



Manual No. 22110313

## Kenmore Elite 2013 Stainless Steel Tall Tub Dishwashers



### Model Numbers:

665.12762K310	665.12763K310	665.12764K310	665.12769K310
665.12772K310	665.12773K310	665.12774K310	665.12779K310
665.12782K310	665.12783K310	665.12789K310	665.12793K310
665.12803K310			

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## FORWARD

This Kenmore Manual, "Kenmore Elite 2013 Stainless Steel Tall Tub Dishwashers," provides the technician with information on the installation, operation, and service of the "Global Wash System" with variable speed wash and drain motors. For specific operating information on the model being serviced, refer to the "Use and Care Guide" provided with the dishwasher.

## GOALS AND OBJECTIVES

The goal of this Manual is to provide information that will enable the service technician to properly diagnose malfunctions and repair the "Kenmore Elite 2013 Stainless Steel Tall Tub Dishwashers."

The objectives of this Job Aid are to:

- Understand and follow proper safety precautions.
- Successfully troubleshoot and diagnose malfunctions.
- Successfully perform necessary repairs.
- Successfully return the product to its proper operational status.

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# Section 1:

## General Information

This section provides general safety, parts, and information for the “Kenmore Elite Stainless Steel Tall Tub Dishwasher.”

- Dishwasher Safety
- Before Using Your Dishwasher
- Model & Serial Number Label
- Tech Sheet Locations
- Product Specifications
- Parts & Features

# Dishwasher Safety

### Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING."

These words mean:

**⚠ DANGER**

**You can be killed or seriously injured if you don't immediately follow instructions.**

**⚠ WARNING**

**You can be killed or seriously injured if you don't follow instructions.**

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

## IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** When using the dishwasher, follow basic precautions, including the following:

- Read all instructions before using the dishwasher.
- Use the dishwasher only for its intended function.
- Use only detergents or rinse agents recommended for use in a dishwasher, and keep them out of the reach of children.
- When loading items to be washed:
  - 1) Locate sharp items so that they are not likely to damage the door seal; and
  - 2) Load sharp knives with the handles up to reduce the risk of cut-type injuries.
- Do not wash plastic items unless they are marked "dishwasher safe" or the equivalent. For plastic items not so marked, check the manufacturer's recommendations.
- Do not touch the heating element during or immediately after use.
- Do not operate the dishwasher unless all enclosure panels are properly in place.
- Do not tamper with controls.
- Do not abuse, sit on, or stand on the door, lid, or dish racks of the dishwasher.
- To reduce the risk of injury, do not allow children to play in or on the dishwasher.
- Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using the dishwasher turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. As the gas is flammable, do not smoke or use an open flame during this time.
- Remove the door or lid to the washing compartment when removing an old dishwasher from service or discarding it.

## SAVE THESE INSTRUCTIONS

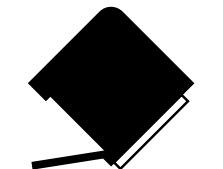
State of California Proposition 65 Warnings:

**WARNING:** This product contains one or more chemicals known to the State of California to cause cancer.

**WARNING:** This product contains one or more chemicals known to the State of California to cause birth defects or other reproductive harm.

## Before Using Your Dishwasher

### **WARNING**



#### **Tip Over Hazard**

**Do not use dishwasher until completely installed.**

**Do not push down on open door.**

**Doing so can result in serious injury or cuts.**

### **WARNING**



#### **Electrical Shock Hazard**

**Electrically ground dishwasher.**

**Connect ground wire to green ground connector in terminal box.**

**Do not use an extension cord.**

**Failure to follow these instructions can result in death, fire, or electrical shock.**

### **GROUNDING INSTRUCTIONS**

- **For a grounded, cord-connected dishwasher:** The dishwasher must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. The dishwasher is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.  
**WARNING:** Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the dishwasher is properly grounded. Do not modify the plug provided with the dishwasher; if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
- **For a permanently connected dishwasher:** The dishwasher must be connected to a grounded metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the dishwasher.

### **SAVE THESE INSTRUCTIONS**

- Install where dishwasher is sheltered from the elements. Avoid possible rupture of fill valve from freezing. Such ruptures are not covered by the warranty. See "Storing" section for winter storage information.
- Install and level dishwasher on a floor that will hold the weight, and in an area suitable for its size and use.
- Remove all shipping plugs from hoses and connectors (such as the cap on the drain outlet) before installing. See Installation Instructions or complete information.

## **Model & Serial Number Label**

**Model & Serial Number  
Label Location**



## **Tech Sheet Location**

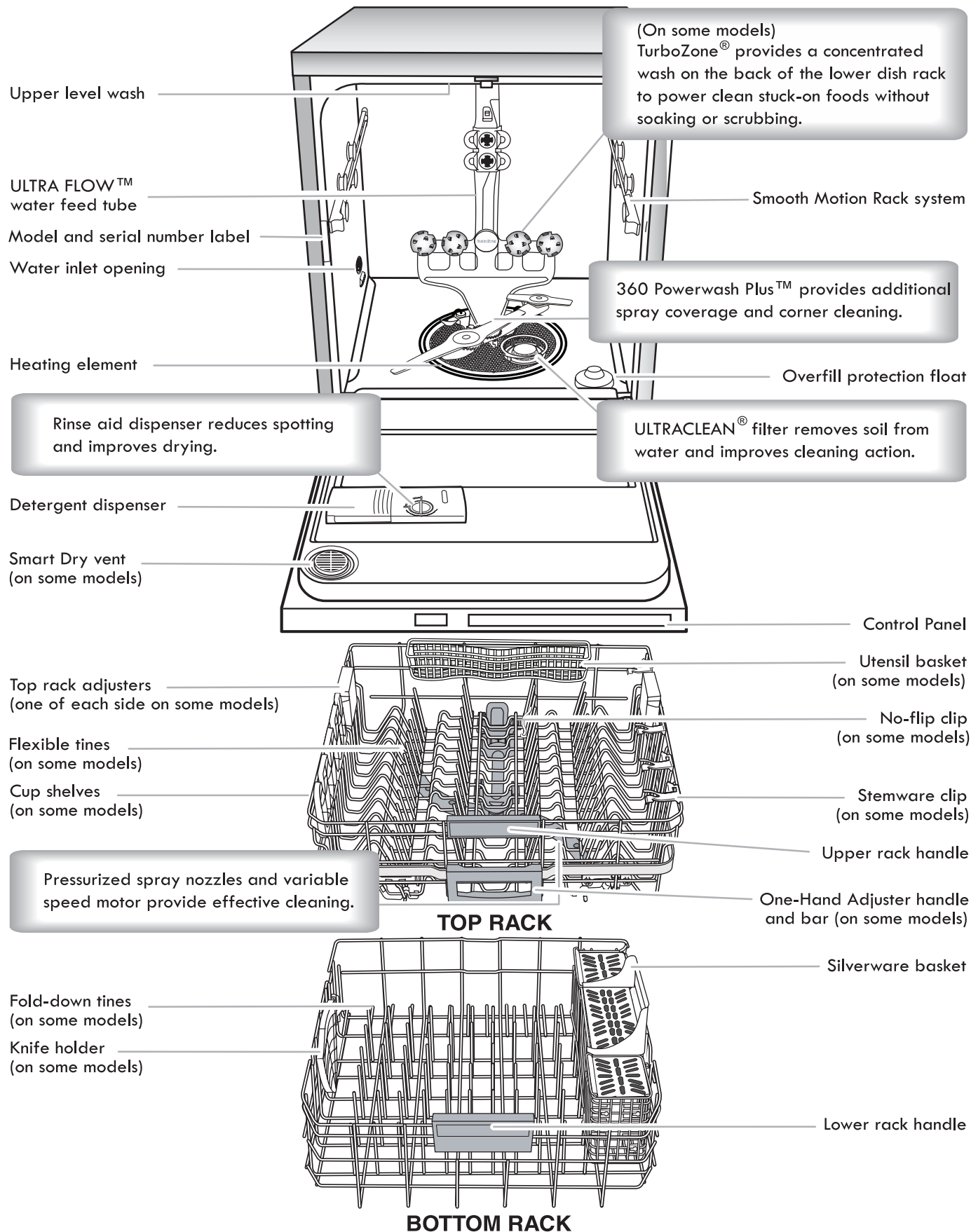
**Tech Sheet Location  
(Behind Toe Kick Panel)**



## Product Specifications

DISHASHER SPECIFICATIONS	
<b>Line Voltage:</b>	120V AC
<b>Frequency:</b>	60 Hz
<b>Amps:</b>	10A
<b>Low Volts Power Supply:</b>	+15V, +13V, +5V, +3.3
<b>Water Pressure:</b>	120 psi Max, 20 psi Min
<b>Supply Water Temperature:</b>	Minimum - 120° F (49° C)
<b>Control:</b>	Electronic Control w/Integrated VSM Control
<b>Wash Motor:</b>	3-Phase Variable Speed Motor (VSM)
<b>Drain Motor:</b>	3-Phase Variable Speed Motor (VSM)
<b>Diverter Motor:</b>	120V AC
<b>Fill Valve:</b>	120V AC
<b>Heater:</b>	120V AC
<b>Dispenser:</b>	120V AC
<b>Spray Arm Motor:</b>	120V AC (some models)
<b>Fan Motor:</b>	+5V DC (some models)
<b>Sensors:</b>	Temperature Sensor Water Sensor (OWI) Spray Arm Sensor (some models)
<b>Switches:</b>	Diverter Position Switch (5V DC) Door Switch (13V DC) Float Switch (120V AC)
<b>TCO / Bi-Metal:</b>	Incorporated into Control Board (Penninsula Slots)
<b>Fuses:</b>	Line (L1) Fuse Motor Control Fuse Triac Fuse
<b>Lower Wash Arm:</b>	360° Power Wash Plus
<b>Upper Wash Arm:</b>	Straight Design
<b>Filtration:</b>	3-Stage Filter System
<b>TurboZone:</b>	Available on certain models

## Parts & Features



## Section 2: Consumer Information

This section provides consumer troubleshooting information for the “Kenmore Elite Stainless Steel Tall Tub Dishwasher.”

## Consumer Troubleshooting

PROBLEM	SOLUTION
<b>DISHWASHER DOES NOT RUN</b>	<p><b>NOTE:</b> It is normal for the dishwasher to repeatedly pause several times during a cycle.</p> <p>If the Start/Resume light is blinking, push START/RESUME and close the door within 3 seconds.</p> <p>Be sure the door is closed and latched. If the upper rack is uneven, lift the rack on the side tilted down. An uneven rack can keep the door from closing.</p> <p>Check that there is not an interference with large casserole dishes and the wash system at the back of the dishwasher. Adjust loading as necessary to ensure door is closed and latched.</p> <p>Be sure you have selected a cycle. (See "Cycles and Options Information.")</p> <p>Be sure there is power to the dishwasher. A circuit breaker or fuse may have tripped.</p> <p>If lights other than Start/Resume blink and the unit will not run, you will need to call for service.</p>
<b>DETERGENT REMAINS IN THE DISPENSER OR TABLET IS ON BOTTOM OF TUB</b>	<p>Check for dishware such as cookie sheets, cutting boards, or large containers, etc., that may be blocking the detergent dispenser from opening properly.</p> <p>Be sure your detergent is fresh and lump free.</p> <p>Be sure the cycle has completed (blue light is on). If it has not completed, you will need to resume the cycle by pressing START/RESUME and closing the door within 3 seconds.</p>
<b>CYCLE RUNS TOO LONG</b>	<p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>■ To use less water and reduce energy consumption you will encounter cycles that typically run for up to 3 hours.</li> <li>■ A water heater setting of 120°F (49°C) is best. The dishwasher will delay longer while heating cooler water.</li> <li>■ Some options will add time to the cycle. (See "Cycles and Options Information" section.) The Smart Dry option adds ½ hour.</li> </ul> <p>Try the 1 Hour Wash cycle.</p> <p>Run the hot water at a faucet close to the dishwasher before selecting and starting the cycle.</p>
<b>DISHWASHER NOT DRYING</b>	<p><b>NOTE:</b> Plastic and items with nonstick surfaces are difficult to dry because they have a porous surface which tends to collect water droplets. Towel drying may be necessary.</p> <p>Use of rinse aid along with the Smart Dry option is needed for proper drying.</p> <p>Proper loading of items can affect drying. (See specific loading instructions within this guide.)</p> <p>Glasses and cups with concave bottoms hold water. This water may spill onto other items when unloading.</p> <ul style="list-style-type: none"> <li>■ Unload the bottom rack first.</li> <li>■ Locate these items on the more slanted side of the rack for improved results.</li> </ul>
<b>WILL NOT FILL</b>	<p>Be sure the water is turned on to the dishwasher.</p> <p>Check that the float is free from obstructions. (See "Parts and Features.")</p> <p>Check for suds in the dishwasher. If foam or suds are detected, the dishwasher may not operate properly or may not fill with water.</p>
<b>WATER REMAINS IN THE TUB/ WILL NOT DRAIN</b>	<p>Be sure the cycle has completed (the blue light is on). If it has not, you will need to resume the cycle by pressing START/RESUME and closing the door within 3 seconds.</p> <p>If dishwasher is connected to a food waste disposer, be sure the knockout plug has been removed from the disposer inlet.</p> <p>Check for kinks in the drain hose.</p> <p>Check for food obstructions in the drain or disposer.</p> <p>Check your house fuse or circuit breaker.</p>

## Consumer Troubleshooting (continued)

PROBLEM	SOLUTION
<b>HARD WATER (WHITE RESIDUE ON DISHWASHER INTERIOR OR GLASSWARE)</b>	<p><b>NOTE:</b> Extremely hard water mineral deposits can cause damage to your dishwasher and make it difficult to achieve good cleaning. You may bring water samples to Sears to check your water hardness level. A water softener is strongly recommended if your hardness is 15 grains or more. If a water softener is not installed, the following steps may help:</p> <p>Use a cleaner designed for dishwashers once per month. See the "Dishwasher Maintenance Procedure" section.</p> <p>Clean the ULTRACLEAN® filters at least once per month.</p> <p>Always use a rinse aid.</p> <p>Always use a high-quality, fresh detergent.</p> <p>Use a detergent booster/water softener additive designed for dishwashers.</p>
<b>ODORS</b>	<p><b>NOTE:</b> If the dishwasher is not used daily, you can run a rinse cycle with the partial load daily until a full load is ready to run, or use the Top Rack Only option (on some models) for partial loads.</p> <p>Run a vinegar rinse through the dishwasher by putting 2 cups (500 mL) of white vinegar in an upright glass measuring cup in the lower rack. Run a normal cycle with the Smart Dry option turned off. Do not use detergent.</p> <p>The dishwasher may not be draining properly, see "WATER REMAINS IN THE TUB/WILL NOT DRAIN" in "Troubleshooting."</p>
<b>NOISY</b>	<p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>■ Surging sounds can occur periodically throughout the cycle while the dishwasher is draining.</li> <li>■ Normal water valve hissing may be heard periodically.</li> <li>■ A normal snap sound may be heard when the detergent dispenser opens during the cycle and when the door is opened at the end of the cycle.</li> <li>■ Improper installation will affect noise levels.</li> </ul> <p>Be sure the filters are properly installed.</p> <p>A thumping sound may be heard if items extend beyond the racks and interfere with the wash arms. Readjust the dishware and resume the cycle.</p>
<b>FOOD SOILS REMAIN ON DISHES</b>	<p>Be sure the dishwasher is loaded correctly. Improper loading can greatly decrease the washing performance (see "Loading for Best Performance").</p> <p>Check filter to ensure it is properly installed. Clean it if needed. (See "Cleaning Instructions" in "ULTRACLEAN® Filtration System" for details.)</p> <p>Select the proper cycle and option for the type of soils. The Pots Pans cycle with the TURBOZONE® (on some models) option can be used for tougher loads.</p> <p>Be sure the incoming water temperature is at least 120°F (49°C).</p> <p>Use the proper amount of fresh detergent. More detergent is needed for heavier-soiled loads and hard water conditions.</p> <p>Scrape food from dishes prior to loading (do not prerinse).</p>
<b>DID NOT SANITIZE</b>	<p>If the Sani Rinse indicator light is blinking, the load is <i>NOT</i> sanitized. The cycle was interrupted in the final rinse, or your water heater is set too low. Set your water heater to 120°F (49°C).</p>
<b>DAMAGE TO DISHWARE</b>	<p>Improper loading can cause dishes to become chipped or damaged. (See specific loading instructions within this guide.)</p>
<b>BLINKING LIGHTS</b>	<p>If Start/Resume or any status lights are blinking and the dishwasher will not run, push START/RESUME and close the door within 3 seconds. If the dishwasher still will not run, call service at 1-800-4-MY-HOME.</p>

## Consumer Troubleshooting (continued)

PROBLEM	SOLUTION
<b>CLOUDY OR SPOTTED DISHWARE (AND HARD WATER SOLUTION)</b>	<p><b>NOTES:</b></p> <ul style="list-style-type: none"><li>■ Liquid rinse aid is necessary for drying and to reduce spotting.</li><li>■ Use the correct amount of detergent.</li></ul> <p>Confirm that the cloudiness is removable by soaking the item in white vinegar for 5 minutes. If the cloudiness disappears, it is due to hard water. Adjust the amount of detergent and rinse aid. See “HARD WATER (WHITE RESIDUE ON DISHWASHER INTERIOR OR GLASSWARE)” in “Troubleshooting.” If it does not come clear, it is due to etching (see below).</p> <p>Be sure the incoming water temperature is set at 120°F (49°C).</p> <p>Try using the High Temp and Sani Rinse options.</p> <p>To remove spotting, run a vinegar rinse through the dishwasher.</p> <ul style="list-style-type: none"><li>■ Wash and rinse the affected dishware and load into dishwasher. Remove all silverware and metal items. Put 2 cups (500 mL) of white vinegar in a glass measuring cup in the lower rack. Run a normal cycle with the Smart Dry option turned off. No detergent is needed.</li></ul>
<b>ETCHING (PERMANENT CLOUDINESS)</b>	<p>This is an erosion of the surface of the glassware and can be caused by a combination of: water that is too hot, from using too much detergent with soft water or by pre-washing. Detergent needs food soil to act upon. If etching has occurred, the glassware is permanently damaged. To avoid further etching, adjust the detergent amount to match the water hardness, stop pre-washing, and use water heating options only when incoming water temperature is below 120°F (49°C).</p>
<b>LEAKING WATER</b>	<p>Be sure dishwasher has been installed properly and is level.</p> <p>Suds can cause the dishwasher to overflow. Measure the detergent accurately and use only detergents designed for use in a dishwasher. Less detergent is needed in soft water. Try another brand of detergent if sudsing continues.</p> <p>To avoid rinse aid leaking from the dispenser, be sure the lid is securely attached and avoid overfilling.</p>
<b>TUB IS DISCOLORED</b>	<p><b>NOTES:</b></p> <ul style="list-style-type: none"><li>■ High iron content in the water can discolor the tub.</li><li>■ Tomato-based foods can discolor the tub or dishware.</li><li>■ A citrus-based cleaner can be used to clean.</li></ul>

## Notes

## Section 3: Component Access

This section provides service parts access, removal, and installation instructions for the “Kenmore Elite Stainless Steel Tall Tub Dishwasher.”

- Insulation Blanket
- Removing Door Latch Strike
- Door Spring Adjustment
- Water Inlet & Drain Hose
- Overfill Assembly
- Accessing Door Components
- Removing User Interface
- Removing Latch Assembly
- Removing Electronic Control Board
- Removing Dispenser Assembly
- Spray Arms, Feed Tube, and Manifold
- Tub Components—Stainless Steel Models
- Removing the Upper Rack(s)
- Removing Lower Spray Arm
- Removing Filters
- Removing TurboZone Manifold & Diverter Disk
- Under the Tub Components
- Heater
- Removing Sump Assembly / Drain Pump
- Removing Optical Water Indicator
- Removing Diverter Assembly
- Removing Lower Spray Arm Sensor
- Wash Motor Replacement
- Notes

## Insulation Blanket and Door Latch Strike

### **WARNING**



**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

### Installing Insulation Blanket

(Stainless Steel Tub Models Only)

1. Fasten the blanket on the tabs located on the sides of the tub, see figures 1 and 2.

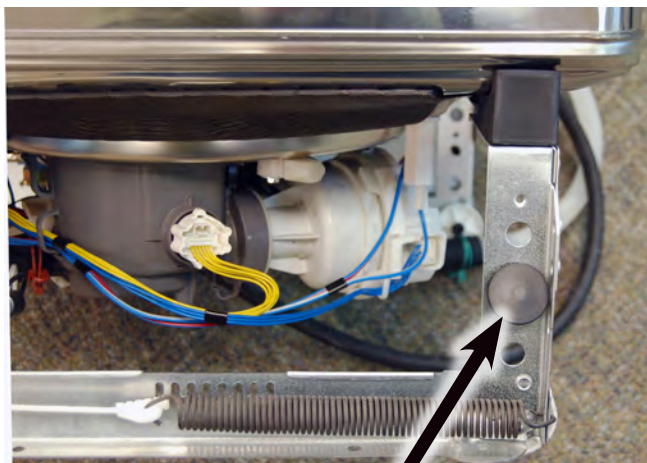


Figure 1



Figure 2

### Removing Door Latch Strike

(FID and 2 1/2" Console)

1. Open the dishwasher door.
2. Depress the 2 outside bars and pull out the latch, see figures 1, 2 and 3.

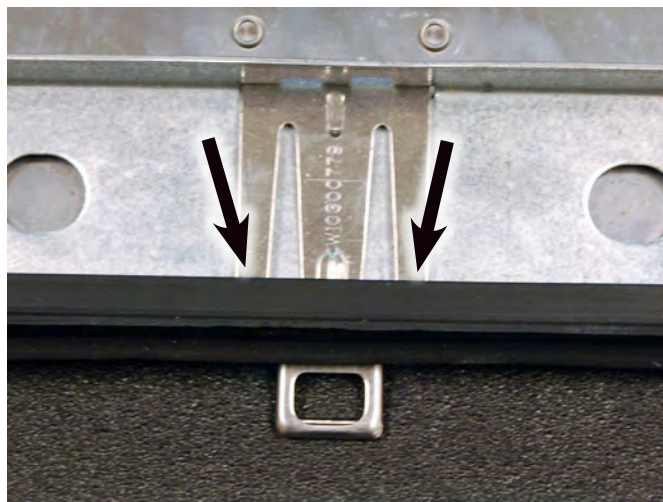


Figure 1

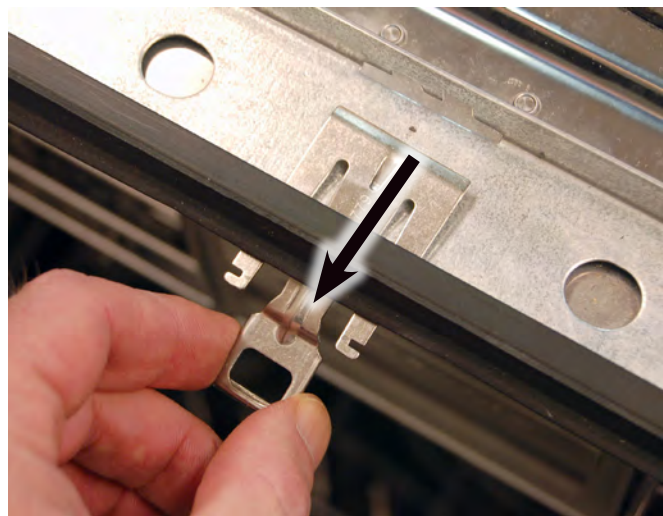


Figure 2



Figure 3

# Adjustable Door Springs, Wheels, Water Inlet and Drain Hose

## ⚠ WARNING



### Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

## Door Spring Adjustment

1. Unplug dishwasher or disconnect power.
2. Remove the dishwasher from the installation.
3. With another person holding the dishwasher to keep it from tipping, open and close the door a few times. IF the door closes or falls open under its own weight, the door tension will need to be adjusted.
4. To adjust the door spring tension, unhook the spring from the rear leg of dishwasher. See figure 1.
5. Using a 5/16" nut driver or hex socket, remove the screw from the tensioner.
6. The screw can be put into one of 3 holes (1, 2, 3) in the front leg of dishwasher, see figure 1. If the door closes by itself, move the tensioner to a lower-numbered hole and replace screw.
7. Reattach door spring to rear leg.

**NOTE:** Tensioners on both sides of dishwasher should be secured at same holes.

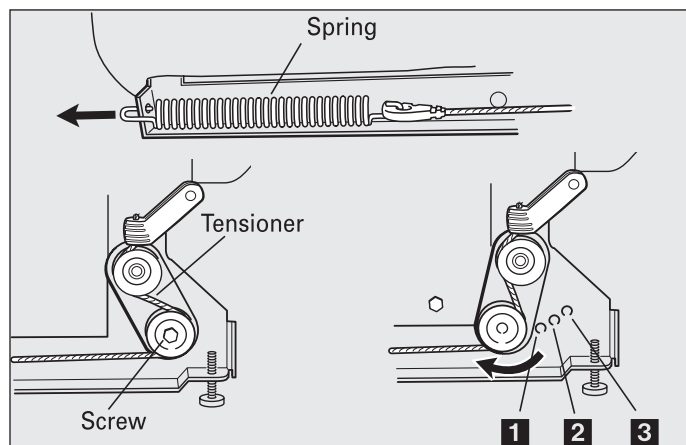


Figure 1

## Water Inlet and Drain Hose

Drain loop must be higher than drain to prevent siphoning.

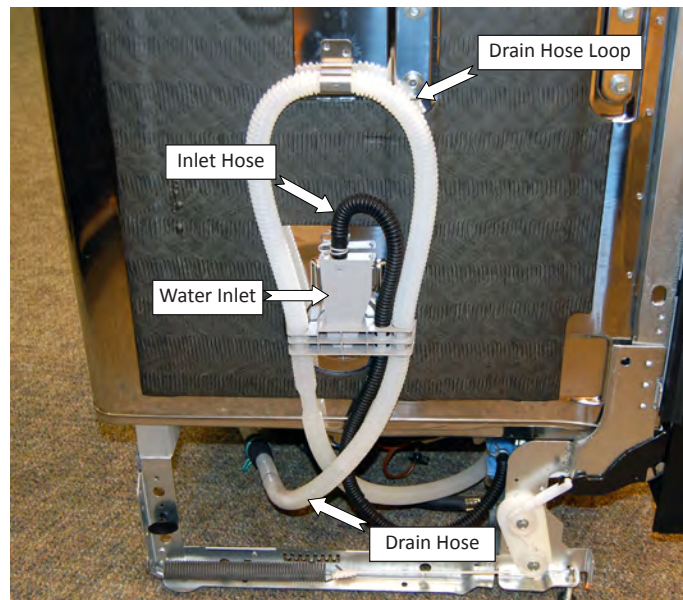


Figure 1

## Water Inlet Components

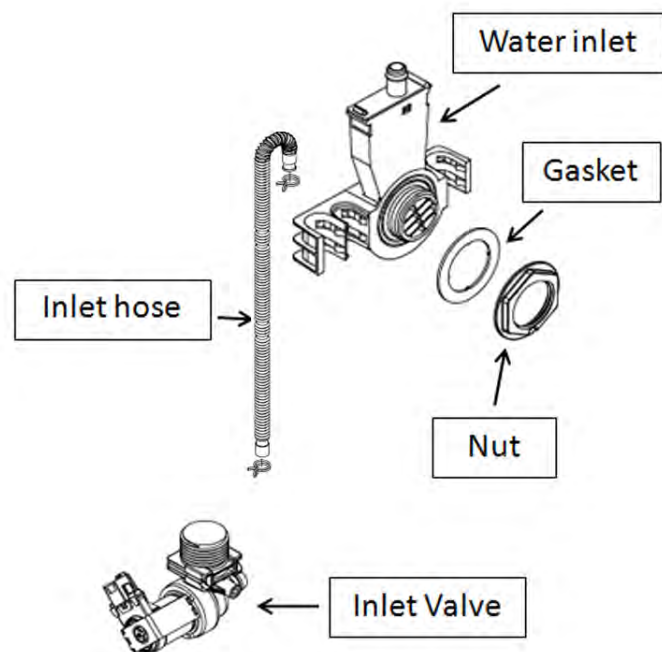



Figure 2

Overfill Assembly

**⚠ WARNING**



**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

Accessing Overfill Assembly

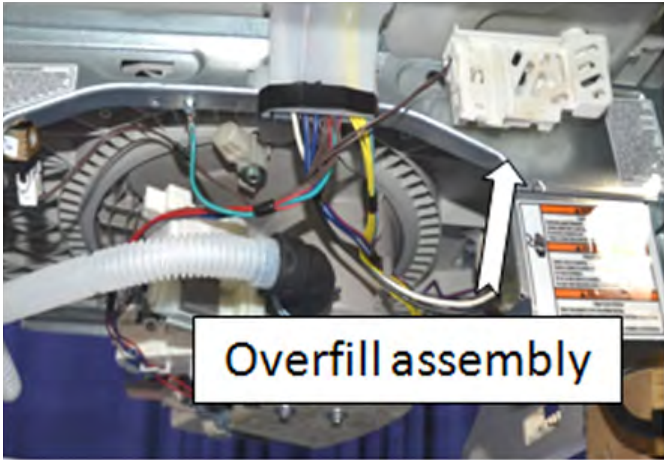


Figure 2 - Location of Overfill Assembly

Overfill Assembly Components

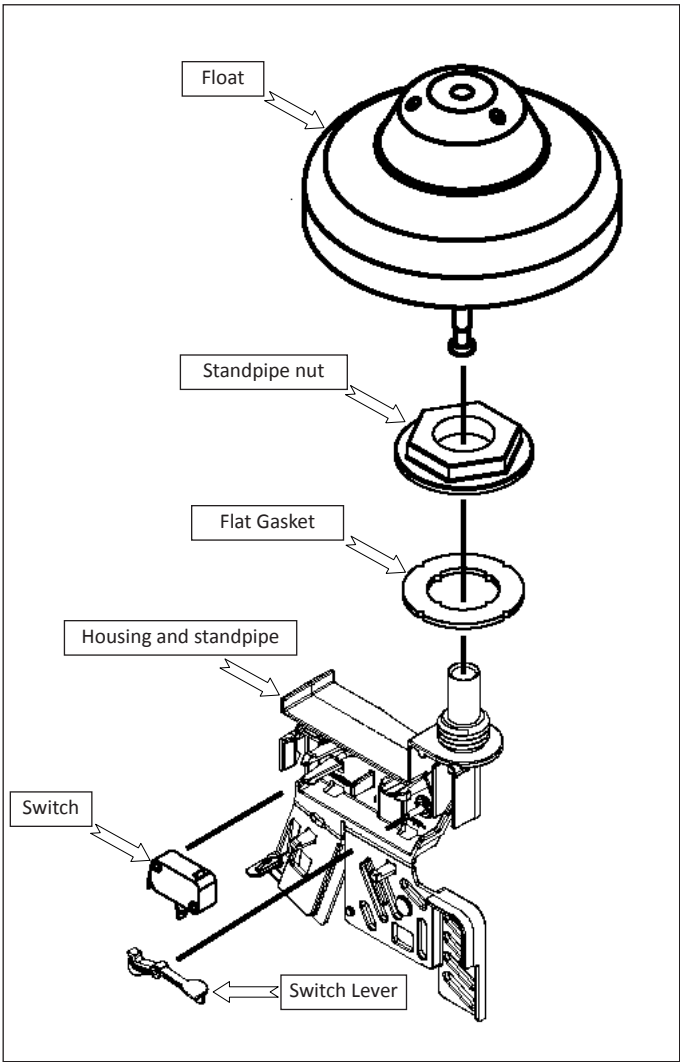


Figure 1



Figure 3

Location of float switch components. See figure 4.

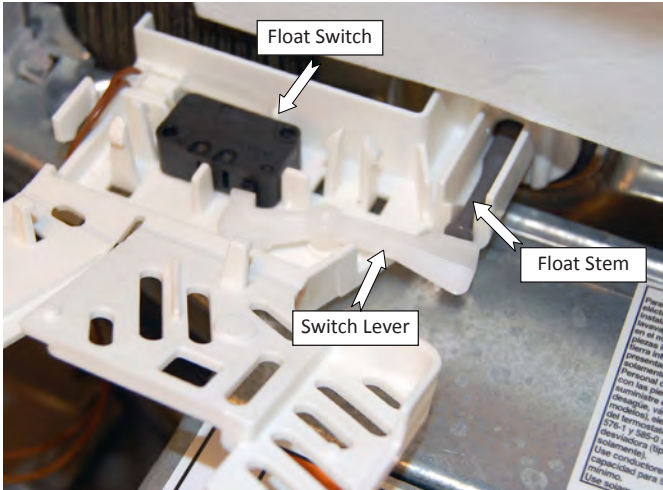


Figure 4

## Accessing Door Components

### **⚠ WARNING**



**Electrical Shock Hazard**  
 Disconnect power before servicing.  
 Replace all parts and panels before operating.  
 Failure to do so can result in death or electrical shock.

