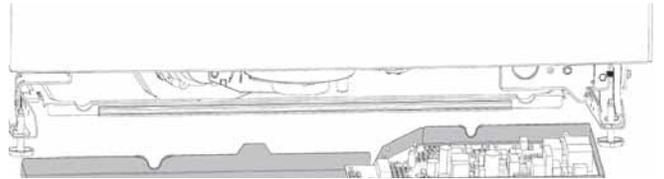
1. Remove power to the dishwasher.
2. Remove the toe kick panel.
3. Remove the door (optional).
4. Remove the junction box cover.
5. Remove two 1/4 in. hex head screws on control box.



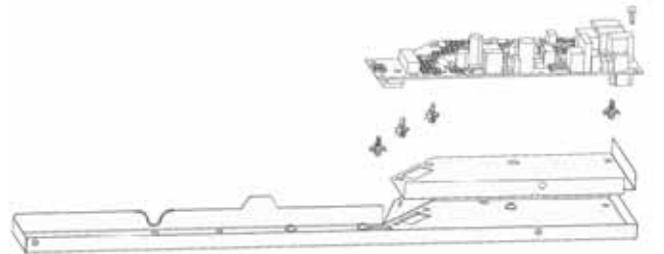
6. Pull down on the bottom cover at the front of control box. While pulling down on the front of the bottom cover, slide the cover forward to clear the back lip and junction box bracket.



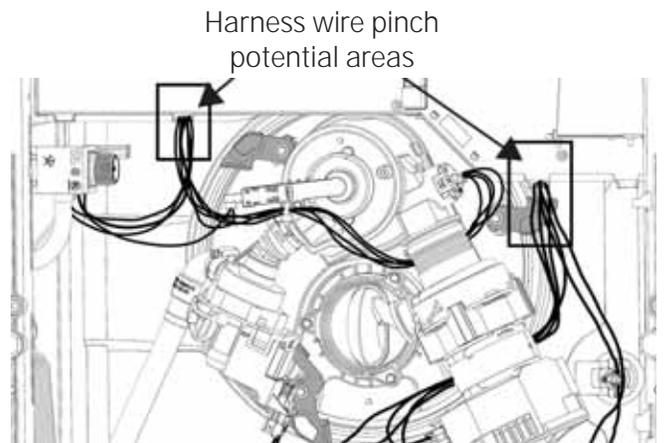
7. Pull cover and control forward, taking care not to damage the board or the wiring.



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, to keep them from snagging on the floor.



10. All ground screws must be reinstalled.

## UI Diagnostics

If there is no operation, display or LED's will not light.

Check for 120 VAC entering the machine control. If no voltage is found, or voltage disappears when Start button is pressed, a house electrical fault is suspected.

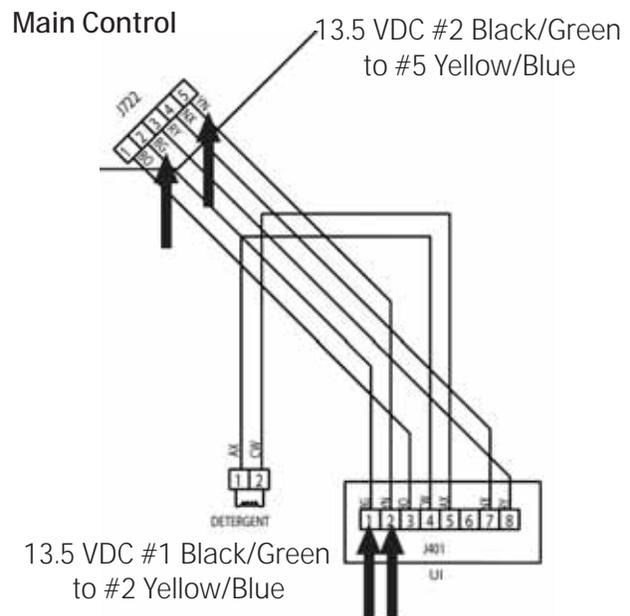
Check the Service LED on the machine control for a flash pattern. Use the table below to translate and repair (using the Service LED as a reliable diagnostic tool).

Blink Pattern	Meaning
1x per 3 seconds	Dishwasher in not running a cycle. Select a cycle and press <b>Start</b> .
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 <b>Start</b> 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 <b>Start</b> and <b>Heated Dry</b> 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.

If the service LED on the machine control has a steady on or one time per second flash, check the door harness and follow the below DCV checks.

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.

A door harness may become pinched and damaged within the door or at the tub lip where the harness exits the inner door assembly. Sleeving may cover the damaged area and make a visible check not viable. The harness must be checked by using an ohm meter and checking continuity of each wire at each end of the harness at the connectors. Moving the harness in various directions may be helpful in diagnosing the harness.

If buttons function properly but the LCD display is not functional, check for proper voltage at the UI. If volts are correct, replace the UI.

## Inverter Control Board

### Introduction

The Inverter is used to allow both circulation and drain motors to be operated at variable speeds for efficient performance and noise reduction.

The inverter board is torqued to the mounting plate and should not be removed. A heat sink material is used between the inverter and mounting plate, and torque is critical for proper heat transfer. Should an inverter need to be replaced, it will come as an assembly, mounted to the mounting plate. The inverter should not be removed from the mounting plate.

Checking for fault codes and using the Service Mode are both used to obtain main control errors and inverter errors.

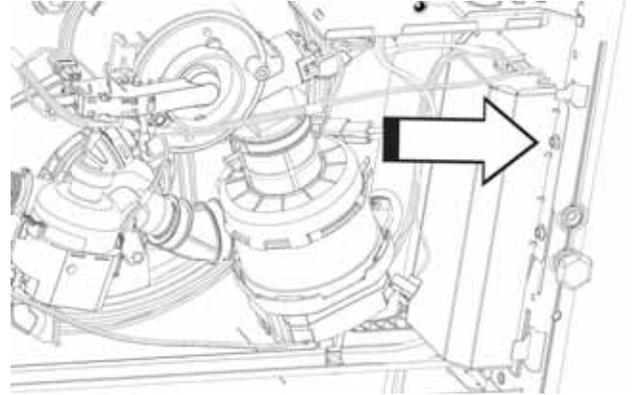
### Safety

Diagnostics for variable speed wash and drain motors include the inverter. **Warning:** Caution must be used while removing or testing the inverter. There is a 185 VDC potential on the inverter. Power must be disconnected while accessing, and isolation gloves are recommended while performing any voltage checks on the inverter.

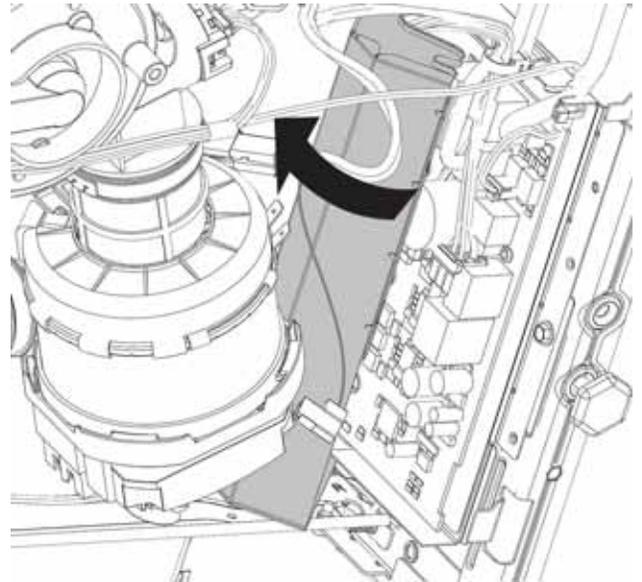
### To Access the Inverter

1. Remove power to the dishwasher.
2. The dishwasher should be removed from its installation and placed on its back. **NOTE:** Damage to the fill system can occur if the dishwasher is placed on either side.
3. Remove the floor protect pan.

4. The cover can be removed for diagnostics and connector access by removing the front mounting screw.



5. Rotate the bottom of the cover to the center of the dishwasher and carefully remove it by moving it toward the tub.



Access details for circulation and drain motors are found in the **Circulation System** and **Drain System** in this service guide, respectively.

## Inverter and Motor Diagnostics

### Accessing Dishwasher Fault Codes

These diagnostic checks are performed with the dishwasher still installed. Place the dishwasher into Diagnostic Fault Code Mode. Fault codes are the first diagnostic test to run, as they can provide the fault or narrow the diagnostic search.

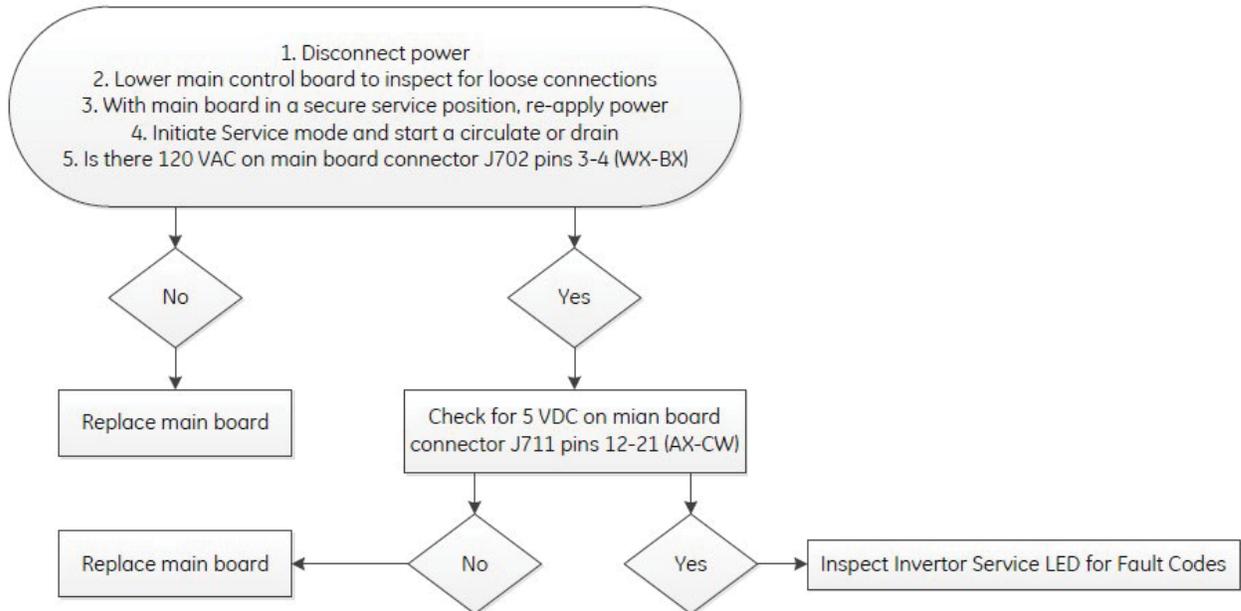
Fault Code	Description	Cause / Action or Check
F64	Inverter Error Received	Check inverter and harness
F65	Inverter No Water Detected	Check inverter and harness
F144	Inverter Error Detected	Check Harnessing, replace inverter
F145	Inverter has detected incorrect AC Voltage	Check House Voltage, harnessing, the replace inverter if all are OK
F146	Circulation Pump Error	Check harnessing, replace circulation pump if needed
F147	Drain Pump Error	Check harnessing, replace drain pump if needed
F148	Open TCO in circulation or drain motor	Check harness, replace affected motor
F149	Poor connection or harness to inverter	Check connections and harness, replace inverter if needed

The main board illustration on the following page shows connector numbers and pin locations. It also shows the Service LED location.

- J702 is the Motor connector
- J703 is Heater connector
- J711 is DC connector
- J723 is the connector for the Monogram Tub Lighting and the Moisture Sensor (for more information on the moisture sensor, see the **Floor Protect Plan** section of this service guide).

## Inverter and Motor Diagnostics

### Circulation and/or Drain Motor Will Not Operate

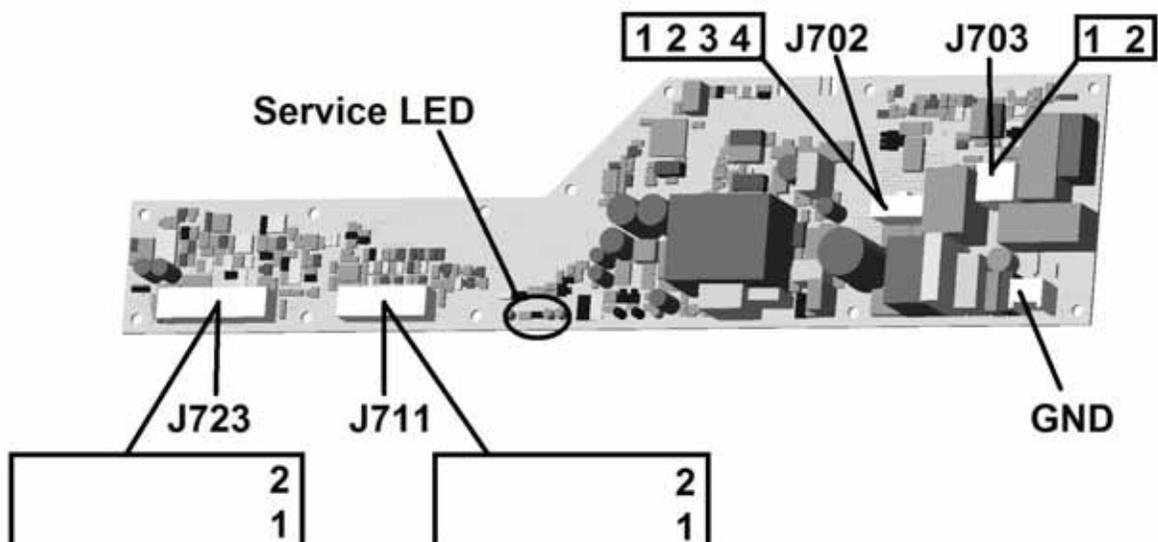


The main board illustration below shows connector numbers and pin locations. It also shows the Service LED location.

- J702 - Motor connector
- J703 - Heater connector
- J711 - DC connector
- J723 is the connector for the Monogram Tub Lighting and the Moisture Sensor (for more information on the moisture sensor, see the **Floor Protect Plan** section of this service guide).

## Inverter and Motor Diagnostics

### Circulation and/or Drain Motor Will Not Operate

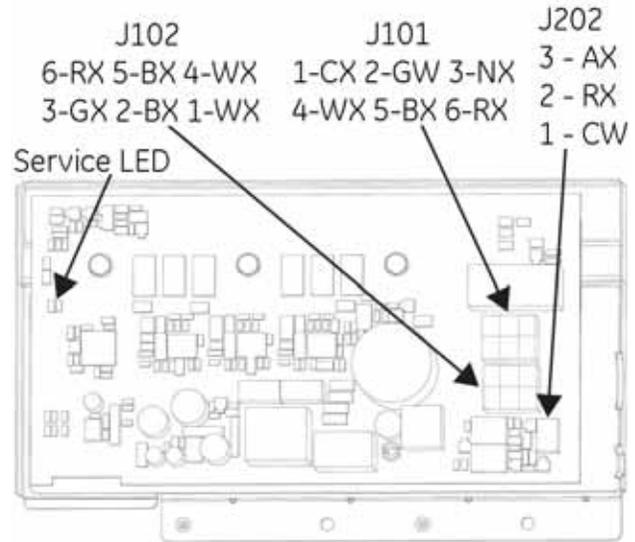


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## Accessing Inverter Fault Codes

These diagnostic checks are performed with the dishwasher uninstalled and inverter cover off to view the inverter service LED.

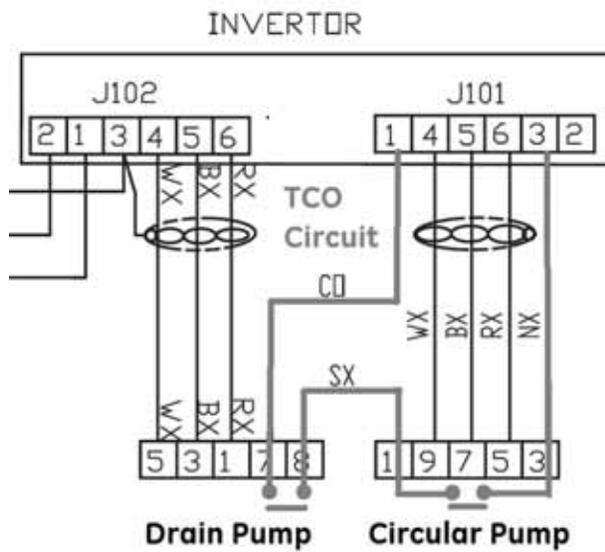
With the cover off, and all connectors have been checked and found to be tight, reapply power to the dishwasher. Then enter Service Mode and initiate the proper test to run the drain or circulation pump motors. Look at the inverter service blink pattern, which may indicate a fault.



