



Preferred Service

# Service Manual

This manual is to be used by qualified appliance technicians only. Viking does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

## Built-In Dishwasher

This Base Manual covers general and specific information including, but not limited to the following models:

**FDB451**

**VDB451**



SMK-0005  
Aug 2012

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## SAVE THESE INSTRUCTIONS

REVIEW ALL SERVICE INFORMATION IN THE APPROPRIATE SERVICE MANUAL AND TECHNICAL SHEETS BEFORE BEGINNING REPAIRS.

Pride and workmanship go into every product to provide our customers with quality products. It is possible, however, that during its lifetime, a product may require service. Products should be serviced only by a qualified service technician that is familiar with the safety procedures required in the repair and who is equipped with the proper tools, parts, testing instruments, and the appropriate service manual.

### Safety Information

We have provided many important safety messages in this manual and on the appliance. Always read and obey all safety messages. This is the safety alert symbol.



This symbol alerts you to hazards that can kill or hurt you and others. All safety messages will be preceded by the safety alert symbol and the word "DANGER", "WARNING", or "CAUTION". These words mean:

DANGER

**IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.**

WARNING

Hazards or unsafe practices which COULD result in severe personal injury or death.

CAUTION

Hazards or unsafe practices which COULD result in minor personal injury or product or property damage.

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

WARNING

To avoid risk of serious injury or death, repairs should not be attempted by unauthorized personnel.

CAUTION

VIKING will not be responsible for any injury or property damage from improper service procedures. If performing service on your own product, you must assume responsibility for any personal injury or property damage which may result.

Technical support for authorized servicers:

1-800-914-4799

Address your written correspondence to:

Viking Preferred Service  
 1803 HWY 82 West  
 Greenwood, MS 38930

## Warnings

Read and follow all instructions before using this appliance to prevent the potential risk of fire, electric shock, personal injury, or damage to the appliance as a result of improper usage of the appliance. Use appliance only for its intended purpose as described in this manual.

To ensure proper and safe operation: Appliance must be properly installed and grounded by a qualified technician. DO NOT attempt to adjust, repair, service, or replace any part of your appliance unless it is specifically recommended in this manual. All other servicing should be referred to a qualified servicer.

## Water

### **WARNING**

Plumbing connections must comply with applicable sanitary, safety, and plumbing codes.

- Water pressure for the water supply should be a minimum of 10 to 125 psi. The dishwasher is supplied with a 5' (1.5 m) braided stainless steel water line with 3/8" (0.95 cm) compression fitting connected to dishwasher.
- After determining where the water supply line will connect to the dishwasher, provide a 2" (5.1 cm) access hole and run the water supply line to the approximate fill valve location.
- For service convenience, a shut-off valve (not supplied) should be installed in the supply line in a readily accessible location (such as beneath the sink).
- It is recommended that the dishwasher be connected to a hot water supply. If a cold water supply is used, cycle times will vary.
- It is important that the water supply line and the shut-off valve have a sufficient flow volume. Flush the supply line prior to connecting it to the intake line of the dishwasher.

## DRAIN

- The access hole for the drain line should be 2" square (5.1 cm). Locate as low

- and as near to the back wall as possible.
- DO NOT use any fittings anywhere in the drain line that are less than 1/2" (1.3 cm) ID.
- If the drain line is going to be connected to a food waste disposer, be sure to remove the knockout or plug from the fitting before connecting drain line.
- Drain connection should be a minimum of 20" (51.0 cm) from the floor. If connection is lower, siphoning during cycle can occur.



### **WARNING**

The dishwasher has a factory installed back-flow preventer. DO NOT add an additional check valve.

## Electrical

This appliance 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.

*Note: For this model, a power cord will have to be purchased separately. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.*



### **WARNING**

Be sure electrical power is turned off at circuit breaker or fuse box before servicing unit. DO NOT use an extension cord for this appliance



### **WARNING**

Improper connection of the equipment – grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the appliance is properly grounded. DO NOT modify the plug if it will not fit the outlet, have a proper outlet installed by a qualified electrician

**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.

**WARNING**

**EXCESSIVE WEIGHT HAZARD**  
Use two or more people to move dishwasher.  
Failure to do so can result in back or other  
injury.

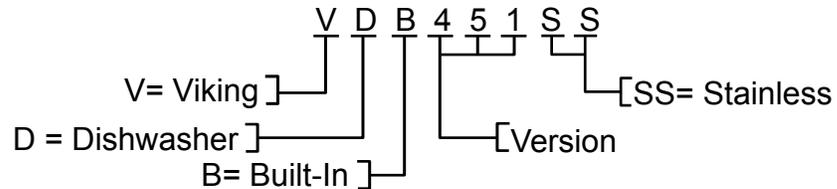
**WARNING**

**TIP OVER HAZARD**  
DO NOT push down on open door. Doing so  
can result in serious injury or cuts

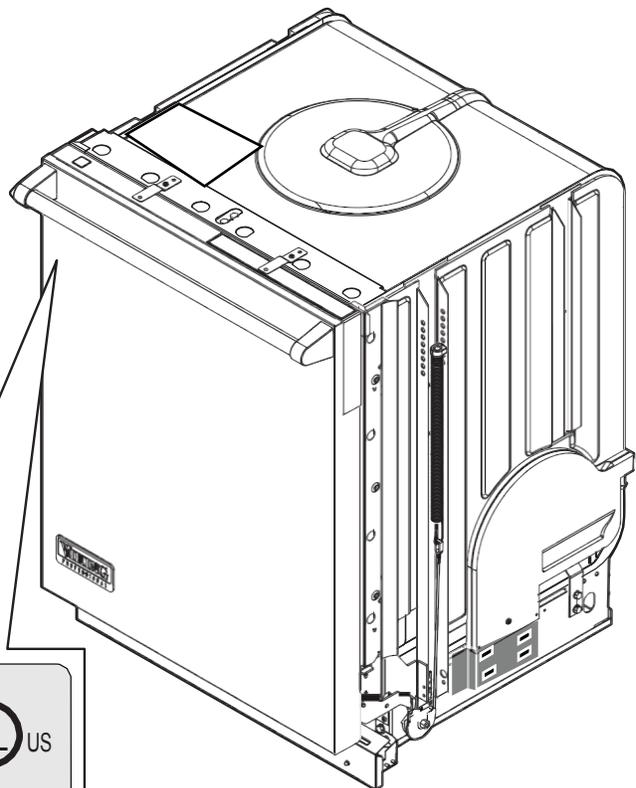
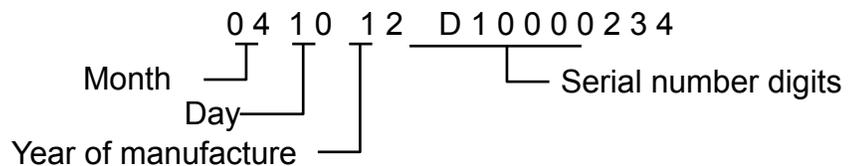
## Model–Serial Number Matrix

The serial number and model number for your appliance are located on the identification plate mounted on the inside of the unit.

### Model Numbers



### Serial Numbers

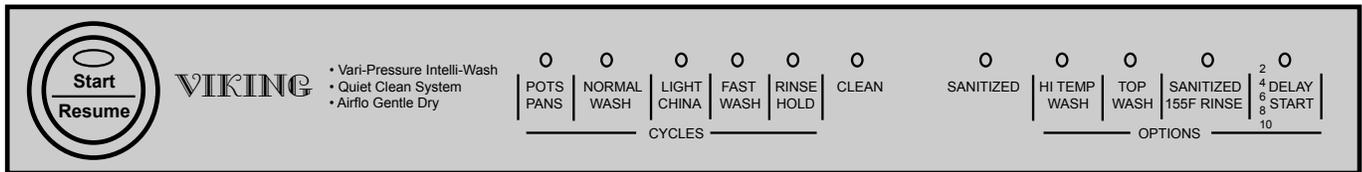


Made in the USA	HOUSEHOLD DISHWASHER	MODEL VDB451SS		
	VIKING RANGE CORPORATION	120V 60Hz OPER 12.2A		M 2.5A
	GREENWOOD, MISSISSIPPI	OTHER 15.5A		LISTED
	38930 USA	SERIAL NO 041012D10000234		

## Settings and Functions

### Control Operation

The following is the basic layout of the control panel and how it is referenced below.



### Wash Cycles

#### POTS / PANS

Heavily soiled pots, pans and casserole dishes. Long heated prewash loosens up encrusted food. High temperature main wash and final rinse.

#### NORMAL WASH

Normally soiled plates, glasses, bowls, and lightly soiled pots and pans. Energy-usage label is based on this cycle.

#### LIGHT/CHINA

Lightly soiled items, china and crystal. Lower temperatures for cleaning delicate items.

#### FAST WASH

To remove light films and residue on dishes and glassware. Short wash times and varying pressures.

#### RINSE/HOLD

All dishware. Short rinse with no heat.

### Options

#### HI TEMP WASH

Increases the temperature, adding heat, time and water for improved cleaning performance. Available only with POTS/PANS and NORMAL WASH. Note: Periods of soaking will occur to aid in removal of baked on soils

#### SANITIZED 155°F RINSE

Raises water temperature to 155°F in the final rinse. Adds heat and time to the cycle. This high temperature rinse sanitizes your dishes and glassware in accordance with NSF/ANSI STANDARD 184 for Residential Dishwashers. Certified for residential dishwashers and not intended for licensed food establishments. Available only with POTS/PANS and NORMAL WASH.

#### DELAY START

Lets you delay running the dishwasher for up to 10 hours. To set "DELAY START", select the desired wash cycle and option(s). Press the "DELAY START" button once and the number "2" will light, indicating a two hour delay. If you desire a longer delay, continue pressing the "DELAY START" button to a longer delay. The corresponding number on the button will light. Once you have set the desired delay time, press the "START" button and close the door. "DELAY START" is not available with the Rinse/Hold cycle.

#### AUDIBLE SOUND SIGNAL

A single beep will occur when you select cycles, options and press the "START" key. If the "START" button is not pressed or if the door is not closed within 4 seconds of pressing the "START" button, 3 short beeps will occur. The end-of-cycle signal consists of 2 long beeps and activates 30 minutes after the last drain, when the condensate dry portion of the cycle is completed. For all other error messages and to deselect the audible sound signal, see the Troubleshooting/ Fault Codes section.

Options (continued)

## ILLUMINATION OF BUTTONS

Option, Cycle and Start buttons will only illuminate after they are selected. The "SANITIZED" indicator will illuminate when the cycle has been completed. If your dishwasher did not properly sanitize your dishes, the indicator light will not illuminate. This can happen if the cycle is interrupted or the water could not be heated to the required temperatures. The "SANITIZED" indicator light goes off after you have

opened and closed the door or if you press and hold the START/RESUME button. The START/RESUME button will blink if cycle is interrupted.

## POWER ON LIGHT

A blue light will illuminate from the bottom kickplate panel in the middle when a cycle is running. This power on light will blink if the cycle is interrupted.

## Cycle Data

Cycle name	Recommended dish types/ soil level	Temperatures	Total water (gal.)	Total Wash Time (minutes) 120F (49C)
Pots/ Pans	Heavily soiled pots, pans and casserole dishes	Main-145° F (63°C) Rinse-150° F (66°C)	8.4	138 (min.)
Normal Wash	Normally soiled plates, glasses, bowls, and lightly soiled pots and pans	Main-120° F (49°C) Rinse-140° F (60°C)	4.25	110 (min.)
Light/ China	Lightly soiled china and crystal	Main-125°F (51.7°C) Rinse-130°F (54°C)	5.4	112 (min.)
Fast Wash	Lightly soiled dishware and glassware	Main-130°F (54°C) Rinse-135°F (57°C)	5.8	60 (min.)
Rinse/ Hold	All dishware	Rinse	1.4	10 (min.)

Note: .Will perform properly if connected to "cold" water (50°F / 10°C). Cycle times will be extended.

Note: All cycle times, temperatures and fills are approximate and are dependent on installation and environmental conditions.

Note: Heating delays to meet set temperatures may extend the cycle times.

Note: AirFlo™ Gentle Drying will add approximately one hour to the total cycle time.

## Preparing Dishes

It is not necessary to rinse normal food soils off the dishes before putting them in the dishwasher, although larger solid particles, such as bones, seeds, skins, pits, and toothpicks should be removed.

Note: All wash times, temperatures and fills are approximate and are dependent on installation and environmental conditions.

Note: Heating delays to meet set temperatures may extend the cycle times.

Note: Wash time does not include the 30 minute condensate dry time.

If you are not going to run the dishwasher immediately after loading, it is best to rinse salty and highly acidic foods off stainless steel, silver, and silverplate flatware. Prolonged contact of foods—including lemon juice, salt, vinegar, mustard, mayonnaise, and salad dressings—with stainless steel can cause corrosion (pitting).

## Before Operation

1. Load the dishes per recommended loading. See section on Loading Dishwasher.
2. Make sure there is rinse agent in the dispenser. Add rinse agent if needed. See section on Rinse Agent.
3. Add proper amount of detergent and pre-wash. See section on Dishwasher Detergent.
4. Push both top and bottom racks in.
5. Select the desired cycle and option(s).
6. Press "START". The "START" symbol will illuminate to indicate the unit is ready.
7. Close the door tightly until you hear a click. Otherwise, the dishwasher will not start.

## Option Restrictions

All options are not available for all cycles. Please note the following:

- The option "HI TEMP WASH" is not available with the "LIGHT/CHINA" or "FAST WASH" cycles.
- No options are available in the "RINSE/HOLD" cycle.
- The option "TOP WASH" is available only with the "NORMAL WASH" cycle.
- The option "SANITIZED 155°F RINSE" is not available with the "LIGHT/CHINA" or "FAST WASH" cycles.

