Fast Track Troubleshooting

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

Model DW80F800

Production date 6/25/2013 DR
Revised 12/30/2014 JW

Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD)
1-866-894-0637 (Tech Sup. - FE/ME)
GSPN: http://gspn3.samsungcsportal.com/main.jsp
PLUS ONE: http://my.plus1solutions.net/clientPortals/samsung

Bulletins
ASC20140122001 sump change
ASC20141007001 door leak oE & SE error

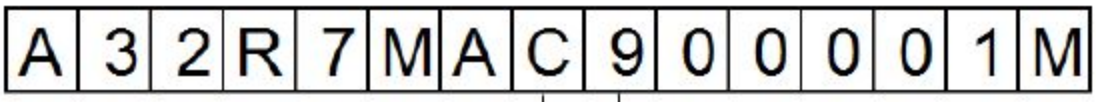
Components	Volts	Ohms
Water Valve	120vac	1.2k
Drain Pump	120vac	37-42
Heater	120vac	13
Fan Motor	120vac	2.6k
Disp. wax motor	120vac	2.3k
Thermal actuator		1.45k
Circulation Motor	120vac	15-21

Thermistor			
Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)	Temp. (°F)
125.78	41	26.065	104
98.323	50	21.385	113
77.454	59	17.599	122
61.465	68	14.579	131
49.12	77	12.14	140
39.517	86	10.159	149
31.996	95	8.542	158

Error Codes

CODE SYMBOL	Meaning	Occurring condition	Expected condition
tE	Temperature sensor Error	When 0.2V or below, or 4.5V or above is maintained for over 3 seconds.	Assy Sensor ECS terminal not connected. Possible defect : Assy Sensor ECS, Main PBA.
HE	Heater Error	When the temperature change is 4°C or less within the first 10 minutes after the heating starts.	Heater terminal not connected. Possible defect : Main Wire-Harness, Heater, Main PBA.
IE	High temperature Heating error.	When the temperature of the Thermistor is 80°C or above for more than 3 seconds.	Water supply temperature of 80°C or above. Possible defect : Assy Sensor ECS, Main PBA.
9E	Low-level water error	1. When high level sensor is not detected after water supply was done, drain & refill the water. After then, if high level sensor is not detected again, this error is occurred. 2. When low level sensor is detected over 5 seconds during wash operation, this error is occurred.	Water-level sensor terminal is not connected. Possible defect : Assy Case Brake, Assy Sensor ECS, Main PBA.
PE	Half load function error (only DMT800)	When micro s/w is not detected for over 30 seconds after the Distributor motor starts.	Distributor motor defect. Micro SW terminal is not connected. Main PBA defect.
4E	Water supply error	1. When the pulse of 100 or less is detected even 73 seconds after the water supply. 2. When flow meter pulse is 5 or less for 13 seconds after the water supply starts. 3. When the water supply does not complete 6 minutes after the water supply starts.	Alien particles within water supply valve. Water supply valve terminal not connected. Possible defect : Main PBA, Water supply valve , Flow Meter.
3E	High temperature Water supply error	When 80°C or above is detected during water supply.	Water supply temperature is 80°C or above. Possible defect : Assy Sensor ECS, Main PBA.
5E	Drain error	When OFF status of Low Level S/W is not detected within 3 minutes during the drain.	Alien particles are clogging in drain hose. Drain pump terminal is not connected. Possible defect : Drain pump, Assy Sensor ECS, Main PBA.
8E	Over-level water error	When overflow detection AD data is 3.5V or below for 3 seconds. (When leakage sensor detects 3.5V or below for 1 seconds during water supply)	Alien particles within water supply valve. Case Sensor part breakdown. Possible defect : Flow Meter, Main PBA, Water supply valve.
LE	Leakage	When leakage sensor detects 3.5V or below for 1 seconds.	Possible defect : Each hose connection , Sump and Tub assembly, Drain Pump assembly , Main PBA.
bE	Button error	When the button is pressed continuously for over 30 seconds.	Possible defect : Sub PBA in control panel, Main PBA.
dE	Door open warning	When door is open in washing period.	Door is not closed properly in test mode only. Possible defect : Door lock switch, Main PBA.
CE	Communication error	Communication error between Micom in sub PBA and Touch IC in touch PBA or between Micom in sub PBA and Micom in main PBA..	1) Touch IC is damaged or reset from power noise. 2) Micom in sub PBA or main PBA is damaged. 3) Un-connection Signal pin (not DC voltage) between touch PBA and sub PBA or between sub PBA and main PBA.