<b>0.5 second on - 0.5 second off</b>	Normal Run flash pattern (this means a motor is running)
<b>1 second on - 1 second off</b>	Normal Standby flash pattern (power on - motor not running)
<b>1 flash with 2 second pause</b>	Inverter has detected house voltage below 103 VAC
<b>2 flashes with 2 second pause</b>	Inverter has detected house voltage below 132 VAC
<b>3 flashes with 2 second pause*</b>	Check for a shorted Circulation motor: Inverter connection J101 pin 4 <b>white</b> - pin 5 <b>black</b> - pin 6 red, 11 - 12 ohms. Shorted or open, replace motor, check connectors, if OK, replace inverter.
<b>4 flashes with 2 second pause*</b>	Open TCO in Circulation Motor - check for continuity inverter connector J101 pin 1 brown / orange to pin 3 blue, confirming an open TCO. Replace inverter if TCO is OK.
<b>6 flashes with 2 second pause*</b>	LRA (Locked Rotor Amps) detected (motor specific, detected when motor is activated in service mode), check for: 1. Loose connectors. 2. Motor** (if OK, replace inverter) 3. Inverter (if both motors show a 6 flash error, replace inverter). **Perform same resistance checks as 3 flash error.
<b>7 flashes with 2 second pause</b>	Communication error. 1. Check for 5 VDC at MB J711 pins 12 - 22 (AX-CW). If 5 VDC is not measured - replace main board. 2. Check for 5 VDC at inverter pins 1 - 3 (CW - AX). If 5 VDC is measured, replace inverter. If 5 VDC is not measured, replace the DC harness. If 5 VDC is measured the Inverter is powered with no communication between MB and inverter, replace MB.
<b>8 flashes with 2 second pause</b>	Relay fault in inverter = replace inverter.
<b>* These errors may be the circulation or drain motor. Both will need to be checked.</b>	

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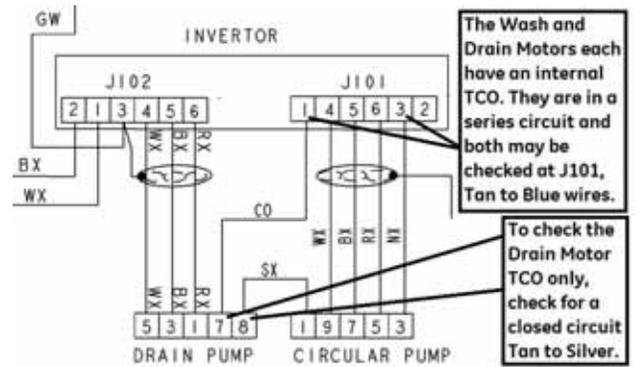
## TCO Circuit



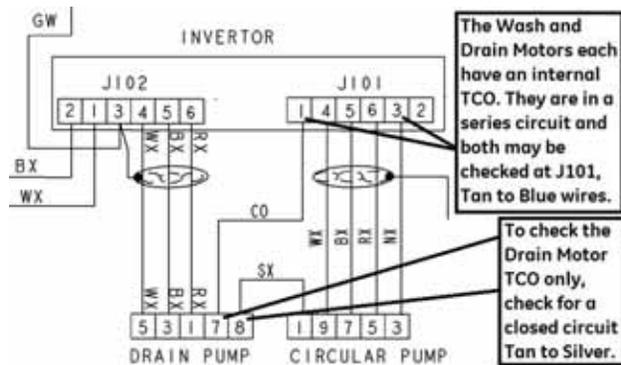
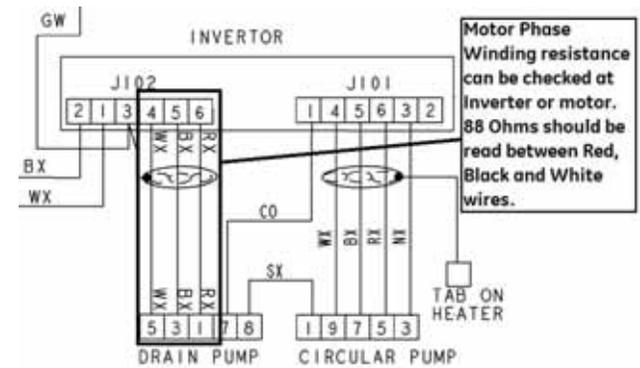
## Circulation Motor TCO

A four flash error indicates an open TCO in one of the motors. Both motors will have to be checked individually. The TCO's are in series.

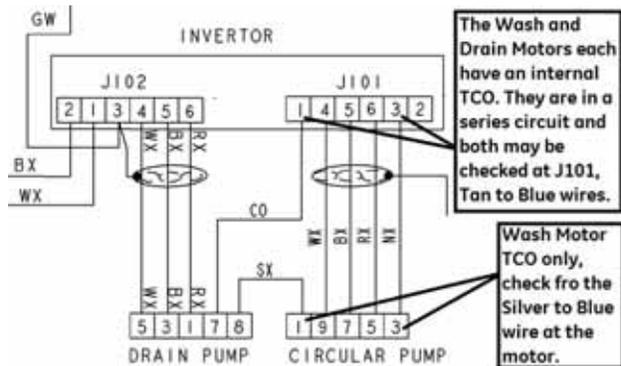
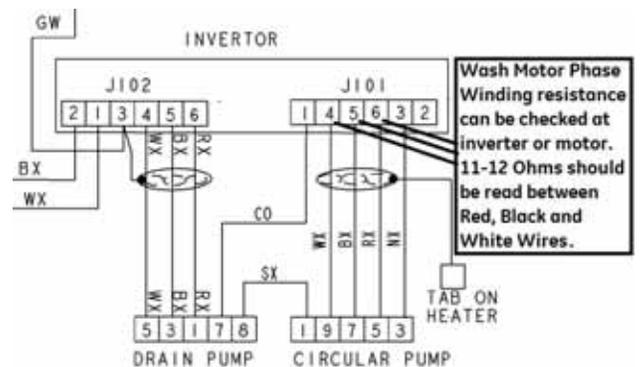
## Drain Motor TCO



## Drain Motor Windings



## Circulation Motor Windings

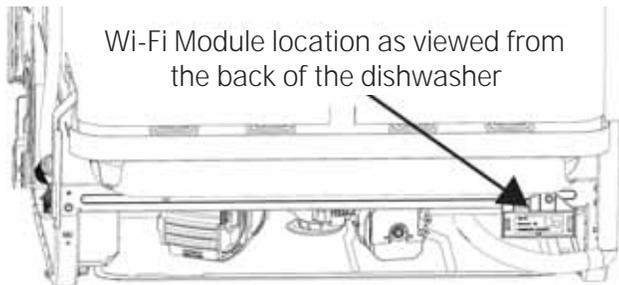


# WiFi Connect

Models PDT855SxJ0xx, ZDT915SxJ0xx and ZDT975SxJ0xx are GE Wi-Fi Connect compatible and allow the dishwasher to communicate to the consumer's smartphone or internet connected tablet. Information on the phone app is available from iTunes and Google Play. The consumer should consult [www.GEAppliances.com/connect](http://www.GEAppliances.com/connect) for complete details.

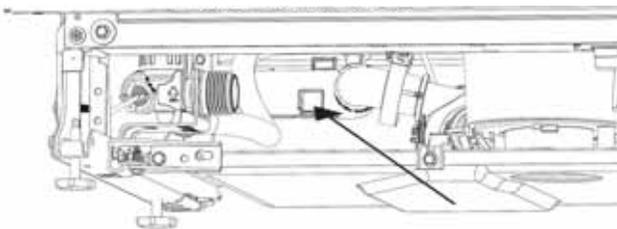
The consumer may also call GE Appliances Connected Home Call Center at 1-800-220-6899, Monday through Friday, between 9:00 AM and 6:00 PM eastern time for Wi-Fi Connect assistance. GE Wi-Fi Connect allows the consumer to check on the dishwasher status and be alerted when the dishwasher cycle is completed.

**Wi-Fi Module:** The Wi-Fi location is on the left rear leg of the dishwasher. An indicator LED on the module is visible from the front by removing the toe kick panel. Replacing the module requires that the dishwasher is removed from installation.



The Wi-Fi Module LED may be seen by looking under the dishwasher, with the toe kick panel and insulation removed. The LED flashes during the first 5 minutes of power-up, and may be used to help diagnose connection concerns within the dishwasher.

Wi-Fi Module location as viewed from the front of the dishwasher. The LED can be seen through the connector area.



## Connection Instructions

Wi-Fi setup is completed by the consumer with their smartphone or connected tablet. If the consumer needs assistance, they should call the GE Appliances Connected Home Call Center.

To enable and disable the Wi-Fi feature, press Wash Temp and Power Dry. A Wi-Fi security tag containing dishwasher network information is located on the right side of the dishwasher tub flange.

## Communications Indicator

The LCD display has an icon indicator showing that the feature is enabled when the GE dishwasher is connected to the consumer's home network.



- If the icon is not present, then there is no Wi-Fi connection. The feature may need to be turned on and set up with the consumer's smart phone. The consumer should contact GE ConnectPlus for assistance at [www.GEAppliances.com/connect](http://www.GEAppliances.com/connect) or call GE ConnectPlus at 1-800-220-6899, Monday through Friday, between 9:00 AM and 6:00 PM eastern time.
- If the icon is in a flashing pattern, the dishwasher is waiting to finish the connection process, or has lost connection.
- If the icon is steady on, the dishwasher is connected. The GE ConnectPlus team is able to diagnose many connection or App concerns over the phone.

## Diagnosis

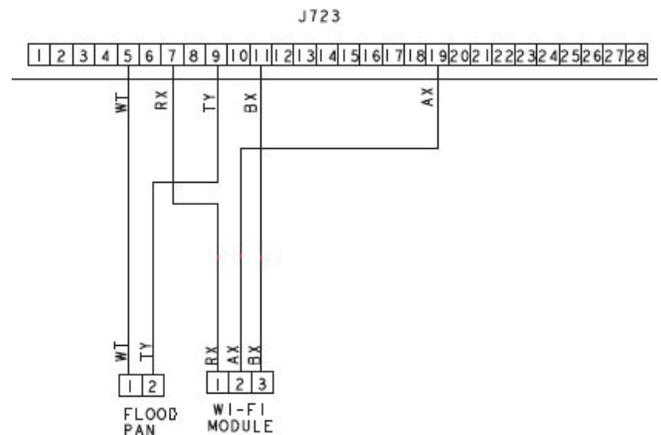
The consumer should always consult the GE ConnectPlus Team for connection concerns. They are able to assist consumers through the connection process. If a service technician is required for a no-connection concern, diagnosis starts by verifying the module LED flashes during the first five minutes of power-up of the dishwasher. The LED can be viewed by looking at the module from the front of the dishwasher with the toe kick and insulation removed. It indicates the module is receiving operating voltage. If the consumer has called the GE ConnectPlus Team and is unable to connect, the GE ConnectPlus Team may determine that the module may need to be replaced. If the module is replaced in the field, the Wi-Fi security tag also must be replaced since each module has a unique network name and password.

## Diagnostic Voltage Checks to Wi-Fi Module

Entering Consumer Error Mode (see the **Consumer Error Mode** section of this service guide) may indicate an F6 Fault. If F6 is detected, the Wi-Fi Module, UI or wiring may be at fault.

If the module LED does not blink, check for DC voltage as described below. The main control board outputs 5 VDC on connector J723, pins 7 RX (red) – 11 BX (black). This voltage powers the module at all times, and the LED will flash for the first 5 minutes after power-up.

- If 5 VDC is present and the LED is not flashing during the first 5 minutes of power-up, the module should be replaced.
- If 5 VDC is not present, the main control should be replaced.
- If the dishwasher is connected to power but not installed, voltage may be checked at the Wi-Fi module between pins 1 RX and 3 BX.



# Tub Lighting

## ZDT915 and ZDT975 Only

Tub lighting is actuated when the door is opened. If the door is opened for longer than 15 minutes, the light will turn off automatically. The light algorithm will reset when the door is closed and then reopened.

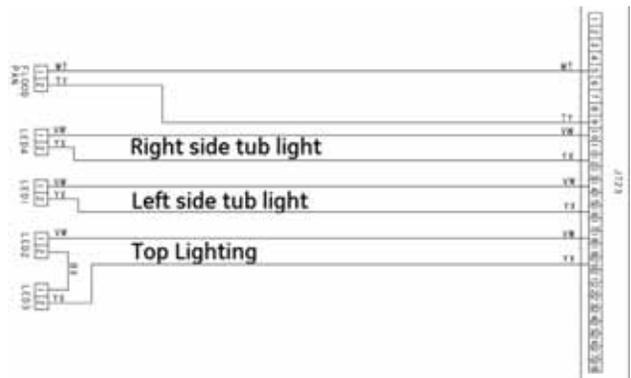
There are four lights in the tub lighting system, two on the top, one on the left side and one on the right side. The top two LED lights have a mounting nut above the tub and a light/lens assembly which will come with a seal. The left side is mounted with the connector at the top, and the right side is mounted with the connector at the bottom. They are both the same part number. The seal comes with the lens assemblies on both the top and side light lens assemblies. Remove the 1/4 in. hex screws. The left side mounting bracket slides up to remove, and the right side slides down to remove.



## Diagnosis

The two top lights are in a parallel circuit and can be checked for 12-14 VDC at the lights (**yellow** on the right side top light, to **violet/white** on the left side, or at the main control board on connector J723, pins 18-20).

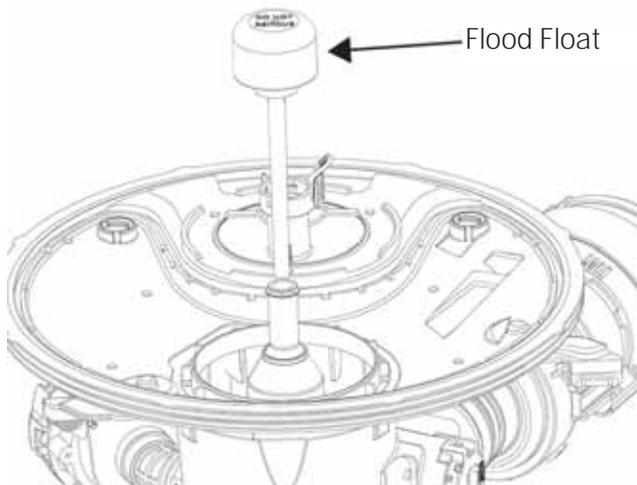
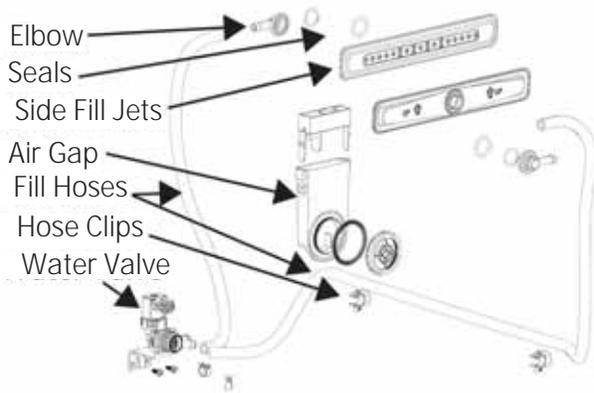
Side lighting voltages can be checked for 19-22 VDC at the left or right side light assemblies, or at the main control board on connector J723, Pins 10-12 (left side) and Pins 14-16 (right side).



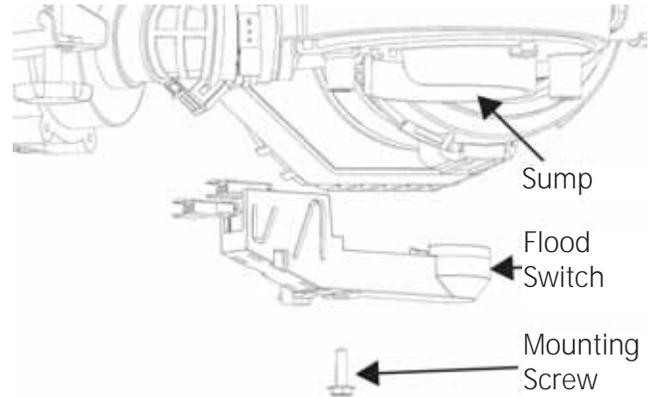
# Fill System

The dishwasher has a fill volume of an approximate .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 flow rate 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. All models have side fill jets, introducing water from both sides of the tub.

## Components

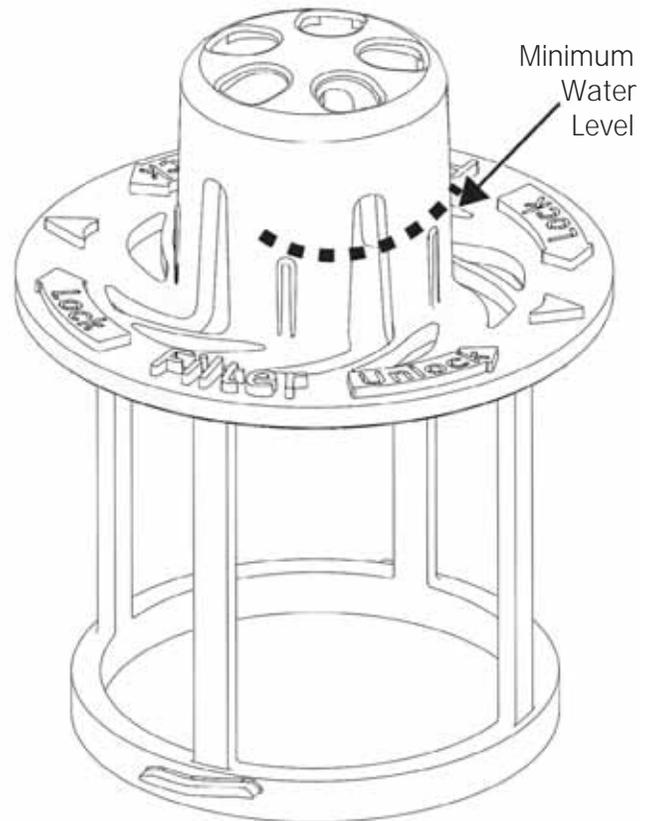


## Flood Switch

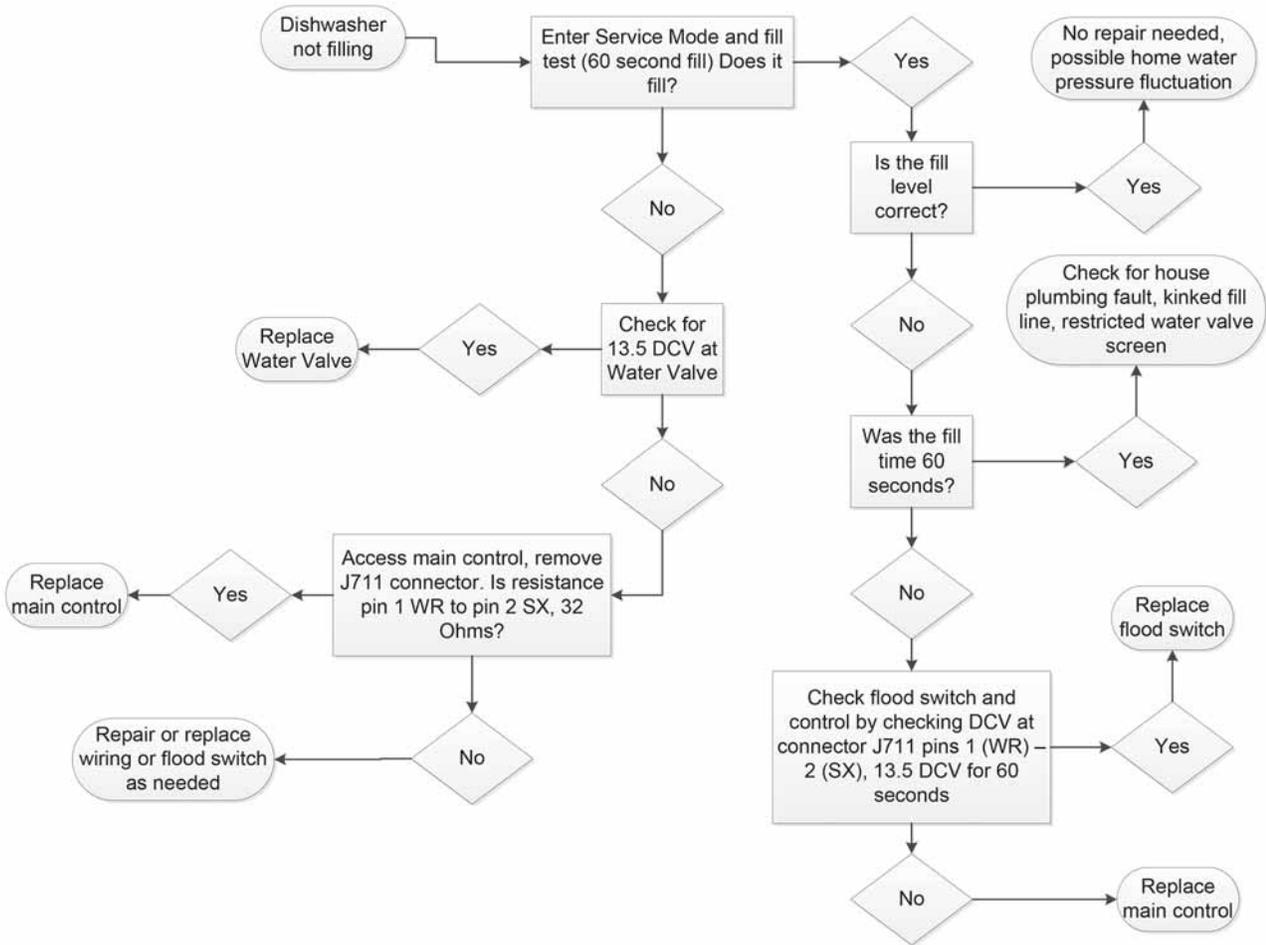


## Water Level

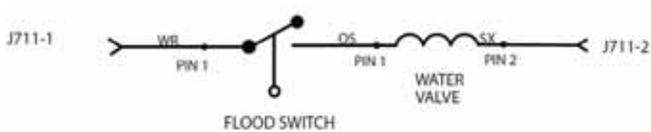
To check for proper water level, place the dishwasher in Service Mode and run the Fill Test (see the **Service Mode** section in this service guide). Water must reach the level shown below.



