

ED,MD, PD 24 Dishwasher



AGENDA

Installation

Feature and Benefits

Dishwasher Sub Systems

- Tub & Structure
- Door Assembly
- Upper & Lower Racks
- Electrical
- Filtration

Dishwasher Components

- Control Board
- WPS
- Wash Pump
- Drain Pump
- Flow Meter
- Water Valve
- Heater
- Pressure Switch

Hands On Testing of Product

- Diagnostics
- Fail Codes

Tear Down Of Product

- Safety
- Interior
- Door & Cabinet

Assembly Of Product

Q&A Time

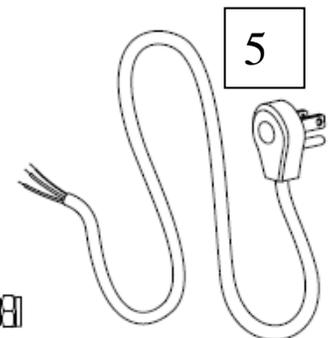
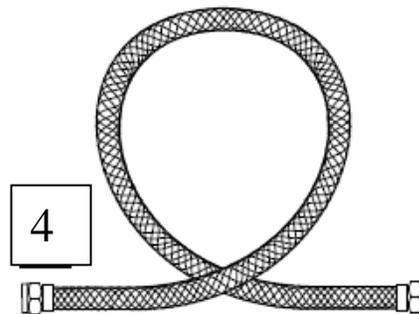
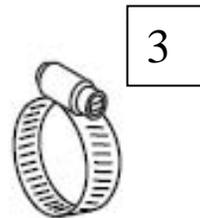
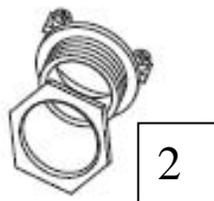
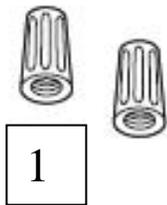
Dishwasher Installation

Utility Requirements

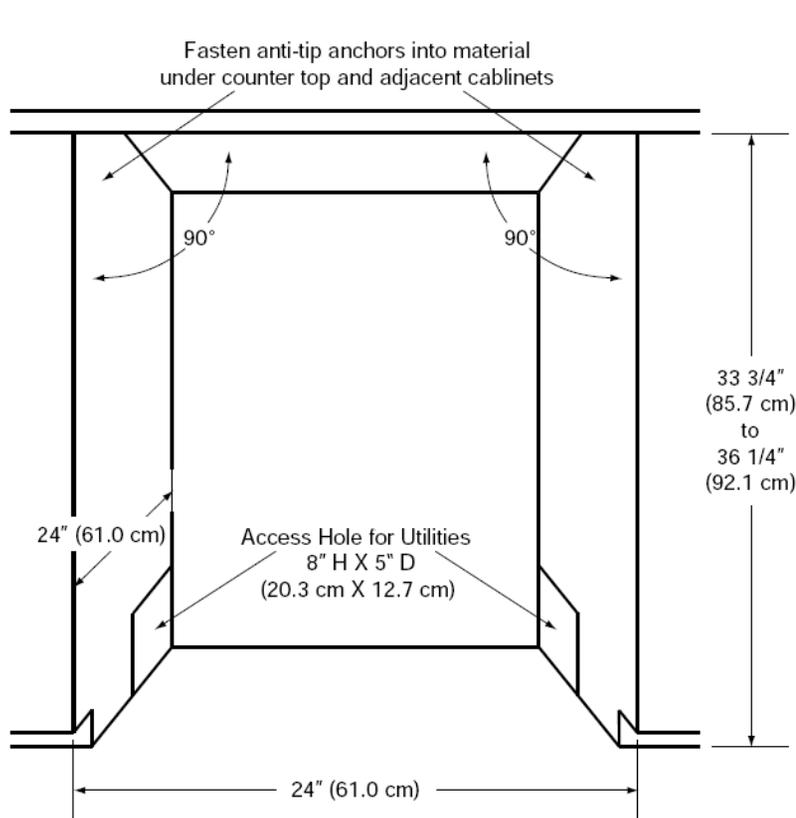
Water Pressure	20 to 120 psi (138 - 827 kPa)
Water Temperature	120°F, minimum
Power Requirements	15 A, 120 Vac, 60 Hz dedicated, grounded, circuit. See the model number label on product for total connected load.

Dishwasher Installation

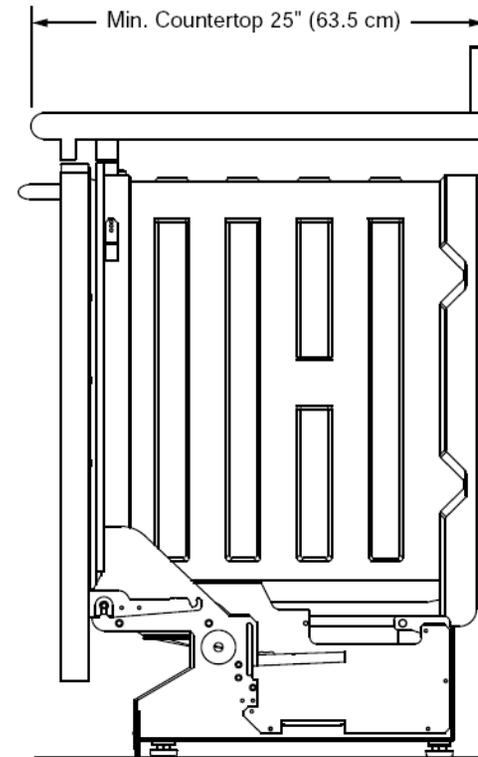
1. 2 wire nuts to fit wire mentioned above. Additional wire nuts may be required for connection to house wiring.
2. 3/4" UL/CSA approved strain relief
3. Hose clamp (for 1 3/8" OD drain hose)
4. 3/8" flexible braided fill hose (required length varies)
5. Wire or three-prong UL/CSA approved electric cord (see electrical specifications)