How to Read the Serial Number:



Production year

2001	R	2011	B
2002	T	2012	C
2003	W	2013	D
2004	X	2014	F
2005	Y	2015	G
2006	L	2016	H
2007	P	2017	J
2008	Q	2018	K
2009	S	2019	M
2010	Z	2020	N

Production Month

Jan	1
Feb	2
Mar	3
Apr	4
May	5
Jun	6
Jul	7
Aug	8
Sep	9
Oct	A
Nov	B
Dec	C

Cycle chart
(DW80F800 Series)

Cycle	Pre-wash1	Pre-wash2	Main wash	Rinse 1	Rinse2	Rinse3	Last Rinse [Sanitize]	Dry	Water [gal(ℓ)]	Time (min.)
Normal	●	Flex 113 °F (45°C)	118 ~ 145 °F (48 ~63 °C)	Flex	●	x	136 ~ 149°F (58 ~ 65 °C) [162 °F (72 °C)]	●	3.1 ~ 7.2 (11.7~27.2)	106~143
Heavy	●	●	140 °F (60 °C)	●	●	●	158 °F (70 °C) [162 °F (72 °C)]	●	8.6 (32.5)	152
Delicate	●	x	122 °F (50 °C)	●	●	x	140 °F (60 °C)	●	5.0 (18.8)	117
Pot & Pans	●	●	149 °F (65 °C)	●	●	●	158 °F (70 °C) [162 °F (72 °C)]	●	8.6 (32.5)	157
Quick +	●	x	140 °F (60 °C)	x	●	x	140 °F (60 °C) [162 °F (72 °C)]	●	5.0 (18.8)	59
Smart Auto	●	Flex	122 °F~138 °F (50~59 °C)	Flex	●	x	138 °F (59 °C) [162 °F (72 °C)]	●	3.6~6.7 (13.7~25.2)	107~138

- The numbers in parentheses in the Last Rinse column represent the temperature when you select Sanitize.
- When you select the Smart Auto or Normal cycle, you can eliminate the Flex(flexible) steps depending on the soil level of the dishes.
- The wash time varies depending on the steps or options you add, and on the pressure and temperature of the supplied water.
- When you select Halt Load or Storm Wash, the cycle sequence remains the same.

Which Detergent Ingredients Give Best Dishwasher Performance?

Detergent with a separate rinse additive in the dispenser gives better drying performance.

For tough baked on soils an Enzyme detergent is better at hydration of the food soils.