# Diagnostics



## Strip Circuit



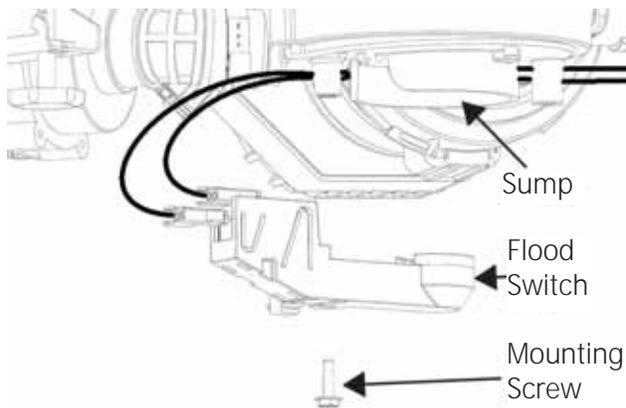
## Flood Float and Switch

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

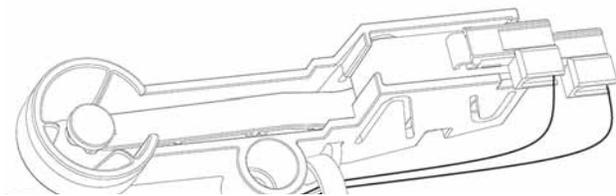
### Flood Switch Removal

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 Protection Pan** section of this service guide.

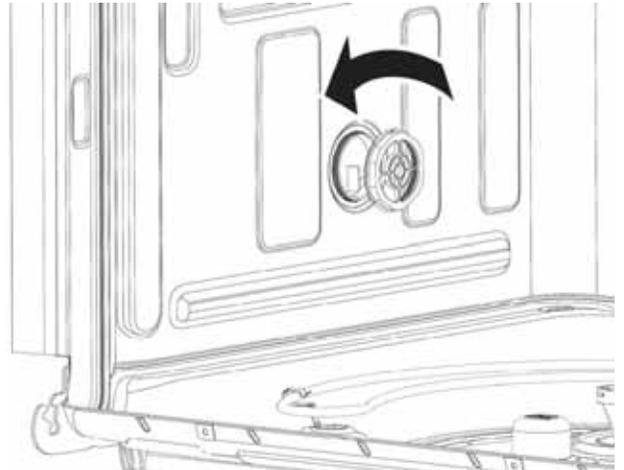


4. Some installations may allow flood switch removal without removing the sump (see **Sump Module Removal** section of this service guide, if needed).
5. The flood switch may now be removed by removing the 1/4 in. hex head screw.

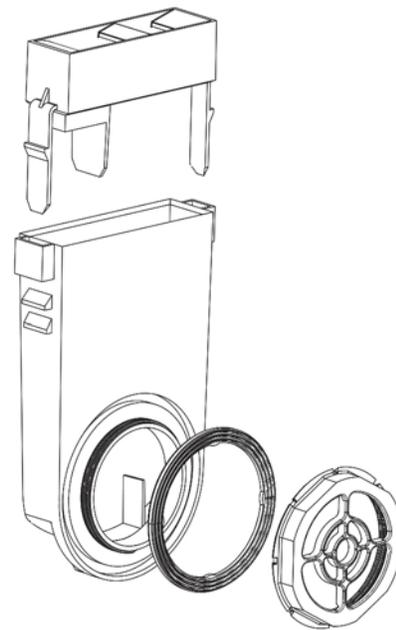


## Air Gap

The air gap allows air to enter into the tub during the dry portion of the cycle. It is located on the left side of the dishwasher tub, and must be removed from the installation to access. Remove by turning the mounting nut counterclockwise from the inside of the tub.

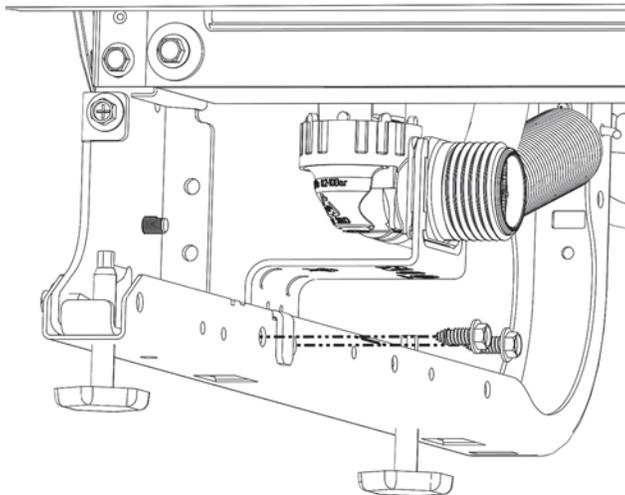


The air gap may now be removed from the outside of the tub. There is a gasket between the air gap and the tub.

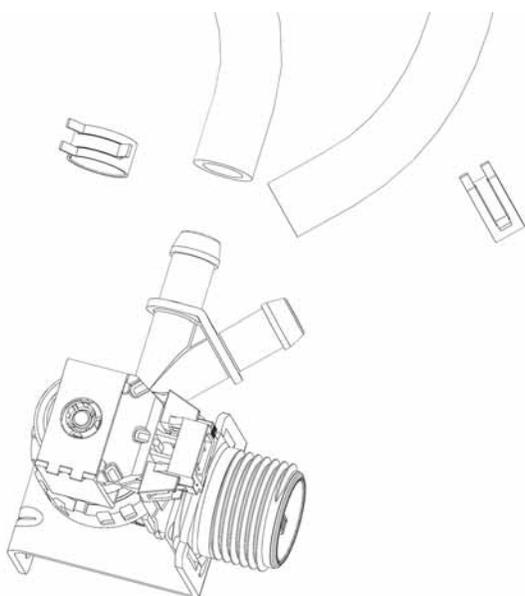


## Water Valve Removal

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.

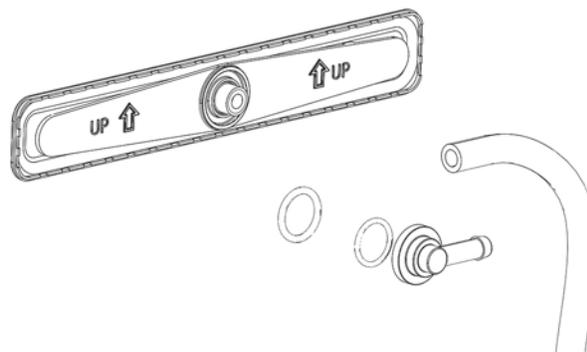


4. Slide the bracket off of the leg.
5. Remove the wire harness.
6. Remove the fill hoses by using pliers to remove tension on the spring clamps.



## Side Fill Jet Assemblies

All models have side fill jet assemblies which shower the lower rack from both sides during the fill cycle. An elbow transitions the fill hoses to the assembly and secures the jets to the tub. A seal is located on both the inside and the outside the tub.



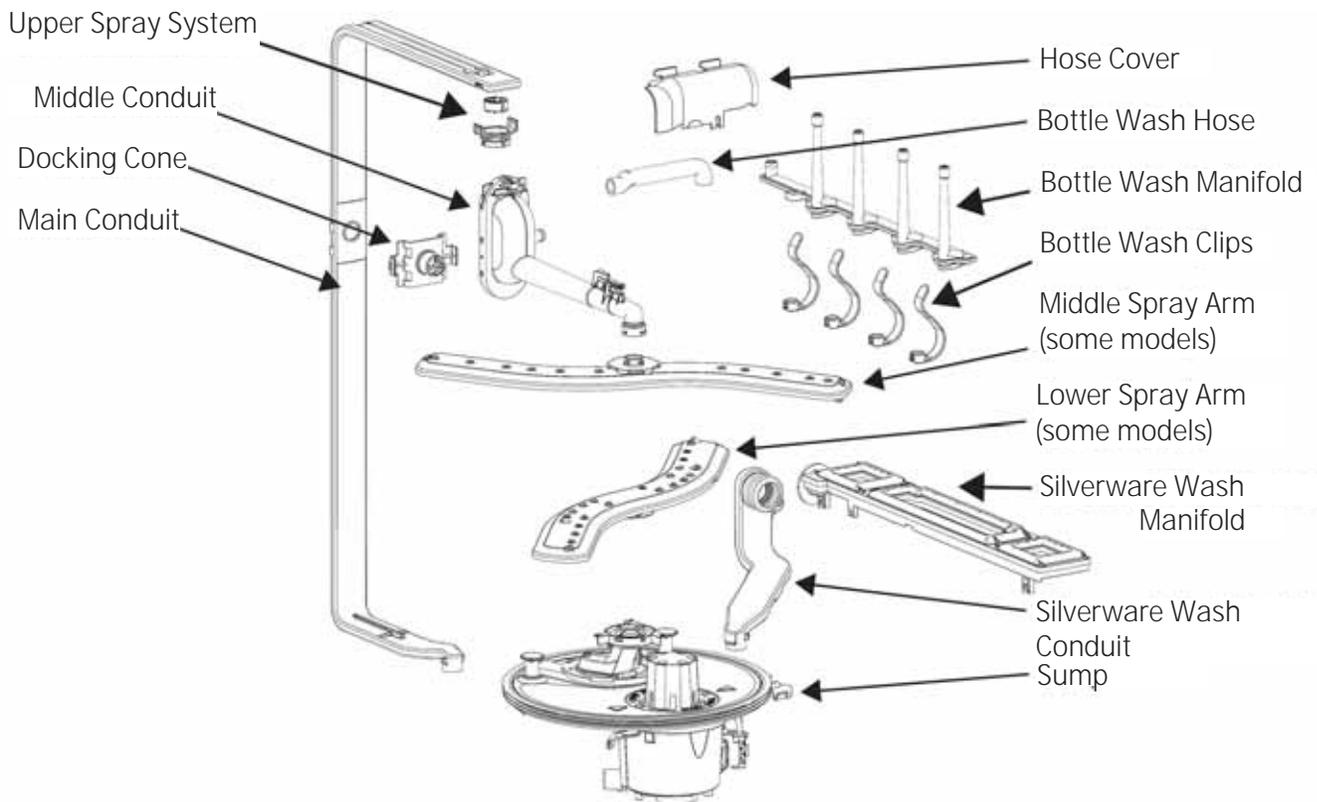
The side jet assembly is the same part for both the left and right sides of the tub. Orientation is important to proper operation. If the side fill jet assembly restricts (example, from mineral deposits), the bottom of the assembly has a weep hole which will allow water to escape into the tub.



# Circulation System

With only .83 gallon 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 @ 5 PSI
- **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 flood switch)
- **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 later 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  $\pm 5$  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.

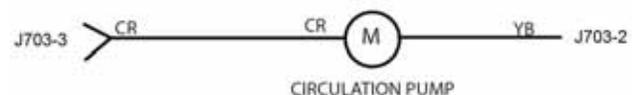
### To Use WX05X20002 Clear Door

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.
7. **WARNING:** To prevent any damage, do not close the dishwasher door when the clear door is in use.
8. 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 too low.

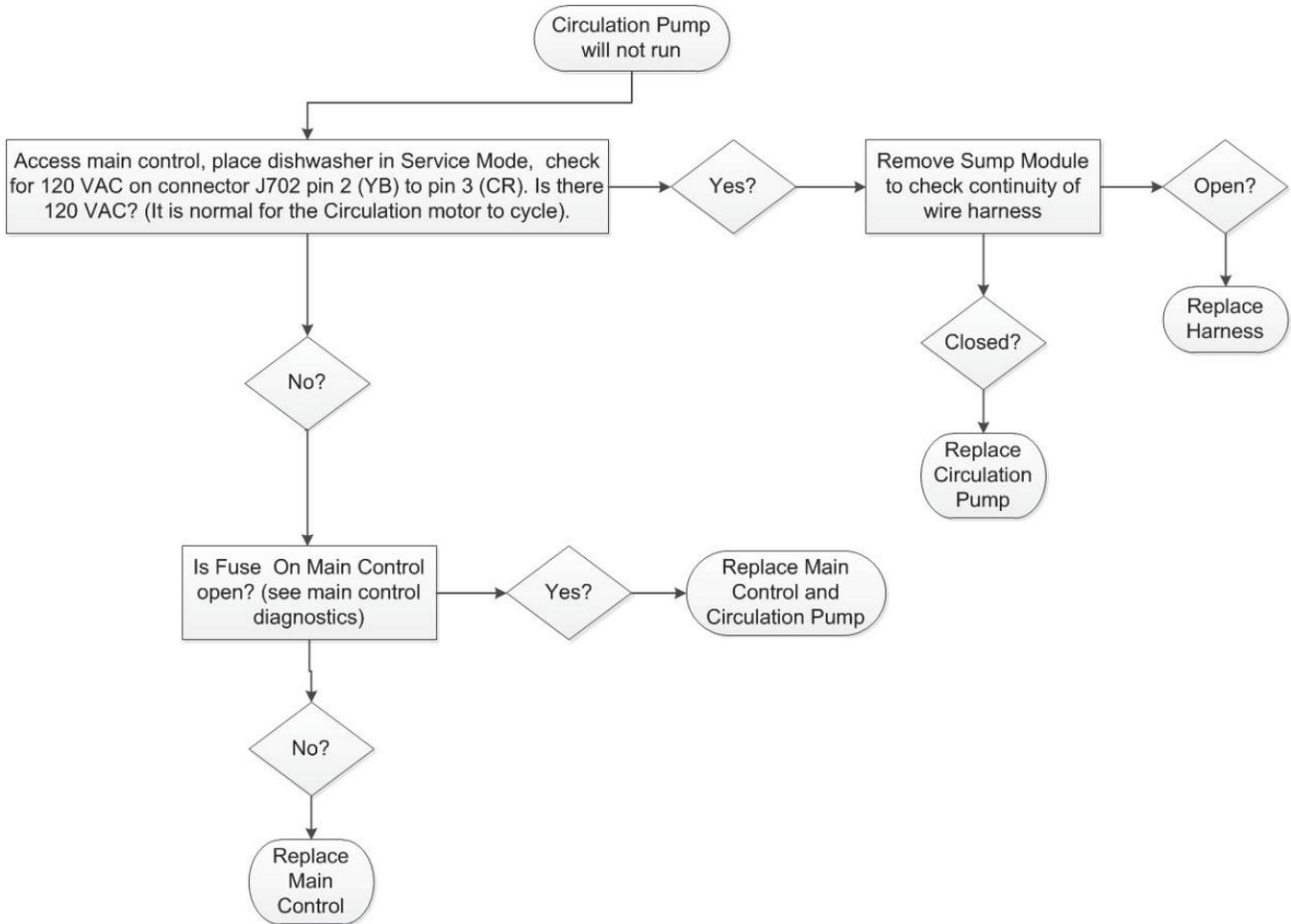
9. Initiate Fill; the dishwasher will fill for 60 seconds.
10. Initiate the Service Mode, and verify the circulation system operation.
11. Service Mode will initiate a 2 minute circulate test. Depending on the diverter position at the start of the test, the control will advance the diverter to the lower standard position (or clockwise rotation). The diverter operates 30 seconds lower CW, 5 to 10 seconds silverware wash, 30 seconds upper spray system, then lower reverse (CCW) for 30 seconds. This pattern will repeat.
12. Use a flashlight for better visibility. Look for leaks in all areas, including between the wash components.
13. Determine potential areas for further inspection and diagnoses.
14. Initiate drain; the dishwasher will drain for approximately 70 seconds.
15. Remove the WX05X20002 Clear Door.
16. Proceed with any inspections, diagnoses and repairs as detailed below. Some components may cause different symptoms depending on the severity of part fault.

