SEARS

Manual No: 22111007

Kenmore ELITE

ENERGY STAR

SOURCE 665

2007 ULTRA WASH® HE Dishwasher

Models

665.13122K700
665.13123K700
665.13124K700
665.13129K700
665.13422K700
665.13423K700
665.13429K700

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FORWARD

This Kenmore Manual, “2007 ULTRA WASH®HE Dishwasher” (Part No. 22111007), provides the technician with information on the installation, operation, and service of the 2007 ULTRA WASH®HE Dishwasher. For specific information on the model being serviced, refer to the “Use and Care Guide,” or “Tech Sheet” provided with the 2007 ULTRA WASH®HE Dishwasher.

The Wiring Diagrams used in this Manual are typical and should be used for training purposes only. Always use the Wiring Diagram supplied with the product when servicing the unit.

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 2007 ULTRA WASH®HE Dishwasher.

The objectives of this Manual 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.

Sears Holdings Corporation assumes no responsibility for any repairs made on our products by anyone other than Authorized Factory Service Technicians.

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GENERAL

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 ìDANGERî or ìWARNING.î 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

MODEL NUMBER DESIGNATIONS

DISHWASHERS (STARTING 2006)

MANUFACTURING NUMBER	665		13	76	2	K	6	0	0
SALES / STOCK NUMBER		22	13	76	2				

SOURCE CODE

BUYING DEPT.

PRODUCT

13 = BASE OR VARIATION MODEL
17 = PORTABLE MODEL

FEATURE LEVEL

00 = LOWEST
99 = HIGHEST
(VARIATION + 10 EX: 2213762 BASE, 213862 VARIATION)

COLOR

2 = WHITE ON WHITE
3 = BLACK ON STAINLESS
4 = BISCUIT ON BISCUIT
5 = MONOCHROMATIC STAINLESS STEEL
9 = BLACK ON BLACK

ALPHA DESIGNATORS

K = LETTER ADDED INTERNALLY TO PREVENT PART NUMBER CONFLICTS

YEAR OF INTRODUCTION

DECADE 9 = 1990; 0 = 2000; 1 = 2010; 2 = 2020

ENGINEERING CHANGE MODEL

0 = BASIC ORIGINAL RELEASE
1 = FIRST REVISION
2 = SECOND REVISION

MODEL & SERIAL NUMBER LABEL & TECH SHEET LOCATIONS

Model & Serial Number Label Location (front left hand side of the inner tub)

Tech Sheet behind the access panel

WARRANTY
KENMORE ELITE® APPLIANCE WARRANTY

THREE-YEAR LIMITED WARRANTY ON THIS KENMORE ELITE® DISHWASHER

When installed, operated and maintained according to all instructions supplied with the product, if this appliance fails due to a defect in material or workmanship within three years from the date of purchase, call 1-800-4-MYHOME® to arrange for free repair.

FIVE-YEAR LIMITED WARRANTY ON UPPER AND LOWER RACKS

For five years from the date of purchase, when this dishwasher is installed, operated and maintained according to all instructions supplied with the product, Sears will replace parts for the upper or lower dishrack if the rack rusts due to defective materials or workmanship. After the third year, customer assumes any labor costs associated with dishrack replacement.

LIMITED WARRANTY FOR THE LIFE OF THE DISHWASHER, ON KENMORE ELITE STAINLESS STEEL TUB MODELS, AGAINST LEAKS IN THE TUB AND INNER DOOR PANEL

For the life of the dishwasher, if a leak should occur as a result of rust-through of the stainless steel tub or inner door panel, Sears will replace the tub or inner door panel free of charge.
If this appliance is used for other than private family purposes, this warranty applies for only 90 days from the date of purchase.

THIS WARRANTY COVERS ONLY DEFECTS IN MATERIAL AND WORKMANSHIP. SEARS WILL NOT PAY FOR:

1. Expendable items that can wear out from normal use, including but not limited to filters, belts, light bulbs, and bags.
2. A service technician to instruct the user in correct product installation, operation or maintenance.
3. A service technician to clean or maintain this product.
4. Damage to or failure of this product if it is not installed, operated or maintained according to all instructions supplied with the product.
5. Damage to or failure of this product resulting from accident, abuse, misuse or use for other than its intended purpose.
6. Damage to or failure of this product caused by the use of detergents, cleaners, chemicals or utensils other than those recommended in all instructions supplied with the product.
7. Damage to or failure of parts or systems resulting from unauthorized modifications made to this product.

DISCLAIMER OF IMPLIED WARRANTIES; LIMITATION OF REMEDIES

Customer's sole and exclusive remedy under this limited warranty shall be product repair as provided herein. Implied warranties, including warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law. Sears shall not be liable for incidental or consequential damages. Some
states and provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitations on the duration of implied warranties of merchantability or fitness, so these exclusions or limitations may not apply to you.
This warranty applies only while this appliance is used in the United States and Canada.
This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co.
Dept. 817WA, Hoffman Estates, IL 60179
Sears Canada Inc.
Toronto, Ontario, Canada M5B 2B8

PRODUCT RECORD

In the space below, record your complete model number, serial number, and purchase date. You can find this information on the model and serial number label located on the product.
Have this information available to help you obtain assistance or service more quickly whenever you contact Sears concerning your appliance.
Model number __ __ __. _____

Serial number _____

Purchase date _____

Save these instructions and your sales receipt for future reference.

INSTALLATION INFORMATION

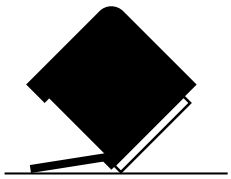
TOOLS AND PARTS

Gather the required tools and parts before starting installation.

- Phillips screwdriver

LOCATION REQUIREMENTS

⚠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

UNPACK THE UNIT

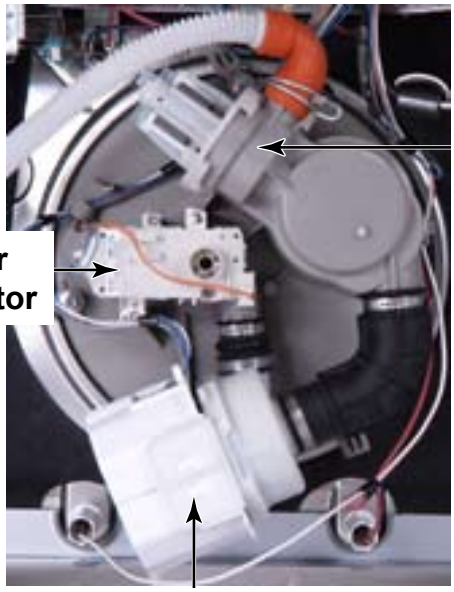
For complete installation procedures see the “Installation Instructions” in the literature packet provided with the dishwasher.
A video presentation, Key Features and Installation Considerations, part number 4317280V, is available. This video covers the entire installation process.

Each location will present a different set of challenges that can be anticipated and solved before installation begins.

- Check the planned location of the dishwasher.
- Easy access to hot water, drain line and electricity.
- Convenient access for loading. The dishwasher door should open and close freely.
- The opening under the counter should be square and the cabinet fronts should be perpendicular to the floor.
- Make sure the cabinet opening is free of intrusions such as braces or utility lines.
- Do not install the dishwasher on carpeted floors.
- An outside wall behind the dishwasher should be insulated to prevent the water line, inlet valve and drain line from freezing and rupturing.

ADDITIONAL CONSIDERATIONS

The application of a horizontal pump and filter technology allows for the tub to be designed three inches deeper than current models. This deeper tub and longer door design will impact the installation process because there is less working space available underneath the unit and correct routing and placement of the drain hose, water supply and electrical wiring is critical. The tub must be level. Reduced water consumption of this dishwasher requires that it be installed level and plumb for proper water recirculation back into the sump area during operation.



Do not remove the drain tube from the left side of the tub. If the loop is removed, the dishwasher will not initiate Automatic Purge Filtration. The drain tube also contains a check valve in the L-connector that prevents backflow of water into the dishwasher from the household drain system.

THEORY OF OPERATION

GENERAL

2007 ULTRA WASH® HE Dishwasher

Your dishwasher has the latest technology in dishwasher filtration. This triple filtration system minimizes sound and optimizes water and energy consumption while providing superior cleaning performance. Throughout the life of your dishwasher, the filter will require maintenance to sustain peak cleaning performance.

The triple filter system consists of 2 parts which filter one hundred percent of the water. The majority of water is filtered thru the upper filter, and the remaining water is filtered thru the fine mesh filter of the lower filter cup.

- The upper filter assembly keeps oversized items and foreign objects along with very fine food particles out of the pump.
- The lower filter keeps food from being recirculated onto your dishware with the fine mesh screen.
- Inside the lower filter is a dam that stands in front of the wash motor inlet. This dam keep large food particles from entering the wash motor.
- The lower spray arm has 2 spray nozzles pointing down to clean the screen and direct the food soils to the filter cup.

The filters may need to be cleaned when:

- Visible objects or soils are on the Upper Filter Assembly.
- There is degradation in cleaning performance (that is, soils still present on dishes).
- Dishes feel gritty to the touch.

In drain, the water flows through the center of the filter cup, down and out the drain opening.

DIVERTER VALVE

During wash, water travels from the wash motor up through the diverter valve which only allows the water to flow through one of three wash zone configurations.

1. Middle wash arm and upper spinner
2. Lower wash arm and upper spinner
3. TurboZone only

Cycle times are longer in this dishwasher due to lower water consumption and alternating wash zones. Some cycles can last up to four hours. The short one hour cycle does not include a dry cycle.

VERY HARD WATER

If the customer has hard water (above 15 grains), the filter should be cleaned at least once per month. Building up of white residue on the dishwasher indicates hard water.

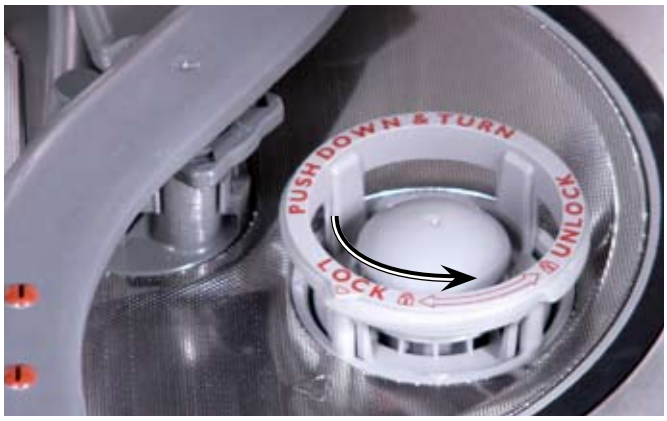
— NOTES —

COMPONENT ACCESS

REMOVE FILTER CUP AND SCREEN

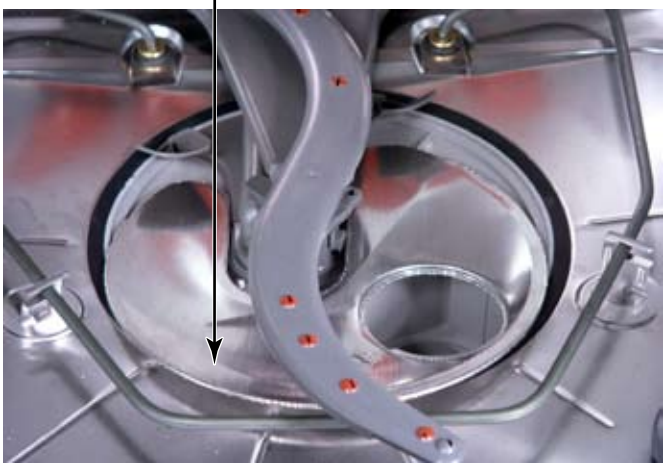
1. Open the dishwasher door
2. Remove the lower dishrack

3. Push down and turn the filter cup 1/4 turn counterclockwise



4. Pull the filter cup straight up and out of the sump

5. Lift the front edge of the screen slightly



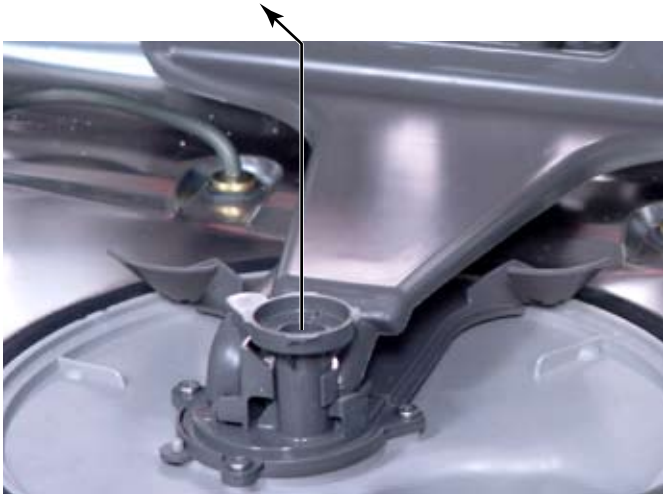
6. Pull the screen straight out of the unit.

7. When replacing the filter cup into the sump, align the arrow on the filter cup with the arrow on the screen and then turn the filter cup 1/4 turn clockwise to secure the filter cup in the proper place

REMOVE LOWER WASH ARM ASSEMBLY

1. Open the dishwasher door
2. Remove the lower dishrack
3. Remove the filter cup and screen
4. Turn the locking ring under the wash arm 1/4 turn counterclockwise.

