


**⚠ WARNING**




**⚠ ADVERTENCIA**



## Electrical Shock Hazard/Riesgo de Descarga Eléctrica

Death or serious injury can result from failure to follow these instructions.

- Service by a qualified service technician only.
- Disconnect power before servicing this product.
- Reconnect all grounding devices after service.
- Replace all parts and panels before operating.

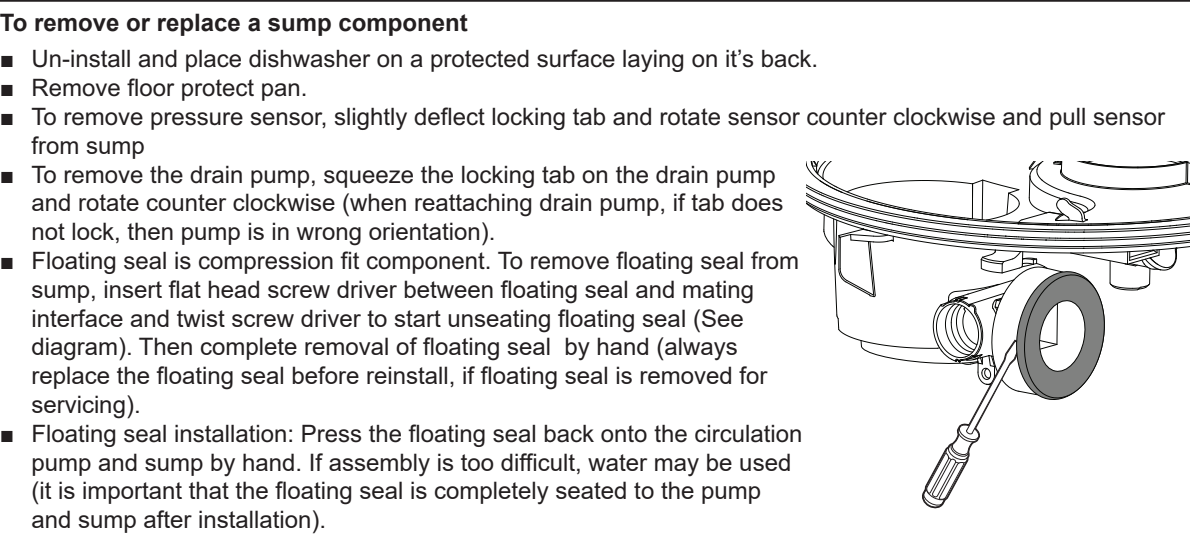
Usted puede morir o sufrir lesiones graves si no siguen estas instrucciones.

El servicio técnico sólo debe ser realizado por un técnico calificado.

- Desconecte el suministro de corriente antes de realizar el servicio técnico.
- Luego del servicio técnico, vuelva a conectar todos los dispositivos de conexión a tierra.
- Reemplace todas las piezas y paneles antes de utilizar.

Ciertas piezas internas no tienen conexión a tierra en forma intencional y pueden presentar un riesgo de descarga eléctrica sólo durante la reparación. Personal de reparación – **NO** toque las siguientes piezas cuando el aparato está recibiendo energía: **elemento de calefacción, pan protección del piso, bomba principal y bomba de drenaje.**

1. Level dishwasher left to right and front to back.
2. Verify presence of air gap or high drain loop.
3. Confirm spray arms turn freely and jets are clear.
  - Use Clear Service Door, part number WXG5X20002, to verify proper spray arm operation (see TB01-14 for details).
4. Confirm ultra fine filter (consumer removable) has no tears and is not clogged (clean as needed).
5. Clean sump if needed.
6. Check for fault codes.
7. Verify thermistor is within specs (see Chart).
8. Confirm detergent cup operation (use Service Mode).
9. Inlet water temp should be 120 degrees F.
10. Check for proper water fill level (use Service Mode).
11. Test water hardness with WD01X10295 test strip. Adjust detergent use accordingly, check Owner's Manual or detergent use instructions.
12. Use high rated detergents; tablets or packs work best. Refer to Owner's Manual.
13. Use a rinse agent.
14. Load dishwasher per Owner's Manual.
15. Select proper cycle, refer to Owner's Manual.
16. Verify it is plugged in and is lit green during cycle is active.