After selecting the wash cycle and options, depress "START" button. The start symbol will illuminate. This merely means the machine is ready. Close the door securely within 4 seconds of pressing the "START" button.

## **Changing a Program After the Unit has Started**

The dishwasher is programmed to stop operating if the door is opened during a cycle. To change a program or option after starting the machine, open the door slightly to let the spray arms stop rotating and avoid getting sprayed with water. Press and hold "START" for four seconds to cancel the current selection, then press the touchpad(s) for your desired selection.

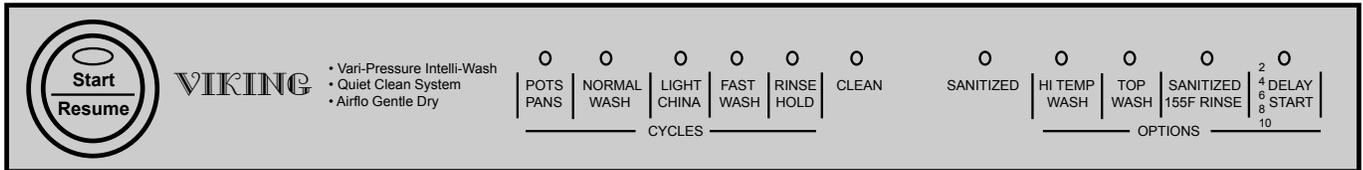
Press "START" again and close the door. The drain pump will run to remove any dirty water from the dishwasher before starting the newly selected cycle. Check to make sure there is still detergent in the detergent dispenser.

## **Opening door after cycle starts**

If the door is opened after the cycle has started, the "START" button will flash to indicate that the dishwasher is in Standby Mode. Press the "START" button and close the door securely within 4 seconds to restart the cycle.

## Entering Diagnostic Mode

To enter the Diagnostic mode, press the left most program button five times and then immediately press the "START" button, within 6 seconds. The unit will beep, and flash all LED's three times. Close door to begin the Service cycle. To exit this mode before completion, hold "START" key for three seconds.



The test cycle will run approximately 6-1/2 minutes and will run each component individually. Be sure to close the soap dispenser cup as this function will also be energized opening up the cup.

1. Drains for 85 Seconds 5 Seconds On–5 Seconds Off–30 Seconds On–5 Seconds Off–40 Seconds On.
2. Fills for 75 seconds.
3. Activates soap dispenser and wash arm diverter sets (duration varies).
4. Circulates top wash arm with heat for 40 seconds.  
Note: Heater does not activate until the motor check is complete (16 seconds after motor starts).
5. Water level check and wash arm diverter sets (duration varies).
6. Circulate lower wash arm with heat for 10 seconds.
7. Water level check and wash arm diverter sets (duration varies).
8. Circulate (filter clean) for 10 seconds.
9. Drains for 85 Seconds.  
5 Seconds On–5 Seconds Off–30 Seconds On–5 Seconds Off–40 Seconds On
10. Vent wax motor and blower motor energize for 10 seconds.
11. When complete, you will hear two long beeps approximately ten seconds after the drain cycle stops. This is the indication that the test cycle has completed.

*Note: During this test cycle, if the control board senses a failure that it is programmed to monitor, it will display an error code.*

## Fail Codes

LED 1 Pots Pans	LED 2 Normal Wash	Service Cycle Only	Error Code	Cause	Action / Possible Root Cause(s)
1	1		Moisture sensor disconnect	Moisture sensor reads out of normal range	1. Wires disconnected to moisture sensor in base pan 2. Defective moisture sensor 3. Defective control board
1	2		Motor Control Status Error (Variable Speed Motor)	Motor control communicates a motor operation failure mode that is most likely caused by the motor control	1. Wires disconnected between motor control and motor 2. Defective motor control 3. Defective motor
1	3		Motor Control Comms Error	Main control cannot successfully communicate with the motor control	1. Wires disconnected between motor controller and control board 2. Defective Motor control 3. Defective control board
1	4		Diverter Timeout	Main control activates the diverter, but never sees feedback from the diverter that the correct position is reached	1. Wires disconnected between control board and diverter 2. Defective diverter 3. Defective control board
1	5		Drain Error (pressure sensor models)	During a drain, the pressure sensor output never drops to the "empty" level	1. Verify that dishwasher drain hose is not clogged or kinked 2. Verify that plug has been removed from disposal (if so connected) 3. Verify that hose has a high loop per installation guide 4. Verify that dishwasher is level front to back and side to side 5. Verify that filters are not clogged 6. Defective drain pump 7. Defective pressure sensor 8. Defective control board
2	1		Pressure Sensor Disconnect Error	Pressure sensor reads out of normal range low	1. Verify the pressure sensor is properly connected 2. Defective pressure sensor 3. Defective sensor harness
2	2		Fill Error (pressure sensor models)	During a fill, the pressure sensor output does not reach target fill pressure	1. Verify water is turned on to dishwasher 2. Verify that fill line is not kinked 3. Verify that dishwasher is level front to back and side to side 4. Verify there has not been a decrease in water pressure 5. Defective pressure sensor 6. Defective control
2	3		Low Level Error	Pressure sensor indicates a water level lower than the low level threshold	1. Low water level in sump (check that items are secured in rack) 2. Verify that the drain has the proper high loop 3. Defective pressure sensor 4. Defective main control
2	4		High Level Error	Pressure sensor indicates a water level higher than the high level threshold	1. Excess water in sump (check that items are secured in rack) 2. Defective pressure sensor 3. Defective main control
2	5	X	Siphon Error	Drains to fast (abnormal pressure sensor change)	1. Make sure that unit is level front to back and side to side 2. Verify that the drain line has the proper high loop 3. Defective pressure sensor 4. Defective main control
3	1		User Interface - Main Control Communication Error	User interface is unable to successfully communicate with the main control	1. Wires disconnected between main control and user interface 2. Defective cable between main control and user interface 3. Defective main control 4. Defective user interface
3	2	X	Pump Flow Error	Control detects insufficient/inconsistent water flow through the wash system and will not allow the flow through heater to activate	1. Verify water is fully turned on to dishwasher 2. Verify that fill line is not kinked 3. Verify that dishwasher is level front to back and side to side 4. Verify that filters are not clogged 5. Verify that there has not been a decrease in water pressure 6. Verify that the drain has the proper high loop 7. Verify proper fill level 8. Enable extended fill service mode (press and hold Normal Wash for 10 seconds) 9. Defective wash motor 10. Defective water inlet valve 11. Defective main control
3	3		Drain Pump Error	Drain pump current sense is out of range	1. Wires disconnected between main control and drain pump 2. Defective drain pump 3. Defective main control
3	4		Motor Status Error	Motor control communicates a motor operation failure mode that is most likely caused by the motor	1. Verify connection between motor control and motor 2. Defective motor control 3. Defective machine control
3	5		Motor Under Voltage Error	Motor control communicates a low motor control voltage condition	1. Verify house voltage is in specification. 2. Verify connection at terminal block 3. Verify AC connection to the machine control 4. Verify connection between machine control and motor control 5. Defective machine control 6. Defective motor control

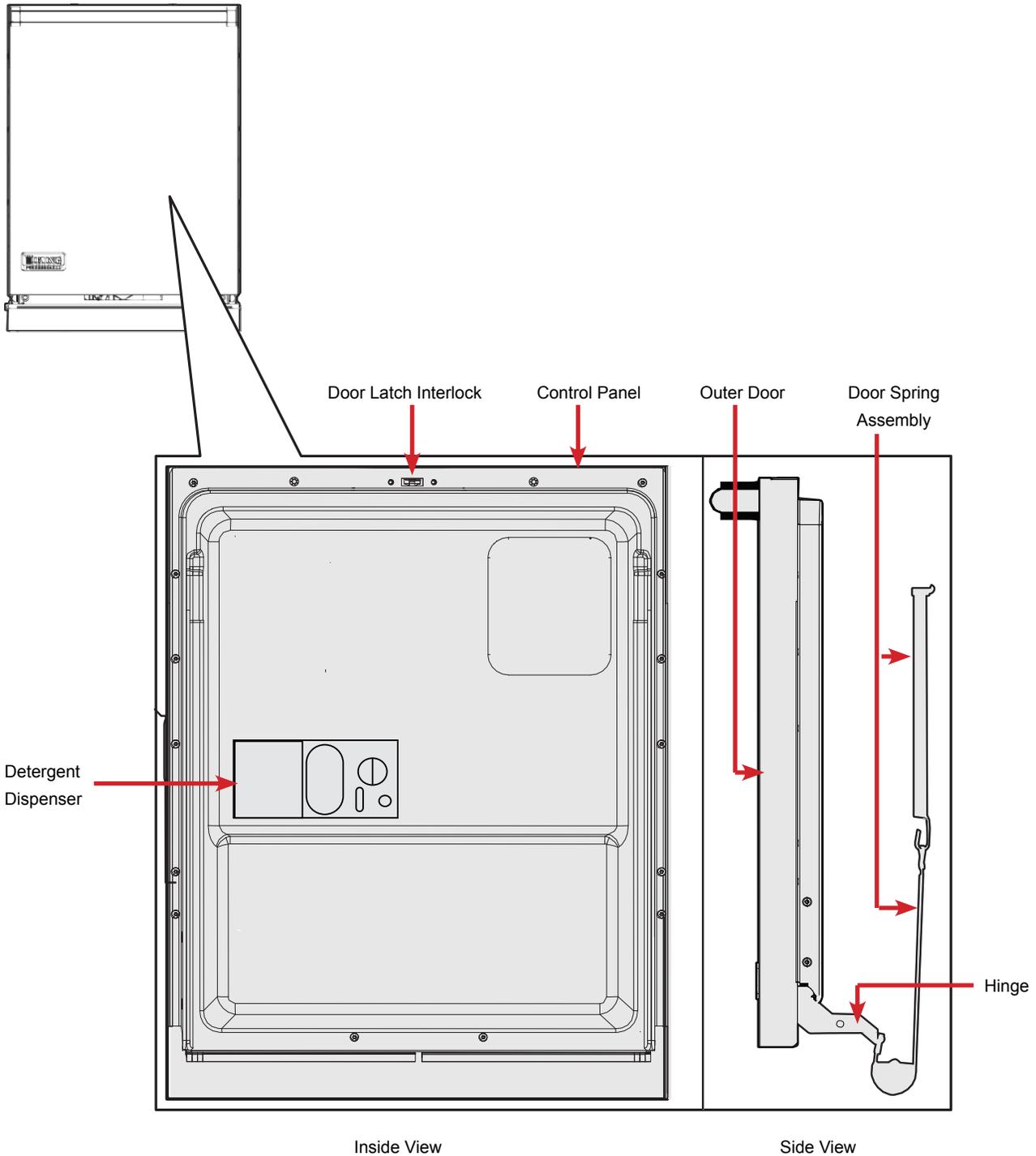
## Fail Codes (cont'd)

LED 1 Pots Pans	LED 2 Normal Wash	Service Cycle Only	Error Code	Cause	Action / Possible Root Cause(s)
4	1		Temperature Sensor Error	Temperature sensor reads out of range	1. Wires disconnected to temperature sensor 2. Defective temperature sensor 3. Defective control board
4	2	X	Wash Heater Error	Wash heater current sense is out of range	1. Wires disconnected between main control and wash heater 2. Defective wash heater 3. Defective main control 4. Defective temperature sensor
4	3	X	Dispenser Error	Dispenser current sense is out of range	1. Wires disconnected between main control and dispenser 2. Defective dispenser 3. Defective main control
4	4	X	Inlet Valve Error	Inlet valve current sense is out of range	1. Wires disconnected between main control and inlet valve 2. Defective inlet valve 3. Defective main control
4	5		Fill too Fast Error	Pressure sensor reaches the fill level too fast (abnormal pressure sensor change)	1. Make sure that unit is level front to back and side to side 2. Verify the house water pressure is within specifications 3. Defective inlet valve 4. Defective pressure sensor 5. Defective main control
5	1	X	Vent Error	Vent current sense is out of range	1. Wires disconnected between main control and vent 2. Defective vent 3. Defective main control
5	2	X	Blower Error	Blower current sense is out of range	1. Wires disconnected between main control and blower 2. Defective blower 3. Defective main control
5	3	X	Dry Heater Error	N/A on 451 model	1. Wires disconnected between main control and dry heater 2. Defective dry heater 3. Defective main control
5	4	X	Current Sense Error	Main control reads current draw when no loads are active	1. Defective main control 2. Defective wire harness
5	5		Internal Error	Main control or UI detects a board level failure	1. Defective main control 2. Defective user interface
Flash both LED1 and LED2 continuously			Moisture Sensor - water detection	Moisture sensor output is equivalent to water in the pan	1. Water in base pan from overflow / leak 2. Defective moisture sensor
Flash all LEDs but start and run continuously			AC Power Loss	Power loss occurred during a running cycle	1. Power lost during a cycle 2. Reset by pressing and holding start for 3 seconds

## **WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Parts Location–Door



## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

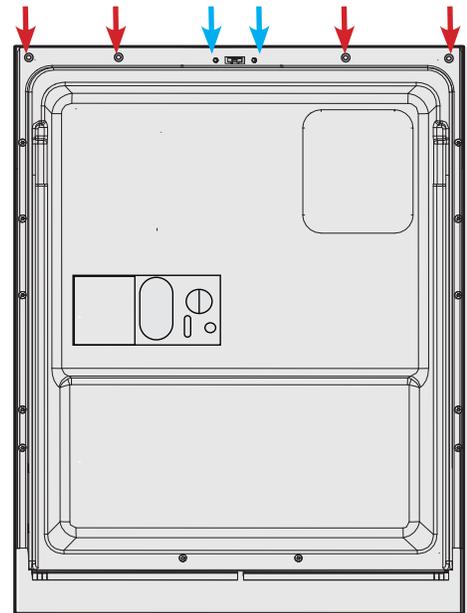
### Door Disassembly

In order to gain access to the internal components of the door, which includes the detergent dispenser, start switch, door interlock, and the user interface, you will need to remove the front door panel and the control panel.