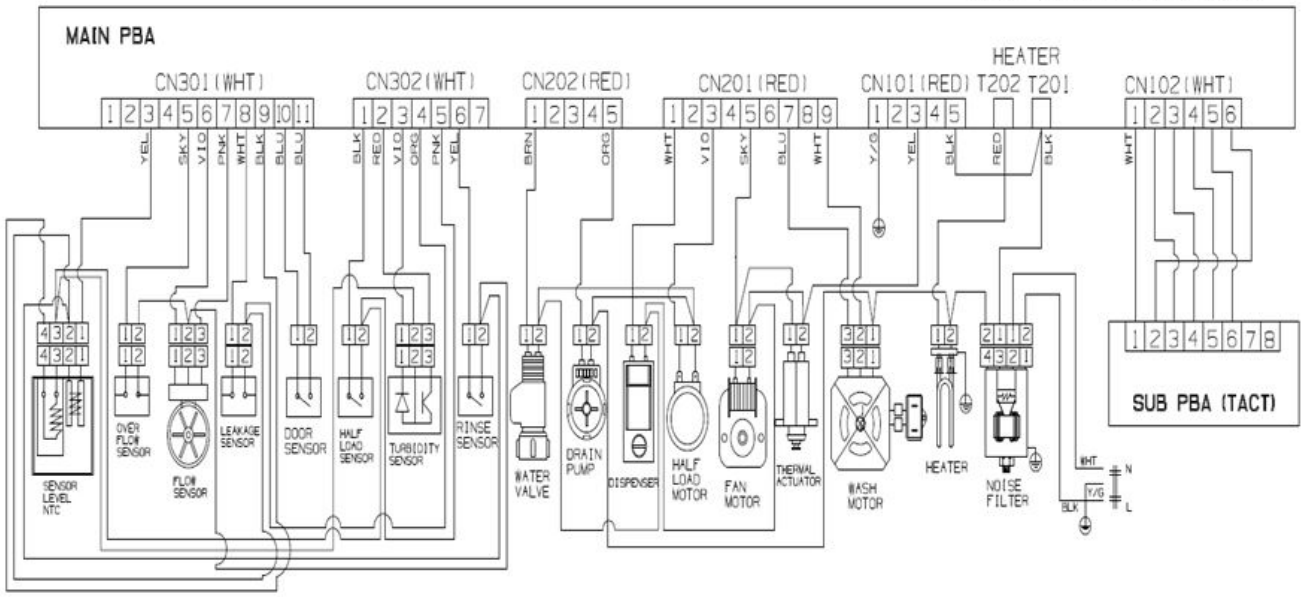
For staining such as tomato, coffee and tea, a detergent with Chlorine bleach will work on the stains much better than an Enzyme based detergent.

Now that phosphate content in dishwasher detergent has plummeted to 0.5 percent from as high as 8.7 percent, conditioned (soft) water is even more critical. The reduction of phosphates may cause spots and film on dishes that can form when the minerals and food bits combine during the wash. It is important to test water hardness for wash ability complaints.

Water --Too Soft ("over-sudsing") can leave deposits on clean dishes.
Too Hard can cause spotting/staining and poor wash ability
Dishes -- Too Dirty (garbage disposal), Too Clean (over-sudsing)
Thoughts? (Drain Suds Lock)
Detergent -- Chlorine, Enzyme, All-in-one & Tablets (over-sudsing)
Thoughts? (Suds Lock)
Rinse Additive -- Liquid in dispenser, All-in-one Thoughts?

SCHEMATIC DIAGRAM

MODEL : DW80F800 / DW80F600 SERIES



▶ CN101
1) GND
2) NC
3) NEUTRAL
4) NC
5) LIVE

▶ CN301
1) HIGH-R
2) HIGH/LOW-T
3) LOW-R
4) HIGH/LOW-T
5) OVER FLOW
6) COLD COUNT
7) 5V
8) LEAKAGE
9) SUMP THERMISTOR
10) 12V
11) DOOR-SENSE

▶ CN302
1) HALF LOAD SENSE
2) TURBIDITY-R
3) TURBIDITY-T
4) GND
5) 5V
6) RINSE-SENSE
7) OPTION-SENSE

▶ CN102
1) 5V
2) 12V
3) RXD
4) TXD
5) WAKE-UP
6) GND

▶ CN501
1) GND
2) MODE
3) 5V
4) OCKIO
5) OCDCK

▶ CN202
1) COLD-VALVE
2) NC
3) OPTION
4) NC
5) DRAIN-PUMP

▶ CN201
1) DISPENSER
2) NC
3) HALF LOAD (option)
4) NC
5) Dry Fan MOTOR
6) NC
7) WASH MOTOR -1
8) NC
9) WASH MOTOR 2

▶ T201
LIVE

▶ T202
HEATER

Service Inspection Mode

- Press the 'Heavy' + 'Delicate' + 'Power' buttons at the same time for two seconds to enter Service Inspection Mode.
- All LEDs are displayed for the first two seconds and then Software-Ver. will be indicated.
- You can change the mode by pressing the Normal button again. To advance to the next mode, press the normal button.
- If you want to activate a mode while operating the dishwasher, the door must be closed.
- If 'LE' , 'OE', 'tE' error occur, enter Service Inspection Mode after resolving it.