1. Check Bottle Wash nozzles for debris. The Bottle Wash nozzles operate at the same time as the middle spray arm.
2. Check holes in spray arm for foreign matter.
3. Check spray arms for rotation.

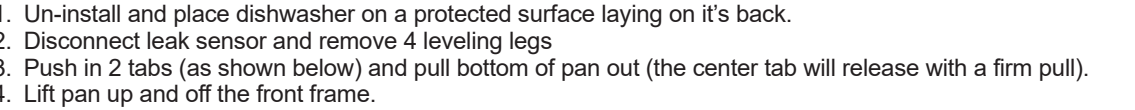
**To Disassemble Mid-Level Arm:**

1. Pull upper rack all the way out and remove.
2. Rotate hub on top side of spray arm counter-clockwise to remove.
3. Remove Bottle Wash Jet cover. Remove Bottle Wash Jet hose.
4. To remove conduit, depress clip on the top rear of conduit. Push conduit away from rack while depressing clip to remove.
5. To reinstall arm, reverse procedure.

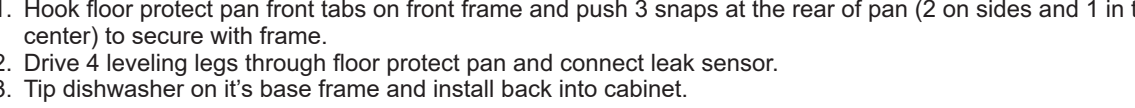
**NOTE:** Mid arm to be installed with spray jets facing the upper rack. Bearing to be placed between nut and bottom of mid arm.

There are 3 locking tabs on the locking hub. There are 4 locking tab receivers on the bottom of the wash arm. Only one tab is locked at any given time.

1. Locate the tab which is locked, the locking hub "wing" will be flush with the spray arm.
2. Insert a small screwdriver to release pressure on the tab. Take care to not over bend tabs to prevent breaking.
3. Turn the hub clockwise to release.



1. Un-install and place dishwasher on a protected surface laying on it's back.
2. Disconnect leak sensor and remove 4 leveling legs
3. Push in 2 tabs (as shown below) and pull bottom of pan out (the center tab will release with a firm pull).
4. Lift pan up and off the front frame.



- Hook floor protect pan front tabs on front frame and push 3 snaps at the rear of pan (2 on sides and 1 in center) to secure with frame.
- Drive 4 leveling legs through floor protect pan and connect leak sensor.
- Tip dishwasher on it's base frame and install back into cabinet.

A technical diagram of a refrigerator's interior. A line points from the text "Water Level" to a circular inset. The inset shows a close-up of the water level sensor, which is a small electronic component mounted on the back wall of the refrigerator compartment, near the top. The sensor is connected to a cable that runs down the side of the compartment.

1. Remove toekick and pre-toekick (on some models) by removing attachment screws from both sides.
2. Remove toekick barrier insulation.



3. Unclip and disconnect wire harness. To unhook cables, use an Allen wrench or hook tool to lift and pull the cable toward the front of the dishwasher, keeping constant tension on the cable. After unhooking, keep constant tension on the cable and secure cable head in the keeper clamp to prevent springs from being disconnected.



Side View

Side View

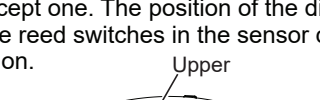
Cable head in keeper clamp

1. Remove four (two each side) T-25 screws.
2. Remove two 1/4" hex head screws inside the bottom of the door.
3. Deflect lower horizontal vent and slide outer panel down. **Note:** There are no components mounted in the outer door.