### Removing Door Panel

1. Unplug dishwasher or disconnect power.
2. Remove 4 screws (long) across top of door and 8 to 10 screws (short) on the sides, see figures 1 and 2.

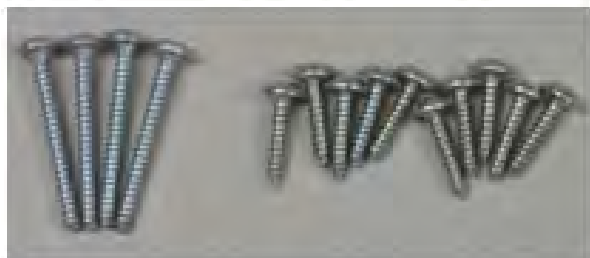


Figure 1

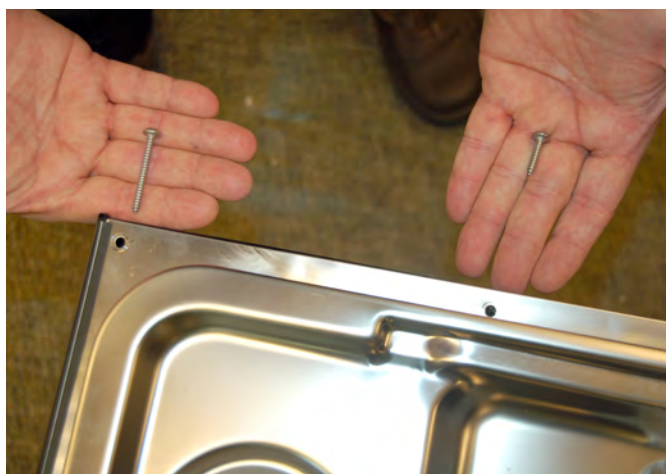


Figure 2

3. Remove the outer door panel, see figure 3.

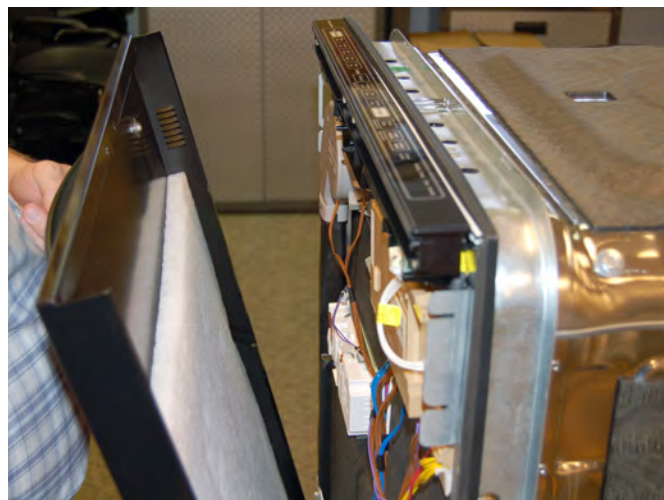


Figure 3

### Door Components

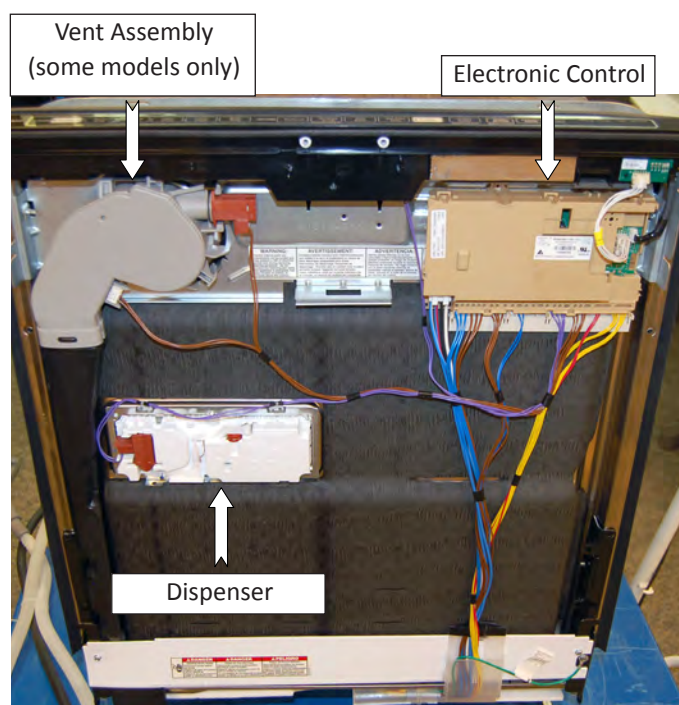


Figure 4

# Removing User Interface

## ⚠ WARNING



**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Unplug dishwasher or disconnect power.
2. Remove the outer panel from the door.
3. Remove user interface assembly from door panel.
4. Disconnect the user interface wiring harness, and on some models, the LED status light harness, see figures 2 and 3.

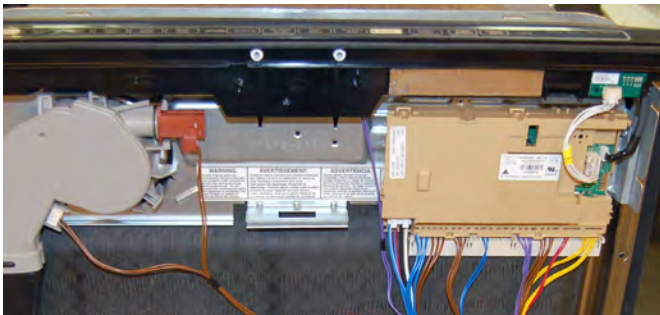


Figure 1

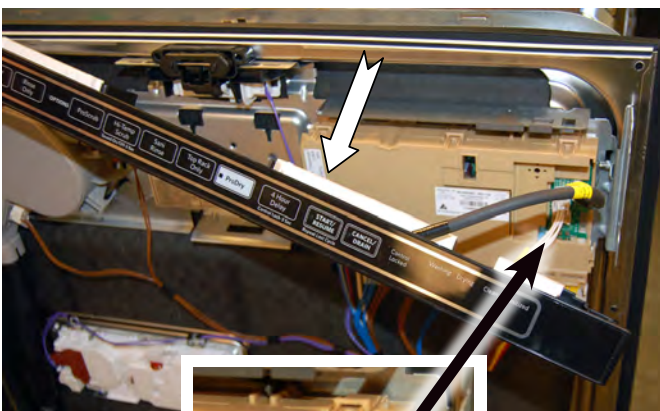
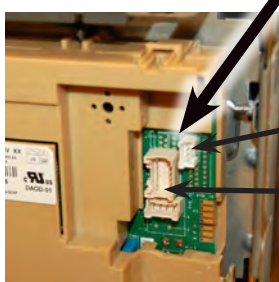


Figure 2



User Interface  
Status LED Board  
(if available)

Figure 3

## Control Board and User Interface

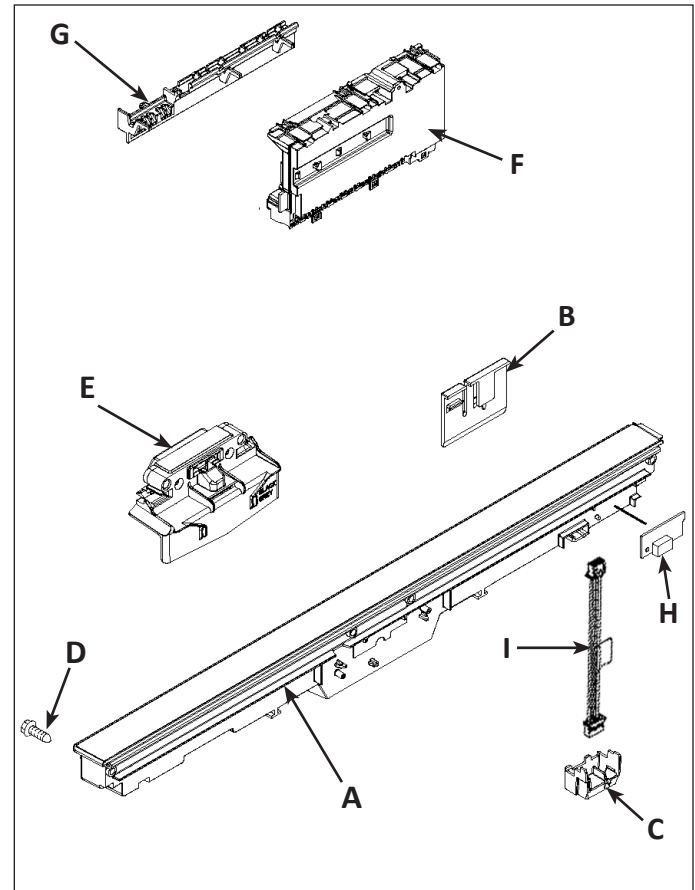


Figure 4

## Control & UI Components

- A. Console Assembly
- B. Control Clip
- C. Box Connector
- D. Screw
- E. Latch Assembly
- F. Electronic Control
- G. Connector Brace
- H. Status Light
- I. 4-Wire Jumper

**NOTE:** This figure represents the configuration for capacitive touch UI and status LED board. Connector configuration may vary depending on model and UI.

## Removing Latch Assembly

### **⚠ WARNING**



**Electrical Shock Hazard**  
 Disconnect power before servicing.  
 Replace all parts and panels before operating.  
 Failure to do so can result in death or electrical shock.

1. Unplug dishwasher or disconnect power.
2. Remove the outer panel from the door.
3. Remove the user interface from the door.
4. To remove latch assembly, insert a small flat-blade screwdriver into the clip slots on each side of the latch. Gently push in to release latch clips, see figure 1 and 2.

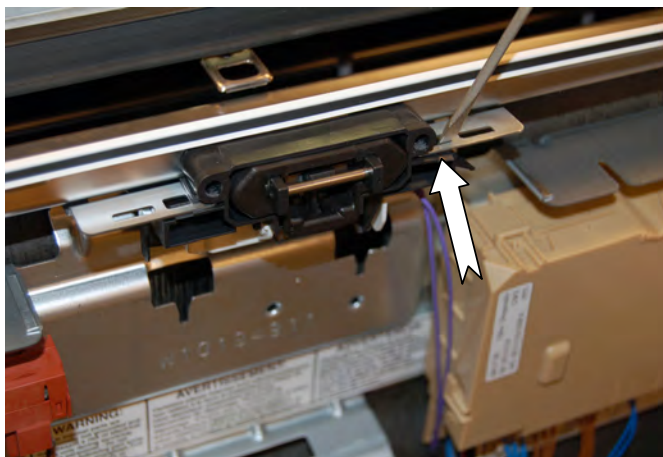


Figure 1

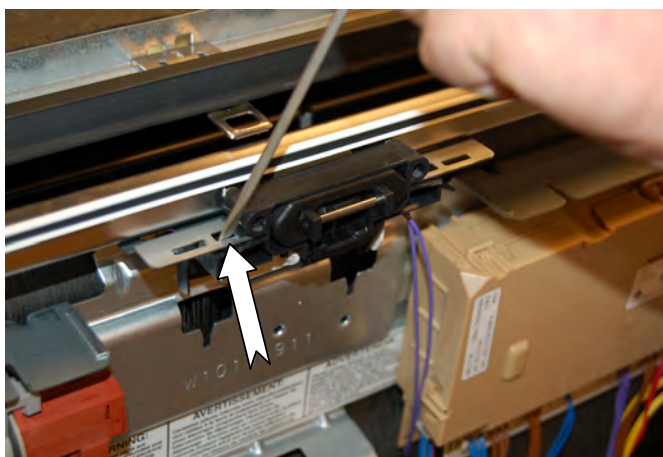


Figure 2

4. Remove latch assembly from door. See figure 3.
5. Disconnect harness assembly.

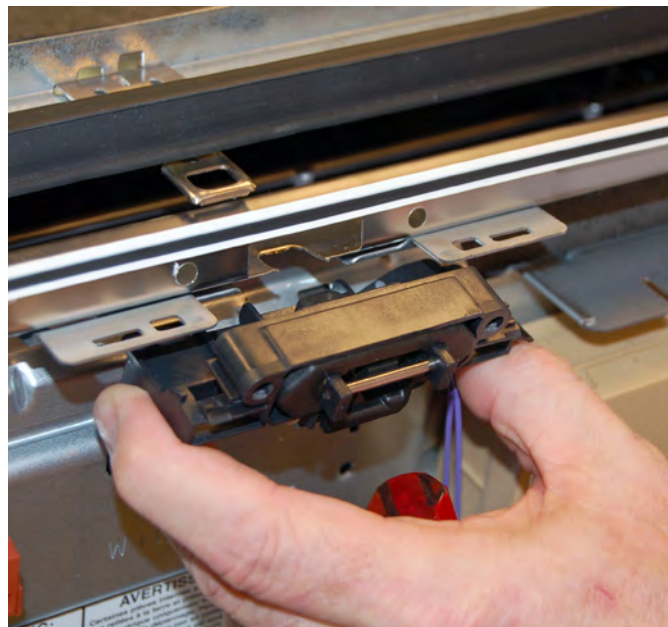


Figure 4

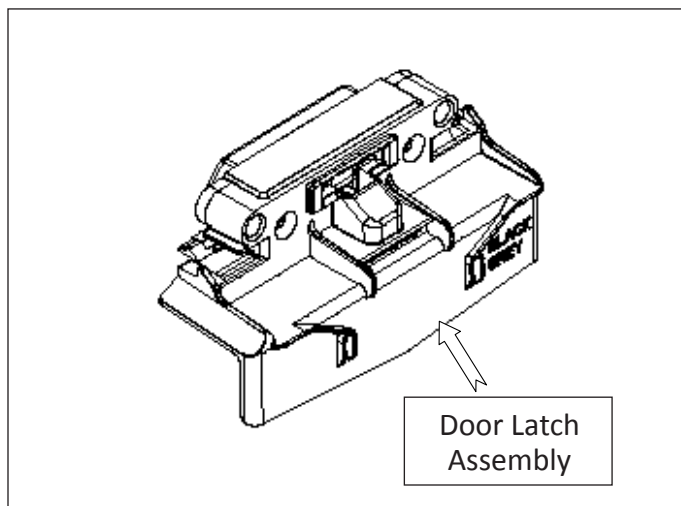


Figure 5

### Removing Electronic Control Board

#### **⚠ WARNING**



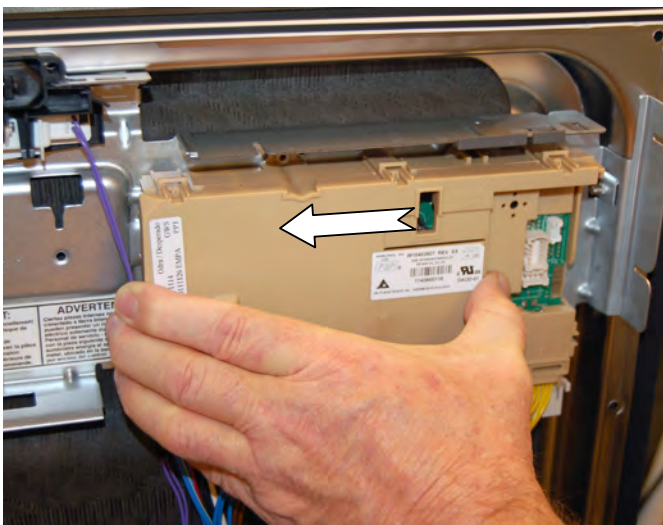
**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Unplug dishwasher or disconnect power.
2. Remove the outer panel from the door.
3. Disconnect harness(es) from control board.
3. Lift up locking tab, see figure 1

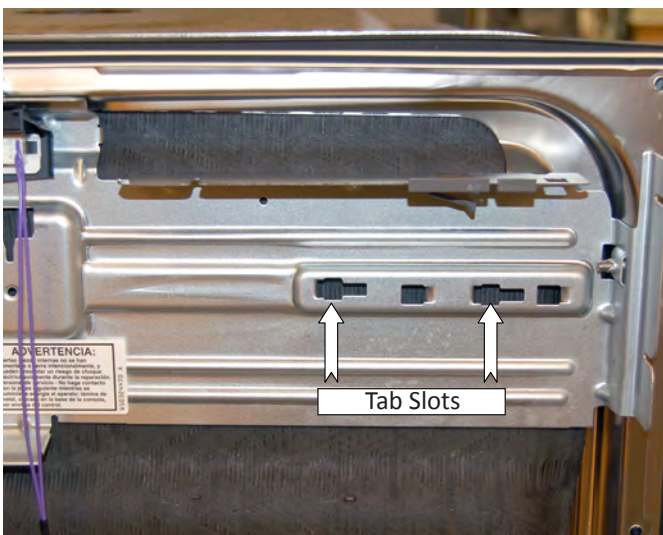


*Figure 1*

4. Slide the electronic control to the left to unhook the tabs on the back of the control from the slots in the door bracket, see figures 2 and 3.



*Figure 2*



*Figure 3*

**NOTE:** There are two tabs on the back of the control that hook into slots in the door bracket.

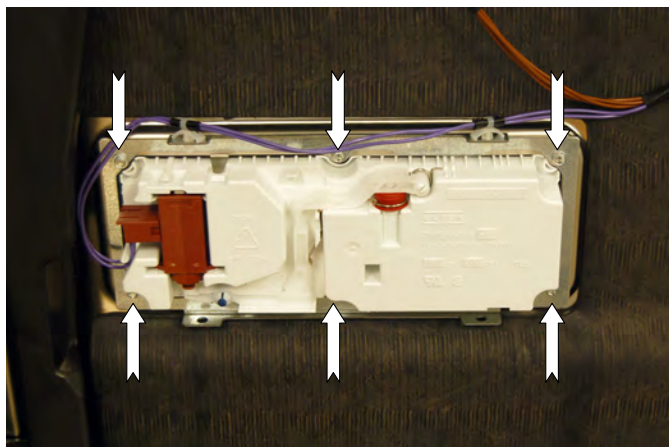
## Removing Dispenser Assembly

### **⚠ WARNING**

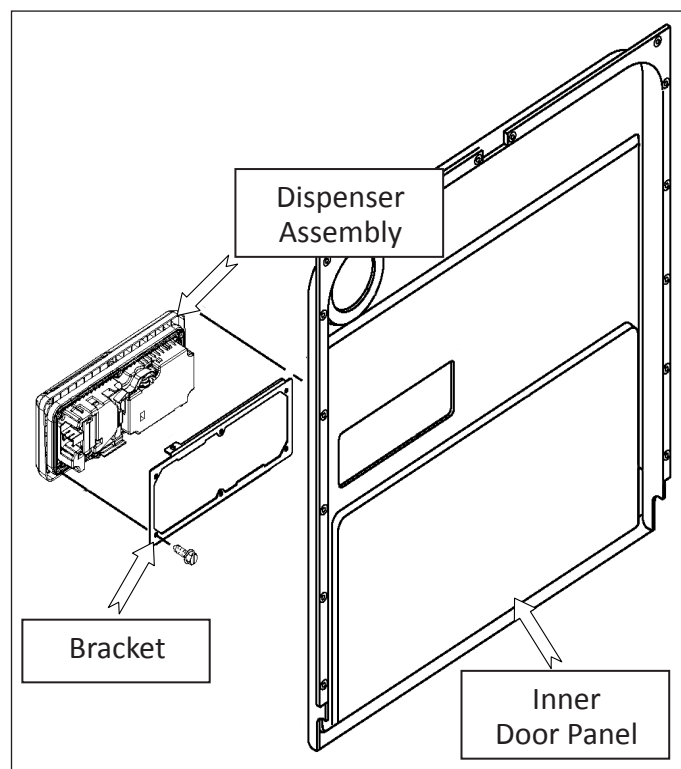


**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Unplug dishwasher or disconnect power.
2. Remove the outer panel from the door.
3. Remove - 6 - ¼" hex head screws securing the dispenser to the door, see figure 1.
4. Disconnect switch wires.
5. Remove dispenser assembly and bracket, see figure 2.

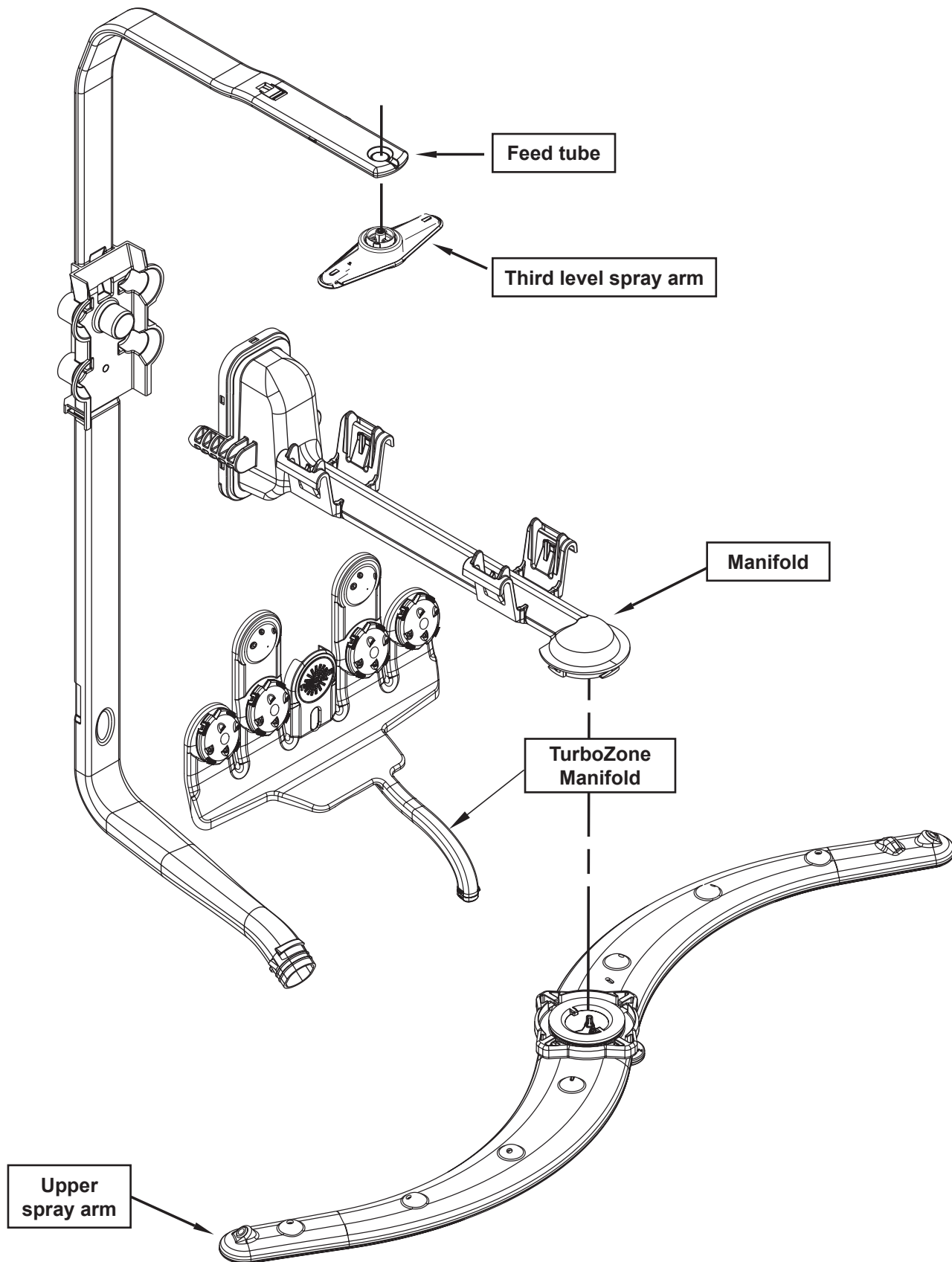


*Figure 1*



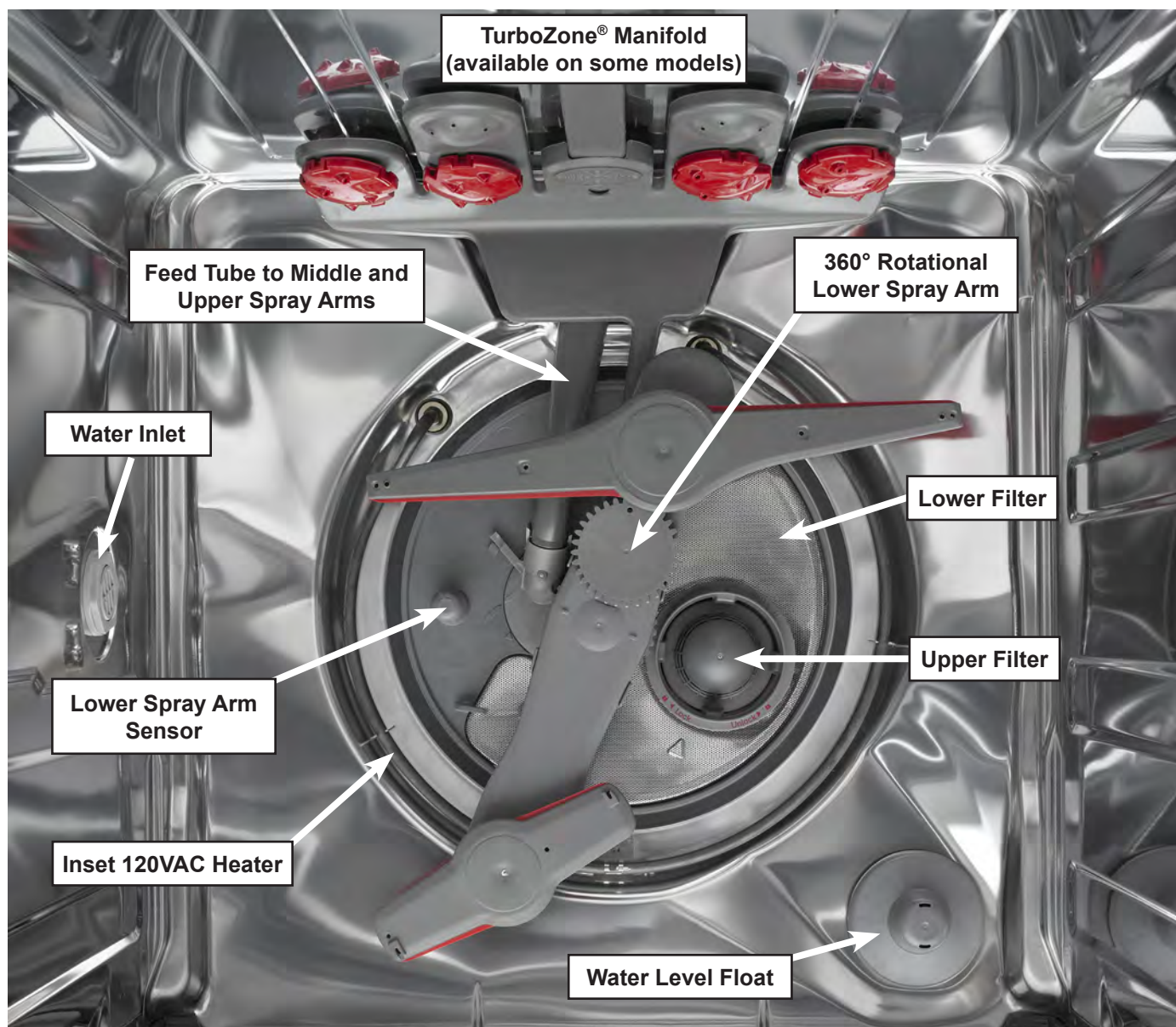
*Figure 2*

## Spray Arms, Feed Tube, and Manifold



**Component Identification**

## Tub Components – Stainless Steel Models



### Tub Component Identification

(TurboZone and Controlled Lower Spray Arm & Sensor are only available on some models.)

# Removing the Upper Rack(s)

## Removing The Upper Rack (SatinGlide Max rails)

### To remove the rack:

1. To gain access to the removable tabs on the tracks/rails, pull the upper rack forward about halfway out of the tub.
2. On one side, press the tab on the track in and pull up the front end of the rack out of the track. See figures 1 & 2.

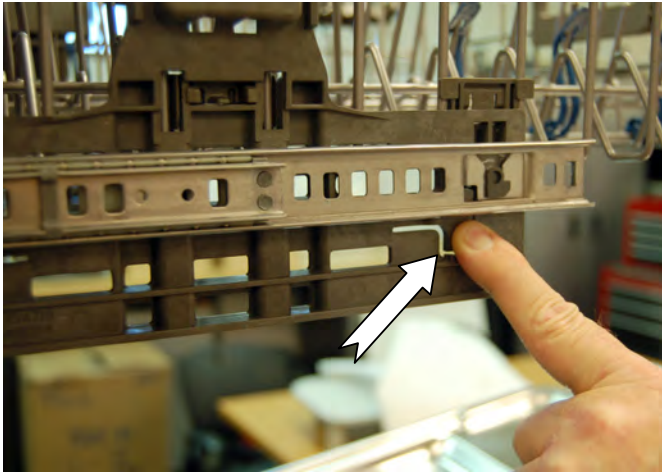


Figure 1

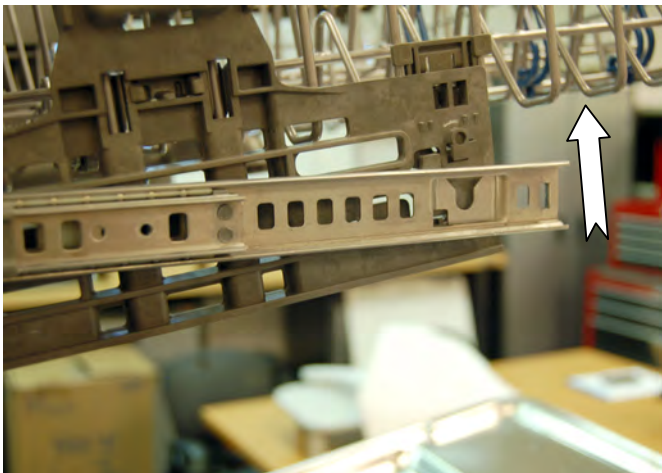


Figure 2

3. Then repeat this step on the other side to completely remove the front end of the rack.
4. Then remove the back end of the rack, by pulling the back end out with a slightly forward, and then upward motion.

### To replace the rack:

Pull the tracks forward about halfway out of the tub. Along the sides of the racks are round attachment tabs. Align the rack's back end attachment tabs with the cutout in the track. Push down into place. Pull the tracks completely out, and align the rack's front end attachment tabs with the cutout in the track. Push down into place. You will hear a snap when the front end of the rack is secured into place on each side.

## Removing The Upper Rack (standard rails)

1. To gain access to the track stops, pull the upper rack forward about halfway out of the tub.
2. To open, flip the track stop toward the outside of the tub. After opening both track stops, pull top rack out of the rails. See figure 3.