### Circulation Strip Circuit

#### Single Speed Motor



## No Circulation (CDT835J, PDT820J and PDT835J Only)

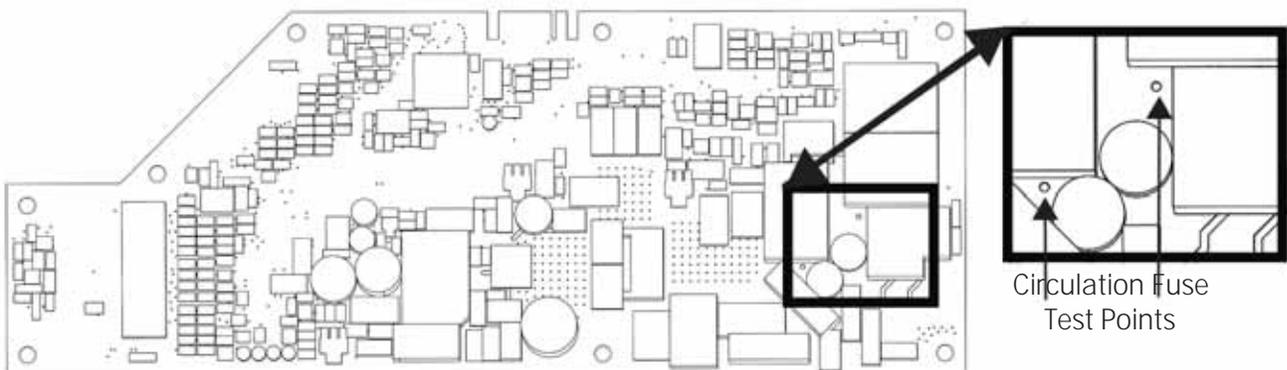


Diagnostics for variable speed motor is located in the inverter section of this guide

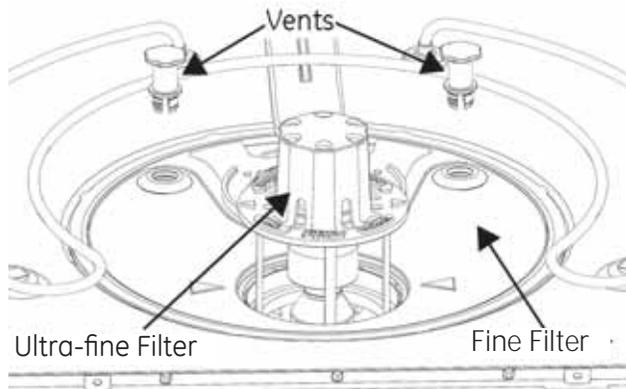
### Circulation and Drain Motor Fuse (CDT835J, PDT820J and PDT835J Only)

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

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



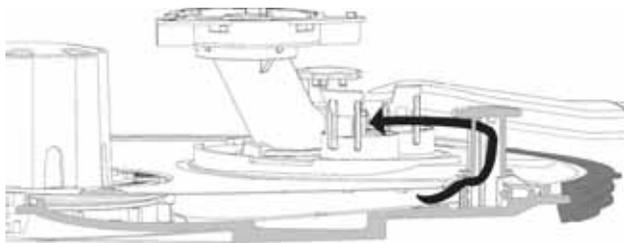
## Filtration



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. 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.

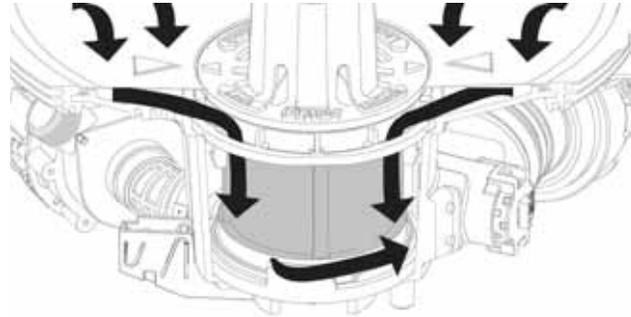


Vent Caps are twist lock; counter-clockwise to remove, clockwise to secure.

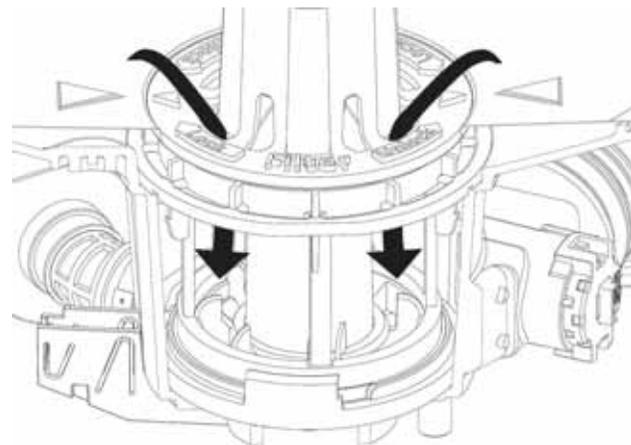
The Fine Filter is located on the sump assembly and should be cleaned each year or as needed for optimum performance. To remove the fine filter, remove the two vents at the rear of the filter and lift up on the filter.

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

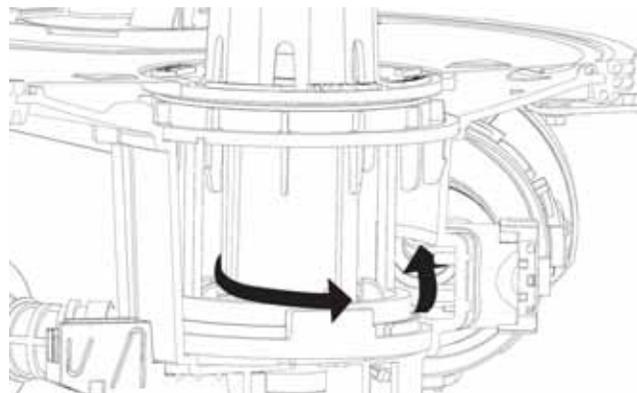
The fine filter water path is shown below. Water passes through the fine filter and flows on the outside of the ultra-fine filter, then passes through the turbidity sensor and into the circulation pump.



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, then passes the turbidity sensor and into the circulation pump.



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



## Circulation Motor and Pump Assembly

### Single Speed Motor (CDT835S, PDF829S and PDT825S)

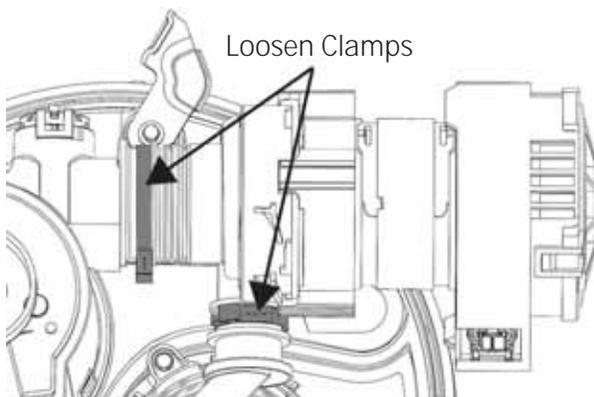
The single speed circulation motor is a DC Brushed Motor, it has onboard AC to DC rectification. Resistance cannot be properly checked on this motor because of the rectifier and diodes inside the motor shield.

### Variable Speed Motor (CDT865SxJ0xx, PDT845SxJ0xx, PDT846SxJ0xx, PDT855SxJ0xx, ZDT915SxJ0xx and ZDT975SxJ0xx).

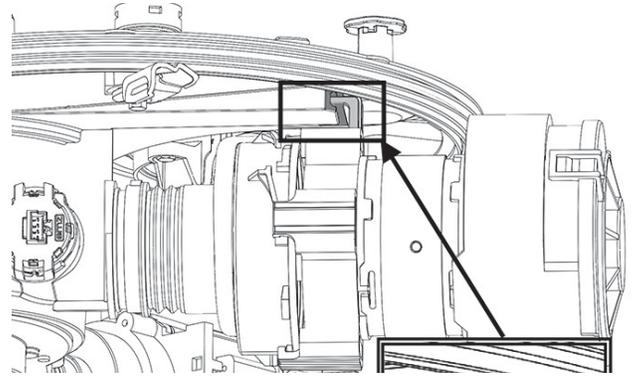
Variable speed motors mount to the sump the same way single speed motors are mounted. Both remove the same way (see the **Tub and Structure** section for sump removal instructions). Both motors mount to the sump with the same tab and hose mounting.

### 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 service guide for sump module 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.**

### Hidden Heater

A hidden heater allows for a cleaner appearance and more efficient water heating system. It also ensures that hot water is circulated to optimize cleaning. The hidden heater is non-operational during the dry segment of the cycle. When Power Dry is selected, the final rinse temperatures are raised to provide needed heat during the dry segment of the cycle. Consult the **Target / Max Temperature Limits** charts under **Target Temperatures** in the **Operational and Cycle Information** section of this service guide.

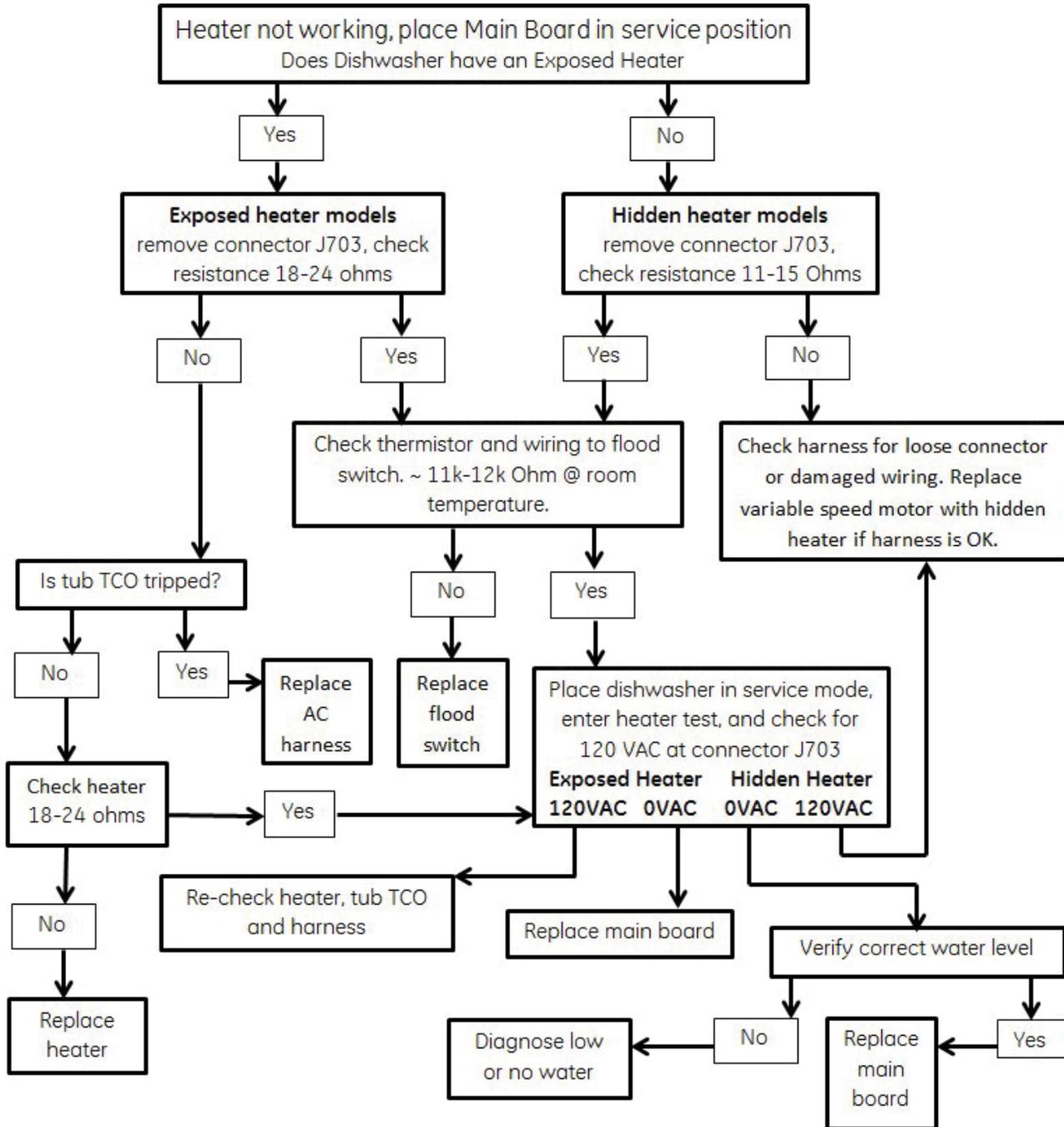
The heater will only operate if the variable speed motor and the inverter send a signal to the main control, indicating that the current draw is correct (dishwasher has water, and variable speed motor is operational). The main control reads the signal and turns the heater on.

The hidden heater has two TCO's located inside the pump motor assembly. The first TCO trips at 200°F and automatically resets at 163°F. The second is a one shot TCO which trips at 349°F.

The heater assembly is thermally adhered to a metal plate inside the pump. Also attached to the same heat transfer plate are two TCO's. Should the heater circuit fail, the complete pump assembly will need to be replaced. The heater and TCO's are not available as separate parts.

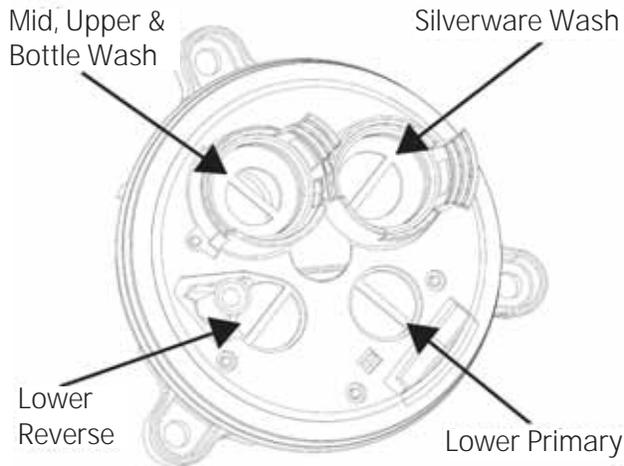
## Hidden Heater Diagnostics

Heater terminals are located on the side of the pump motor assembly, and can be tested there or at the main control board. Remove connector J703, and look for 10 to 15 ohms across the **violet** to **white/red** wires. If the circuit is open, replace the complete pump motor assembly. Voltage may also be checked with the main control in the service position. With all connectors seated, place in Service Mode, fill with water, and run the circulation pump to power the heater. Check for 120 VAC at connector 703 across the **violet** to **white/red** wires.



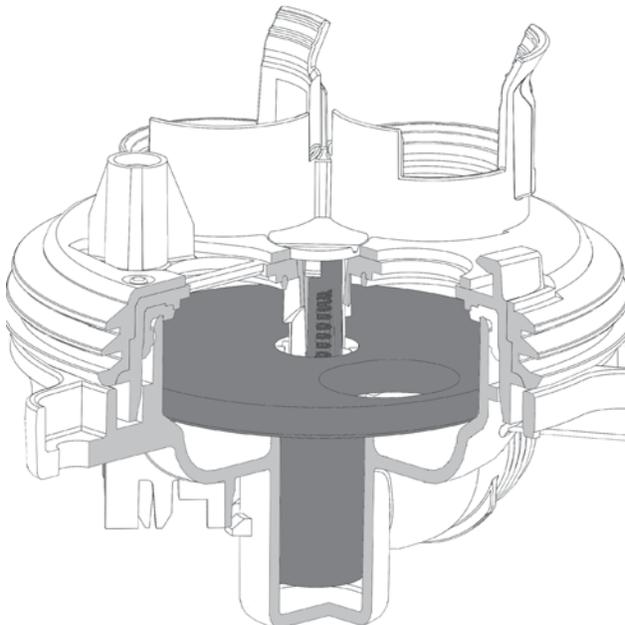
## Pressure Diverter

The Diverter is the key component which allows lower water use, by alternating water to the lower spray arm, silverware wash, mid/upper spray system (bottle wash, mid spray arm and upper spray system) or lower spray arm reverse bottle wash and upper spray system.

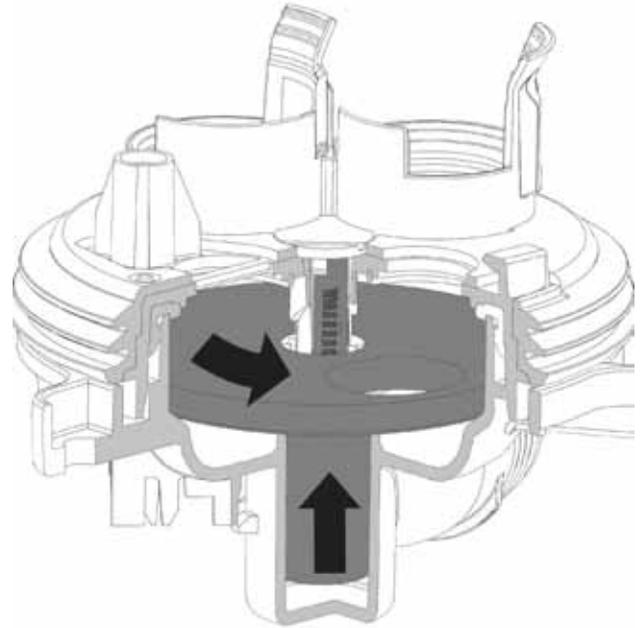


### Operation

The rotation of the power diverter is counter-clockwise as viewed from the top. The control will seek the lower primary as the start of the circulation cycle. Lower reverse and silverware wash are only used during the main wash segment of a cycle. A short spray will be detected from the silverware wash, mid and upper spray systems as well as the lower reverse until the diverter is positioned to the lower primary port.

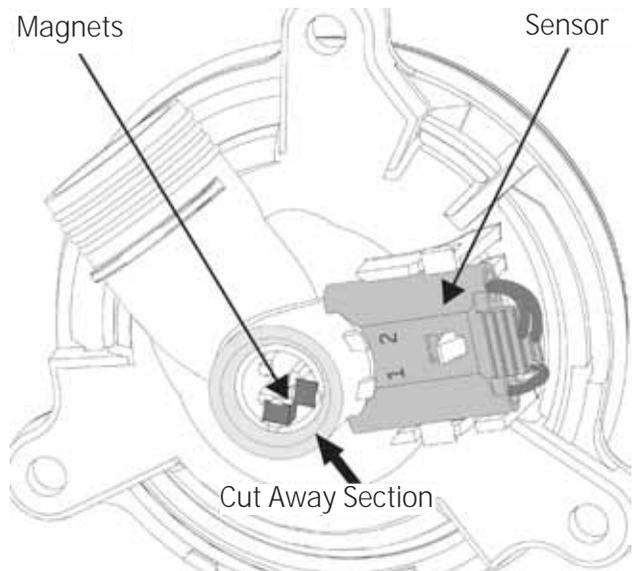


The circulation pump turns on, water pressure causes the diverter plate to rise and index 1/8 turn. The pump turns off, resulting in the diverter plate to lower and index 1/8 turn. This repeats until the diverter reaches the position the control is set for.



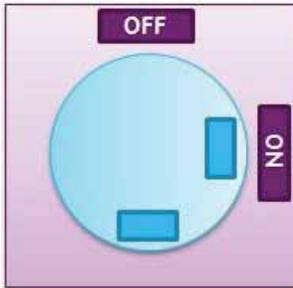
### Diverter Position Sensor

A diverter sensor is used to detect the position of the diverter. A sensor contains two reed switches used on the outside of the diverter. The sensor is part of the DC harness. This sectioned illustration of the bottom of the diverter has been sectioned to show magnets located on the bottom of the diverter plate. The diverter is only available as an assembly.

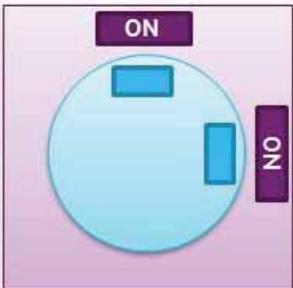


The main control seeks the Lower Primary as the first full circulation segment in the main wash, followed by silverware wash, upper spray system (which includes mid spray arm), bottle wash and upper spray system. Lower reverse is the last of the rotation before repeating the full rotation until the main wash is complete. Silverware wash and lower reverse are not used in pre- or post-rinse segments of the cycle. The illustrations below show the sensor ON or a closed circuit, and OFF or an open circuit as determined by the magnets on the diverter plate.