5. Lift the wash arm assembly straight up and out of the dishwasher.



REMOVE TURBO WASH MANIFOLD

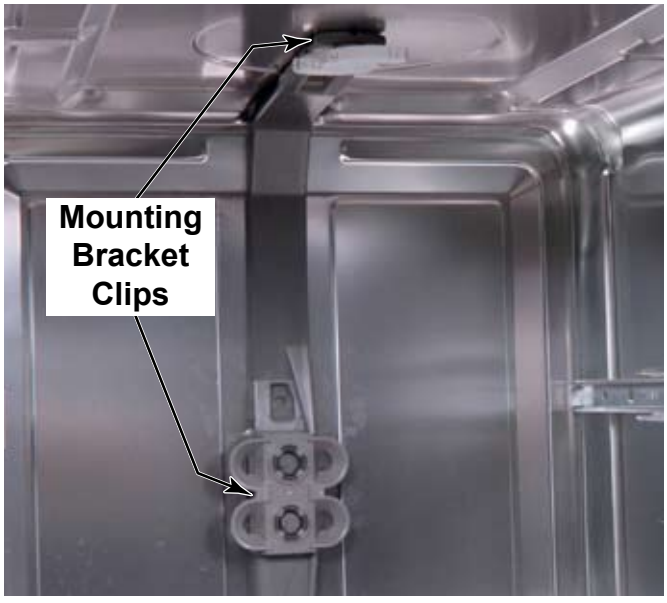
1. Open the dishwasher door
2. Remove the lower dishrack
3. Remove the filter cup and screen
4. Remove the lower wash arm assembly
5. Detach the turbo wash manifold from the feed tube assembly located at the rear of the dishwasher.

6. Gently rock the turbo wash manifold tubing from side to side releasing it from the diverter assembly
7. If you are unable to easily remove the turbo wash manifold by rocking it then gently pull the tab sideways allowing clearance of the flange on the tubing end.

REMOVE FEED TUBE ASSEMBLY

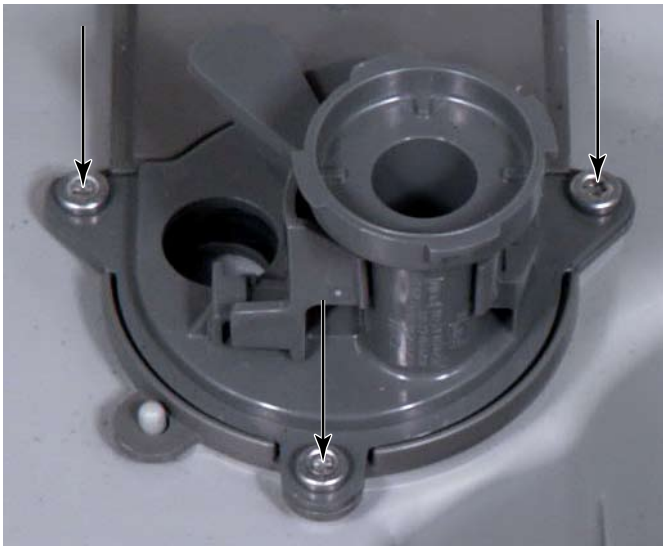
1. Open the dishwasher door
2. Remove both dishracks
3. Remove the filter cup and screen
4. Remove the lower wash arm assembly
5. Remove the Turbo wash manifold
6. Rotate the release lever approximately 90 degrees counterclockwise to release the tubing from the diverter assembly

7. Gently rock the feed tube assembly tubing out of the diverter assembly
8. Release the 2 mounting bracket clips that secure the feed tube assembly to the back and top of the dishwasher and remove the feed tube



REMOVE OUTLET COVER

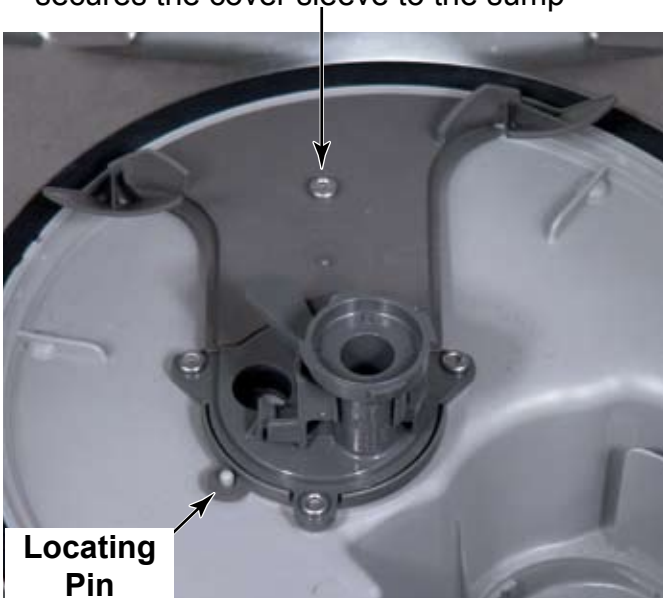
1. Open the dishwasher door
2. Remove both dishracks
3. Remove the filter cup and screen
4. Remove the lower wash arm assembly
5. Remove the Turbo wash manifold
6. Remove the feed tube assembly
7. Remove 3 T-20 Torx® screws that secure the outlet cover to the sump



8. Lift The outlet cover up and out of the dishwasher

REMOVE COVER SLEEVE

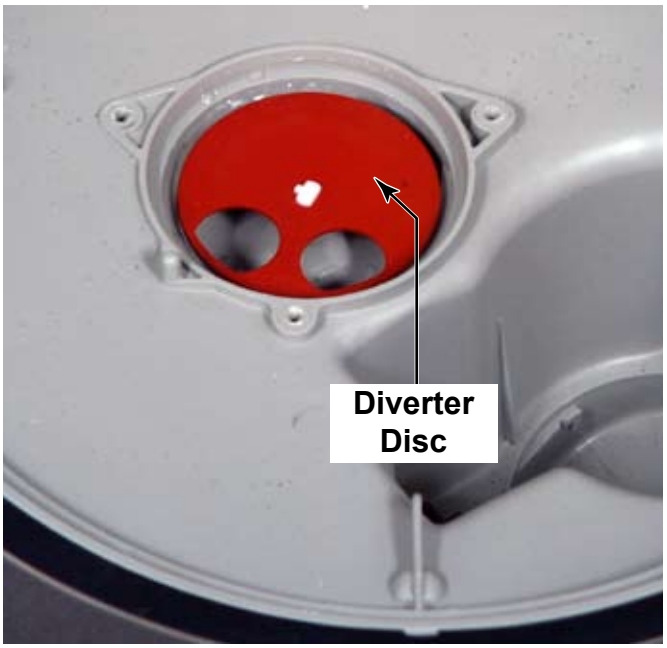
1. Open the dishwasher door
2. Remove both dishracks
3. Remove the filter cup and screen
4. Remove the lower wash arm assembly
5. Remove the Turbo wash manifold
6. Remove the feed tube assembly
7. Remove the outlet cover
8. Remove the 1 T-20 Torx® screw that secures the cover sleeve to the sump



9. Lift the cover sleeve up and out of the diswasher
10. Take note of the locating pin that protrudes through a hole in a tab on the cover sleeve to assist in correct re-assembly.

REMOVE DIVERTER DISC

1. Open the dishwasher door
2. Remove both dishracks
3. Remove the filter cup and screen
4. Remove the lower wash arm assembly
5. Remove the Turbo wash manifold
6. Remove the feed tube assembly
7. Remove the outlet cover
8. Remove the cover sleeve
9. Remove the diverter disc by lifting it up off the center post and out of the sump

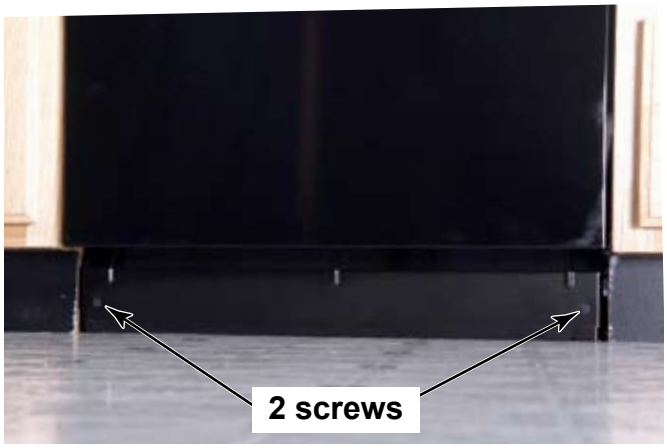


REMOVE ACCESS PANEL AND TOE PANEL

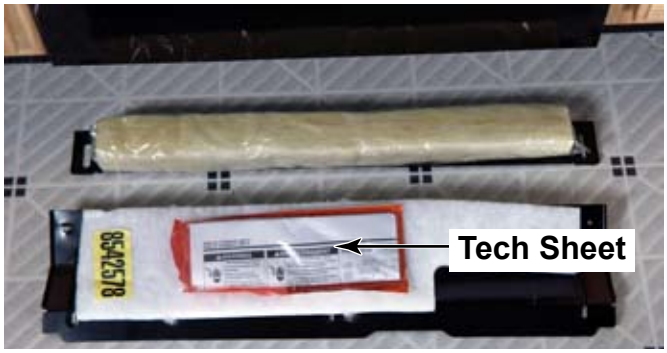
⚠ WARNING

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. Remove two screws with a 1/4 inch nut driver that secure the access panel and toe panel to the base of the dishwasher.



2. Pull both panels away from the dishwasher



3. Note the location of the tech sheet on the back of the access panel.

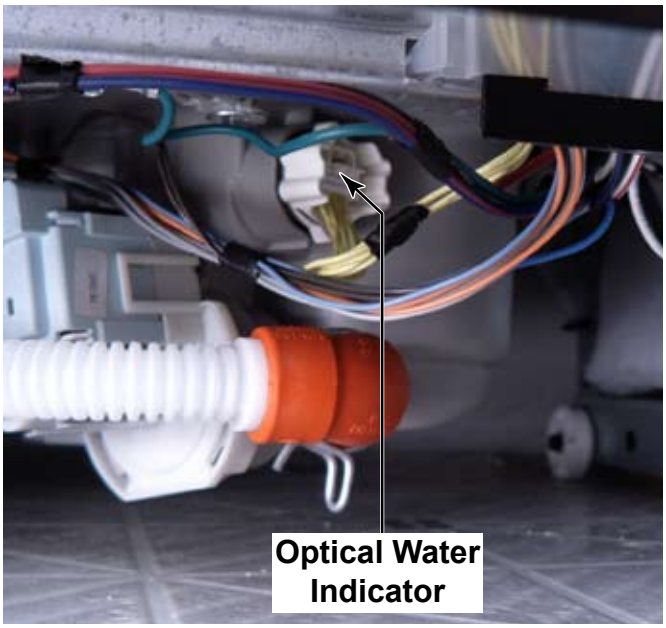
4. When reinstalling these two panels, be sure that the toe panel is placed up against the dishwasher first and then place the access panel against the toe panel before securing both panels with the two screws removed earlier.

REMOVE 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. Remove the access panel and toe panel
2. Disconnect the wire connector to the optical water indicator, or OWI, by lifting the locking tab and removing the wire connector
3. Turn the OWI 90 degrees counterclockwise and pull it out of the sump



REMOVE 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.

1. Remove the access panel and toe panel
2. Use a pair of channel lock pliers to squeeze the clamp that secures the drain hose to the drain outlet

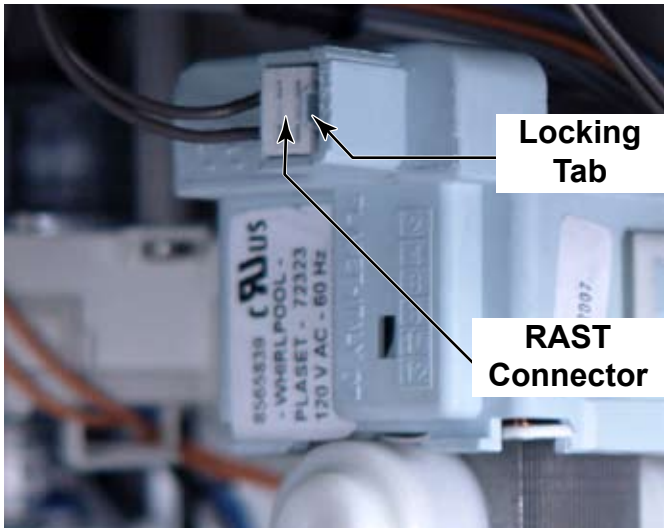
3. Pull the clamp and hose off the drain outlet
4. Be sure to clean up any water that comes out of the drain pump or drain hose

REMOVE DRAIN PUMP

⚠ WARNING

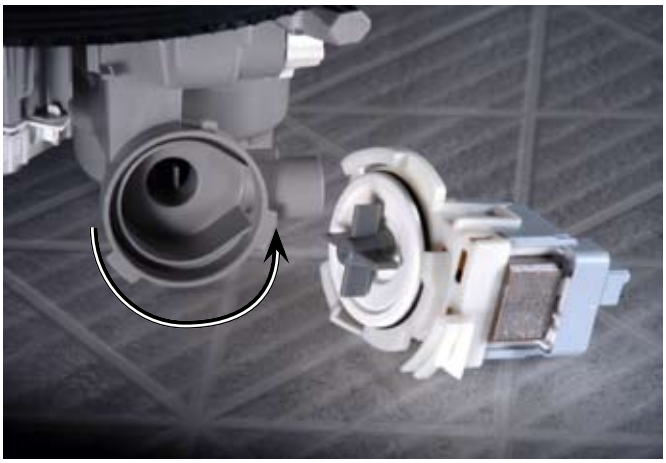
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Remove the access panel and toe panel
2. Remove the drain hose
3. Disconnect the RAST connector that secures the wire leads to the drain pump by lifting the locking tab and pulling the connector out