Mode	Display	Related Parts	Symptoms	Note
No.1	Ft	· Drain pump · Inlet Valve · Flow Meter · Water-level sensor · Turbidity	Door open warning Water supply Error Low level water Error Turbidity Error	If Door is open, Door open warning (dE) will blink. If low level sensor is not detected, Drain is executed. Water supply will be executed when low level sensor is detected. If water is not fully supplied(sensing on flow-meter), the Water Supply Error (4E) will blink. When High level sensor is not detected after water supply was done, Low-level water error (9E) will blink. When Turbidity problem is occurred after water supply was done, Turbidity Error (AE) will blink. If all functions in this mode are completed, 'Ft' and '3.6~3.9' will blink.
No.2	Lc	· Circulation Motor	A nozzle does not inject water.	If Low Level sensor is detected before Circulation Motor is operating, 'LL' and 'Lc' will blink. When water is filled enough, Circulation Motor -2(190W) will be operated.
No.3	Ld	· Circulation Motor	A nozzle does not inject water.	If Low Level sensor is detected before Circulation Motor is operating, 'LL' and 'Ld' will blink. When water is filled enough, Circulation Motor- 1(150W) will be operated.
No.4	Hd	· Circulation Motor · Heater · Thermistor (or Assy Sensor ECS) · Dispenser	Heater Error	If Low Level sensor is detected before Circulation Motor is operating, 'LL' and 'Hd' will blink. When water is filled enough, Circulation Motor 1(150W) and Heater will be operated. 'Temperature[°C]' and 'Hd' will blink. When the temperature meet 60°C or above, the heater is turned off. If Heater or thermistor(or Assy Sensor ECS) have problems, the Heater Error (HE) will blink. Dispenser will operate during 130 seconds only one time.
No.5	SH	· Half Load Motor (only DMT800)	Half load function Error	If Low Level sensor is detected before Circulation Motor is operating, 'LL' and 'SH' will blink. When water is filled enough, Half Load Motor will be operated, and then Half load function will be operated.
No.6	SP	· Half Load Motor (only DMT800)	Storm wash function Error	If Low Level sensor is detected before Circulation Motor is operating, 'LL' and 'SP' will blink. When water is filled enough, Half Load Motor will be operated, and then Storm wash function will be operated.
No.7	dF	· Dry Fan Motor · Dispensor	The Dry Fan motor does not work.	Operate the Dry Fan Motor and check whether Rinse aid is filled or not. If there is not rinse aid in Dispenser, Rinse Refill lamp is ON.
No.8	L	· Inlet valve · Overflow Sensor	Over level water Error	Water is supplied until Over-level water error (oE) is blinked. If Over-level water error (oE) occurs, overflow sensor is OK.
No.9	S	· Drain Pump · Water-level sensor	Drain Error	Drain pump will drain until low level sensor is detected. If Low level sensor is not detected after 60 seconds, Drain Error (5E) will blink.
No.10	FL	· Half Load Motor	Half load function Error	Buzzer sound is generated when the Half Load Motor is initialized to full load location, and the 'FL' will blink.
No.11	Temperature	· Inlet Valve · Circulation Motor · Dry Fan Motor · Drain Pump · Heater · Half Load Motor		Operate each operating part when the key is pressed. (See the below) When the 'Smart Auto' Key is pressed Water supply is On('Smart Auto' LED On) and pressed again it is Off ('Smart Auto' LED Off) When 'Heavy' Key is pressed each time, it works the Circulation Motor-1 is On ('Heavy' LED On) → Off ('Heavy' LED Off) → Circulation Motor-2 is On ('Heavy' LED On) → Off ('Heavy' LED Off) → Dry Fan Motor is On ('Heavy' LED On) → Off ('Heavy' LED Off), Drain Pump is On ('Heavy' LED On) → Off ('Heavy' LED Off). When 'Delicate' Key is pressed, it woks Heater On ('Delicate' LED On during 2 seconds) and Off automatically. When 'Half Load' Key is pressed Half Load Motor is On('Half Load' LED On) and pressed again it is Off('Half Load' LED Off). (only DMT800) When a different key is pressed during individual operation of the operating part, present operating part is stopped and the applicable operation for the pressed key will start.

