



website : <http://biz.lgservice.com>

e-mail : <http://LGService.com/techsup.html>

WASHING MACHINE SERVICE MANUAL

CAUTION

READ THIS MANUAL CAREFULLY TO DIAGNOSE PROBLEMS
CORRECTLY BEFORE OFFERING SERVICE.

BEFORE SERVICING THE WASHING MACHINE, UNPLUG THE POWER
CORD TO AVOID THE RISK OF AN ELECTRIC SHOCK.

WHEN SERVICING INTERNAL PARTS, USE ONLY SERVICE PARTS
SUPPLIED FROM LG.

AFTER SERVICING THE ELECTRIC WIRE, INSURE THAT INSULATION
TAPE IS APPLIED TO PREVENT AN ELECTRICAL SHORT.

MODEL : F*(R5)(V/T/Q)(N/Y)W**

CONTENTS

1. SPECIFICATIONS	3
2. FEATURES & TECHNICAL EXPLANATION	4
3. PARTS IDENTIFICATION	6
4. INSTALLATION	7
5. OPERATION	12
6. WIRING DIAGRAM / PCB LAYOUT	17
7. TROUBLESHOOTING	19
7-1.BEFORE PERFORMING SERVICE	19
7-2.LOAD TEST MODE	19
7-3.HOW TO CHECK THE WATER LEVEL FREQUENCY	20
7-4.ERROR DISPLAY	21
7-5.TROUBLESHOOTING WITH ERROR	23
• IE (Water Inlet Error)	24
• UE (Unbalanced Error)	25
• OE (Water Outlet Error)	26
• FE (Over Flow Error)	28
• PE (Pressure Sensor S/W Error)	29
• dE2 (Door open Error).....	31
• dE1 (Door switch Error).....	31
• tE (Thermistor (Heating) Error)	33
• LE (Motor Lock Error)	36
8. TROUBLESHOOTING WITHOUT ERROR CODES	38
• Power Failure or no power	38
• Vibration & Noise during spin	39
• Detergent & Softener does not flow in	40
• Water Leak	41
• Before using the Tag On function	43
9. PART INSPECTION	45
9-1.FILTER ASSEMBLY (LINE FILTER)	45
9-2.DOOR LOCK SWITCH ASSEMBLY	46
9-3.STATOR ASSEMBLY	48
10. DISASSEMBLY INSTRUCTIONS	49
11. EXPLODED VIEW AND PART LIST	57

1. SPECIFICATION

ITEM		Refer to 1 page
POWER SUPPLY		220 V - 240 V ~,50Hz/60Hz
PRODUCT WEIGHT		63kg
ELECTRICITY CONSUMPTION	WASHING	155 W
	SPIN	490 W
	DRAIN MOTOR	20 W
	WASH HEATER	2000 W
REVOLUTION SPEED	WASH	46 rpm
	SPIN	F4R***** : No Spin / 400 / 800 / 1000 / 1200 / 1400
		F2R***** : No Spin / 400 / 800 / 1000 / 1100 / 1200
OPERATION WATER PRESSURE		0.1 ~ 1.0 MPa (1.0 kgf / cm ² ~ 10.0 kgf / cm ²)
CONTROL TYPE		Electronic
WASH CAPACITY		Refer to the Rating Label
DIMENSION		600mm x 560mm x 850mm
WASH PROGRAM		Cotton, Cotton+, Mixed Fabric, Easy Care, Silent Wash, Allergy Care/Hygiene Baby Steam Care/Baby Care Delicates, Hand/Wool, Sportswear, Quick 30, Duvet, Tub Clean, Download Cycle
RINSE		Normal, Rinse ⁺
DOOR SWITCH TYPE		PTC+Solenoid
WATER LEVEL		by Pressure Sensor S/W
RESERVATION		From 3 hours to 19 hours
SENSING LAUNDRY AMOUNT		Adapted
FUZZY LOGIC		Adapted
DISPLAY REMAINING TIME		Adapted
ERROR DIAGNOSIS		13 items
POWER AUTO OFF		Adapted
CHILD LOCK		Adapted
AUTO RESTART		Adapted
TIME SAVE		Adapted
SMART		WiFi (Smart ThinQ 3.0)

WARNING

- To reduce the risk of personal injury, adhere to all industry recommended safety procedures including the use of long sleeved gloves and safety glasses.
Failure to follow all of the safety warnings in this manual could result in property damage, personal injury or death.

2. FEATURES & TECHNICAL EXPLANATION

2-1. Product Features



- **Inverter Direct Drive system**

The advanced Brushless DC motor directly drives the drum without belt and pulley.



- **6 Motion**

Washer is able to perform various drum actions or a combination of different actions depending on the wash program selected. Combined with a controlled spin speed and the ability of the drum to rotate both left and right, the wash performance of the machine is greatly improved, giving you perfect results every time.



- **Turbo Wash**

Wash the laundries in 1 hour with energy and water saving.



- **Tag on**

This is a function that may use Diagnosis, Download Course, Washing Coach, One Touch Washing, etc. when you touch the Tag On logo of the washing machine by using your smartphone with NFC.



- **More economical with Intelligent Wash system**

Intelligent Wash System detects the size of load and water temperature, and then determines the optimum water level and washing time to minimize energy and water consumption.