4. Press the locking tab located behind the drain pump

5. Rotate the drain pump 90 degrees counterclockwise to remove it from the dishwasher

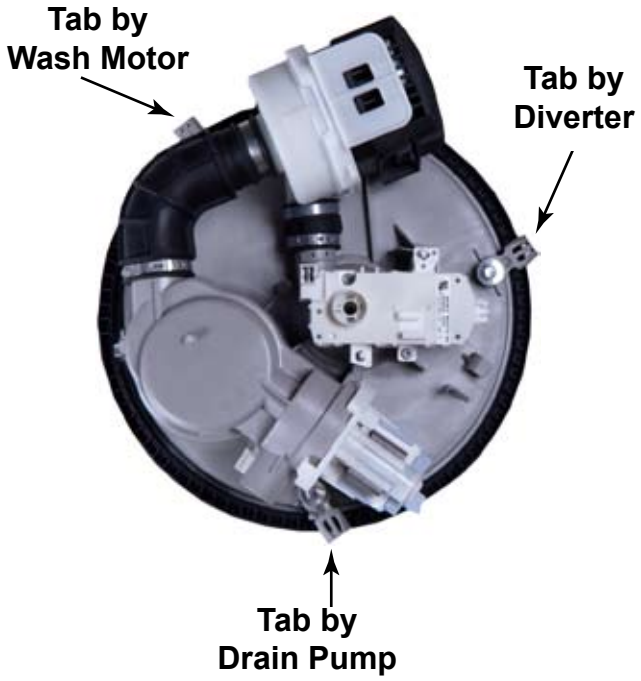


REMOVE SUMP

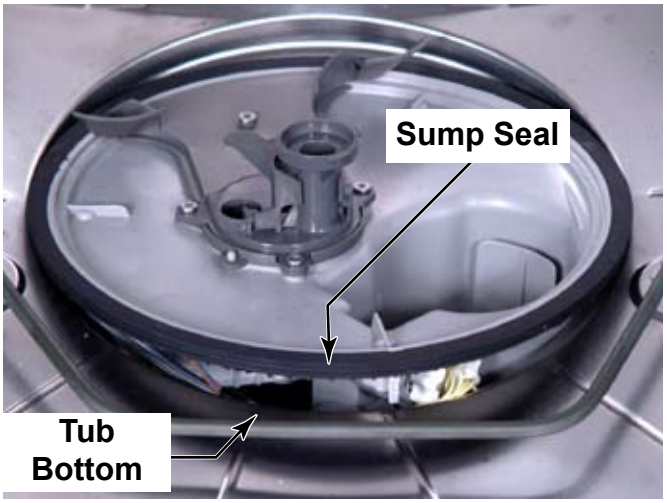
⚠ WARNING

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.

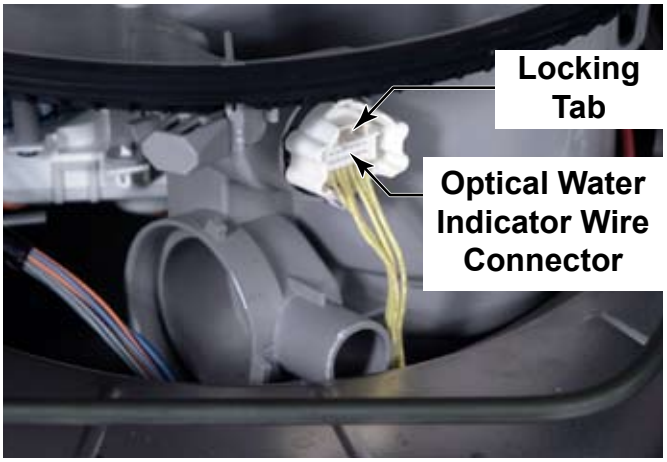
1. Remove the access panel and toe panel
2. Remove the drain hose
3. Remove the drain pump
4. Reach under the dishwasher and rotate each of the 3 sump tabs 1/4 turn clockwise to unlock the sump from the tub



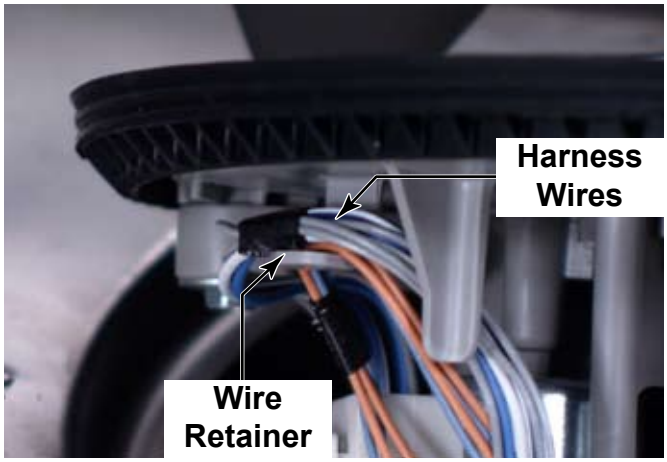
5. Open the dishwasher door
6. Remove both dishracks
7. Remove the filter cup and screen
8. Remove the lower wash arm assembly
9. Remove the Turbo wash manifold
10. Remove the feed tube assembly
11. Reach under the dishwasher and push up on the sump to separate the seal of the sump from the tub bottom



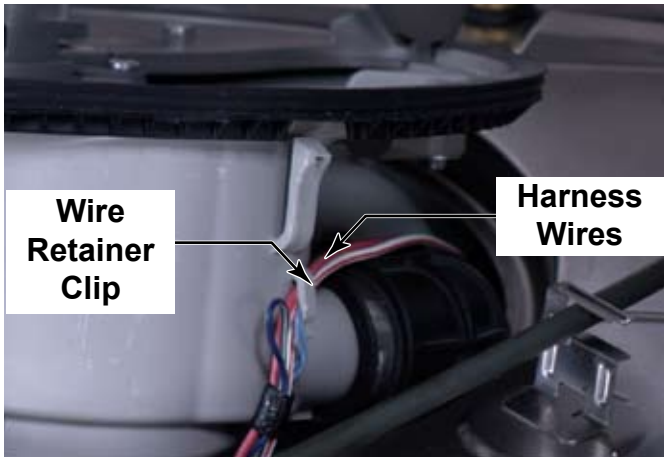
12. Lift the sump from inside the dishwasher tub and prop the front edge up so the connections to the OWI, optical water indicator, are accessible
13. Disconnect the wiring by lifting the locking tab and removing the wire connector



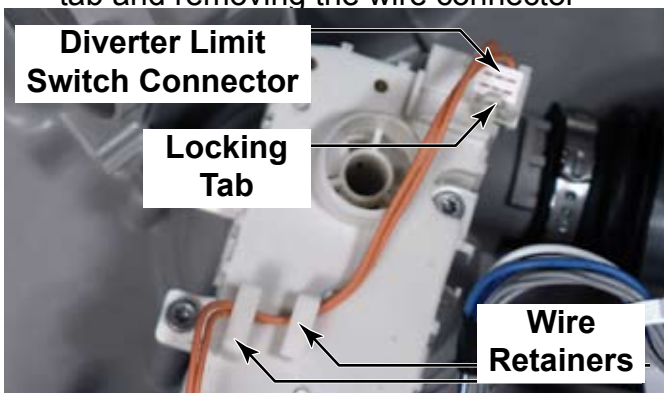
14. Pull the harness wires on the left side of the sump off of the wire retainer



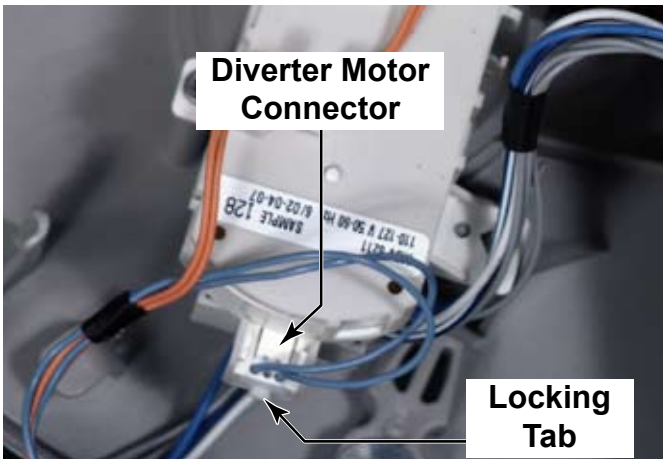
15. While lifting the sump, be sure that the harness wires on the right side of the sump release from the wire retainer clip



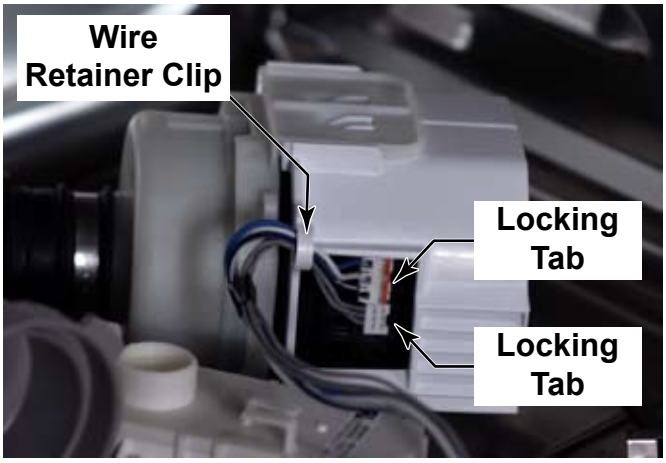
16. Turn the sump over and set it down in the sump hole upsidedown.
17. Remove the wires from the wire retainers on the diverter
18. Disconnect the wire connector to the diverter limit switch by lifting the locking tab and removing the wire connector



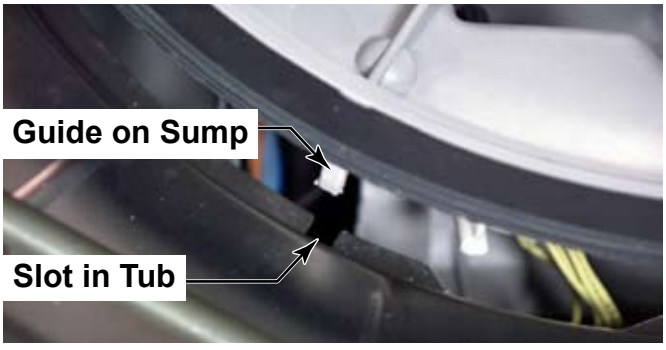
19. Disconnect the wire connector to the diverter motor by lifting the locking tab and removing the wire connector



20. Remove the wires from the wire retainer clips on the wash motor
21. Disconnect the two wire connectors to the wash motor by lifting the locking tabs and removing the wire connectors



22. The sump can now be removed from the dishwasher
23. When reinstalling the sump into the tub use the alignment tab in the front of the sump and match it to the slot in the tub

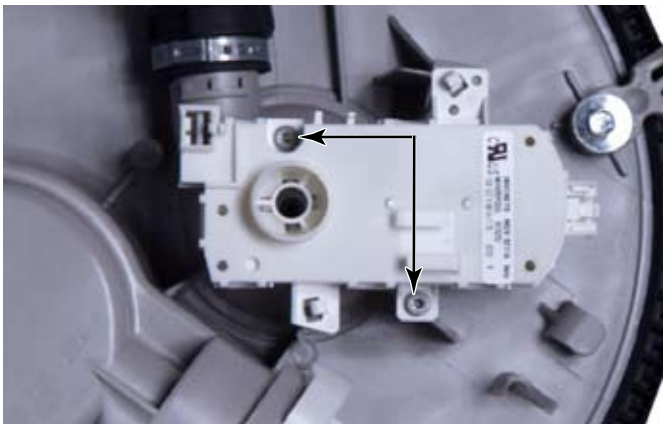


REMOVE DIVERTER VALVE MOTOR

⚠ 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. Remove the sump
2. Remove the two T-15 Torx® screws that secure the diverter valve motor to the sump and remove the diverter valve motor



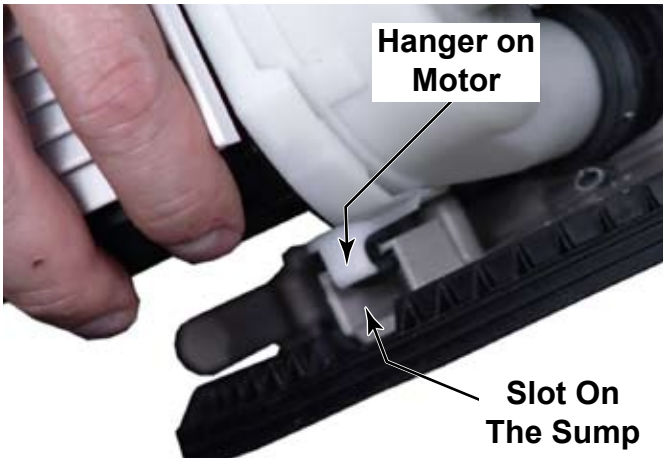
REMOVE WASH MOTOR ASSEMBLY

⚠ 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. Remove the sump
2. Remove two hose clamps from the sump side that are connected to the wash motor by lifting up on the free end of the hose clamp with a flat blade screwdriver

3. Use a pair of pliers and pull the clamp end up and away from the clamp band until the clamp releases or separates
4. Remove the wash motor and hoses from the sump by pulling the hose ends off the sump and the hanger out of the slot on the sump
5. When reassembling the wash motor assembly to the sump be sure to insert the hanger on the motor into the slot on the sump



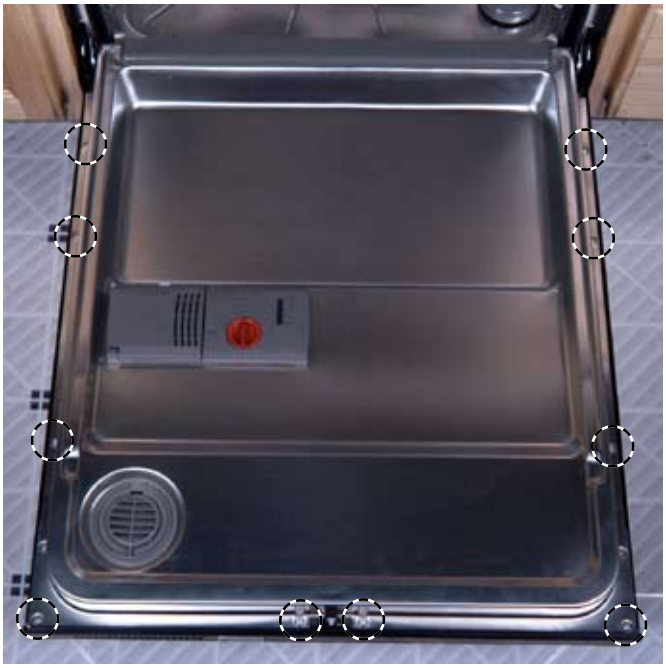
6. When replacing the wash motor assembly the service replacement motor will come with hoses and hose clamps attached

REMOVE OUTER DOOR PANEL

⚠ 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. Open the dishwasher door
2. Remove 6 T-15 Torx® screws from the sides of the door panel and the 4 longer T-15 Torx® screws across the top edge



3. Hold the front panel to the door panel and close the door
4. Lean the front panel away from the dishwasher

5. Lift the door panel up and off the front of the dishwasher

REMOVE CONTROL PANEL

⚠ 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. Open the dishwasher door
2. Hold the control panel to the inner door panel and remove 2 T-15 Torx® screws, one on each side of the door panel.

