



Fast Track Trouble shooting

Model: WA48H7400



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.

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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:

SERVICE TEST MODE – POWER ON

DELAY END + PRE SOAK 3 SECONDS



The motor speed will be displayed when started
(It displays 0 when the motor does not spin).

Quick Spin Test Mode - press the Delay End and Self Clean Keys for 3 seconds - Cannot enter once cycle started
Starts spinning and reaches to its maximum RPM then speed drops immediately.
Hold Quick Spin Test Mode, press the Start/Pause button. It will stop accelerating and hold its speed for 10 mins.

Cycle Count Check Mode -press the Pre Soak Key.
Tally's the number of washings. The total number of washings will light up and a signal LED will glow.
Max # of cycles is 1999 rolls to 0

S/W Version Check Mode - press the Soil Level Key

Board Input Test Mode - press the Delay End

Diagnostic Code Check Mode - press the extra rinse

QUICK TEST MODE – POWER OFF

SPIN + SOIL LEVEL + POWER TOGETHER



Definition of Quick Test Mode:

- Check operation of all LED's (Verify faulty LED).
- Check model and software version.
- Check different operating modes (e.g. water valve, motor, door, drain pump, etc.).

All LED's light up & sends out Beep Sound when it entered

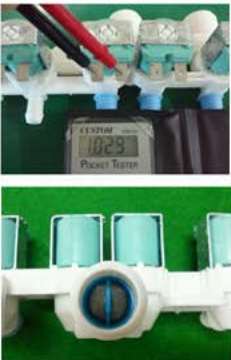
Displays software version for a sec and **clears EEPROM (MEMORY)**

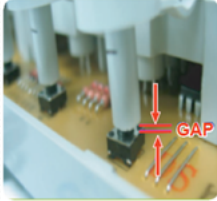
When version is displayed, turn Jog-Dial so that version disappears.

Press the following keys to test the components.

- Temp. Key : Water Valve Test
- Delay End Key : Door Lock/Unlock Test
- Spin : Drain Pump/Circulation Pump Test

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Level Sensor	1E	- Water level sensor fault. - Incorrect connections of the water level sensor terminal. - The hose part for the water level sensor is folded. - Main PCB fault.	- Check the water level sensor terminal connections and contacts. - An error occurs if an incorrect water level sensor is used. Make sure to check the material code. (Abnormal operation) - If the water level sensor is faulty, replace it. - If the error persists despite taking the action above, replace the PBA.	► Check the water level sensor frequency. - Check it after the water level sensor and the connector are connected. Checking Part : Blue Color Wire <u>Orange Color Wire</u> - Frequency: Approx. 26.4 KHz without water (Min 25.9KHz) 
Washing Motor Error and Hall Sensor Error	3E	- Washing motor fault - Washing motor hall sensor fault - Incorrect connections of the washing motor/hall sensor connector - Washing motor rotor and stator fault - Main PCB fault	- Check the motor connector terminal connections and contacts. 3E is displayed because overloading occurs due to too much laundry. - If the hall sensor terminal is faulty, replace the hall sensor. - Check whether the stator of the motor cover is damaged. - Check for coil disconnections due to foreign material. - If the PBA control circuit is faulty, replace the PBA.	► Check the motor Winding Coil - Plug out the connector and read resistances at any two of the three terminals on Motor : Should be 19.3Ω (at 25oC)  ► Check the motor Hall Sensor - Check the resistance on the main PCB motor (Between pins 2 and 4, 3 and 4 of the four (4) pins) - Resistance : Approx. 2 to 4 MΩ - Check the voltage when the power is on. CN1 1-5V-1 2-Hall-A 3-Hall-B 4-GND 5-Clutch Hall IC 