- **Child Lock**

The Child Lock prevents children from pressing any button to change the settings during operation.



- **Low noise speed control system**

By sensing the amount of load and balance, it evenly distributes load to minimize the spinning noise level.



- **Auto Restart**

Auto Restart allows the program to restart all by itself in case of power failure. It does from the stage where it stopped.

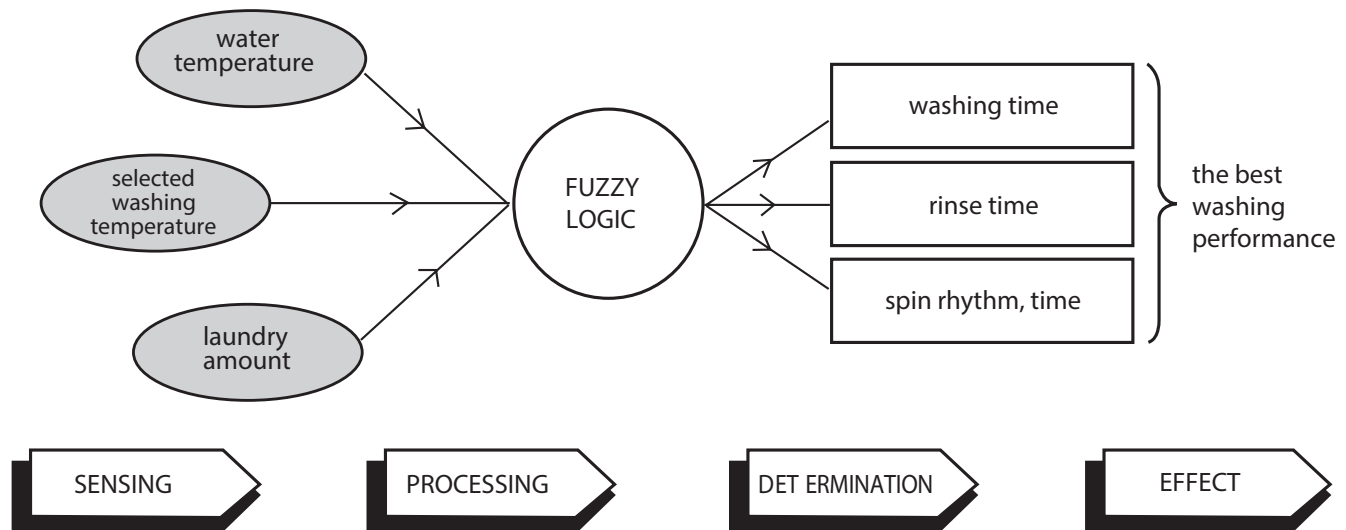


- **SmartDiagnosis™**

Should you experience any technical difficulty with your washing machine, it has the capability of transmitting data by phone to the Customer Information Center. The call center agent records the data transmitted from your machine and uses it to analyze the issue, providing a fast and effective diagnosis.

2-2. DETERMINE WASHING TIME BY FUZZY LOGIC

To get the best washing performance optimal time is determined by sensing the water temperature, selected washing temperature and laundry amount.