3. The control panel will be connected with wires that may need to be disconnected to set the control panel down.

— NOTES —

COMPONENT TESTING

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

- The most common cause for control failure is corrosion on connectors. Therefore, disconnecting 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.
- Resistance checks must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

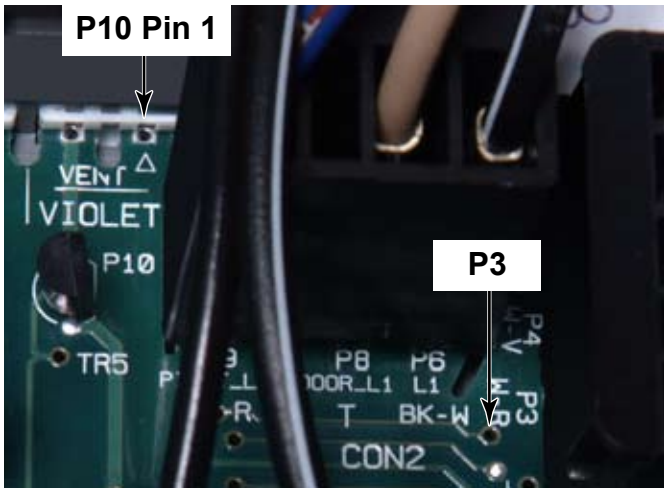
Failure to do so can result in death or electrical shock.

ALL COMPONENT TESTING CHECKS

All checks are to be made with one probe on the P10 Pin 1 position. Pin 1 is identified with a triangle. Count up the numbers to the left of the triangle for higher pin number positions.

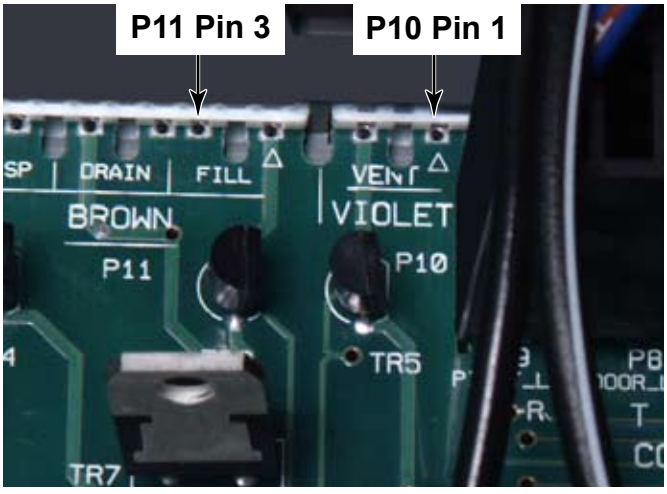
HEATER CIRCUIT

1. Place one probe on the P10 Pin 1 position and the other on P3 position.
2. Should be between 10 Ω to 30 Ω.



WATER VALVE CIRCUIT

1. Place one probe on the P10 Pin 1 position and the other on P11 Pin 3 position.
2. Should be between 890 Ω to 1090 Ω.



⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

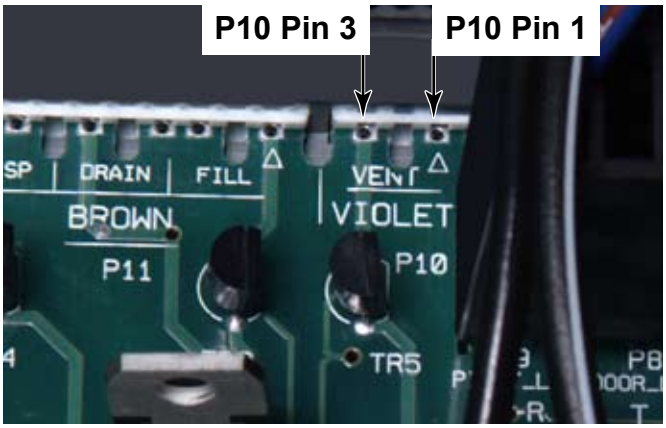
Failure to do so can result in death or electrical shock.

ALL COMPONENT TESTING CHECKS

All checks are to be made with one probe on the P10 Pin 1 position. Pin 1 is identified with a triangle. Count up the numbers to the left of the triangle for higher pin number positions.

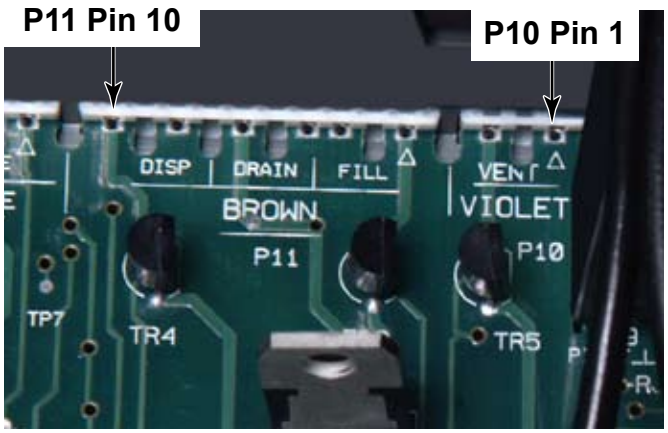
VENT CIRCUIT

1. Place one probe on the P10 Pin 1 position and the other on P10 Pin 3 position.
2. Should be between 600 Ω to 1800 Ω.



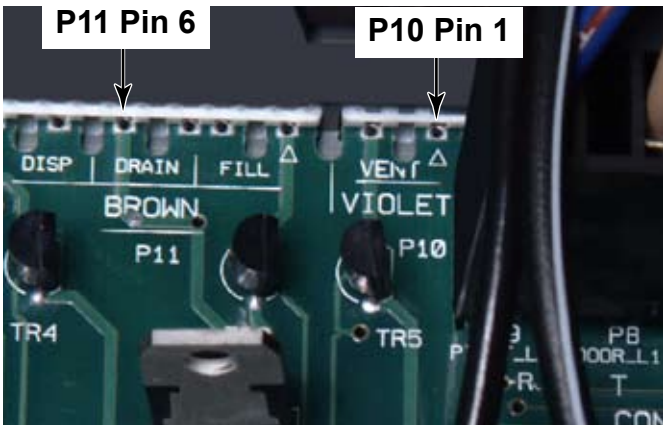
DETERGENT AND RINSE AID CIRCUIT

1. Place one probe on the P10 Pin 1 position and the other on P11 Pin 10 position.
2. Should be between 280 Ω to 340 Ω.



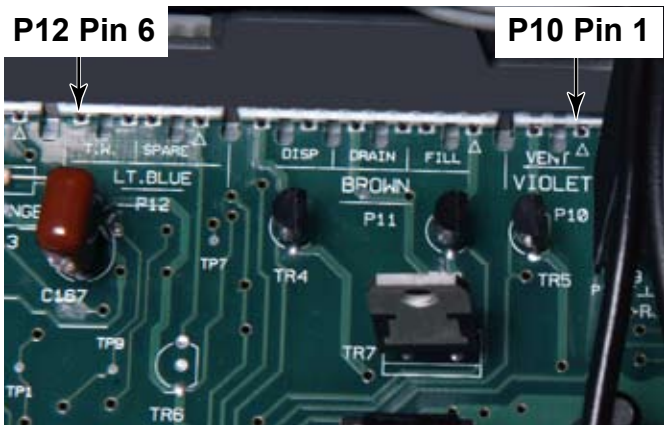
DRAIN MOTOR CIRCUIT

1. Place one probe on the P10 Pin 1 position and the other on P11 Pin 6 position.
2. Should be between 15 Ω to 19 Ω.



DIVERTER VALVE CIRCUIT

1. Place one probe on the P10 Pin 1 position and the other on P12 Pin 6 position.
2. Should be between 1300 Ω to 1600 Ω.



DIAGNOSIS & TROUBLESHOOTING

TROUBLESHOOTING GUIDE

⚠WARNING

Electrical Shock Hazard

Plug into a grounded 3 prong outlet.

Do not remove ground prong.

Do not use an adapter.

Do not use an extension cord.

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

NOTES:

- For resistance checks, refer to "Wiring Diagram & Strip Circuits" section.
- For checking operation with diagnostics, refer to "Service Diagnostics Cycle" section.
- For information on normal cycle and options, see "Cycle Operation" section.

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODE(S)
Clean LED Flashes	Control programmed with self diagnostics.	Read error code from the dishwasher and refer to Service Error Codes table.	
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 of all components in power up circuit. Check connections between keypad(s) and control.	
	Door switch not making contact: ? Faulty door latch assembly. ? Faulty door switch.	1. Unplug dishwasher or disconnect power. 2. Measure resistance of door switch contacts while checking mechanical operation of latch assembly. Confirm switches not loose from assembly.	
	Opened bi-metal attached to control.	1. Unplug dishwasher or disconnect power. 2. Measure resistance. If open, replace. If replaced more than once, replace harness as well. **NOTE:** Replace any component with evidence of overheating.	
	Multiple open or shorted circuits in keypad.	See "Checking Keypad Operation."	
	Faulty control.	1. Unplug dishwasher or disconnect power. 2. Check/replace control.	

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODE(S)
Won't Run and LED for Start/Resume Key is Blinking Slowly	By design, if the door is opened 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(s) is Flashing Rapidly	Stuck key or short circuit(s) in keypad, or in control's input lines that read the keys.	**Don't replace both:** See first section of "Checking Keypad Operation" for test to determine whether shorts are in the keypad or the control.	**2-1**
Won't Start and Start/Resume key LED Flashes 3 Times When Start/Resume Key is Pressed	Control is programmed to not start if it suspects door switch is stuck closed. Control looks for switch to open between cycles. ? Customer didn't open door between cycles. ? Door switch contacts stuck closed.	1. Open and close door and then press Start/Resume key. Instruct customer. 2. Unplug dishwasher or disconnect power. 3. Measure resistance of door switch contacts while checking mechanical operation of latch assembly.	**5-2**
Won't Start and Start/Resume Key LED Flashes 3 Times When Start/ Resume Key is Pressed and Clean LED is Blinking	Control detected motor and/or heater problems.	Refer to "Service Error Codes" table.	**6-1** **7-1** **7-2**
Won't Accept Key Presses and Control Lock LED On	Control Lockout feature accidentally turned on by customer.	Instruct customer. Press and hold the Heated Dry key for 5 seconds to turn off (or on) the Control Lock feature.	
	Control detected keypad problem.	Refer to "Service Error Codes" table.	**2-1**
Some Keys Work but One or More Keys Won't Respond	Open key or LED circuit(s) on the keypad, or open circuits on the control to the key(s) and LEDs.	See "Checking Keypad Operation."	
Unusual LED or Display Readouts	Open ID diodes and/or LED circuit(s) in keypad, or open circuits on the control that drive the ID diodes or LEDs.	See "Checking Keypad Operation."	
Washes for <45 Seconds Without Filling and then Shuts Off	Unit is in Sales Demo mode.	Press the following key sequence in less than 3 seconds to turn Demo mode off (or on): High Temp ? Heated Dry ? Heated Dry? High Temp ? Heated Dry ? Heated Dry **NOTE:** Service Diagnostics will also clear Demo mode.	