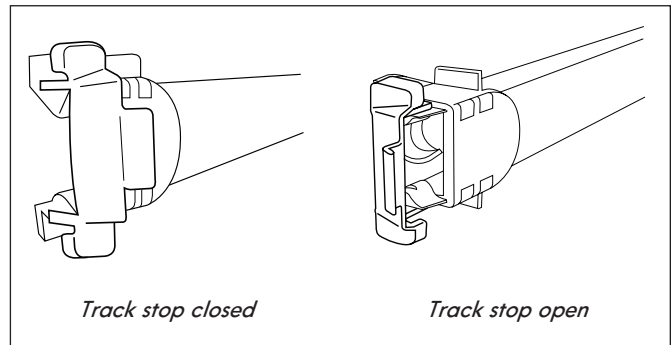


Figure 3

## Removing Lower Spray Arm

To remove the lower spray arm:

1. Lower spray arm nut location, see figure 1.

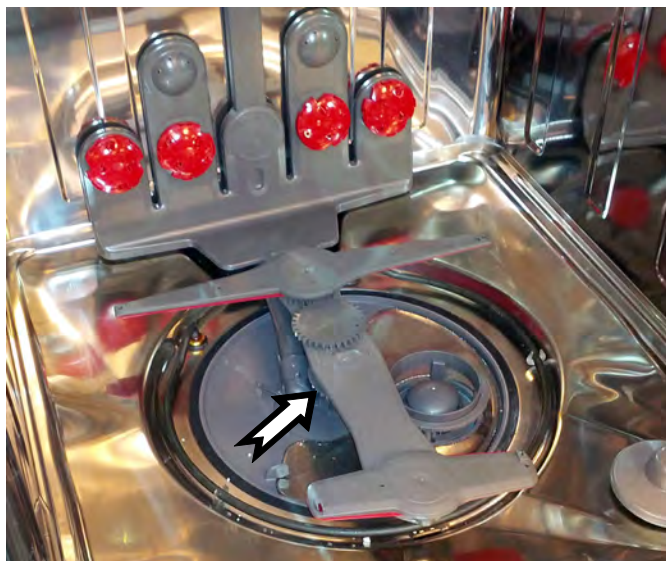


Figure 1

2. Rotate the lower spray arm nut ¼ turn counter clockwise to remove the spray arm, see figure 2.

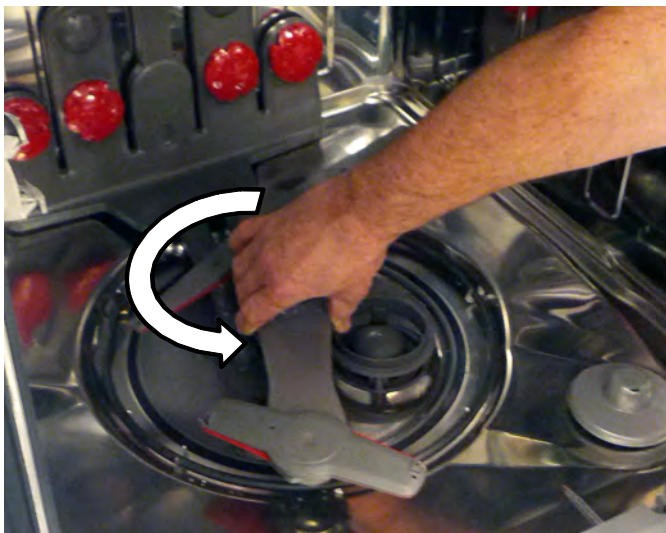


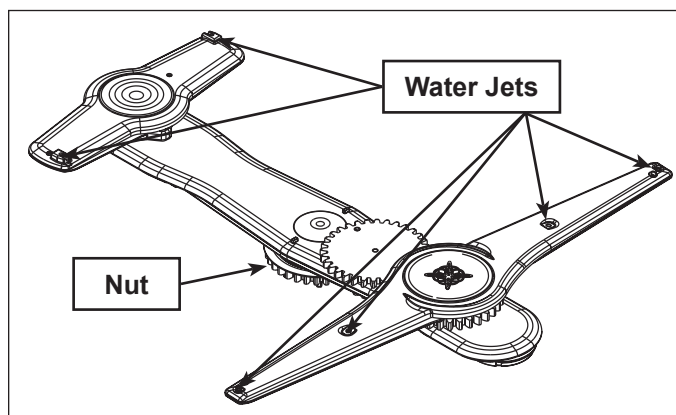
Figure 2

3. Lift off, see figure 3.



Figure 3

## Lower Spray Arm Assembly



## Removing Filters

### To remove the filters:

1. Upper Filter-Push down and turn filter 1/4 turn counterclockwise and lift out, see figures 1 and 2.



Figure 1



Figure 2

2. Lower Filter- Lift out of sump, see figure 3.



Figure 3

### UltraClean® Filtration System

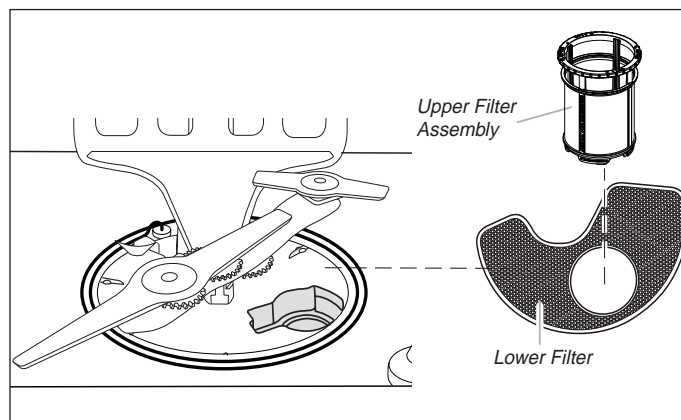


Figure 4 - Filtration System

## Removing TurboZone® Manifold and Diverter Disk

### To Remove TurboZone® Manifold: (available on some models)

1. Unsnap manifold from distribution tube.
2. Disconnect the manifold tube from the sump by lifting up, see figure 1.



Figure 1

**NOTE:** Powerful rotating jets target water towards pots, pans, or casserole dishes loaded in the back of the dishwasher.

### Accessing Diverter Disk (stainless steel tub)

1. Unsnap distribution tube from tub clips. See figures 1 & 2.

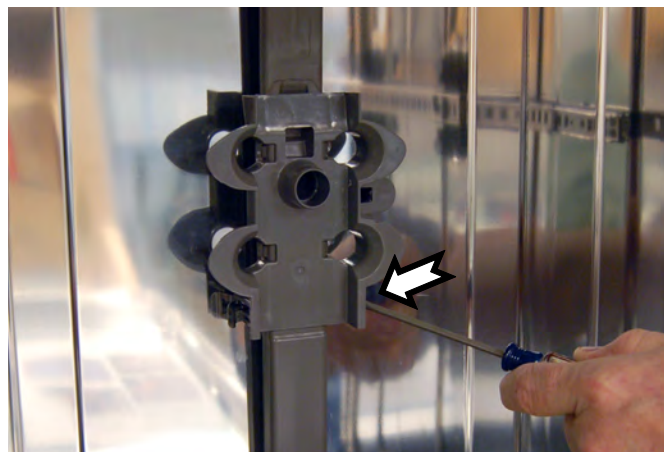


Figure 1

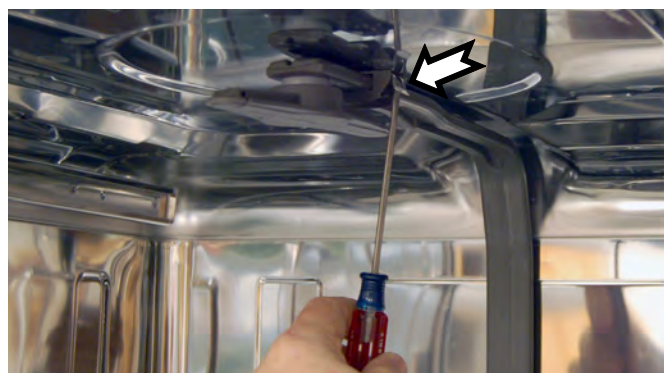


Figure 2

2. Disconnect the feed tube from the diverter housing, see figure 3.



Figure 3

continued next page . . .

## Removing Diverter Disk (continued)

3. Release the lock on the diverter housing, see figure 4.

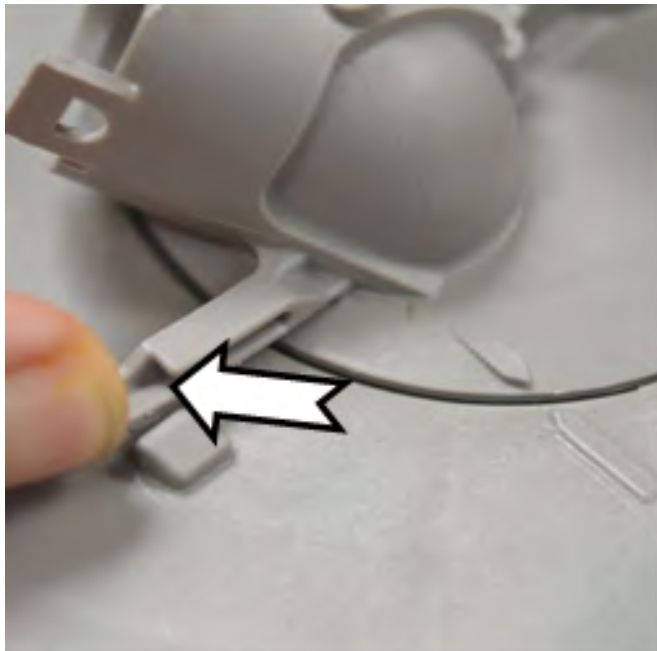


Figure 4

5. Lift out the housing, see figure 6.



Figure 6

4. Rotate the housing counterclockwise, see figure 5.



Figure 5

### Diverter Disk

6. The diverter disc attaches to a keyed shaft, see figure 7.

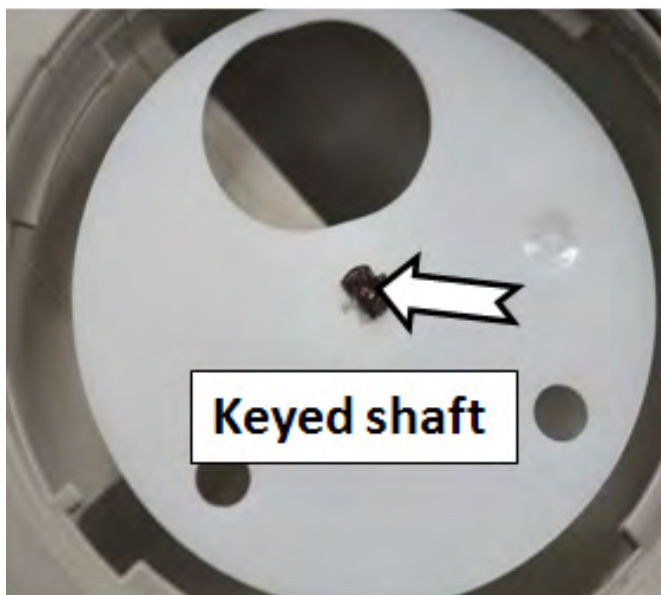


Figure 7

continued next page . . .

## Removing Diverter Disk (continued)

7. Lift off the disc, see figures 8 and 9.

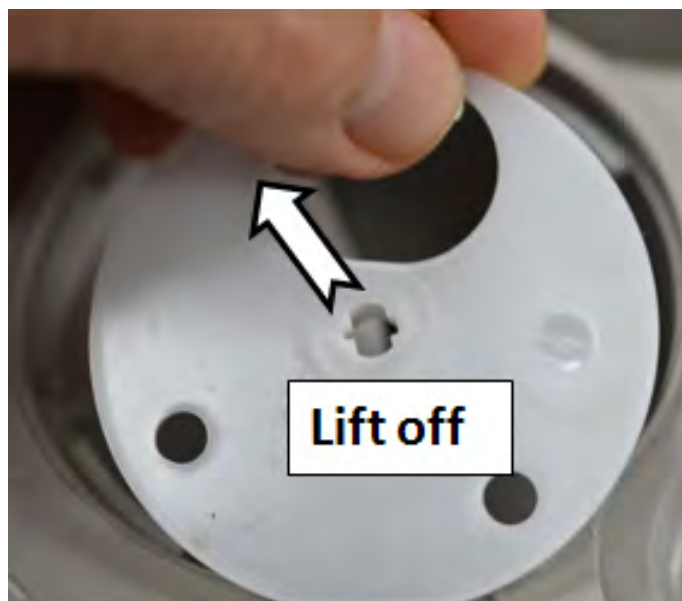


Figure 8



Figure 9

## Installing Diverter Housing

1. Align the arrow on the diverter housing to the lower arrow on the sump.
2. Rotate the housing clock wise until the diverter housing locks in place, see figure 1.

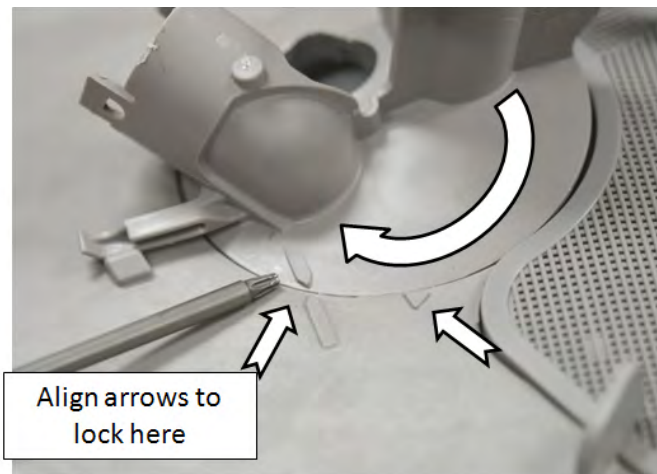


Figure 1

## Under the Tub Components

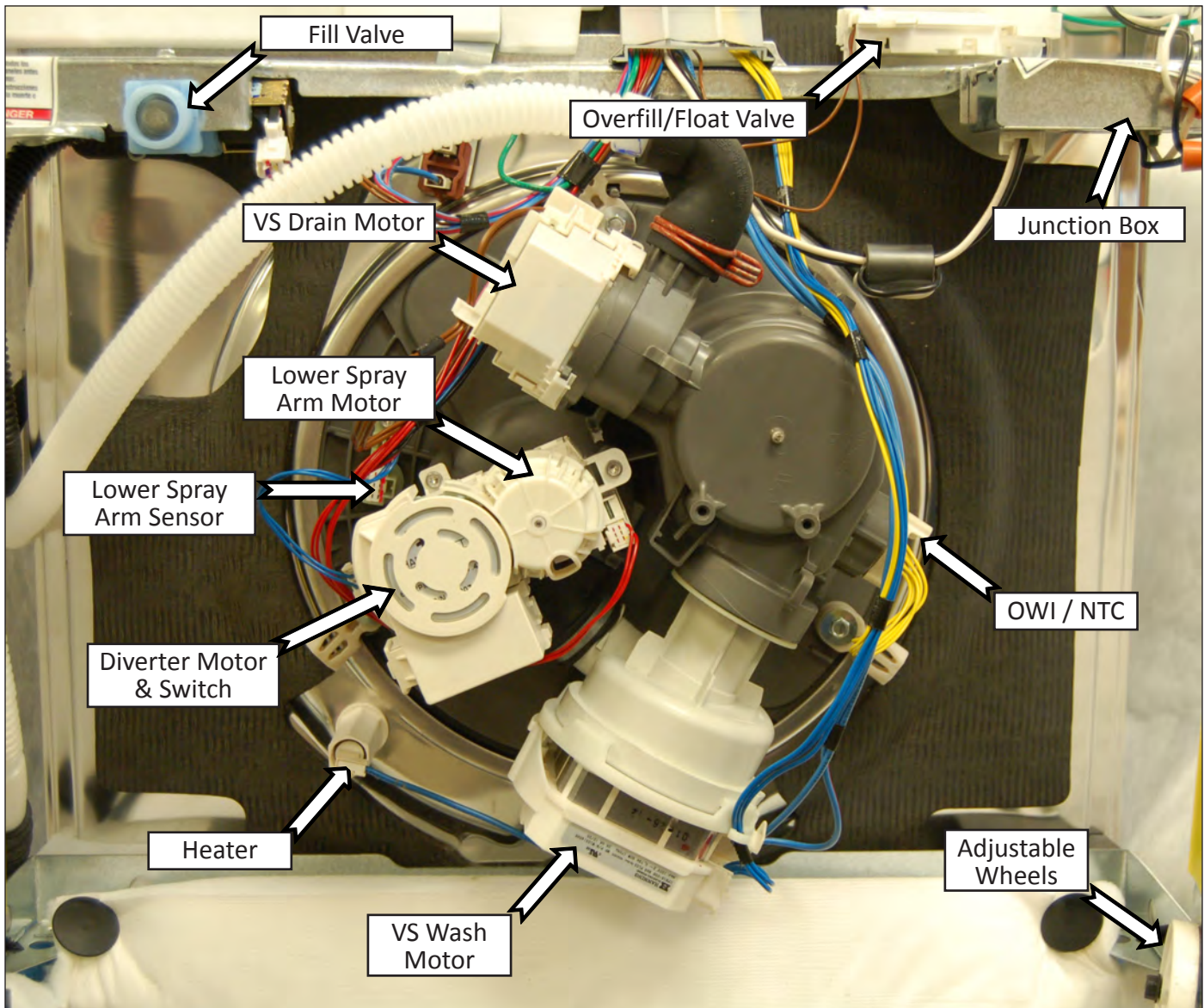


Figure 1

## Heater

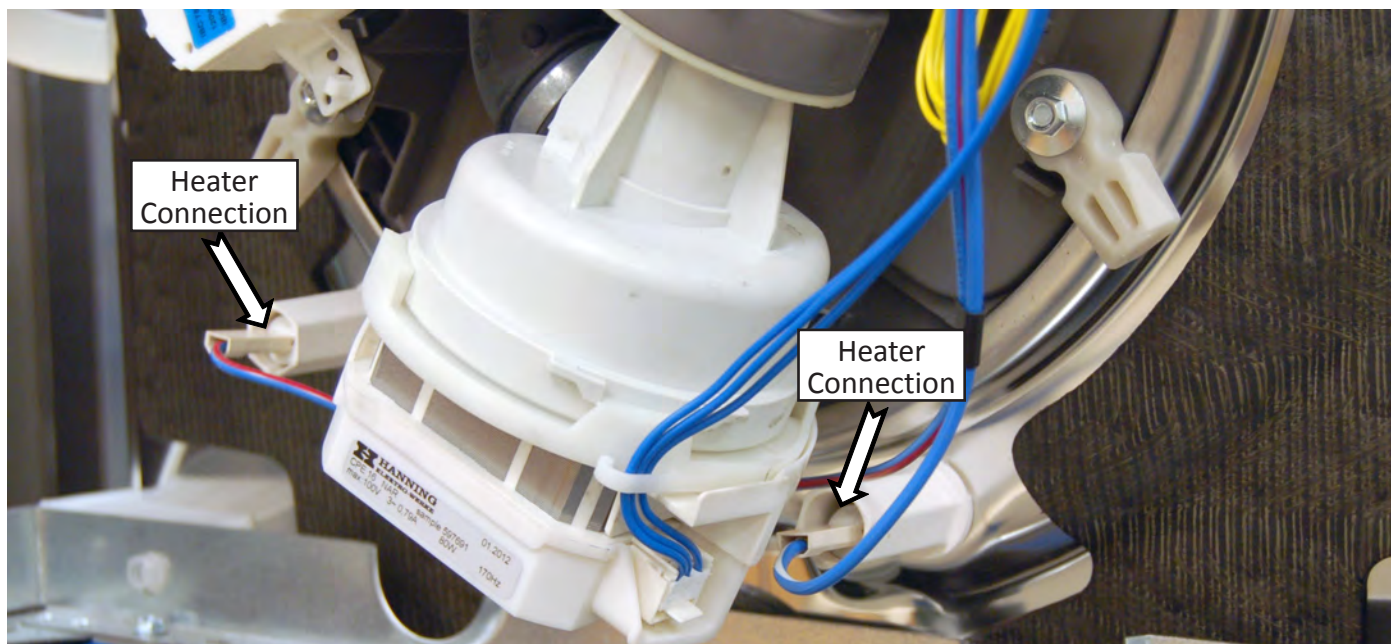


Figure 1

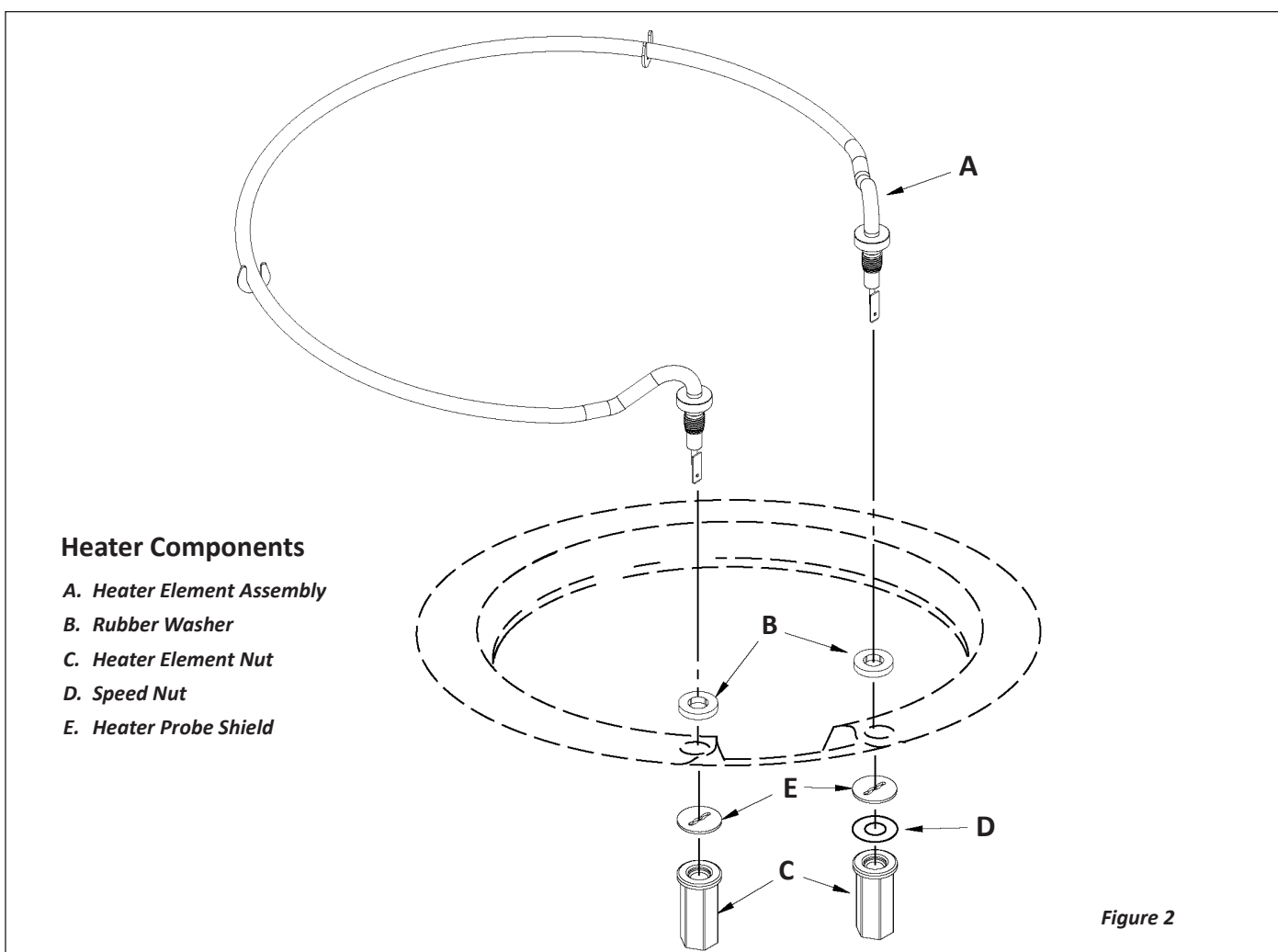


Figure 2

## Removing Sump Assembly & Drain Pump

### **⚠ WARNING**



**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Unplug dishwasher or disconnect power.
2. Release hose clamp and pull off the hose, see figures 1 and 2.

**Note:** Be prepared to catch the water from the sump area.

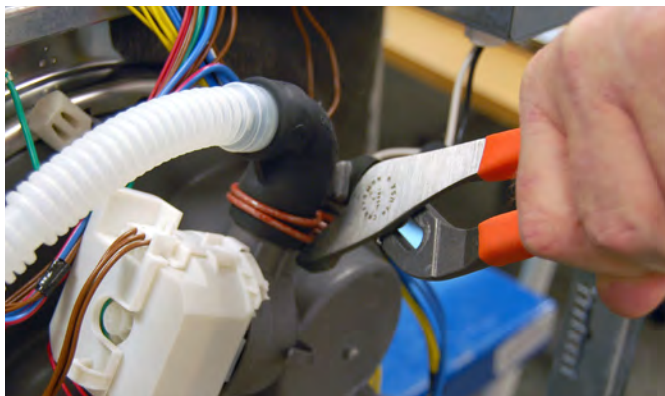


Figure 1

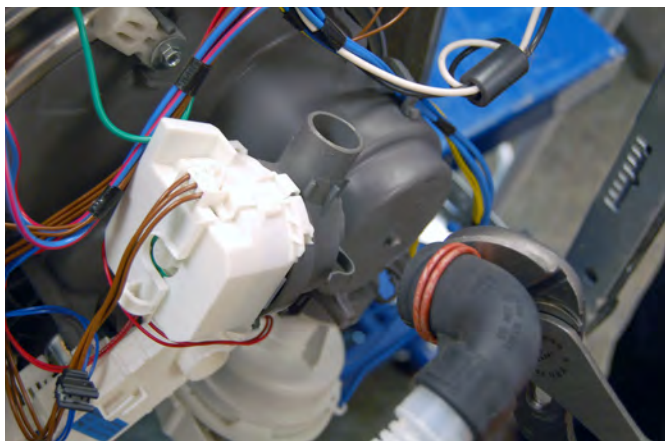


Figure 2

3. Remove the wire harness from the bracket on the side of the sump and move off to the side, see figures 3 and 4.

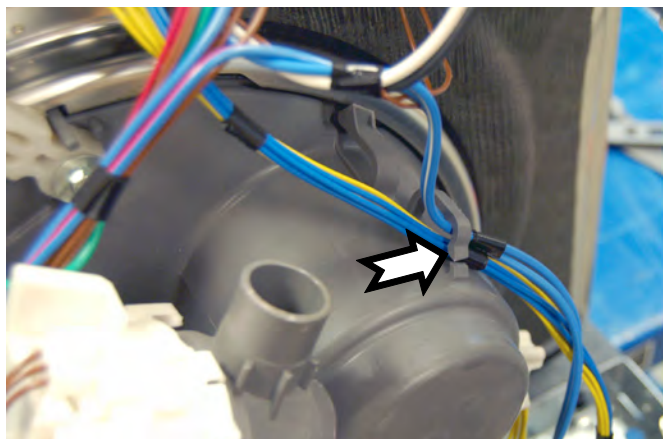


Figure 3

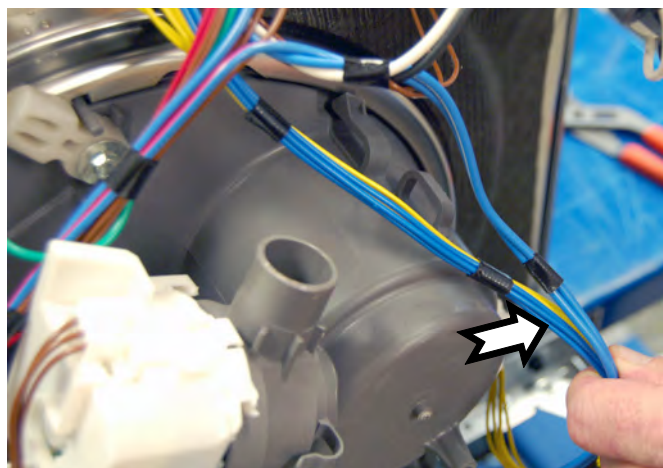


Figure 4

4. Unplug the wire harness connected to the drain pump, see figure 5.

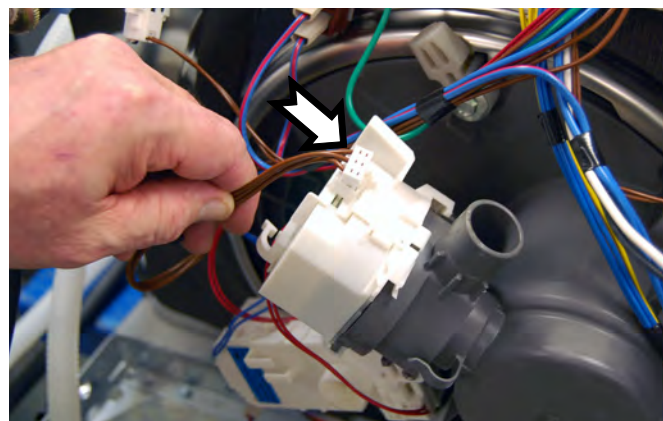
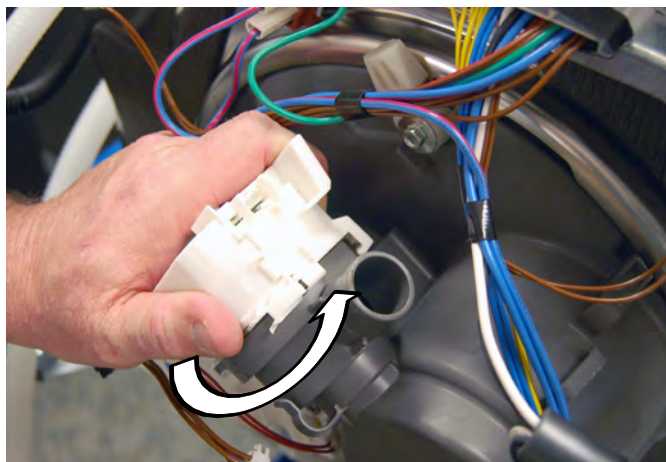


Figure 5

continued next page . . .

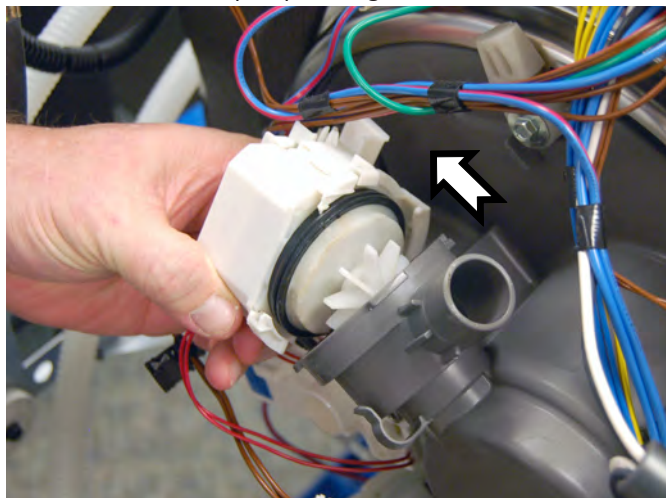
## Removing Sump Assembly & Drain Pump (continued)

5. Rotate the drain pump 1/4 turn counterclockwise, see figure 6.



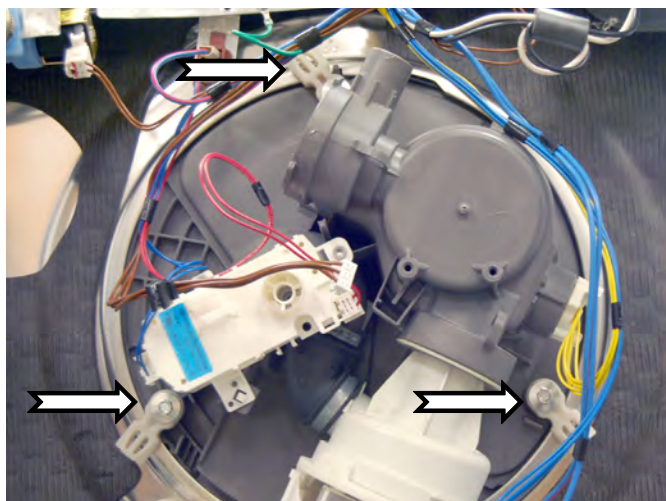
**Figure 6**

6. Remove the drain pump, see figure 7.

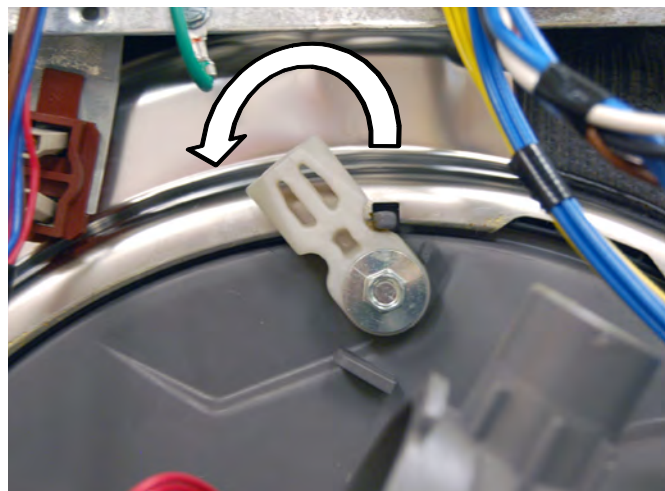


**Figure 7**

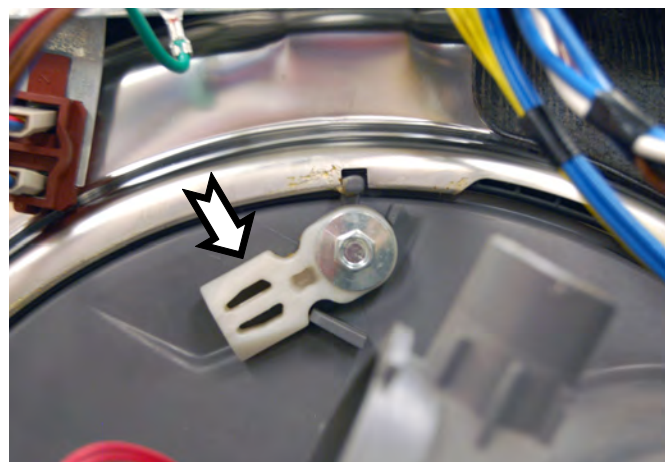
7. Unlock the three tabs securing the motor and sump assembly to the tub, see figures 8, 9 and 10.