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Supply Error	4E	- Water supply value fault - Main PCB fault - Freezing in the winter season	- If the water supply valve has a wire disconnected, replace it. - Check whether the water supply valve is clogged with foreign material and whether water is supplied continually. - Check whether no water is supplied because of freezing in the winter season. - If the PBA relay operates abnormally, replace the PBA	1. Check the resistance for the water supply valve. - Resistance : 0.9KΩ to 1.1KΩ between the terminals of the Water Supply Valve. 2. Check whether there is foreign material in the Water supply valve filter. 
Drain Error	5E	- Freezing in the winter season - Foreign materials in the drain pump - Poor physical connection - Drain pump fault - Main PCB fault	- If the drain pump revolutions are restrained due to freezing in the winter season, check the method to remove the freezing and remove as directed. - Check whether the revolutions of the drain pump motor are restrained by foreign material, and remove as directed. - Check the wire connectors on Main PCB and Drain Pump ASSY. The connector or wire may have poor physical connection. - Check the drain pump resistance.	Check the drain pump resistance. (Resistance : 13.5 ~ 16.5Ω) 
Communication Error	AE	- The signals between the sub and main PBAs are not sensed. - Incorrect wire connections between the sub and main PBAs.	- Check the wire connections and terminal contacts between the sub and main PBAs. - Check for disconnected wires. - Check whether the sub PBA is short-circuited because of moisture. - If the main PBA's communication circuit is faulty, replace it.	-

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Switch Error (Main Relay Error)	bE2	- The Power button is continually pressed. - A button other than the Power button is continually pressed.	- Check whether either the Power switch or a tact switch is continually pressed. - Check whether the service PBA holding screws are fastened too tight. If they are fastened too tight, loosen them a little. - If the main PBA switching IC on/off error has occurred, replace the main PBA. - The "E2" error occurs if the main relay connections are incorrect. Check the connections. If there is no error in the connections, replace the main PBA.	Check the contact between the control panel buttons and their corresponding tact switch. - There must be a gap between a control panel button and its corresponding micro switch. ☑ Otherwise, an error occurs after approx. 30 seconds has passed. 
Door Error	dE1 dE	- Door-Lock SW fault - Reed SW fault - Main PCB fault	- Check the Door-Lock SW terminal connections and contacts. - Bring the probe of tester into contact with two terminals of Door-Lock SW.[DS Error] In state of Door Close, Check Reed SW Resistance.[FL Error] In state of Door Unlock, Check Motor Resistance. And In state of Door Lock, Check Door Lock Contact Resistance.[LO Error] In state of Door Unlock, Check Motor Resistance and Door Unlock Contact Resistance. - If Resistance is satisfied with Spec, Replace the PBA.	 1. Check the resistance for Reed SW (Checking Part : White-Green Wire) - Resistance: Approx 0.2Ω between the terminals of Reed SW.  2. Check the resistance for Motor (Checking Part : Black-Brown Wire) - Resistance: 33Ω to 46Ω between the terminals of Motor.  3. Check the resistance for Lock/Unlock Contact (Checking Part : Lock White-Red Wire Unlock White-Blue Wire) - Resistance: Resistance: Approx 0.2Ω between the terminals of Contact. ☑ Check the Door Lock/Unlock state. Lock  Unlock
Water Leakage Error	LE	- Check for any leakage. - Foreign material in the DV case - Fault of a hose or incorrect part engagement in the product.	- Check for any leakage on the base, Hose, Valve and Tub connections and take any required action. - During natural draining, this error occurs when the drain bellows are clogged with foreign material. Remove the foreign material. - Check the drain motor operation. Replace if it does not operate normally.	

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Overflow Error	OE	- Water level sensor fault - Freezing in the winter season	- If the water level sensor has a functional error, replace it. - Check the hose. This error occurs if it is torn or has a hole. - This error occurs if water is frozen in the winter season. Use hair dryer to defrost hose. Consider relocating the unit to warmer location.	
Temperature Sensor Error	TE	- Washing temperature sensor fault - Faulty and incorrect connections of sensor - Main PCB Fault - Freezing in the winter season	- Check the connections of the temperature sensor. - If the temperature sensor has a functional error, replace it.	Check the <u>thermistor</u> resistance (Resistance at 20~30°C: 66.187~36.941 kΩ) 
Unbalance Error	UE	- Motor hall sensor fault - Caused by the laundry contents	- Check the type of laundry. Check whether it may cause an unbalanced situation. - Educate the consumer in this case is to press pause reposition the load or remove a few items. Press start to continue and complete the wash cycle.	-