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODE(S)
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.	
	OWI soil sensor picking high soil cycle too often.	1. Run Service Diagnostics cycle to check if OWI is showing high soil with no soil added. 2. Check lens surface. Clean if needed. 3. Replace OWI. **NOTE:** If OWI soil sensor is replaced, run Diagnostics after installing new OWI to force calibration on next regular wash cycle.	
	Heater takes a long time to heat water with low voltage.	Check for at least 100 VAC at power source.	
	A water heating problem could cause long cycles but will typically cause a "water heating fault".	Refer to "Service Error Codes" table.	**7-1**
	Diverter problem prevented water from heating.	Refer to "Service Error Codes" table.	**4-1** **4-4**
	Incoming water too cold.	Refer to "Service Error Codes" table.	**8-2** **8-3**
	Sensor problem.	Refer to "Service Error Codes" table.	**3-1** **3-3**
Can Start a Cycle, but Cycle Does Not Complete (and Clean LED May Blink)	Control canceled cycle due to error detected with wash motor, low water, or suds.	Refer to "Service Error Codes" table.	**6-1** **6-2** **8-1**
Will Not Drain, or Excess Water Left in Unit	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).	
	Customer misunderstands water level after drain.	Instruct customer. Sump will normally have about 2.4 cm (1 inch) of water remaining after cycle.	
	Draining problem.	Refer to "Service Error Codes" table. **NOTE:** Refer to table even if error code not recorded by control.	**9-1**

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODE(S)
Detergent Not Dispensing or Detergent Left in Dispenser	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.	
	Open coil on dispenser solenoid or loose/open connection in dispenser circuit.	1. Unplug dishwasher or disconnect power. 2. Check resistance of dispenser coil and all connections in dispenser circuit.	
	Open coil on dispenser solenoid or loose/open connection in dispenser circuit.	1. Unplug dishwasher or disconnect power. 2. Check resistance of dispenser coil and all connections in dispenser circuit.	
	Control cancelled cycle before dispensing due to error detected with wash motor, low water, or suds.	Refer to “Service Error Codes” table.	**6-1** **6-2** **8-1**
	Faulty dispenser drive circuit on control.	Check operation of dispenser during Diagnostics.	
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 3 screens. ? Filter cup coarse screen ? Filter cup fine screen ? Sump fine screen	
	Spray arms not rotating.	Check for free and proper arm rotation by operating dishwasher and opening door to see whether arms remain in the same position. If arms are blocked by dish item, instruct customer. May also have restricted movement due to misalignment of the upper spray arm water delivery system. Check nozzles. If plugged, clean nozzles and confirm filters installed properly.	
	Mechanical items covered previously.	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.”	
	Soil sensor problem.	Refer to “Service Error Codes” table. **NOTE:** Refer to table even if error code not recorded by control.	**3-2** **3-3**
	Diverter problem.	Refer to “Service Error Codes” table. **NOTE:** Refer to table even if error code not recorded by control.	**4-1** **4-4**
	Control canceled cycle due to error detected with wash motor, low water, or suds.	Refer to “Service Error Codes” table.	**6-1** **6-2** **8-1**

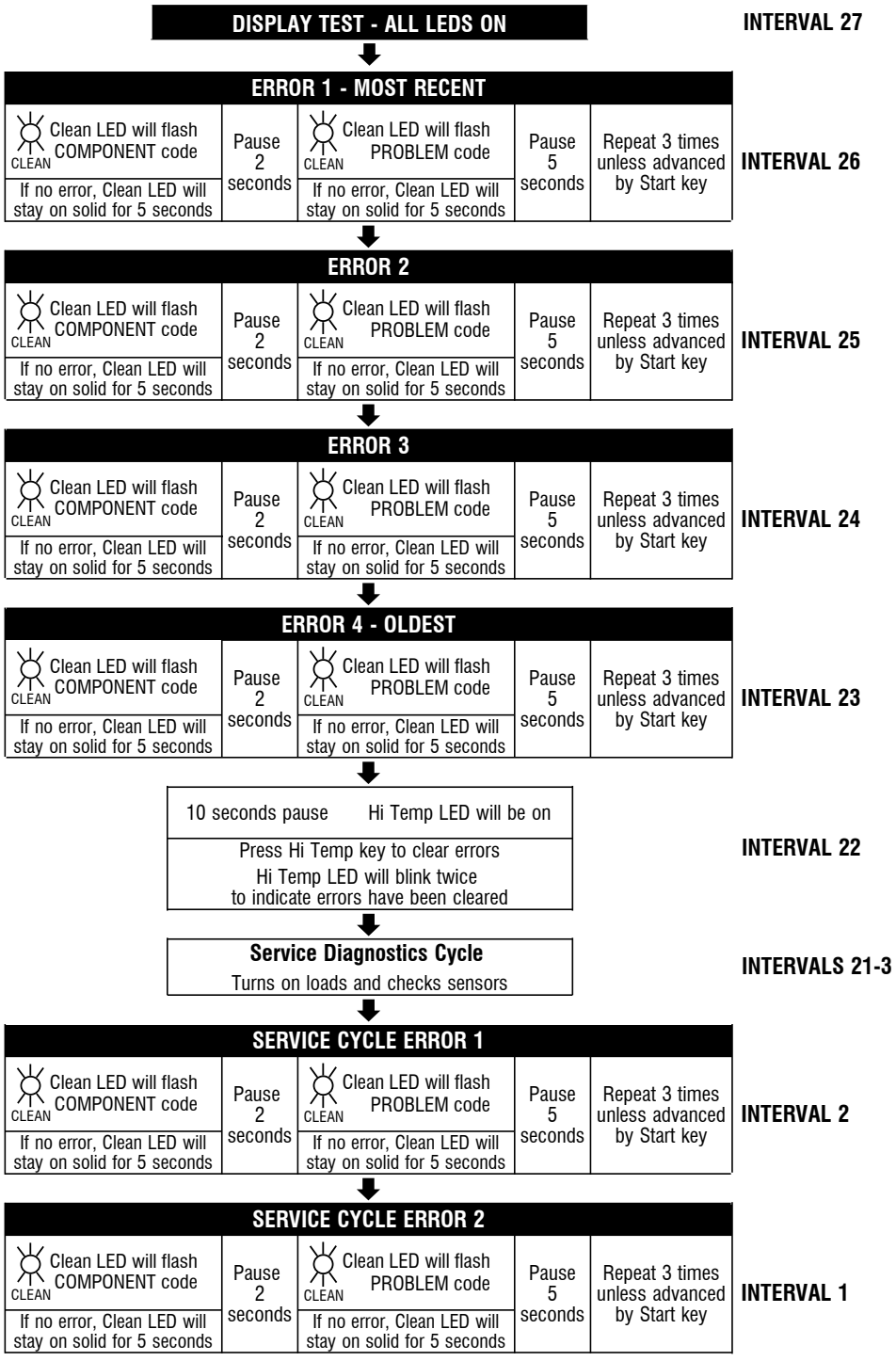
CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODE(S)
Film on Glasses and/or Dishes	Hard water leaving film on dishes.	Check water hardness. If hard, instruct customer to use maximum detergent or try pouring ¼ cup of Glass Magic into bottom of dishwasher. Also recommend the High Temp option. To clean the dishwasher, recommend running with 1 cup of white vinegar sitting upright in upper rack.	
	Detergent carryover.	Check water hardness. If below 10 grains, then instruct customer to use less detergent and recommend the High Temp option.	
	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 and/or Heated Dry.	Recommend use of rinse aid and Heated Dry. Instruct customer how to fill and monitor rinse aid.	
	Line voltage too low to heat fast enough.	Check power source. Confirm at least 100 VAC.	
	Rinse Aid dispenser not dispensing.	See last three items under “Detergent Not Dispensing or Detergent Left in Dispenser.”	
	A heating problem could cause poor drying but will typically cause a water heating fault.	Refer to “Service Error Codes” table.	**7-1**
	Diverter problem prevented water from heating.	Refer to “Service Error Codes” table. **NOTE:** Refer to table even if error code not recorded by control.	**4-1** **4-4**
	Control canceled cycle due to error detected with wash motor, low water, or suds.	Refer to “Service Error Codes” table.	**6-1** **6-2** **8-1**
Sanitized LED Blinks at the End of a 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.	**8-2** **8-3**
	Line voltage too low to heat fast enough.	Check power source. Confirm at least 100 VAC.	
	Diverter problem prevented water from heating in final rinse.	Refer to “Service Error Codes” table.	**4-1** **4-4**
	A heating problem could cause the temperature not to reach but will typically cause a water heating fault.	Refer to “Service Error Codes” table.	**7-1**
	Thermistor/OWI problem.	Refer to “Service Error Codes” table.	**3-1** **3-2**

CUSTOMER DESCRIPTION	POTENTIAL CAUSES	CHECK	RELATED ERROR CODE(S)
Melted or Etched Dishware (Long and/or Hot Cycles)	Customer uses non-dishwasher safe dishes or loads directly over heater.	Instruct customer.	
	Temperature sensing problem.	Refer to “Service Error Codes” table.	**3-1**
	Water heating problem.	Refer to “Service Error Codes” table.	**7-2**
	Etching can be a result of using too much detergent.	Instruct customer.	
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.	
	Diverter problem.	Refer to “Service Error Codes” table.	**4-1** **4-4**
	No or low water.	Refer to “Service Error Codes” table.	**8-1**
	Drains too long because of sensor problem.	Refer to “Service Error Codes” table.	**3-1** **3-3** **9-1**

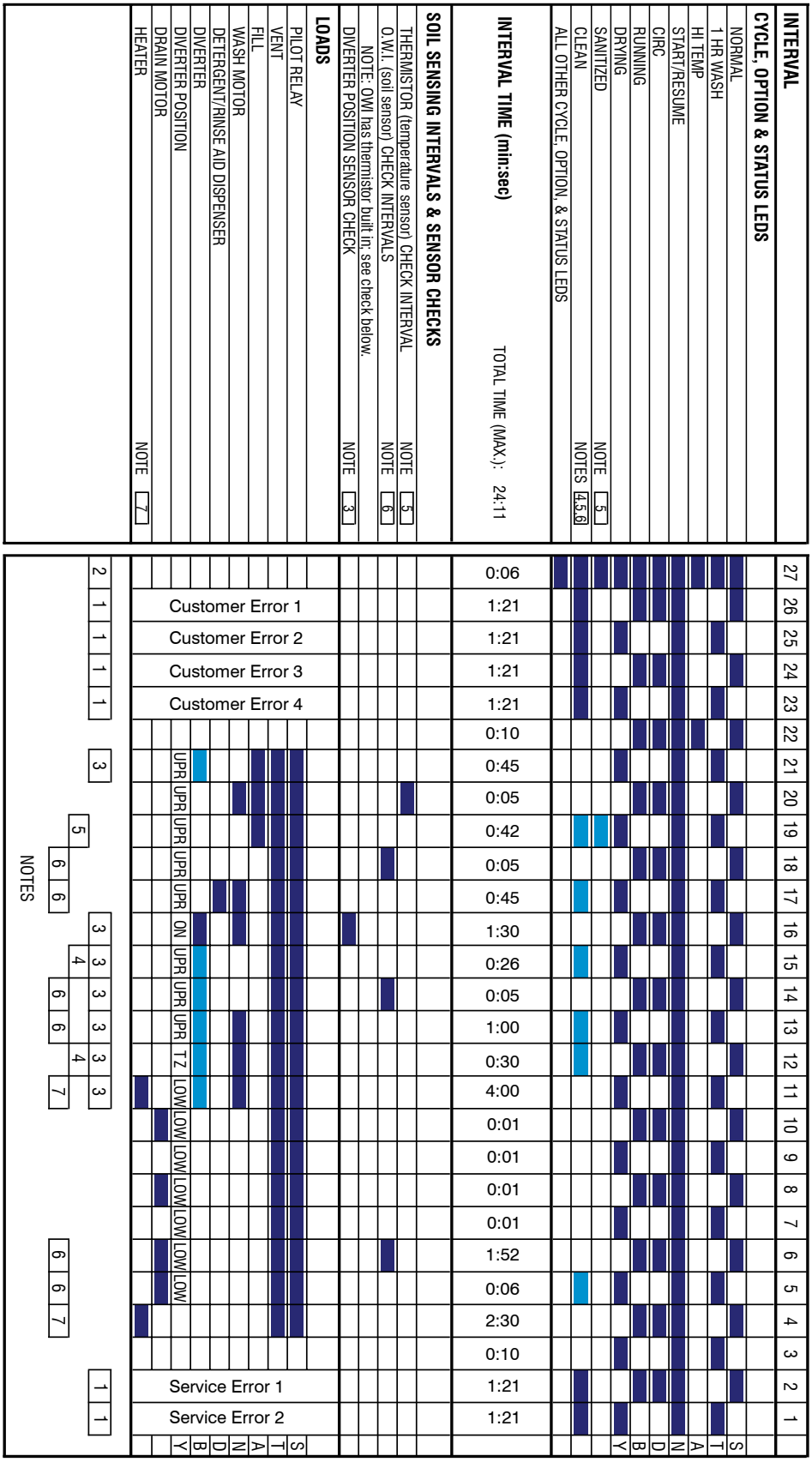
SERVICE DIAGNOSTICS WITH ERROR CODES

ENTRY SEQUENCE

HEATED DRY ⇒ NORMAL ⇒ HEATED DRY ⇒ NORMAL ⇒ HEATED DRY ⇒ NORMAL



SERVICE DIAGNOSTICS CYCLE CHART



SERVICE DIAGNOSTICS CYCLE NOTES

1 To invoke the Diagnostics Cycle, perform the following key presses or actions in less than 6 seconds while in standby:

Diagnostics WITHOUT Error Codes:
Heated Dry ⇒ Normal ⇒ Heated Dry ⇒ Normal
(Skips intervals 26-22 and 2-1)

Diagnostics WITH Error Codes:
Heated Dry ⇒ Normal ⇒ Heated Dry ⇒ Normal ⇒ Heated Dry ⇒ Normal
(Includes intervals 26-22 and 2-1)

- To rapid advance one interval at a time, press the Start/Resume key. Rapid advancing may skip sensor checks as some checks require two complete intervals.
- 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.
- Calibration cycle forces two rinses to occur prior to Final Rinse (to assure clear water), then calibrates the OWI during the final rinse.

2 Turn on all LEDs immediately upon receiving entry sequence (even if door open) and throughout this first interval as a display test.

3 Diverter will be on continuously in interval 16. In all other diverter intervals, diverter will only be on until it reaches the intended position for that interval.

4 Turn on Clean LED if control was able to sense all positions correctly in previous interval.

- Clean LED turns on in interval 15 if all positions found in interval 16.
- Clean LED turns on in interval 12 if diverter operating correctly in interval 13.

