Fast Track Troubleshooting

Model: WF393**

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.

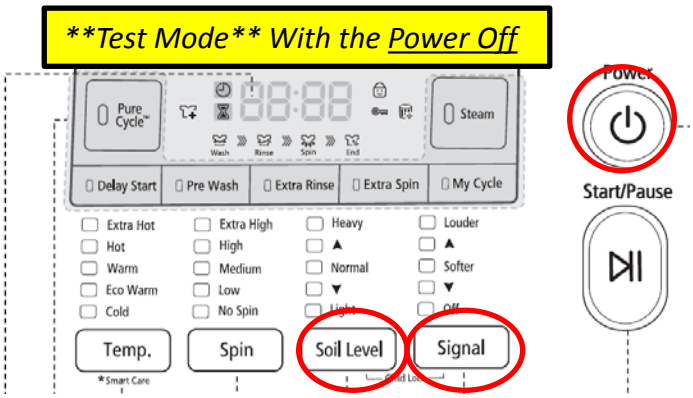
Bulletins:

Publication #Dr WF393 Production Date 4/29/14

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

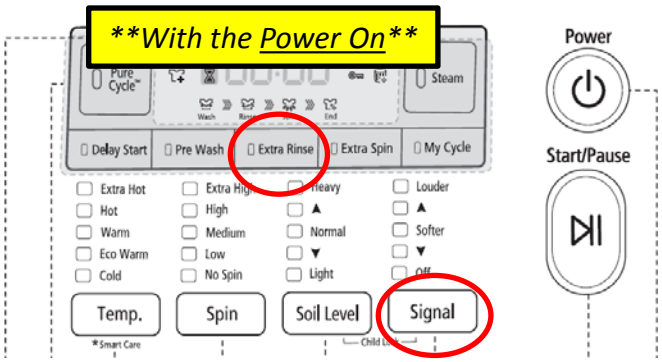
QUICK TEST MODE: WITH POWER OFF - PRESS: SOIL + SPIN + POWER

TEST	FUNCTION	PRESS
1	Water Valve Test	**TEMP** **Door Lock Must be Activated 1st before running Component **
2	Door Lock	**SPIN**
3	Heater	**SOIL**
4	Drain Pump /Bubble Pump	**SIGNAL**
5	EEPROM MEMORY CLEAR	**DELAY START + POWER** *(with POWER OFF)*



SERVICE MODE: WITH POWER ON - PRESS: Signal + Extra Rinse

TEST	FUNCTION	PRESS
1	Cycle Count	**SIGNAL**
2	Version	**SOIL Level**
3	**Board Input Test** *(Move Jog dial to check LED) (See Chart at bottom)*	**Extra Rinse**
4	**DIAGNOSTIC ERROR CODE CHECK** ***(See Below)***	**SPIN -** ("d" *will start flashing*) Turn dial either clockwise (c.w) or counter c.w.
5	**SPIN TEST (RPM)** *(ref: NB***)*	**Pre Wash + Soil Level** for 3sec. (*To Pause: press* - **START/PAUSE**)



*NB*** Spin Test will NOT test Hall Sensor in this mode.* *NOTE: ALWAYS remember to offset counter weight when spin testing an empty machine*

FACT: It is NORMAL for this unit to be unbalanced until 350-400 RPM – counter weights will only align correctly after this RPM is reached

Service mode Option 3:
Board Input Test Chart

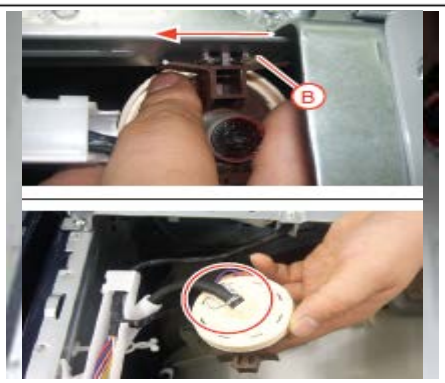
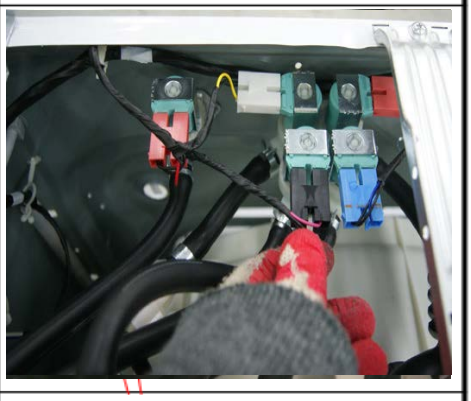
LED	1st LED is on	2nd LED is on	3rd LED is on	4th LED is on	5th LED is on
Display	Water temp. (°C)	Water temp. (°F)	Door status (OP:open, CL:close)	Door lock S/W status (UL:unlock LO:lock)	Water Frequency