SUB PCB

- CN802
1. CLUTH

2. WL_MAIN

3. STANDBY

4. TX

5. RX

6. RESET

7. 5V

8. GND

9. 12V

10. POWER ON

- CN501
1. NC

2. NC

3. NC

4. NC

5. NC

6. NC

7. GND

8. WATER THERM

9. CLUTCH SEN

10. WATER SEN 1

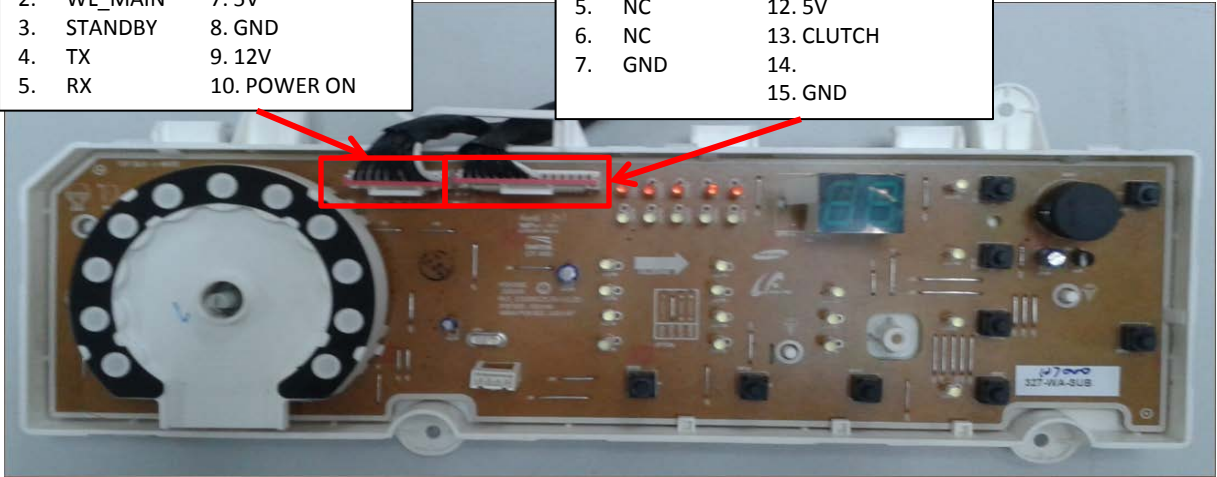
11. WATER SEN 2

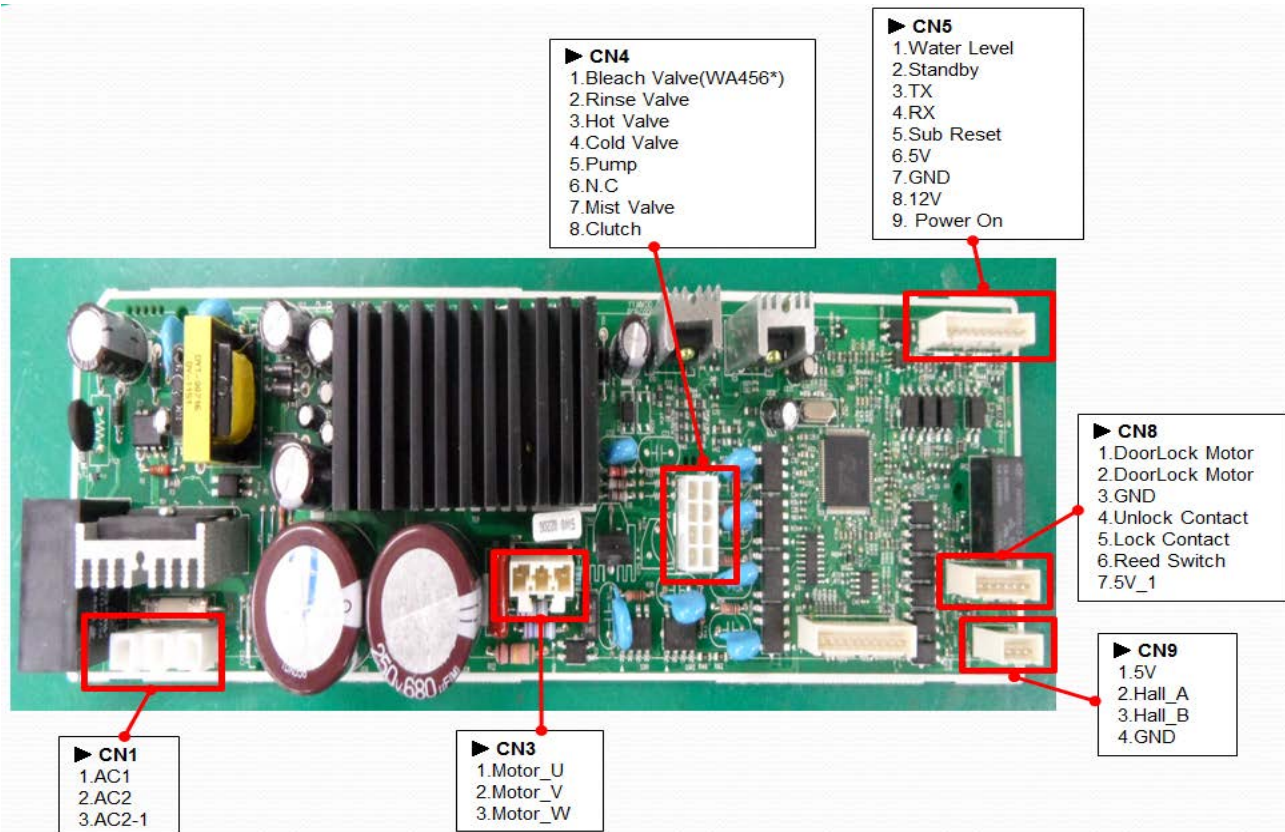
12. 5V

13. CLUTCH

14.

15. GND





Hall Sensor Check

Check Voltage at Pin #4 and #3 of CN9

Tester Check = DC0.6V

Check Voltage at Pin #4 and #2 of CN9

Tester Check = DC0.6V

Motor Check

Resistance at Pin #1 of CN3 and GND

= 226k Ω

Resistance at Pin #2 of CN3 and GND

= 226k Ω

Resistance at Pin #3 of CN3 and GND

= 226k Ω

Drain Motor Pump Check

Check Voltage at Pin #3 of CN1 and Pin #5 of CN4

When Drain Pump operates = AC 120V

Water Valves/ Check

Check Voltage at Pin #3 of CN1 and Pin #1,2,3,4

of CN4 When Valves operates = AC 120V

Clutch-Motor

Check Voltage at Pin #3 of CN1 and Pin #8 of CN4

When Valves operates = AC 120V

AC Power Check

Check Voltage at Pin #1 and #3 of CN1

Tester Check = AC 120V

Door Lock Check

Check Voltage at Pin #3 and #5 of CN8

When Door Lock = DC 6.5V

PCB SUB

① EMG ③ STANDBY ⑤ RX ⑦ 5V ⑨ 12V
② WATER LEVEL ④ TX ⑥ SUB RESET ⑧ GND ⑩ POWER ON

PCB MAIN

Pressure Sensor
1: PS, SIG A
2: PS, SIG B
3: PS, SIG C
4: PS, SIG D
5: PS, SIG E
6: PS, SIG F
7: PS, SIG G
8: PS, SIG H
9: PS, SIG I
10: PS, SIG J
11: PS, SIG K
12: PS, SIG L
13: PS, SIG M
14: PS, SIG N
15: PS, SIG O
16: PS, SIG P