5 Thermistor (temperature sensor) checks:

- Turn Clean LED on if thermistor is in its normal temperature range of 17°C–71°C (62°F–160°F).
- Turn sanitized LED on if thermistor is above 32°C (90°F).

6 OWI (optical soil sensor) checks:

- Check OWI sensor for the presence of water during the 5 sec. pause in interval 18 and turn on the Clean LED in interval 17 if water detected.
- Check OWI sensor for presence of bulk soil during pause interval 14 and turn on the Clean LED in interval 13 if bulk soil detected.
- Drain until OWI sensor sees the presence of air or a max. of 1:52 during interval 6 and turn on the Clean LED in interval 5 if air detected.

7 Heater relay must lag wash motor relay by 1.5 sec. at start-up of heated wash intervals to avoid simultaneous heater and motor in-rush current.

CHECKING KEYPAD OPERATION

A rapidly blinking LED over one of the keys of the keypad (or sometimes a “dead” keypad/console) indicates one or more key switch lines are stuck or shorted on the control or the keypad. To determine if the control or keypad is faulty, do the following test:

STUCK KEY TEST:

1. Unplug dishwasher or disconnect power.
2. Open the dishwasher door.
3. Open console and disconnect the keypad ribbon connection from the control (at P1).
4. Put console back together. Do not close the dishwasher door.
5. Plug in dishwasher or reconnect power.
6. Wait 5 seconds.
7. Close dishwasher door.
8. Monitor the control’s response.

- If the control is OK (no longer sees shorts with the keypad unplugged), it will respond by turning on the drain motor for 2 minutes. Check and/or replace the keypad if the control responds OK.
- If the control is not OK (still sees shorts with the keypad unplugged), then the drain motor will NOT respond. If drain motor does not start within 10 seconds, repeat or verify that all steps were followed, then replace the control.

GENERAL KEYPAD INSPECTION:

- Unplug dishwasher or disconnect power.
- Check keypad ribbon tail for broken/shorted/corroded/creased traces.
- Check for loose connection to control.
- Check for evidence of contaminants or corrosion around the perimeter of the keypad, on the keypad ribbon tail and/or on the keypad connector at the control.
- Perform keypad function checks below.

TO TEST THE MODEL ID DIODES IN THE KEYPAD:

Check each key and confirm corresponding LED turns on and that the proper delay selections for that model are available. If ID diodes for this keypad are opened or shorted, key and LED mapping and features like Delay may be altered.

TO TEST AN LED FUNCTION:

Confirm that the LED turns on during the “Display Test” at the beginning of the Service Diagnostics Cycle (see “Service Diagnostics Cycle Time Chart,” NOTE 2)

CHECKING KEYSWITCH CONTACTS

- Unplug dishwasher or disconnect power.
- Remove connector P1 from the control board.
- Using the table below, measure the resistance across the switch when the key is pressed.

NOTE: The meter must be connected with the proper polarity. The resistance reading should go from infinity (open circuit) with the key open down to a readable ohm level with the key pressed. The level may be different depending on your meter, since there is a diode in the circuit. If available, you could use the “Diode Test” function of a digital meter, which will give a voltage to turn on the diode in the circuit.

- If any switches fail this test, replace the console panel/keypad assembly.
- If all switches test OK, replace the machine control board.

KEYSWITCH RESISTANCE CHECK TABLE

KEY	+Pos. Lead	– Neg. Lead
DELAY HOURS	P1-12	P1-2
SMART WASH/ADAPTIVE WASH	P1-13	P1-3
TOP RACK ONLY	P1-11	P1-2
CANCEL/DRAIN	P1-12	P1-3
POTS & PANS/HEAVY	P1-13	P1-4
HIGH TEMP SCOUR/ HIGH TEMP SCRUB	P1-11	P1-4
START/RESUME	P1-12	P1-4
NORMAL WASH/NORMAL	P1-13	P1-5
SANI RINSE/SANI WITH STEAM	P1-11	P1-5
TURBO ZONE/PRO SCRUB/ POWER SCOUR	P1-11	P1-3
CHINA/LIGHT	P1-13	P1-6
HEATED DRY	P1-11	P1-6
RINSE ONLY/QUICK RINSE	P1-12	P1-5
ONE HOUR WASH	P1-12	P1-6

SERVICE ERROR CODES

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
1- CONTROL	**1 Pilot Stuck On**	Control detected K2 relay stuck closed.	1. Unplug dishwasher or disconnect power. 2. Check all loads for shorts. 3. Replace control and all faulty components.
2- USER INTERFACE	**1 Stuck Key**	Control detected stuck key(s) in keypad or keypad connection.	See "Checking Keypad Operation."
3- THERMISTOR/ OWI	**1 Open**	? Open connector 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 Diagnostic Cycle. 2. Unplug dishwasher or disconnect power. 3. Check all components and connections in the Temperature Sensing Circuit.
	2 Shorted	? Incoming water temperature above 71°C (160°F). ? 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 Diagnostic cycle. 3. Unplug dishwasher or disconnect power. 4. Check all components and connections in the Temperature Sensing Circuit.
	3 Failed Calibration	OWI failure.	1. Check all connections in soil sensing circuit. 2. Check OWI lens surface. Clean if needed. 3. Run Service Diagnostics to check OWI operation. OWI should see low soil with just water. Replace OWI or control if needed. **NOTE:** Run Diagnostics after installing new OWI to force calibration on next regular wash cycle.
4- DIVERTER	**1 Can't Find Position**	Control cannot determine diverter position.	1. Check all connections in diverter motor and diverter sensor circuits. 2. Verify diverter is working during Service Diagnostic cycle. Replace diverter and/or control.
	2	Reserved for future use.	
	3	Reserved for future use.	
	4 Stuck On	Diverter motor is stuck ON.	1. Check all connections in diverter motor and diverter sensor circuits. 2. Verify diverter is working during Service Diagnostic cycle. Replace diverter, harness or control.
	5 Disk Missing	Control detected diverter disk in sump is missing.	1. Unplug dishwasher or disconnect power. 2. Remove lower spray arm, turbo zone assembly, rear feed tube and outlet cover; and verify the round diverter disk is installed.

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
5- DOOR SWITCH(ES)	**1 Door Open**	Door was not latched within 3 seconds of pressing the Start/Resume key.	Instruct customer. Refer to Use and Care Manual.
		Door switch not making contact: ? Faulty or sloppy door latch assembly (which can be aggravated by high door closure force, keeping strike plate from fully seating). ? Faulty door switch (high resistance).	1. Unplug dishwasher or disconnect power. 2. Measure resistance of door switch contacts while checking mechanical operation of latch assembly. Confirm switches not loose from assembly. Check strike plate and door closure force.
		Loose connections between door switches and pin 8 on control (also pin 4 on plastic tub models only).	1. Unplug dishwasher or disconnect power. 2. Check resistance of all harness connections between door switches and pin 8 of the control (pin 4 on plastic tub models only).
		Faulty control.	1. Unplug dishwasher or disconnect power. 2. Check/replace control.
	2 Not Opening	Control programmed to not start if it suspects the door switch is stuck closed. Control looks for the door switch to open between cycles. ? Customer didn't open the door between cycles. ? Door switch contacts stuck closed.	1. Open and close door and then press Start/Resume key. Instruct customer. 2. Unplug dishwasher or disconnect power. 3. Measure resistance of door switch contacts while checking mechanical operation of latch assembly.

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
6- WASH MOTOR	**1 No Communication**	Loose connections between control and motor.	1. Unplug dishwasher or disconnect power. 2. Check all connections in Wash/Rinse Circuit and Motor Communications Circuit.
		Motor fuse open. Faulty wash motor or diverter motor.	1. Unplug dishwasher or disconnect power. 2. Use inspection mirror to inspect for water leakage and/or overheating on the diverter and wash motor. 3. Measure resistance of diverter from load side of fuse (long wire side) to test pad at P12-6 on control (normal resistance 1300-1600). 4. Check error code history for both components. 5. If resistance of diverter is normal and there is no history of diverter errors, then replace wash motor and fuse.
		Neutral door switch not making contact consistently: ? Faulty or sloppy door latch assembly (which can be aggravated by high door closure force, keeping strike plate from fully seating). ? Faulty door switch (high resistance). **NOTE:** Neutral switch on plastic tub models is only in series with motor and heater. Other loads are not affected.	1. Unplug dishwasher or disconnect power. 2. Measure resistance of door switch contacts while checking mechanical operation of latch assembly. Confirm switches not loose from assembly. Check strike plate and door closure force.
		Faulty control on wash motor or dishwasher.	1. Run Service Diagnostics and confirm if other loads operate. If so go to step 2. 2. Unplug dishwasher or disconnect power. 3. Replace wash motor. 4. Plug in dishwasher or reconnect power. 5. If no other loads turn on go to step 6. 6. Unplug dishwasher or disconnect power. 7. Replace control.
	2 Motor Error	Communication error between control and motor.	1. Visually check all connections to motor and control. 2. Check for proper operation during Service Diagnostics. 3. Unplug dishwasher or disconnect power. 4. Replace motor and/or control.

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
7- HEATING	1 No Heat	Control programmed to stop running and not allow further cycles if it detects a water heating problem (no temperature increase detected during heated wash on three consecutive cycles). Control disables the Start/Resume key until cleared.	Running Diagnostics clears the control and allows a cycle to run again. **The water heating problem must be fixed or the control will stop running again. See potential causes below.**
		Heater Circuit problem: ? Open in heater. ? Open connection or component in Heater Circuit. ? Faulty Heater Drive Circuit on control.	1. Check operation of heater in Service Diagnostics Cycle. 2. Unplug dishwasher or disconnect power. 3. Measure resistance of heater and all components and connections in Water Heating Circuit/Heat Dry Circuit.
		Neutral door switch not making contact consistently: ? Faulty or sloppy door latch assembly (which can be aggravated by high door closure force, keeping strike plate from fully seating). ? Faulty door switch (high resistance). **NOTE:** Neutral switch on plastic tub models is only in series with motor and heater. Other loads are not affected.	1. Unplug dishwasher or disconnect power. 2. Measure resistance of door switch contacts while checking mechanical operation of latch assembly. Confirm switches not loose from assembly. Check strike plate and door closure force.
	2 Stuck On	Heating element stuck ON.	1. Unplug dishwasher or disconnect power. 2. Check resistance of all components in Water Heating Circuit/Heat Dry Circuit. Replace faulty components. 3. Check for continuity between P8 and P9 on control. If shorted, replace control.

FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
8- INLET WATER	1 Low Water/ Air in Pump	No water to dishwasher.	Verify water supply is turned on and supply line adequate. Correct installation if necessary.
		Bowls or pots loaded or flipped upside down and captured wash water.	Instruct customer on loading. Refer to Use and Care Manual.
		Loose connection to dishwasher fill valve, or in the valve circuit, or in fill valve solenoid.	1. Unplug dishwasher or disconnect power. 2. Check resistances of fill valve solenoid and all connections in the Fill Circuit.
		Overfill switch stuck in "Overfill" 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/adjust levelness of dishwasher.
		Drain loop detached from tub and/or improper drain connection.	Check for water siphoning out of unit: 1. Allow dishwasher to complete normal fill. 2. Drain for 5-10 seconds by pressing Cancel/Drain. 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.
		Inlet screen or fill valve plugged.	1. Turn off water supply to dishwasher. 2. Disconnect water line to fill valve and inspect inlet for obstruction.
		Dishwasher creating too many suds during washing.	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.
		Faulty fill valve drive circuit on the control.	Check operation of fill valve during Diagnostics.
		Water leaking from dishwasher.	Check for leaks under dishwasher.
	2 Cool Water	Incoming water under 32°C (90°F).	1. Be sure dishwasher is connected to the hot water supply. 2. Confirm temperature at sink (recommend 49°C/120°F). Instruct customer to run water at sink before running dishwasher.
	3 Cold Water	Incoming water under 18°C (65°F).	1. Be sure dishwasher is connected to the hot water supply. 2. Unplug dishwasher or disconnect power. 3. Check all connections and measure resistance in "Temperature Sensing Circuit." Replace OWI if needed. 4. Confirm temperature at sink (recommend 49°C/120°F). Instruct customer to run water at sink before running dishwasher.