Remove the four T20 TORX screws along the top of the door indicated below by red arrows. Then remove the two inner phillips head screws (latch screws), indicated below with blue arrows

## CAUTION

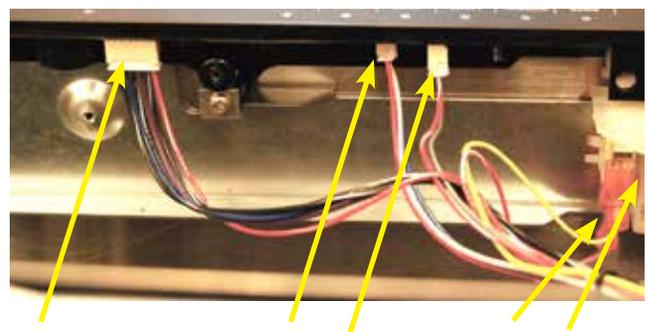
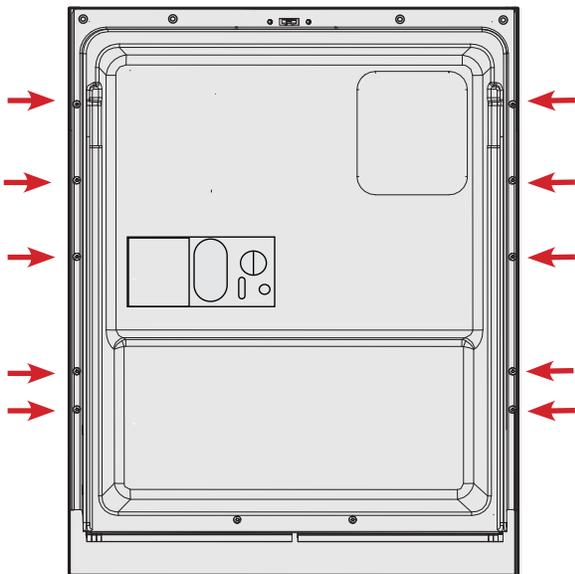
Make sure that the outer door is held in place while removing the screw so that the door does not fall and become dented or scratched. The inner door assembly is sharp and could result in minor personal injury.



### Outer Door Removal

In order to gain access to the inner door assembly and detergent dispenser, you must first remove the outer stainless steel or wood door panel. Open the door to a complete 90° angle to expose the securing screws. Using a T15 TORX screwdriver, remove the ten screws, five on each side.

Carefully ease door to close position, do not latch. Pull outer door panel out towards you a few inches to expose electrical connections to control panel (Control panel is still mounted to outer door panel at this point.)



Remove wires going to the door latch and the three connectors going to the control pad and one connector going to start switch, shown above.

## **WARNING**

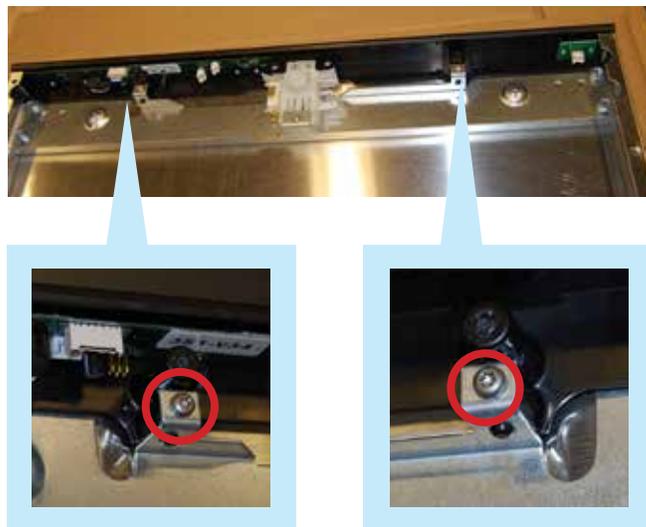
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

Remove outer door assembly and place in a location to prevent damage to panel and household items, preferably on a padded surface.

### **Control Panel Removal**

In order to gain access to control panel, remove outer door panel, see outer door removal procedure, Page 15.

With outer door panel removed put on padded surface to remove the control panel which is mounted on the outer door panel.



Remove the two T20 Torx screws, circled in red above to remove control assy from outer door panel.

### **User Interface Removal**

In order to gain access to control panel, remove outer door panel, see outer door removal procedure, Page 15.

Remove control panel, see Control Panel Removal.



Remove the four T10 Torx screws as indicated by arrows in photo above, remove user interface board from control panel assembly.

**⚠ WARNING**

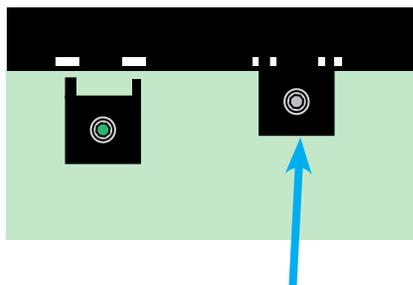
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

When user interface is re-installed care must be taken to face the four plastic keepers into the control panel the correct way.

The screw goes into the recessed side of the keeper, see photo below.



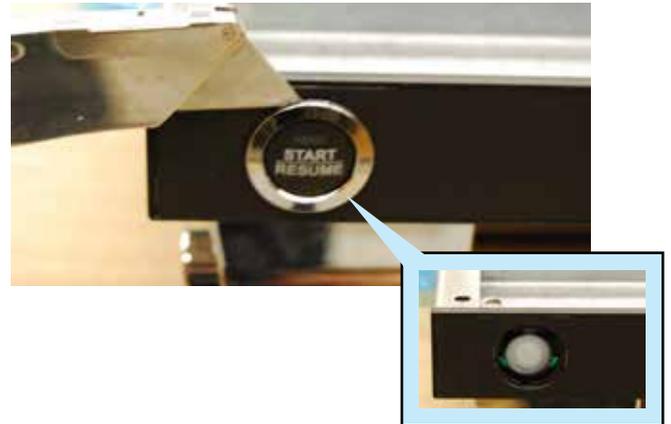
The plastic keepers have two feet on each keeper. These feet fit into matching slots on the control panel to ensure that User Interface Board doesn't move and is firmly anchored.



Keeper feet are inserted into small rectangular holes in the console, and screwed down

### Start Button Removal

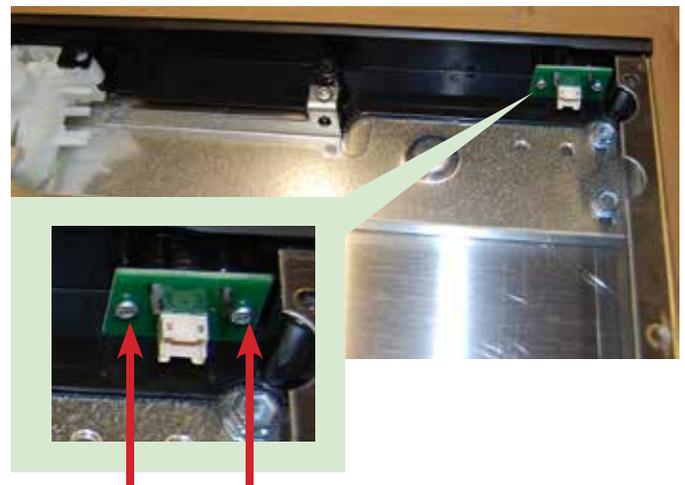
Using a very thin object such as the razor blade shown below, slip under the button collar and gently lift up until prongs release collar and button.



### Start Switch Removal

Remove outer door panel, see Outer Door Removal procedure, Page 15.

Remove the two T10 TORX screws that mount Start switch to console, see red arrows below, remove switch.



## **WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Door Latch Interlock Removal

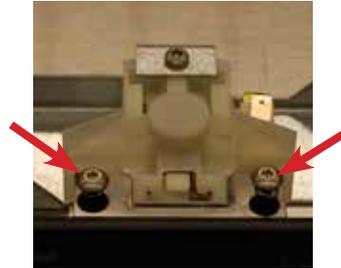
Remove outer door panel, see Outer Door Removal procedure, Page 15.

Remove control panel assy, see Control Panel Removal procedure, Page 16.

The door latch mechanism is secured to the outer door panel by one T20 TORX screw. With the control panel removed, remove the screw.



Install these two screws snugly



Remove the two upper screws at this time, they will be installed during the outer door panel assembly to the inner door assembly.

Reassemble door by reversing procedures in previous column.

If door latch has been removed the following procedure should be used to install it for proper alignment.

With control panel mounted to outer door place door latch in it's proper position, then install T20 TORX into bottom of latch as shown above in previous step. **DO NOT TIGHTEN** this screw at this time. Install the two latch screws into the upper latch mounts shown in photo in next column. Snug these two screws down all the way, don't overtighten. At this time tighten the T20 TORX screw at bottom of latch. These actions should ensure proper latch alignment

## ⚠ WARNING

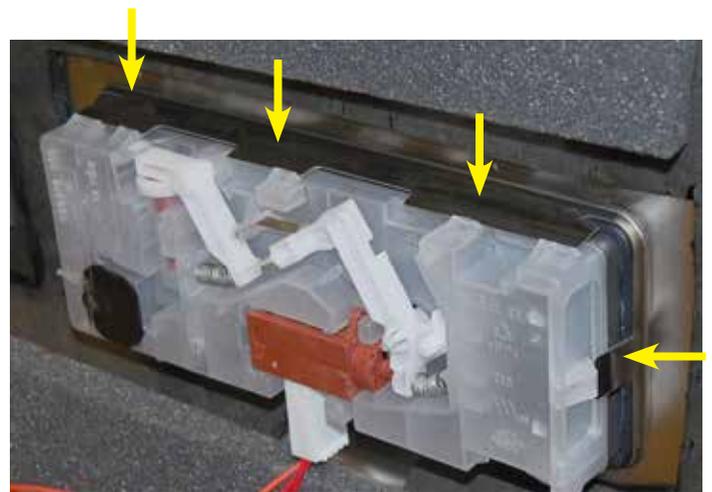
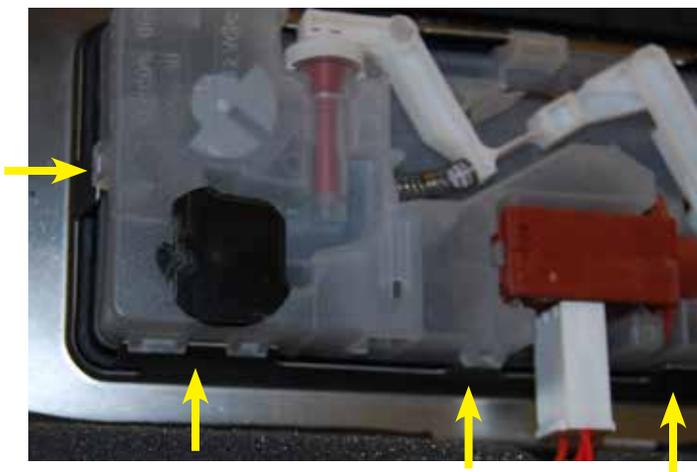
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Detergent Dispenser

Remove outer door panel, see Outer Door Removal procedure, Page 15.

Remove connector going to detergent dispenser.

To remove detergent dispenser bend tabs up to clear and release plastic dispenser assembly while pushing in on dispenser, this will allow the dispenser to release and come out of the inner door liner. See arrows below, there are metal tabs on all four sides of detergent dispenser.



## ⚠ CAUTION

When replacing soap dispenser, a rubber lubricant is required to install the new dispenser, part # 036641-000 (P80 emulsion), this should come with the new dispenser and should be applied to seal before installation. Failure to use this lubricant could result in water leaks.

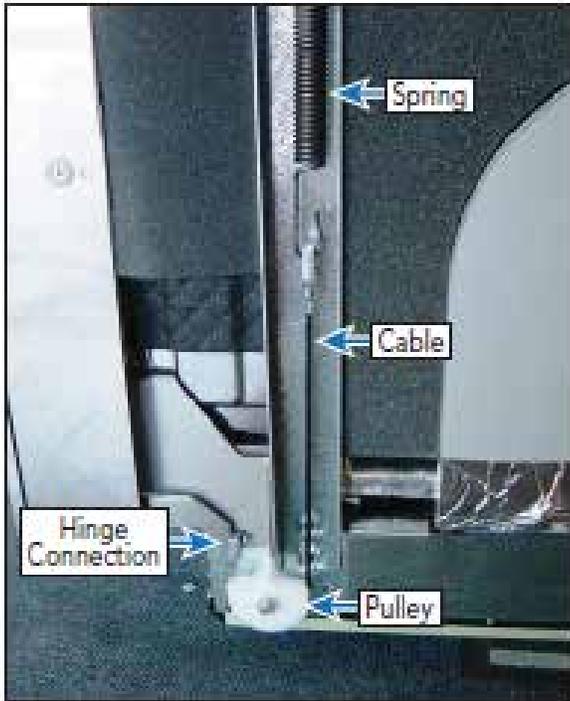


## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Door Spring and Cable Assembly

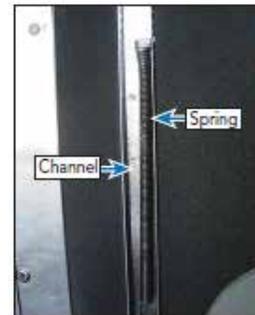
The image below shows the right side door hinge cable, spring, and pulley. The left side is the same.



Below is a close-up view of the cable wrapped around the pulley. As the door opens or closes, the cable will ride along the roller creating a smooth movement in the door operation.



The image below shows the spring and the channel it rides in. The connection is secured in mounting holes in the channel frame.



The image below shows the spring in its default location (sixth hole from the top).