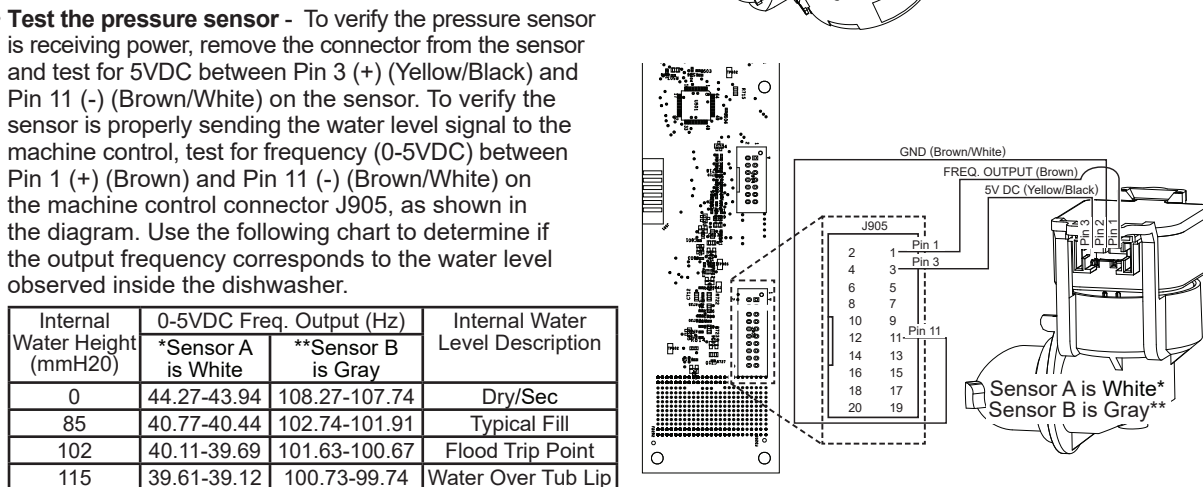
Normal spray arm rotation is clockwise; reversing is counter clockwise. The diverter switches positions by turning the pump handle. The diverter has 4 outlets. The diverter has 4 outlets. A disc inside the diverter rotates up into position when the circulation pump is on, blocking off all ports except one. The position of the diverter is monitored by the control via the red sensor on the wiring harness. The red switches in the sensor detect the position of magnets on the diverter disc when the circulation pump is on.

**To check the operation of the diverter :**

Using a Clean Service Door, place the dishwasher in service mode. Fill it with water and then turn the circulation test on. When the unit turns the pump on, it will check the sensor to see if it is in the lower spray arm "home" position (clockwise rotation), and if it is not, it will turn the pump off and try again. If it is in the correct position, the pump will stay on. This process will repeat for up to 2 minutes. If the diverter never changes position after the pump cycles on/off continuously, replace the diverter. If the diverter never finds its correct "home" position, check the operation of the diverter sensor by holding a magnet next to it and checking electrical continuity across the red switches.