✓ *Use the Board input test under service mode to test water temp, during normal wash operation.*

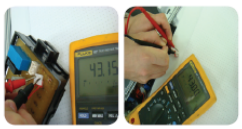
Service mode Option 4:
DIAGNOSTIC ERROR CODE CHECK

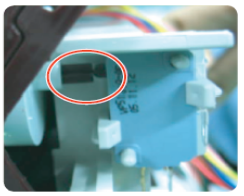
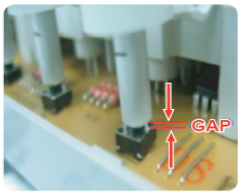
- Activate the **SERVICE MODE** first (ref: above).
- Press the **SPIN** key to start **DIAGNOSTIC CODE** check mode. **"d"** will start flashing.
- To cycle through the diagnostic codes (d1, d2, d3, etc.), turn the rotary cycle selector (knob) either clockwise or counter clockwise.
- When turning the rotary selector key (knob) in one direction, it shows diagnostic codes from the latest (d1).
- Now when turning the knob in the opposite direction it shows the diagnostic codes in the reverse order. E.g. When it stops at "d5" and then turn backwards, it shows from "d4" to "d". (Refer to Diag. Code interpretation).

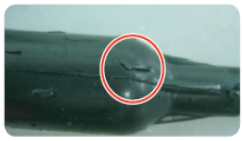
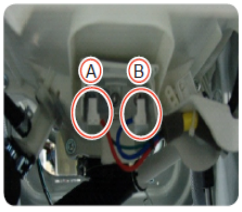
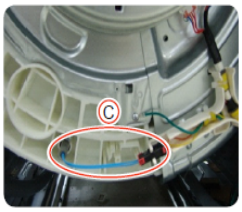
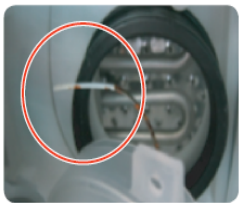
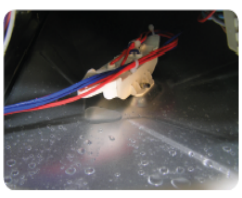
Components Check

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
	
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

Error Type	Error Mode		Causes	Corrective Actions	Description of Photo
	LED	LCD			
Water Level Sensor	LE	Error! Water Level Sensor Problem Error! Sensor del nivel de agua.	• 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. - Frequency: Approx. 26.4 KHz with no load
Washing Motor Error and Hall Sensor Error	3E E3 bE	Error! The motor is not working properly. Error! El motor no funciona correctamente.	• 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.	 ► DD MOTOR 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.  ► UNIVERSAL MOTOR Check the Resistance of Nos.1 and 4 of the wire pin on the side of the TACHO SENSOR. - Resistance: Approximately 40 to 45 Ω (Normal)  ► THREE PHASE MOTOR Measure the Resistance of Nos. 2 and 3 of the wire pin on the side of the HALL SENSOR. - The revolution of the drum needs to be reproduced. (Turn the drum by hand.) - Resistance: Approximately 3 to 12V (Voltages may differ depending on the speed of the revolutions.)
Water Supply Error	nF nF1	Error! Low Water Pressure Error! Baja presión de agua.	• 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: 0.8k to 1.8kΩ between the terminals of the water supply valve. 2. Check whether there is foreign material in the water supply valve diaphragm. 3. If the water supply valve filter is clogged, clean filter.
Drain Error	nd	Error! No Draining Error! No funciona el drenaje.	• Drain pump fault • Freezing in the winter season • Foreign materials in the drain pump • Main PCB fault	• Check whether the revolutions of the drain pump motor are restrained by foreign material. • Check the same thing for the natural drain process. • Check the wire connectors on Main PCB and Drain Pump ASSY. The connector or wire may have poor physical connection. • If the drain pump operates abnormally intermittently when the temperature of the water in the tub is high. • If the motor revolutions are restrained due to freezing in the winter season, check the method to remove the freezing and remove as directed.	 ► DRAIN MOTOR Resistance: Approximately 6.3 Ω between the Terminals for the Water Supply Valve  [Drain]  [Bubble] ► Check the drain pump resistance. - Drain : Resistance : 13.5Ω ~ 16.5Ω - Bubble : Resistance : 18.75Ω ~ 22.75Ω