## CAUTION

Make sure that when removing or adjusting the door spring tension that you are wearing protective gloves and eye wear. Injury can occur should the spring or cable come loose or slip during assembly.

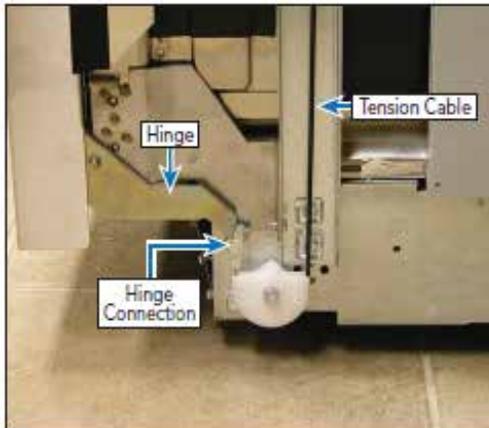
## ⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

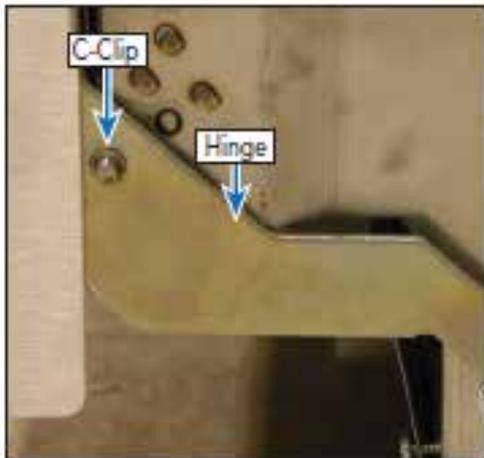
### Door Hinge Disassembly

To access door hinge, slide unit out of the installation. Next remove the outer door panel (see Outer Door Removal section, Page 15.).

Disconnect tension cable from hinge.

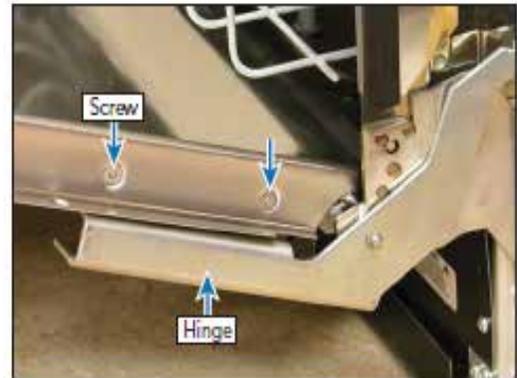


Remove C-Clip securing hinge.



Note: Remove C-Clip slowly (clip has spring and can dislodge).

Remove two screws that hold each hinge to the inner door. Repair or replace the hinge as necessary.

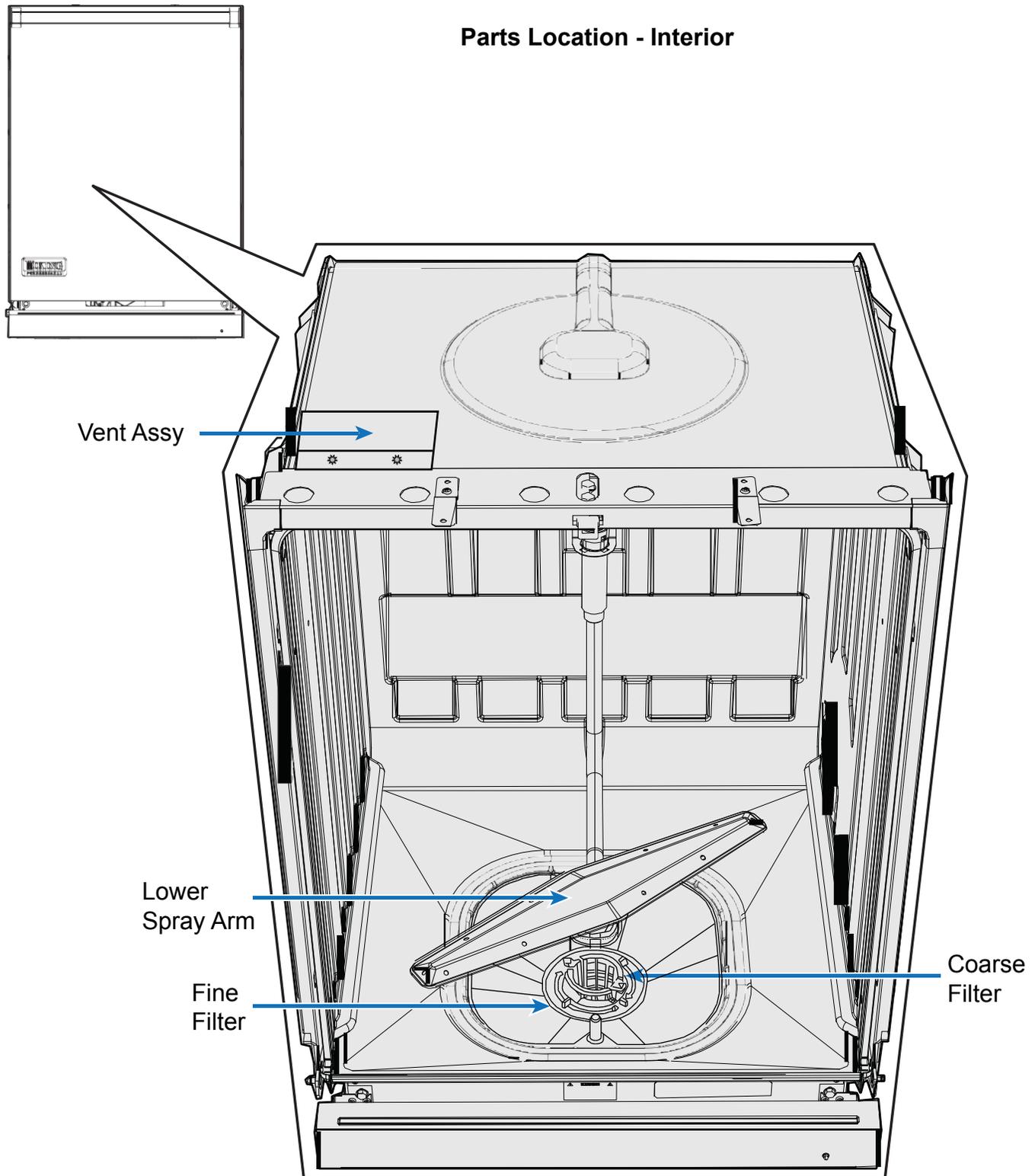


Reverse the procedure to reinstall the hinge.

## **WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Parts Location - Interior

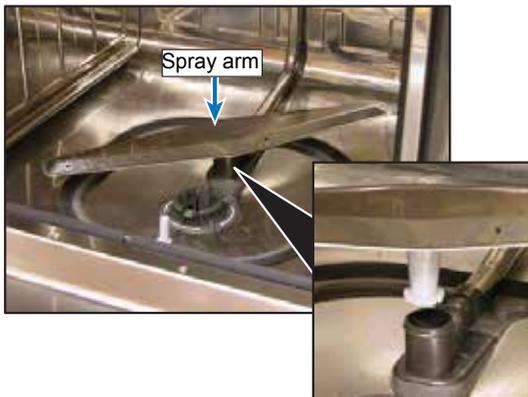


**WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

**Lower Spray Arm Removal**

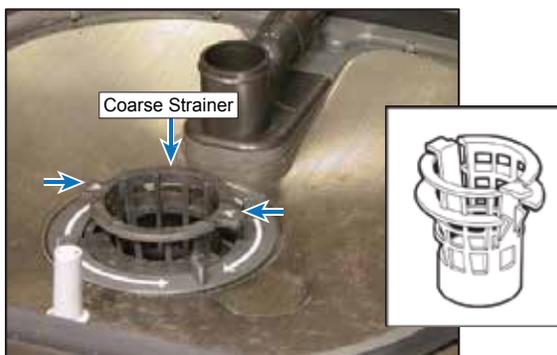
To access lower spray arm, open the door and remove lower rack. Next, unsnap lower spray arm (shown below).



Repair or replace as necessary. Reverse the procedure to reinstall the spray arm.

**Coarse Strainer Removal**

To access coarse strainer, open door and remove lower rack. Next, remove lower spray arm (see Lower Spray Arm Removal procedure, above). Squeeze tabs on coarse strainer to release (shown below).



Lift coarse strainer out and repair or replace as necessary. Reverse the procedure to reinstall the coarse strainer.

**Fine Strainer Removal**

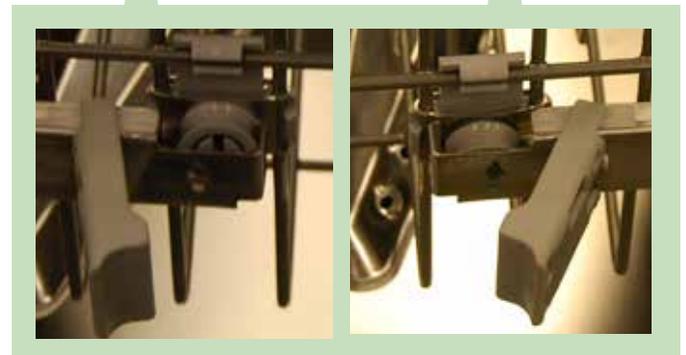
To access fine strainer, open door and remove lower rack. Next, remove coarse strainer (see Coarse Strainer Removal procedure, lower left). Slide fine strainer counter-clockwise to disengage.



Lift fine strainer out and repair or replace as necessary. Reverse the procedure to reinstall the fine strainer.

**Upper Rack Removal**

Slide upper rack out to full extension, release left and right clips by swinging out, see photos below. Lift rollers out of slide rails pull forward and remove rear rollers from slides.



## **WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Vent Assembly Removal

Remove four TORX screws shown in photos below.



Remove the panel and set aside to gain access to the mounting screws for the vent assembly, remove screws as shown in photo below.

Remove the two screws from top panel of dishwasher shown in photo below. Remove cover and set aside



At this time the vent assembly can be removed from unit by lifting up and out, from the top of unit.



Reverse previous steps for installation.

**WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

**Base Pan–Front View**

The base front panel is pictured below, note that front levelling legs are manual adjustment on the 201 series model. The rear leg is adjustable from the front with a flat blade screwdriver in center of panel.



Front legs adjustable on 301 from front

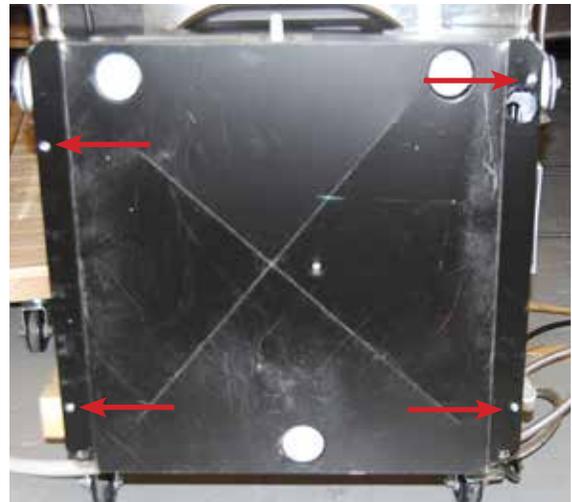


301 series model

Remove two T20 Torx screws shown in photo above, top with arrows. Remove panel and place in safe location.

**Base Cover Disassembly**

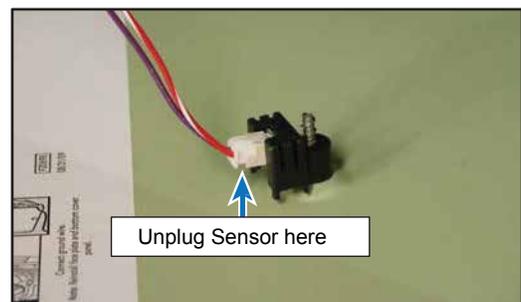
Remove the four T20 TORX® screws that hold the bottom base to the dishwasher superstructure. The image in next column shows the location of these screws. With the panel removed, locate the moisture sensor and unplug, leaving the moisture sensor attached to the base pan.



**CAUTION**

After the four screws that secure the pan to the frame are removed, be careful because the moisture sensor is mounted to the pan and the wiring could be damaged.

The image below shows the moisture sensor secured to base pan. The sensor is secured in place by one T15 TORX screw.



Note: Place base pan in a secured area. Take care not to damage the sensor.

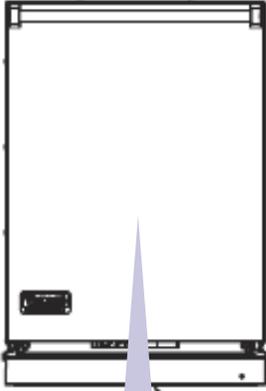
With the base pan removed, you now have access to locate, diagnose, and service all the components.