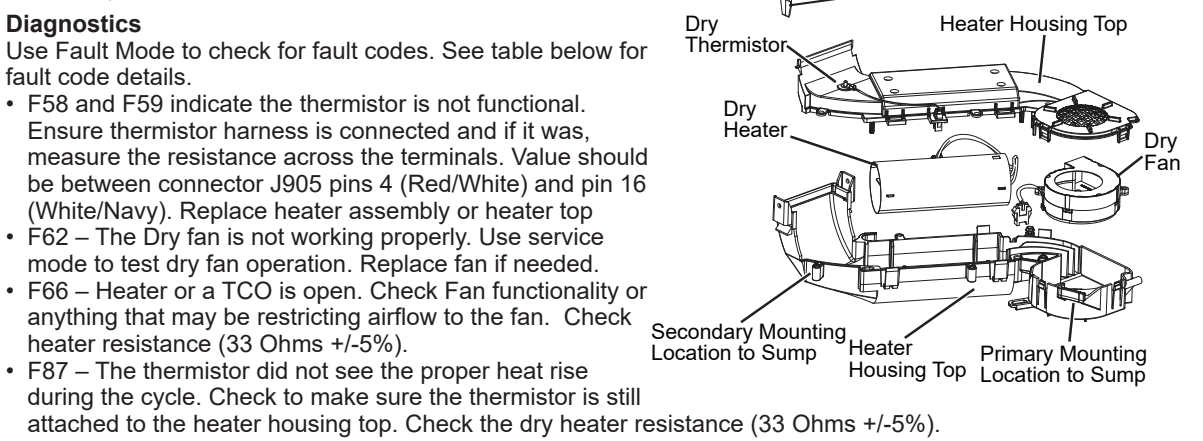


The diagram shows a top-down view of the diverter assembly. It features a central circular hub with four outlets. The outlets are labeled: 'Upper' at the top, 'Lower' at the bottom, 'Reversing' on the left, and 'Deep Clean Jets/Silverware Selves' on the right. A curved arrow indicates the clockwise rotation of the diverter disc. A small rectangular component is shown at the bottom, connected to the central hub by a line, representing the sensor or wiring harness connection point.



1. Dishwasher must be uninstalled from cabinet and placed on its back.
2. Remove fill hose and drain hose from fill funnel / vent.
3. Remove heater fan assembly mounting screw (see bottom view) from sump and disconnect harness connections (heater, fan and thermistor).
4. Place dishwasher on its frame and open the door.
5. Apply pressure to Fill funnel / vent to compress fill gasket. While pressure is applied, rotate fill cap 90 degrees counter clockwise. Remove fill cap. Heater assembly and vent is now free from dishwasher.
6. To separate fill funnel / vent from heater assembly, carefully detach each tab.

The diagram illustrates the removal of the heater assembly and vent from the dishwasher. It shows a side view of the heater assembly with a fill funnel/vent attached. Callouts point to the Fill Gasket, Fill Cap, and Fill Funnel Tabs.



| Start LED Blinks | SSD Display | Fault Name                          | Action Item                                                                                                                                                                          |
|------------------|-------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2                | Adc or HfF  | Internal Board Failure              | Replace machine control board. Power cycle to exit.                                                                                                                                  |
| 4                | CfE         | Continuous Fill Fault               | Check for a stuck open water valve by disconnecting power to dishwasher. Check if water valve is getting continuous voltage. Power cycle to exit.                                    |
| 5                | Fld         | Failure to Drain                    | Check for clog in air gap/drain, drain hoses, and drain pump. Check that disposer plug has been removed. Check drain hose routing to match the installation instructions.            |
| 6                | H2O         | Water Supply Failure                | Verify the water supply line is connected properly, the supply line valve is turned on, and restart the cycle.                                                                       |
| 7                | AcF         | High Supply Voltage                 | Check the supply voltage. Supply voltage is greater than 170V.                                                                                                                       |
| 8                | dLF         | Door Latch Failure                  | Check continuity of the harness. With the door closed there should be continuity between all 3 pins of the door latch. Replace door latch if no problems are found with the harness. |
| 9                | PrS         | Pressure Sensor Failure             | Verify pressure sensor harness has continuity. Unplug/plug harness at board & pressure sensor. Replace pressure sensor if needed.                                                    |
| 10               | FuS         | Board Circulation Pump Fuse Failure | Check continuity on the circulation pump fuse. Check the circulation pump motor. See, <b>Diagnosis of No Drain AND No Circulation</b> section for details.                           |
| 11               | ISF         | Inverter Software Fault             | Power cycle the unit. If problem persists, then replace the machine control board.                                                                                                   |
| 12               | IdC         | Relay Duty Cycle High               | Replace machine control board. Power cycle to exit.                                                                                                                                  |

When the dishwasher is in Standby Mode (Cycle Selection Mode), press and hold the Cycle Select or furthest pad on the left and Start pads simultaneously for 5 seconds. The LCD will display the software version, then report door status for 10 seconds, errors will then be displayed as listed below.