Dishwasher Installation



CUT-OUT FRONT VIEW



CABINET INSTALLATION SIDE VIEW

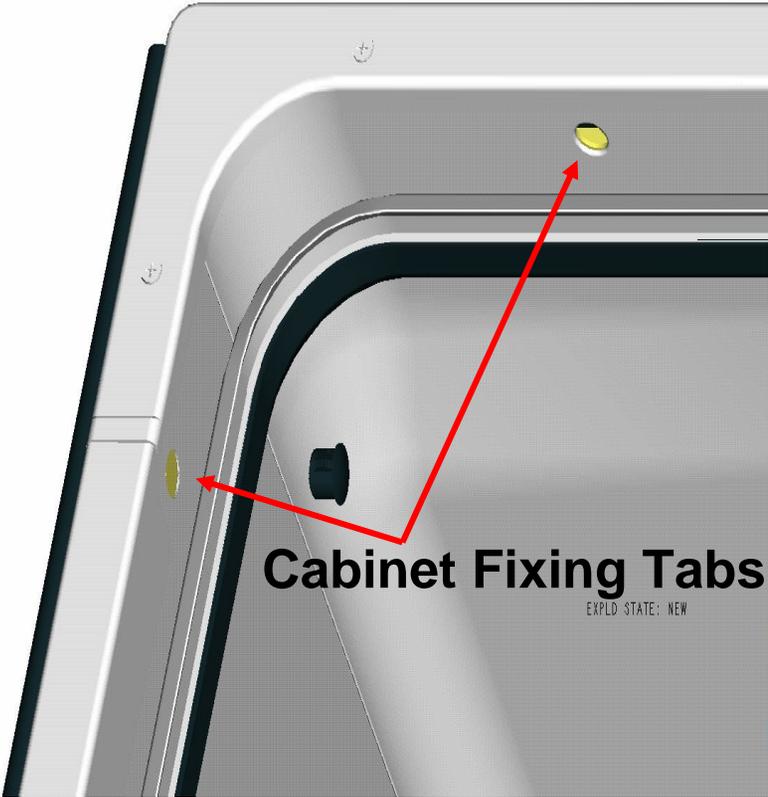
Features and Benefits

- New 24" Dishwasher models:
 - **Epicure®** and Integrated
 - **Millennia®** horizontal and vertical
 - **Preference®**: all 6 colors
- Superior cleanability with AHAM average score of 95.6
- Quiet operation
- Triple water filtration
- In-line water heater
- 158°F Sani-Rinse
- 14 Place settings
- Hidden touch control electronic panel
- 2" adjustable height rack
- Secure Stemware™ location
- Removable split silverware basket
- Stainless steel tank
- Exterior blue LED indicator pointing to the floor

Dishwasher Sub Systems

- Tub & Structure
- Door Assembly
- Upper & Lower Racks
- Wash
- Filtration
- Water & Fill
- Cycle & Option

Tub & Structure



Side
Mounting

Tub & Structure

LATCH STRIKE

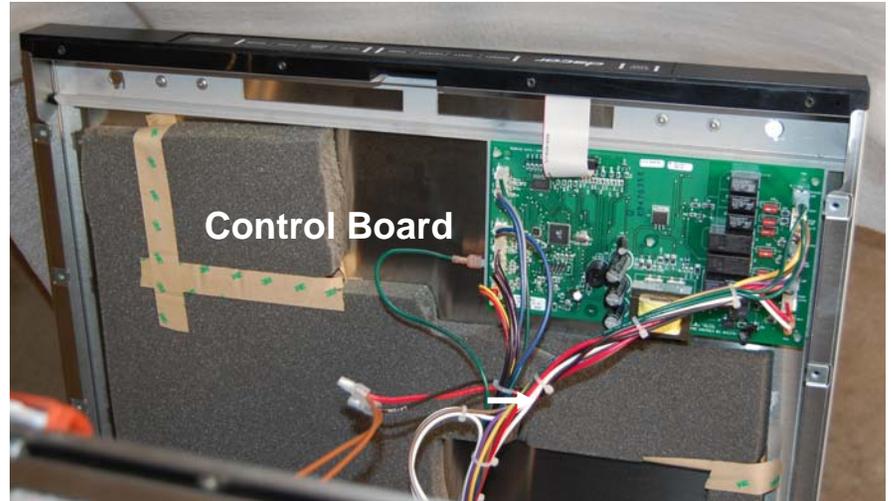


- Adjust strike position by loosening screw
- Push the strike in to stop tub gasket leaks
- Pull the strike out to lower door closing force
- Run water test to ensure no tub leaks