**Figure 8 - Tab Locations**

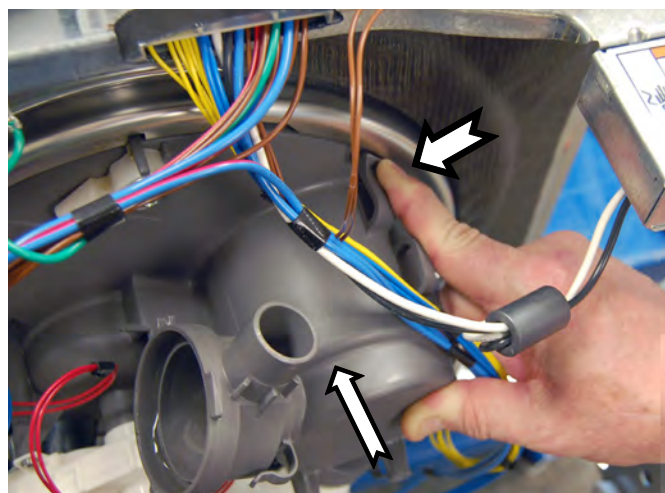


**Figure 9 - Locked**



**Figure 10 - Unlocked**

8. Depress the locking tab and push upward on sump to detach from tub, see figure 11.



**Figure 11**

continued next page . . .

### Removing Sump Assembly & Drain Pump (continued)

9. Tilt the assembly and lift out to remove, see figures 12.

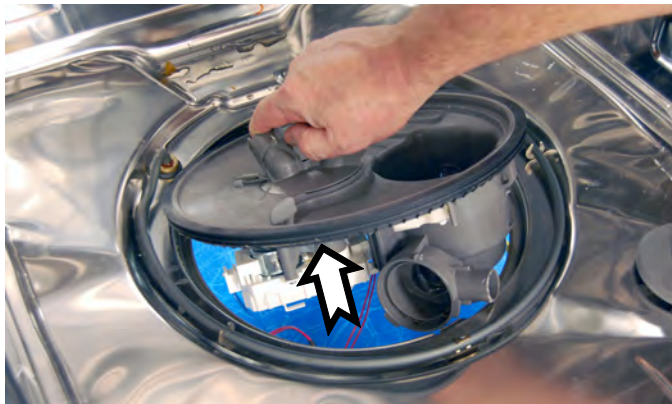


Figure 12

**NOTE:** When installing the sump assembly, align the tab on the assembly with the slot in the tub, see figures 13 and 14.



Figure 13



Figure 14

10. Unplug the diverter position switch harness, see figure 15.

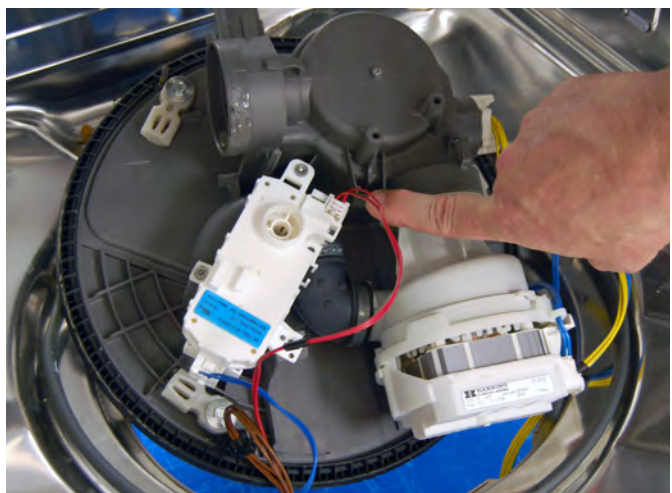


Figure 15

11. Unplug the diverter motor harness, see figure 16.

**NOTE:** Also disconnect the lower spray arm motor harness on models that have the controlled lower spray arm.

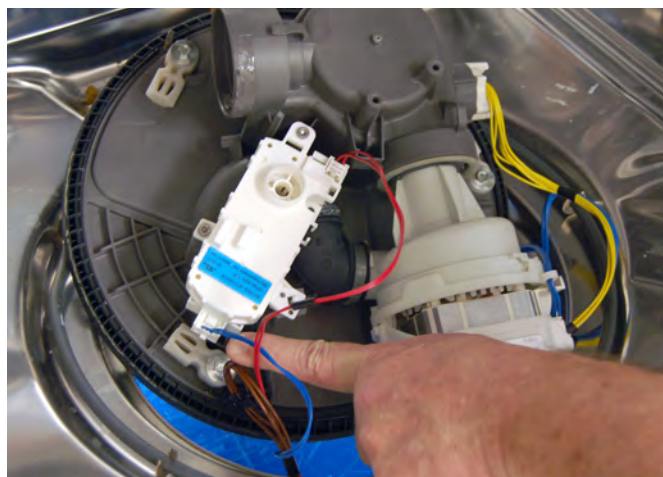


Figure 16

12. Unplug the OWI / NTC harness, see figure 17.

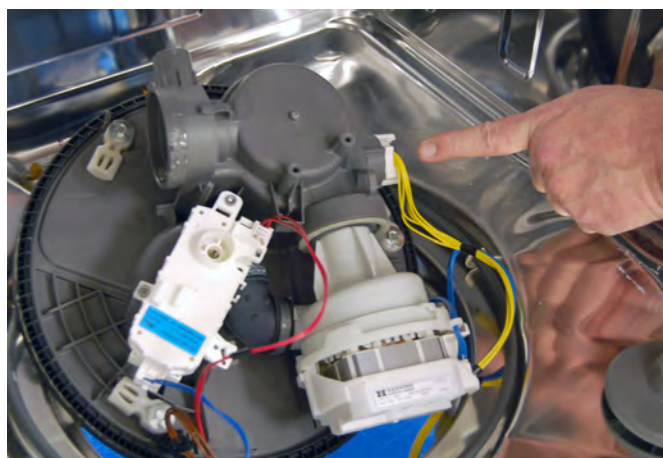


Figure 17

13. Unplug the wash motor harness, see figure 18

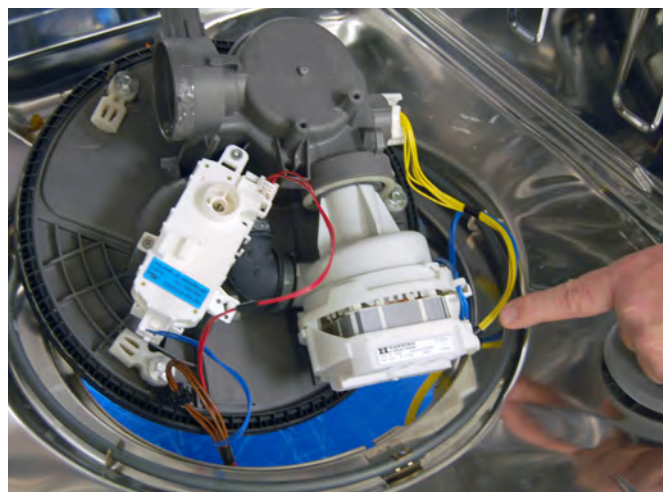


Figure 18

## Removing Optical Water Indicator

### **⚠ WARNING**



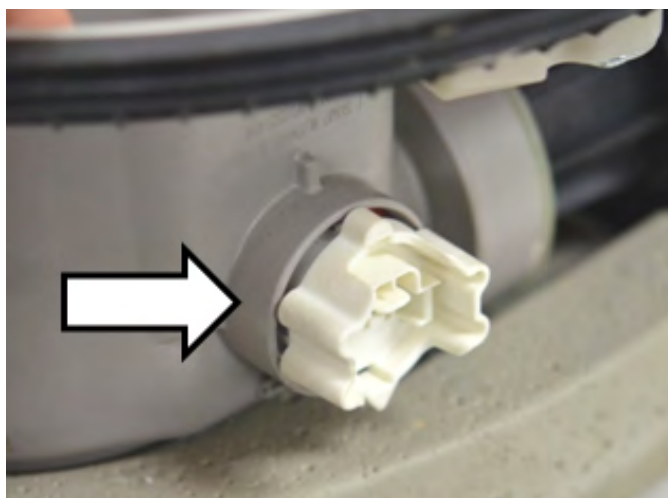
**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Rotate optical water indicator counter-clockwise 1/4 turn, see figure 3.



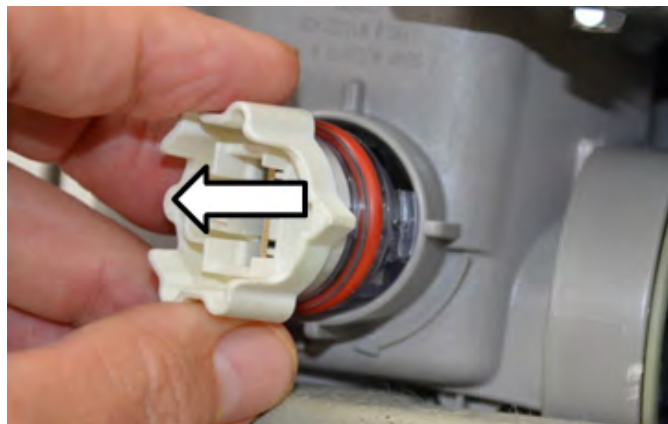
*Figure 3*

Optical water indicator—exterior view, see figure 1.



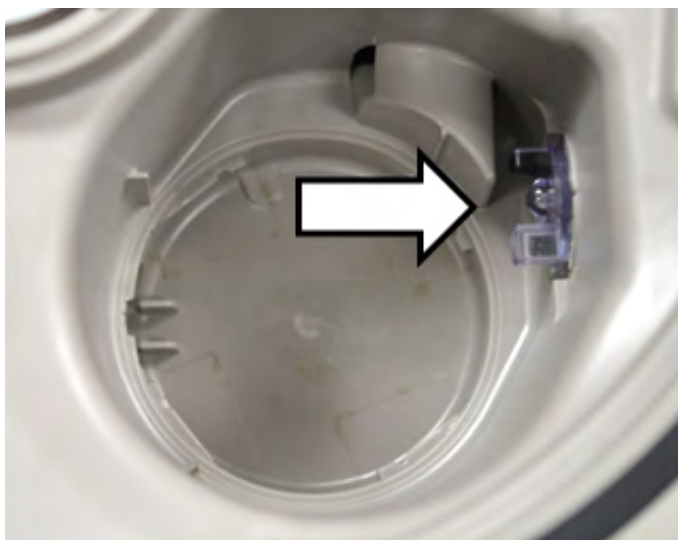
*Figure 1*

2. Pull out to remove, see figure 4.



*Figure 4*

Optical water indicator in sump area, see figure 2.



*Figure 2*

## Removing Diverter Assembly

### **⚠ WARNING**

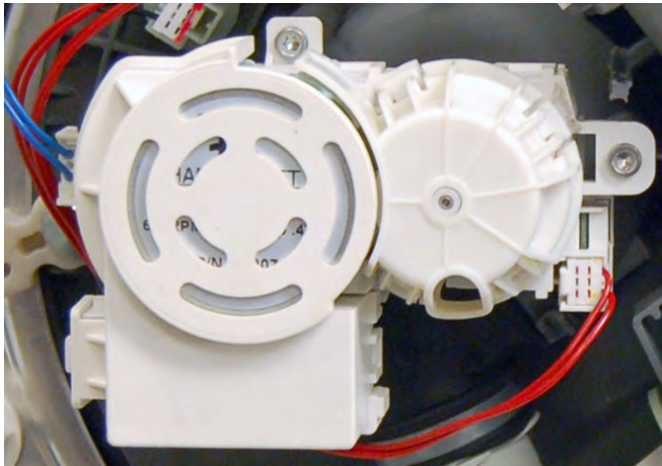


**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

#### To remove the Diverter Assembly:

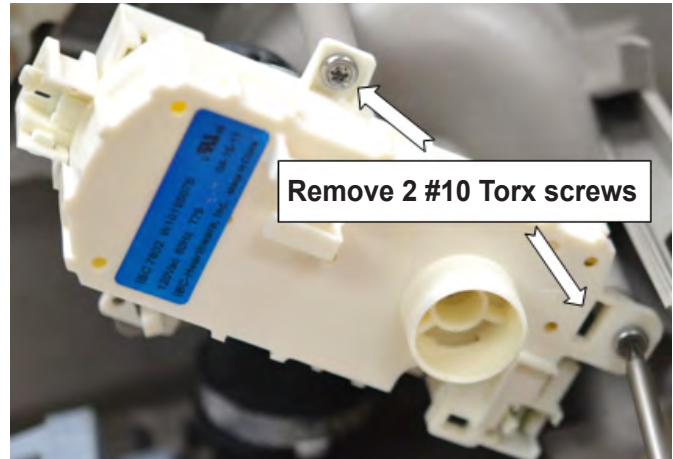
1. Unplug dishwasher or disconnect power.
2. If not done already, disconnect the diverter motor and sensor harnesses; and if available, the lower wash arm motor harness\*. (See figure 1.)

**\*Note:** The lower spray arm motor, which is incorporated into the diverter assembly (see figure 1), is available on models that have the controlled lower spray arm.



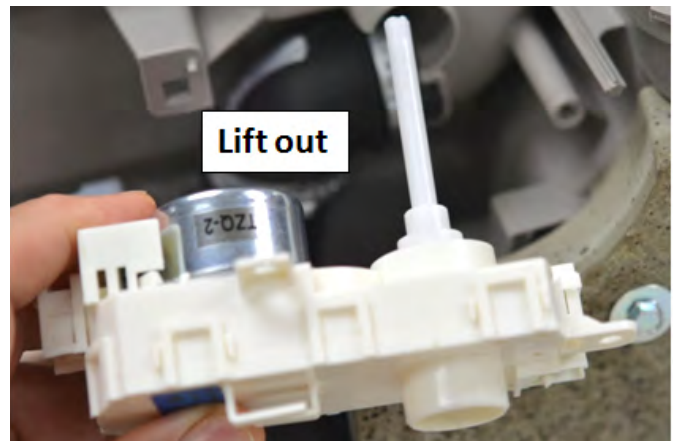
*Figure 1 - Diverter assembly w/spray arm motor*

3. Remove 2 Torx screws, see figure 2. (Diverter assembly shown without lower wash arm motor.)



*Figure 2 - Diverter assembly w/o spray arm motor*

4. Lift out, see figure 3.



*Figure 3*

**Note:** The diverter disc is keyed onto the motor shaft. The diverter motor can be removed without removing the diverter disc first but to install the diverter motor, the diverter housing must be removed to align the diverter disc to the motor shaft.

## Removing Lower Spray Arm Sensor

### **⚠ WARNING**



**Electrical Shock Hazard**  
 Disconnect power before servicing.  
 Replace all parts and panels before operating.  
 Failure to do so can result in death or electrical shock.

To remove the Lower Spray Arm Sensor  
 (Available on models with the controlled lower spray arm.)

1. Unplug dishwasher or disconnect power.
2. Disconnect the harness from controlled lower spray arm sensor.
3. Remove 1 Torx screw, see figure 1. (Diverter assembly removed for open view of sensor.

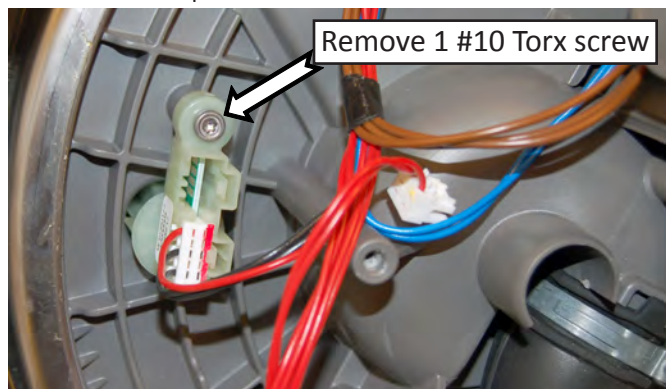


Figure 1

4. Lift out and remove from sump, see figure 2.

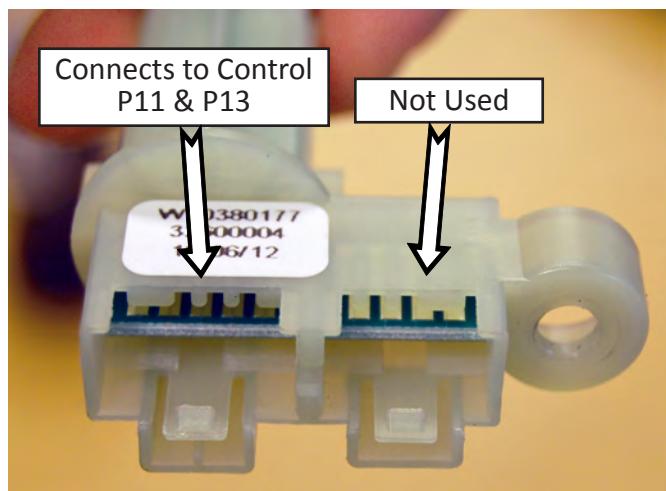


Figure 2

### Controlled Spray Arm Shaft and Sensor

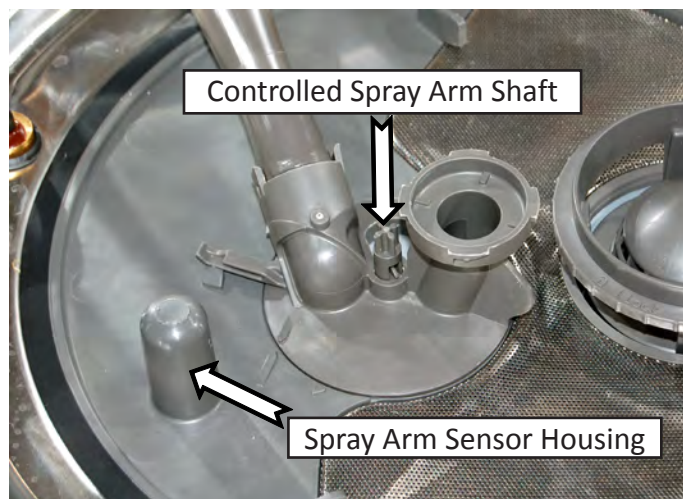


Figure 3

## Wash Motor Replacement Steps for Removing Old Wash Motor

### **⚠ WARNING**



**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Use a pair of diagonal pliers to cut off the hose clamps, see figures 1 and 2.



*Figure 1*



*Figure 2*

2. Remove old clamps, see figure 3.



*Figure 3*

3. Remove motor from seal, see figure 4.



*Figure 4*

continued next page . . .

## Steps for Removing Old Wash Motor (continued)

4. Pry up on old seal, see figure 5.

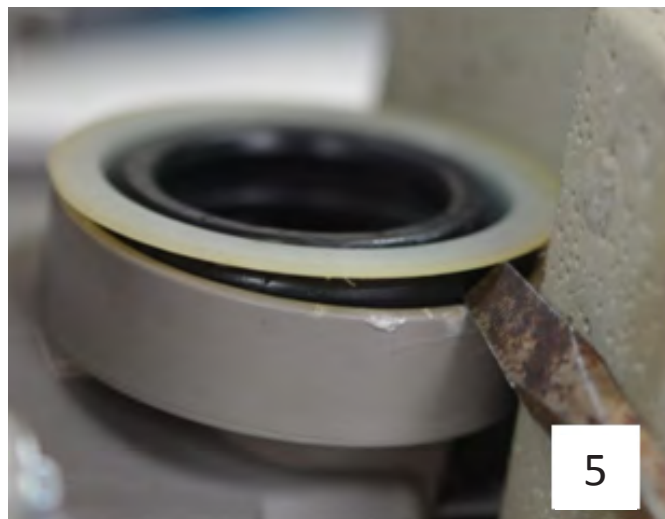


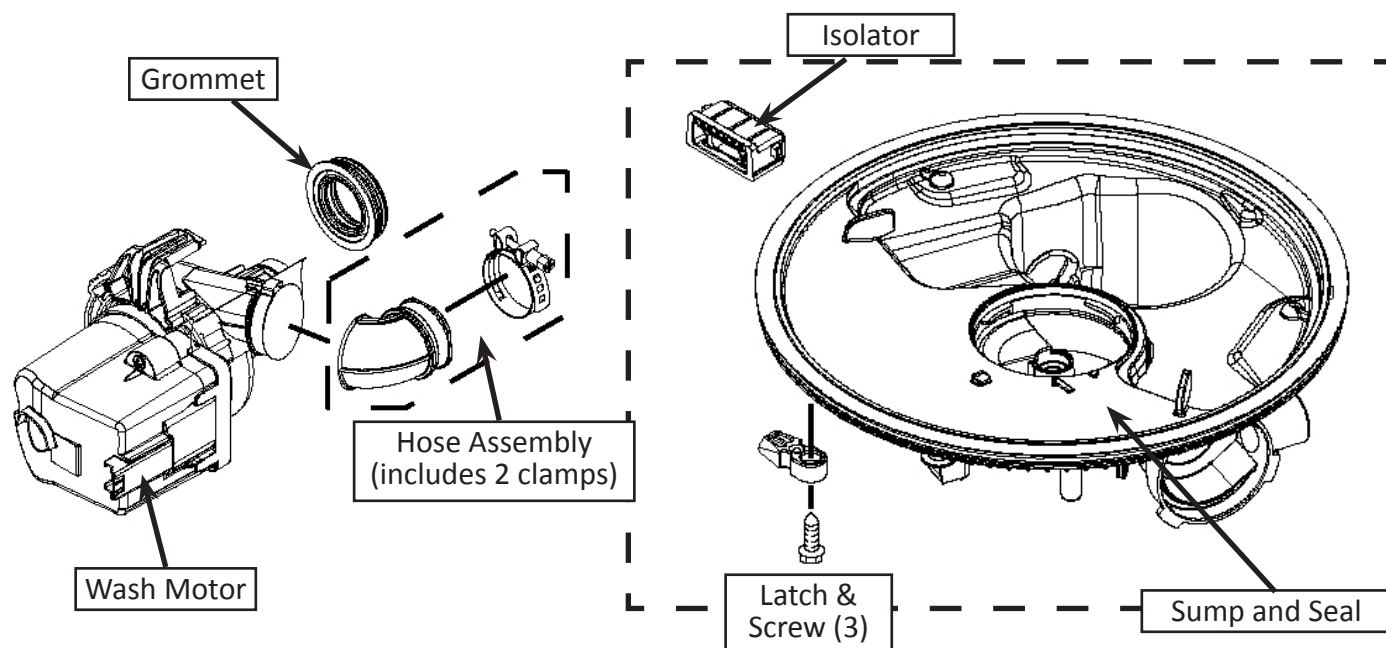
Figure 5

5. Remove seal, see figure 6.



Figure 6

## Motor and Sump Assembly



## Steps for Installing New Wash Motor

### **⚠ WARNING**



**Electrical Shock Hazard**  
Disconnect power before servicing.  
Replace all parts and panels before operating.  
Failure to do so can result in death or electrical shock.

1. Install new Seal, see figure 1

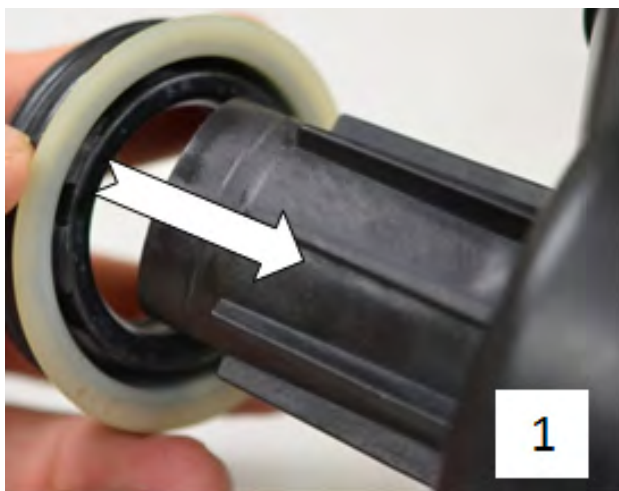


Figure 1

2. Install motor, see figure 2.

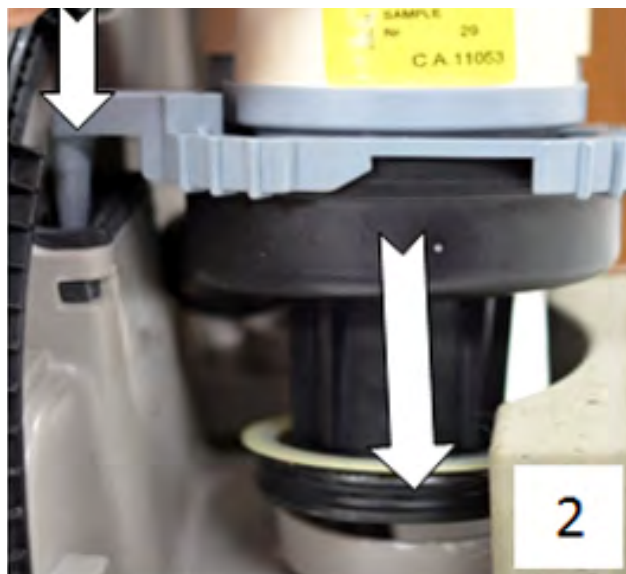


Figure 2

3. Seat new seal, see figure 3.

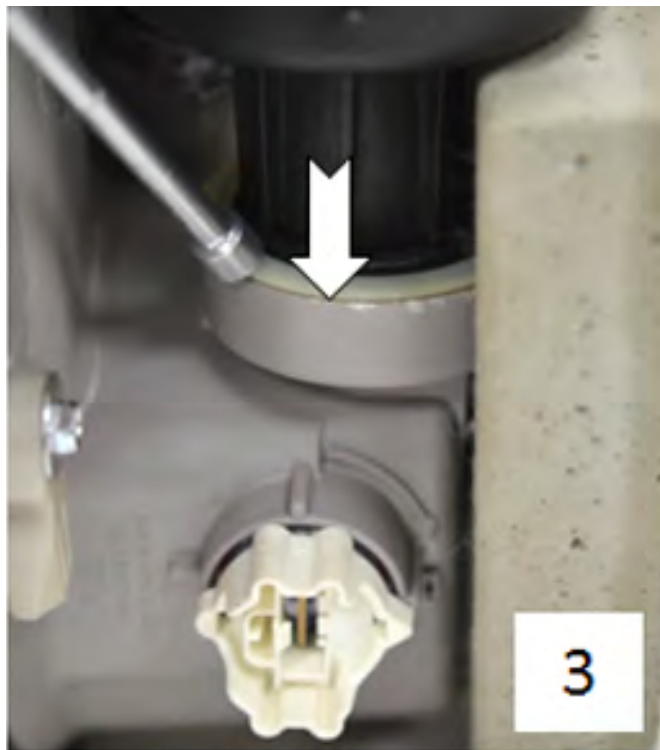


Figure 3

4. Seal installed correctly, see figure 4.



Figure 4

continued next page . . .

## Steps for Installing New Wash Motor (continued)

5. Wash motor hose and clamps, see figure 5.



Figure 5

6. Install clamps with screws toward bottom, see figure 6.



Figure 6

7. Align tabs and tighten clamps, see figures 7 and 8.

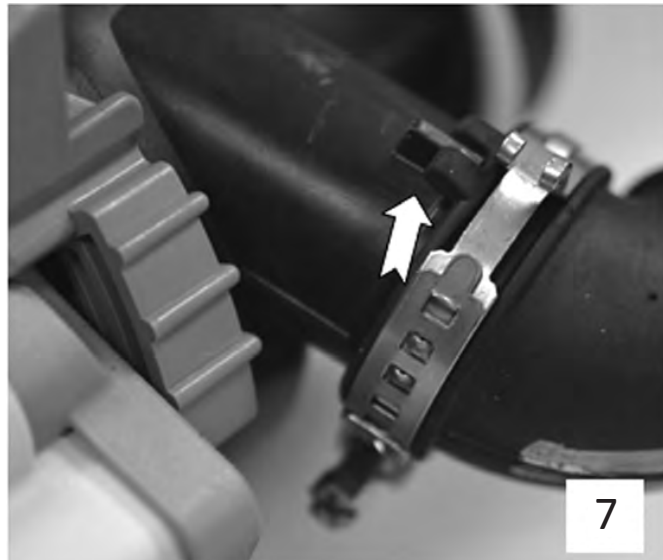


Figure 7

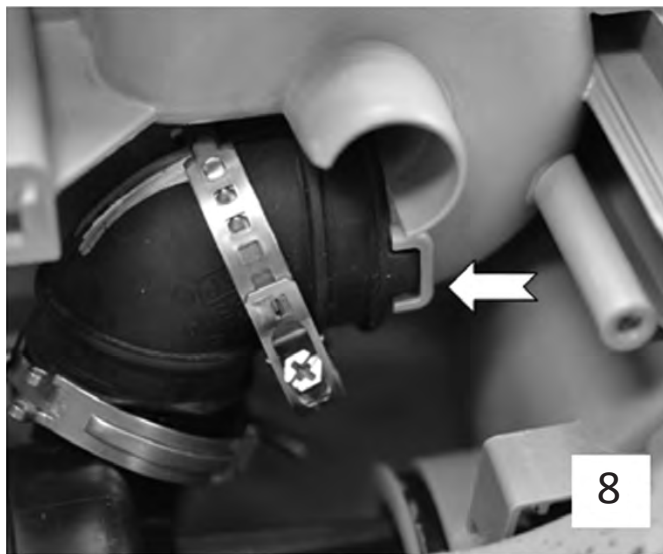


Figure 8

8. Install motor and pump assembly. Fill sump with water and check for leaks.

Notes

## Section 4:

# Diagnostics & Troubleshooting

This section provides diagnostic, fault codes, and troubleshooting information for the “Kenmore Elite Stainless Steel Tall Tub Dishwasher.”

- Safety First
- Wash Cycles
- Service Diagnostic Cycle
- Service Diagnostic Cycle Notes
- Diagnostic Guide
- Service Diagnostics with Error Codes
- Service Error Codes
- Troubleshooting Guide
- Notes

### For Service Technician Use Only

#### **⚠ DANGER**



##### **Electrical Shock Hazard**

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

#### **⚠ WARNING**



##### **Electrical Shock Hazard**

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

### **Voltage Measurement Safety Information**

**When performing live voltage measurements, you must do the following:**

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

#### **IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics**

ESD problems are present everywhere. Most people begin to feel an ESD discharge at approximately 3000V. It takes as little as 10V to destroy, damage, or weaken the main control assembly. The new main control assembly may appear to work well after repair is finished, but a malfunction may occur at a later date due to ESD stress.

- Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

**-OR-**

- Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging main control assembly in anti-static bag, observe above instructions.