After door check, control will enter mode to display any fault codes currently detected by the control. Fault displays cannot be cleared manually. They will be automatically cleared when fault condition is no longer present. LCD will scroll any active failure codes.

To exit the Fault Code Display Mode, press any key.  
Pressing the **Delay Hour** button will cycle through each active fault code one at a time.  
**NOTE:** The press and hold for 5 seconds is still valid.

| SSD       | Fault Type                                 | Fault Description                                                                                                                                                                                |
|-----------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F5        | Inverter Found On Incorrect MC Personality | MC personality has not been configured correctly                                                                                                                                                 |
| F6        | Wireless Module (On some models)           | Communication lost with wireless module                                                                                                                                                          |
| F16       | High Water Temperature                     | High water temperature detected.                                                                                                                                                                 |
| F32       | Water Level Sensor Invalid                 | Pressure Sensor reading falls out of range or is unplugged.                                                                                                                                      |
| F33       | Low Pressure Sensor Reading                | Pressure sensor reading too low during calibration.                                                                                                                                              |
| F34       | Floor Protect Pan Detected Fault           | Water present or detected in the drain pan.                                                                                                                                                      |
| F35       | Diverter Feedback Fault                    | Feedback communication from diverter is not present or not correct.                                                                                                                              |
| F36       | CSM Tripped                                | CSM has tripped, see section on Current Sense Module                                                                                                                                             |
| F48       | Turbidity Sensor High                      | Turbidity sensor reading high. (possible open on sensor)                                                                                                                                         |
| F49       | Turbidity Sensor Low                       | Turbidity sensor reading low. (possible short on sensor)                                                                                                                                         |
| F50       | Temperature Sensor High                    | Temperature sensing or stuck at a high reading.                                                                                                                                                  |
| F51       | Temperature Sensor Low                     | Temperature sensing or stuck at a low reading.                                                                                                                                                   |
| F52       | Turbidity Sensor Calibration Failure       | Turbidity sensor did not successfully calibrate.                                                                                                                                                 |
| F58 / F59 | Thermistor Fault                           | Thermistor is not functional                                                                                                                                                                     |
| F60       | Heater Relay Stuck Fault                   | Heater relay is stuck                                                                                                                                                                            |
| F62       | Dry Fan Fault                              | Dry fan not working properly                                                                                                                                                                     |
| F64       | Inverter Fault Received                    | Inverter specific fault detected.                                                                                                                                                                |
| F65       | Inverter No Water Detected                 | Inverter did not detect water. Will not allow heater to turn on.(Failsafe)                                                                                                                       |
| F66       | Dry Heater TCO Fault                       | Temperature is out of range<br>The heater can be purchased as a whole assembly or in individual components, except for the thermistor which has to be purchased in top housing or whole assembly |
| F80       | Absent Water Flow (turbidity based)        | Water flow not detected in unit.                                                                                                                                                                 |
| F86       | No Fill Fault                              | Pressure sensor does not sense filling                                                                                                                                                           |
| F87       | Thermistor Install Fault                   | Thermistor did not see the proper heat rise during the cycle                                                                                                                                     |
| F98       | Non-draining Pump (turbidity based)        | Unit not draining or not being detected by turbidity sensor                                                                                                                                      |
| F99       | Minimum Wash Temp Not met                  | Minimum wash temperature of 120°F was not reached in 3 of the past 5 wash cycles.                                                                                                                |
| F128      | Low Rinse Aid                              | Low Rinse aid is detected in the unit.                                                                                                                                                           |
| F146      | Circulation Pump Locked Rotor              | Circulation pump is stalled. Check for physical blockage, check motor connections. If OK replace circ pump. If not fixed, replace machine control.                                               |

