

SAMSUNG

Model: WF433BTG*



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.

Bulletins:

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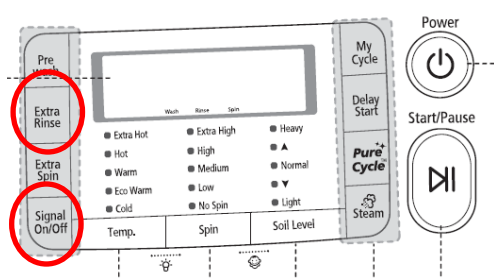
Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD) - 1-866-894-0637 (Tech Sup. - FE/ME)

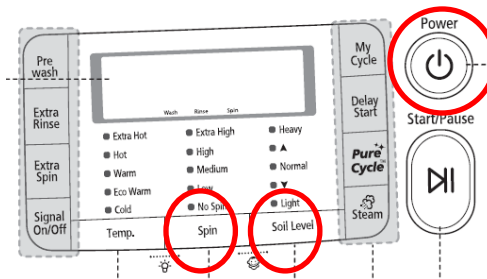
GSPN: http://service.samsungportal.com/EP/web/portal/jsp/EP_Default1.jsp

PLUS ONE: <http://my.plus1solutions.net/clientPortals/samsung>

****With the Power On****



****With the Power Off****



Service Mode:

This mode allows more detailed operation tests and troubleshooting, to enter press **Signal & Extra Rinse** simultaneously with the power on.

In Service Mode the following tests can be performed:

Quick Spin Test: Press **Delay Start & Extra Rinse**.

Note: This accelerates the drum motor from 0 to max RPM in a few minutes. Stay with the washer during this test, out of balance detection may be bypassed. Press **Start/Pause** during the test to hold spinning speed for 10 minutes before going back to Quick Spin Test Mode. Press and hold the **Delay Start & Extra Rinse** to continue.

Cycle Count = Press **Signal** to see how many times the unit was used.

Software # = Press **Soil level** to see the SW version information.

Fault Code Test = Press **Spin** to view the stored fault codes – then turn **Jog Dial** to view error codes. Push **Start/Pause** while the code is displayed to view the number of cycles since the error occurred, Push **Start/Pause** to go back to faults.

Peripheral (Main PCB) input Tests:

1. Select **Extra Rinse**. Then turn the **Jog-Dial** so that the **Heavy Duty LED** is turned on. Next, Water Temperature will be displayed in Fahrenheit.
2. Select **Extra Rinse**. Then turn **Jog-Dial** so that the **Bedding LED** is turned on. The door status will be displayed (OP if open, CL if closed).
3. Select **Extra Rinse**. Then turn **Jog-Dial** so that the **Sanitize LED** is turned on. The door lock Switch status is displayed (UL = unlocked, Lo = locked).
4. Select **Extra Rinse**. Then turn **Jog-Dial** so that the **Stain Away LED** is turned on and Water Level Frequency will be displayed.

Quick Test Mode:

To enter press **Spin, Soil, & Power** simultaneously with the power off.

1. All LED's light up and the washer beeps as it enters the Quick Test Mode.
2. After the displaying the software version, LCD will display Model information. If EEEE is displayed the PCB ass'y is defective.
3. When the version is displayed, turn the Jog-Dial CCW so that the version disappears. Press the following keys to test the various components:

Press **Spin** to test Door Lock/Unlock circuit

Press **Temp** to cycle through the Water Valves circuit test (**The door must be locked first**) in this order: Pre-Wash, Bleach, Cold Main, Hot, & Steam, then off.

Press **Steam** to test Drain Pump/Circulation Pump

Press **Soil** to test the Water/Steam Heater.

When either **Test** or **Spin** is displayed on the LCD, press **Start/Pause** to conduct the motor test.

In **Test mode**, you can test the clockwise and counterclockwise movement of the motor.

In **Spin mode**, you can test the motor at a high rpm.