# Disassembly

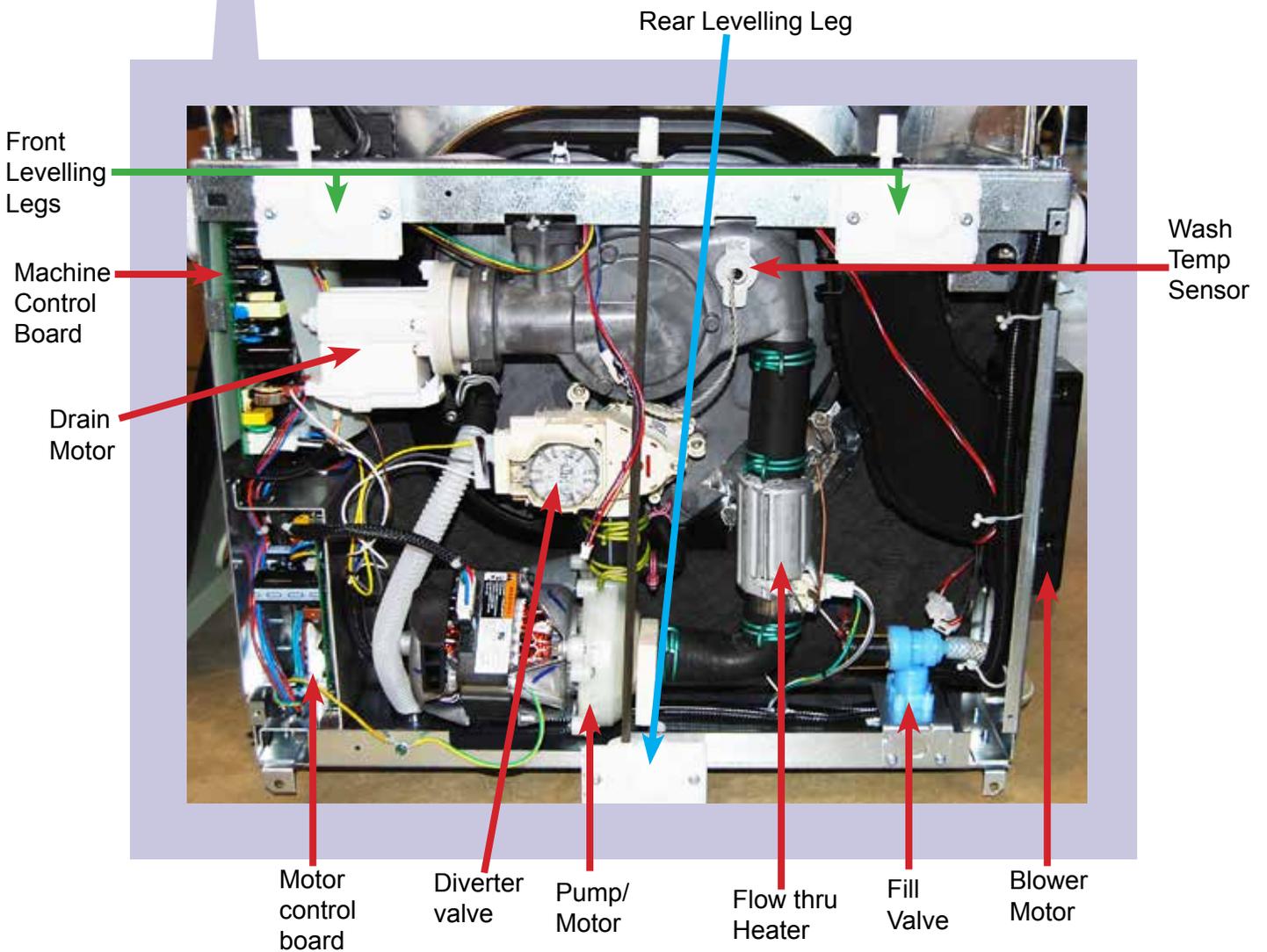


## **! WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.



### Parts Location - Base Unit

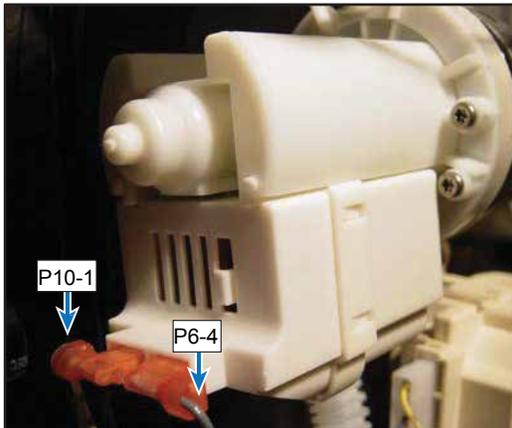


## ⚠ WARNING

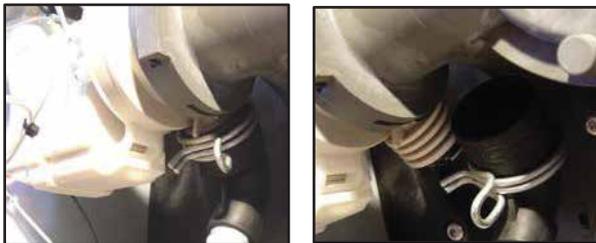
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Drain Motor Disassembly

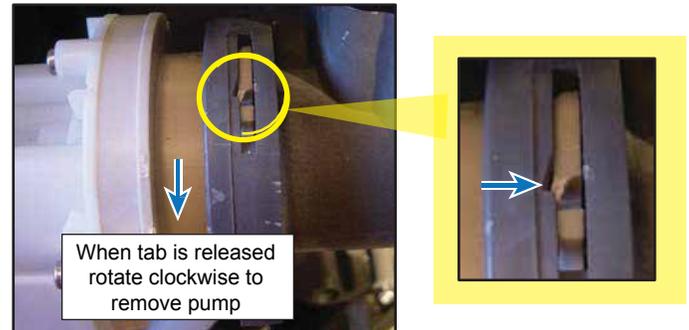
The image below shows the drain motor. When required, the main control sends 120-volts from terminal P6-4 (brown) wire on the control board and Neutral. Unplug the wires to the motor.



Locate the drain hose on the rear of the pump. Using a pair of pliers, disconnect the hose. Image below (left) shows the hose connected and below right shows the hose disconnected.



Next, release the drain motor from the sump assembly. Locate the release tab (indicated by the yellow dotted line, below left). Using a flat blade screwdriver, bend the tap in the direction shown by the arrow (below right) to release the pump from the main housing. Grasp the pump and rotate clockwise and the pump can be removed.



When reinstalling pump, make sure to bend the tab back in place to lock the pump in the sump housing.

The image below (left) shows the pump removed. The image below (right) shows sump area with pump removed. Note the location of the O-ring gasket in the sump. Make sure the gasket is in place when reinstalling the pump or the unit will leak water into the base pan.



# Disassembly

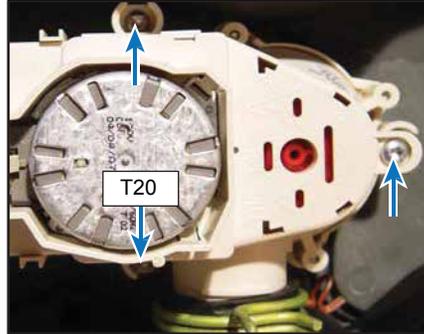


## **⚠ WARNING**

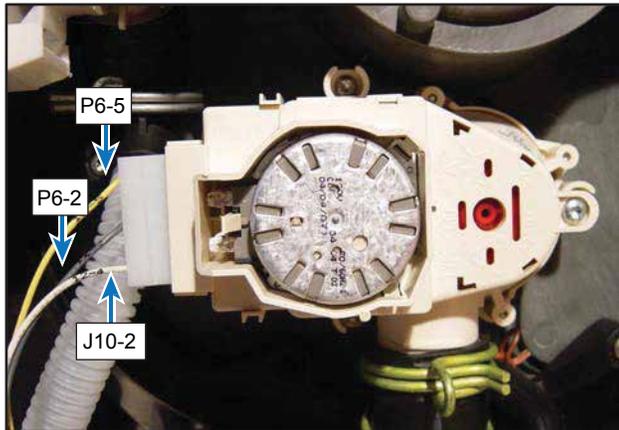
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Wash Diverter Disassembly

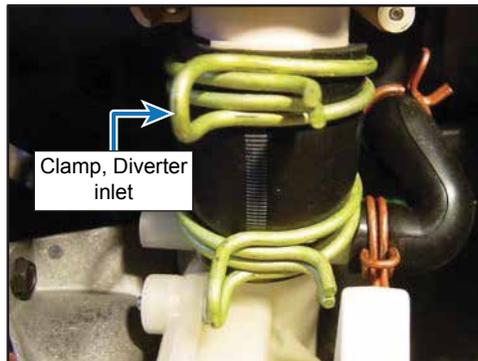
The wash diverter is designed to direct the water flow to the upper arm, lower arm or both. When required, the main control sends 120-volts AC from terminal P6-2 (gray) wire on the control board and neutral to activate the motor. The yellow wire on the diverter sends line voltage back to the control board to P6-5 (line in-yellow wire) and tells the controller the position of the diverter.



Remove the diverter from the sump assembly. The image below (left) shows the rear of the diverter and below right shows the sump area with the diverter removed.



Disconnect the hose clamp connection from the diverter inlet as shown.



The wash diverter is attached to the sump by the use of three T20 TORX screws. Remove all three screws.

## **⚠ CAUTION**

It is recommended that the diverter be taken out before removing the circulation motor. It makes it easier to handle the motor assembly.

## ⚠ WARNING

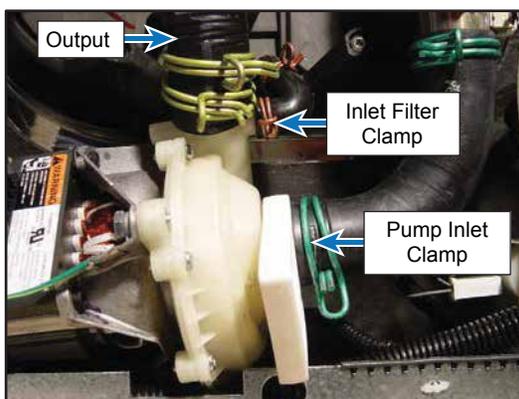
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Circulation Motor Disassembly

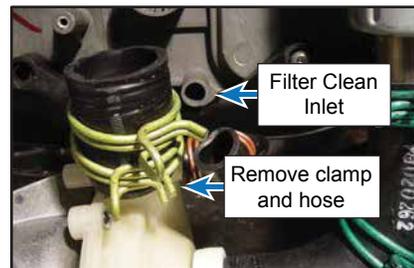
The Dishwasher use a single speed, capacitor assist wash motor. Voltage between P5-1 and P5-2 should be 120 VAC. If voltage is not present, verify wiring. If voltage is present and the motor is not running, check the capacitor and motor windings for proper readings.



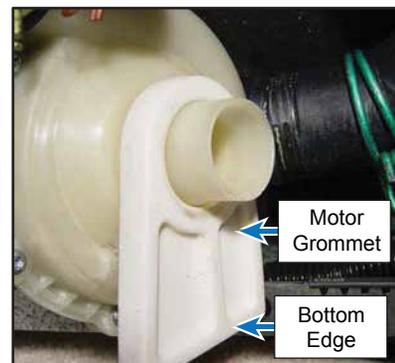
The image below (with diverter removed) shows the hose connections to the circulation motor inlet, output, and the filter clean sump inlet. Disconnect the green hose clamp from the heater tube to pump inlet as well as the red hose clamp from the filter inlet tube on the pump assembly. Disconnect the pump inlet hose from the pump assembly.



The image below shows the filter inlet hose to the sump disconnected. The arrow points to the "Filter Clean" inlet in the sump. Regardless of the position of the diverter, water is directed to this tube.



The image below shows the hose disconnected from the pump. Notice that there is a white motor grommet over the pump opening. Make sure it is back in place and bottom edge is facing base pan before reassembly. (The previous image on this page shows proper position of grommet).



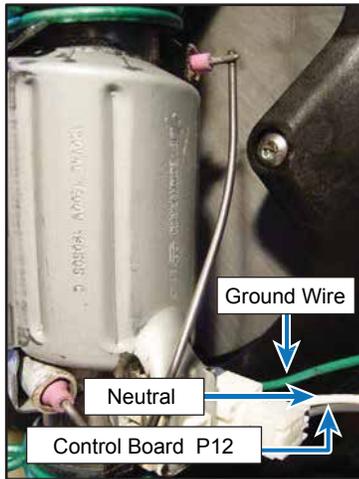
The motor assembly can now be removed for service.

## WARNING

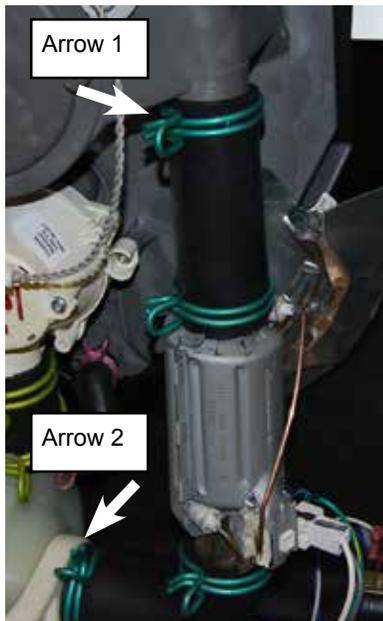
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Water Heater Disassembly

The dishwasher uses a flow-through heater that will heat the water as it passes through the center of the heater. In order to remove, unplug the 2-wire connector that supplies power to the heating element and the ground wire which connects to a spade terminal on the heater housing. This image shows the connections.



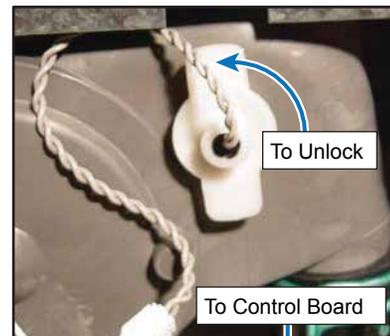
Next, disconnect the two clamps that hold the heater assembly to both the sump outlet (Arrow 1) and circulation pump inlet (Arrow 2) shown here. The heater can now be removed for service. You will need to transfer the two 1-1/2" OD hoses to the new heater assembly. The element is a 120-volt, 12 ohm, 10 amp, 1200 watt draw. It is controlled from P12 (gray) to Neutral on the main terminal block.



### Water Temperature Sensor Removal

The water temperature sensor will sense the temperature of the water throughout the wash cycle. It is an N.T.C (Negative Temperature Control) sensor which reads approximately 47k  $\Omega$  ohms at 77° ambient. As the water temperature rises, the resistance drops.