#### **IMPORTANT SAFETY NOTICE — “For Technicians only”**

This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

## For Service Technician Use Only

### Wash Cycles

**Normal Cycle** (NOTE: Each sequence box contains multiple intervals.)

DRAIN 0 MIN, 0:40 MAX	FILL 0:55	WASH 6:50	DETER- GENT DISPENSE	WASH 2:30	THERMAL HOLD (1,2) 41°C (105°F) OR 40:00	WASH 20:00- 25:00	DRAIN SEQUENCE 2:06 (4)	FILL 0:18	WASH 1:47	DRAIN SEQUENCE 0:57	FILL 0:43
WASH 5:06	DRAIN SEQUENCE 1:25	FILL 0:51	HEATED WASH (2) 15:00	THERMAL HOLD (1,2) 137-140°F (58.5-60°C) OR 45:00	RINSE AID DISPENSE	WASH 2:00	RINSE AID DISPENSE	HEATED WASH 3:00	DRAIN SEQUENCE 0:40 (4)	PAUSE 6:00	DRY (2,3) SMART DRY 35:00 HEATED DRY 42:30

**One Hour Wash** (NOTE: Each sequence box contains multiple intervals.)

DRAIN 0 MIN, 0:40 MAX	FILL 1:14	HEATED WASH 3:00 (2)	DRAIN SEQUENCE 2:06 (4)	FILL 1:06	HEATED WASH 3:00 (2)	DRAIN SEQUENCE 1:34 (4)	FILL 1:14	DETERGENT DISPENSE	HEATED WASH 16:00 (2)	DRAIN SEQUENCE 2:06 (4)	FILL 0:22	WASH 0:30
FILL 0:47	HEATED WASH 6:36 (2)	DRAIN SEQUENCE 1:34 (4)	FILL 1:06	HEATED WASH 12:20 (2)	RINSE AID DISPENSE	WASH 2:00	RINSE AID DISPENSE	WASH 2:30	DRAIN SEQUENCE 0:40 (4)	PAUSE 6:00 (3)	DRY (2,3) SMART DRY 17:30 HEATED DRY 25.30	

**Pots & Pans Cycle** (NOTE: Each sequence box contains multiple intervals.)

DRAIN 0 MIN, 0:40 MAX	FILL 1:03	Cycle repeats sequence once						WASH 3:40	DRAIN SEQUENCE 1:44	FILL 0:59
		WASH 3:40	DRAIN SEQUENCE 2:06 (4)	FILL 0:15	WASH SEQUENCE 0:54-1:39	DRAIN SEQUENCE 0:34 (4)	FILL 0:59			
DETERGENT DISPENSE	WASH 2:30	THERMAL HOLD 54°C (130°F) OR 60:00	WASH 55:00	DRAIN SEQUENCE 2:06 (4)	FILL 0:15	WASH SEQUENCE 0:54-1:39	DRAIN SEQUENCE 0:34	FILL 0:59	Cycle repeats sequence...	
									WASH 6:00	DRAIN SEQUENCE 2:06 (4)
...once	HEATED WASH 15:00	THERMAL HOLD 60°C (140°F) OR 45:00	RINSE AID DISPENSE	WASH 2:00	RINSE AID DISPENSE	HEATED WASH 4:30 (2)	DRAIN SEQUENCE 0:40 (4)	PAUSE 6:00	DRY (2,3) SMART DRY 42:00 HEATED DRY 42:30	
FILL 0:59										

**1: THERMAL HOLD = HEATED WASH UNTIL TEMPERATURE REACHED OR MAXIMUM TIME**

**2: HEATER NOT ON FOR ENTIRE DRY TIME**

**3: IF HEATED DRY SELECTED**

**4: SENSED DRAIN = DRAINS UNTIL WATER IS REMOVED FROM TUB OR MAXIMUM TIME**

**NOTES:** - Cycles shown depict typical low soil version.

- Cycles will vary based on sensor inputs and options selected.

- All washers alternate spray arms and vary motor speed.

- To invoke rapid advance mode, press HI TEMP - HEATED DRY - HI TEMP - HEATED DRY with door open or closed after starting cycle.

- Press START/RESUME to advance cycle interval.

## 4-4 ■ Kenmore Elite 2013 Stainless Steel Tall Tub Dishwasher

**See Service Diagnostic Cycle Notes on following page.**

## For Service Technician Use Only

### Service Diagnostic Cycle Notes

- To invoke the diagnostics cycle, perform the following key presses while in standby.
  - Press any 3 keys in the sequence 1-2-3, 1-2-3, 1-2-3 with no more than 1 second between key presses.
  - The Service Diagnostic Cycle will start when the door is closed.
  - To rapid advance 1 interval at a time, press the START/RESUME key. Rapid Advancing may skip sensor checks as some checks require two complete intervals.  
**NOTE:** While in the Diagnostic cycle, the START/RESUME feature is turned off (i.e., auto resume after door interrupts) START/RESUME key serves as interval advance key.
  - Invoking Service Diagnostics clears all status and last ran information from memory and restores defaults. It also forces the next cycle to be a sensor calibration cycle.
  - Last Ran Cycle and Options returned to default (Normal Cycle with Heated Dry Option).
  - Last Ran Delay returns to lowest delay increment.
  - Calibration Cycle may force an extra rinse to occur prior to final rinse (to assure clear water), then calibrates the OWI and the Fill amount during the final rinse.
  - Operating state returns to standby upon completing or terminating the service diagnostics cycle.
- Tun on all LED's immediately upon receiving the entry sequence (even if door is open) and throughout this first interval as a display test.
- Diverter will be on continuously in Interval 14. In all other diverter intervals, diverter will only be on until it reaches the intended position for that interval.
- Press HI TEMP key in this interval to clear customer error history.
- Thermistor (Temperature Sensor) checks — turn Clean LED on if thermistor is in its normal temperature range (32° F to 167° F); turn Sanitized LED on if Fill temperature is above 85° F.
- O.W.I. (Optical Soil Sensor/Optical Water Indicator) checks
  - OWI Sensor for the presence of water during the 5 second pause in Interval 16 and turns on the Clean LED in Interval 15 if water detected.
  - OWI Sensor for presence of bulk soil during Pause Interval 13 and turns on the Clean LED in Interval 12 if bulk soil detected.
  - Drain until OWI sensor sees the presence of air or a maximum of 1:52 during Intervals 5 and turns on the Clean LED in Interval 4 if air detected.
- DC fan motor is on during upper rack washing intervals.
- Turn off all LED's during pause prior to displaying error codes.
- Pause to allow for cold first Fill detection.
- Lower Spray Arm (LSA) models identified by finger-shaped sensor in tub, protruding from bottom left side of sump. Check for LSA motor and sensor during Interval 10 per detail below or look for error code (F9E4) at end of service cycle.

### Interval 10 (4 Min. Lower Wash) Diagnostic Details:

**NOTE:** Lower Spray Arm (LSA) motor and sensor status indication given during 3rd and 4th minute of Interval 10. (Only available on certain models.)

**Minute 1: LSA Rotates CCW**

**Minute 2: LSA Rotates CW**

**Minute 3: LSA Rotates CCW**

➤ Clean LED lit to indicate LSA motor status good.

**Minute 4: LSA Rotates CW**

➤ Clean LED lit to indicate LSA sensor status good.

**NOTE:** Inoperable LSA motor will also cause LSA sensor to indicate bad status (F9E4). See error code table to diagnose. Interval 3: LSA moves to home position after drain completes. Home position = LSA roughly 5 clockwise from 12 O'clock.

### Diagnostic Guide

Before servicing, check the following:

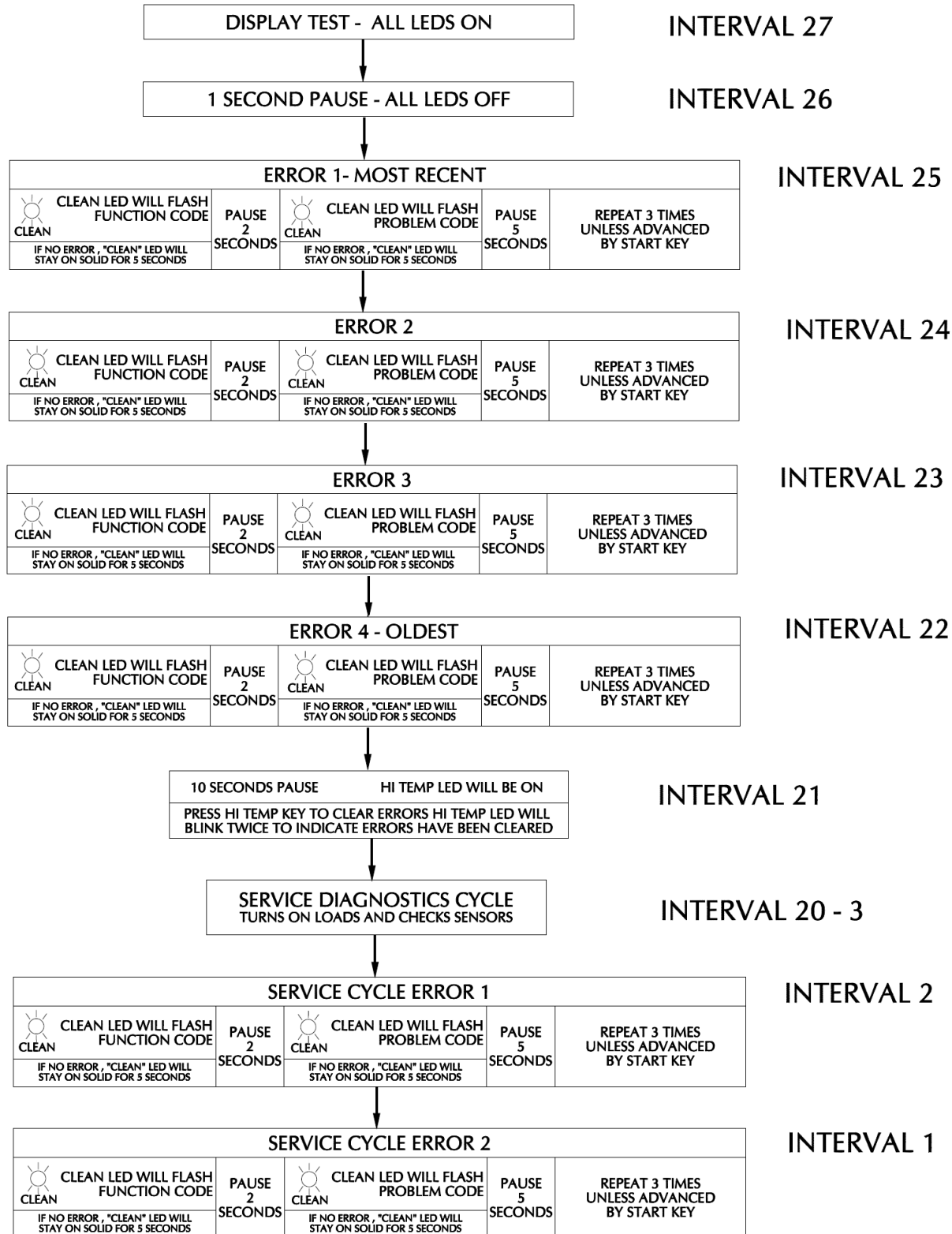
- If applicable, make sure there is power at the wall outlet.
- Has a household fuse blown or circuit breaker tripped?
- Is the water supply turned on?
- Are the drain hoses unobstructed?
- All tests/checks should be made with a VOM (volt-ohm-milliammeter) or DVM (digital-voltmeter) having a sensitivity of 20,000 Ω per volt DC or greater.
- Resistance checks must be made with dishwasher unplugged or power disconnected.
- **IMPORTANT:** Avoid using large diameter probes when checking harness connectors as the probes may damage the connectors upon insertion.
- Check all harnesses and connections before replacing components. Look for connectors not fully seated, broken or loose wires and terminals, pin insertion, or wires not pressed into connectors far enough to engage metal barbs.
- A potential cause of a control not functioning is corrosion or contamination on connections. Use an ohmmeter to check for continuity across suspected connections.

## For Service Technician Use Only

### Service Diagnostics With Error Codes

#### Entry Sequence:

To invoke the diagnostics cycle, perform the following key presses while in standby. Press any 3 keys in the sequence 1-2-3, 1-2-3, 1-2-3 with no more than 1 second between key presses. **NOTE:** Some models have replaced the "Clean" LED with "Complete."



## For Service Technician Use Only

### Service Error Codes #1

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
1 - CONTROL	1-PILOT STUCK ON	CONTROL DETECTED K400 PILOT RELAY STUCK CLOSED.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. CHECK ALL LOADS ON K400 PILOT RELAY FOR SHORTS. 3. REPLACE CONTROL AND ALL SHORTED COMPONENTS.
	2-CONTROL SOFTWARE ISSUE	DAMAGED OR CORRUPTED MEMORY ON CONTROL BOARD; INCOMPATIBLE SOFTWARE COMPONENTS INSIDE MICRO.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. REPLACE CONTROL BOARD.
2-USER INTERFACE	1-STUCK KEY	CONTROL DETECTED STUCK KEY(S) IN KEYPAD OR KEYPAD CONNECTION.  <b>NOTE:</b> CONTROL ONLY ALERTS CUSTOMER IF START/RESUME OR CANCEL KEY IS STUCK. IF ANY OTHER KEYS ARE STUCK, THE STUCK KEY(S) WILL BE IGNORED AND AN ERROR RECORDED TO SERVICE HISTORY, BUT NO ALERT TO CUSTOMER.	CHECK RESPONSIVENESS OF EACH KEY. (1) IF SOME KEYS DO NOT RESPOND, THEN: - UNPLUG DISHWASHER OR DISCONNECT POWER. - DISASSEMBLE DOOR AND DISCONNECT KEYPAD CONNECTION FROM CONTROL OR LCD DISPLAY MODULE. - VERIFY ALL OTHER CONNECTIONS TO CONTROL ARE MADE. - RE-ASSEMBLE DOOR BUT DO NOT CLOSE DOOR. - PLUG IN DISHWASHER OR RECONNECT POWER - WAIT AT LEAST 7 SECONDS FOR CONTROL TO POWER UP COMPLETELY. - CLOSE DISHWASHER DOOR & MONITOR CONTROL RESPONSE: (A) IF CONTROL IS OK (NO LONGER SEES STUCK KEYS WITH KEYPAD UNPLUGGED), IT WILL RESPOND BY TURNING ON THE DRAIN MOTOR FOR 2 MINUTES. REPLACE KEYPAD AND CONSOLE. (B) IF CONTROL IS NOT OK (STILL SEES STUCK KEYS WITH KEYPAD UNPLUGGED), IT WILL NOT TURN ON DRAIN MOTOR. WAIT FOR AT LEAST 10 SECONDS. IF STILL NO DRAIN RESPONSE, THEN REPLACE CONTROL OR LCD DISPLAY MODULE (WHICHEVER ONE THE KEYPAD WAS CONNECTED TO). (2) IF KEYS APPEAR OR INTERMITTENT, AND KEYPAD IS CAPACITIVE TOUCH TYPE, THEN: (A) VERIFY TUB BRACKETS ARE SCREWED TO UNDERSIDE OF COUNTERTOP AND NOT HANGING OVER KEYS (IF SCREW HEADS TOO CLOSE, RELOCATE SCREW TO ALTERNATE HOLE). (B) CHECK FOR EVIDENCE OF MOISTURE OR DEBRIS ON THE SURFACE OF THE KEYS; IF EVIDENT, CLEAN AND INSTRUCT CUSTOMER ABOUT KEEPING SURFACE CLEAN. CHECK ERROR CODE HISTORY FOR VENT ERROR 10-2 AND/OR FAN ERROR 10-3 AS POTENTIAL CAUSE OF CONDENSATION ON USER INTERFACE.
	2-NO RESPONSE FROM UI	USER INTERFACE CAN NOT COMMUNICATE WITH MAIN CONTROL. LOOSE USER INTERFACE CONNECTION.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. CHECK CONNECTIONS BETWEEN LCD DISPLAY MODULE AND P1C CONNECTOR ON THE CONTROL: IF CONNECTION(S) LOOSE, THEN RE-CONNECT. 3. CHECK FOR 5VDC FROM P1C-2 TO P1C-4. IF NO VOLTAGE AT CONTROL, REMOVE POWER AND REPLACE MAIN CONTROL BOARD
		WRONG CONTROL INSTALLED	VERIFY CORRECT CONTROL IS INSTALLED. CONTROL SHOULD HAVE NO CONNECTOR PRESENT AT P1A. IF WRONG DISCONNECT POWER AND REPLACE CONTROL.
3-THERMISTOR/ OWI	1-OPEN	- OPEN CONNECTION OR COMPONENT IN TEMPERATURE SENSING CIRCUIT. - OPEN OR FAULTY TEMPERATURE SENSOR - FAULTY TEMPERATURE SENSOR INPUT ON CONTROL.	1. CHECK OPERATION OF TEMPERATURE SENSOR IN SERVICE DIAGNOSTICS CYCLE. 2. UNPLUG DISHWASHER OR DISCONNECT POWER. 3. CHECK ALL COMPONENTS AND CONNECTIONS IN THE TEMPERATURE SENSING CIRCUIT WITH METER, FIX/REPLACE OPEN CONNECTION / PART.
	2-SHORTED	- INCOMING WATER TEMPERATURE ABOVE 167F(75 C) - SHORTED CONNECTION OR COMPONENT IN TEMPERATURE SENSING CIRCUIT. - SHORTED OR FAULTY TEMPERATURE SENSOR. - FAULTY TEMPERATURE SENSOR INPUT ON CONTROL.	1. CHECK INCOMING WATER TEMPERATURE. 2. CHECK OPERATION OF TEMPERATURE SENSOR IN SERVICE DIAGNOSTICS CYCLE. 3. UNPLUG DISHWASHER OR DISCONNECT POWER. 4. CHECK ALL COMPONENTS AND CONNECTIONS IN THE TEMPERATURE SENSING CIRCUIT WITH METER, FIX/REPLACE SHORTED WIRES / PART. (SEE OWI SENSOR STRIP CIRCUIT)

## For Service Technician Use Only

### Service Error Codes #2

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
3-THERMISTOR/ OWI	3-FAILED CALIBRATION	OWI FAILURE	<ol style="list-style-type: none"> <li>1. UNPLUG DISHWASHER OR DISCONNECT POWER.</li> <li>2. REMOVE OWI AND CHECK LENS SURFACE. LENS SHOULD BE CLEAR AND SURFACE SHOULD BE FREE OF DEBRIS AND SCRATCHES. CLEAN LENS OR REPLACE OWI AS NEEDED.</li> <li>3. CHECK ALL CONNECTIONS IN SOIL SENSING CIRCUIT WITH METER, FIX/REPLACE BAD CONNECTION / PART.</li> </ol> <p><b>NOTE:</b> RUN DIAGNOSTICS CYCLE AFTER INSTALLING NEW OWI TO FORCE CALIBRATION ON NEXT REGULAR WASH CYCLE.</p>
		DRAIN HOSE CHECK VALVE NOT SEALING.	<p>DIRTY WATER BACKS INTO DISHWASHER AFTER DRAINING.</p> <ol style="list-style-type: none"> <li>1. DISCONNECT DRAIN HOSE AT PLUMBING CONNECTION.</li> <li>2. ELEVATE HOSE ABOVE DISHWASHER AND FILL WITH WATER. IF WATER FLOWS INTO DISHWASHER, REPLACE ENTIRE DRAIN LOOP (INSTALL AS HIGH AS POSSIBLE AND ATTACH TO UNDERSIDE OF COUNTERTOP IF POSSIBLE).</li> </ol>
4-WASH MOTOR	4-MOTOR FAILURE	LOOSE CONNECTION IN WASH MOTOR CIRCUIT AND/OR OPEN WASH MOTOR.	<ol style="list-style-type: none"> <li>1. UNPLUG DISHWASHER OR DISCONNECT POWER.</li> <li>2. CHECK ALL CONNECTIONS IN WASH MOTOR CIRCUIT WITH METER, FIX/REPLACE OPEN CONNECTION / PART.</li> </ol>
		MOTOR FUSE ON CONTROL OPEN.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).
		FAULTY WASH MOTOR DRIVE CIRCUIT ON THE CONTROL.	
		FAULTY WASH MOTOR	
5-DOOR SWITCH	1-DOOR STUCK OPEN	DOOR WAS NOT LATCHED WITHIN 3 SECONDS OF PRESSING THE START / RESUME KEY.	INSTRUCT CUSTOMER. REFER TO USE & CARE GUIDE.
		<p>LOOSE CONNECTION IN DOOR SWITCH CIRCUIT AND/OR DOOR SWITCH CONTACTS STUCK OPEN AND / OR DOOR SWITCH NOT MAKING CONTACT:</p> <ul style="list-style-type: none"> <li>- FAULTY OR SLOPPY DOOR LATCH ASSEMBLY (WHICH CAN BE AGGRAVATED BY HIGH DOOR CLOSURE FORCE KEEPING STRIKE PLATE FROM FULLY SEATING).</li> <li>- FAULTY DOOR SWITCH (HIGH RESISTANCE).</li> </ul>	<ol style="list-style-type: none"> <li>1. CHECK STRIKE PLATE AND DOOR CLOSURE FORCE. VERIFY DOOR SEAL IS SEATED PROPERLY. CHECK FOR INTERFERENCE BETWEEN DISH RACKS AND DOOR. TRY BENDING STRIKE PLATE DOWN FOR BETTER ENGAGEMENT.</li> <li>2. UNPLUG DISHWASHER OR DISCONNECT POWER.</li> <li>3. CHECK DOOR SWITCH CONTACTS AND ALL CONNECTIONS IN THE DOOR SWITCH CIRCUIT WITH METER, WHILE OPENING AND CLOSING THE DOOR LATCH.</li> <li>- IF HIGH RESISTANCE WITH DOOR CLOSED, CHECK / FIX LOOSE CONNECTIONS.</li> <li>4. MEASURE RESISTANCE OF DOOR SWITCH CONTACTS WHILE CHECKING MECHANICAL OPERATION OF LATCH ASSEMBLY. CHECK FOR BROKEN PLASTIC PIECES ON LATCH ASSEMBLY. REPLACE LATCH IF FAULTY.</li> </ol>
		FAULTY CONTROL	<ol style="list-style-type: none"> <li>1. WITH DOOR OPEN, VERIFY 13 VDC PRESENT ACROSS P9-5 AND P9-6.</li> <li>2. IF NO VOLTAGE PRESENT, UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.</li> </ol>
	2-DOOR STUCK CLOSED	<p>CONTROL PROGRAMMED TO NOT START IF IT SUSPECTS THE DOOR SWITCH IS STUCK CLOSED. CONTROL LOOKS FOR THE DOOR SWITCH TO OPEN BETWEEN CYCLES.</p> <ul style="list-style-type: none"> <li>- CUSTOMER DIDN'T OPEN THE DOOR BETWEEN CYCLES OR DOOR SWITCH CONTACTS STUCK CLOSED.</li> </ul>	<ol style="list-style-type: none"> <li>1. OPEN AND CLOSE DOOR AND THEN PRESS START/RESUME KEY. IF WORKS NOW, INSTRUCT CUSTOMER TO OPEN DOOR BETWEEN CYCLES.</li> <li>2. UNPLUG DISHWASHER OR DISCONNECT POWER.</li> <li>3. MEASURE RESISTANCE OF DOOR SWITCH CONTACTS WHILE CHECKING MECHANICAL OPERATION OF LATCH ASSEMBLY.</li> </ol>
6-INLET WATER	1-LOW/NO WATER (MECHANICAL PROBLEM)	NO WATER TO DISHWASHER.	VERIFY WATER SUPPLY IS TURNED ON AND SUPPLY LINE ADEQUATE.
		BOWLS OR POTS LOADED OR FLIPPED UPSIDE DOWN AND CAPTURED WASH WATER.	INSTRUCT CUSTOMER ON LOADING. REFER TO USE AND CARE GUIDE.
		DRAIN LOOP DETACHED FROM TUB AND/OR IMPROPER DRAIN CONNECTION.	<p>CHECK FOR WATER SIPHONING OUT OF UNIT:</p> <ol style="list-style-type: none"> <li>1. ALLOW DISHWASHER TO COMPLETE NORMAL FILL.</li> <li>2. DRAIN FOR 5-10 SECONDS BY PRESSING CANCEL/DRAIN.</li> <li>3. OPEN DOOR AND CONFIRM WATER DOES NOT SIPHON OUT OF UNIT. IF IT DOES, CONFIRM DRAIN LOOP IS ATTACHED TO SIDE OF DISHWASHER AND DRAIN HOSE IS CONNECTED TO A DRAIN AT LEAST 50.8 CM (20 INCHES) OFF THE FLOOR.</li> </ol>
		WATER LEAKING FROM DISHWASHER	CHECK FOR LEAKS UNDER DISHWASHER.

## For Service Technician Use Only

### Service Error Codes #3

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
6-INLET WATER	1-LOW/NO WATER (MECHANICAL PROBLEM)	FILL VALVE OR WATER LINE PLUGGED WITH DEBRIS.	TURN OFF WATER SUPPLY TO DISHWASHER DISCONNECT WATER, LINE TO INLET VALVE AND INSPECT/CLEAN THE INLET SCREEN OF FILL VALVE AND RECONNECT WATER.
		OVERFILL SWITCH STUCK IN "OVERFILL" POSITION AND/OR DISHWASHER NOT LEVEL.	CHECK OTHER ERROR CODES TO SEE IF 6-4 ALSO OCCURRED. SEE 6 - 4 ERROR CODE BELOW.
		FILL VALVE ELECTRICAL PROBLEM.	CHECK OTHER ERROR CODES TO SEE IF 6-2 ALSO OCCURRED. SEE 6 - 2 ERROR CODE BELOW.
	2-FILL VALVE ELECTRICAL PROBLEM	LOOSE CONNECTION IN FILL VALVE CIRCUIT AND/OR OPEN FILL VALVE SOLENOID.	UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK RESISTANCES OF FILL VALVE SOLENOID AND ALL CONNECTIONS IN THE FILL CIRCUIT WITH METER. FIX / REPLACE OPEN CONNECTION / PART.
		OPEN FUSE ON CONTROL TO FILL VALVE.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).
		FAULTY FILL VALVE DRIVE CIRCUIT ON THE CONTROL.	UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.
	3-SUDS/AIR IN PUMP	TOO MANY SUDS.	1. ALLOW UNIT TO FILL AND WASH FOR 1 MINUTE. OPEN DOOR AND CHECK FOR EXCESSIVE SUDSING. 2. CONFIRM USING PROPER DISHWASHER DETERGENT, NOT HAND DETERGENT. 3. CHECK FOR EXCESSIVE RINSE AID LEAKAGE.
		BOWLS OR POTS LOADED OR FLIPPED UPSIDE DOWN AND CAPTURED WASH WATER.	INSTRUCT CUSTOMER ON LOADING. REFER TO USE AND CARE MANUAL.
		WATER LEAKING FROM DISHWASHER.	CHECK FOR LEAKS UNDER DISHWASHER.
		DIVERTER DISK IN SUMP IS MISSING.	REMOVE LOWER SPRAY ARM, TURBO ZONE ASSEMBLY, REAR FEEDTUBE AND OUTLET COVER AND VERIFY WHETHER THE RED DIVERTER DISK IS INSTALLED.
	4-FLOAT SWITCH OPEN	OVERFILL SWITCH STUCK IN "OVERFILL" (OPEN) POSITION AND/OR DISHWASHER NOT LEVEL.	REMOVE ANY ITEMS STUCK UNDER FLOAT. VERIFY THAT THE FLOAT MOVES FREELY AND YOU HEAR THE "CLICK" OF THE SWITCH CONTACTS. CHECK LEVELNESS OF THE DISHWASHER. MEASURE SWITCH RESISTANCE (SEE FILL CIRCUIT DIAGRAM).
		DRAIN HOSE CHECK VALVE NOT SEALING.	WATER BACKS INTO DISHWASHER AFTER DRAINING AND ELEVATES WATER LEVEL. 1. DISCONNECT DRAIN HOSE AT PLUMBING CONNECTION. 2. ELEVATE HOSE ABOVE DISHWASHER AND FILL WITH WATER. IF WATER FLOWS INTO DISHWASHER, REPLACE ENTIRE DRAIN LOOP (INSTALL AS HIGH AS POSSIBLE AND ATTACH TO UNDERSIDE OF COUNTERTOP IF POSSIBLE).
		FILL VALVE TRIAC ON CONTROL SHORTED.	IF STILL FILLING WHILE DOOR IS OPEN, FILL VALVE IS MECHANICALLY STUCK OPEN (SEE BELOW). IF NO FILL WITH DOOR OPEN, CHECK OPERATION IN SERVICE DIAGNOSTICS TEST CYCLE. ADVANCE SERVICE CYCLE UNTIL DETERGENT DISPENSER OPENS. FILL VALVE SHOULD BE OFF. LISTEN TO SEE IF DISHWASHER STILL FILLING. IF STILL FILLING, THEN UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.
		FILL VALVE MECHANICALLY STUCK OPEN.	CONFIRM DISHWASHER FILLS WHILE DOOR IS OPEN. IF YES, THEN UNPLUG DISHWASHER OR DISCONNECT POWER, TURN OFF WATER TO DISHWASHER, REPLACE FILL VALVE. AND TURN WATER BACK ON.
		TOO MANY SUDS.	1. ALLOW UNIT TO FILL AND WASH FOR 1 MINUTE. OPEN DOOR AND CHECK FOR EXCESSIVE SUDSING. 2. INSTRUCT CUSTOMER IF USING IMPROPER DISHWASHER DETERGENT (HAND DETERGENT). 3. DISCONNECT POWER & REPLACE DISPENSER IF SEE EXCESSIVE RINSE AID LEAKAGE.
		OPEN FUSE TO FILL VALVE AND OTHER TRIAC LOADS.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).

## For Service Technician Use Only

### Service Error Codes #4

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
6-INLET WATER	6-COOL WATER	INCOMING WATER UNDER 18 C/65°F.	<ol style="list-style-type: none"> <li>1. BE SURE DISHWASHER IS CONNECTED TO THE HOT WATER SUPPLY.</li> <li>2. CONFIRM TEMPERATURE AT SINK (RECOMMENDED 49°C/120°F). INSTRUCT CUSTOMER TO RUN WATER AT SINK BEFORE RUNNING DISHWASHER.</li> <li>3. UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK ALL CONNECTIONS AND MEASURE RESISTANCE IN "TEMPERATURE SENSING CIRCUIT". REPLACE OWI IF RESISTANCE HIGH.</li> </ol>
7-HEATING	1-NO HEAT	CONTROL PROGRAMMED TO DISABLE HEATER, BUT CONTINUE RUNNING CYCLES, IF IT DETECTS A WATER HEATING PROBLEM.	RUNNING DIAGNOSTICS CLEARS THE CONTROL AND ALLOWS THE HEATER TO TURN ON AGAIN, BUT MUST ALSO CORRECT THE WATER HEATING PROBLEM OR THE CONTROL WILL DISABLE THE HEATER AGAIN. SEE HEATER CIRCUIT PROBLEM BELOW.
		HEATER CIRCUIT PROBLEM: - OPEN IN HEATER. - OPEN CONNECTION OR COMPONENT IN HEATER CIRCUIT.	<ol style="list-style-type: none"> <li>1. UNPLUG DISHWASHER OR DISCONNECT POWER.</li> <li>2. MEASURE RESISTANCE OF HEATER AND ALL COMPONENTS AND CONNECTIONS IN WATER HEATING CIRCUIT/ HEAT DRY CIRCUIT. FIX / REPLACE OPEN CONNECTION / PART.</li> </ol>
		FAULTY HEATER DRIVE CIRCUIT ON THE CONTROL.	UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.
	2-HEATER STUCK ON	FAULTY HEATER DRIVE CIRCUIT ON THE CONTROL.	<ol style="list-style-type: none"> <li>1. UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.</li> <li>2. INSPECT HEATER AND CONNECTIONS FOR OVERHEATING / SHORTING. IF EVIDENCE OF OVERHEATING OR SHORTS EXISTS, REPLACE.</li> </ol>
8-DRAINING	1-SLOW DRAIN	OBSTRUCTED DRAIN HOSE OR PATH	<ol style="list-style-type: none"> <li>1. UNPLUG DISHWASHER OR DISCONNECT POWER.</li> <li>2. CHECK FOR BLOCKAGES FROM SUMP CHECK VALVE TO CUSTOMER'S PLUMBING. POTENTIAL ITEMS, PLUGGED GARBAGE DISPOSER OR PLUG NOT KNOCKED OUT, DRAIN LOOP CHECK VALVE STUCK, AND/OR PLUGGED HOSES.</li> </ol>
		DRAIN PUMP IMPELLER FRACTURED OR DAMAGED	UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE DRAIN PUMP.
	4-DRAIN MOTOR ELECTRICAL PROBLEM	LOOSE CONNECTION IN DRAIN MOTOR CIRCUIT AND/OR OPEN DRAIN MOTOR WINDING.	UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK RESISTANCES OF DRAIN MOTOR WINDING AND ALL CONNECTIONS IN THE DRAIN CIRCUIT. FIX / REPLACE OPEN CONNECTION / PART.
		OPEN FUSE ON CONTROL TO DRAIN MOTOR.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 NEXT TO METER CHECK DIAGRAM).
		FAULTY DRAIN MOTOR DRIVE CIRCUIT ON THE CONTROL.	
9-DIVERTER	1-DIVERTER CAN'T FIND POSITION	CORRODED OR LOOSE CONNECTION IN DIVERTER SENSOR / MOTOR CIRCUIT.	<ol style="list-style-type: none"> <li>1. CHECK OPERATION IN SERVICE DIAGNOSTICS CYCLE. LISTEN FOR CAM CLICKING AS IT ROTATES OR INSPECT SHAFT WITH MIRROR TO SEE IF ROTATING DURING DIVERTER INTERVAL. IF ROTATING, THEN LIKELY THE SENSOR CIRCUIT.</li> <li>2. UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK CONNECTIONS / PARTS IN DIVERTER SENSOR AND MOTOR CIRCUIT WITH METER. FIX / REPLACE CONNECTIONS / PARTS.</li> <li>3. INSPECT DIVERTER SENSOR FOR EVIDENCE OF WATER OR CONTAMINANTS; IF YES, REPLACE.</li> </ol>
		MECHANICAL BINDING OF DIVERTER SHAFT / DISC.	CHECK OPERATION OF DIVERTER MOTOR DURING DIAGNOSTICS. INSPECT DIVERTER SHAFT WITH MIRROR IF MOTOR APPEARS TO BE ON (HUMS, VIBRATES) BUT SEE LIMITED ROTATION, THEN REPLACE DIVERTER AND SEAL.
		OPEN FUSE ON CONTROL TO DIVERTER MOTOR.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).
		FAULTY DIVERTER MOTOR DRIVE CIRCUIT ON THE CONTROL.	
	2-DIVERTER STUCK ON	FAULTY DIVERTER DRIVE CIRCUIT ON THE CONTROL.	1. UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.
			2. INSPECT DIVERTER MOTOR AND CONNECTIONS FOR OVERHEATING / SHORTING. IF EVIDENCE OF OVERHEATING / SHORTING EXISTS, REPLACE.