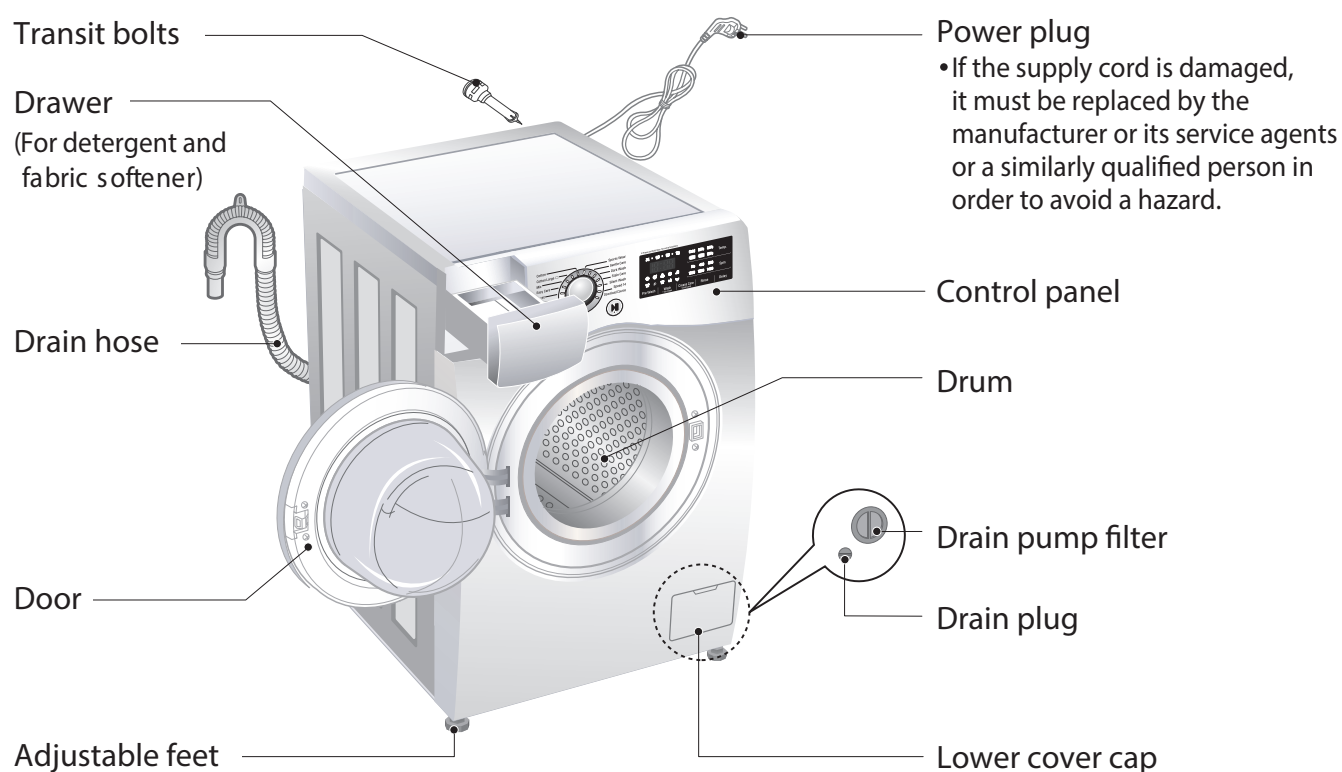
2-3. WATER LEVEL CONTROL

- This model adopts a pressure sensor which can sense the water level in the tub.
- Water supply is stopped when the water level reach the preset level, then washing program proceeds.
- Spinning does not proceed until the water in the tub reduces to a certain level.

2-4. THE DOOR CAN NOT BE OPENED

- While program is operating.
- While Door Lock light is on.

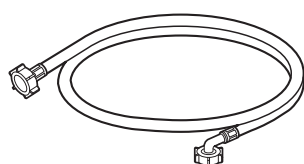
3. PARTS IDENTIFICATION



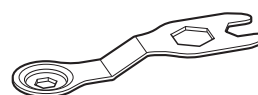
■ Name	: Front loading washing machine
■ Power supply	: 220 - 240 V~
■ Size	: 600 mm (W) X 560 mm (D) X 850 mm (H)
■ Weight	: 63 kg
■ Max.Watt	: 2100 W 0.45 W (The off-mode, The left-on mode)
■ Wash capacity	: 7 / 8 / 9 kg
■ Permissible water pressure	: 0.1 - 1.0 MPa (1.0 - 10.0 kgf / cm ²)

* The appearance and specifications may vary without notice to improve the quality of the unit.

■ Accessories



Inlet hose



Spanner

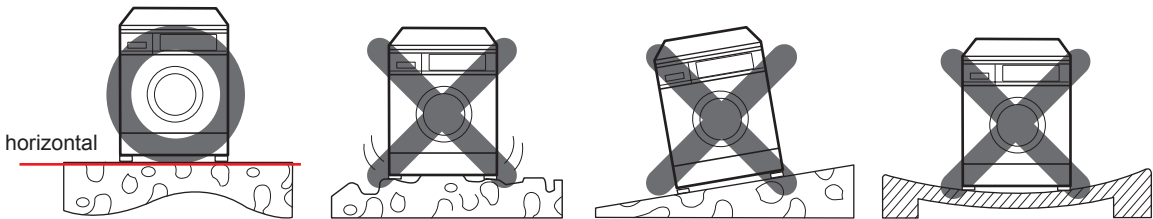
4. INSTALLATION

■ INSTALLATION

The appliance should be installed as follows.

1 Check the conditions of installation area.

1. Check level ground.



On raised foundations or upper level homes, the **vibrations** can be caused by the type of flooring. It may be **necessary to move the machine** to a different area in the home or have the floor reinforced to properly support the operation of the unit.

2. Check for humidity or any foreign objects under the feet.

Clean the floor, there should be no foreign objects under the feet.
If the unit has foreign objects underneath the feet, this will prevent the unit from being leveled properly and will cause **vibrations** and **slipping**.
Remove any foreign objects, if any from underneath the machine and level unit properly.
See below for examples of foreign objects.



Purchased stopper



Carpet

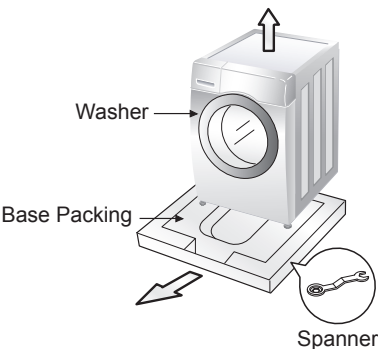


Paper



Laminated paper

2 Open the box and check appliance condition.



This leveling (or spanner) wrench must be used to remove the shipping bolts and level the unit. This should be kept for future use.

3 Use spanner to remove transit bolts.



X 4 EA

Transit bolts

- ※ Without removal of transit bolts
▶ **Spin noise** and **shaking**.

4 Confirm the distance between the appliance and the wall.

More than 2cm



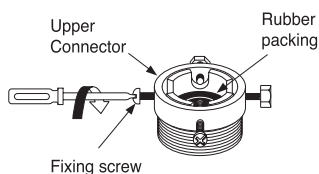
- ※ If the distance is less than 2cm,
the water supply hose will
kink or **fold**.



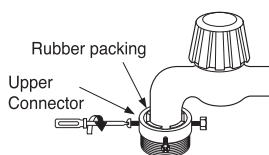
5 The tap connection and hose connection must be parallel.