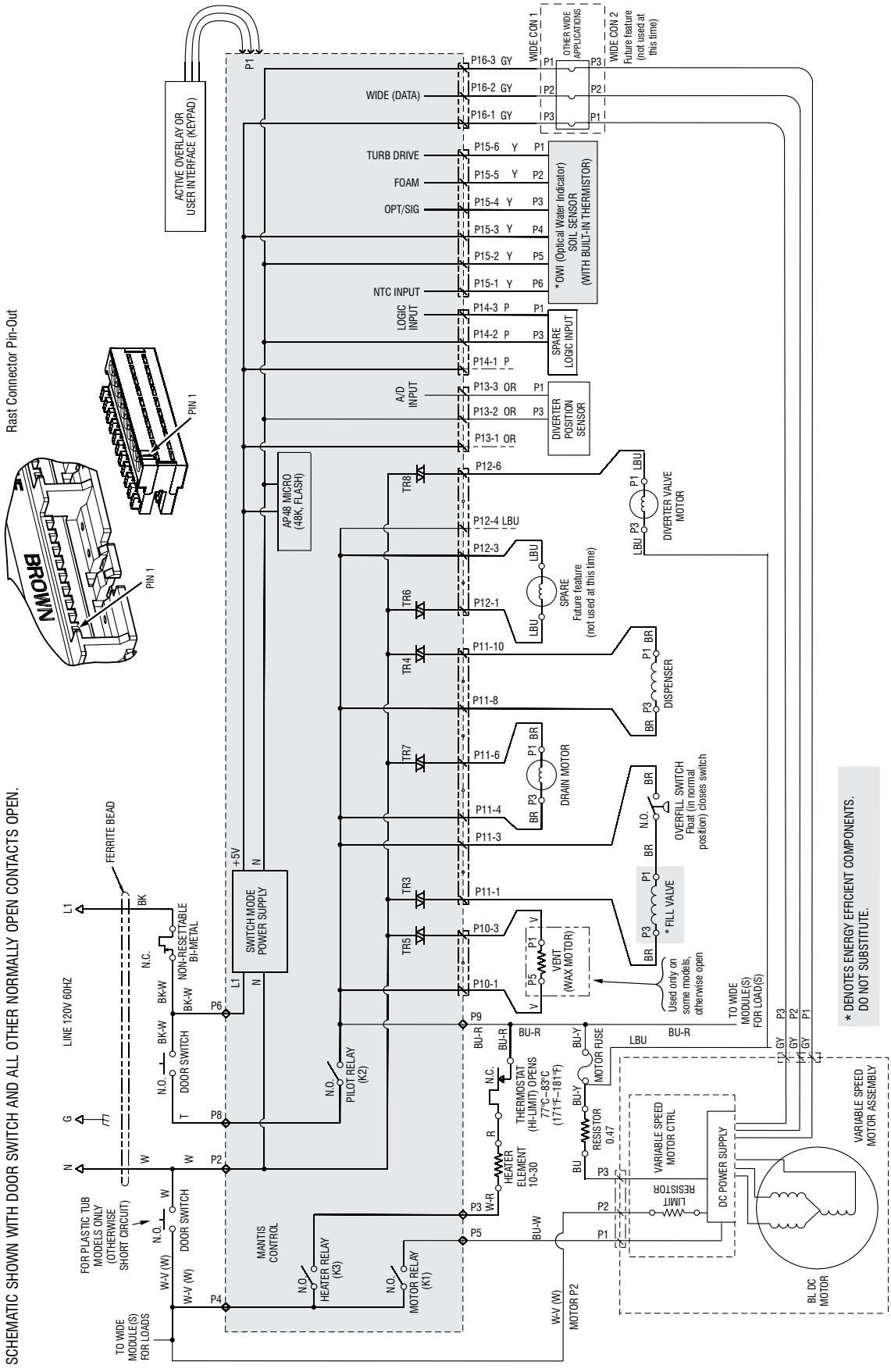
FUNCTION CODE	PROBLEM CODE	CAUSES	WHAT TO CHECK
9- DRAINING	**1 Slow Drain**	Obstructed drain hose or path.	1. Unplug dishwasher or disconnect power. 2. Check for blockages from sump check valve to customer's plumbing. Potential items: ? Plugged garbage disposal or plug not knocked out. ? Blocked/stuck sump or drain loop check valve. ? Plugged hoses.
		Open winding on drain pump motor or loose/open connection in Drain Motor Circuit.	1. Unplug dishwasher or disconnect power. 2. Check resistances of drain motor windings and all connections in Drain Circuit.
		Drain pump impeller fractured.	1. Unplug dishwasher or disconnect power. 2. Remove drain pump and check impeller by pulling and rotating. If the impeller pulls off easily or turns freely (normally there is some uneven resistance), it is stripped. Replace drain pump.
		Faulty drain motor drive circuit on control.	Check operation of drain motor during Diagnostics.

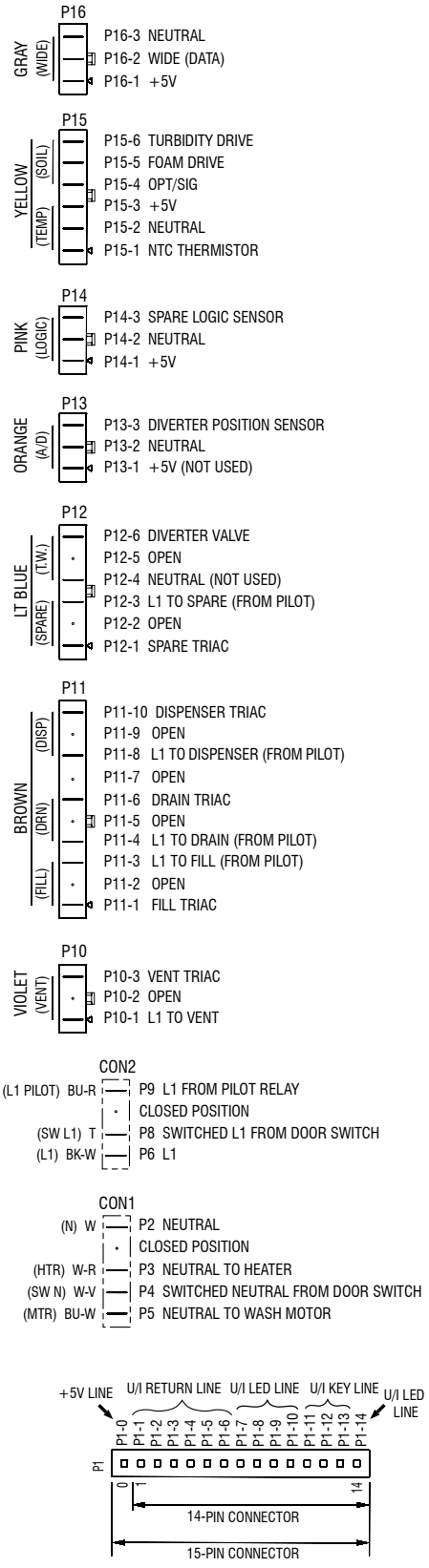
— NOTES —

WIRING DIAGRAMS

WIRING DIAGRAM

SCHEMATIC SHOWN WITH DOOR SWITCH AND ALL OTHER NORMALLY OPEN CONTACTS OPEN.



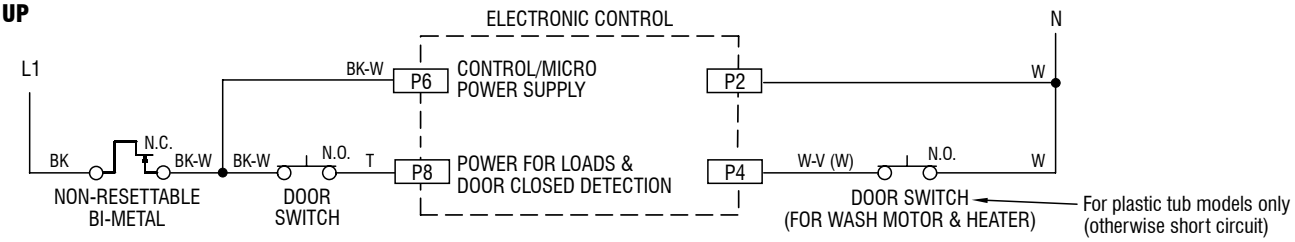

P16
GRAY (WIDE)
P16-3 NEUTRAL
P16-2 WIDE (DATA)
P16-1 +5V
P15
YELLOW (SOIL) (TEMP)
P15-6 TURBIDITY DRIVE
P15-5 FOAM DRIVE
P15-4 OPT/SIG
P15-3 +5V
P15-2 NEUTRAL
P15-1 NTC THERMISTOR
P14
PINK (LOGIC)
P14-3 SPARE LOGIC SENSOR
P14-2 NEUTRAL
P14-1 +5V
P13
ORANGE (A/D)
P13-3 DIVERTER POSITION SENSOR
P13-2 NEUTRAL
P13-1 +5V (NOT USED)
P12
LT BLUE (T.W.) (SPARE)
P12-6 DIVERTER VALVE
P12-5 OPEN
P12-4 NEUTRAL (NOT USED)
P12-3 L1 TO SPARE (FROM PILOT)
P12-2 OPEN
P12-1 SPARE TRIAC
P11
BROWN (DISP) (DRN) (FILL)
P11-10 DISPENSER TRIAC
P11-9 OPEN
P11-8 L1 TO DISPENSER (FROM PILOT)
P11-7 OPEN
P11-6 DRAIN TRIAC
P11-5 OPEN
P11-4 L1 TO DRAIN (FROM PILOT)
P11-3 L1 TO FILL (FROM PILOT)
P11-2 OPEN
P11-1 FILL TRIAC
P10
VIOLET (VENT)
P10-3 VENT TRIAC
P10-2 OPEN
P10-1 L1 TO VENT
CON2
(L1 PILOT) BU-R
P9 L1 FROM PILOT RELAY
CLOSED POSITION
(SW L1) T
P8 SWITCHED L1 FROM DOOR SWITCH
(L1) BK-W
P6 L1
CON1
(N) W
P2 NEUTRAL
CLOSED POSITION
(HTR) W-R
P3 NEUTRAL TO HEATER
(SW N) W-V
P4 SWITCHED NEUTRAL FROM DOOR SWITCH
(MTR) BU-W
P5 NEUTRAL TO WASH MOTOR
+5V LINE
U/I RETURN LINE
U/I LED LINE
U/I KEY LINE
U/I LED LINE
P1-0 P1-1 P1-2 P1-3 P1-4 P1-5 P1-6 P1-7 P1-8 P1-9 P1-10 P1-11 P1-12 P1-13 P1-14
P1
0 1 14
14-PIN CONNECTOR
15-PIN CONNECTOR

STRIP CIRCUITS

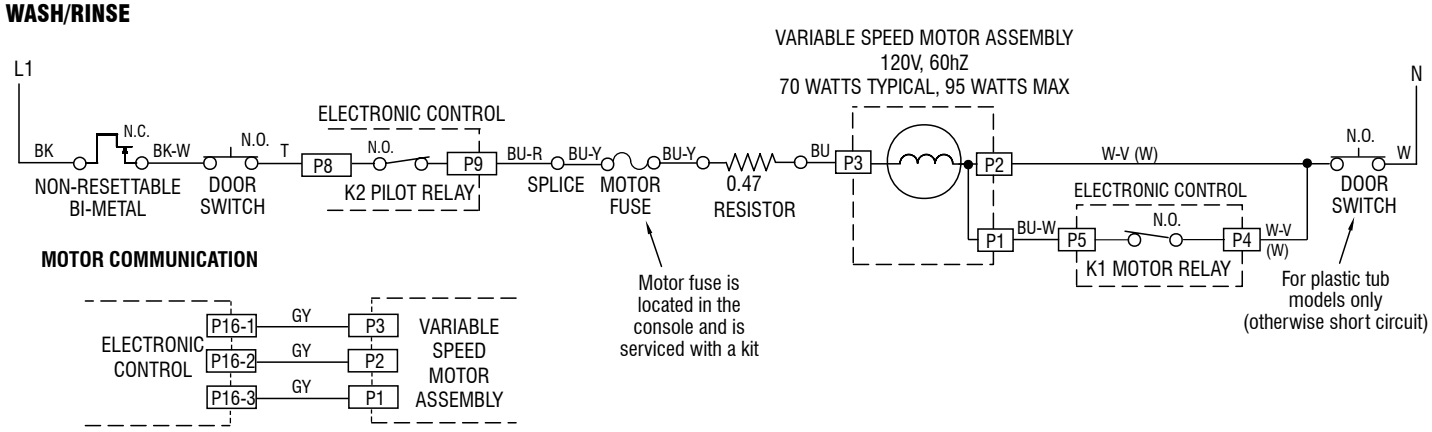
The following individual circuits are for use in diagnoses. Do not continue with the diagnosis of the appliance if a fuse is blown, a circuit breaker is tripped, or if there is less than a 120 volt power supply at the wall outlet.

- Unplug dishwasher or disconnect power.
- Perform resistance checks. To check resistance of a component, disconnect harness leads first.

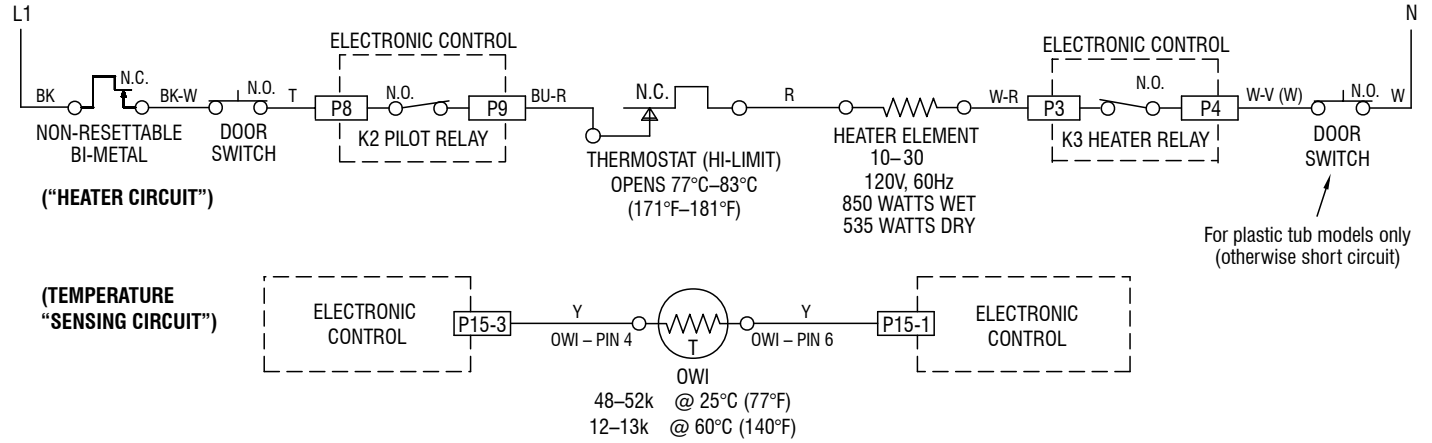
POWER UP



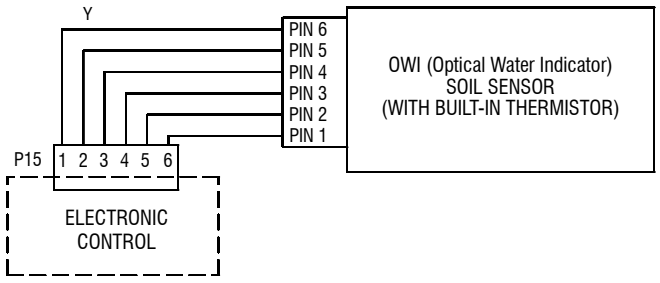
WASH/RINSE



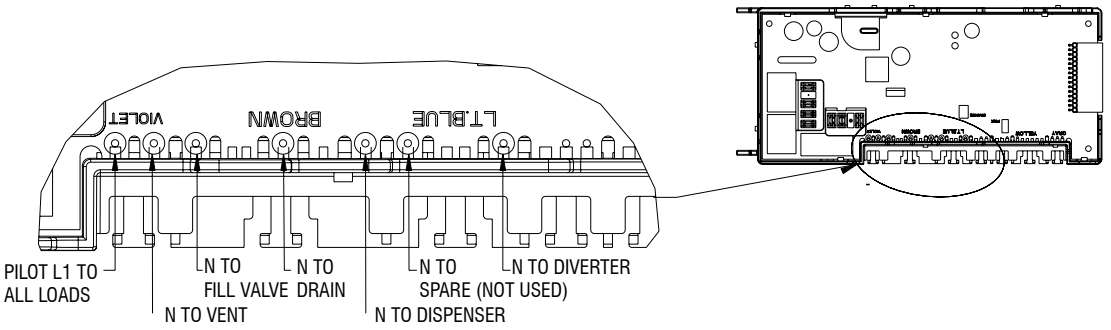
WATER HEATING/HEAT DRY Pump is washing and control monitors temperature during water heating periods. (See WASH/RINSE & TEMPERATURE "SENSING CIRCUIT".)