Door Assembly

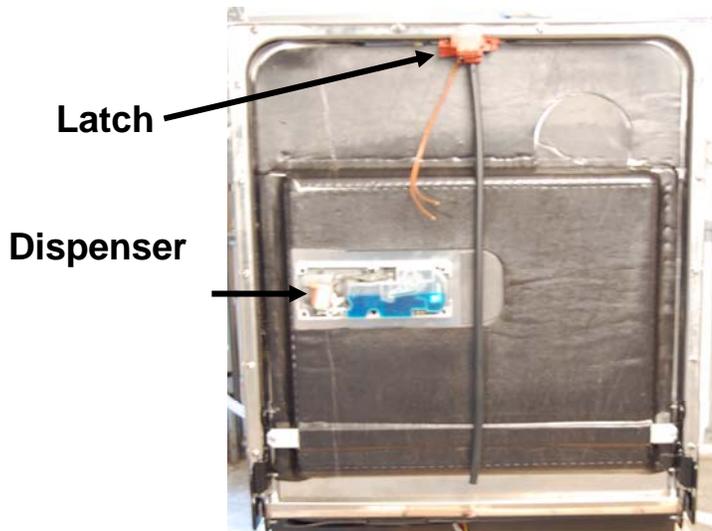


Hinge Assembly

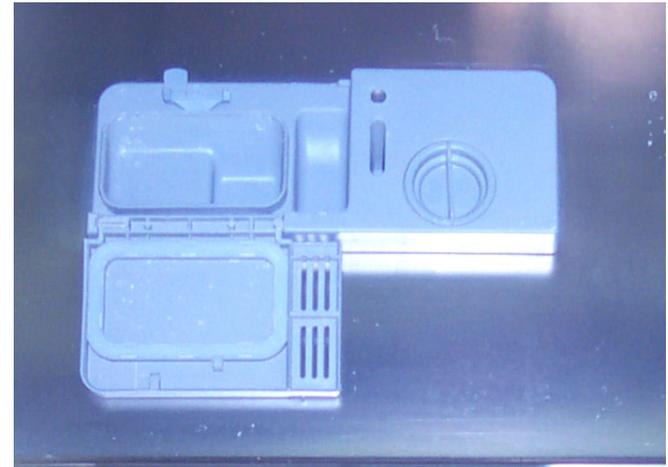


Outer Door Panel

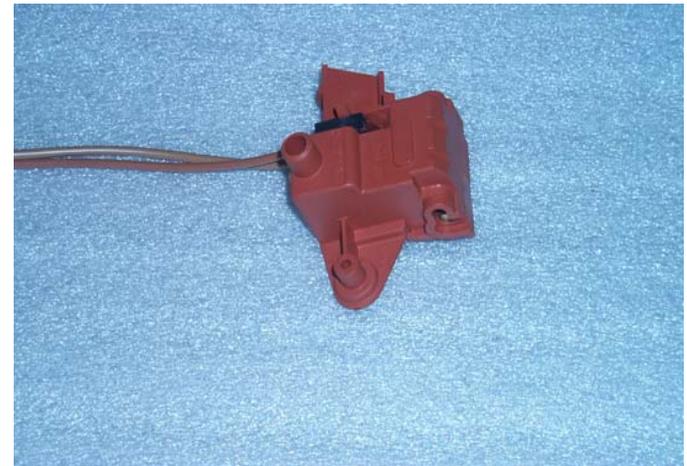
Door Assembly



Inner Door



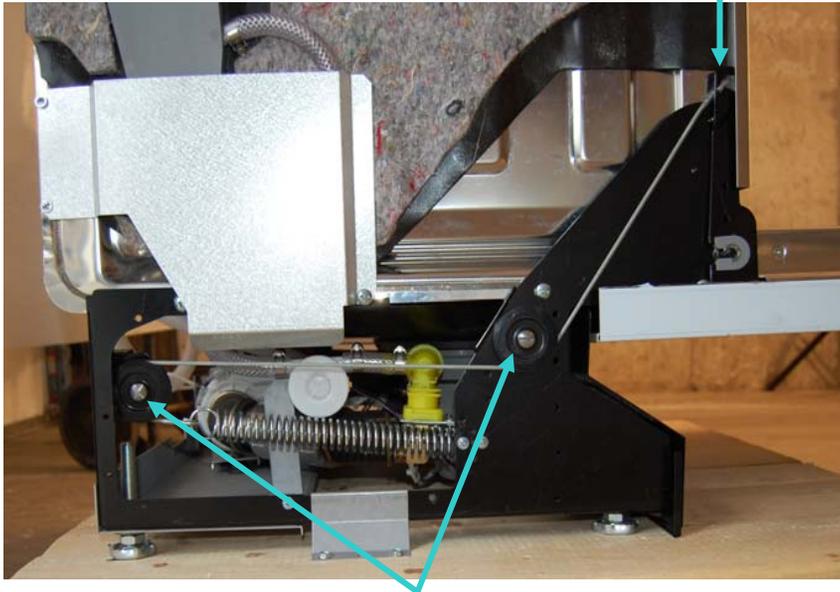
Dispenser



Latch

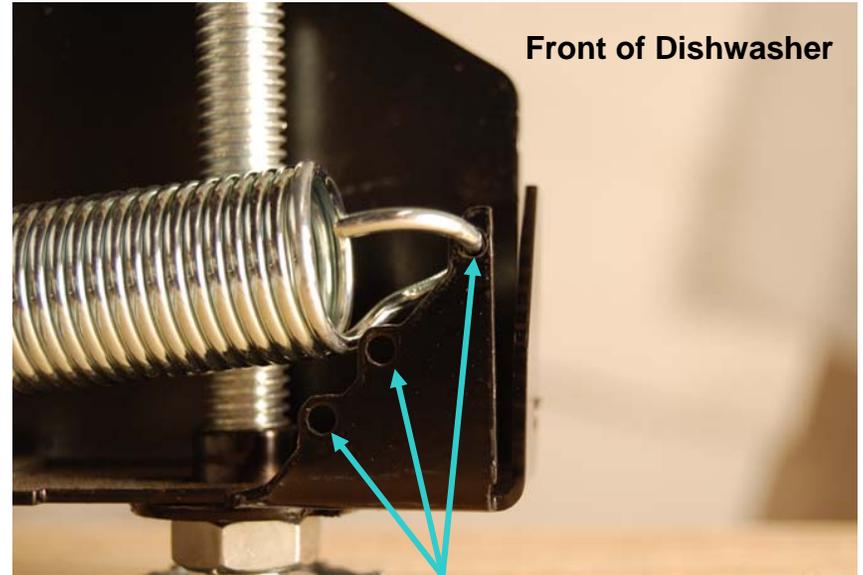
Door Hinge & Tension

Cable hook Attachment point



Two Wheel Pulley System

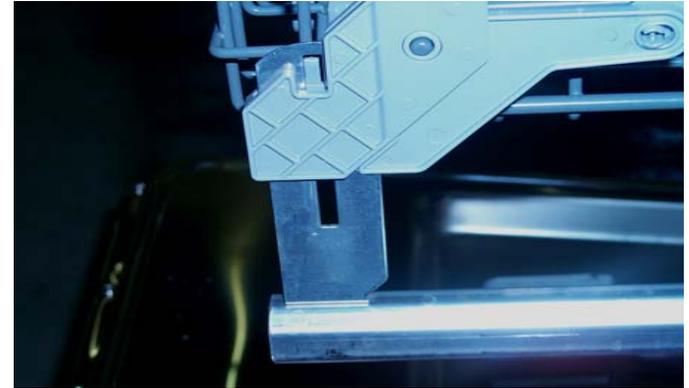
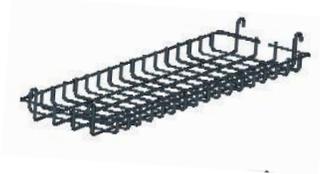
Front of Dishwasher