## For Service Technician Use Only

### Service Error Codes #5

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
9-DIVERTER	3-DIVERTER DISC MISSING	CONTROL DETECTED DIVERTER DISK IN SUMP IS MISSING.	REMOVE LOWER SPRAY ARM, TURBO ZONE ASSEMBLY, REAR FEED TUBE AND OUTLET COVER AND VERIFY THE ROUND DIVERTER DISK IS INSTALLED.
	4-LOWER SPRAY ARM ERROR	MECHANICAL BINDING OR BLOCKING OF SPRAY ARM.	1. CHECK FOR AND REMOVE ANY BLOCKAGE OF LOWER SPRAY ARM (UTENSILS, POT HANDLES). 2. RUN THE SERVICE DIAGNOSTIC CYCLE AND CHECK FOR THE LSA OPERATION/FAULT DETECTION (NOTE 10). IF FAILURE STILL EXISTS THEN: 3. DISCONNECT POWER FROM THE UNIT AND CHECK WIRING CONNECTION OR DAMAGE AT CONTROLLED LOWER SPRAY ARM MOTOR AND SENSOR. 4. CHECK "TRIAC FUSE DIAGNOSTIC" NEAR "METER CHECK OF LOADS" ON PAGE 1 (REPLACE CONTROL IF OPEN). 5. CHECK FOR OPEN OR SHORTED LSA MOTOR WINDING RESISTANCE. (REPLACE DIVERTER MODULE).
		CORRODED OR LOOSE CONNECTION IN SPRAY ARM SENSOR/MOTOR CIRCUIT.	
		OPEN FUSE ON CONTROL TO SPRAY ARM MOTOR.	
		FAULTY SPRAY ARM DRIVE CIRCUIT ON THE CONTROL.	
10-OTHER	1-DISPENSER ELECTRICAL PROBLEM	LOOSE CONNECTION IN DISPENSER CIRCUIT AND/OR OPEN DISPENSER SOLENOID.	UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK RESISTANCES OF DISPENSER SOLENOID OR WAX MOTOR AND ALL CONNECTIONS IN THE DISPENSER CIRCUIT. FIX / REPLACE OPEN CONNECTION / PART.
		OPEN FUSE ON CONTROL TO DISPENSER.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).
		FAULTY DISPENSER DRIVE CIRCUIT ON THE CONTROL.	UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.
	2-VENT WAX MOTOR ELECTRICAL PROBLEM (NOT ALL MODELS)	LOOSE CONNECTION IN VENT CIRCUIT AND/OR OPEN VENT WAX MOTOR.	UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK RESISTANCES OF VENT WAX MOTOR AND ALL CONNECTIONS IN THE VENT CIRCUIT. FIT / REPLACE OPEN CONNECTION / PARTS.
		OPEN FUSE ON CONTROL TO VENT.	REFER TO FUSE SERVICE & DIAGNOSTIC CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).
		FAULTY VENT DRIVE CIRCUIT ON THE CONTROL.	UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.
	3-DRYING FAN ERROR (ON MODELS WITH FAN)	LOOSE CONNECTION IN FAN CIRCUIT AND/OR OPEN FAN MOTOR.	UNPLUG DISHWASHER OR DISCONNECT POWER AND CHECK RESISTANCES OF FAN MOTOR AND ALL CONNECTIONS IN THE FAN CIRCUIT. FIX / REPLACE OPEN CONNECTIONS OR FAN.
		FAULTY FAN DRIVE CIRCUIT ON THE CONTROL.	UNPLUG DISHWASHER OR DISCONNECT POWER AND REPLACE CONTROL.

## For Service Technician Use Only

### Troubleshooting Guide #1

**NOTES:**

- For resistance checks, refer to the “Dishwasher Strip Circuits” section.
- For checking operation with diagnostics, refer to “Service Diagnostics Cycle” section.
- For information on Normal Cycle, 1-Hour Cycle, and Pots & Pans Cycle, See “Wash Cycle Operation” section.

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODES
CLEAN LED FLASHES	CONTROL PROGRAMMED WITH SELF DIAGNOSTICS.	READ FUNCTION CODE BEING DISPLAYED TO CUSTOMER AND REFER TO FUNCTION CODES PORTION OF ERROR CODE TABLE. RUN SERVICE DIAGNOSTICS TEST CYCLE TO READ FULL HISTORY OF ERROR CODES.	
WON'T RUN or POWER UP (“DEAD” KEYPAD/CONSOLE) - NO OPERATION - NO KEYPAD RESPONSE - NO LEDS OR DISPLAY	NO POWER TO UNIT OR BAD CONNECTION.	CHECK FUSES, CIRCUIT BREAKERS AND JUNCTION BOX CONNECTIONS.	
	LOOSE CONNECTIONS IN DISHWASHER POWER UP CIRCUIT OR BETWEEN KEYPAD(S) AND CONTROL.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. CHECK CONTINUITY POWER CONNECTIONS TO CONTROL AND CONNECTIONS BETWEEN KEYPAD(S) AND CONTROL.	
	MODEL HAS AN LCD DISPLAY AND THE CONTROL HAS BEEN EXCHANGED FOR ONE THAT IS NOT COMPATIBLE WITH THE LCD DISPLAY MODULE.	VERIFY CORRECT CONTROL IS INSTALLED. CONTROL SHOULD HAVE NO 4-PIN USER INTERFACE CONNECTOR PRESENT AT P1A IF IT IS CONFIGURED FOR AN LCD MODEL . REPLACE CONTROL.	
	FAULTY USER INTERFACE OR CONTROL	1. UNPLUG DISHWASHER OR DISCONNECT POWER. DISASSEMBLE DOOR AND INSPECT CONTROL POWER CONNECTOR (P4) AND ADJACENT PC BOARD FOR DAMAGE. REPLACE AS NEEDED. 2. REFER TO SERVICE ERROR CODES TABLE FOR STUCK KEY (2-1). RUN THE DIAGNOSTIC CHECK, ITEM (1). -IF DRAIN MOTOR TURNS ON, CONTROL IS OK. REPLACE THE UI. -IF DRAIN MOTOR DOES NOT TURN ON, REPLACE CONTROL. 3. INSPECT UI CABLE FOR LOOSE OR DAMAGED WIRING. REPLACE AS NEEDED. 4. INSPECT UI ASSEMBLY FOR DAMAGE OR CONTAMINATION. REPLACE UI AS NEEDED.	2-1
WON'T RUN AND LED FOR START/RESUME KEY IS BLINKING SLOWLY	BY DESIGN, IF THE DOOR IS OPENED FOR MORE THAN 5 SECONDS OR POWER IS INTERRUPTED DURING A CYCLE, THE USER MUST PRESS THE START/RESUME KEY TO RESUME OPERATION.	INSTRUCT CUSTOMER. REFER TO USE & CARE MANUAL.	
	START/RESUME KEY NOT RESPONDING.	SEE “ONE OR MORE KEYS WON'T RESPOND”.	
	CONTROL DETECTED DOOR SWITCH PROBLEM.	REFER TO SERVICE ERROR CODES TABLE.	5-1
WON'T RUN AND LED ABOVE KEY IS FLASHING RAPIDLY AND CONTINUOUSLY	STUCK KEY / SHORT CIRCUIT(S) IN KEYPAD OR IN CONTROL'S INPUT LINES THAT READ THE KEYS.	REFER TO SERVICE ERROR CODES TABLE.	2-1
WON'T RUN AND ALL LEDS ON	SOFTWARE / HARDWARE INCOMPATIBILITY PROBLEM WITH CONTROL.	REFER TO SERVICE ERROR CODES TABLE.	1-2
WON'T START AND START/RESUME KEY LED FLASHES 3 TIMES WHEN START/RESUME KEY IS PRESSED	CONTROL LOOKING FOR DOOR TO OPEN BETWEEN CYCLES: - CUSTOMER HAS NOT OPENED DOOR SINCE LAST CYCLE. - DOOR SWITCH CONTACTS STUCK CLOSED.	REFER TO SERVICE ERROR CODES TABLE.	5-2
WON'T ACCEPT KEY PRESSES AND CONTROL LOCK LED ON	CONTROL LOCKOUT FEATURE ACCIDENTALLY TURNED ON BY CUSTOMER.	INSTRUCT CUSTOMER. REFER TO U & C MANUAL (PRESS & HOLD CONTROL LOCK KEY 5 SEC TO TURN ON/OFF).	2-1

## For Service Technician Use Only

### Troubleshooting Guide #2

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODES
ONE OR MORE KEYS WON'T RESPOND (BUT SOME KEYS WORK) -OR UNUSUAL LED/ DISPLAY / KEY BEHAVIOR	STUCK KEY / SHORT CIRCUIT(S) IN KEYPAD OR IN CONTROL'S INPUT LINES THAT READ THE KEYS.	REFER TO SERVICE ERROR CODES TABLE.	
	CAPACITIVE TOUCH KEYPAD ADHESIVE COMING LOOSE FROM CONSOLE.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. INSPECT KEYPAD BOARD FOR SEPARATION FROM CONSOLE. REPLACE KEYPAD AND CONSOLE IF SEPARATION IS SEEN.	
	LOOSE CONNECTIONS BETWEEN KEYPAD AND CONTROL AND / OR BENT OR CONTAMINATED CONNECTOR PINS.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. INSPECT CONNECTIONS IN USER INTERFACE CIRCUITS. RE-CONNECT LOOSE CONNECTIONS. REPLACE PART(S) IF PINS DAMAGED OR CONTAMINATED.	2-2
	EXCESSIVE CONDENSATION ON USER INTERFACE PARTS DUE TO VENT AND/OR FAN PROBLEM.	CHECK ERROR HISTORY FOR 10-2 VENT ERROR OR 10-3 FAN ERROR. REFER TO SERVICE ERROR CODES TABLE.	10-2 10-3
	DEFECTIVE USER INTERFACE	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. REPLACE USER INTERFACE CONSOLE ASSEMBLY.	
DISHWASHER BEEPS CONSTANTLY (FOR MODELS WITH BEEPERS)	USER OPENED DOOR DURING CYCLE AND CLOSED DOOR WITHOUT PRESSING START / RESUME TO RESUME CYCLE.	INSTRUCT CUSTOMER. DISHWASHER CONTROL IS DESIGNED TO BEEP IF DISHWASHER IS IN "CYCLE INTERRUPT" MODE WITH DOOR LATCHED. CONTROL WILL STOP BEEPING WHEN DOOR IS OPENED AND/OR START / RESUME KEY IS PRESSED TO RESUME CYCLE.	
	NORMAL BEEPER OPERATION IS EXCESSIVE TO CUSTOMER.	INSTRUCT CUSTOMER HOW TO TURN BEEPER OFF/ON. PRESS AND HOLD HI TEMP KEY FOR 3 SECONDS (TONE SOUNDS).	
	DOOR NOT OPENED BETWEEN THE CYCLES.	INSTRUCT CUSTOMER. CONTROL WILL BEEP IF NEW CYCLE STARTED AND THE DISHWASHER DOOR WAS NOT OPENED SINCE THE LAST COMPLETED CYCLE.	5-2
LONG CYCLES AND/OR STUCK IN CERTAIN PART OF CYCLE	AS PART OF NORMAL OPERATION, THE DISHWASHER PAUSES 2 OR 3 TIMES DURING THE CYCLE FOR THERMAL HOLDS AND ADVANCES ONCE TEMPERATURE IS MET.	INSTRUCT CUSTOMER. EXPLAIN THERMAL HOLDS AND HOW THE CYCLE PAUSES WHEN THEY OCCUR. EXPLAIN HOW TODAY'S MORE ENERGY EFFICIENT DISHWASHERS RUN LONGER CYCLES BUT USE LESS ENERGY OVERALL.	
	OWI SOIL SENSOR PICKING HIGH SOIL CYCLE TOO OFTEN.	1. RUN SERVICE DIAGNOSTICS CYCLE TO CHECK IF OWI SHOWING HIGH SOIL WITH CLEAR WATER. 2. CHECK LENS SURFACE. CLEAN IF NEEDED. 3. UNPLUG DISHWASHER OR DISCONNECT POWER. 4. REPLACE OWI & RUN DIAGNOSTICS AFTER INSTALLING NEW OWI TO FORCE CALIBRATION ON NEXT WASH CYCLE.	
	A WATER HEATING PROBLEM COULD CAUSE LONG CYCLES BUT WILL TYPICALLY CAUSE A "WATER HEATING FAULT".	REFER TO SERVICE ERROR CODES TABLE.	7-1
	HEATER TAKES A LONG TIME TO HEAT WATER WITH LOW VOLTAGE.	CHECK FOR AT LEAST 100VAC AT POWER SOURCE.	
	INCOMING WATER TOO COLD	REFER TO SERVICE ERROR CODES TABLE.	6-6
	SUDS / AIR IN PUMP REQUIRES REPEATED WASH PERIODS.	REFER TO SERVICE ERROR CODES TABLE.	6-3
	OWI OR NTC SENSOR PROBLEM.	REFER TO SERVICE ERROR CODES TABLE.	3-1, 3-3
LEDS/OR DISPLAYS RUN FOR SHORT TIME (BUT NO LOADS RUNNING) AND THEN SHUTS OFF	UNIT IS IN SALES DEMO MODE.	CHECK OPERATION OF CANCEL KEY; IF NO CANCEL LED RESPONSE TO MULTIPLE CANCEL KEY PRESSES, THE CONTROL IS LIKELY IN SALES DEMO MODE. RUN SERVICE DIAGNOSTICS CYCLE TO CLEAR DEMO MODE.	
	OPEN F8 (WASH MOTOR) FUSE OR F9 (TRIAC LOAD FUSE) ON CONTROL DISABLED LOADS.	REFER TO FUSE SERVICE & RESISTANCE CHECKS ON PAGE 1 (NEXT TO METER CHECK DIAGRAM).	
CAN START A CYCLE BUT ONLY RUNS FOR A SHORT TIME - DOES NOT COMPLETE CYCLE (CLEAN LED OR COMPLETE MIGHT ALSO BLINK)	CONTROL CANCELLED CYCLE DUE TO ERROR DETECTED WITH WASH MOTOR, DRAIN MOTOR, LOW WATER OR SUDS.	REFER TO SERVICE ERROR CODES TABLE.	4-4 6-1, 6-3 8-4
	UNIT IN SALES DEMO MODE	RUN SERVICE DIAGNOSTICS CYCLE TO CLEAR DEMO MODE.	

## For Service Technician Use Only

### Troubleshooting Guide #3

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODES
WILL NOT DRAIN OR EXCESS WATER LEFT IN DISHWASHER. NOTE: CHECK ERROR HISTORY. IF NO ERROR CODES FOR ELECTRICAL PROBLEMS, PROBLEM IS MECHANICAL. DO NOT REPLACE CONTROL.	DRAIN LOOP CHECK VALVE NOT SEALING.	1. DISCONNECT DRAIN HOSE AT PLUMBING CONNECTION. 2. ELEVATE HOSE ABOVE DISHWASHER AND FILL WITH WATER. IF WATER FLOWS INTO DISHWASHER, REPLACE ENTIRE DRAIN LOOP (INSTALL AS HIGH AS POSSIBLE).	
	CUSTOMER MISUNDERSTANDS WATER LEVEL AFTER DRAIN.	INSTRUCT CUSTOMER. SUMP WILL NORMALLY HAVE ABOUT 2.4 CM (1 INCH) OF WATER REMAINING IN FILTER CUP HOLE AFTER CYCLE.	
	DRAINING PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	8-1, 8-4
LOWER SPRAY ARM BLOCKING THE FILTER CUP REMOVAL. (CONTROLLED ROTATION LOWER SPRAY ARM MODELS).	DOOR OPENED WHILE LOWER SPRAY ARM MOVING.	INSTRUCT CUSTOMER CONTROLLED LOWER SPRAY ARM POWER IS CUT OFF WHEN DOOR IS OPENED.	
	CORRODED OR LOOSE CONNECTION IN SPRAY ARM SENSOR/MOTOR CIRCUIT CAUSING LSA TO STOP SOMEWHERE OTHER THAN HOME POSITION (HOME POSITION = LSA ROUGHLY 5 CLOCKWISE FROM 12 O'CLOCK).	DISCONNECT POWER AND CHECK CONNECTION AT CONTROLLED LOWER SPRAY ARM MOTOR AND SENSOR AT THE CONTROL. INSPECT CONNECTORS FOR WATER AND CONTAMINATION AND REPLACE AS NEEDED. RUN THE SERVICE DIAGNOSTIC CYCLE AND CHECK FOR THE LSA MOTOR/SENSOR OPERATION (NOTE 10). REFER TO SERVICE ERROR CODE TABLE.	9-4
DETERGENT NOT DISPENSING OR DETERGENT LEFT IN DISPENSER NOTE: CHECK ERROR HISTORY IF NO ERROR CODES FOR ELECTRICAL PROBLEMS, PROBLEM IS MECHANICAL. DO NOT REPLACE CONTROL	ITEM IN LOWER RACK BLOCKED LID OR BLOCKED SPRAY OF WATER TO DISPENSER.	INSTRUCT CUSTOMER ON PROPER DISH LOADING.	
	MECHANICAL BINDING OF DISPENSER LID.	1. UNPLUG DISHWASHER OR DISCONNECT POWER. 2. CHECK/REPLACE DISPENSER.	
	LID LATCH BINDING DUE TO EXCESS DETERGENT IN MECHANISM.	INSTRUCT CUSTOMER ON PROPER DISPENSER FILLING.	
	DISPENSER ELECTRICAL PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	10-1
	CONTROL CANCELLED CYCLE DUE TO ERROR DETECTED WITH WASH MOTOR, DRAIN MOTOR, LOW WATER, OR SUDS.	REFER TO SERVICE ERROR CODES TABLE.	4-4 6-1, 6-3 8-4
POOR WASH	CYCLE SELECTION OF CUSTOMER NOT APPROPRIATE FOR DISH LOAD.	INSTRUCT CUSTOMER ON CYCLE SELECTION. RECOMMEND "HIGH TEMP" OPTION FOR WASH PERFORMANCE BOOST.	
	PLUGGED OR DAMAGED SCREENS.	INSPECT FOLLOWING THREE SCREENS: - FILTER CUP COARSE SCREEN - FILTER CUP FINE SCREEN - SUMP FINE SCREEN	
	SPRAY ARMS NOT ROTATING OR PLUGGED.	1. CHECK ARM ROTATION. IF ARMS BLOCKED BY DISH ITEM, INSTRUCT CUSTOMER. ALSO CHECK FOR CORRECT UPPER SPRAY ARM ALIGNMENT WITH DOCKING STATION LOCATED ON FEED TUBE AT BACK TUB WALL. 2. CHECK NOZZLES; IF PLUGGED CLEAN NOZZLES AND CONFIRM FILTERS INSTALLED PROPERLY. 3. CONTROLLED LOWER SPRAY ARM MOTOR FAILED. CHECK SPRAY ARM MOVING IN BOTH DIRECTIONS DURING DIAGNOSTICS CYCLE.	9-4
	POOR WASH DUE TO DRAINING, DISPENSING &/OR TEMPERATURE PROBLEMS.	SEE "WILL NOT DRAIN OR EXCESS WATER LEFT IN UNIT", OR "DETERGENT NOT DISPENSING OR DETERGENT LEFT IN DISPENSER", OR DETAILS ON TEMPERATURE SENSING IN "LONG CYCLES AND/OR STUCK IN CERTAIN PART OF CYCLE".	
	CONTROL CANCELLED CYCLE DUE TO ERROR DETECTED WITH WASH MOTOR, DRAIN MOTOR, LOW WATER, OR SUDS.	REFER TO SERVICE ERROR CODES TABLE.	4-4 6-1, 6-3 8-4
	SOIL SENSOR PROBLEM	REFER TO SERVICE ERROR CODES TABLE NOTE: EVEN IF NO ERROR CODE RECORDED, CONFIRM OWI PASSES ALL OWI CHECKS IN SERVICE DIAGNOSTICS CYCLE AND SEE CHECKS FOR ERROR 3-3.	3-2 3-3
	DIVERTER PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	9-1 9-2
	DIVERTER DISC MISSING	REMOVE OUTLET COVER AND INSPECT FOR RED PLASTIC DISC THROUGH HOLES IN OUTLET. INSTALL NEW DISC IF MISSING.	

## For Service Technician Use Only

### Troubleshooting Guide #4

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODES
POOR WASH	HEATING PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	7-1
	SOFTENER PROBLEM (ONLY SOME MODELS)	REFER TO SERVICE ERROR CODES TABLE.	6-8
FILM OR SPOTS ON GLASSES AND/OR DISHES	CUSTOMER NOT USING RINSE AID AND/OR HEATED DRY.	CHECK RINSE AID GAGE LEVEL ON DISPENSER; INSTRUCT CUSTOMER HOW TO FILL AND MONITOR ADD / USE RINSE AID.	
	RINSE AID DISPENSER PROBLEM.	REFER TO SERVICE ERROR CODES TABLE.	10-1
	HARD WATER LEAVING FILM ON DISHES.	CHECK WATER HARDNESS. IF HARD, INSTRUCT CUSTOMER TO USE MAXIMUM DETERGENT OR TRY POURING ¼ CUP OF GLASS MAGIC INTO BOTTOM OF DISHWASHER. ALSO RECOMMEND 1 HR WASH CYCLE.	
		FOR MODELS WITH WATER SOFTENER: CHECK "ADD SALT" LED AT END OF CYCLE; IF ON, ADD SALT; INSTRUCT CUSTOMER.	
		FOR MODELS WITH WATER SOFTENER: REGEN VALVE ELECTRICAL PROBLEM; REFER TO SERVICE ERROR CODES TABLE.	
	DETERGENT CARRYOVER OR OVER SUDSING.	CHECK WATER HARDNESS. IF BELOW 10 GRAINS, THEN INSTRUCT CUSTOMER TO USE LESS DETERGENT AND RECOMMEND THE "1 HR WASH" CYCLE.	6-3
	ETCHING OF GLASS FROM TOO MUCH DETERGENT AT TOO HIGH OF TEMPERATURE.	CHECK WATER HARDNESS. IF BELOW 10 GRAINS, THEN INSTRUCT CUSTOMER TO USE LESS DETERGENT AND RECOMMEND THE "1 HR WASH" CYCLE.	
	DIVERTER PROBLEMS	REFER TO SERVICE ERROR CODES TABLE.	9-1, 9-2
	DRAIN LOOP CHECK VALVE NOT SEALING.	1. DISCONNECT DRAIN HOSE AT PLUMBING CONNECTION. 2. ELEVATE HOSE ABOVE DISHWASHER AND FILL WITH WATER. IF WATER FLOWS INTO DISHWASHER, REPLACE ENTIRE DRAIN LOOP (INSTALL AS HIGH AS POSSIBLE AND ATTACH TO UNDERSIDE OF COUNTERTOP IF POSSIBLE).	
POOR DRY	CUSTOMER NOT USING RINSE AID OR DISPENSER EMPTY.	CHECK RINSE AID GAUGE LEVEL ON DISPENSER; INSTRUCT CUSTOMER HOW TO FILL AND MONITOR ADD / USE RINSE AID.	
	CUSTOMER NOT USING HEATED DRY OPTION.	RECOMMEND USE OF HEATED DRY OR SMART DRY TO CUSTOMER.	
	RINSE AID DISPENSER PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	10-1
	VENT STUCK CLOSED DUE TO PILOT RELAY STUCK ON (NOT ALL MODELS).	REFER TO SERVICE ERROR CODES TABLE.	1-1
	FAN PROBLEM (ON MODELS WITH FAN)	REFER TO SERVICE ERROR CODES TABLE.	10-3
	CONTROL CANCELLED CYCLE DUE TO ERROR DETECTED WITH WASH MOTOR, DRAIN MOTOR, LOW WATER, OR SUDS.	REFER TO SERVICE ERROR CODES TABLE.	4-4 6-1, 6-3 8-4
	HEATING PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	7-1
SANITIZED LED BLINKS OR INCOMPLETE SANITIZATION MESSAGE AT END OF CYCLE (CONTROL COULD NOT CONFIRM SANITIZATION ACHIEVED)	DOOR OPENED DURING FINAL RINSE OR DRY.	INSTRUCT CUSTOMER.	
	INCOMING WATER TOO COLD.	REFER TO SERVICE ERROR CODES TABLE.	6-6
	HEATING PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	7-1
	THERMISTOR / OWI SENSOR PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	3-1, 3-2
	INTERMITTENT DOOR SWITCH / LATCH CONNECTION.	REFER TO SERVICE ERROR CODES TABLE.	5-1, 5-2
	LINE VOLTAGE TOO LOW TO HEAT FAST ENOUGH.	CHECK POWER SOURCE. CONFIRM AT LEAST 100V AC.	
	AIR PRESSURE SURGES IN DISHWASHER DUE TO WASHING WITH HIGH SUDS CAUSES BRIEF OPENING OF DOOR SWITCH CONTACTS DURING FINAL RINSE.	REFER TO SERVICE ERROR CODES TABLE.	6-3

## For Service Technician Use Only

### Troubleshooting Guide #5

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODES
MELTED DISHWARE AND/OR SPRAY ARM AND/OR DISHWASHER ALWAYS HOT	CUSTOMER USES NON-DISHWASHER SAFE DISHES OR LOADS PLASTIC DISHES DIRECTLY OVER HEATER.	INSTRUCT CUSTOMER.	
	TEMPERATURE SENSING PROBLEM.	REFER TO SERVICE ERROR CODES TABLE.	3-1
	WATER HEATING PROBLEM, HEATER STUCK ON.	REFER TO SERVICE ERROR CODES TABLE.	7-2
	WATER HEATER DISPLACED FROM MOUNTING CLIP AND / OR PULLED OFF CENTER.	INSPECT HEATER. ADJUST BACK INTO POSITION IF NEEDED.	
NOISY OPERATION	SPRAY ARM STALLED OR BLOCKED AND SPRAYING ON THE DOOR.	- INSTRUCT CUSTOMER IF BLOCKED. - CHECK SPRAY ARM ROTATION AND INSPECT FOR PLUGGED NOZZLES. IF PLUGGED, CLEAN NOZZLES AND CONFIRM FILTERS INSTALLED PROPERLY. - CONTROLLED LOWER SPRAY ARM MOTOR FAILED. CHECK SPRAY ARM MOVING IN BOTH DIRECTIONS DURING DIAGNOSTICS CYCLE.	9-4
	DIVERTER PROBLEM	REFER TO SERVICE ERROR CODES TABLE.	9-1 9-2,9-3
	MOTOR PROBLEMS FORCE CYCLE TO START AND STOP REPEATEDLY.	REFER TO SERVICE ERROR CODES TABLE.	4-2
	NO OR LOW WATER	REFER TO SERVICE ERROR CODES TABLE.	6-1, 6-2 6-3, 6-4
	DRAINS TOO LONG	SLOW DRAIN PROBLEM - REFER TO SERVICE ERROR CODE TABLE FOR 8-1.	8-1
	VENT STUCK OPEN	REFER TO SERVICE ERROR CODES TABLE.	10-2
	FAN RUNS (MAKES NOISE) AFTER CYCLE COMPLETED (ON MODELS WITH FAN).	DISHWASHER IS DESIGNED TO KEEP FAN RUNNING AFTER CYCLE TO PREVENT MOISTURE BUILDUP IN DISHWASHER. FAN WILL TURN OFF IF DOOR IS OPENED LONGER THAN 5 SEC. INSTRUCT CUSTOMER.	
	EXCESSIVE FAN NOISE DUE TO FAULTY FAN (ON MODELS WITH FAN).	1. CHECK FAN OPERATION DURING SERVICE DIAGNOSTICS TEST CYCLE. 2. UNPLUG DISHWASHER OR DISCONNECT POWER. 3. REPLACE FAN IF DOES NOT SPIN FREELY.	
LEAKS OR DRIPS ON CABINET OR FLOOR	VENT WAX MOTOR PROBLEM (NOT ALL MODELS)	REFER TO SERVICE ERROR CODES TABLE.	10-2
	FAN PROBLEM (ON MODELS WITH FAN)	REFER TO SERVICE ERROR CODES TABLE.	10-3
	TOO MANY SUDS	REFER TO SERVICE ERROR CODES TABLE.	6-3 6-4
	LEAKING DISHWASHER	CHECK DOOR / TUB GASKET AND ALL WATER CONNECTIONS UNDER DISHWASHER. REFER TO SERVICE ERROR TABLE.	6-1 6-3
	UNIT UNLEVEL (LEANING FORWARD) AND WATER SURGES OVER FRONT LIP DURING CYCLE.	CHECK ERROR HISTORY FOR FLOAT ERROR 6-4. ERROR 6-4 IS LIKELY TO OCCUR IF UNIT IS SIGNIFICANTLY UNLEVEL AND LEANING FORWARD. REFER TO SERVICE ERROR TABLE.	6-4
	AIR PRESSURE SURGE WHEN DOOR IS OPENED AND IMMEDIATELY CLOSED WHILE DISHWASHER IS HOT CAN FORCE DROPLETS OUT THE VENT DUCT.	INSTRUCT CUSTOMER TO LEAVE DOOR OPEN A FEW MINUTES BEFORE RE-CLOSING IF OPENED WHILE DISHWASHER IS HOT TECH.	

## Section 5: Testing

This section provides a wiring diagram, control board specifications, testing procedures and strip circuits the “Kenmore Elite Stainless Steel Tall Tub Dishwasher.”

- Dishwasher Safety
- Wiring Diagram
- Control Board Information
- General Theory of Operation
- Power Check
- Door Switch Circuit
- Fill Circuit
- Dispenser Circuit
- Water Heating/Heat Dry
- Water Sensing w/OWI
- Diverter Motor
- Diverter Position Switch
- Wash Motor (Variable Speed)
- Drain Motor (Variable Speed)
- Vent Wax Motor
- Vent Fan
- Lower Spray Arm Motor
- Lower Spray Arm Sensor
- User Interface (UI)
- Notes

## For Service Technician Use Only

### **⚠ DANGER**



#### Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

### **⚠ WARNING**



#### Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

### Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

#### IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. Most people begin to feel an ESD discharge at approximately 3000V. It takes as little as 10V to destroy, damage, or weaken the main control assembly. The new main control assembly may appear to work well after repair is finished, but a malfunction may occur at a later date due to ESD stress.

- Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

-OR-

- Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging main control assembly in anti-static bag, observe above instructions.