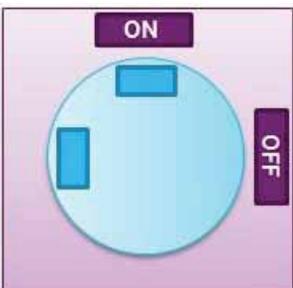
### Lower Primary



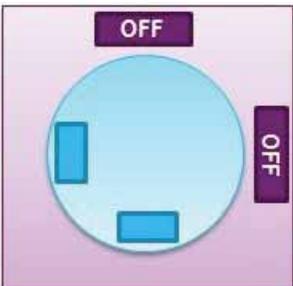
### Silverware Wash



### Mid and Upper Spray Systems



### Lower Reverse



## Diagnosing a Pressure Diverter

Use a Clear Door (Part #: WX05X20002) to diagnose a mechanically inoperative diverter.

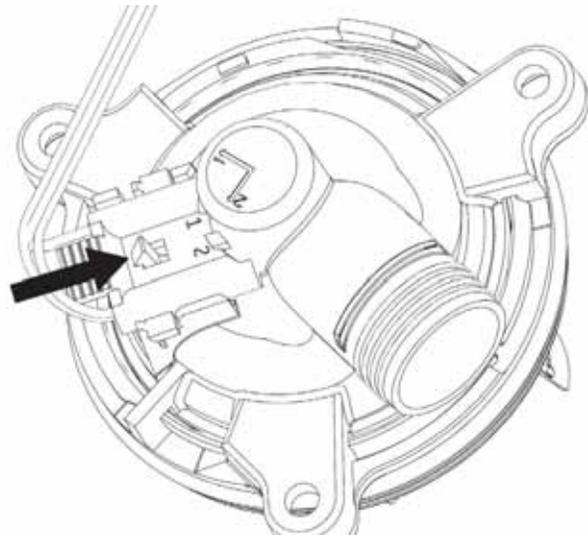
If a diverter is not changing positions when the circulation motor stops and starts, and the dishwasher has proper water level with a normal spray pattern on the zone that is working, the diverter is mechanically inoperative and should be replaced.

A dishwasher that starts and stops every 3 to 10 seconds (3 to 5 seconds for single speed motors, and 6 to 10 seconds for variable speed motors) may indicate a bad sensor. If the water changes wash zones, the sensor, connections or harness may be at fault. Switches normally open and close when the circulation pump is on, causing pressure to raise the diverter plate.

## Diagnosing the Diverter Sensor

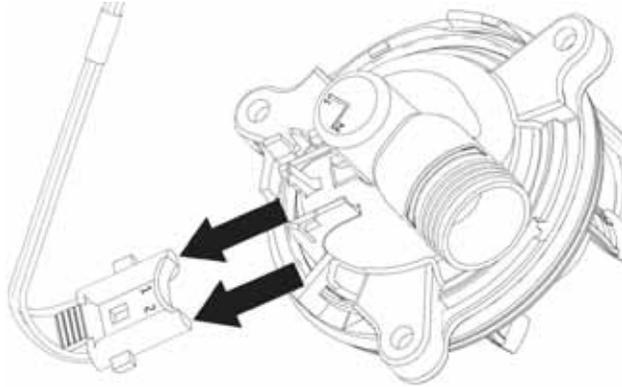
A magnet can be placed on the end of the sensor to test the switches. Each switch will open and close as the magnet triggers the switch. The circuit will read as open or closed.

1. Access the sensor (see **Sump Module Removal** section of this service guide).
2. Push in on the tab to release the sensor and lift up to remove.

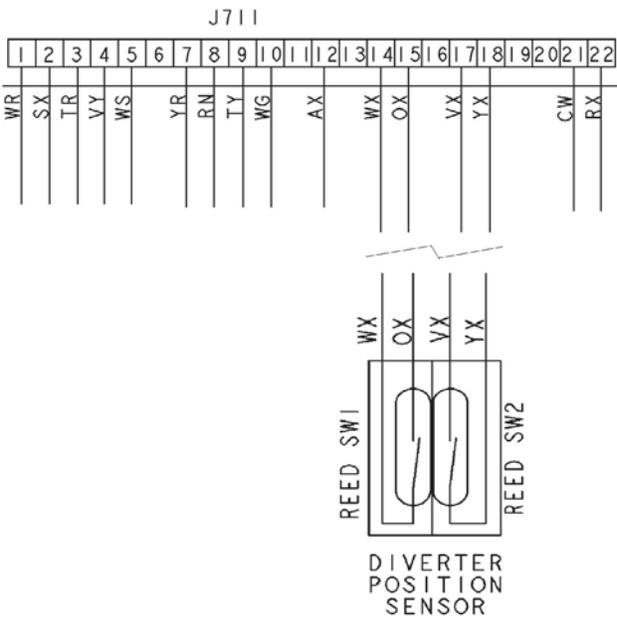


3. Access connector J711 on the main control.

- Continuity can be checked across **white/orange** (pin 14 and pin 15) and **violet/yellow** (pin 17 and pin 18). An open circuit should be read. To close each switch, place a magnet at the end of the sensor to close the switch.

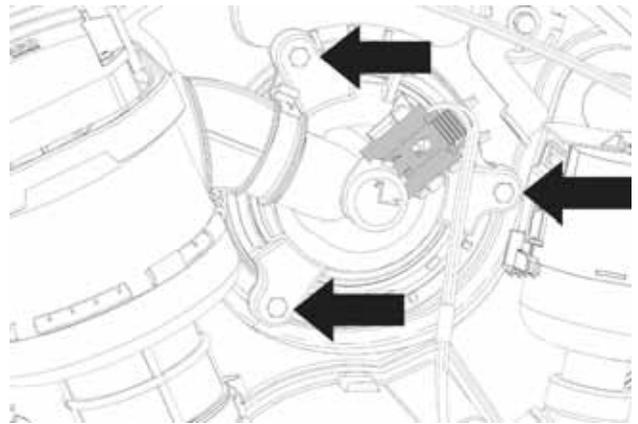


#### Diverter Sensor Circuit



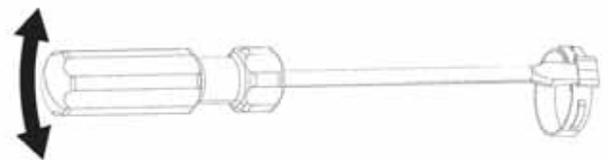
#### Diverter Removal

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

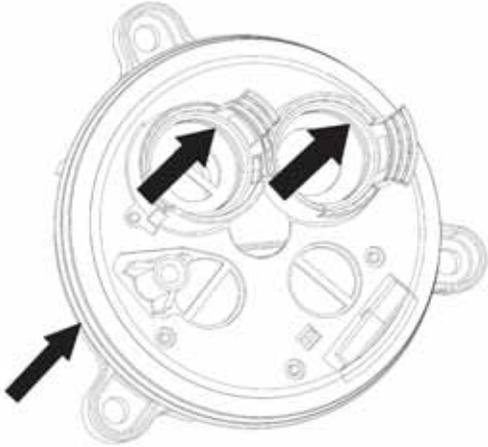


- Remove and discard the one-time clamp.

**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.



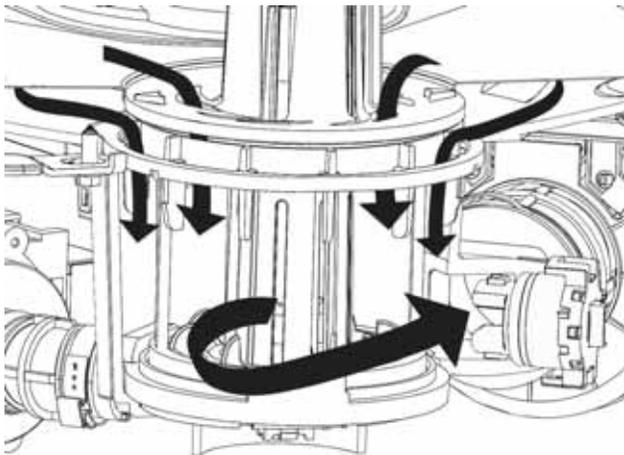
**Diverter Installation Tip:** Using rinse aid or water on the diverter seals will aid diverter installation.



### Turbidity Sensor and Thermistor

#### Operation

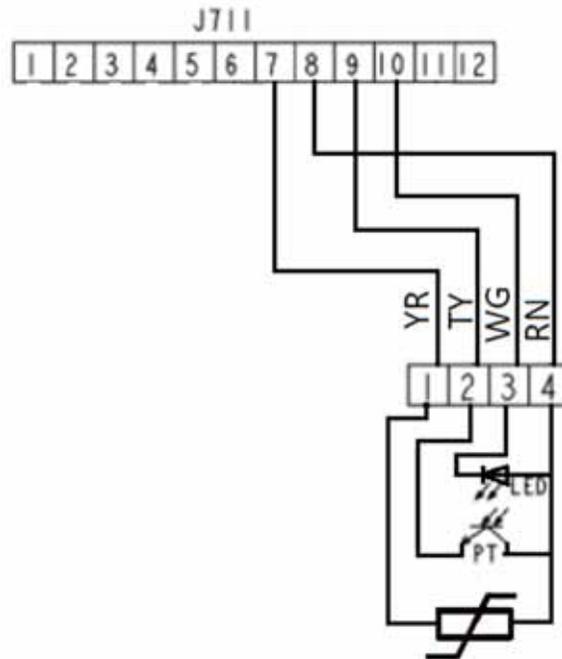
The Turbidity Sensor measures the amount of suspended particles of the filtered wash water. The sensor assembly contains a LED transmitter which emits light, and a receptor (similar to a photo-cell) which receives light. The wash water passes between the transmitter and receptor, then the control interprets 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.



#### 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.

To check the thermistor, access the Main Control (see **To Access Main Control Board** section under **Main Control Diagnostics**). Check resistance on connector J711, pin 7, YR to pin 8, RN. The sensor may also be removed and the two outside terminals may be checked. Use the table above to calculate the correct resistance reading.



#### 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

(Continued next page)

## 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.

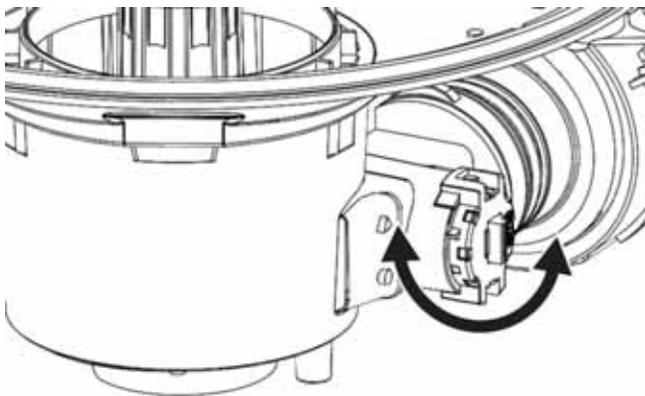
## Turbidity Sensor Diagnostics

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 Consumer Error Mode to look for Turbidity Sensor Faults.

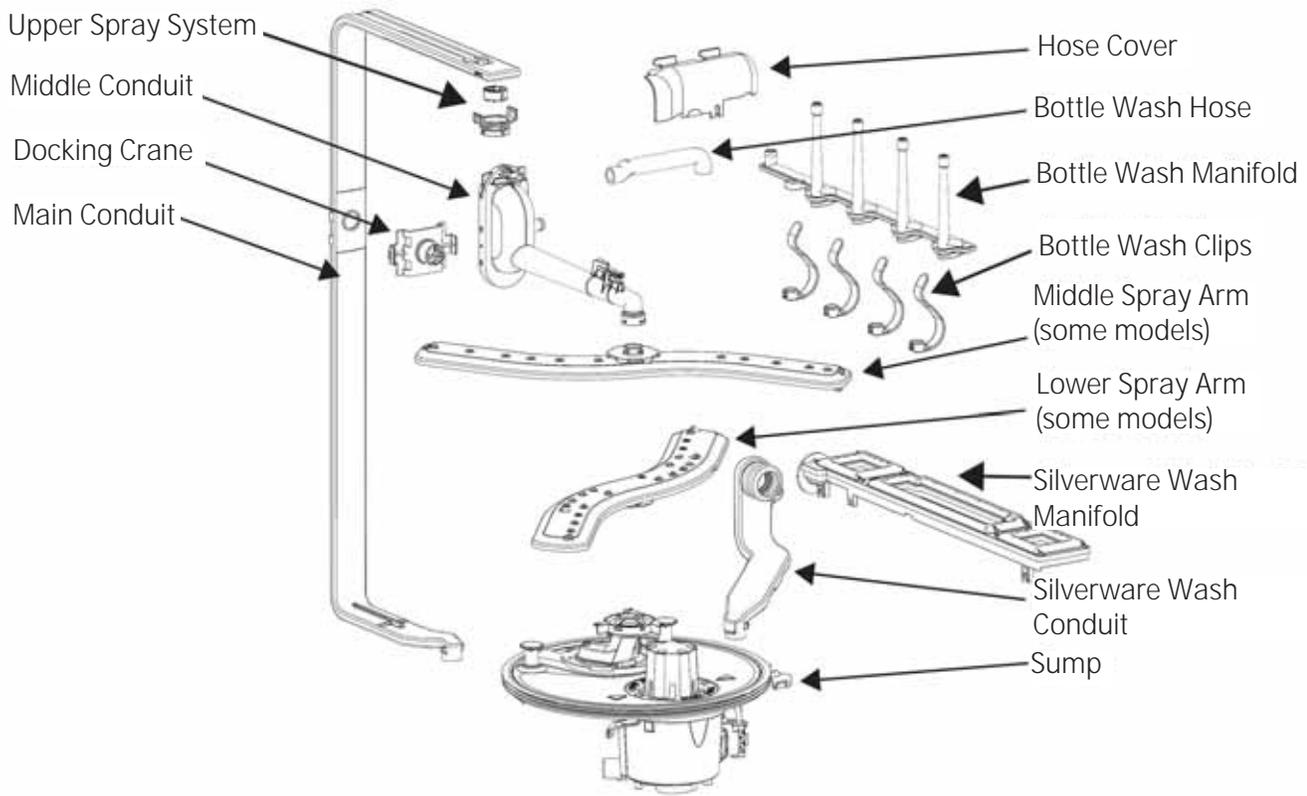
To check the thermistor, access the Main Control (see **To Access Main Control Board** section under **Main Control Diagnostics**). Check resistance on connector J711, pin 7, YR to pin 8, RN. The sensor may also be removed and the two outside terminals may be checked. Use the table to the left to calculate 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



## Lower Spray Arm and Conduit

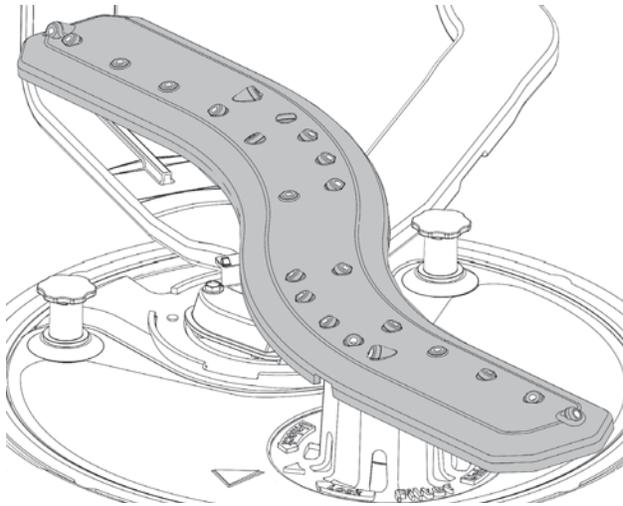
The lower spray arm provides an upward directed water flow. All models feature reversing lower spray arms, turning both clockwise and counter-clockwise during the main wash part of the cycle.

During the pre-rinse and post-rinse segments, the arm turns clockwise only.

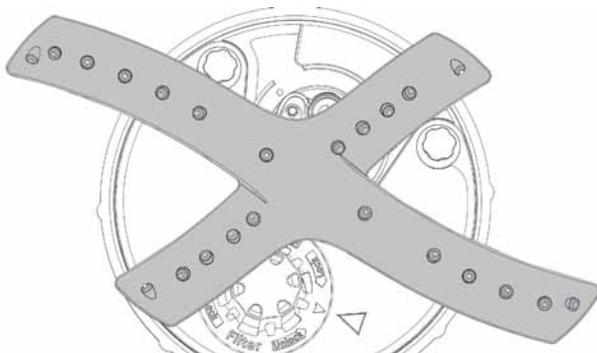
There are two designs of lower spray arms. Cafe and Profile models have the quad reversing spray arm. Monogram models have a single blade appearance, but do have reversing functionality.

The conduit is the same for all models (see removal instructions).