In order to remove, unplug the 2-wire connector and then twist the sensor counterclockwise to release from the sump assembly. The image below shows the temp sensor in the locked position. Grasp the sensor tabs and twist counterclockwise to release.



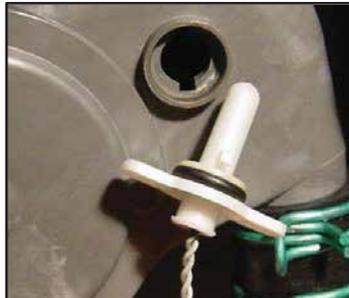
The image below shows the temp sensor in the unlocked position.



While grasping the tabs, pull the sensor out of the sump assembly as shown.

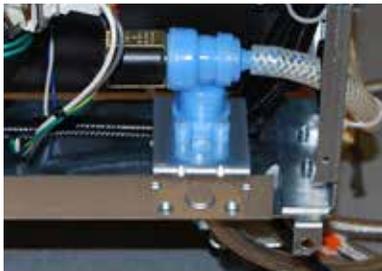
## ⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.



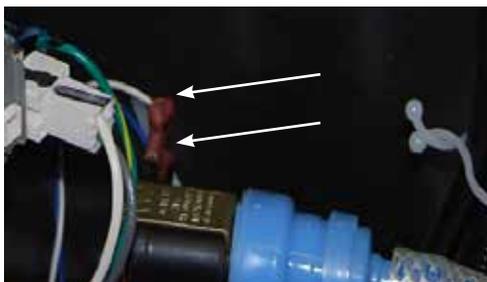
### Fill Valve Disassembly

In order to access the fill valve, you will need to lay the unit on its back. Remove the base pan and moisture sensor. The valve is secured to the rear frame with two TORX screws as shown.



Remove the two screws shown above and remove the fill valve from the base.

Unplug the white and blue wires from the coil, and then disconnect the fill tube from the valve outlet. The fill valve is a 120-volt valve. The coil is a 1.1K  $\Omega$  ohm coil and is controlled from P6-3 (line voltage-blue) and Neutral on the main terminal block.



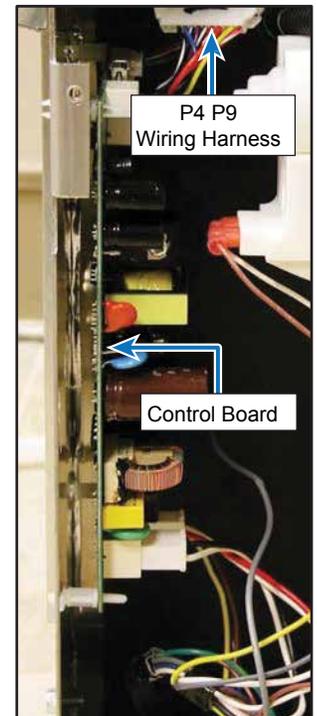
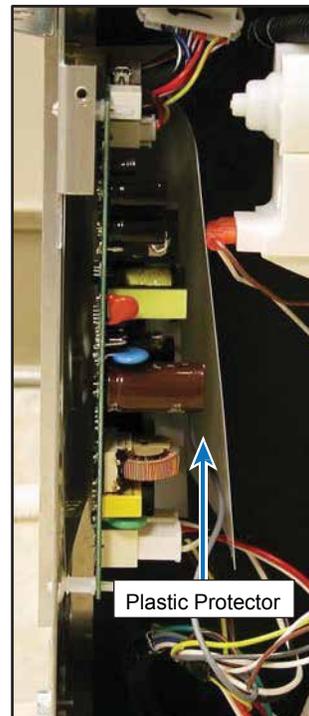
### Control Board Disassembly

The control board is secured to the inner left support structure of the dishwasher. Please exercise caution when removing in order to avoid any damage to the board and its components

## ⚠ CAUTION

In order to protect the electronic circuits on the board and avoid any damage caused by static discharge, Viking Range Corporation recommends the use of a ground strap.

Remove the sheet from the tabs and place aside. The image below (right) shows the protective sheet removed.



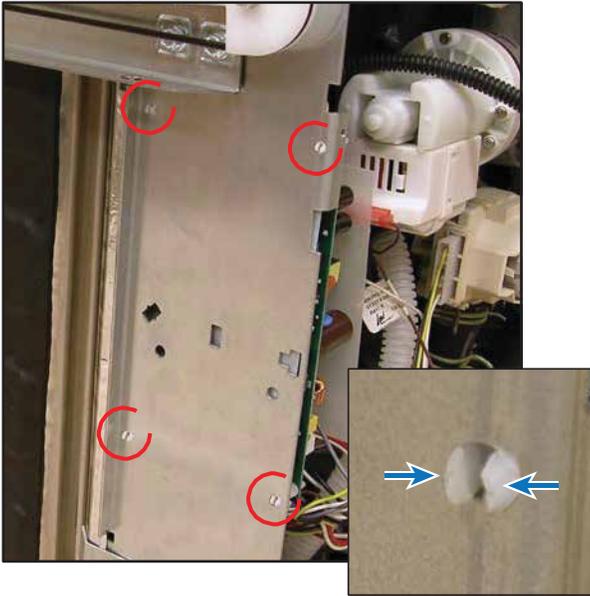
# Disassembly



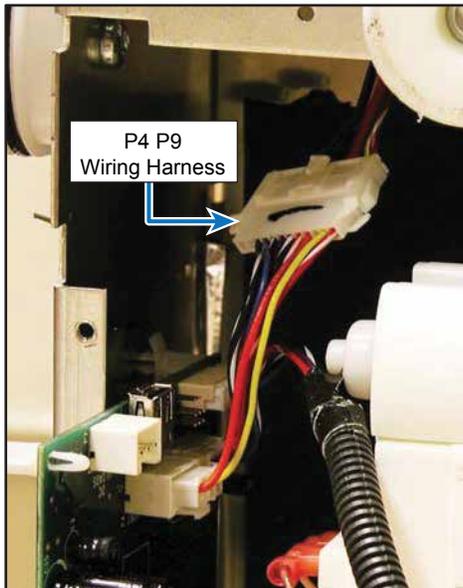
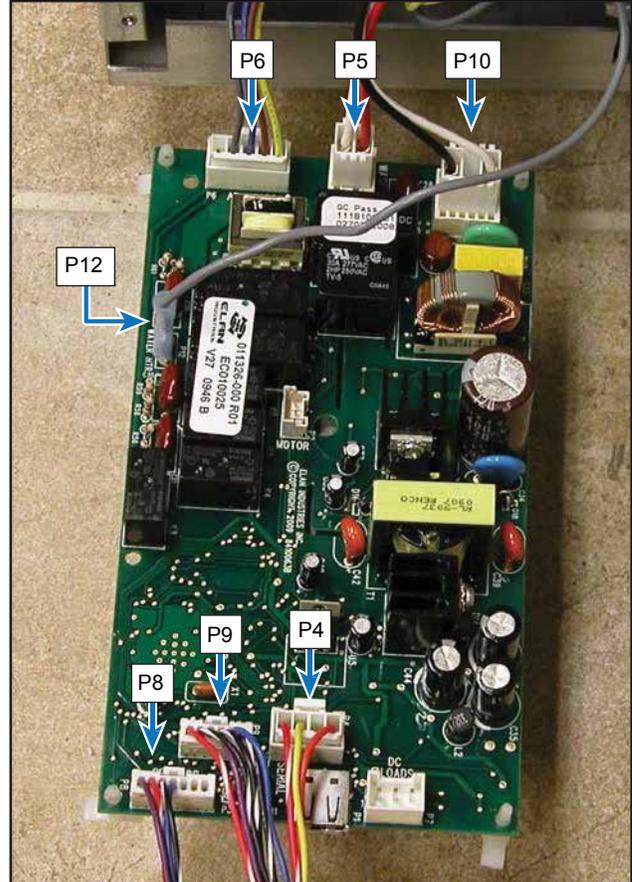
## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

The image below shows the locking tabs that hold the control board support (indicated by red dotted lines) to the dishwasher frame. Release these tabs in the directions shown by the arrows.



Disconnect P4/P9 wiring harness. Now carefully pull the board down and release from front.

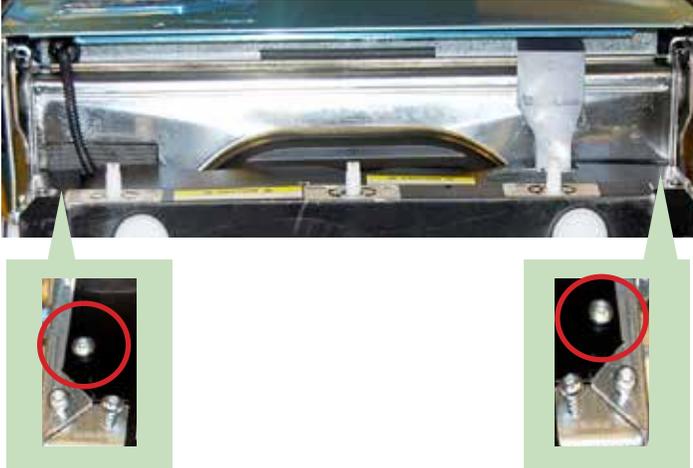


## ⚠ WARNING

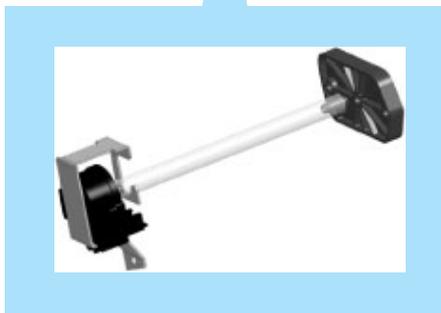
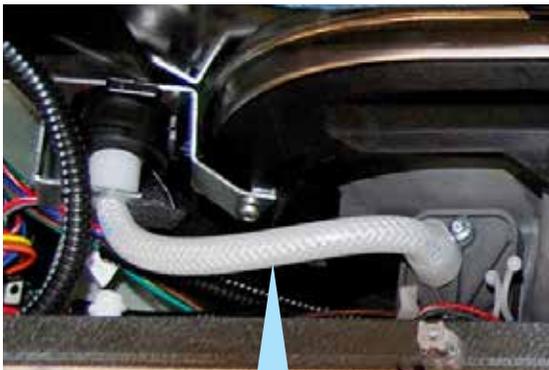
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Huba (Pressure) Sensor Removal

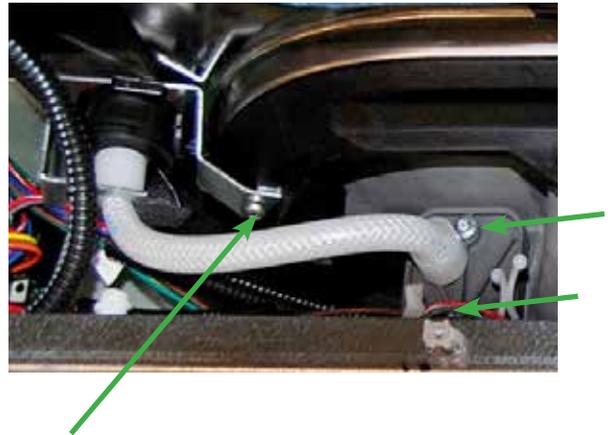
Remove front kick plate panel by removing the two screws shown in photos below.



You now have access to the Huba Sensor, shown in photo below.



Remove TORX screw from bracket and the TORX screws from the sump side, disconnect connector and remove Huba Sensor from unit.



Reverse previous steps to install Huba Sensor.

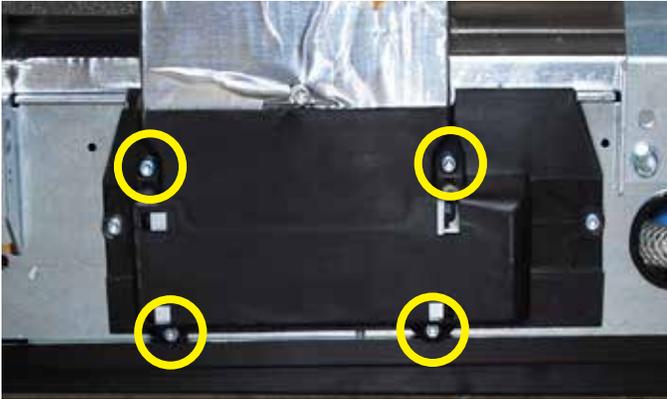
# Disassembly

## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Blower Removal

Remove the four screws holding the blower assembly to dishwasher.



The blower can be released from mount by using a small screwdriver to release tabs, see inset in photo below. Release tabs and slide blower assembly and pull out of mount.



Pull blower assembly out towards you slowly as shown above. Disconnect blower motor connection as shown below.