Error Type	Error Mode		Causes	Corrective Actions	Description of Photo
	LED	LCD			
Communication Error	-	Error! Electronic Control Problem Error! Problemas con el control electrónico.	• 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.	-
Switch Error (Main Relay Error)	E2 Sr	Error! A button is either stuck or is being pressed continuously. Error! 1/2 Algún botón se encuentra trabado o está sometido Error! 2/2 a presión en forma ininterrumpida.	• The Power button is continually pressed. • A button other than the Power button is continually pressed. • Main PCB relay fault	• 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	Error! Door is open. Error! La puerta está abierta.	• Door switch fault • Drain pump fault • Dry duct fan motor 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 1. Check the door switch Resistance. 2. The resistance of 1 and 3 Pin Must be approximately 125Ω.
	dL	Error! The door was unlocked while the washer was running. Error! 1/2 La puerta fue destrabada mientras la lavadora estaba Error! 2/2 en funcionamiento.			
	LO	Error! The door will not unlock. Error! La puerta no se puede abrir.			 ► TYPE 2 The resistance of Nos. 3 and 5 of the DOOR LOCK SWITCH must be approximately 949 Ω.
	FL	Error! The washer door would not lock. Error! No se podía trabar la puerta de la lavadora.			
Heater Error	Hr	Error! Water Temperature Control Problem Error! Problema con el control de la temperatura del agua.	• Heater fault • A fault of the red temperature sensor at the center of the dry heater • Steam function fault • Freezing in the winter season	• Check for wires are disconnected in the washing heater. Replace if faulty. - An Hr error occurs. • If the dry heater or air refresh heater overheating sensor is faulty, replace it. - An Hr error occurs. • Check the steam heater. Replace if it is faulty. - An Hr error occurs.	 [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	Error! Water Leakage Problem Error! Problemas de pérdida de agua.	• 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 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.

Error Type	Error Mode		Causes	Corrective Actions	Description of Photo
	LED	LCD			
Overflow Error	OE	Error! Water Supply Problem Error! Suministro de agua.	• 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	Error! Temperature Sensor Problem Error! Sensor de temperatura.	• 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	Error! Unbalanced Load Error! La carga desequilibrada.	• 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.	-
Heater Error	Hr	Error! Water Temperature Control Problem Error! Problema con el control de la temperatura del agua.	• Heater fault • A fault of the red temperature sensor at the center of the dry heater • Steam function fault • Freezing in the winter season	• Check for wires are disconnected in the washing heater. Replace if faulty. - An Hr error occurs. • If the dry heater or air refresh heater overheating sensor is faulty, replace it. - An Hr error occurs. • Check the steam heater. Replace if it is faulty. - An Hr error occurs.	 [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	Error! Water Leakage Problem Error! Problemas de pérdida de agua.	• 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 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.

Additional Error codes

nFI	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.
PEI (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.

Problem	What To Do
Will Not Lock	• Door is not aligned or closed properly. • Perform ***Quick Test Mode***. Check Door Lock. Check the output voltage of Door Lock Coil. If it reads 120V, change PCB, and if not, change Door Lock Connector. (Refer to PCB Connector Check.) • Read Lock Switch and PCB (CN1). (Refer to PCB Connector Check.)

Problem	What To Do
Will Not Spin	• Make sure to close the door completely. • Check for water left inside the washer. If so, go to ***"Will Not Drain"***. • Perform ***Quick Test Mode or Quick Spin Test***. Does the washer spin? (Before the test, empty the unit inside.) If it doesn't tumble after the above, change PCB. When the problem persists, change the motor. • Check motor windings resistance. (CN8 Pin1&3 = 11.6 ohms (at ±7% 20°C/68°F), Pin1&2 = 11.6ohms (at ±7% 20°C), Pin2&3 = 11.6 ohms (at ±7% 20°C))

Problem	What To Do
No Key Operation	• Each washing selection deactivates some buttons. • Child Lock is being activated. To exit, hold down Soil Level Key and Signal Key simultaneously until it sends out a beeping sound. • When "End" illuminates on the display, only the Power button works.