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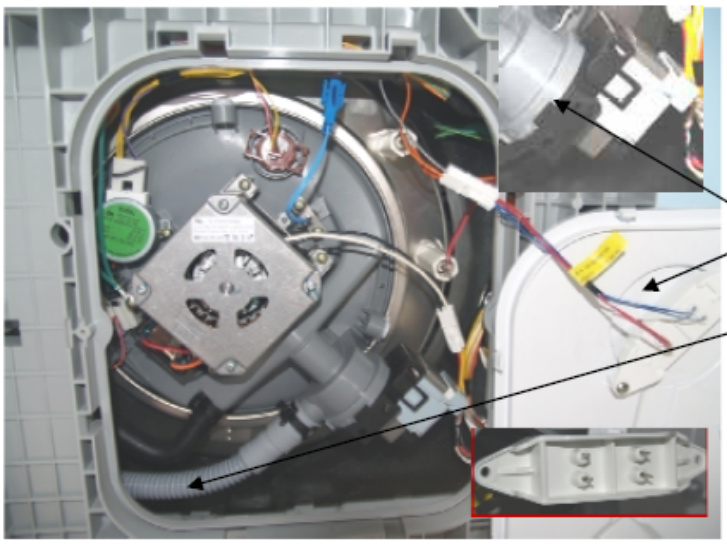


Leaking Code

Moisture creates resistance between the pins. **ALWAYS** clean the area below the pins after troubleshooting.

Check Pump Ass'y for proper twist lock.

Condensation may form on the tray from uninsulated outside walls or large hole in the floor to a cold basement.

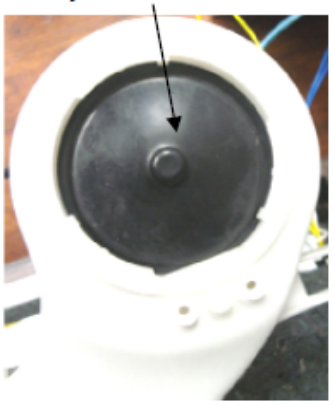
Check Drain Hose for cut or small hole.

Check all components mounted to the sump for any leakage.

Detergent Door Not Opening

1. Never overfill the dispenser compartment with powder or liquid, only go below or up to fill line.
2. If there is residue around the dispenser door area. Previously undispensed, partially dispensed, or door stuck close issue) clean it with mild soap & water. The residue can foul the mating latch.
3. If the customer uses "tablets" or some self contained type of soap tab, make sure it is fully seated and the door does not 'sandwich' it shut.
4. Make sure that in the rack nearest to the dispenser door when the door is shut, is not obstructing the opening of the dispenser with some protruding utensil.

Vent seal actuated by wax motor



Testing The Detergent Door and Dispenser

1. Disconnect the wires from dispenser. **wax motor** & close detergent door.
2. Put the unit into service mode and check for 120 VAC to the wax motor *(refer page 2 of this fast track)*
3. In approximately 40 seconds the **wax motor** will open the door.
4. After the dispenser opens, the rinse aid will be activated.
5. Close detergent door to repeat test

Upper Nozzle : Remove it by rotating the holder. (counterclockwise)

Middle Nozzle : Remove it by rotating the holder. (counterclockwise)

Lower Nozzle : Pull it out carefully from the Assy sump.