### Monogram Reversing Lower Spray Arm



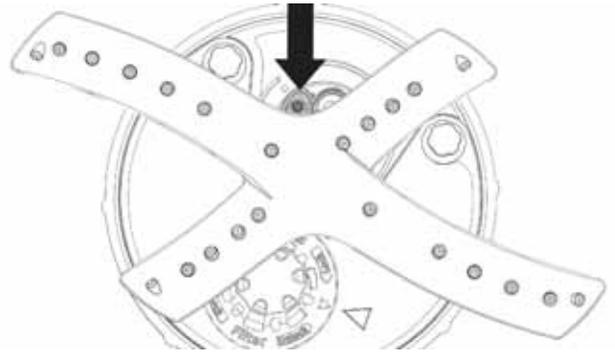
### Cafe and Profile Reversing Lower Spray Arm



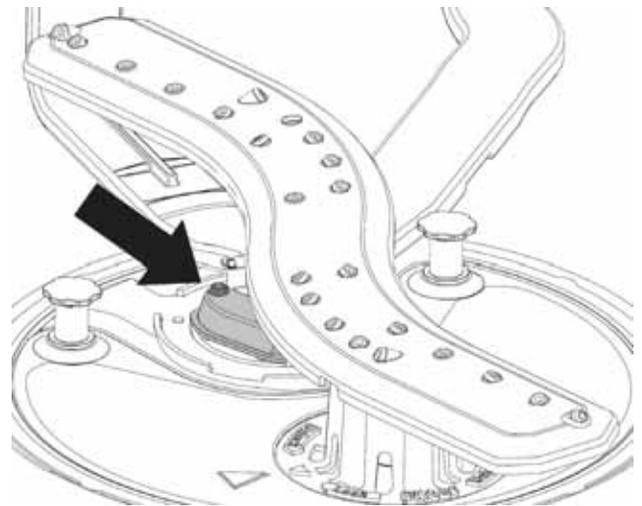
## Lower Spray Arm and Conduit Removal

1. Remove the 1/4 in. hex head screw from the conduit.

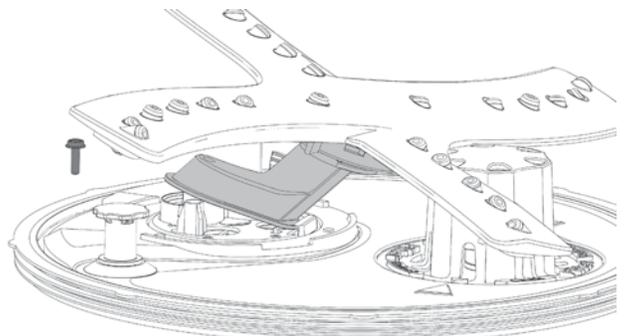
### Cafe and Profile



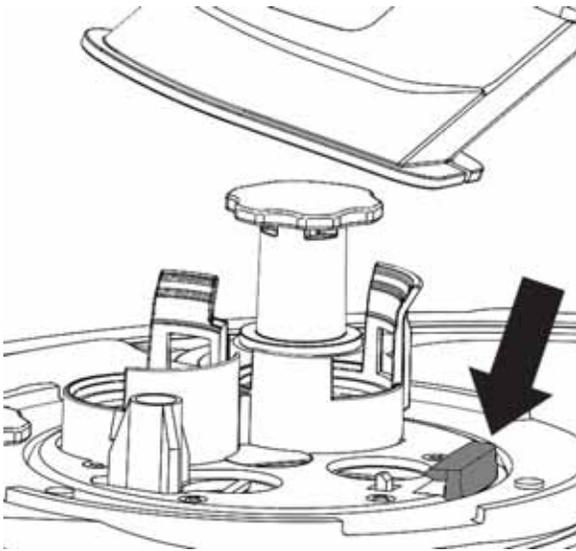
### Monogram



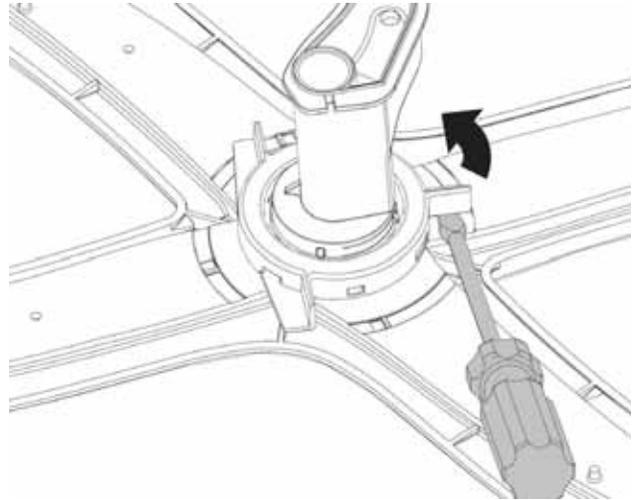
2. Tip the conduit and spray arm to the front of the dishwasher.



3. Slide the conduit out of the diverter tab.



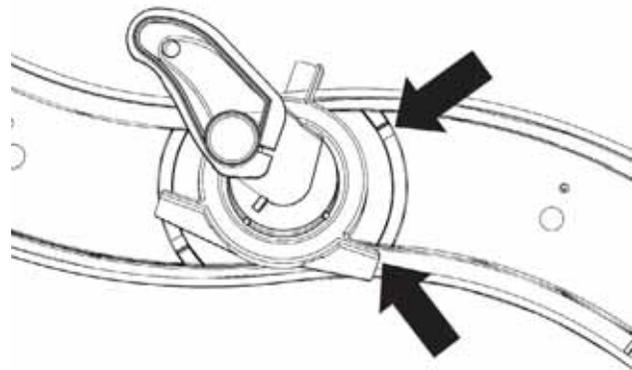
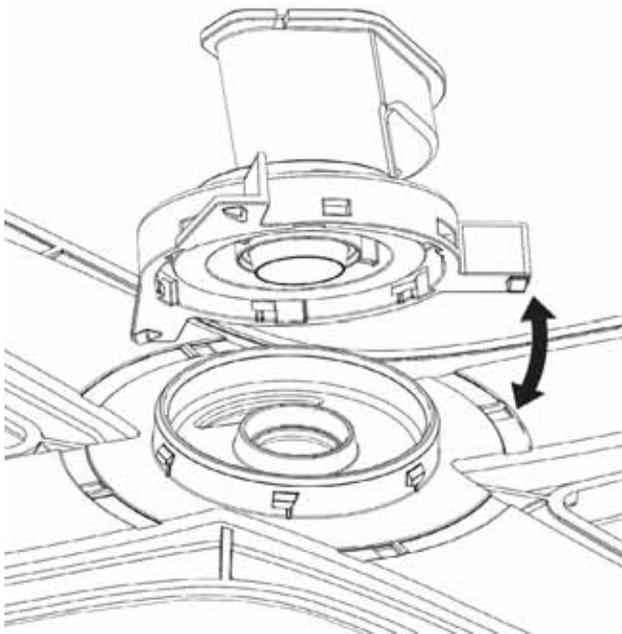
Release the tab using a small screwdriver and turn the hub counter-clockwise to separate the conduit and spray arm.



### Spray Arm from Conduit Removal

Reversing spray arms have a locking tab system to prevent spray arms from unlocking and coming off during reverse action.

Monogram models may have the hub tab locked in the spray arm tab or on the edge of the spray arm.

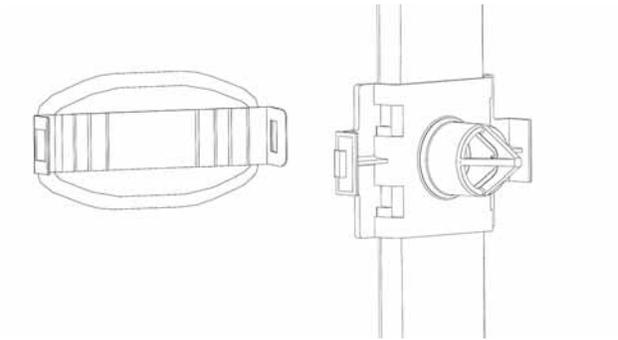


## Main Conduit

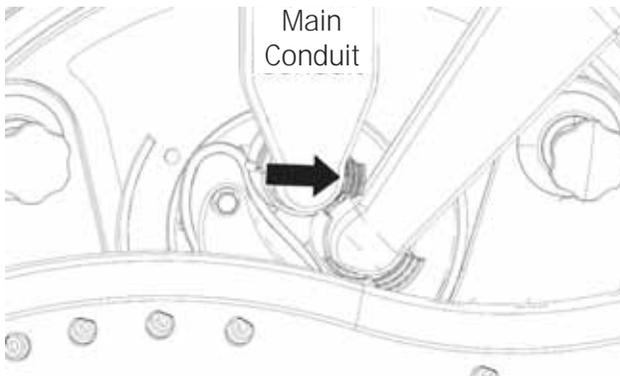
The Main Conduit supplies water to the mid spray arm, bottle wash (on some models) and the upper spray system (on some models).

### Main Conduit Removal

1. Remove both the 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.

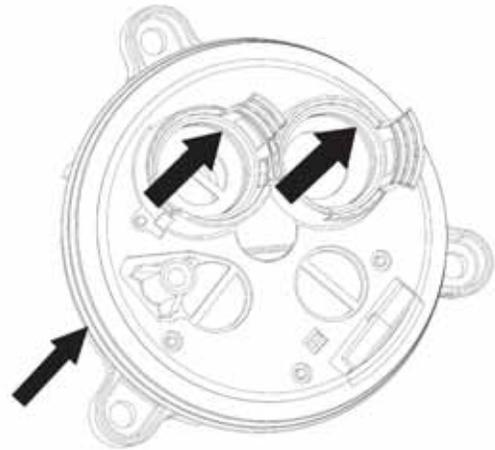


4. Push on the tab and pull up on the conduit to release from the diverter.



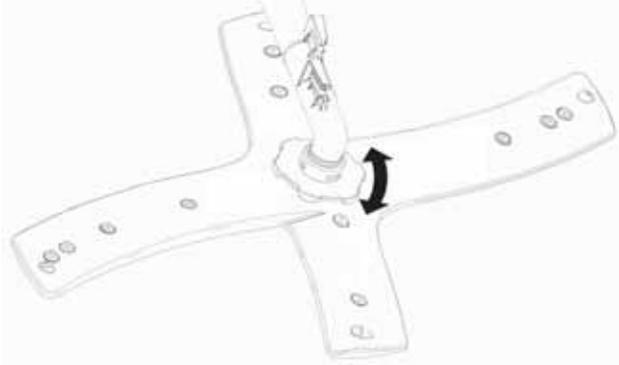
5. Models PDF820S, PDT825S and CDT835S, disengage the heater clip and flex the main conduit to complete the removal (some models).

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

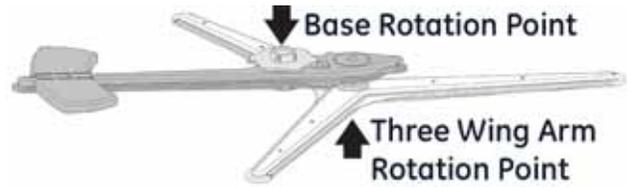


## Middle Spray Arm

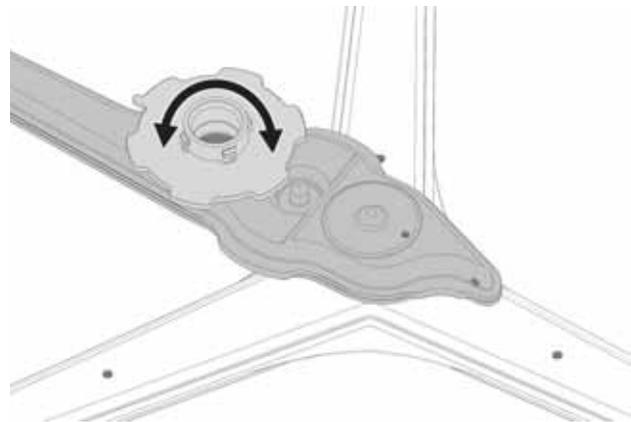
The Mid Spray Arm provides an upward directed spray pattern to the upper rack. To remove the mid spray arm, turn the nut clockwise (looking down through the upper rack).



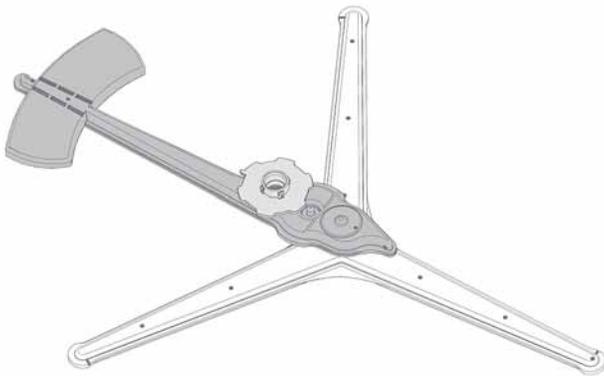
The three wing part of the assembly is mounted to the base assembly and not centered to the rack. It will have an elliptical rotation allowing the spray pattern to position spray jets to each corner of the upper rack.



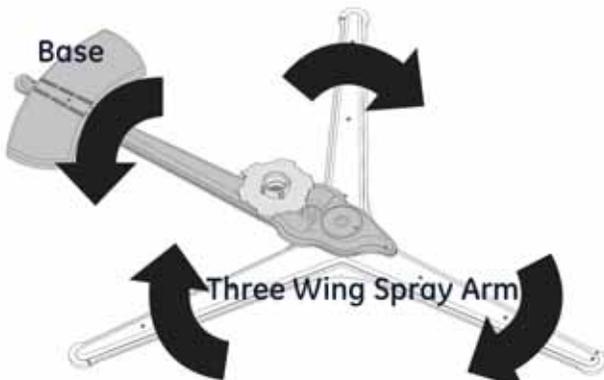
The assembly mounts to the middle conduit with the same style twist lock nut as other models in this guide. To remove, turn the mounting nut clockwise as looking from above and counterclockwise to install.



## Clean Sweep Jets Middle Spray Arm Model (PDT846SSJ only)



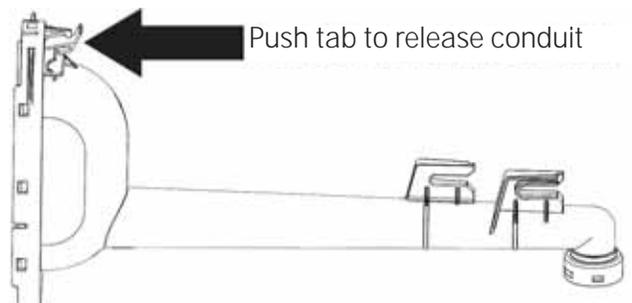
Clean Sweep Jets Middle Spray Arm has 2 counter rotating components available as one part. The base portion of the assembly has a counterclockwise rotation (as viewed from above) and has a paddle appearance (shown as a shaded part). The three wing appearance portion of the assembly rotates clockwise (as viewed from above) the spray arm is internally gear driven.



## Middle Conduit

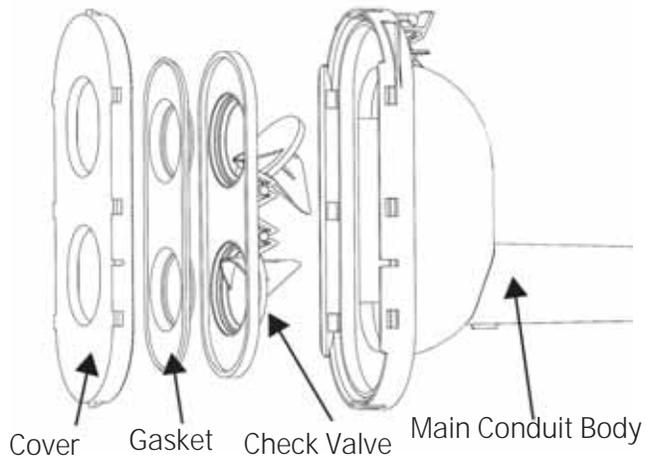
The Mid-level Conduit supplies water from the main conduit to the mid spray arm and bottle wash feature (some models). All models have adjustable racks. An adjustable conduit is used to allow proper engagement of the main conduit to the mid conduit in both rack positions.

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

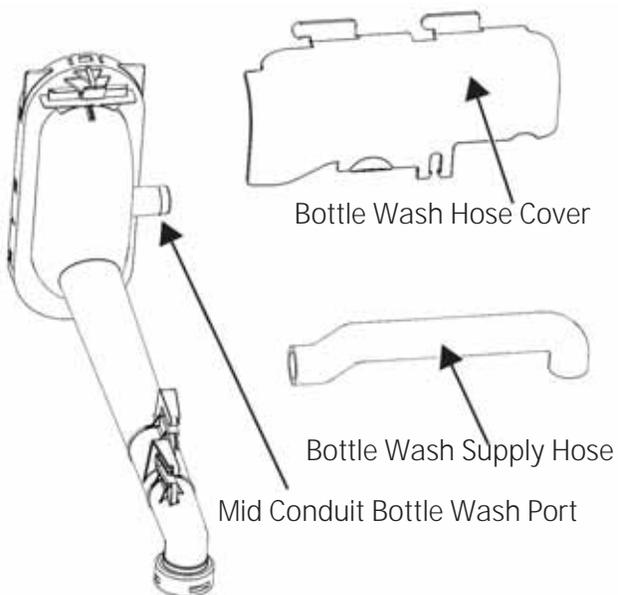


(Continued next page)

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



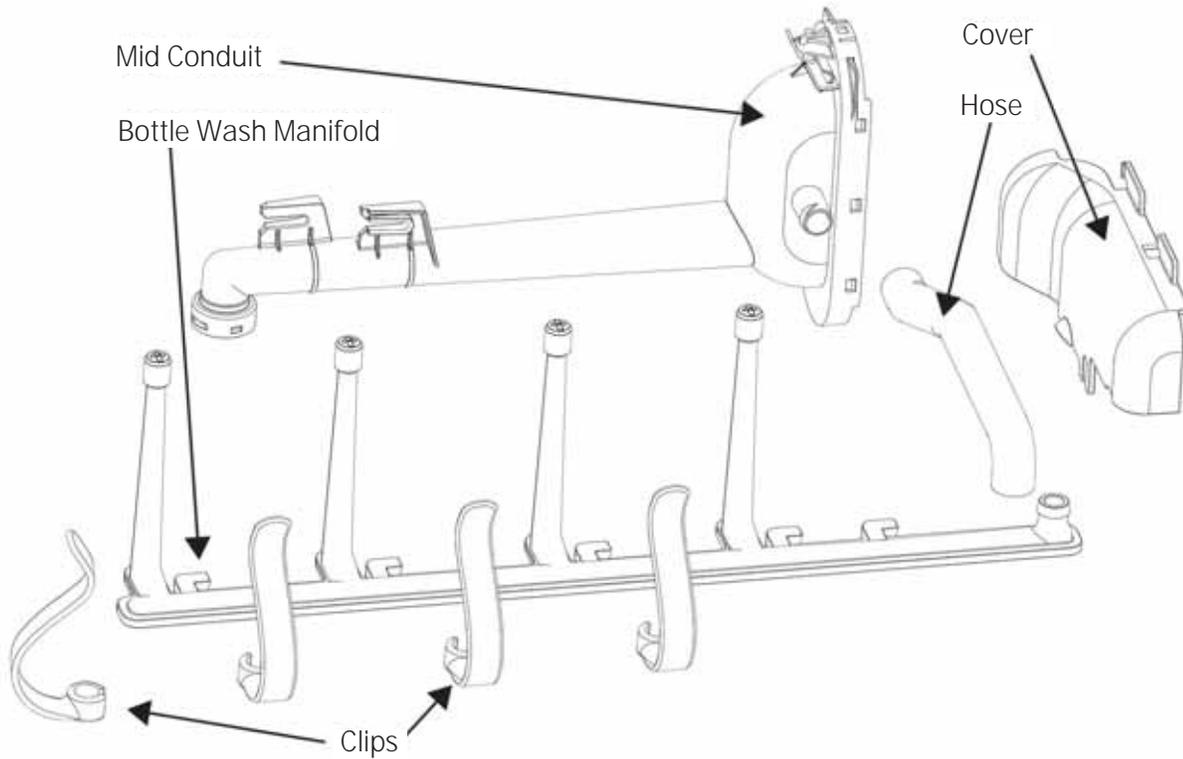
The middle conduit has a port on the right side to allow water flow to the bottle wash feature.



## Bottle Wash System

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 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 Middle Rack section of this guide.