| <b>SSD</b> | <b>Fault Type</b>              | <b>Fault Description</b>                                                                                                                                                   |
|------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F147       | Drain Pump Locked Rotor        | Drain pump is stalled. Check for physical blockage, check motor connections. If OK replace drain pump, if not fixed, replace machine control.                              |
| F151       | Continuous Flow Fault          | Water level reaches flood stage several times and has to drain.                                                                                                            |
| F152       | Continuous Heater              | The heater relay has failed closed, replace machine control.                                                                                                               |
| F153       | Analogue Door Latch Failed     | The door latch and/or DC harness to the door latch has failed.                                                                                                             |
| F154       | ADC has Failed                 | An internal microprocessor failure has occurred, replace machine control.                                                                                                  |
| F155       | Key Stuck (Tactile)            | An user interface button is stuck. If no stuck button not found, replace user interface control.                                                                           |
| F157       | Turbidity Diagnostic           | Turbidity sensor failure. Check turbidity sensor connections. If OK replace turbidity sensor.                                                                              |
| F158       | Over Voltage Detected          | House wiring may be providing more than 132VAC.                                                                                                                            |
| F161       | Inverter Software Fault        | Update control software if available, else replace machine control.                                                                                                        |
| F162       | Inverter Supply Fault          | Control high voltage not available, check main power, if OK replace machine control.                                                                                       |
| F164       | Valve Leakage Fault            | There is a potential leak in the water valve. Check for a stuck open water valve by disconnecting power to dishwasher. Check if water valve is getting continuous voltage. |
| F165       | Water Valve Flow Rate Fault    | The flow rate of the water valve is low. Check water flow and obstructions.                                                                                                |
| F166       | Open AC Current Diagnostic     | The AC current measurement circuit has failed. Replace machine control.                                                                                                    |
| F167       | Short AC Current Diagnostic    | The AC current measurement circuit has failed. Replace machine control.                                                                                                    |
| F168       | Low Water Heater Current Fault | Current draw of the water heater is low. Check resistance and connections. If everything is OK replace machine control.                                                    |
| F169       | Replace Drain Pump             | A failure has occurred with the drain pump. Check all motor connections, check TCO continuity. Replace pump. If problem persists replace the machine control.              |
| F170       | Replace Circ Pump              | A failure has occurred with the circulation pump. Check all motor connections, check TCO continuity. Replace pump. If problem persists replace the machine control.        |
| F172       | Low Dry Heater Current Fault   | Current draw of the dry heater is low. Check resistance and connections. If everything is OK replace machine control.                                                      |

| Load To Control                 | Timeout (Sec) | Notes                                                                                             |
|---------------------------------|---------------|---------------------------------------------------------------------------------------------------|
| Drain Pump                      | 120           | Drains to 0 then stops. If activated again, will drain continually.                               |
| Water Valve                     | 120           | Fills to a set volume. Will not activate if full.                                                 |
| Circ Pump*/<br>Diverter         | 120           | Cycles through diverter positions with each activation.                                           |
| Heater*                         | 120           | Fills to a set volume, runs circ. pump. Will heat to 180°F. Will not activate if already at temp. |
| Dispenser Cup/<br>Rinse Aid     | 15            | Triggers relay to open main wash dispenser soap container.                                        |
| Door Fan                        | 120           | Turns on/off door fan for models that support this feature.                                       |
| Heater Without<br>Neutral Break | 120           | Can be used to test Neutral Break.                                                                |
| Dry Heater With<br>Fan          | 120           | Turns on dry heater and dry heater fan.                                                           |

To activate the test, press the **Start** pad. Press the **Start** pad to cancel the test, or press the **Cycle Select** or furthest pad on the left to cancel the current test and proceed to the next test. If the Start light flashes, the control will begin the test when the door is closed. The LCD will provide a readout of the load to be energized, as well as prompt to close door if a load tries to energize with the door open.