1. Normal Tap without thread & **screw** type inlet hose.

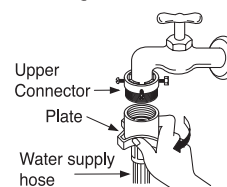
1. Unscrew the fixing screw to attach the tap.



2. Push the connector up till the rubber packing is in tight contact with the tap. Then tighten the 4 screws.

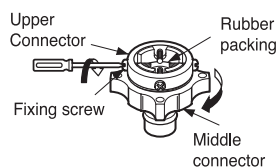


3. Push the water supply hose vertically upwards so that the rubber packing within in the hose can adhere completely to the tap and then tighten it by screwing it to the right.

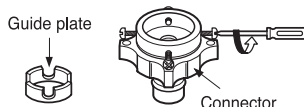


2. Normal Tap without thread & **one touch** type inlet hose (Single inlet models)

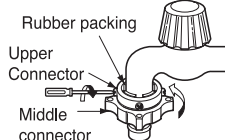
1. Untighten the upper connector screw.



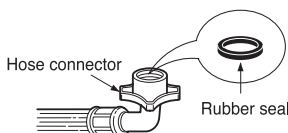
- ï In case the diameter of the tap is large remove the guide plate.



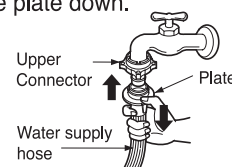
2. Push the upper connector up till the rubber packing is in tight contact with the tap. Then tighten the 4 screws.



- ï Turn the middle connector not to have water leaked.
- ï Make sure that the rubber seal is inside the hose connector.



3. Connect the water supply hose to the middle connector, pushing the plate down.



- ï To separate the water supply hose from the middle connector shut off the tap. Then pull the inlet hose down, pushing the plate down.



- ï Make sure that there are no kinks in the hose and that it is not crushed.

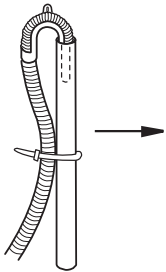
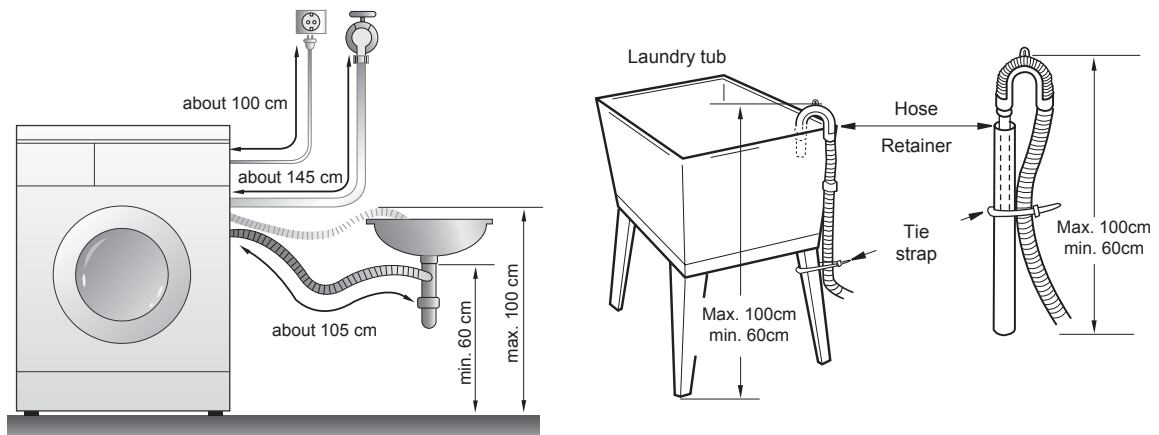
6 Connect Drain Hose.

If the drain hose is not installed properly, the unit will not drain properly.

This allows water to back flow into the unit which can cause odors.

Refer to Owner Manual for proper drain hose installation.

The odor could also be coming from the home's drain to which the drain hose is attached.



In this type of drain hose installation, the odor could be coming from the standpipe.

This odor can come up the drain hose and into the unit.

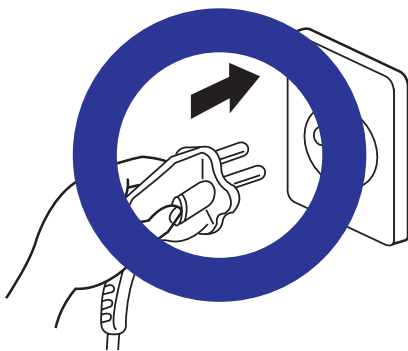
Pour a cup or two of bleach or vinegar down the home drain and let it sit for 24 hours before running another cycle.

This will help eliminate odor from the home drain.

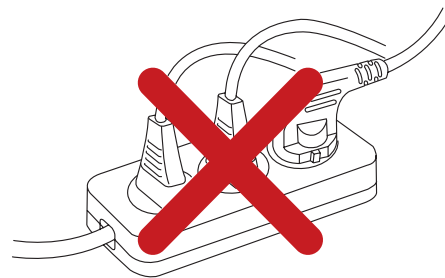
If a cycle is started too soon after doing this, it will not help the issue.