Spring Tension Adjustment Points

Upper Rack Assembly

Rear basket seal
upper and lower
position



Locking tabs



Easy Lift Mechanism



Upper Spray Arm

Lower Rack Assembly



WASH SYSTEM



Upper Spray Arm



Sprayer, upper tub



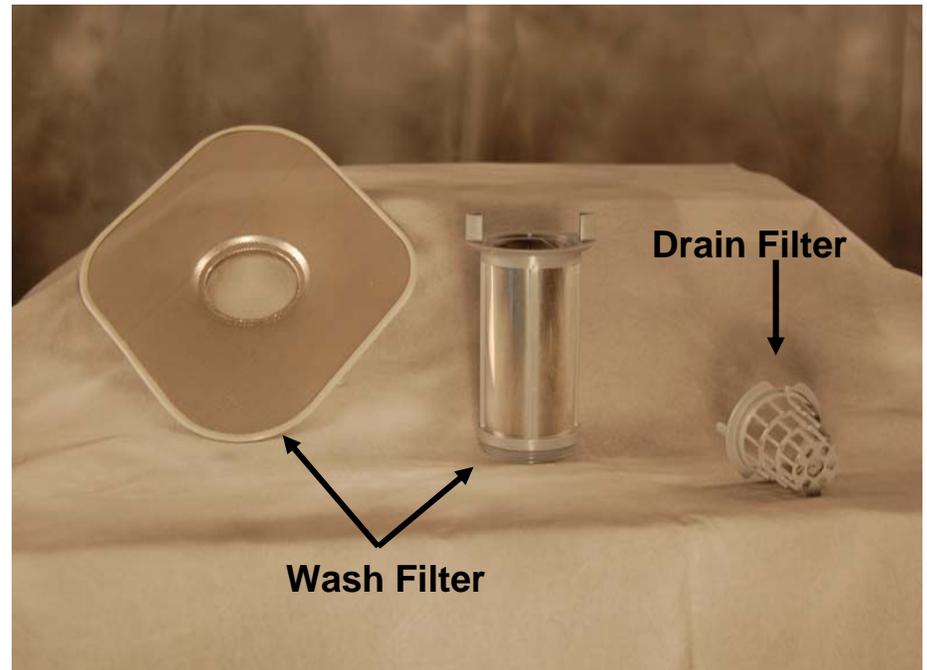
Lower Spray Arm



Filtration

Sump / Filter System

The in-line filter system is composed of three layers. An inner basket, a fine screw down tube and an upper mesh strainer. This system will need to be cleaned regularly to maintain the utmost efficiency.



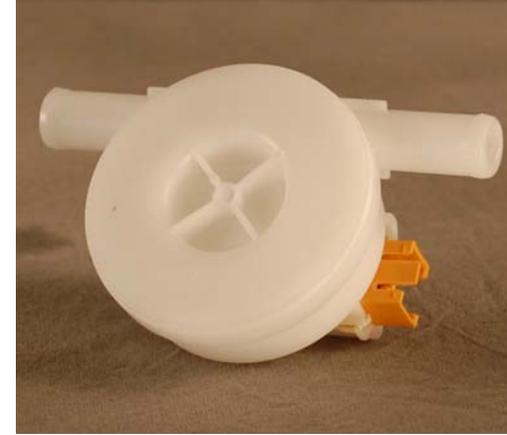
Water Temperature Control



The water temperature is controlled at set points, shown in the following table for different wash cycles.

MODE	PROCESS	NORMAL	HEAVY	CRYSTAL	RINSE	SANI
CYCLE	Pre Wash B	N/A	124° F	N/A	N/A	N/A
	WASH	133° F	158° F	104° F	N/A	N/A
	RINSE	155° F	158° F	140° F	N/A	160° F

Water Fill System



Water Fill is primarily sensor dependent. When filling the control board will allow 590 or 905 pulses per fill depending on that fill process requirement. Time will be used as a secondary condition for any fill process.

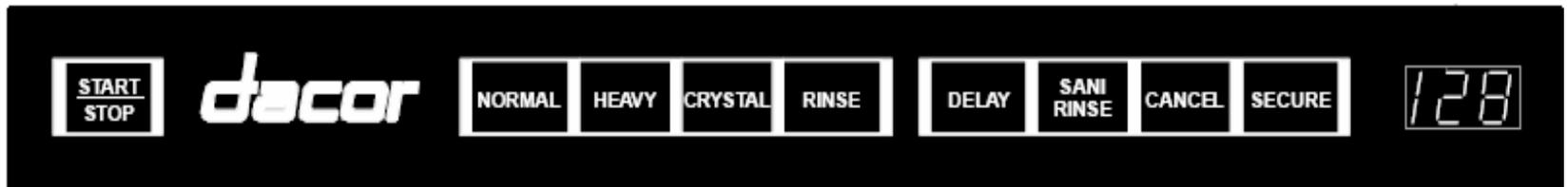
Fill Quantities:

- Pre-wash 590 pulses / 0.75 Gal
- Purge 315 pulses / 0.4 Gal
- Main wash 905 pulses / 1.15 Gal
- Rinse 905 pulses / 1.15 Gal

Memorize Cycle and Option



The control system saves and remembers the last cycle and options at the conclusion of the cycle. This Information will be used as a default for the next user interface. Press the Start/Stop Key a first time to recall the last cycle and turn on the previous cycle LEDs. Then press the Start/Stop Key a second time to begin the cycle.



Dishwasher Components

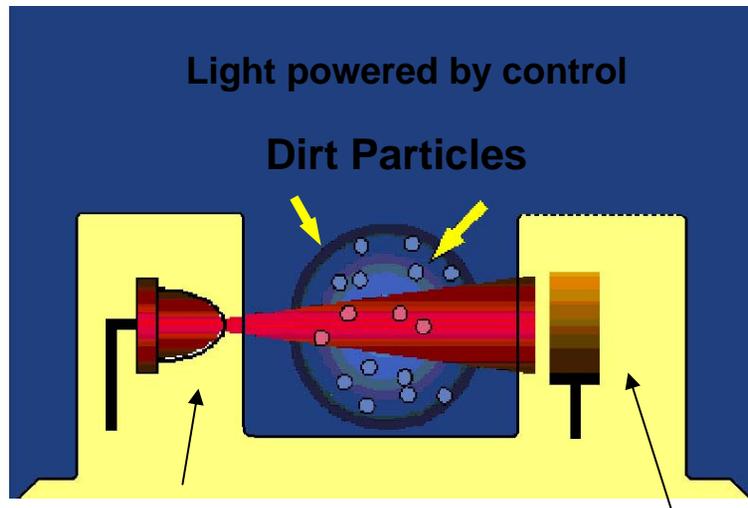
- Control Board
- WPS
- Wash Pump
- Drain Pump
- Flow Meter
- Water Valve
- Heater
- Pressure Switch

Wash Process Sensor

TURBIDITY (SOIL) / TEMPERATURE SENSOR

Sensors controls wash cycle & heating time based on temperature & turbidity of water

The advanced control algorithm using the information from the WPS sensor increases the cycle length. The soil level of the water will be assessed and decisions will be made to determine the optimal wash and rinse cycle length and number of purge sequence.