17: PS, SIG Q
18: PS, SIG R
19: PS, SIG S
20: PS, SIG T
21: PS, SIG U
22: PS, SIG V
23: PS, SIG W
24: PS, SIG X
25: PS, SIG Y
26: PS, SIG Z
27: PS, SIG A
28: PS, SIG B
29: PS, SIG C
30: PS, SIG D
31: PS, SIG E
32: PS, SIG F
33: PS, SIG G
34: PS, SIG H
35: PS, SIG I
36: PS, SIG J
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39: PS, SIG M
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44: PS, SIG R
45: PS, SIG S
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48: PS, SIG V
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67: PS, SIG O
68: PS, SIG P
69: PS, SIG Q
70: PS, SIG R
71: PS, SIG S
72: PS, SIG T
73: PS, SIG U
74: PS, SIG V
75: PS, SIG W
76: PS, SIG X
77: PS, SIG Y
78: PS, SIG Z
79: PS, SIG A
80: PS, SIG B
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107: PS, SIG C
108: PS, SIG D
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115: PS, SIG K
116: PS, SIG L
117: PS, SIG M
118: PS, SIG N
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120: PS, SIG P
121: PS, SIG Q
122: PS, SIG R
123: PS, SIG S
124: PS, SIG T
125: PS, SIG U
126: PS, SIG V
127: PS, SIG W
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256: PS, SIG V
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258: PS, SIG X
259: PS, SIG Y
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261: PS, SIG A
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263: PS, SIG C
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405: PS