7 Connect power plug.

Connect the power plug to the wall outlet.



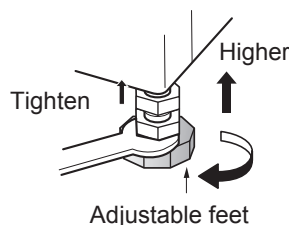
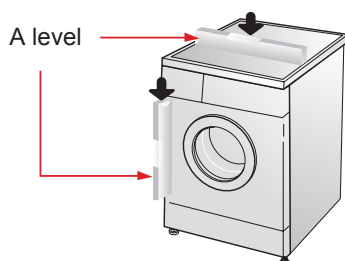
Avoid connecting several electric devices, it may be the cause of a fire.



8 Check the horizontality with a level (Gage).

Step 1

If washing machine legs are loose or not Screwed in, then **tighten** with the spanner wrench. Using the level, level the washing machine from front to back and side to side.



Step 2

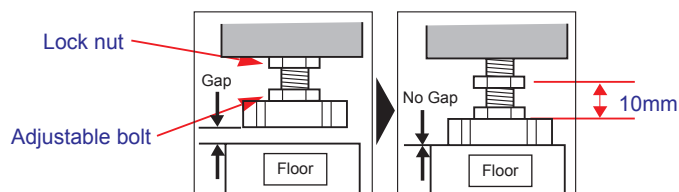
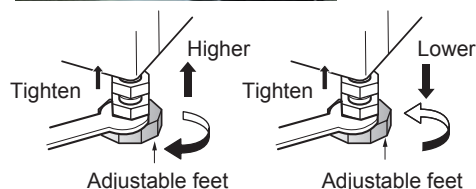
Use the spanner wrench to adjust Legs until level and try the **Diagonal test**.

Diagonal test



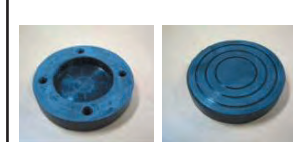
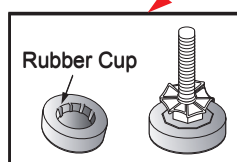
※ How to perform a diagonal test:

Place your right hand on the back, right corner and your left hand on the front, left corner of the unit, then attempt to rock the unit from corner to corner. Then, move your right hand to the front, right side and your left hand to the back, left corner and attempt to rock the unit from corner to corner. If the unit is level, it will not rock. However, if the unit is not level, it will rock. If the unit rocks, it will be necessary to adjust the leveling feet of the unit. Adjust the foot under the hand that is on the front of the machine.

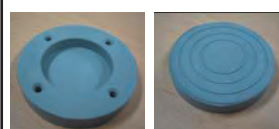


Lower the foot until there is no gap between floor and foot.

And only use **adjustment rubber** when difference at the leg adjustment is more than **10mm**.



4620ER4002A
(Black)
for Tile floors



4620ER4002B
(Gray)
for Wooden floors

Step 3

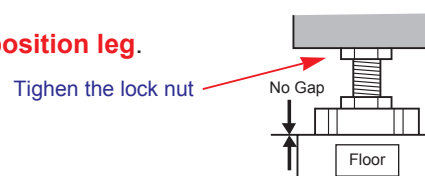
Perform a Rinse and Spin with some clothing in the machine.

To do this, put 2~3kg of clothing in the unit, turn on the unit, Select the Rinse+Spin and then start. When the unit reaches the spin cycle, watch for vibrations.

If the unit is vibrating, make small adjustments to the leg until they subside. (Repeat step 2)

Step 4

Tighten the lock nut against the base of the machine to **lock** the **position leg**.



9 Test operation

1 Preparation for washing.



- Connect the power plug to the outlet.
- Connect the inlet hose.

2 Press the power button.




3 Press the START/PAUSE button.



- In case of Coloreds program.

6 Check the water heating.



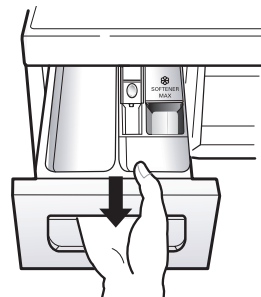
- Touch the Temp and Medic Rinse button simultaneously and the present temperature will be displayed.  Page 20

5 Check automatic reverse turn.



- Check if the drum rotates clockwise and counterclockwise.

4 Check the water supply.



- Check if water is supplied through the detergent dispenser.

7 Check the drain and spin functions.

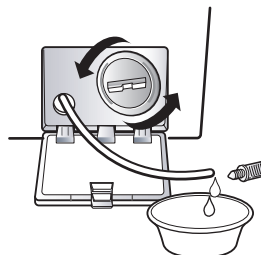
- Turn power off and then power on.
- Select the spin rpm
- Press the START PAUSE button.
- Check the spin and drain functions.

8 Turn power off and open the door.



- Turn power off and then power on.
- Listen for a click to determine if the door is unlocking.