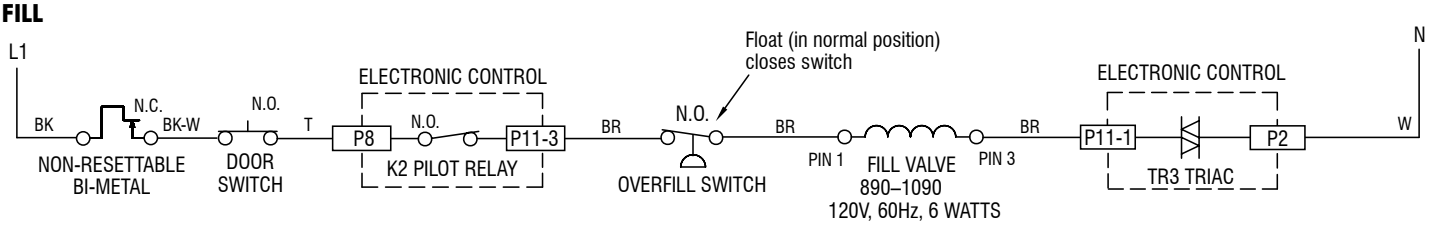
SOIL SENSING Use service diagnostics to test OWI.



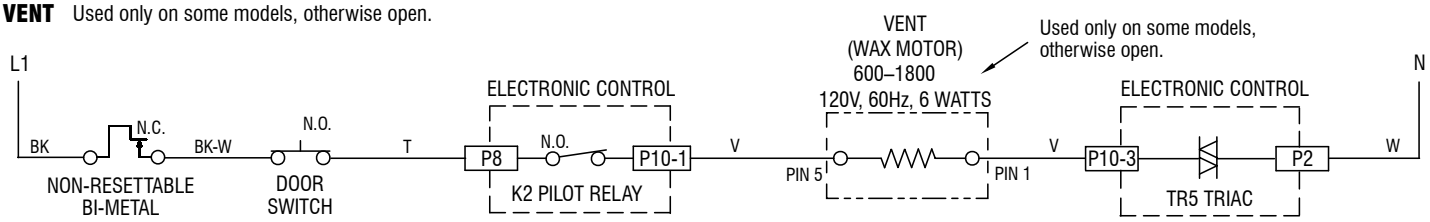
METERING OF TRIAC LOADS Load must be connected for Triac to operate correctly. Meter checks best made at the control. (See illustration below.)



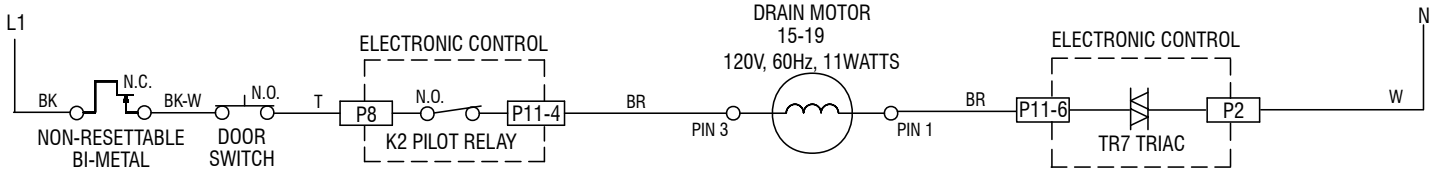
FILL



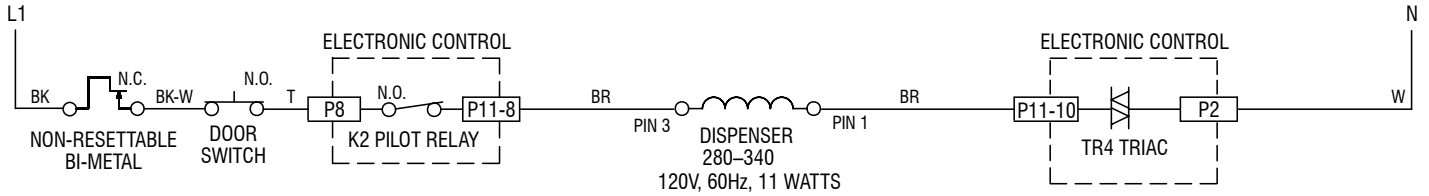
VENT Used only on some models, otherwise open.



DRAIN

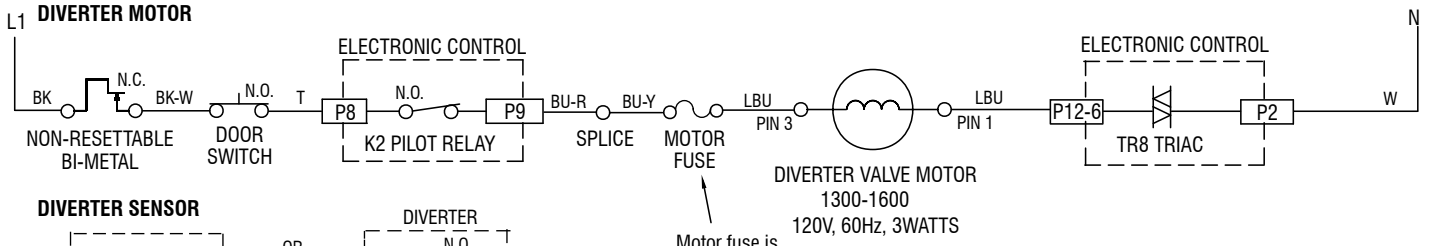


DISPENSER (DETERGENT & RINSE AID)



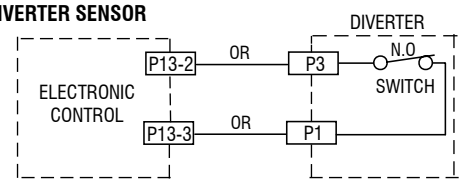
DIVERTER VALVE

DIVERTER MOTOR



Motor fuse is located in the console and is serviced with a kit

DIVERTER SENSOR



CYCLE OPERATION

NOTE: Cycles shown depict typical low soil version. Cycles will vary based on sensor inputs and options selected.

POTS & PANS						
DRAIN 0 MIN 0:40 MAX	FILL 1:13	WASH 4:00	DRAIN SEQUENCE 1:43 MAX			
	FILL 1:11	DETERGENT DISPENSE	WASH 2:15	THERMAL HOLD *1 120° 55:00	WASH 50:00	DRAIN SEQUENCE 1:12 MAX
	FILL 1:06	WASH 6:00	DRAIN SEQUENCE 1:12 MAX			
	FILL 1:06	HEATED WASH 15:00	THERMAL HOLD *1 140° 45:00	RINSE AID DISPENSE	WASH 8:00	DRAIN SEQUENCE 1:08 MAX
	PAUSE 6:00	DRY *2,3 26;00				

NORMAL						
DRAIN 0 MIN 0:40 MAX	FILL 1:13	WASH 4:00	DRAIN SEQUENCE 1:43 MAX			
	FILL 1:09	DETERGENT DISPENSE	WASH 2:15	THERMAL HOLD *1 105° 35:00	WASH 25:00	DRAIN SEQUENCE 1:12 MAX
	FILL 0:18	WASH 4:42	DRAIN SEQUENCE 0:35 MAX			
	FILL 1:04	HEATED WASH 15:00	THERMAL HOLD *1 140° 45:00	RINSE AID DISPENSE	WASH 8:00	DRAIN SEQUENCE 1:08 MAX
	PAUSE 6:00	DRY *2,3 26;00				

*1: Thermal hold = heated wash until temperature reached or maximum time.
*2: Heater not on for entire dry period.
*3: If selected.

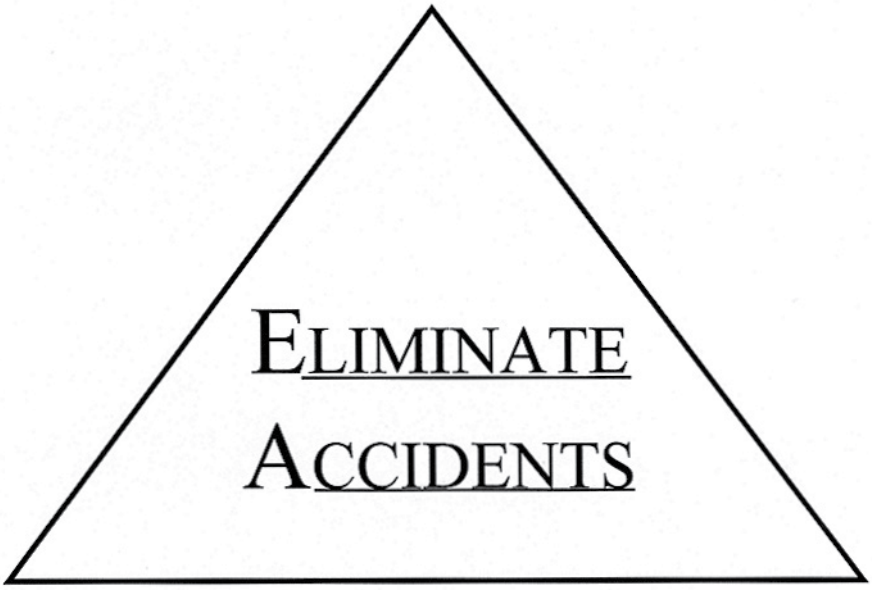
SMART WASH / ADAPTIVE WASH						
DRAIN 0 MIN 0:40 MAX	FILL 1:13	WASH 4:00	DRAIN SEQUENCE 1:43 MAX			
	FILL 1:09	DETERGENT DISPENSE	WASH 3:45	THERMAL HOLD *1 105° 35:00	WASH 25:00	DRAIN SEQUENCE 1:12 MAX
	FILL 0:18	WASH 4:42	DRAIN SEQUENCE 0:35 MAX			
	FILL 0:18	WASH 4:42	DRAIN SEQUENCE 0:35 MAX			
	FILL 1:04	HEATED WASH 15:00	THERMAL HOLD *1 140° 45:00	RINSE AID DISPENSE	WASH 8:00	DRAIN SEQUENCE 1:08 MAX
	PAUSE 6:00	DRY *2,3 26:00				

CHINA						
DRAIN 0 MIN 0:40 MAX	FILL 1:13	WASH 4:00	DRAIN SEQUENCE 1:43 MAX			
	FILL 1:09	DETERGENT DISPENSE	WASH 2:15	THERMAL HOLD *1 105° 35:00	WASH 25:00	DRAIN SEQUENCE 1:12
	FILL 0:18	WASH 4:42	DRAIN SEQUENCE 0:35 MAX			
	FILL 0:18	WASH 4:42	DRAIN SEQUENCE 0:35 MAX			
	FILL 1:04	HEATED WASH 15:00	THERMAL HOLD *1 135° 45:00	RINSE AID DISPENSE	WASH 8:00	DRAIN SEQUENCE 1:08 MAX
	PAUSE 6:00	DRY *2,3 26:00				

*1: Thermal hold = heated wash until temperature reached or maximum time.
*2: Heater not on for entire dry period.
*3: If selected.

ONE HOUR WASH						
DRAIN 0 MIN 0:40 MAX	FILL 1:13	WASH 3:00	DRAIN SEQUENCE 1:43 MAX			
	FILL 1:04	WASH 3:00	DRAIN SEQUENCE 1:08			
	FILL 1:11	DETERGENT DISPENSE	WASH 14:45	DRAIN SEQUENCE 1:12 MAX		
	FILL 1:06	WASH 3:00	DRAIN SEQUENCE 1:12 MAX			
	FILL 1:06	HEATED WASH 15:00	RINSE AID DISPENSE	WASH 5:30	DRAIN SEQUENCE 1:08 MAX	
	PAUSE 6:00	DRY *2,3 29:00				

*1: Thermal hold = heated wash until temperature reached or maximum time.
*2: Heater not on for entire dry period.
*3: If selected.



You Can Count on me . . .
to Work Safely!