Turbidity/Soil Sensor

Transmission detector

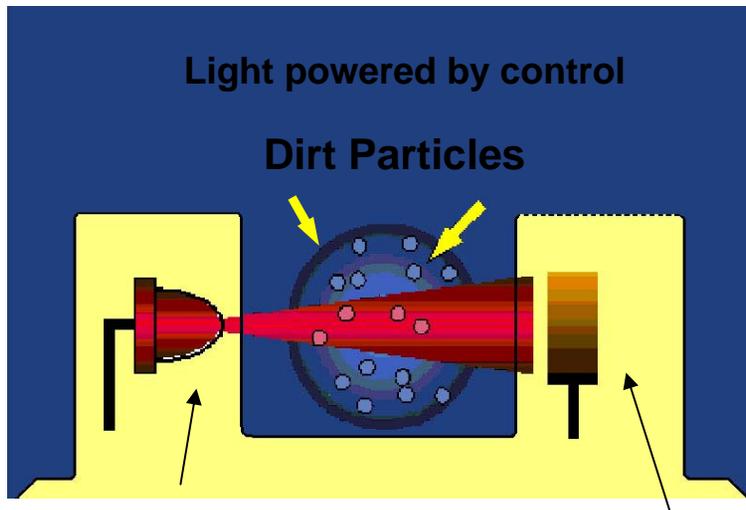


Wash Process Sensor

TURBIDITY (SOIL) / TEMPERATURE SENSOR

Sensors controls wash cycle & heating time based on temperature & turbidity of water

When Temperature or Turbidity sensors fail, the system will default to time schedule and a failure code will be logged, "F4", in the Diagnostic Test Mode Only, indicating the sensor (WPS) failure.



Turbidity/Soil Sensor

Transmission detector



Circulation Pump

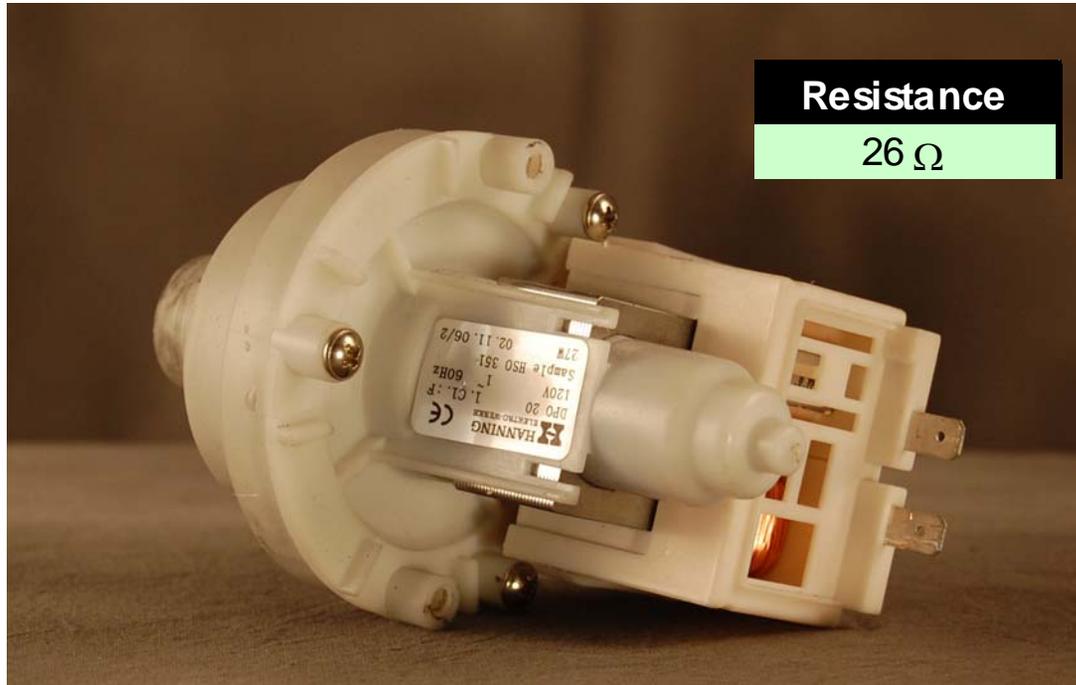
Located on the base pan centre rear. Held in place by attached hoses.

This view shows the 24 inch twist off circulation pump. This unit can easily be removed, cleaned, cleared and put back into place