Problem	What To Do
Excessive Suds	• Go to ***"Will Not Drain"*** and ***"Will Not Spin"*** and check the draining. • Check PCB and Drain Pump for any loose wire connection. • Perform Quick Test Mode or Board Output Test to drain. • Use HE (High-Efficiency) or low sudsing detergent specially formulated for front load washers. • Reduce the amount of detergent for that specific load size and soil level. Keep in mind that towel creates more suds generally. • Reduce the amount of detergent when water is soft, or laundry is small or lightly soiled. • Do one more washing cycle with cold water and a table spoon of salt without detergent.

Problem	What To Do
Leaks water.	•Make sure there is no leakage in the inlet hose connections. • Check for rubber gasket damage due to over-tightening. • Check standpipe for leakage. Check if the standpipe contributes the leakage. If so, the standpipe is under-capacity. In this case, make sure to seal its opening tightly. • Check waster hose connections. (Water Supply/ Drain/ Dispenser Hose & Clamp) • Check if rubber boot is water-tight. • Check for any kink on the water hoses.

Problem	What To Do
Load is too wet at the End of the cycle.	• Unbalance due to not enough load. Put additional load. • Due to excessive suds by using general detergent. Use HE (High-Efficiency) or reduce its quantity. • Low Spin Speed or Drain Only was selected. • Go to **" Will Not Spin".**

Problem	What To Do
Will Not Drain	• Check for any kink on the drain hose. If any, straight it out. • Check for any restriction in the drain hose. • Close the door and press the Rotary Cycle Selector. For safety reasons, the washer does not tumble or spin with the door open. • When it is freezing outside, check if it is frozen inside the drain hose. • Check if the water level signal input is correct. Go to ***Board Input Test Mode***. • Go to ***Quick Test Mode*** and do Drain Pump Test. • Check if there is any twist in the hose (the one between Tub and Drain Pump). • Check if it reads AC 120V at the pump when a spin cycle is selected. • Read the winding resistance of the pump motor. (14.2 ± 7% Ohms) • Check the pump at CN1(Pin3) on PCB. It should read AC 110~120V. (Refer to PCB Connector Check)

Problem	What To Do
Will Not Unlock	• Check if the door is being pushed out, which may keep it from unlocking. • Door locks itself when the water level is too high (Drain the unit). • Check the following with ***Board Input Test Mode***. Water Level (frequency): Over 23.80 KHz. → If so, refer to "Will Not Drain". Temperature (Inside Drum): Higher than 60°C/140°F. → If so, wait until it drops. When everything is normal, check PCB connectors and Door Lock Switch. • Drain manually after removing the plastic drain hose holder. • Display shows ***"LO"***. Turn off and on the unit. If ***"LO"*** keeps illuminating, check PCB and Door Lock Switch. • Perform ***Quick Test Mode***. Check Door Lock. Check the output voltage of Door Lock Coil. If it reads 120V, change Door Lock Switch, and if not, change PCB. (Refer to PCB Connector Check.)

Problem	What To Do
Fills with the wrong temperature water.	. Turn both faucets on fully . Make sure temperature selection is correct. . Make sure hoses are connected to correct faucets. Flush water lines. . Check the water heater. It should be set to deliver a minimum 120°F(49°C) hot water ate the tap. Also check water heater capacity and recovery rate. . Disconnect hoses and clean screens Hose filter screens may be plugged. . As your Washer is filling, the water temperature may change as the automatic temperature control feature checks incoming water temperature. This is normal. While your Washer is filling, you may notice just hot and/or just cold water going through the dispenser when cold or warm wash temperatures are selected. This is a normal function of the automatic temperature control feature as you Washer determines the temperature of the water.