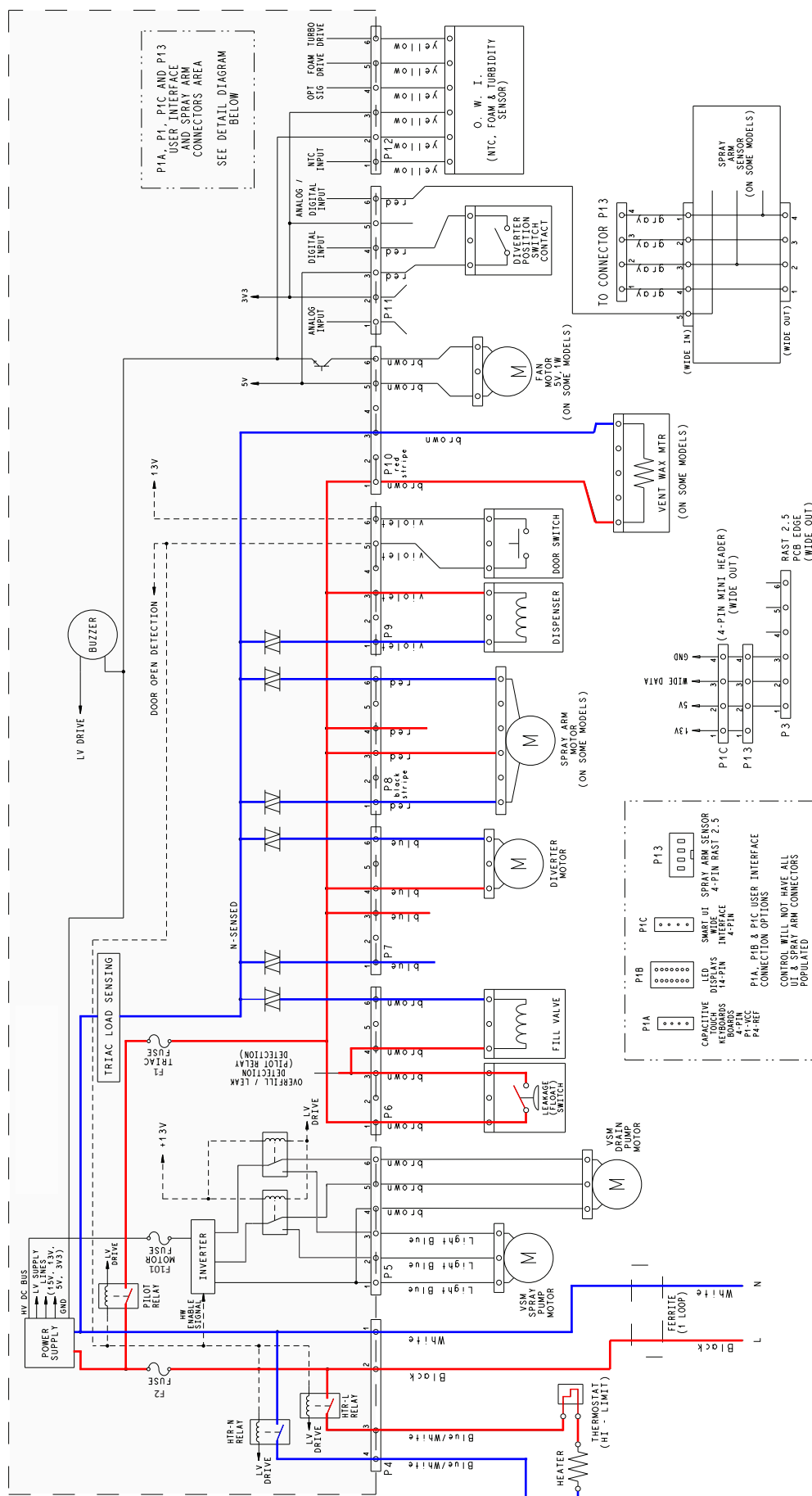
#### IMPORTANT SAFETY NOTICE — “For Technicians only”

This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

# Wiring Diagram

Schematic shown with door switch and all other normally open contacts open.

\* Denotes energy efficient components. Do not substitute.



## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

## Control Board Information

### SPECIFICATIONS

#### ELECTRICAL SUPPLY:

(Under Load): 60Hz 120V AC

#### SUPPLY WATER FLOW RATE:

To Fill 1.9 L (2 qt.) In 27 Seconds, 120 psi Maximum, 20 psi Minimum

#### SUPPLY WATER TEMPERATURE:

49° C (120° F) (Before starting a cycle, run water from the sink faucet until hot)

#### WATER CHARGE:

3.5 L (0.9 gal) Approximate

#### LOWER SPRAY ARM ROTATION:

12 TO 40 rpm

#### UPPER SPRAY ARM ROTATION:

12 TO 30 rpm

## FUSE SERVICE & DIAGNOSTIC CHECKS

### FOR L1 FUSE, WASH/DRAIN MOTORS FUSE, AND TRIAC FUSE

1. Verify harness connections to all loads and control are secure.
2. Check stored failure code and/or operation of loads during service diagnostics cycle.

#### L1 FUSE DIAGNOSTICS:

##### DISHWASHER IS COMPLETELY UNRESPONSIVE

- If Neutral and L1 are present at P4, pins 1 & 2 respectively, the L1 fuse is open. Replace Control.

#### TRIAC FUSE DIAGNOSTICS:

##### TRIAC LOADS: DISPENSER, DIVERter MOTOR, FILL VALVE, LOWER SPRAY ARM (SOME MODELS)

- If any of the TRIAC loads work, then the TRIAC fuse is OK. Diagnose and repair non-working triac loads.
- If all TRIAC loads fail to operate, TRIAC fuse is open. Replace Control.

#### WASH/DRAIN MOTOR FUSE DIAGNOSTICS:

- If both the wash and drain motors fail to operate, motor fuse is open. Replace Control.
- If only wash or drain motor operates, fuse is OK. Use meter to measure non-operational motor's (3) phase resistances.
- If a phase is open (>1K ohms) or unequal to the others, motor is bad. Replace Motor.
- If all phases are equal and within range (see wash/drain strip circuit), use meter to verify wiring harness continuity (<3 ohms) from Control connection to motor phase.
- If harness continuity is OK, Control is bad. Replace Control.
- If harness continuity is open or intermittent, harness is bad. Repair/Replace harness.

#### IF ANY OF THE FUSES ARE OPEN:

- Inspect and check resistances of all loads on fuse. If any loads are open, shorted, or show evidence of overheating or pinched wires, replace loads and/or repair wires.

## Component Testing

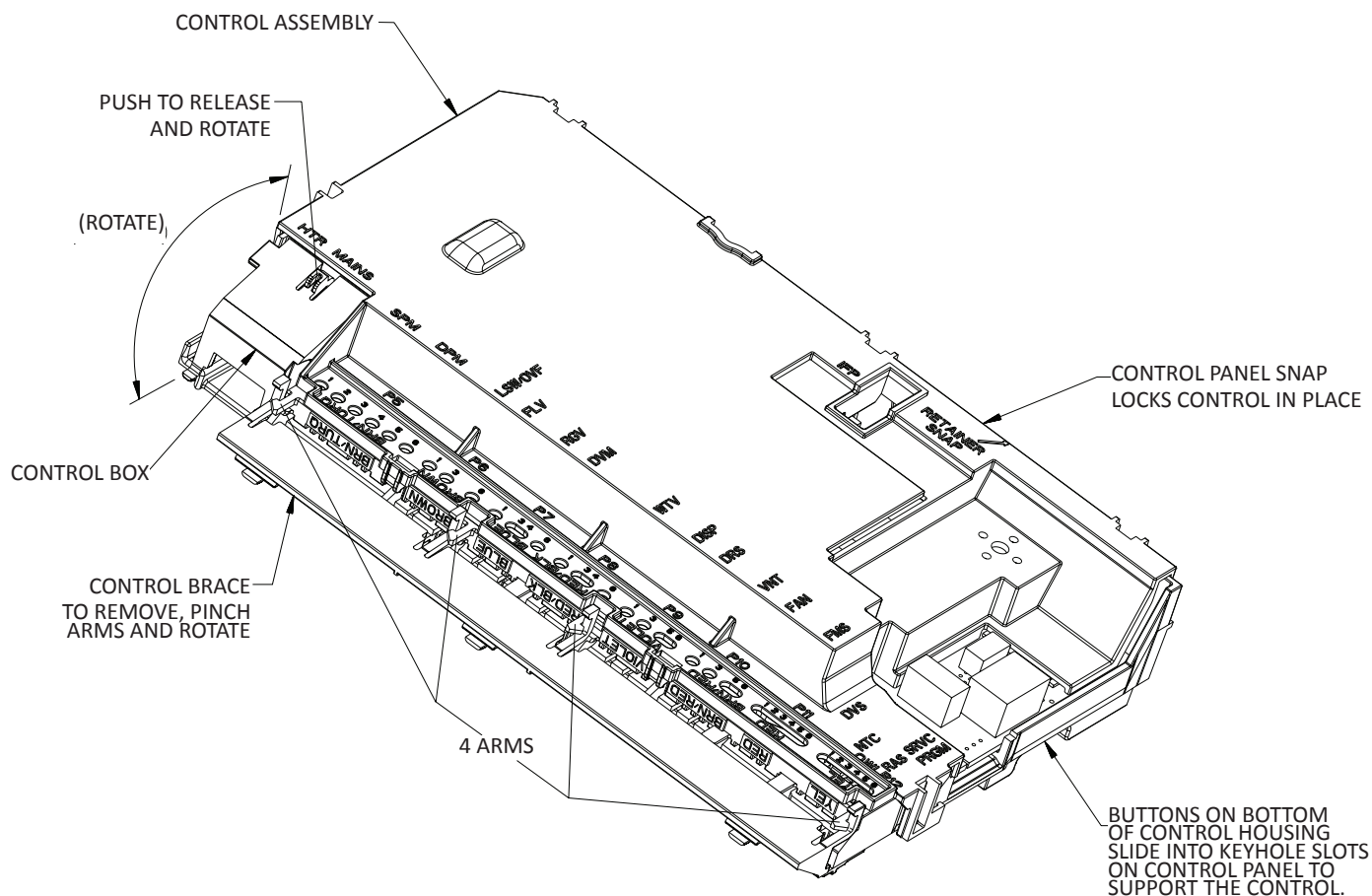
### TESTING DISHWASHER COMPONENTS FROM THE CONTROL

Before testing any of the components, perform the following checks:

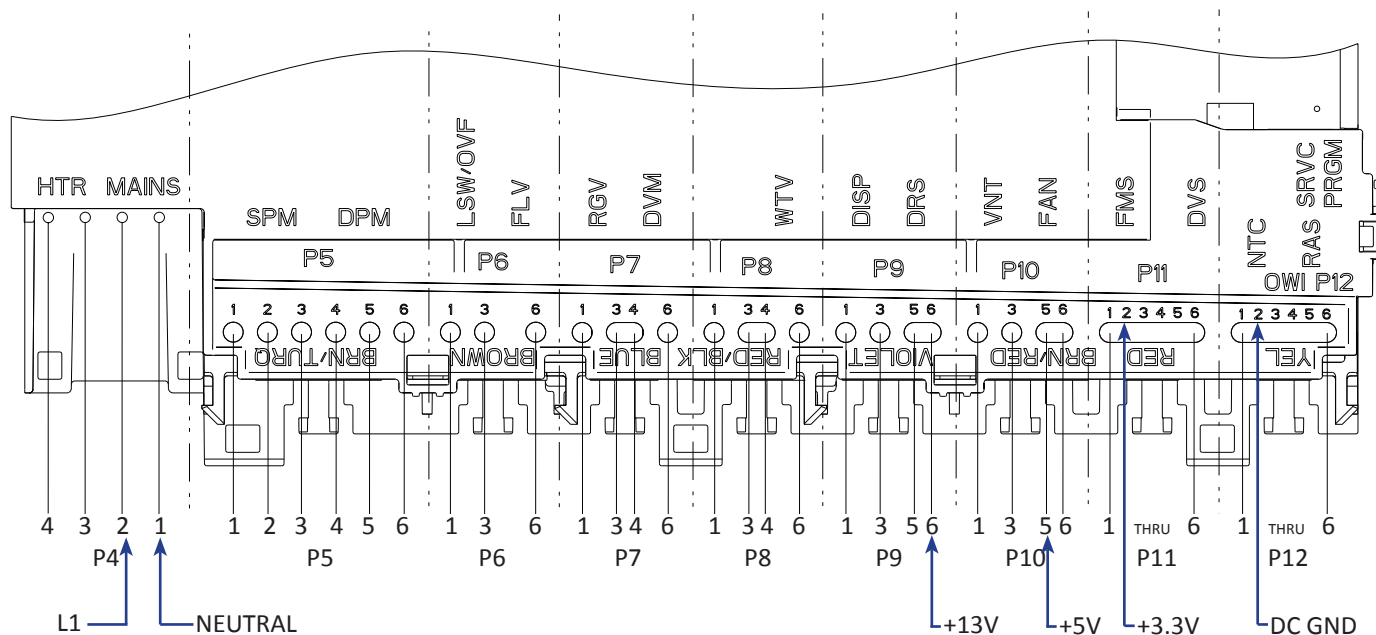
- The most common cause for mis-diagnosed control failure is poor connections. Therefore, disconnecting, inspecting and reconnecting wires will be necessary throughout test procedures.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms-per-volt DC, or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough.
- Voltage checks must be made with all connectors attached to the boards.
- Resistance checks must be made with power cord unplugged or power disconnected, and with wiring harness or connectors disconnected from the control.
- The testing procedures in this section may require the use of needle probes to measure voltage. Failure to use needle probes will damage the connectors.

# For Service Technician Use Only

## ELECTRONIC CONTROL BOARD



## METER CHECK OF LOADS & SUPPLIES



## For Service Technician Use Only

### **⚠ DANGER**



#### **Electrical Shock Hazard**

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## General Theory of Operation

*Refer to Wiring Diagram on page 6-3.*

Neutral and L1 (AC voltage) enters the Control Board at P4, pins 1 & 2 respectively. AC is converted to DC at the LV/HV Power Supply. LV (Low Voltage) Supplies include 15V, 13V, 5V, and 3.3V DC. These LV supplies are used to provide power to the microprocessors and board components, control the triacs, power the sensors, buzzer, fan motor, and energize the AC relays. The 170V DC HV (High Voltage) Supply is used to control the variable speed wash and drain motors.

The 13V DC is vital to the operation of the dishwasher. This supply is necessary to operate all 120V AC loads in the dishwasher, whether they are connected to a relay or controlled by triacs. 13V DC is generated by the power supply and flows through the door switch—when closed—to be available to the heater relays, wash & drain motor relays, and the pilot relay. A relay coil becomes energized when the control closes the LV drive circuit for a specific relay completing 13V pathway, which in turn closes the relay switch providing AC to the load. The Pilot relay provides “L1” to the remainder of the components that are controlled by the Neutral-sensed triacs.

There are three fuses on the Control Board: the L1 Fuse, the Motor Fuse, and the Triac Fuse. If the L1 Fuse is open, the entire dishwasher is unresponsive. If the Motor Fuse is open, both variable speed wash and drain motors will not operate. And, if the Triac Fuse is open, all loads controlled by Triacs will not operate.

**NOTE:** Refer to “Fuse Service and Diagnostic Checks” on page 6-4.

## Power Check

This test checks for incoming and outgoing power to and from the control board. This test assumes that proper voltages is present at the outlet or direct connect cable.

### Test Procedure

1. Unplug dishwasher or disconnect power.
2. Remove access panel.
3. Remove terminal box cover.
4. With a voltmeter set to AC, insert black probe inside white wire screw nut (N) and insert red probe inside black wire screw nut (L1).
5. Plug in dishwasher or reconnect power.
  - If 120V AC is present, unplug dishwasher or disconnect power and proceed to step 6.
  - If 120V AC is not present, have customer correct power problem at outlet or breaker.
6. Remove outer door panel.
7. Remove cover from control board and locate connector P4.
8. With a voltmeter set to AC, connect black probe to P4, pin 1 (N) and red probe to P4, pin 2 (L1).
9. Plug in dishwasher or reconnect power.
  - If 120V AC is present, go to step 10.
  - If 120V AC is not present, check for open connection between terminal block and control. Repair as needed.
10. Verify DC Supplies
  - **+3.3 & +5V DC** is used to power IC's and micro-processors on the circuit board and also provide power to the fan motor and sensors.
    - If **+3.3V DC** were missing, the dishwasher would become unresponsive. To verify  $+3.3V \pm 5\%$ , with a voltmeter set to DC, connect the black lead to P12-2 (GND) and the red lead to P11-2 (+3.3V).
    - If **+5V DC** were missing, the fan motor or diverter switch would not function. To verify  $+5V \pm 5\%$ , with a voltmeter set to DC, connect the black lead to P12-2 (GND) and the red lead to P10-5 (+5V).
  - **+13V DC** is used to actuate most of the 120V AC relays and triacs on the control.
    - If **+13V DC** was missing, the heater, motors, and all other loads would not turn on. To verify  $+13V \pm 5\%$ , with a voltmeter set to DC, connect the black lead to P12-2 (GND) and the red lead to P9-6 (+13V).
11. Unplug dishwasher or disconnect power.
12. Reassemble all parts and panels.

**Troubleshooting Missing DC Supplies:** Refer to the wiring diagram on page 6-3 when troubleshooting the DC supplies. If +3.3, +5, or +13V DC is missing on the control, unplug dishwasher or disconnect power, and then disconnect all components/loads from the control relying on the missing or loaded supply. Plug in dishwasher or reconnect power and check if the DC supply has returned.

- If not, replace the control.
- If it has, turn off dishwasher and reconnect one connector at a time until the component loading down that supply has been identified.

## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Door Switch Circuit

Perform the following checks if the dishwasher does not detect the door open or closed. This test will check the wiring to the door switch and the door switch itself. The following items are part of the door switch circuit.

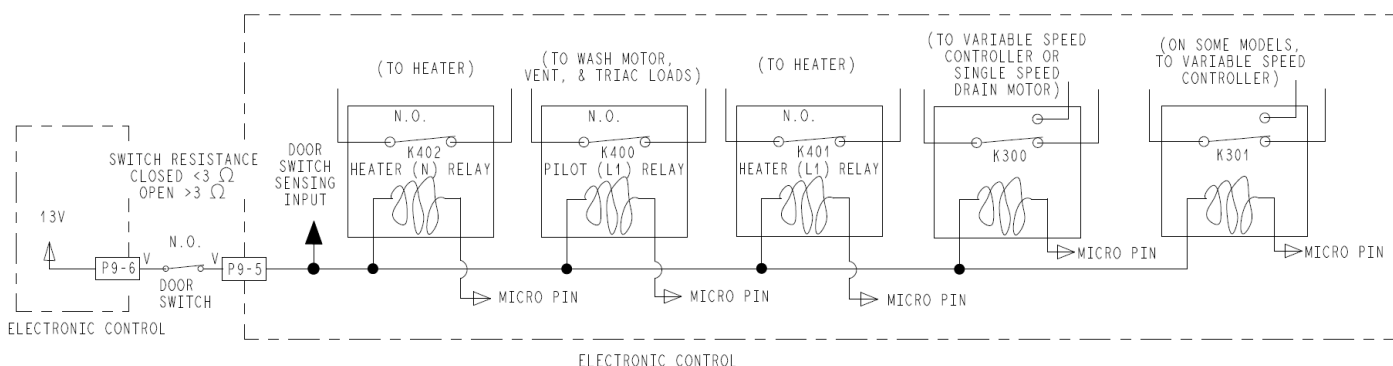
- Harness/Connection
- Door Switch/Latch Assembly
- Control Board

### Test Procedure

1. Check for improper installation of the dishwasher or leveling. Check door latch mechanism for obstructions or binding. Verify door seal is seated properly. Check for interference between dish racks and door. Repair as necessary.
2. Unplug dishwasher or disconnect power.
3. Remove outer door panel to access control board and door latch.

4. Check door switch contacts and all connections in the door switch circuit. Visually check that the P9 connector on the control and the door latch connector are securely installed.
  - If visual check passes, go to step 5.
  - If any of the connectors are not inserted properly, reconnect and retest door latch/switch.
5. Disconnect connector P9 from the control board.
6. Using an ohmmeter, measure across P9, pins 5 and 6 with the door closed, strike completely in latch mechanism (switch closed).
  - If 3 ohms or less is measured, proceed to step 7.
  - If high resistance is measured when door is closed, check for loose connections and repair as needed.
7. Using an ohmmeter, measure across P9, pins 5 and 6 with the door open, strike removed from latch mechanism (switch open).
  - If reading is infinite, go to step 8.
  - If reading shows continuity, or door switch is damaged, replace door switch and retest.
8. Plug in dishwasher or reconnect power.
9. Using a voltmeter set to DC, with door open, verify that 13V DC is present across P9-6 (+13V) and P12-2 (DC GND).
  - If 13V DC is not present, replace the control.
  - If 13V DC is present, proceed to step 10.
10. Reassemble all parts and panels.
11. Plug in dishwasher or reconnect power.
12. Perform Diagnostic Cycle to verify repair.

## Strip Circuit – Door Switch



## For Service Technician Use Only

### **⚠ DANGER**



#### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

### Fill Circuit

This test will check the wiring and components in the fill circuit. The following items are part of the fill circuit.

- Harness/Connection
- Overfill Switch
- Fill Valve
- Control Board

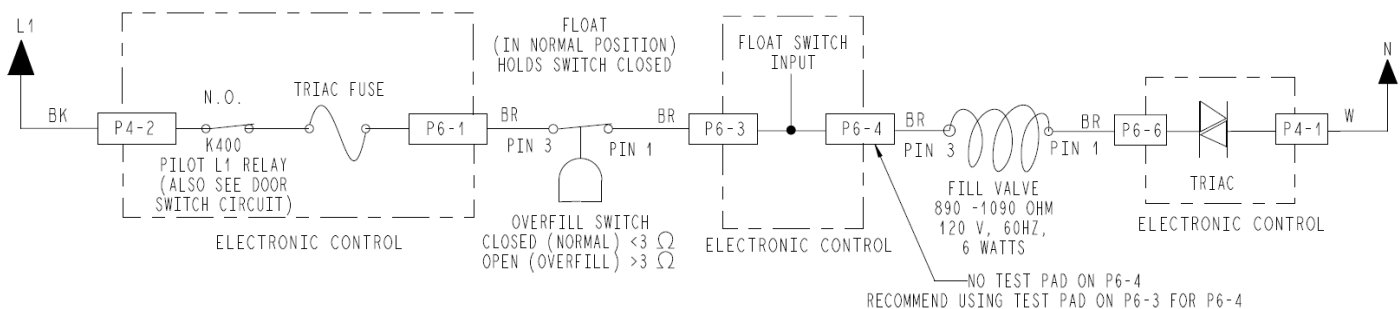
#### Test Procedure

1. Verify water supply is turned on and supply line is adequate. Check for water siphoning out of the unit (drain loop or improper drain connection). Check for debris in water line or fill valve inlet screen. Check for proper float switch operation. Repair as necessary.
2. Are all the loads controlled by TRIACS not working?
  - YES – check for open door switch, TRIAC fuse, or pilot relay.
  - NO – just the Fill Valve. Go to step 3.
3. Unplug dishwasher or disconnect power.
4. Remove outer door panel to access control board.
5. Unplug connector P6 from control board.
6. Check the fill valve and harness—using an ohmmeter, measure the resistance between P6-4 and P6-6.
  - If the resistance is between 890-1090 ohms, the fill valve and harness are good. Go to step 7.
  - If outside the range, replace the fill valve.
  - If an open circuit is detected, check connections and harness continuity between control and fill valve. If good, replace the fill valve.
7. Check the float (overflow) switch—using an ohmmeter, measure the resistance between P6-1 and P6-3 with the float switch closed/float down.
  - If 3 ohms or less is measured, go to step 8.
  - If an open circuit or high resistance is measured, check connections and harness continuity between the control and float switch. If harness is good, replace switch and retest.
8. Using an ohmmeter; measure the resistance between P6-1 and P6-3 with the float switch open/float up.
  - If reading is infinite, go to step 9.
  - If 3 ohms or less is measured, or float/overflow switch is damaged, replace switch and retest.
9. Reconnect P6 to control board.
10. Plug in dishwasher or reconnect power.
11. Check for AC voltage from the Control. Start the Diagnostic Cycle and at the proper interval measure for AC out of the control between P6-4 to P6-6 using a voltmeter set to AC.
 

**IMPORTANT: The Fill Valve must be connected to the control board to measure voltage accurately!!!**

  - If no AC voltage is measured, replace the control board and retest.
  - If 120V AC is measured and fill valve is energized, go to step 12.
12. Perform Diagnostic Cycle to verify repair.
13. Unplug dishwasher or disconnect power.
14. Reassemble all parts and panels.
15. Plug in dishwasher or reconnect power.

### Strip Circuit – Fill Valve



## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Dispenser Circuit

This test will check the wiring to the dispenser and the dispenser solenoid or wax motor itself. The following items are part of the dispenser circuit.

- Harness/Connection
- Dispenser Solenoid/Wax Motor
- Control Board

### Test Procedure

1. Check for obstructions or mechanical binding preventing the dispenser lid from opening. Repair or replace as necessary.
2. Are all the loads controlled by TRIACS not working?
  - YES – check for open door switch, TRIAC fuse, or pilot relay.
  - NO – just the Fill Valve. Go to step 3.
3. Unplug dishwasher or disconnect power.

4. Remove outer door panel to access control board.
5. Unplug connector P9 from control board.
6. Check the dispenser solenoid or wax motor (depending on model) and harness—using an ohmmeter, measure the resistance between P9-1 and P9-3.

#### Solenoid:

- If the resistance is between 280-340 ohms, the solenoid valve and harness are good. Go to step 7.
- If outside the range, replace the dispenser solenoid.
- If an open circuit is detected, check connections and harness continuity between control and dispenser. If good, replace the dispenser solenoid.

#### Wax Motor:

- If the resistance is between 1.4-2.8k ohms, the wax motor and harness are good. Go to step 7.
- If outside the range, replace the dispenser wax motor.
- If an open circuit is detected, check connections and harness continuity between control and dispenser. If good, replace the dispenser wax motor.

7. Reconnect P9 to control board.

8. Plug in dishwasher or reconnect power.

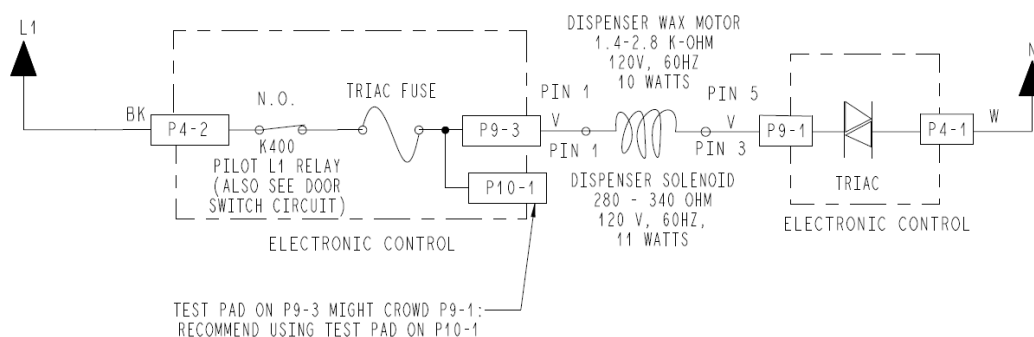
9. Check for AC voltage from the Control. Start the Diagnostic Cycle and at the proper interval measure for AC out of the control between P9-1 to P9-3 using a voltmeter set to AC.

**IMPORTANT: The Dispenser Solenoid or Wax Motor must be connected to the control board to measure voltage accurately!!!**

- If no AC voltage is measured, replace the control board and retest.
- If 120V AC is measured and dispenser motor is energized, go to step 10.

10. Perform Diagnostic Cycle to verify repair.
11. Unplug dishwasher or disconnect power.
12. Reassemble all parts and panels.
13. Plug in dishwasher or reconnect power.

## Strip Circuit – Dispenser



## For Service Technician Use Only

### **⚠ DANGER**



#### **Electrical Shock Hazard**

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Water Heating / Heat Dry

This test will check the wiring to the heater element and hi-limit thermostat and the heating circuit itself. The following items are part of the heater circuit.

- Harness/Connection
- Heater Coil
- Hi Limit Thermostat
- Control Board

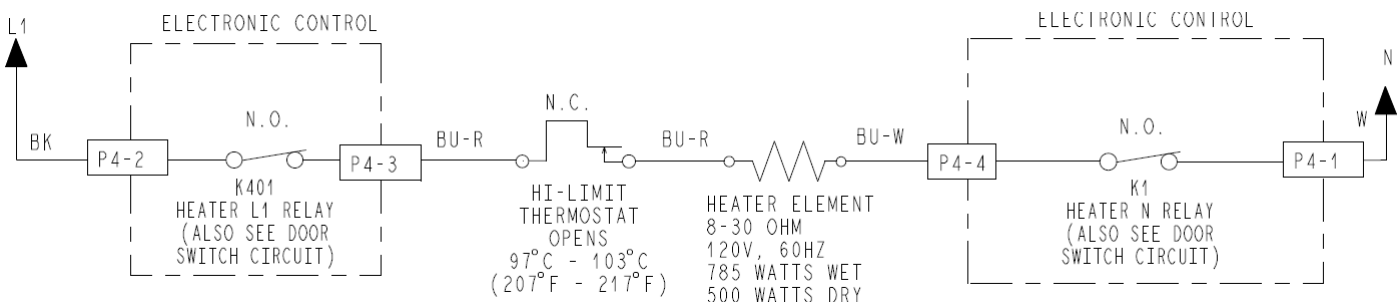
### Test Procedure

Control may be programmed to disable the heater if it detects a problem with the heating system. Run Diagnostics to clear the control and allow the heater to turn on again. If heating problem is not corrected, the control will disable the heater again.

1. Unplug dishwasher or disconnect power.
2. Remove outer door panel to access control board.
3. Disconnect P4 from the control board.

4. Using an ohmmeter, measure resistance between P4, pins 3 and 4.
  - If the resistance is between 8-30 ohms, go to step 6.
  - If an open circuit is detected, go to step 5.
5. Visually check the wire connections between the control board, the heater element, and the hi-limit thermostat. If the connections look good, check for continuity across the heater element and the hi-limit.
  - Replace heater element or hi-limit thermostat if it is electrically open.
  - Repair or replace wire harness if test fails continuity.
6. Reconnect P4 to control board.
7. Plug in dishwasher or reconnect power.
8. Check for AC voltage from the Control. Start the Diagnostic Cycle and at the proper interval measure for AC out of the control between P4-3 and P4-4 using a voltmeter set to AC.
  - If 120V AC is measured and heater element is on, go to step 9.
  - If no AC voltage is measured, replace control board.
9. Perform Diagnostic Cycle to verify repair.
  - If heater related error still exists, perform Water Sensing test procedure on following page.
10. Unplug dishwasher or disconnect power.
11. Reassemble all parts and panels.
12. Plug in dishwasher or reconnect power.

### Strip Circuit – Heater Circuit



## For Service Technician Use Only

### **⚠ DANGER**



#### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Water Sensing with O.W.I. Sensor

This test will check the wiring to the OWI (Optical Water Indicator), which incorporates the temperature thermistor and the OWI itself. The following items are part of the water sensing circuit.

- Harness/Connection
- O.W.I. Sensor (with temperature thermistor)
- Control Board

### Test Procedure

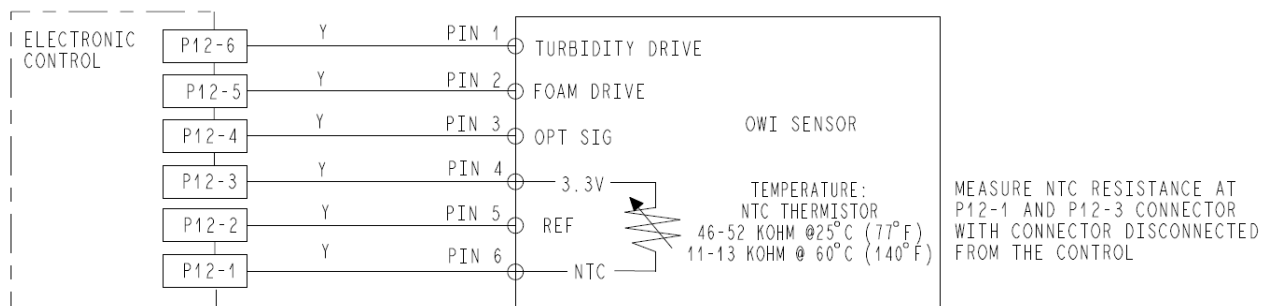
1. Check the operation of the temperature thermistor in the Service Diagnostic Cycle.
2. Unplug dishwasher or disconnect power.
3. Remove outer door panel to access control board.
4. Disconnect P12 from the Control Board.
5. Using an ohmmeter, measure resistance between P12, pins 1 and 3. The following table provides approximate room and hot water temperatures and their associated resistance values.

TEMP °F (°C)	RES RANGE k ohms
77° F (25° C)	46 – 52k ohms
140° F (60° C)	11 – 13k ohms

**NOTE:** All thermistor resistance measurements must be made while dishwasher is unplugged or disconnected from power and connector P12 removed from control.