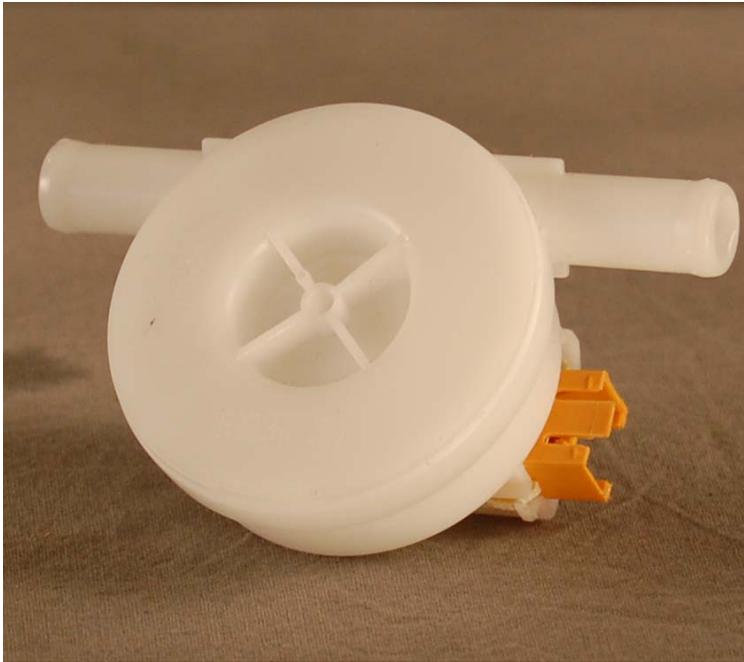
Drain Pump

Located on base pan in the front right of centre



Flow Meter

Located on the left side following the inlet water valve



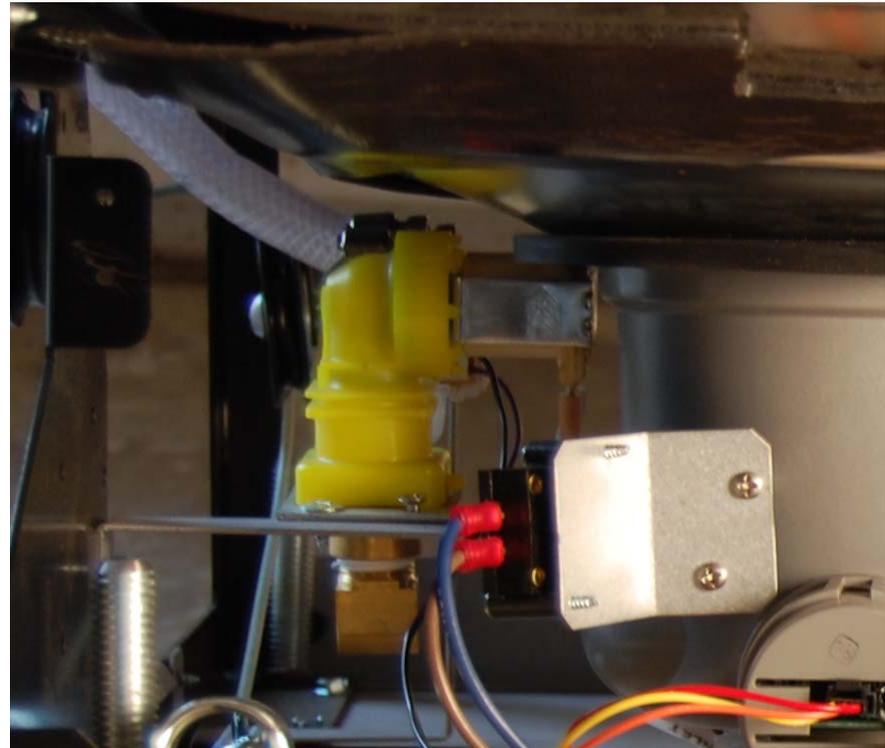
- Determines level of fill
- The flow meter will not allow more than 80 seconds fill time. If greater than 80 seconds fill time “F2” will be displayed
- After 30 seconds of fill, the flow meter will have a minimum of 300 pulses otherwise an “F3” will be displayed.

Inlet Water Valve

Screwed on the left frame behind lower front panel

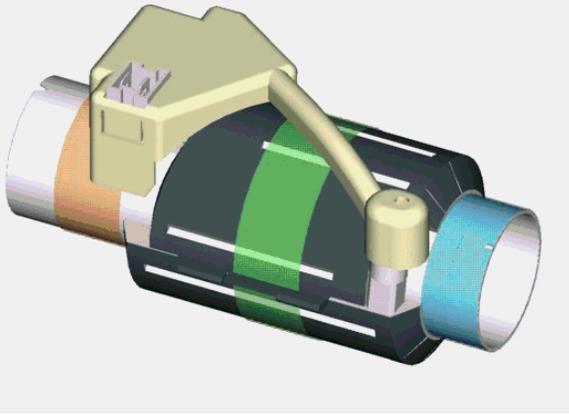


Flowrate	Coil Resistance
1.08 GPM	1126 Ω



Inline Heater

1200W heater wrapped around a stainless steel tube



While checking the heater, do not apply power to it until the tub has filled with water and the motor is operating

Heater can only be energized during a wash cycle, while the pump is running.

Heater has its own thermal protection that cuts-out the heater at 197°F



Inline Heater

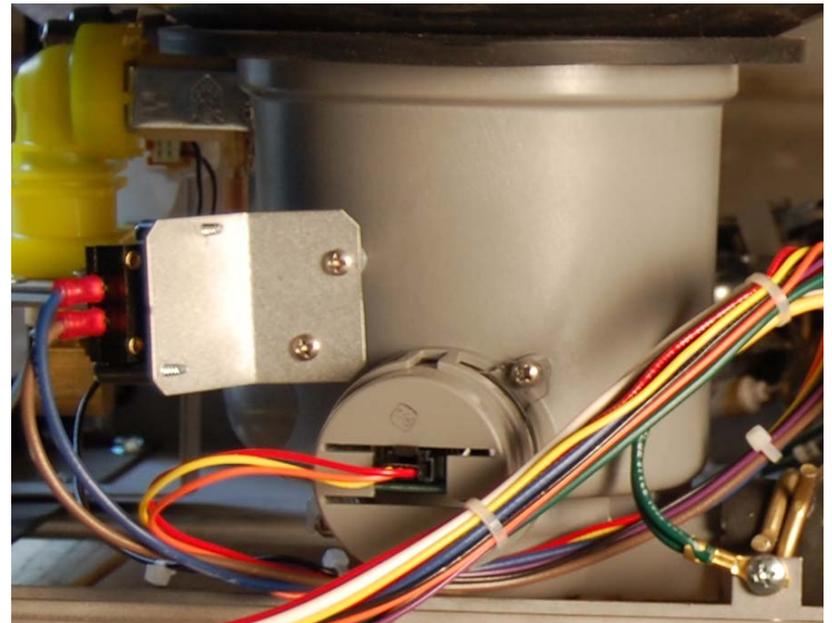
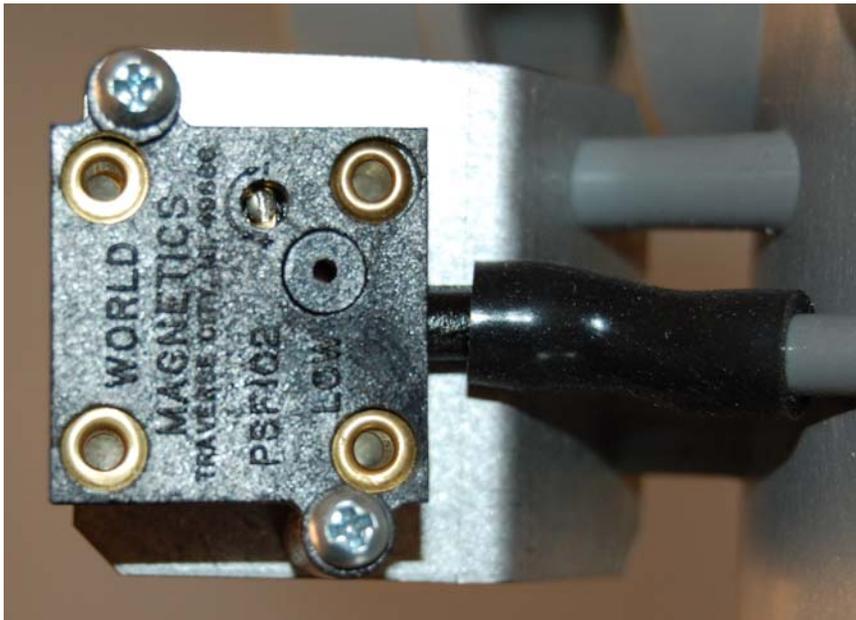
1200W heater wrapped around a stainless steel tube