Release tab



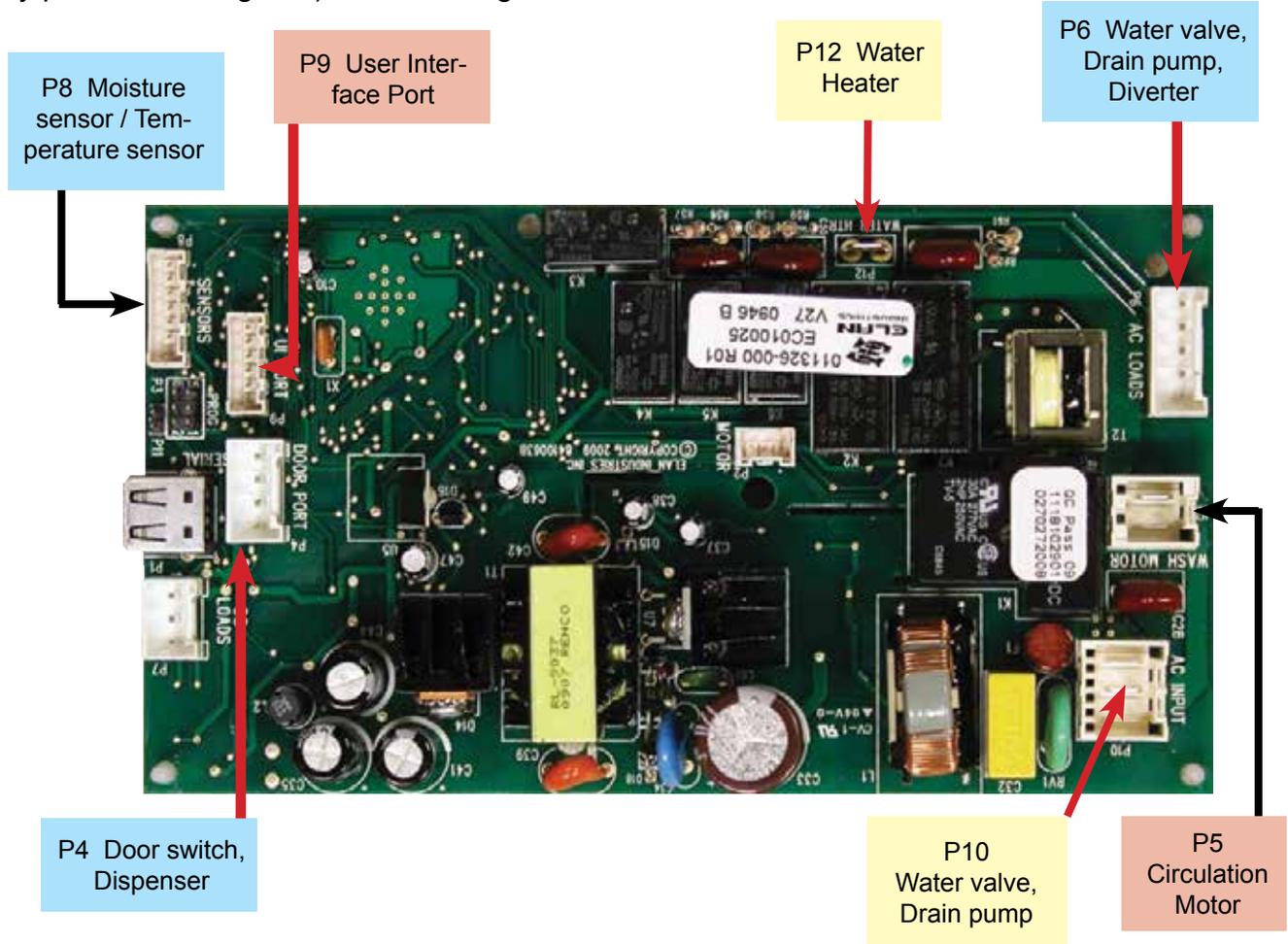
Reverse previous procedures to install the blower.

## ⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

### Control Board Test Points

The unit has a control board that controls the functions of the dishwasher. Components can be diagnosed via the control board. With the control board accessed (see Control Board Disassembly procedure, Page 31), the following can be measured:



Component	Control Board Test Point	Readings (Typical)
Door Switch	P4-1 (Yellow) – P4-2 (RD/WH)	0 Ω door closed ∞ Ω door open
Dispenser	P4-1 – P4-4	8.3 Ω
Wash Motor	P5-1 (Red) – P5-2 (White)	6.3 Ω
Water Valve	P6-3 (Blue) – P10-1 (White)	1.1K Ω
Drain Pump	P6-4 (Brown) – P10-1 (White)	15.1 Ω
Diverter	P6-2 (Gray) – P10-1 (White)	2.7K Ω
Moisture Sensor	P8-1 (Red/White) – P8-2 (Purple)	175K Ω
Temperature Sensor	P8-3 (Black/White) – P8-4 (Blue)	47K Ω @ 77° (varies based on temp)
Water Heater	P12 (Gray) – P10-1 (White)	12.00 Ω

## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

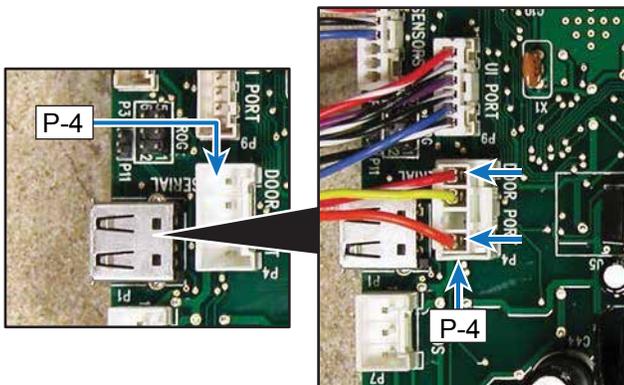
### Control Board Diagnosis

*(Some measurements require power and others require the unit not to be powered.)*

With the control board removed (see Control Board Disassembly procedure, Page 31 ), the following components can be diagnosed without removal of the components:

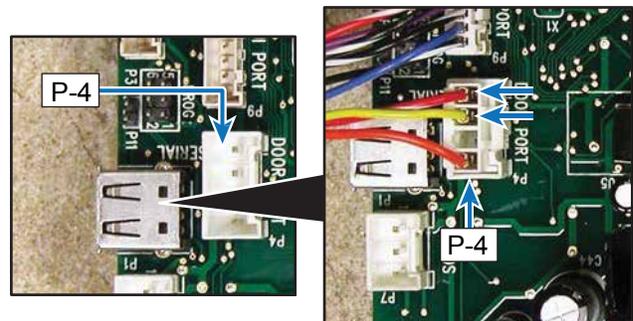
#### Door Switch

The door interlock switch controls 12 VDC to the control board. When the door is open, the contact opens and the board stops the operation. To check the switch, unplug the moxex connector and check for continuity between P4-1 (red/white) and P4-2 (yellow). With the door closed, the reading should be 0  $\Omega$  ohms. Open the door and the reading should be infinity ( $\infty$ ). If the readings are incorrect, check the wiring to the door switch and inspect the door switch.



#### Detergent Dispenser

The dishwasher uses a detergent dispenser to release detergent into the tub. As voltage is applied, the latch mechanism releases the dispenser door allowing detergent to enter the tub. Voltage between P4-1 and P4-4 should be 12 VDC when the dispenser is activated. If no voltage is measured, verify wiring.



*Note: Testing the soap dispenser can be achieved in the diagnostic mode.*

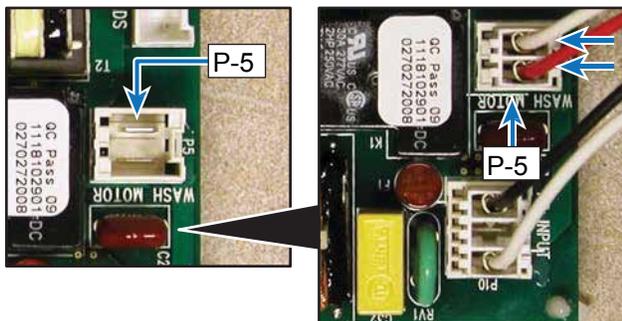
## ⚠ WARNING

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*(Some measurements require power and others require the unit not to be powered.)*

### Circulation Motor

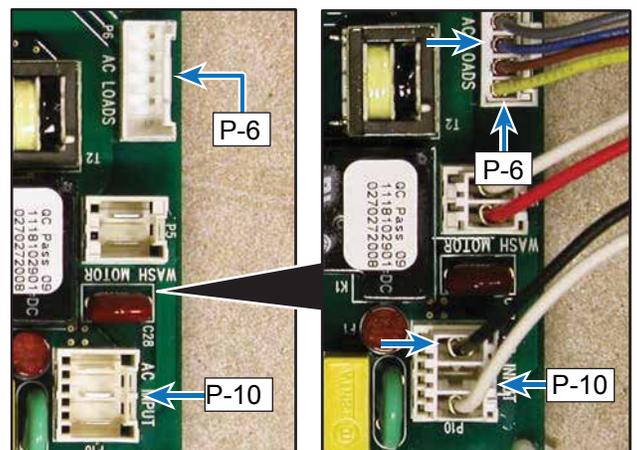
The 200 Series Dishwasher uses a single speed, capacitor assist wash motor. Voltage between P5-1 and P5-2 should be 120 VAC when the motor is activated. If voltage is not present, verify wiring. If voltage is present and the motor is not running, check the capacitor and motor windings for proper readings.



*Note: Testing the circulation motor can be achieved in the diagnostic mode.*

### Fill Valve

The dishwasher uses a fill valve to fill the machine with water. Verify as the valve is energized 120 VAC is present between P6-3 and P10-1. If voltage is present and no water enters, check the water supply and shut off valve to make sure water is being supplied to the unit. If water is present, unplug the wires to the fill valve and using an ohmmeter, check for approximately 1.1k  $\Omega$  ohms at the coil. If 0  $\Omega$  ohms are read, replace the fill valve (see Fill Valve Disassembly procedure, page 31).



*Note: Testing the fill valve can be achieved in the diagnostic mode.*

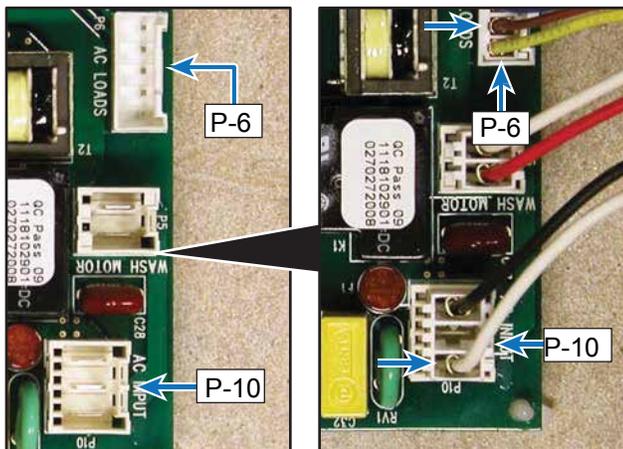
## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

*(Some measurements require power and others require the unit not to be powered.)*

### Drain Motor

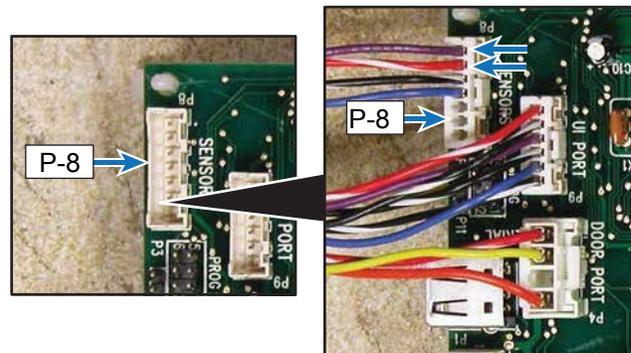
The dishwasher uses a drain motor to remove water from the tub at timed intervals during the wash cycle. In the drain mode, voltage between P6-4 and neutral should be 120 VAC. If voltage is measured, unplug the wires to the drain motor and using an ohmmeter, check for approximately 15.1  $\Omega$  ohms at the valve. If 0  $\Omega$  ohms are read, replace the drain pump. If readings are correct, remove pump and check for obstructions in the drain pump (see Drain Motor Disassembly procedure, page 27).



*Note: Testing the drain motor can be achieved in the diagnostic mode.*

### Moisture Sensor

The dishwasher uses a moisture sensor that is mounted in the base pan of the dishwasher. Any moisture that comes in contact with the sensor will cause the unit to stop filling, operate the drain pump, and signal an error code. If the sensor is open, an open fail code will signal (see Fail Codes, page 12). Resistance between P8-1 and P8-2 should be 175K  $\Omega$  ohms.



## ⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

*(Some measurements require power and others require the unit not to be powered.)*

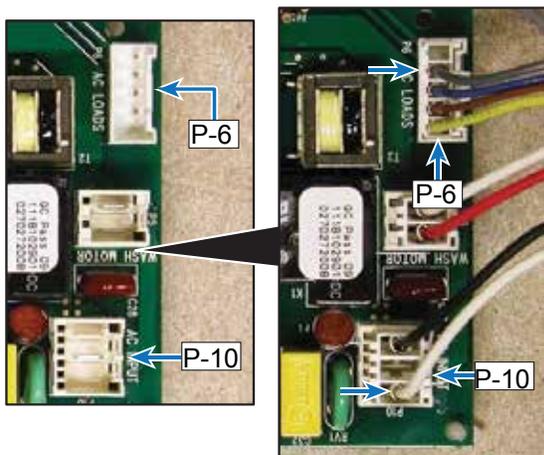
### Wash Diverter

The dishwasher uses a wash diverter to divert water to either the upper arm or lower arm during the wash cycle. This allows for low water consumption and a better wash to both upper and lower racks.

At the beginning of each wash cycle, the control board positions the wash diverter to its proper starting position. It is monitored by a built in monitoring switch that sends 120 VAC back to P6-5. Depending on how long the switch is closed determines what position it is in.

To check the wash diverter, check the motor with an ohmmeter between P6-2 and Neutral. It should read approximately 2.7k  $\Omega$  ohms. If readings are incorrect, verify wiring connections to the diverter. If the wiring is proper, replace the wash diverter (see Wash Diverter Disassembly procedure, page 28).

*Note: If the diverter does not position itself, a Diverter time out error will display (see Fail Codes, page 12).*

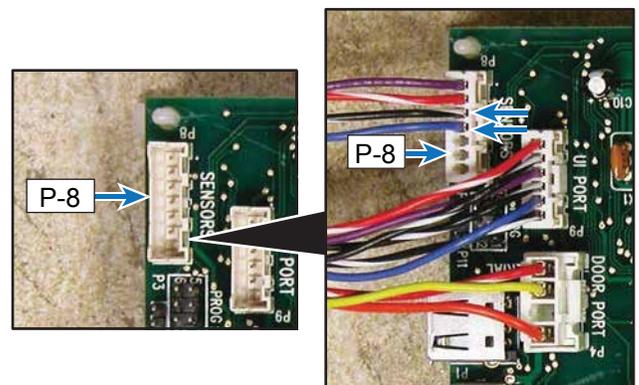


### Water Temperature Sensor

The dishwasher uses a water temperature sensor that is mounted in the sump of the dishwasher. It is an N.T.C (Negative Temperature Coefficient). As the temp of the water rises, the resistance drops (and vice-versa).