- If the thermistor resistance is OK, the thermistor is good. Go to step 6.
  - If the thermistor resistance does not agree with the table, replace the O.W.I. Sensor.
  - If an open circuit is detected, check connections and harness continuity between control and O.W.I. If good, replace the O.W.I. Sensor.
6. Using an ohmmeter, check P12 -1 to cabinet ground and P12-3 to cabinet ground.
    - If no short is indicated, go to step 7.
    - If either pin indicates continuity to ground (short), repair or replace wiring harness and retest.
  7. Reconnect P12 to control board.
  8. With a voltmeter set to DC, connect the black lead to P12-2 and the red lead to P12-3.
  9. Plug in dishwasher or reconnect power.
  10. Start the Diagnostic Cycle and at the proper interval measure for DC out of the control between P12-2 and P12-3.
    - If 3.3V DC is measured the control is functioning. go to step 11.
    - If no DC voltage is measured, replace the control board and retest.
  11. Perform Diagnostic Cycle to verify repair.
  12. Reassemble all parts and panels.
  13. Plug in dishwasher or reconnect power.

## Strip Circuit – Water Sensing



## For Service Technician Use Only

### **⚠ DANGER**



#### **Electrical Shock Hazard**

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

### Diverter Motor

This test will check the wiring to the diverter motor and the diverter motor itself. The following items are part of the diverter motor circuit.

- Harness/Connection
- Diverter Motor
- Diverter Position Switch (see test on following page)
- Control Board

#### Test Procedure

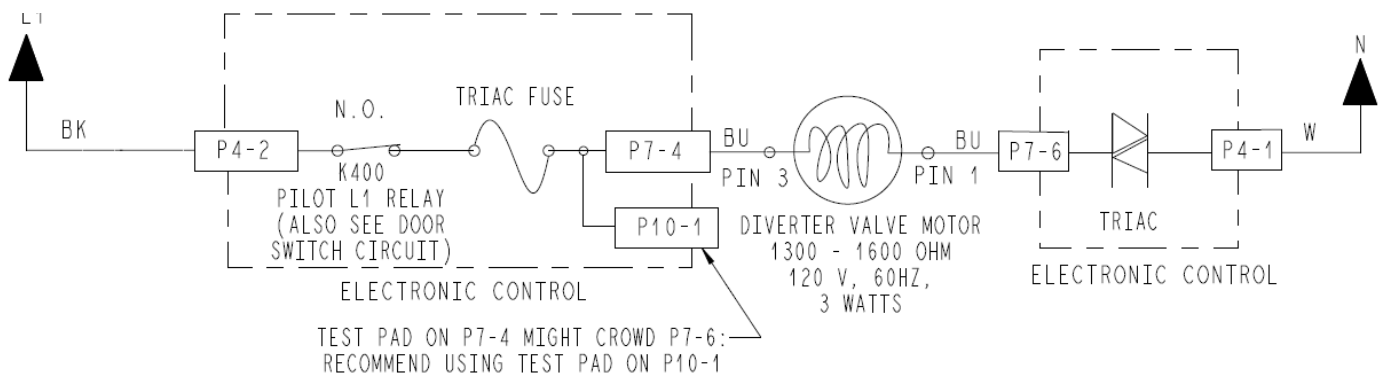
1. Check for operation in Diagnostic Cycle. Listen for cam clicking as it rotates—or inspect shaft with mirror to see if rotating during diverter interval. If diverter is rotating, the likely problem is with the diverter sensor (see test procedure on following page). Verify that diverter disk is properly installed on shaft.
2. Are all the loads controlled by TRIACS not working?
  - YES – check for open door switch, TRIAC fuse, or pilot relay.
  - NO – just the diverter valve. Go to step 3.

3. Unplug dishwasher or disconnect power.
4. Remove outer door panel to access control board.
5. Unplug connector P7 from control board.
6. Check the diverter motor—using an ohmmeter, measure the resistance between P7-4 and P7-6.
  - If the resistance is between 1300-1600 ohms, the diverter motor and harness are good. Go to step 7.
  - If outside the range, replace the diverter assembly.
  - If an open circuit is detected, check connections and harness continuity between control and diverter assembly. If good, replace the diverter assembly.
7. Reconnect P7 to control board.
8. Plug in dishwasher or reconnect power.
9. Check for AC voltage from the Control. Start the Diagnostic Cycle and at the proper interval measure for AC out of the control between P7-4 to P7-6 using a voltmeter set to AC.
 

**IMPORTANT: The Diverter Motor must be connected to the control board to measure voltage accurately!!!**

  - If no AC voltage is measured, replace the control board and retest.
  - If 120V AC is measured and diverter is rotating, go to step 10.
10. Perform Diagnostic Cycle to verify repair.
  - If diverter error still exists, perform diverter sensor test procedure on following page.
11. Unplug dishwasher or disconnect power.
12. Reassemble all parts and panels.
13. Plug in dishwasher or reconnect power.

#### Strip Circuit – Diverter Motor



## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Diverter Sensor/Position Switch

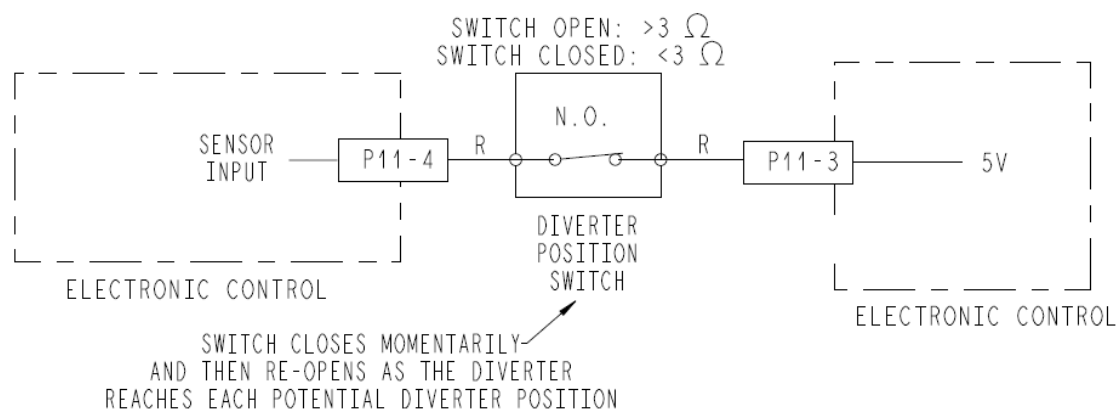
This test will check the wiring to the diverter sensor/position switch and the diverter assembly itself. The following items are part of the diverter sensor/switch circuit.

- Harness/Connection
- Diverter Motor (see test on previous page)
- Diverter Sensor/Position Switch
- Control Board

### Test Procedure

1. Check the operation of the diverter motor in the Service Diagnostic Cycle. You should be able to "hear" the cam clicking as it rotates through the following wash zones.
  - Interval 20, the diverter motor is activated and water is 'diverted' to upper spray arm.
  - Interval 11, the diverter motor is activated and water is 'diverted' to the Turbo Zone (some models only).
  - Interval 10, the diverter motor is activated and water is 'diverted' to lower spray arm.
2. If the diverter is diverting the flow of water to the wash zones, the diverter motor is working—continue to step 3. If not, perform the diverter motor test procedure on the preceding page.
3. Unplug dishwasher or disconnect power.
4. Remove access panel and outer door panel.
5. Visually check that the diverter position switch connector and P11 connector on the control are securely installed.
  - If visual check passes, go to step 6.
  - If any of the connectors are not inserted properly, reconnect and retest diverter position switch.
6. Check continuity of harness between diverter position switch and P11 on control.
  - If continuity test is good, continue to step 7.
  - If continuity test fails, repair or replace harness as needed.
7. To test diverter switch, unplug connector P11 from control board and connect an ohmmeter across pins 3 and 4 (on the connector removed, not the control board).
8. Plug in dishwasher or reconnect power.
9. Run the service diagnostic cycle as stated in Step 1, and during Intervals 20, 11, and 10, you should observe the diverter position switch closing momentarily and then reopening as it reaches each potential position.
  - If the switch is functioning normally (approximately 3 ohms or less when closed), proceed to step 10.
  - If switch does not open or close properly, or resistance is much greater 3 ohms when closed, then replace diverter assembly and retest.
10. If all the previous tests pass, replace the control board.
11. Perform Diagnostic Cycle to verify repair.
12. Reassemble all parts and panels.
13. Plug in dishwasher or reconnect power.

### Strip Circuit – Diverter Switch



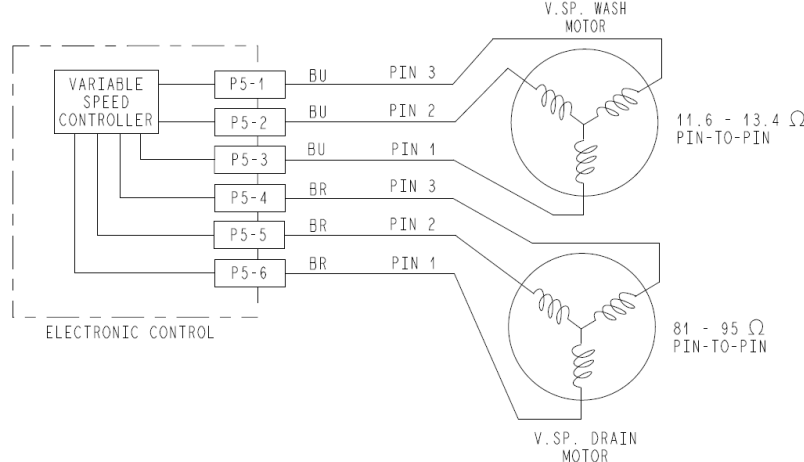
**After performing voltage measurements, disconnect power before servicing.**

- Harness/Connection
- Wash Motor (Variable Speed)
- Control Board

1. Check the tub and sump for anything that may be impeding water flow. Inspect and if necessary clean the tri-filter system and verify that filters are installed properly. Also, inspect spray arm water nozzles and clean if needed.
2. Check the wash motor and electrical connections by performing the Service Diagnostic Cycle. The following steps assume that this step was unsuccessful.
3. Unplug dishwasher or disconnect power.
4. Remove outer door panel to access control board.


- | Motor Harness  | Windings (ohms) |
|----------------|-----------------|
| P5, Pins 1 & 2 | 11.6-13.4 ohms  |
| P5, Pins 2 & 3 | 11.6-13.4 ohms  |
| P5, Pins 3 & 1 | 11.6-13.4 ohms  |
- If the values are outside the range, open, or inconsistent from winding to winding, replace the wash motor.
  - If the values are within the ranges listed, replace the control board.
9. Unplug dishwasher or disconnect power.
  10. Reassemble all parts and panels.
  11. Plug in dishwasher or reconnect power.

- If the values are outside the range, open, or inconsistent from winding to winding, replace the wash motor.
- If the values are within the ranges listed, replace the control board.



# For Service Technician Use Only

**⚠ DANGER**



**Electrical Shock Hazard**

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Drain Motor (Variable Speed)

This test will check the wiring to the drain motor and the drain motor itself. The following items are part of the drain motor circuit.

- Harness/Connection
- Drain Motor (Variable Speed)
- Control Board

### Test Procedure

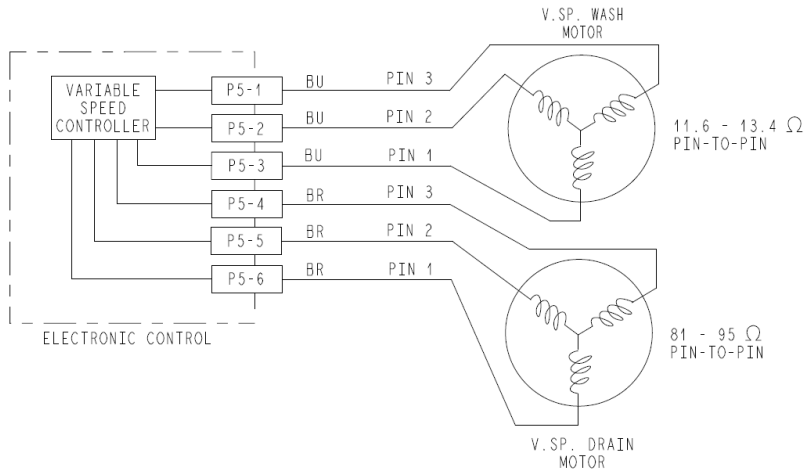
1. Verify that drain hose or drain path is not obstructed. Check for blockage from sump check valve to customer's plumbing. Check for plugged garbage disposal or disposal plug not knocked out. Check drain loop, stuck check valve, or for plugged hoses. Repair as needed.
2. Check the drain motor and electrical connections by performing the Service Diagnostic Cycle. The following steps assume that this step was unsuccessful.
3. Unplug dishwasher or disconnect power.
4. Remove outer door panel to access control board.

5. Visually check that connector P5 is inserted all the way into the control board.
  - If visual checks pass, go to step 6.
  - If visual checks fail, reconnect P5 and repeat step 2.
6. Visually check that the drain motor connector is inserted all the way into the motor.
  - If visual checks pass, go to step 7.
  - If visual checks fail, reconnect motor connector and repeat step 2.
7. Check the harness between the control board and drain motor for continuity.
  - If there is continuity, go to step 8.
  - If there is no continuity, repair or replace harness as needed.
8. Check the drain motor windings. Disconnect the P5 from the control board. With an ohmmeter, verify the resistance values as show below.

Motor Harness	Windings (ohms)
P5, Pins 4 & 5	81-95 ohms
P5, Pins 5 & 6	81-95 ohms
P5, Pins 6 & 4	81-95 ohms

- If the values are outside the range, open, or inconsistent from winding to winding, replace the wash motor.
  - If the values are within the ranges listed, replace the control board.
9. Unplug dishwasher or disconnect power.
  10. Reassemble all parts and panels.
  11. Plug in dishwasher or reconnect power.

## Strip Circuit – Wash & Drain Motors (Variable Speed)



## For Service Technician Use Only

### **⚠ DANGER**



#### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

### Vent Wax Motor

This test will check the wiring to the vent and the vent wax motor itself. The following items are part of the vent wax motor circuit.

- Harness/Connection
- Vent Wax Motor
- Control Board

#### NOTES:

Only dishwashers with the SmartDry™ option have a vent and fan. If moisture is detected between outer and inner door panels or on cabinets around air inlet located on side of door panel, check that the vent damper is closing properly using the Service Diagnostic Cycle.

Also verify that wax motor seal and vent bezel seal are not pinched or missing. Verify there are no leaks around the vent bezel seal allowing moisture past the bezel and into the door panel area.

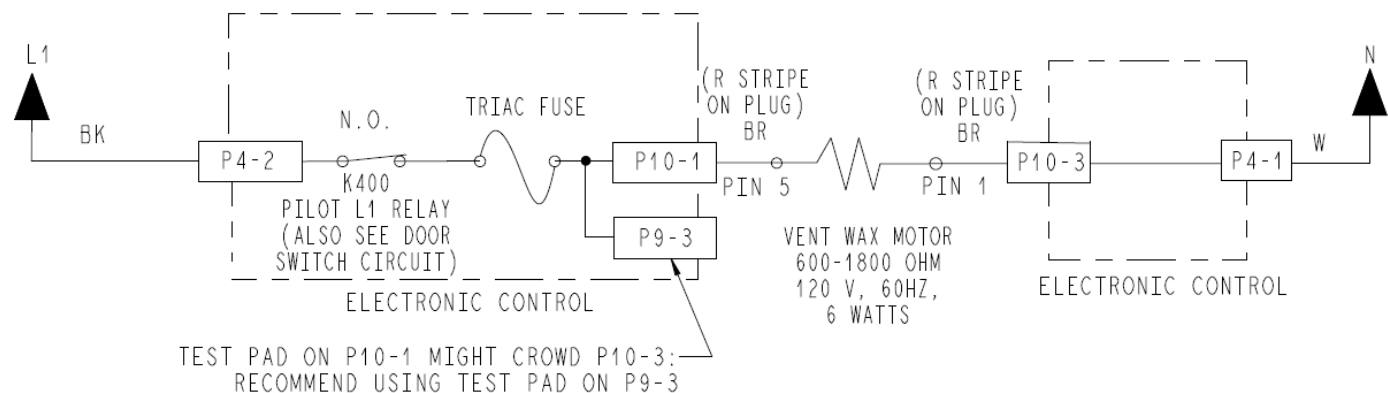
#### Test Procedure

1. Unplug dishwasher or disconnect power.
2. Remove outer door panel to access control board.
3. Unplug connector P10 from control board.
4. Check the vent wax motor and harness—using an ohmmeter, measure the resistance between P10-1 and P10-3.
  - If the resistance is between 600-1800 ohms, the wax motor and harness are good. Go to step 5.
  - If outside the range, replace the vent wax motor.
  - If an open circuit is detected, check connections and harness continuity between control and vent wax motor. If good, replace the wax motor.
5. Reconnect P10 to control board.
6. Plug in dishwasher or reconnect power.
7. Check for AC voltage from the Control. Start the Diagnostic Cycle and measure for AC out of the control between P10-1 to P10-3 using a voltmeter set to AC.
 

**NOTE:** During the Diagnostic Cycle, the vent wax motor is always energized.

  - If no AC voltage is measured, replace the control board and retest.
  - If 120V AC is measured and dispenser motor is energized, go to step 8.
8. Unplug dishwasher or disconnect power.
9. Reassemble all parts and panels.
10. Plug in dishwasher or reconnect power.

#### Strip Circuit – Vent Wax Motor



## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Vent Fan

This test will check the wiring to the vent and the vent fan itself. The following items are part of the vent fan circuit.

- Harness/Connection
- Vent Fan
- Control Board

### NOTES:

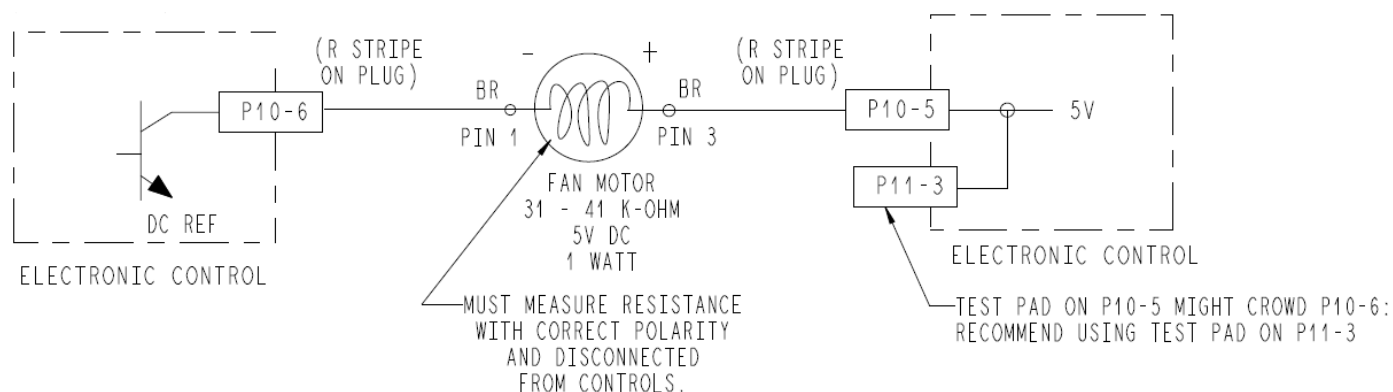
Only dishwashers with the SmartDry™ option have a vent and fan. If moisture is detected between outer and inner door panels or on cabinets around air inlet located on side of door panel, check that the vent damper is closing properly using the Service Diagnostic Cycle.

Also verify that wax motor seal and vent bezel seal are not pinched or missing. Verify there are no leaks around the vent bezel seal allowing moisture past the bezel and into the door panel area.

### Test Procedure

1. Check the vent fan and electrical connections by performing the Service Diagnostic Cycle. The following steps assume that this step was unsuccessful.
2. Unplug dishwasher or disconnect power.
3. Remove outer door panel to access control board.
4. Unplug connector P10 from control board.
5. Check the resistance of the fan motor coil. With a ohmmeter, connect the black lead to P10-6 and the red lead to P10-5. **IMPORTANT:** Note measurement polarity.
  - If the resistance is between 31-41 k-ohms, the fan motor and harness are good. Go to step 6.
  - If outside the range, replace the fan motor.
  - If an open circuit is detected, check connections and harness continuity between control and fan motor. If good, replace the fan motor assembly.
6. Reconnect P10 to control board.
7. With a voltmeter set to DC, connect the black lead to P10-6 and the red lead to P10-5. **IMPORTANT:** Note measurement polarity.
8. Plug in dishwasher or reconnect power.
9. Check for DC voltage from the Control. Start the Diagnostic Cycle and at the proper interval measure for +5V DC out of the control between P10 pins 5 & 6.
  - If +5V DC is measured and fan is running, go to step 10.
  - If no voltage is measured, replace the control board and retest.
10. Unplug dishwasher or disconnect power.
11. Reassemble all parts and panels.
12. Plug in dishwasher or reconnect power.

### Strip Circuit – Vent Fan



## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Lower Spray Arm Motor

This test will check the wiring to the spray arm motor and the motor itself. The following items are part of the lower spray arm motor circuit.

- Harness/Connection
- Lower Spray Arm Motor
- Lower Spray Arm Sensor
- Control Board

### Test Procedure

- Check for and remove anything blocking the lower spray arm (utensils, pot handles, etc). Verify that the filters are installed properly and not impeding spray arm rotation. Also, check for clogged spray nozzles and clean as needed.
- Perform the Service Diagnostic Cycle to check status of lower spray arm and sensor. The following operations are performed during "Interval 10" (4 minute lower wash).
  - Minute 1: LSA Rotates CCW**
  - Minute 2: LSA Rotates CW**
  - Minute 3: LSA Rotates CCW**
    - Clean LED lit to indicate LSA motor status good.
  - Minute 4: LSA Rotates CW**
    - Clean LED lit to indicate LSA sensor status good.

The following steps assume that this step was unsuccessful.
- Are all the loads controlled by TRIACS not working?

- YES – check for open door switch, TRIAC fuse, or pilot relay.
  - NO – just the spray arm motor. Go to step 4.
- Unplug dishwasher or disconnect power.
  - Remove outer door panel to access control board.
  - Unplug connector P8 from control board.
  - Check the spray arm motor—using an ohmmeter, verify the resistance values as shown below.

Motor Harness	Windings (ohms)
P8, Pins 3 & 6	1890-2310 ohms
P8, Pins 3 & 1	1890-2310 ohms

- If the values are within the ranges listed, the spray arm motor and harness are good. Go to step 8.
  - If outside the range or inconsistent from winding to winding, replace the spray arm motor (diverter assembly).
  - If an open circuit is detected, check connections and harness continuity between control and spray arm motor. If good, replace the spray arm motor (diverter assembly).
- Reconnect P8 to control board.
  - Plug in dishwasher or reconnect power.
  - With a voltmeter set to AC, connect black probe to P8-6 (N) and the red probe to P8-3 (L1). Start the Diagnostic Cycle and at "Interval 10" (4 minute lower wash) check for AC to the CCW motor winding during minutes 1 and 3.
 

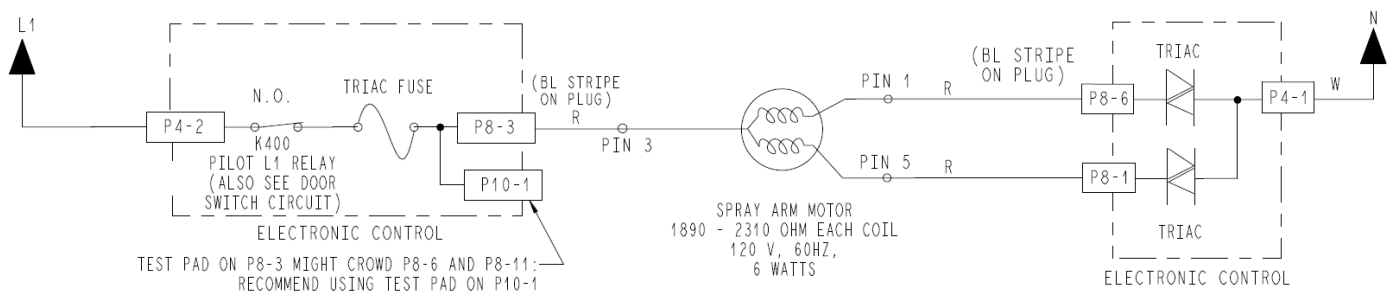
**IMPORTANT: The Lower Spray Arm Motor must be connected to the control board to measure voltage accurately!!!**

    - If 120V AC is measured during CCW rotation (minutes 1 & 3), go to step 11.
    - If no AC voltage is measured, replace the control board and retest.
  - With a voltmeter set to AC, connect black probe to P8-1 (N) and the red probe to P8-3 (L1). Start the Diagnostic Cycle and at "Interval 10" (4 minute lower wash) check for AC to the CW motor winding during minutes 2 and 4.
 

**IMPORTANT: The Lower Spray Arm Motor must be connected to the control board to measure voltage accurately!!!**

    - If 120V AC is measured during CW rotation (minutes 2 & 4), go to step 12.
    - If no AC voltage is measured, replace the control board and retest.
  - Perform Diagnostic Cycle to verify repair.
    - If lower spray arm error still exists, perform lower spray arm sensor test procedure on following page.
  - Unplug dishwasher or disconnect power.
  - Reassemble all parts and panels.
  - Plug in dishwasher or reconnect power.

### Strip Circuit – Lower Spray Arm Motor



## For Service Technician Use Only

**⚠ DANGER**



### Electrical Shock Hazard

**Only authorized technicians should perform diagnostic voltage measurements.**

**After performing voltage measurements, disconnect power before servicing.**

**Failure to follow these instructions can result in death or electrical shock.**

## Lower Spray Arm Sensor

This test will check the wiring to the spray arm sensor and the sensor itself. The following items are part of the lower spray arm sensor circuit.

- Harness/Connection
- Lower Spray Arm Motor
- Lower Spray Arm Sensor
- Control Board

### Test Procedure

1. Check for and remove anything blocking the lower spray arm (utensils, pot handles, etc). Verify that the filters are installed properly and not impeding spray arm rotation. Also, check for clogged spray nozzles and clean as needed.
2. Perform the Service Diagnostic Cycle to check status of lower spray arm and sensor. The following operations are performed during "Interval 10" (4 minute lower wash).

**Minute 1: LSA Rotates CCW**

**Minute 2: LSA Rotates CW**

### Minute 3: LSA Rotates CCW

- Clean LED lit to indicate LSA motor status good.

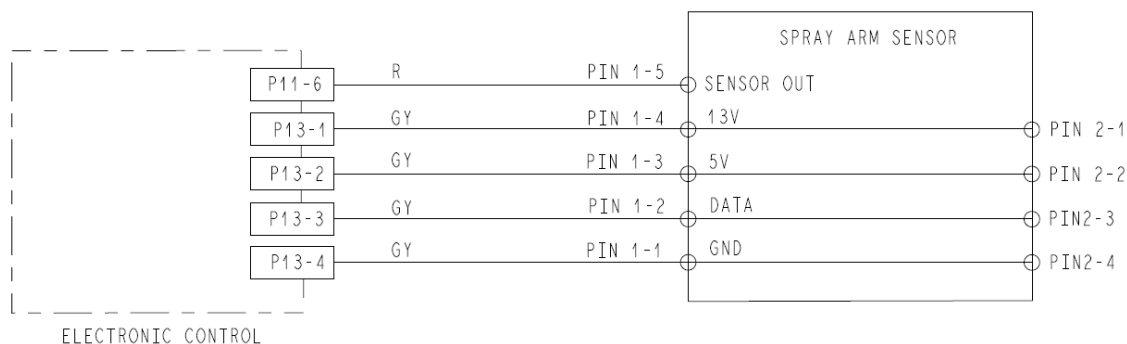
### Minute 4: LSA Rotates CW

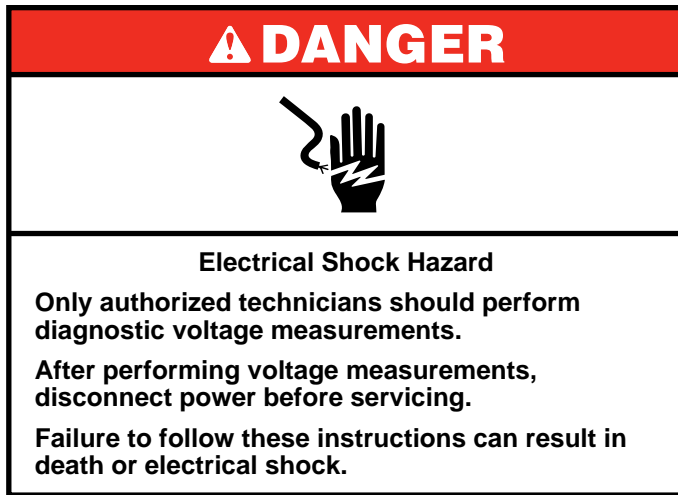
- Clean LED lit to indicate LSA sensor status good.

The following steps assume that this step was unsuccessful.

3. Unplug dishwasher or disconnect power.
4. Remove access panel and outer door panel.
5. Visually check that the spray arm sensor connector, P11 and P13 connectors on the control are securely installed.
  - If visual check passes, go to step 6.
  - If any of the connectors are not inserted properly, reconnect and retest spray arm sensor.
6. Check continuity of harness between P11 and spray arm sensor and P13 and spray arm sensor.
  - If continuity test is good, continue to step 7.
  - If continuity test fails, repair or replace harness as needed.
7. With a voltmeter set to DC, connect the black lead to P13-4 and the red lead to P13-2.
8. Plug in dishwasher or reconnect power.
9. Start the Diagnostic Cycle and during Interval 10, measure for +5V DC out of the control between P13, pins 4 and 2.
  - If +5V DC is measured, the control is functioning, replace the spray arm sensor.
  - If no DC voltage is measured, replace the control board.
10. Perform Diagnostic Cycle to verify repair.
11. Reassemble all parts and panels.
12. Plug in dishwasher or reconnect power.

## Strip Circuit – Lower Spray Arm Sensor



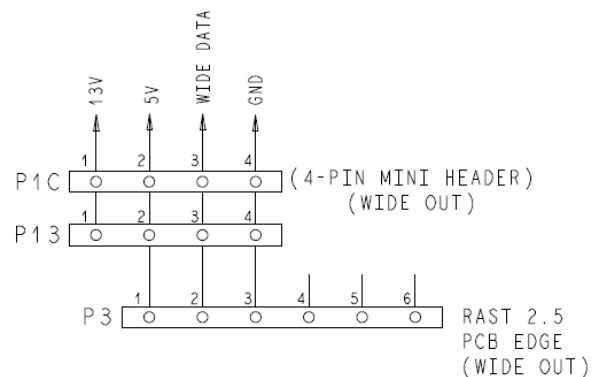
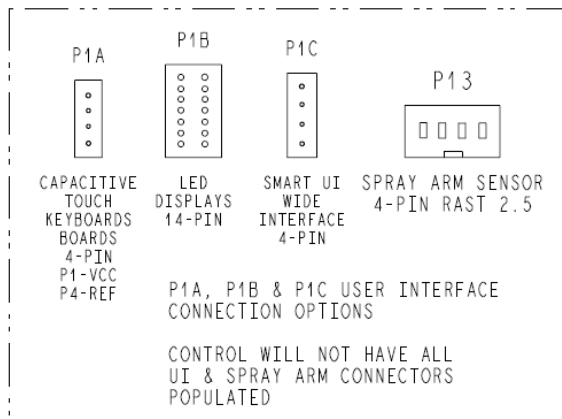


4. Disconnect user interface connection from control board. Verify all other connections to the control are good.
5. Re-assemble door, but do not close door.
6. Plug in dishwasher or reconnect power.
7. Wait at least 7 seconds for control to power-up completely.
8. Close dishwasher door and monitor control response:
  - If control is OK, it will respond by turning on the drain motor for 2 minutes. Replace user interface assembly.
  - If control is not OK, it will not turn on the drain motor. Wait for at least 10 seconds. If still no drain response, then replace control or LCD display module (whichever one the UI was connected to).
9. Unplug dishwasher or disconnect power.
10. Reassemble all parts and panels.
11. Plug in dishwasher or reconnect power.

This test will check the wiring to the user interface and the user interface itself. The following items are part of the user interface circuit.

- Harness/Connection
- User Interface (UI)
- Status LED (On some models)
- Control Board

1. Verify that the control lock-out feature has not been turned on by the customer. If unit will not run or power up, perform Power Check procedure on page 6-6. Also, check for excessive condensation on UI parts due to vent and/or fan problem.
2. Unplug dishwasher or disconnect power.
3. Remove outer door panel to access control board and user interface.







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**Manual No. 22110313**  
**Kenmore Elite 2013 Stainless Steel Tall Tub Dishwasher**