The heater ON and OFF time is primarily a function of the temperature sensor located on the WPS. Time will be used as a secondary condition for Heater ON/OFF time. If a WPS fault is present, Heater regulation is based on time only. The Heater will cycle ON and OFF every 30 seconds.

Pressure Switch Assembly

Located mounted to the front of the sump to the upper left of the WPS

Senses the absents of water during the drain cycle. Produces the drain failure code F-1

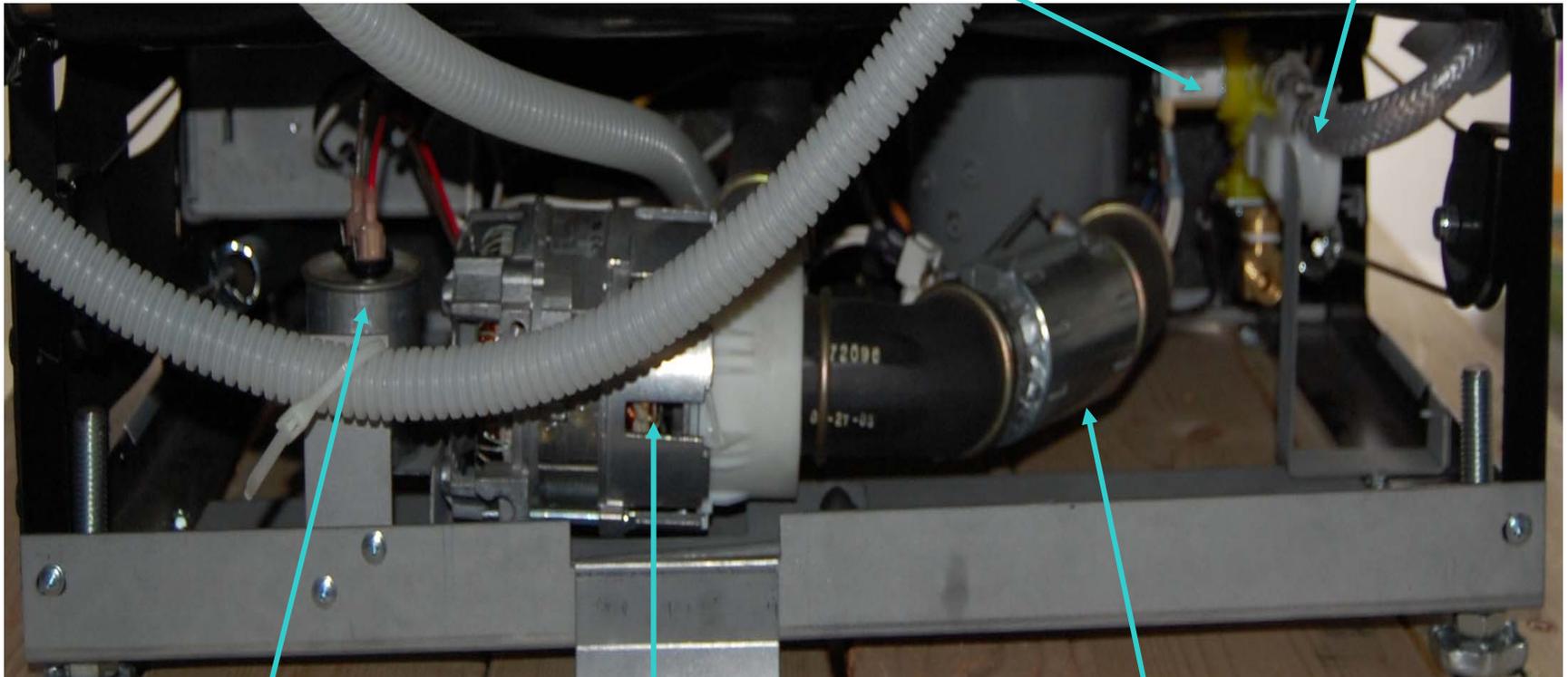


The drain will be primarily time dependent then pressure dependent.