Press furthest most pad on the left and **Start** pads together momentarily. Both Fault and Service Modes will time-out after appx. 5 minutes.

For models with 3 or more pads, press the **Dry** and **Start** pads together momentarily within 5 minutes of powering on the unit. **NOTE:** Models with 1 or 2 pads do not have a Demo Mode.

Press **Steam** or **Pre-Soak** pads 7 times within 5 seconds to enable or disable

Press the **Dry** pad 7 times within 5 seconds to enable or disable

Press and hold the furthest most pad on the left and **Wash Temp** for 5 seconds to enable or disable

| LED Activity                      | Meaning                                                    |
|-----------------------------------|------------------------------------------------------------|
| Flashing - 1 sec. on / 1 sec. off | Control is powered and actively running.                   |
| Flashing Rapidly                  | Control stuck in Bootloader Mode. Replace machine control. |
| Steady Off                        | Control is not powered or not correctly programmed.        |

**YELLOW ROBERTSHAW WATER VALVE**  
COIL RESISTANCE: 18.5Ω

**BLUE USONDO WATER VALVE**  
COIL RESISTANCE: 32.5Ω

**MONOGRAM ONLY**

**TOP LEFT**

**TOP RIGHT**

**USER INTERFACE BOARD**

**J703 (MONOGRAM ONLY)**

**J301**

**J302**

**J303**

**J304**

**LED STATUS BOARD**

**PROFILE MODELS ONLY**

**DOOR LCD MODELS ONLY**

**LCD ASM**

**OUTER DOOR ASM**

**FREE WIRING CONNECTORS AT THE BOTTOM OF THE DOOR**

**DRY THERMISTOR OUTPUT TABLE**

| TEMPERATURE (°F) | RESISTANCE (Ω) |
|------------------|----------------|
| 0                | 32 31581-33719 |
| 10               | 50 19351-20449 |
| 20               | 68 12205-12775 |
| 25               | 77 9800-10200  |
| 30               | 86 1874-8240   |
| 40               | 104 5184-5470  |
| 50               | 122 3492-3714  |
| 60               | 140 2402-2574  |
| 70               | 158 1685-1819  |
| 80               | 176 1206-1310  |

**TURBIDITY THERMISTOR OUTPUT TABLE**

| VOLTAGE | RESISTANCE | TEMPERATURE |
|---------|------------|-------------|
| 0.95    | 2006Ω      | 50°F        |
| 1.56    | 10450Ω     | 75°F        |
| 2.25    | 5824Ω      | 100°F       |
| 2.91    | 3411Ω      | 125°F       |
| 3.48    | 2081Ω      | 150°F       |
| 3.91    | 1330Ω      | 175°F       |

**WIRE COLOR CODE**

1<sup>st</sup> LETTER = MAIN COLOR, 2<sup>nd</sup> LETTER = GREEN COLOR

A = AQUA, B = BLACK, C = BROWN, G = GREEN, N = NAVY  
O = ORANGE, P = PINK, R = RED, S = GRAY, I = TAN  
V = VIOLET, W = WHITE, Y = YELLOW

**165D9739P059**

Located at rear of dishwasher. On power up the green status LED will flash for the first 5 minutes then go off. Look for +5 VDC on J905 connector on the machine control (between pins 5 and 13). If +5 VDC is present and LED does not flash on initial power up (within the first 5 minutes), replace wireless module.

|                         | Resistance | Pin Locations                      |
|-------------------------|------------|------------------------------------|
| <b>Circulation Pump</b> | 11-12 ohms | J908 Pin 2, J909 Pin 2, J909 Pin 5 |
| <b>Drain Pump</b>       | 88 ohms    | J908 Pin 3, J909 Pin 1, J909 Pin 4 |