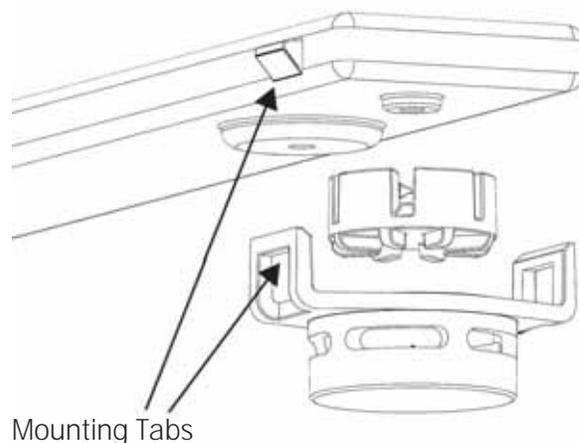


## Upper Spray System

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

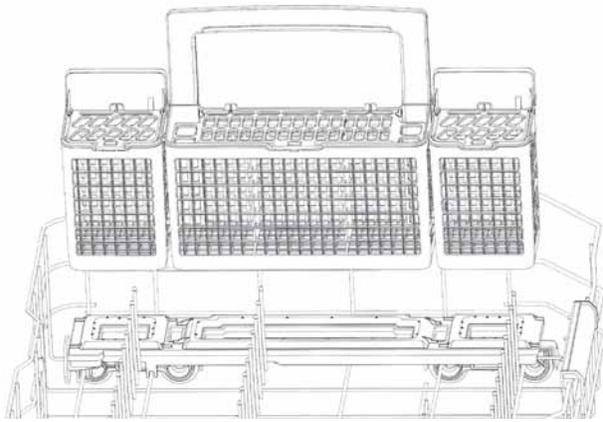
The spray bracket is attached to the main conduit by means of tabs.

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

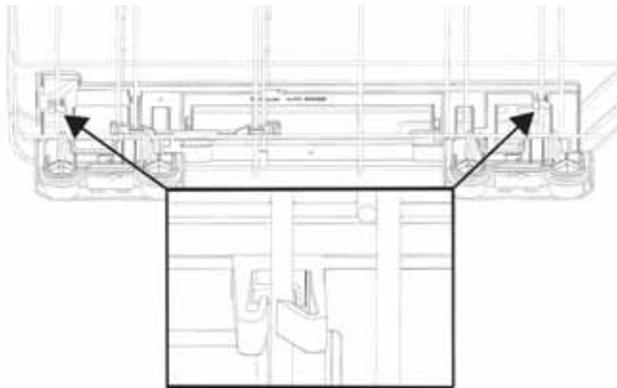


## Silverware Wash

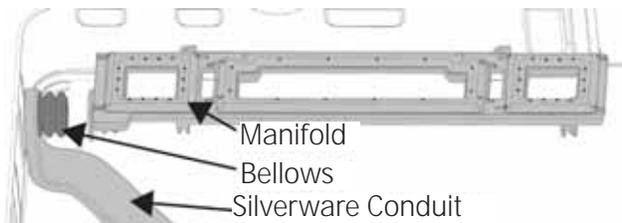
Silverware Wash is a new feature which directs water directly to the silverware basket. A manifold is located inside the lower rack.



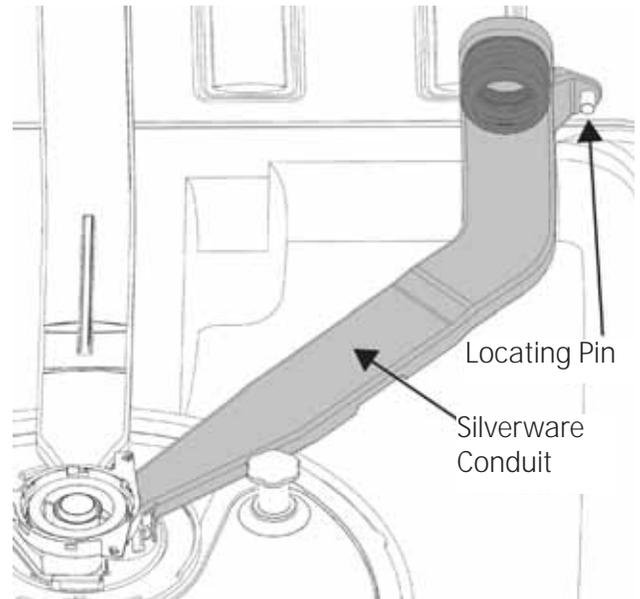
The Manifold is secured with two release tabs.



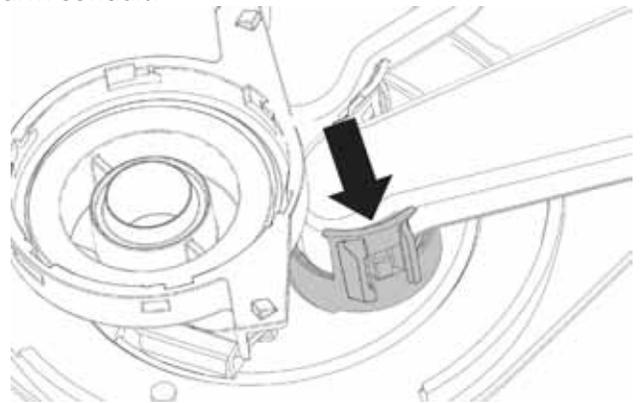
The manifold seals to the silverware wash conduit with a bellows.



The conduit is placed on a locating pin on the back wall of the tub, and connects to the four port diverter using the same type of tab as the main conduit.



To remove the silverware conduit from the diverter, push the tab and lift the conduit out of the diverter port. It may be helpful to remove the lower spray arm conduit.



Using rinse aid or water on the diverter seals will aid installation.

Operation characteristics are discussed in the Pressure Diverter section of this service guide.

# Drain System

## Operation

### CDT835S, PDF829S and PDT825S

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

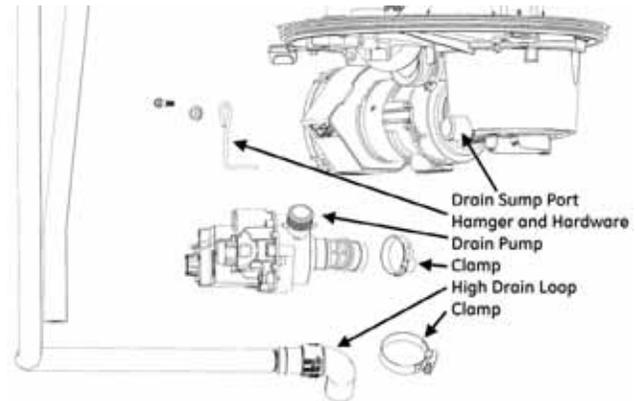
Some Cycles have a Partial Drain, the Algorithm changes to:

- 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.

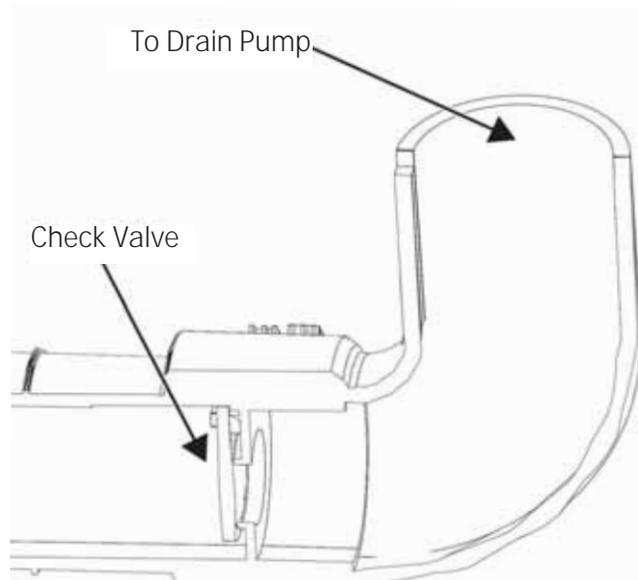
**NOTE:** Poor draining will result if the drain hose is higher than 72 inches.

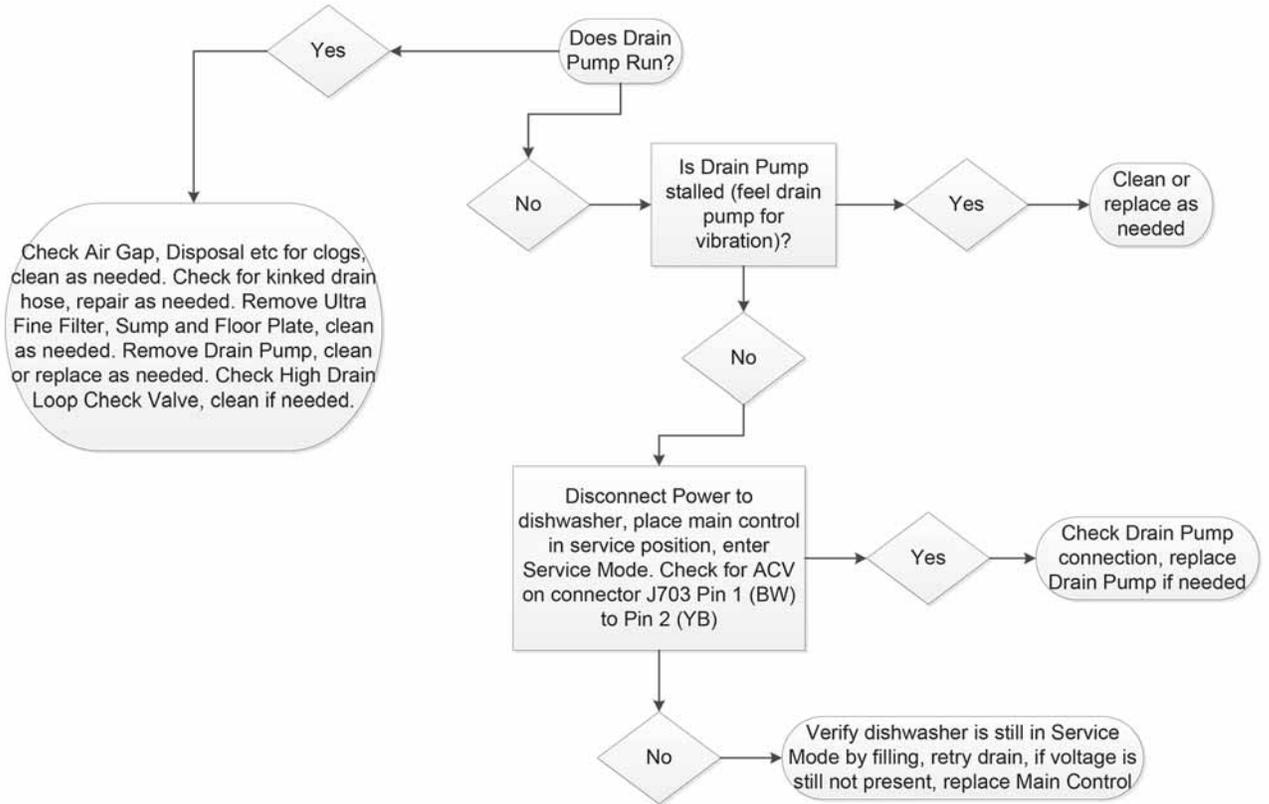
## Drain Components



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

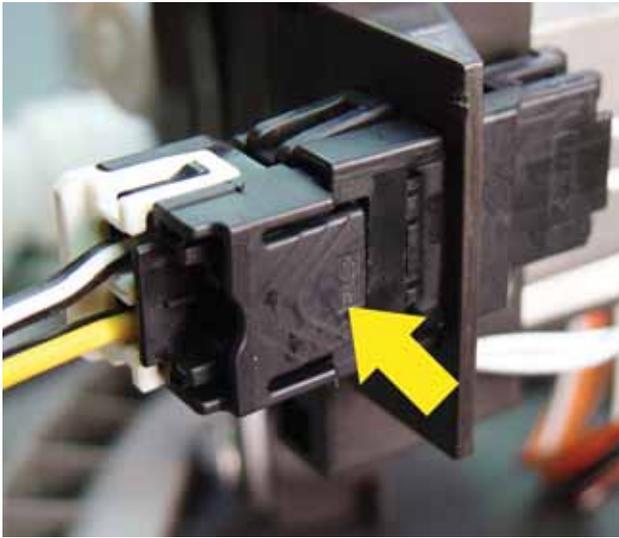


Diagnostics Variable Speed Drain Motor

Diagnosing the variable speed drain motor involves the motor, inverter, circulation pump and main control. These are all located in the Electronics Controls, Inverter Control Board section of this service guide.

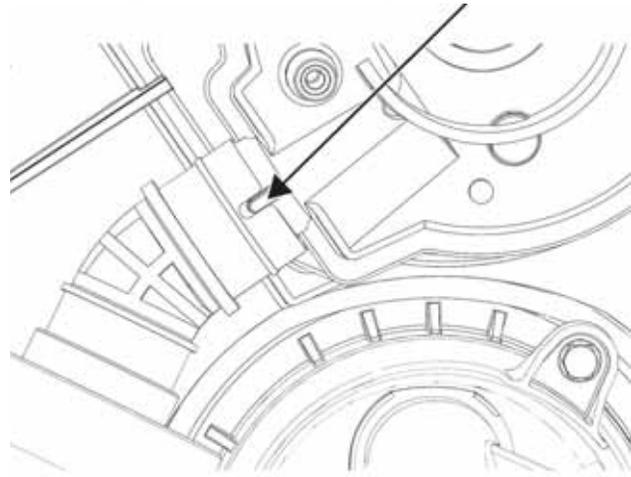
## Drain Pump Removal or Replacement

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

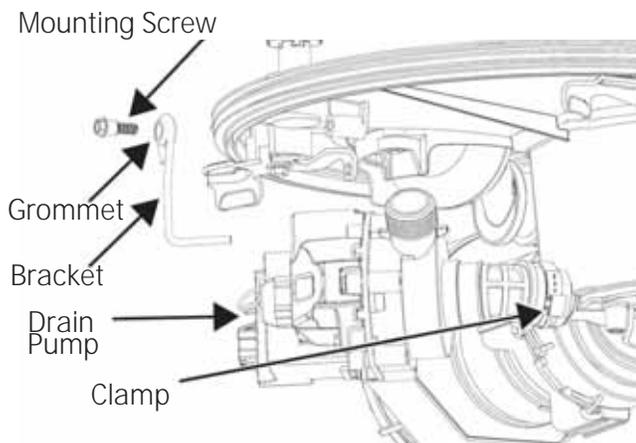


7. Use a new clamp (included with a new pump or clamp kit WD35X10382 when reinstalling).

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

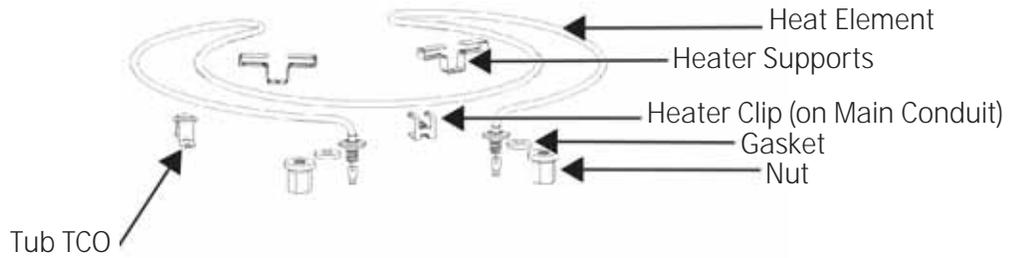


5. Loosen or remove the Drain Pump Hanger.
6. Loosen the hose clamp and discard, remove or replace the drain pump.



# Dry System

Introduction and Operation CDT835S, PDF829S and PDT825S



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 forced air with a power dry fan. Air enters through the fill funnel, then exits through the vent.

During the dry cycle, the heat element cycles after an initial 6 minute "on" time to 60 seconds "off", then 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 the options and cycle selected. The table below represents a normal cycle with a Heated Dry option *only* selected.

## Heated Dry Element Algorithm

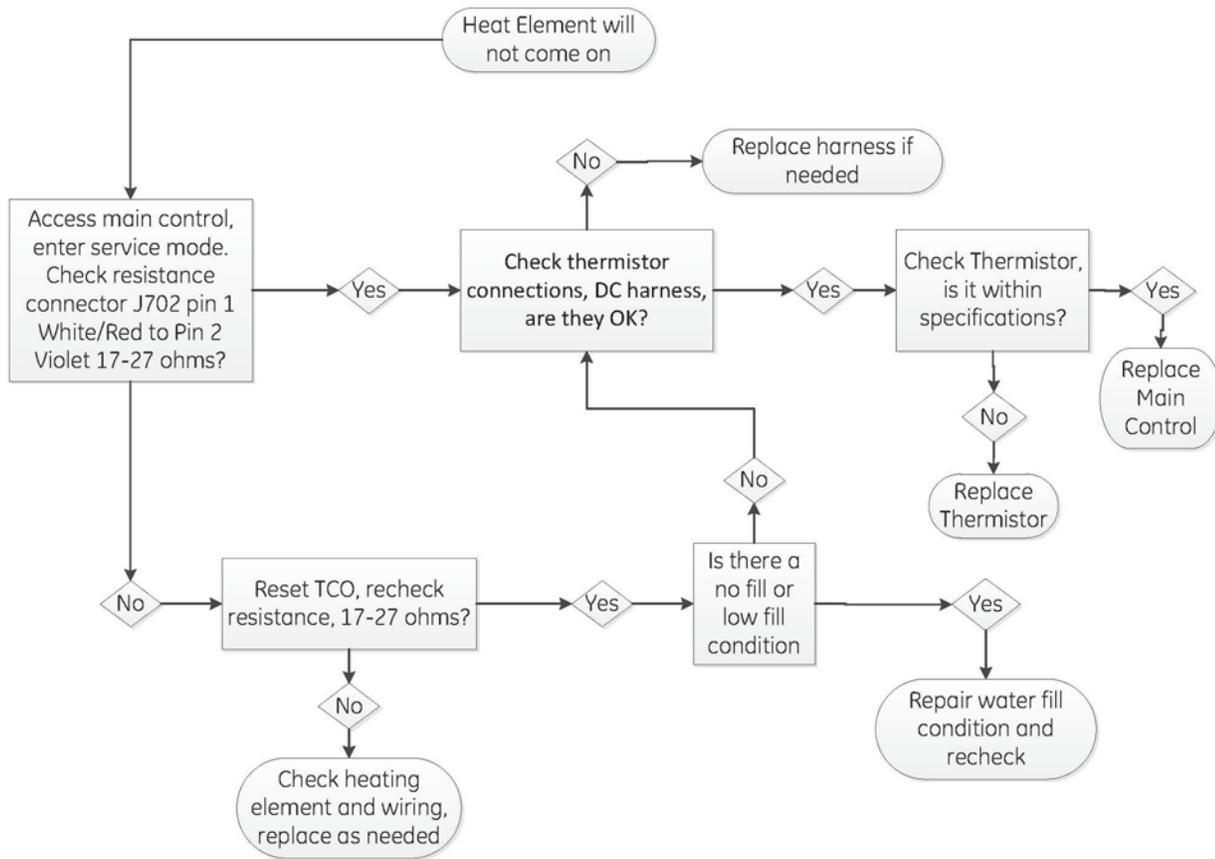
4 Pass Heater Algorithm, Dry Cycle	
Normal with Heated Dry	
Time (minutes)	Calrod Description
6	Calrod on
28	Calrod Pulse - 1 minute on/1 minute off
14	Calrod off - Cool Down
Normal with Temp Boost or Sani Selected	
6	Calrod on
58	Calrod Pulse - 1 minute on/1 minute off

## Specifications

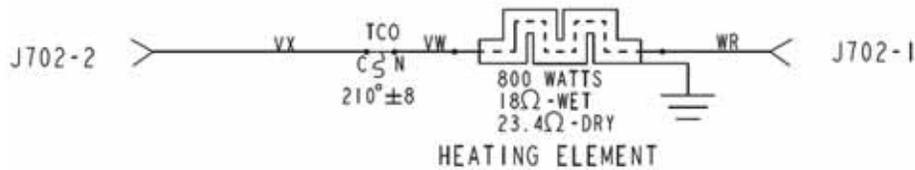
The Calrod Heating element is rated at 120 VAC.