9 Water removal.

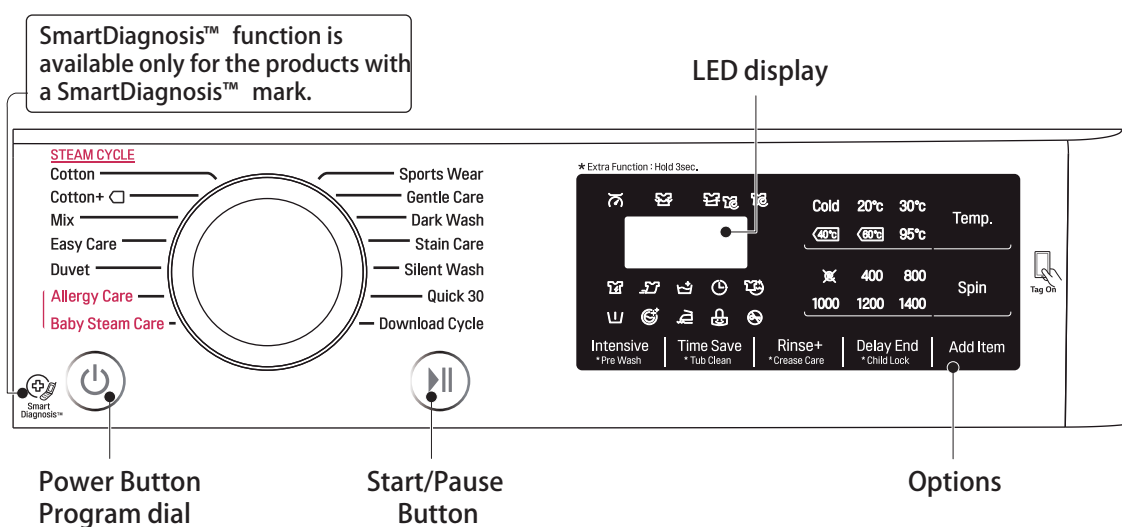


- If SVC is needed during check, remove the remaining water by pulling out the hose cap.

5. OPERATION

How to use washer

■ Control panel



Power

- Press the Power button to turn power on and off.
- To cancel the Time Delay function, the power button should be pressed.

Program Dial

- Programs are available according to the laundry type.
- Lamp will light up to indicate selected program.

Start/Pause

- This Start/Pause button is used to start wash cycle or pause the wash cycle.
If temporary stop of wash cycle is needed, touch the Start/Pause button.
When in Pause, the power is turned off automatically after 4 minutes.

LED display

- The display shows the settings, estimated time remaining, options, and status messages for your washer. The display will remain on through the cycle.

Options

- This allows you to select an additional cycle and will light when selected.
- Use these buttons to select the desired cycle options for the selected cycle.

How to use washer

■ Options

- **Intensive** (👕👖) : If the laundry is normal and heavily soiled, "Intensive" option is effective.

- **Rinse +** (👕⁺) : Add rinse once.

- **Dealy End :**

You can set a time delay so that the washing machine will start automatically and finish after a specified time interval.

❗ NOTE

- The delay time is the time to the end of the programme, not the start. The actual running time may vary due to water temperature, wash load and other factors.

1. Touch the Power button.
2. Select a cycle.
3. Touch the Time Delay button and set time required.
4. Touch the Start/Pause button.

How to use washer

Temp.

By touching the Temp. button the water temperature can be selected.

- Cold
- 20°C, 30°C, 40°C, 60°C, 95°C

Water temperature can be selected according to the program.

Spin

Spin Speed level can be selected by touching 'Spin' button repeatedly.

Spin Only

1. Touch the Power button.
2. Touch the Spin button to select RPM.
3. Touch the Start/Pause.

NOTE

When you select "No Spin", it will still rotate for a short time with low speed to drain quickly.

Pre Wash ()

If the laundry is heavily soiled, "Pre Wash" course is effective.

1. Touch the Power button.
2. Select a cycle.
3. Touch the Pre Wash button.
4. Touch the Start/Pause button.

Wrinkle Care

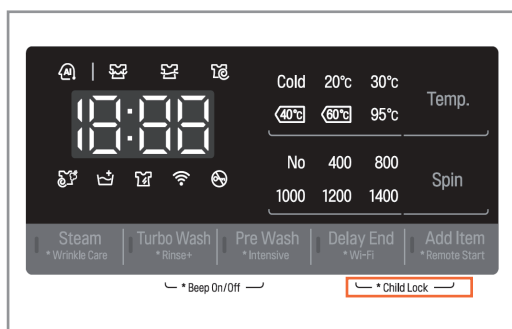
This washing programme reduces wrinkles by steaming after spin.

1. Press the Power button.
2. Select a cycle
3. Press the Wrinkle Care button for 3 seconds.
4. Press the Start/Pause button.

How to use washer

■ Child Lock

Select this function to lock the buttons on the control assembly to prevent tampering. "Child Lock" can be set only during the washing cycle.

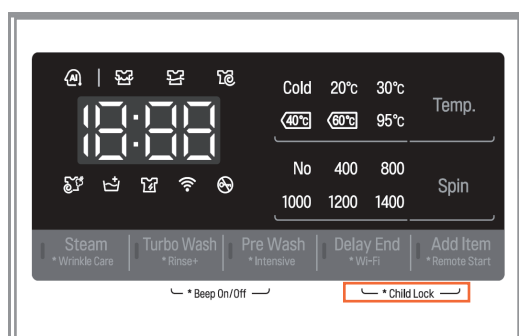


Locking the control panel

1. Touch and hold the Child Lock button for 3 seconds.
2. A beeper will sound, and ' will appear on the LED display.
When the child lock is set, all buttons are locked except the Power button.