In the 200 Series dishwasher, it also serves as a water input sensor as well. During a fill cycle, an increase or decrease in water temperature is monitored by the control board. This temperature change due to incoming water temperature fluctuations is realized by the board as water entering the machine. If no change in temperature is recorded, a FILL error code will be displayed. If the sensor is open, an OPEN fail code will signal (Refer to page 12 for fail codes).

The control board monitors P8-3 – P8-4. Resistance should be 47K  $\Omega$  @ 77°. If no resistance is found, check wiring. If wiring is OK, replacement of the sensor is necessary.



## **WARNING**

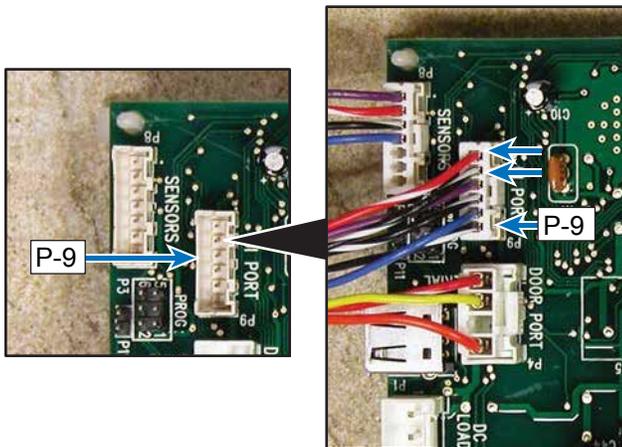
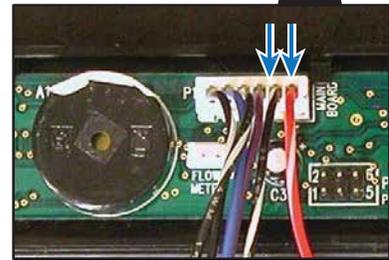
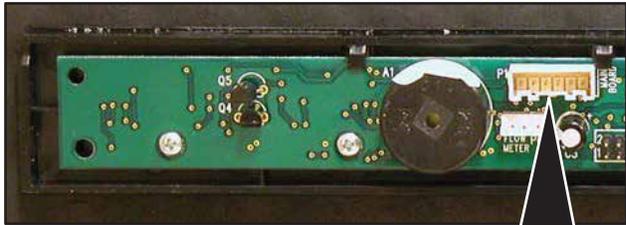
To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

*(Some measurements require power and others require the unit not to be powered.)*

### User Interface Port

The user interface allows the end consumer to make cycle selections. As the selection is made, the signal is sent to the control board via a ribbon connection. Voltage between P9-1 and P9-2 should be 12 VDC. If no voltage is found, check ribbon connector. If connector is OK, replacement of the user interface is necessary (see Control Panel Removal procedure, page 16).

### User Interface Board



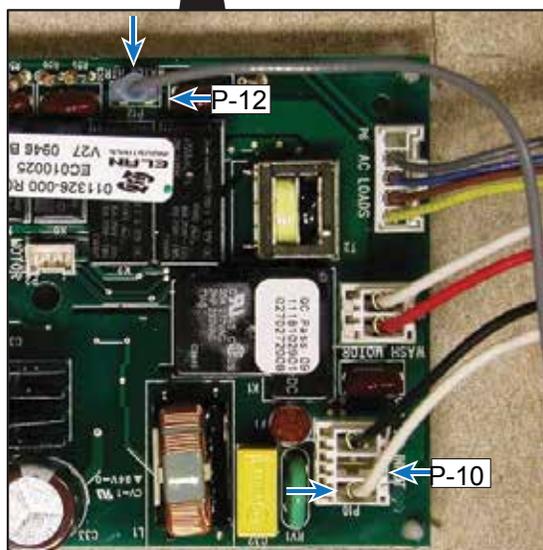
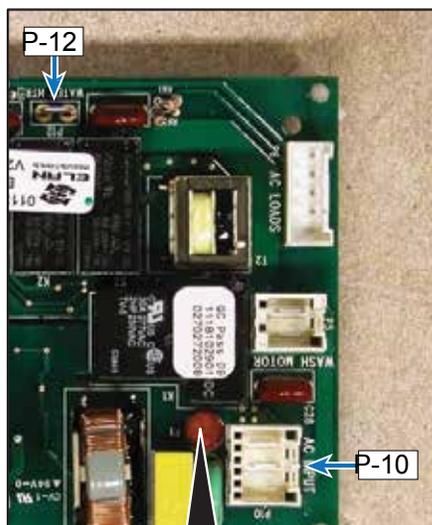
**WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect electrical power source to unit, unless test procedures require power to be connected. Discharge capacitor through a resistor before attempting to service. Ensure all ground wires are connected before certifying unit as repaired and/or operational.

*(Some measurements require power and others require the unit not to be powered.)*

**Water Heater**

The unit uses a 120-volt, 1200 watt heater to heat the water during the wash cycle. To check the heater, unplug the gray wire on P12 and using an ohmmeter, check for 12  $\Omega$  ohms between the gray wire and Neutral. If 0  $\Omega$  ohms are read, check the wiring to the heater. If the wiring is correct, replace the heater. The heater can also be tested in the Diagnostic mode (see page 12).

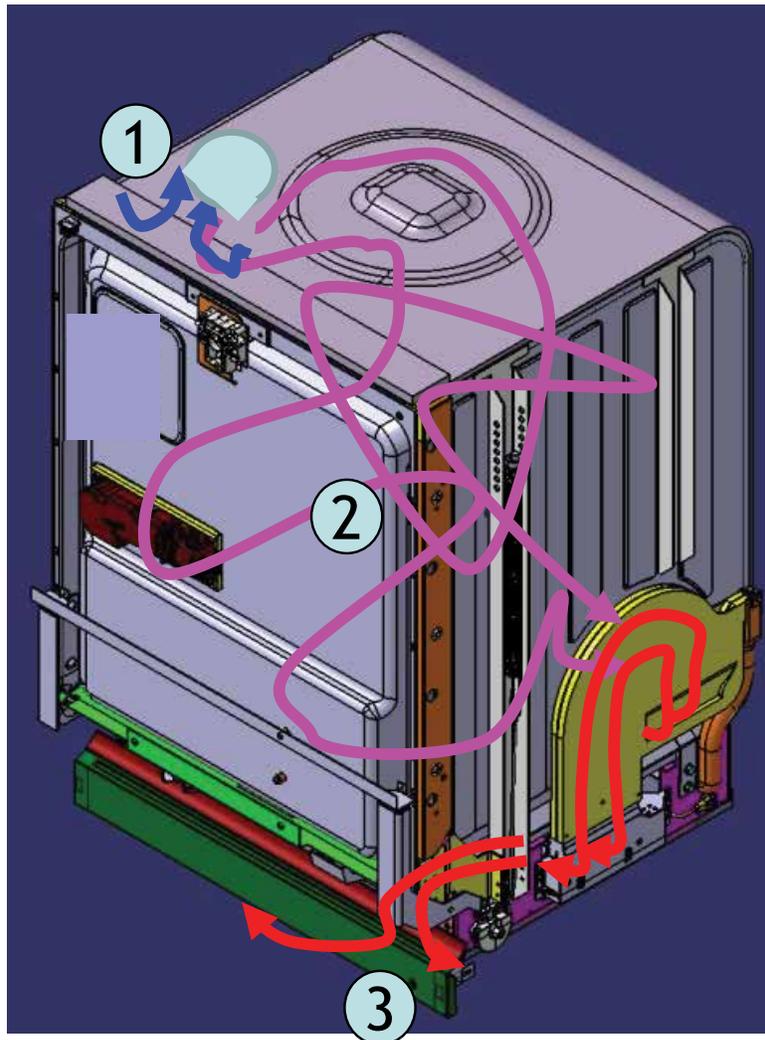


## WARNING

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### Dry System

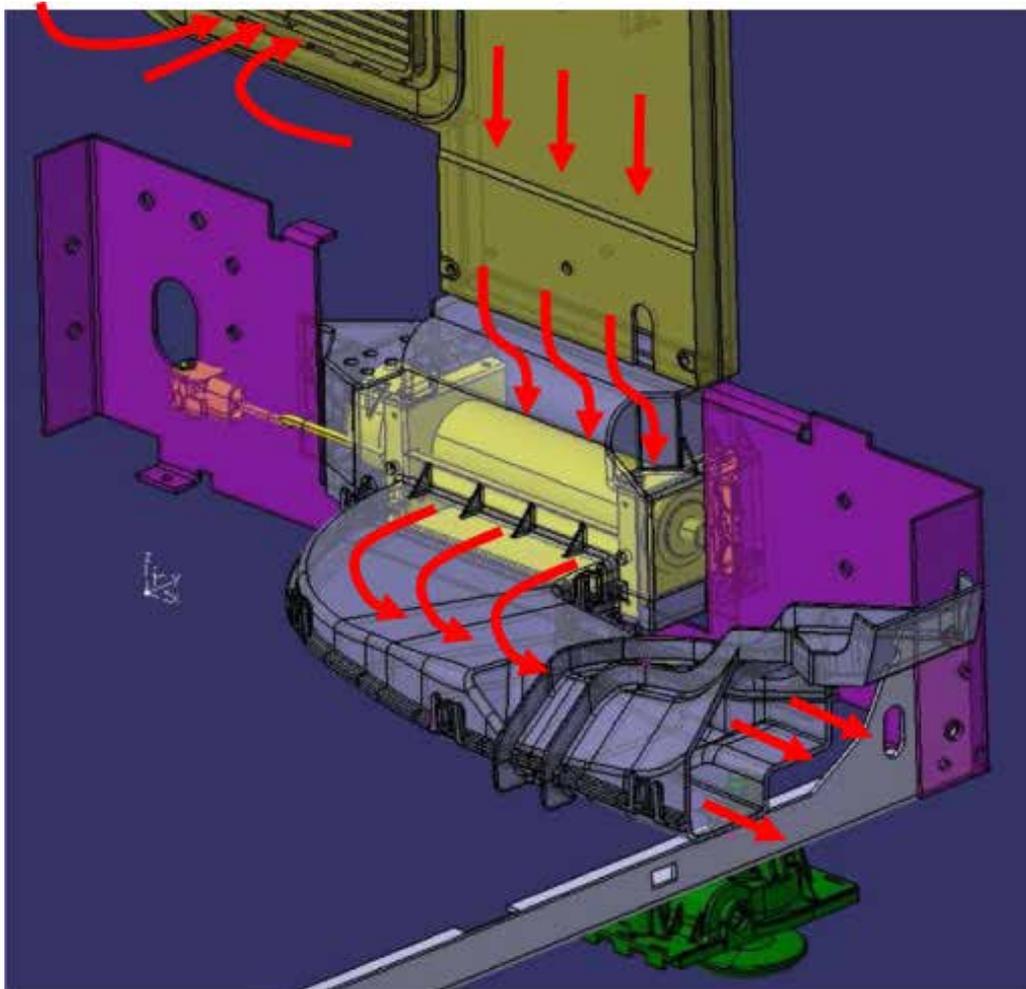
1. Cold Air enters through the top vent to the dishwasher from inside the surrounding cabinet
2. Cold air enters to the dishwasher and runs through the dishes and become hot and moist
3. This hot and moist air (steam) is sucked by blower through air water inlet and directs to outside through the new duct design



**⚠ WARNING**

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Air is pulled from dishwasher interior by blower during the dry cycle, in conjunction with the energizing of the vent wax motor. The moist air is exhausted through the blower out the front kickplate grill. There is no heater element in the drying system, drying is accomplished as explained on the previous page.



## Troubleshooting Guide

Below are some general guides should a problem be detected. Please refer to the test procedures in this manual to determine the defective component.

Problem	Probable Cause	Correction
The dishwasher does not start	Door is open "Delay Start" option is ON Water supply is disconnected Power cord is disconnected Fuse is blown	Make sure door is closed and check door switch Turn option OFF Verify supply and check water valve Verify power supply and connection Check breaker
Spotting and filming	Hard water Filter block No rinse aid Dishwasher detergent	Check water hardness Check filters for obstructions Add rinse aid and check dispenser Check amount of detergent and verify it is not old and caked
Wash arms not rotating freely	Obstruction Low water pressure	Remove obstruction Check water pressure
Strainer blocked	Obstruction	Remove obstruction
Excessive foam in machine	Improper detergent	Use only dishwasher detergent
Small particles deposited on items	Detergent Improper loading Filter clogged	Use fresh detergent Make sure wash arm turns freely Verify filters are free of obstructions
Detergent left in detergent compartment	Compartment blocked Old detergent Dispenser	Verify no obstructions Use new detergent Verify dispenser is opening properly
Dishes not dry	Rinse aid Improper loading Water temperature Heater	Verify rinse aid in dispenser Verify proper loading Verify proper water temperature Verify heater is working
Dishwasher will not fill	Door open Water valve Water supply	Verify door is closed and check door switch (must press start and shut door within four seconds) Check water valve and check for obstructions Verify water supply and check supply line
Water backs up in sink when dishwasher drains	Food waste disposer	Verify no obstructions in trap at sink
Water left in bottom near filters	Normal	Some water in bottom is normal
Dishwasher will not drain	Drain hose Drain pump	Verify hose is not obstructed or kinked Verify no obstructions in pump

VDB541 Motor Control Circuits