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 the **Door Removal** section in this service guide).
4. Remove the sump assembly (see **Sump Module Removal** section in this service guide).
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** section in this service guide).
4. Remove the dishwasher from its installed position and place on its back.

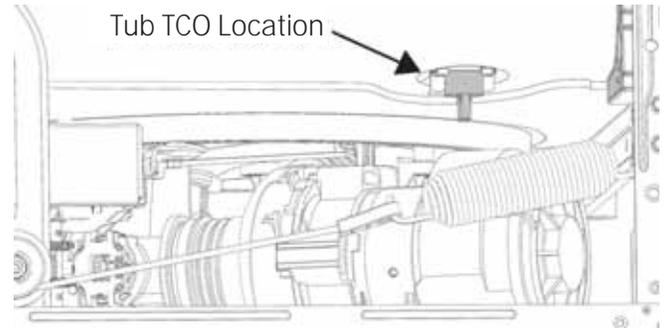
**WARNING:** If the door is not removed and the dishwasher is not placed on its back, there is a **TIP RISK**.

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 PDF820S, PDT825S and CDT835S

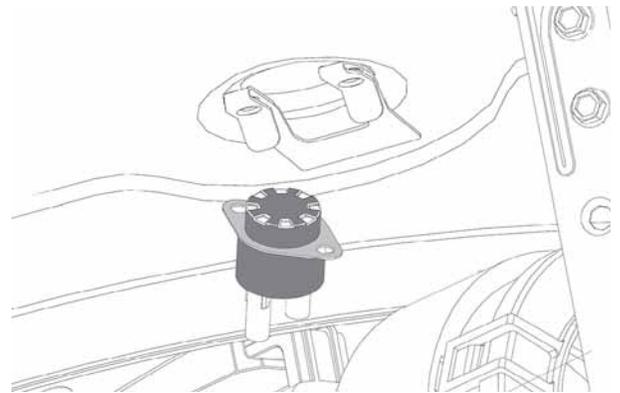
The Tub TCO is used to prevent a run-away heat condition. If it trips, low water level will cause this condition as well as a bad thermistor. The TCO is located on the right side of the tub, approximately 16 inches from the front of the tub.

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).

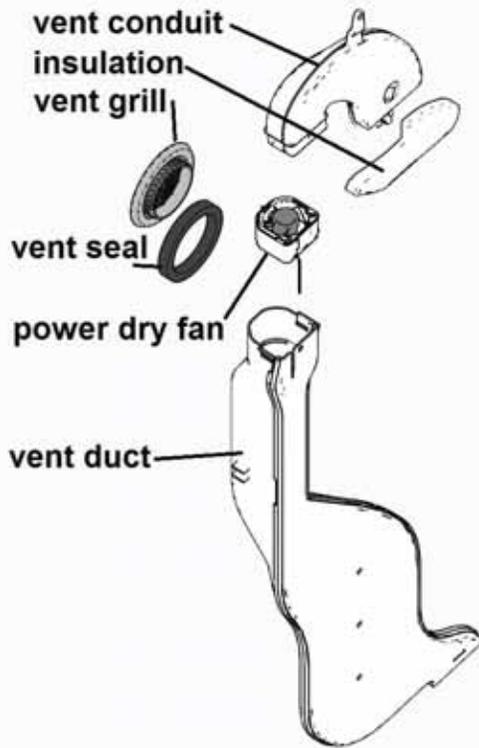
## Power Dry Forced Air

All models covered in this guide have a Power Dry setting and on Monogram models, a Max Dry option. Components include a power dry fan assembly and duct assembly inside the door. Monogram models have a different fan motor which enables two operation speeds. Fresh Air is pulled in from the left side of the tub through an air intake (on past models this was the fill funnel).

Models CDT835SxJ0xx, PDT825SxJ0xx and PDT835SxJ0xx use both the power dry fan and add heat during the dry cycle.

Models CDT865SxJ0xx, PDT845SxJ0xx, PT855SxJ0xx, ZDT915SxJ0xx and ZDT915SxJ0xx use a hidden heater and is non-operational during the Dry segment of the cycle. When Power Dry or Max Dry (on Monogram models) is selected, the final rinse temperatures are raised to provide needed heat during dry (consult the **Target / Max Temperature Limits** charts under **Target Temperatures** in the **Operational and Cycle Information** section of this service guide).

### Power Dry Components



## Operation

### Power Dry (all models)

The fan is a brushless motor and operated by 13.5 VDC and runs at ~6,000 RPM.

The Power Dry cycle is 50 minutes. When the cycle is completed, the Clean light comes on.

If the Dry segment of the cycle is interrupted by opening the door, the control will advise the consumer to press START and to close the door.

If the consumer does not open the door after the cycle is complete, the fan will run another 90 minutes. It will not restart if door is opened and closed, and there will be no indication of this operation on the control display. The total run time if door is not opened after the Clean light is cycled on can be 140 minutes.

### Max Dry (ZDT800S and ZDT870S)

Monogram models have both Power Dry and Max Dry options.

The fan is a brushless motor and rated as dual speed and running at ~6000 RPM for Power Dry and ~10,000 RPM for Max Dry. ~6-7 VDC @ 6k RPM and 12-14 VDC @ ~10k RPM.

Max Dry operates the same as above.

The Max Dry cycle is 90 minutes and the fan runs at a maximum speed of ~10,000 RPM. When the cycle is completed, the Clean light comes on. If the dry segment of the cycle is interrupted by opening the door, the control will advise the consumer to press START and close the door. If the consumer does not open the door after the cycle is complete, the fan will run another 90 minutes. During this time the fan lowers speed to ~6k RPM, and it will not restart if the door is opened and closed. There will be no indication of this operation on the control display. The total run time if the door is not opened after the Clean light is cycled on can be 180 minutes.

## Dry Cycle Specifications

- **Power Dry Fan:** 12-13.5 VDC, 6k RPM
- **Variable Speed Dry Fan:** 6 VDC 6k RPM and 13.5 VDC – 10k RPM

## Diagnostics

If the fan is non-operational, the door must be removed and separated to accurately diagnose. The brushless motor can be diagnosed by checking the DC voltage to the motor. The inner door can be placed back on the dishwasher and plugged in the door harness. The dishwasher can be placed into Service Mode and the fan can be turned on.

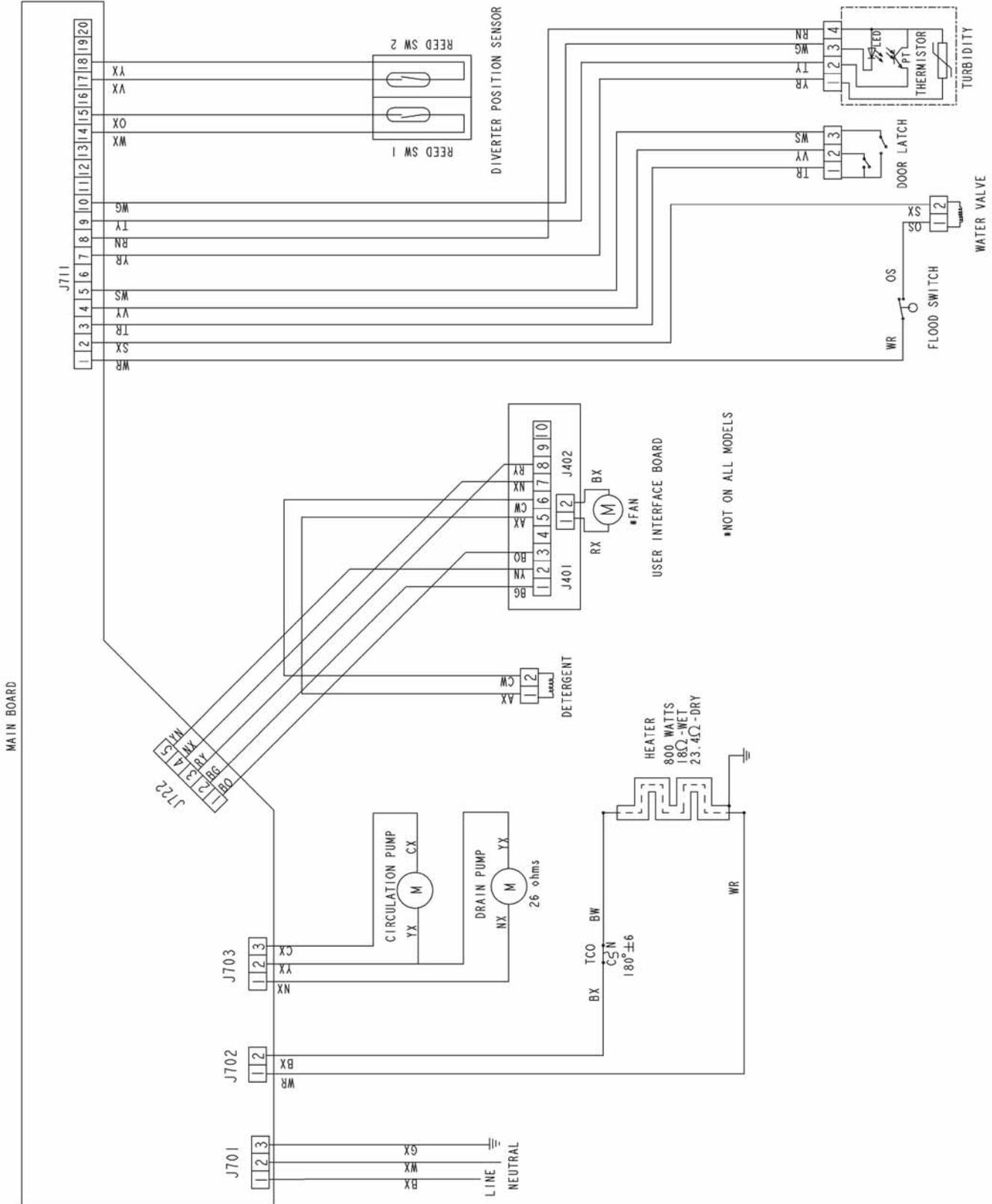
Dry motors (Power Dry and Monogram Max Dry) will receive 12-14 VDC in Service Mode and can be checked at the UI board, connector J402 (two pin connector) from **red** to **black**. Monogram models run at ~10k RPM, all others run at ~6k in Service Mode.

## Power Dry Fan and Vent Removal

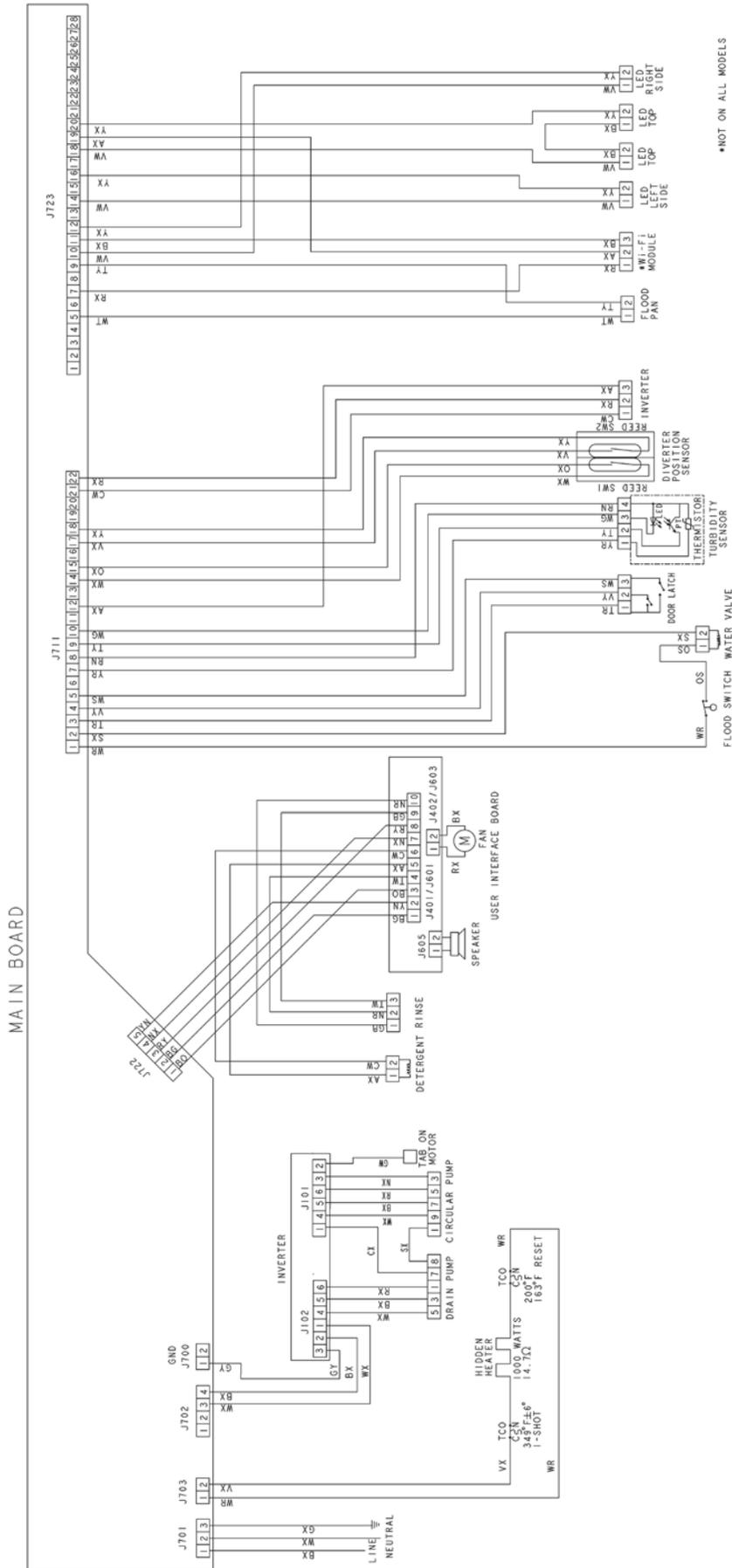
See the **Door** section of **Tub and Structure** in this service guide.

# Schematics

CDT835SxJ0xx, PDT825SxJ0xx and PDT835SxJ0xx







# 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](http://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.*

<b>For The Period Of:</b>	<b>GE Will Replace:</b>
<b>One Year</b> From the date of the original purchase	<b>Any part of the dishwasher which fails due to a defect in materials or workmanship.</b> During this <b>limited one-year warranty</b> . GE will also provide, <b>free of charge</b> , 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

## A

Adjustable Bracket 24  
Auto Hot Start 10

## B

Basket and Frame 27  
Bottle Wash 10, 25, 63, 69, 74, 79, 80  
Bottle Wash System 80  
Buttons 33, 34

## C

Circulation Motor 65  
Circulation System 12, 19, 41, 63  
Component Locator Views 14  
Conduits and Spray Arms 74  
Consumer Error Mode 13, 23, 44, 46, 47, 50, 64, 72  
Cycle Algorithm Comparisons 12  
Cycle Information 10  
Cycle Times 10

## D

Detergent Dispenser 38  
Diverter 12, 69, 70  
Door 9, 14, 18, 20, 23, 29, 31, 32, 35, 36, 64  
Door Balance System 20  
Door Gasket 36  
Door Strike 36  
Drain System 19, 41, 51, 82  
Dry System 29, 37, 63, 85

## E

Electrical Specifications 9  
Electronic Controls 13, 44

## F

fill funnel 85, 88  
Fill System 41, 59  
filtration 63, 66  
Flood Switch 9, 17, 42, 59, 61  
floor protect pan 13, 45, 51  
Front Control Console 32, 33  
Front Control UI 33  
Full Extension Rails 24

## H

Heat Element 85  
Hinges 20, 35  
hose 25, 41, 42, 43, 67, 71, 82, 84

## I

Inner Door Panel 36  
Inner Door Vent Cover 31

## J

Junction Box 19

## L

Latch Switch Diagnosis 23  
Latch System 23  
Level Legs 20  
Light Pipe 33, 34  
Lower Rack 26

## M

Main Conduit 63, 77, 79, 85  
Main Control Board CSM 13, 45, 46, 50  
Main Control Diagnostics 13, 48, 72, 73  
Middle Conduit 78  
Monogram Slide Rails 28  
Monogram Third Rack 28

## N

No Circulation 65  
Nomenclature 7

## O

Outer Door Panel 35

## P

Pocket Handle 33  
Product Specifications 8  
Pump Assembly 67

## R

Rack 8, 24, 26, 27, 28  
Roller Assembly 26

## S

Schematics 90  
Service Mode 13, 38, 46, 47, 51, 54, 59, 64, 68, 89  
Silverware Baskets 26  
Spray Arms 74  
Stationary Bracket 25  
Sump Gasket 43  
Sump Module 41

## T

Thermistor 9, 44, 63, 72  
Third Rack 8, 27, 28  
Toe Kick 15, 19  
Top Control Console Cover 35  
Top Control Panel 33  
Troubleshooting 13  
Tub and Structure 19  
Tub Gasket 22  
Tub TCO 9, 87

(Continued next page)

Tub Trim 19  
Turbidity Sensor 9, 44, 45, 63, 72, 73

## **U**

UI Diagnostics 50  
Upper Spray System 80

## **V**

Vent Parts 37

## **W**

Warranty 93  
Water Level 59  
Water Valve 9, 47, 59, 62