EEPROM Clear Check

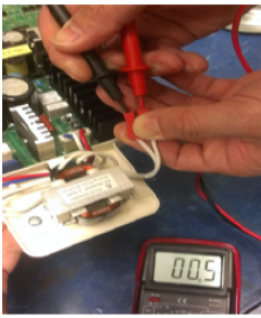
Power off, Press **Delay Start** and **Power** at the same time. Good = Good Fail = Fail

All memory will be cleared, including Fault Codes

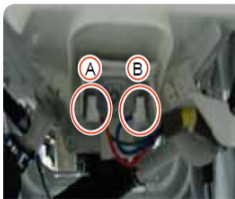
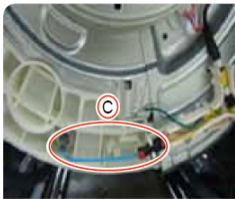
This should be done whenever a new Main PCB is installed.

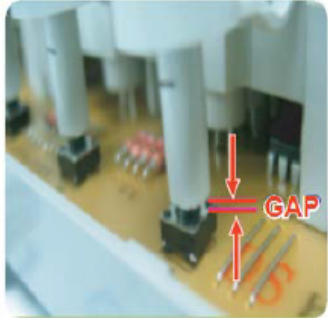
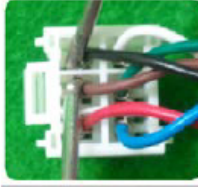
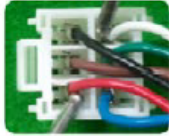
Components Check

Door Lock S/W	Water Level Sensor	Water Valve
		
1. Check the door switch resistance. 2. Check the resistance after the power is off. 3. The resistance across No.1 and No.3 of the Door Lock Switch must be approximately 40 to 57Ω.	1. Check the water level sensor frequency. 2. Check it after the water level sensor and the connector are connected. 3. Frequency: Approx. 26.4 kHz with no load.	1. Check the resistance for the water supply valve. Resistance: 1.0K to 1.2K ohms 2. Check whether there is foreign material in the water supply valve diaphragm. 3. If above test is ok, activate the "water valve test" and check the voltage of each valve for 110V. If voltage is NG change main pcb.

Drain Motor	Drum Motor	Reactor
		
Resistance : Approximately 174Ω between the terminals for the Water Supply Valve.	Plug out the connector and read resistances at any two of the three terminals on Motor : Should be 15 Ω	Check resistance approximately 0.5Ω If no resistance is found the reactor is bad and the unit will not turn on

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Level Sensor	LE1	- 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 : White Color Wire Orange Color Wire. - Frequency : Approx. 25.5 KHz with no load
Washing Motor Error and Hall Sensor Error	3E E3 bE	- 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 6.0 Ω (at 25°C)  ► Check the motor Hall Sensor Check the resistance on the main PCB motor (Between pins 1 and 3, and 1 and 4 of the four (4) pins) - Resistance : Approx. 2 to 4 MΩ - Check the voltage when the power is on.
Water Supply Error	nF	- 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: 113.5Ω ~ 16.5Ω between the terminals of the water supply valve.  2. Check whether there is foreign material in the water supply valve filter. 3. If the water supply valve filter is clogged, clean filter.
Drain Error	nd	- 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. - Drain : Resistance : 13.5Ω ~ 16.5Ω - Bubble : Resistance : 18.75Ω ~ 22.75Ω
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
Door Error	dS	- Door switch fault - Main PCB fault	- If a dS error occurs, check whether it occurs during the Boil cycle. - If it is detected that the door is open, close the door. - The 120V is directly connected to the door. Check and repair the power wire connections and insulation state. - Check the door switch. Replace if faulty. - Check the main PBA door sensing circuit. Replace if faulty.	 ► TYPE 1 Check the door switch Resistance. The resistance of 1 and 3 Pin Must be approximately 125Ω.
	dL			
	LO			
Heater Error	Hr	- Disconnection wire - Heater fault - Wash-thermistor fault	- Check for connection between wire and heater. - If wash heater is faulty, replace it. - Refer the TYPE 1 - If it is not problem in heater, replace wash-thermistor - Refer the TYPE 2	 [FRONT] ► TYPE 1 Check the resistance between A and B. It should be 16.05±0.65Ω.
				 [BACK] ► TYPE 2 If TYPE 1 is OK, Change a wash-thermistor at back of Tub.
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 because the drain bellows are clogged with foreign material. Remove the foreign material. - Check the drain motor operation. Replace if it does not operate normally.	 ► DRAIN PUMP TYPE (Automatic Drainage) Check whether there is any foreign material in the bellows. ☒ Check for any foreign material, such as underwear wires or coins.
				 ► PUMP TYPE Check for any leakage on the base, Hose, Valve and Tub connections.
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.	 Check the hose connected to the water level sensor. ☒ Check whether the hose is folded, cut, or damaged.
Temperature Sensor Error	tE	- Washing temperature sensor fault - Dry temperature sensor fault - Faulty and incorrect connections of the dry condensing sensor - Main PCB fault - Freezing in the winter season	- Check the connections for the washing heater temperature sensor connector. - If the washing heater temperature sensor has a functional error, replace it. - A tE error occurs. - Check the connections for the dry heater temperature sensor connector. - If the dry heater temperature sensor has a functional error, replace it. - Check the connections for the duct condensing temperature sensor connector. - If the duct condensing temperature sensor has a functional error, replace it.	-
Unbalance Error	dc	- Motor hall sensor fault - Caused by the laundry contents	- Check the type of laundry. Check whether they 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.	-

Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Switch Error (Main Relay Error)	E2	- 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	dS FL LO	- 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.	 - Check the resistance for Reed SW (Checking Part : White-Green Wire) - Resistance: Approx 0.2Ω between the terminals of Reed SW.  - Check the resistance for Motor (Checking Part : Black-Brown Wire) - Resistance: 33Ω to 46Ω between the terminals of Motor.  Lock  Unlock - 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.

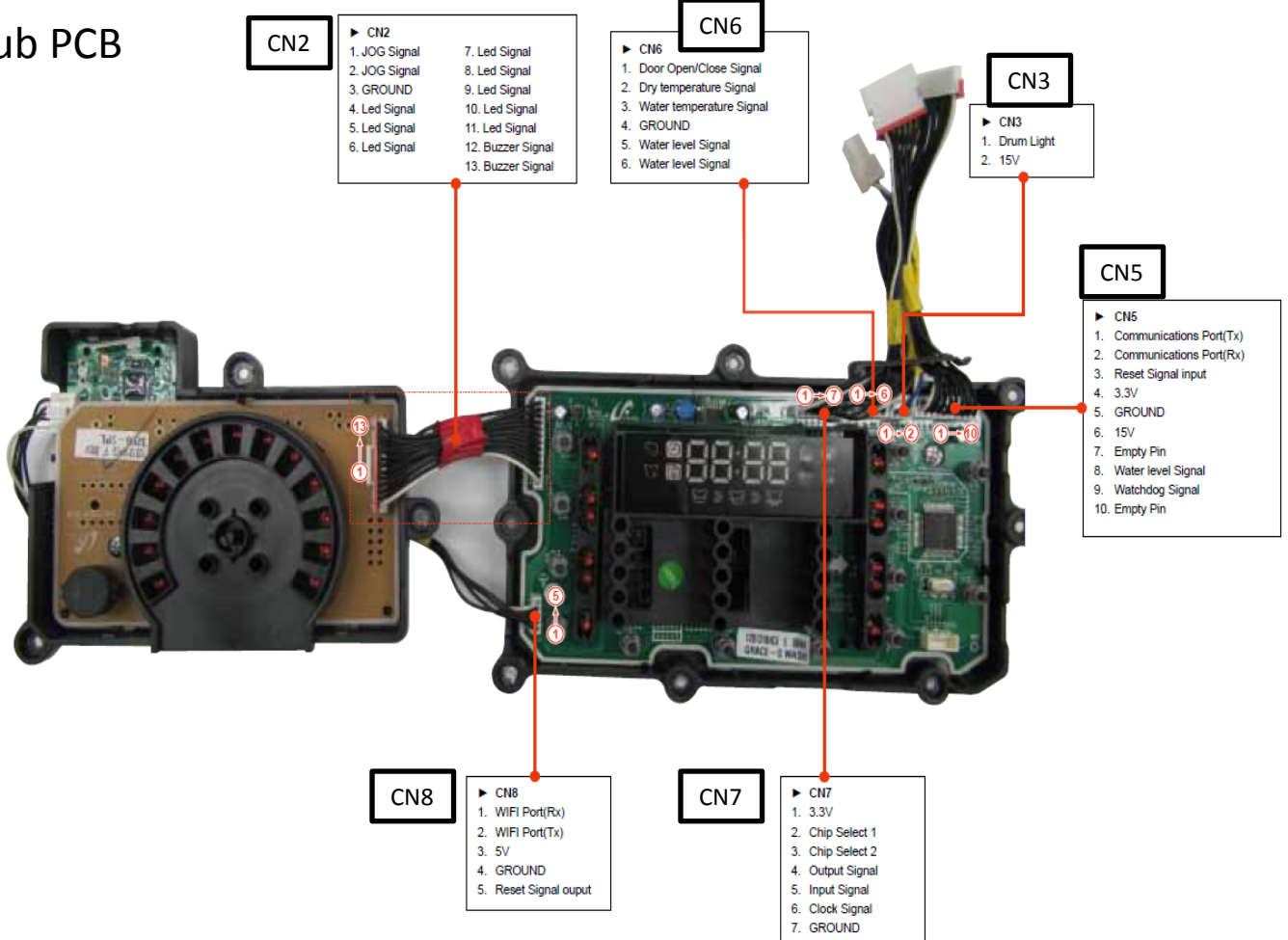
Error Type	Error Mode	Causes	Corrective Actions	Description of Photo
Water Leakage Error	LE	• Check for any leakage. • Foreign material in the DV case • Fault of a hose or incorrect part engagement in the product.	• Check for any leakage on the base, Hose, Valve and Tub connections and take any required 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.	
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 thermistor resistance (Resistance at 20~30°C: 66.187~36.941kΩ) 
Unbalance Error	dc	• 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.	-