Rear View / Mechanical Area

Water Valve

Flow meter



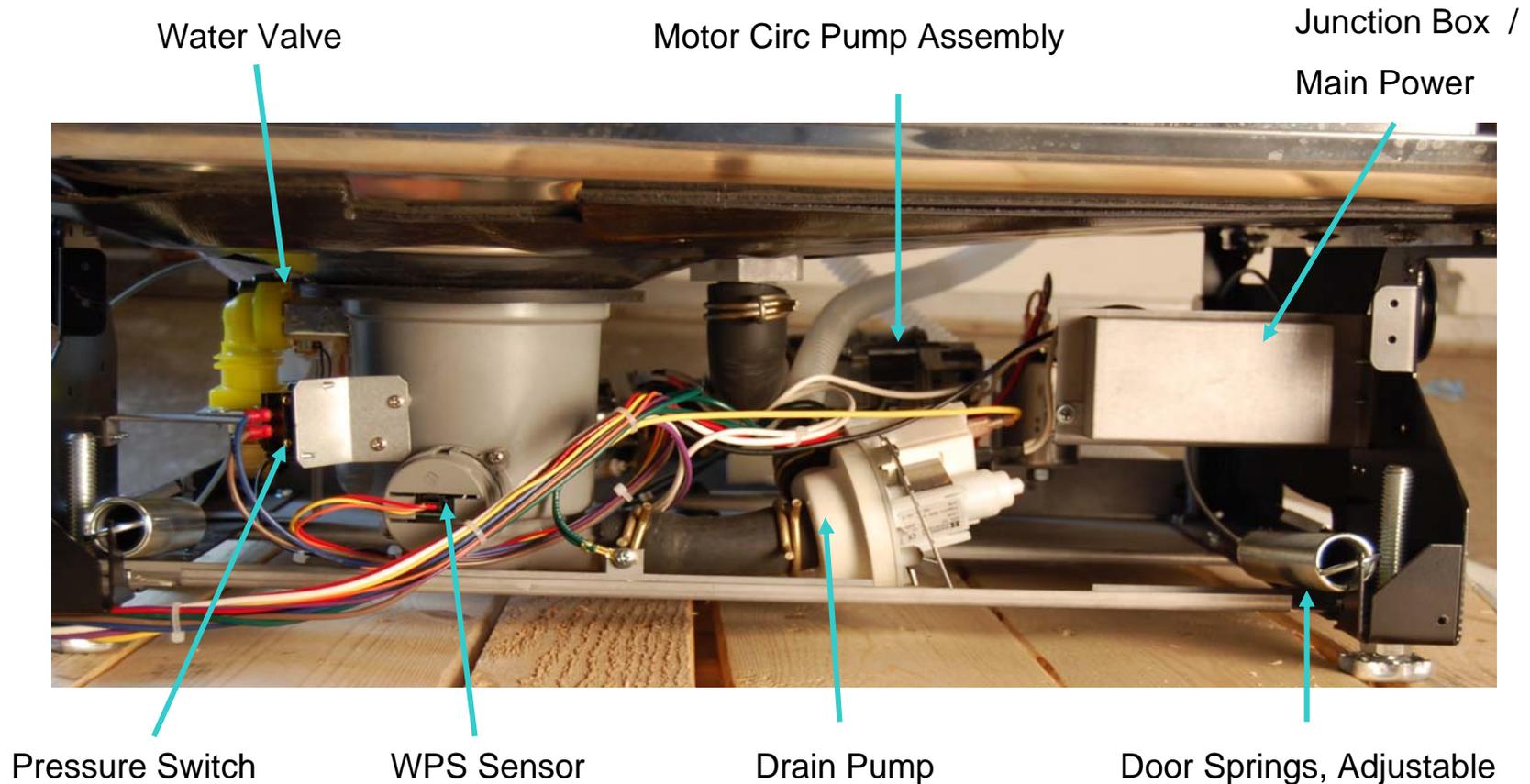
Start Capacitor

Motor Circ Pump Assembly

Heater

Front View / Mechanical Area

Cover Removed



Service & Diagnostic Test

- Diagnostic Test
- Fail Codes

Diagnostic Test



Enter the Diagnostic test mode:

First: Entering the secure mode by pressing the SECURE key for three (3) seconds. Then press the SECURE key again for three (3) seconds to exit the secure mode.

Second: Press DELAY and SANI RINSE keys simultaneously to start the Diagnostic test mode.

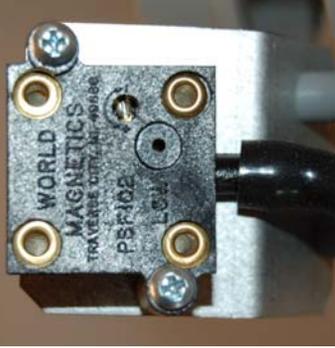
Once the diagnostic test has been completed, press **CANCEL** key once to exit this mode.

Diagnostic Test

- All LEDs on the dishwasher will turn ON for about 15 seconds then turn OFF.
- Temperature measurement is taken one (1) minute after the circulation Pump is ON and immediately after the Heater turns OFF.
- At the end of the test the In Process LED will be ON indicating that the Diagnostic test passed.
- Any fault code that is detected will be displayed. The fault code displayed will be displayed until the CANCEL key is pressed.
- If more than one fault is detected during the Diagnostic test, only the first detected fault code will be displayed until it is corrected.

Components ON	Duration (sec)	Comments
Drain Pump	30	Control Board version displayed; Full drain see drain logic
Inlet Valve	60	Most significant Failure code; Full fill see Fill logic
Pause	20	
Circ Pump & Heater	300	Temperature is read once every minute
Dispenser	5	
Drain Pump	30	

F-1 Drain Failure



Cause: Pressure switch is in the closed position after two full drain procedures.

Effect: Three long beeps. F-1 will be displayed only during the diagnostic mode.

Solution: Press cancel key twice to reset this fault. Possible failure to the pressure switch, drain pump, or restricted in the drain hose.

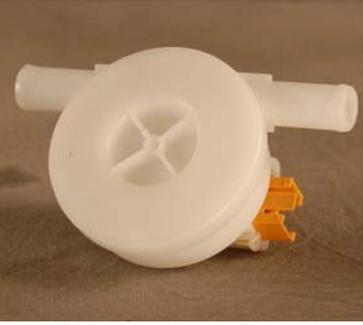


F-2 Over Fill Condition

Cause: Inlet valve does not close.

Effect: Three long beeps. F-2 will be displayed to the user and in diagnostic mode. Drain pump will be on until door is opened.

Solution: Press cancel key twice to reset this fault. Possible failure to the inlet water valve or control board.



F-3 Low Inlet Water Pressure

Cause: Low inlet water pressure.

Effect: Three long beeps. F-3 will be displayed to the user and in diagnostic mode.

Solution: Press cancel key twice to reset this fault. Possible failure to flow meter, Inlet water valve, or restriction in main water feed.



F-4 Wash Process Sensor (WPS) Failure

Cause: No response signal from the WPS.

Effect: Wash cycle will go into a default time table. F-4 will be displayed during the Diagnostic Only.

Solution: Possible failure to WPS sensor or related wiring.



F-9 Heating Failure

Cause: Heater Failure.

Effect: Temperature does not increase.

- F-9 will be displayed only during the Diagnostic Mode.
- Wash cycle will go into a default time table for heat on.

Solution: Possible failure to inline heater, WPS, or control board.

Review / Check on learning

Dishwasher Sub Systems

- Tub & Structure
- Door Assembly
- Upper & Lower Racks
- Electrical
- Filtration

Dishwasher Components

- Control Board
- WPS
- Wash Pump
- Drain Pump
- Flow Meter
- Water Valve
- Heater
- Pressure Switch

Service & Diagnostics

- Diagnostic Test
- Fail Codes



Questions