Problem	What To Do
Will Not Start	. Plug the unit into the wall outlet. Check for proper voltage. • Check fuse or reset circuit breaker. • Push any key to turn on the washer and press the Start/Pause key to run the washer. • Close door and push the Start/Pause key to run the washer. • Check if washer is in a pause, soak or suds process. Wait briefly and it may start. (If the washer is in suds period, Suds will light up instead of remaining time.) • Check for restricted drain system. (If there is electrical problem in drain system, ***"nd"*** error will occur after 15 minutes.) • Check Water Supply. • Check the line or water valve screen filter. • Check if PCB connectors are assembled properly. • Check if CN6 terminals on PCB are in good condition. (Refer to PCB Connector Check.) • Replace PCB.

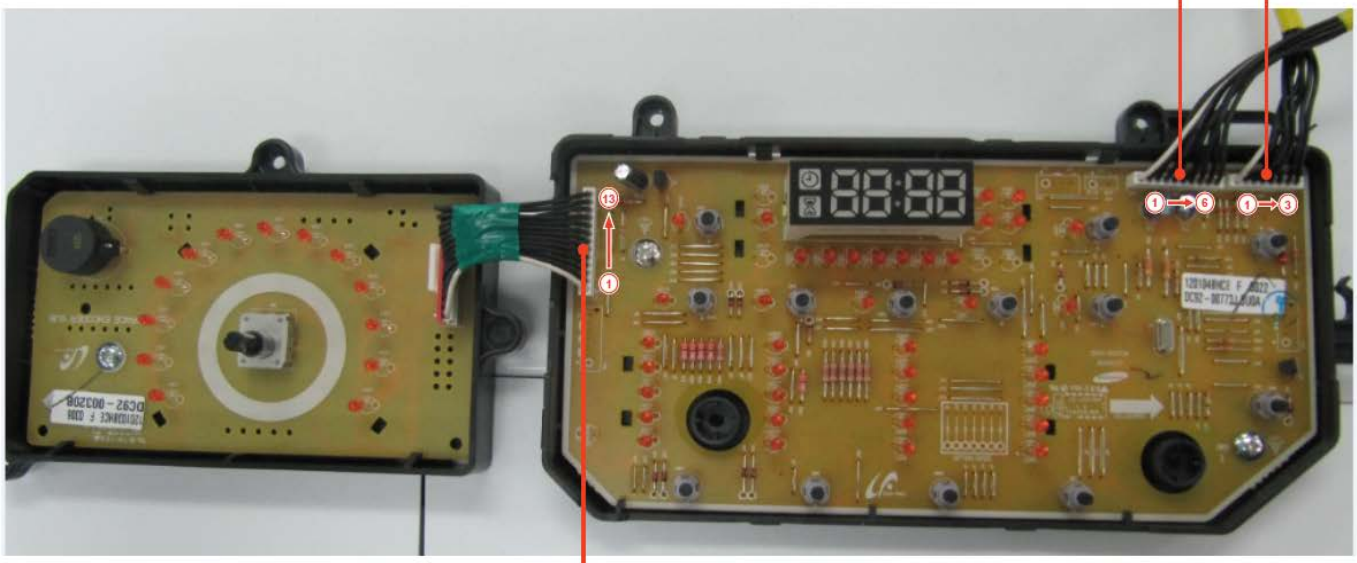
Problem	What To Do
Stops	• Plug cord into live electrical outlet. . Check fuse or reset circuit breaker. . Close door and press the Cycle Selector dial to start your Washer. For your safety, your Washer will not tumble or spin unless the door is closed . Before your Washer starts to fill, ti will make a series of clicking noises to check the door lock and do a quick drain. . There may be a pause or soak period in the cycle. Wait briefly and it may start. . Check screens on inlet hoses at the faucets for obstructions. Clean screens periodically.

Problem	What To Do
Vibrates or is too noisy	Check if the washer is leveled and the lock nuts are tightened up on the bottom plate. • Check if all of the shipping bolts and spacers are removed from the back panel. • Check if load is big enough and there is no unbalance. If there is not enough load, put in a few towels to balance it. • Check if the motor is fastened enough. • Remove various trouble contributors (such as dust coat on the floor). . Check if Washer is touching other object.

Problem	What To Do
Has detergent remains In the automatic dispenser After the wash cycle is complete.	. Make sure your Washer is running with sufficient water pressure. . Make sure the Detergent Selector dial is in the upper position when using granular detergent.