Additional Error codes

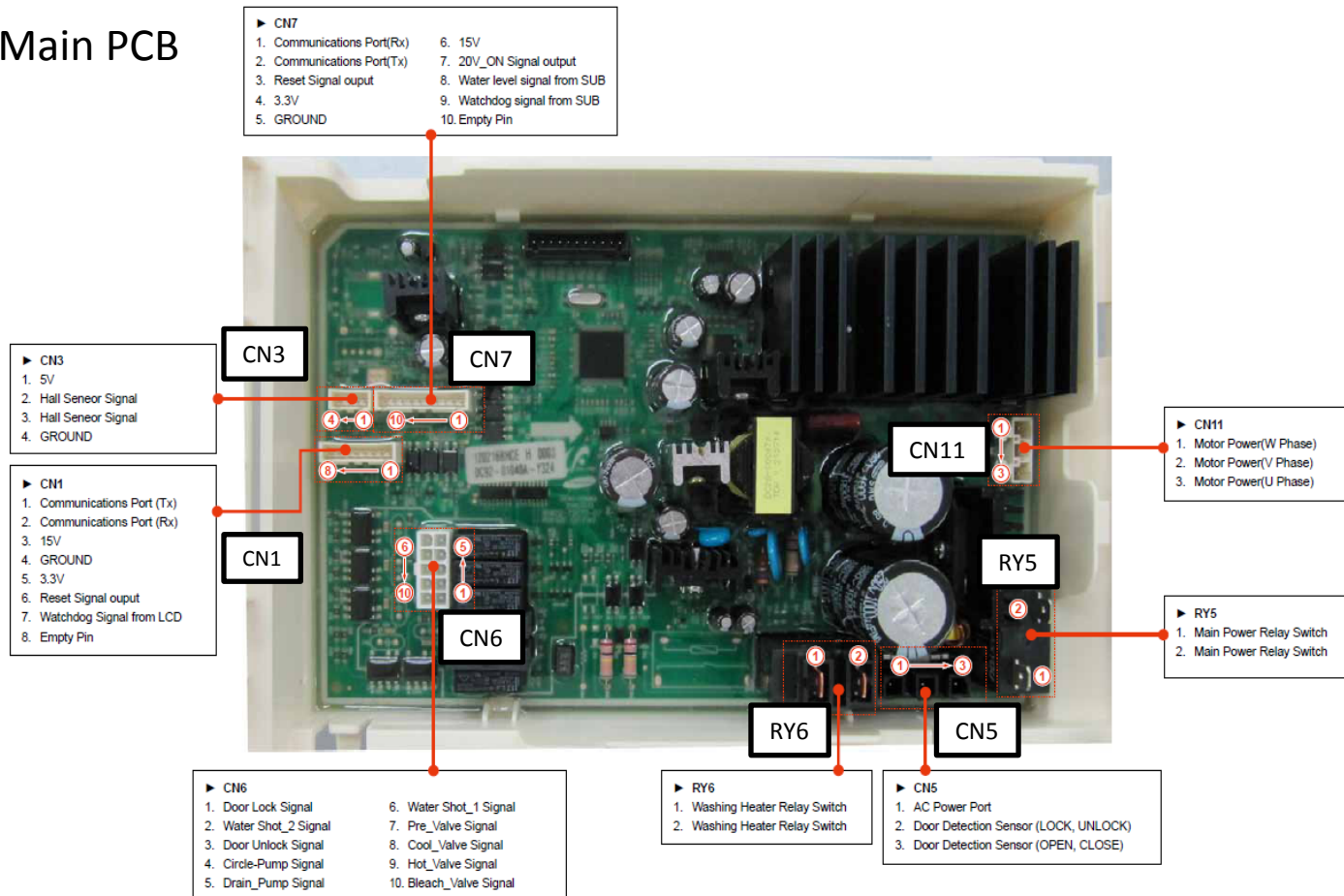
nF1	The hot/cold water hose connection is not correct.	Please connect the hot/cold water hose connection correctly.
PE (Clutch Motor Error)	This error occurs when the position of the clutch is not detected. - If the position detection signal is not received 15 seconds after the clutch motor starts, the spin drum is shaken left and right and then the motor is restarted. If the motor position signal is not received even after 3 reattempts, a PE error occurs.	1. Check the clutch motor. 2. Check the assembly status of the clutch motor. 3. Check the wire connector terminals.
PE1 (clutch hall sensor error)	After the completion of the clutch position detection, and the clutch hall signal is invalid, the spin drum is shaken left and right and then the clutch hall signal is evaluated again. This, if the clutch hall signal is still invalid, the clutch position switching status is checked and then the operation is restarted. (If the 15 reattempts fail, this error occurs.)	1. Check the clutch hall sensor. 2. Check the wire connector terminals. 3. Check the clutch switching status. - Check the coupling assembly and disassembly status.

Foaming Detected	SUdS Sd	- This occurs when too much foaming is detected. It is also displayed while foaming is removed. When the removal is finished, the normal cycle proceeds. "Sud" or "SUdS" is displayed when too much foaming is detected and "End" is displayed when the removal of the foaming is finished. (This is one of the normal operations. It is an error for preventing non-sensing faults.)	
Mems PBA Error Detected	8E1 8E2 8E	- Error detected in the Mems PBA or data error detected. Check the wire connections. Replace if necessary. 1. Check the wire connections. 2. Replace the Mems PBA.	
System Error	SF1 SF2 SF3	- Micro Controller Operation Fail.	Replace Assy PCB.

Sub PCB



Main PCB



SUB PCB(DIAPLAY)

SCHEMATIC DIAGRAM (GRACE-S BETTER_AD)