! NOTE

Turning off the power will not reset the child lock function. You must deactivate child lock before you can access any other functions.

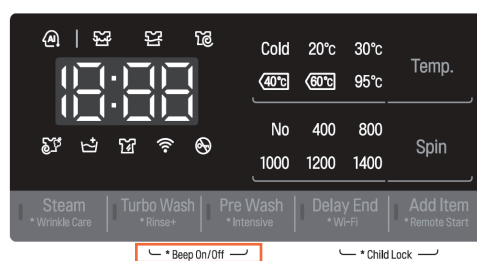


Unlocking the control panel

1. Touch and hold the Child Lock button for 3 seconds.
2. A beeper will sound and the remaining time for the current programme will reappear on the LED display.

■ Beep On / Off

The Beep on/off function can be set only during the washing cycle.



1. Touch the Power button.
2. Touch the Start/Pause button.
3. Touch and hold the Temp. and Rinse button simultaneously for three seconds to set Beep on/off function.

Once the Beep on/off function is set, the setting is memorized even after the power is turned off.

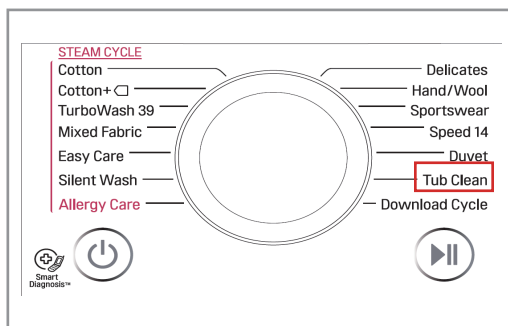
! NOTE

If you want to turn the Beeper off, simply repeat this process.

How to use washer

■ Tub Clean

Tub Clean is a special cycle to clean the inside of the washing machine. A higher water level is used in this cycle at higher spin speed. Perform this cycle regularly.



1. Remove any clothing or items from the washer and close the door.
2. Open the dispenser drawer and add Anti limescale (e.g. Calgon) to the main wash compartment.
3. Close the dispenser drawer slowly.
4. Power On and select the Tub Clean. Then 'Tub Clean' will be displayed on the display.
5. Touch the Start/Pause button to start.
6. After the cycle is complete, leave the door open to allow the washer door opening, flexible gasket and door glass to dry.

ⓘ NOTE

Do not add any detergent to the detergent compartments. Excessive suds may generate and leak from the washer.

⚠ CAUTION

If there is a child, be careful not to leave the door open for too long.