Problem	What To Do
Has no water Or not enough water..	. Perform ***Quick Test Mode***. Check all of Water Valves visually. Or, check Water Valves with hands on them. When they work, you can feel vibrations. If not, no vibrations. • Check if water taps are turned on fully. • Check Water Valves and Water Level Sensor (Refer to PCB Connector Check) • Check if there is any kink in inlet hoses. • Check if inlet screens are clogged up. • Check if water has enough pressure. If so, find out its contributors. • Check if there is any frozen area in the unit (Drain Hose, etc) • Measure the resistance of Water Valve Coil. (It should read 1.18K ohms. Check Pin#1 of CN5 and PIN#1,2,3,4 of CN10) • Check Pressure S/W and PCB for loose connections. (Refer to PCB Connector Check.)

Sub PCB



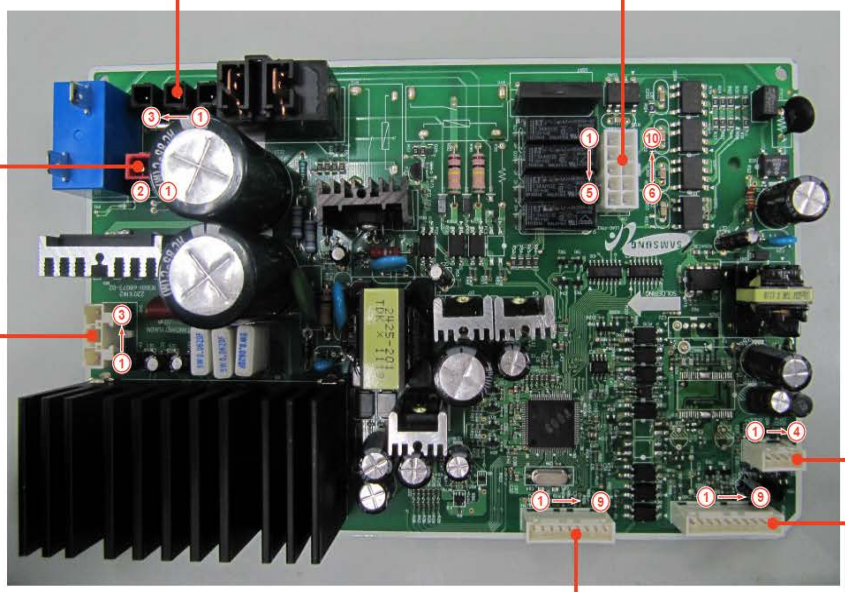
► CN10
1. Communications Port (Tx)
2. Communications Port (Rx)
3. Reset Signal ouput
4. Ground
5. 5V
6. 15V

► CN3_GRAPHIC
1. Tub Light Drive Signal
2. Empty Pin
3. 15V

► CN2

1. JOG signal	8. Led signal
2. JOG signal	9. Led signal
3. Ground	10. Led signal
4. Led signal	11. Led signal
5. Led signal	12. Buzzer signal
6. Led signal	13. Buzzer signal
7. Led signal	

Main PCB



► CN6
1. AC Power Port
2. Door Detection Sensor(LOCK, UNLOCK)
3. NC

► CN1

1. NC	6. DRY VALVE
2. BUBBLE PUMP	7. PRE VALVE
3. DRAIN_PUMP	8. COOL VALVE
4. DOOR_UNLOCK	9. HOT VALVE
5. DOOR_LOCK	10. BLEACH VALVE

► CN7
1. Reactor Connection Port
2. Reactor Connection Port

► CN5
1. Motor Power (W Phase)
2. Motor Power (V Phase)
3. Motor Power (U Phase)

► CN3
1. 5V
2. Hole Sensor Signal
3. Hole Sensor Signal
4. GND

► CN4

1. 5V	6. DRST
2. NC	7. FLMD0
3. DDI	8. DDO
4. DCK	9. GND
5. DMS	

► CN10

1. TXD	6. 15V
2. RXD	7. NC
3. RESET	8. WATER LEVEL
4. 5V	9. RELAY WATCHDOG
5. GND	

REFERENCE INFORMATION

BLK	BLACK
BLU	BLUE
GRN	GREEN
GRY	GRAY
NTR	NATURAL
ORG	ORANGE
PNK	PINK
RED	RED
SKYBLU	SKYBLUE
VIO	VIOLET
WHT	WHITE
YEL	YELLOW