■ Door Lock & Detecting

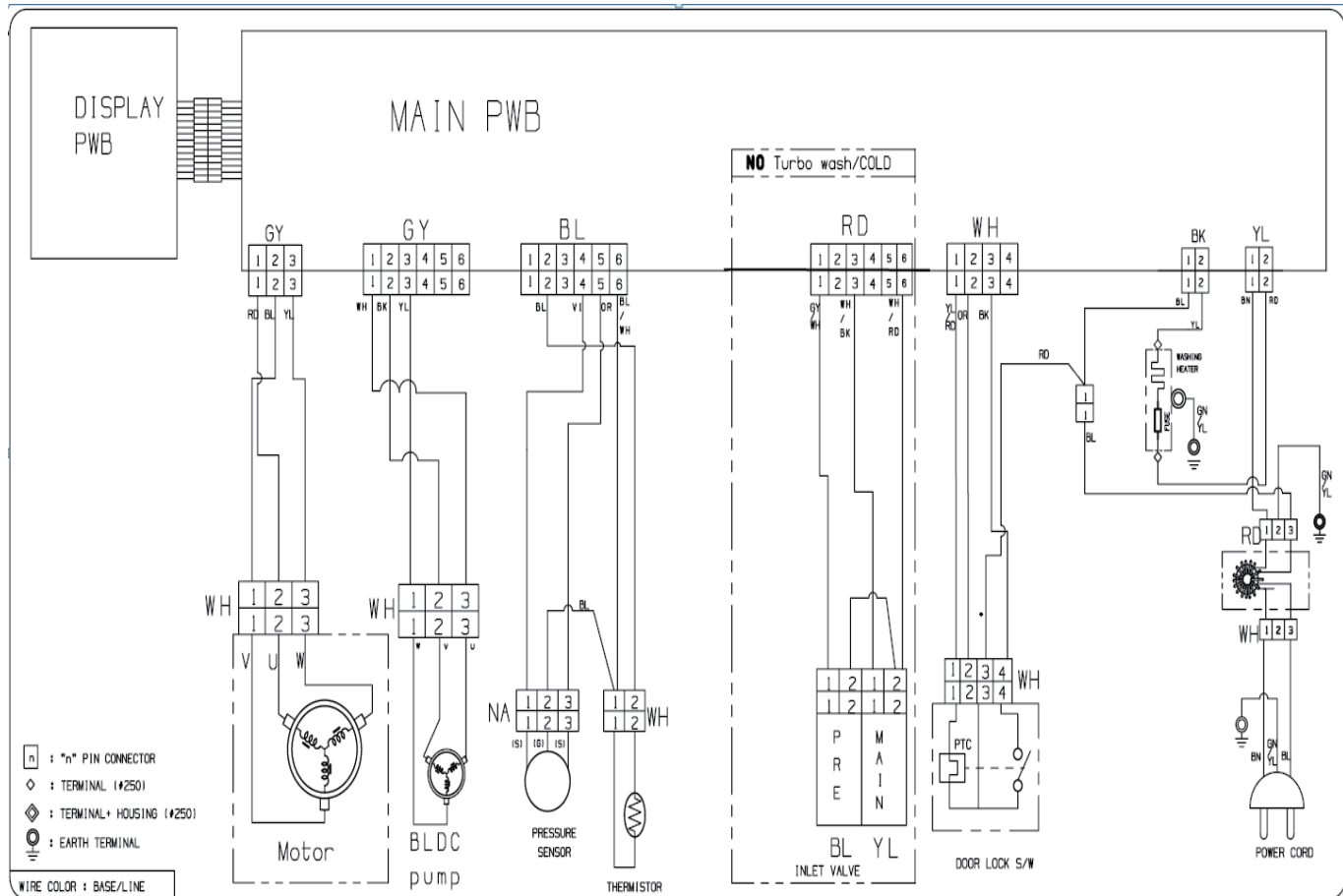


Ⓐ "Door Lock" - For safety reasons, the door will lock while machine is in use and the "Door Lock" icon will light up. You can safely open the door after the "Door Lock" icon turns off.

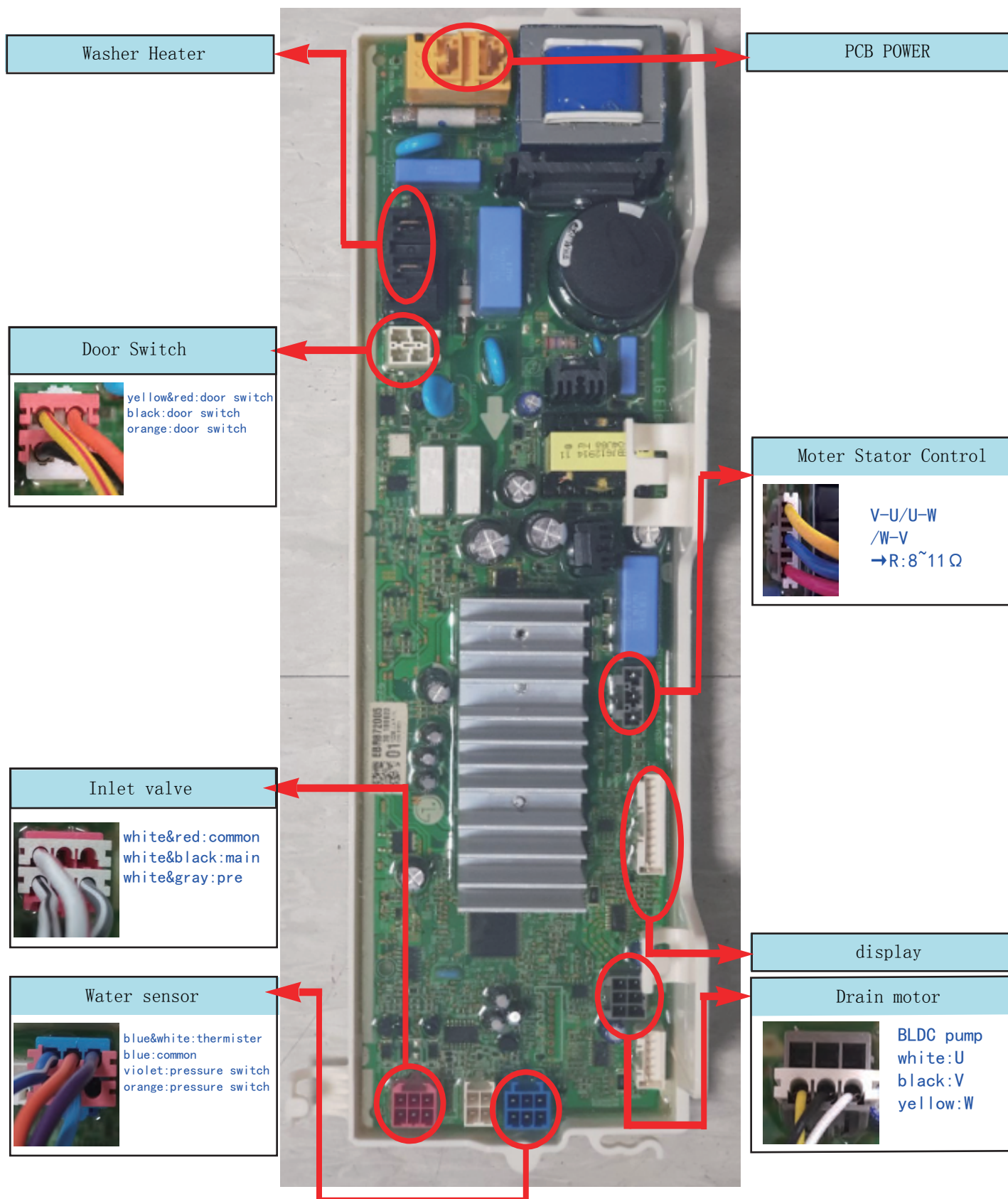
Ⓑ While "Detecting" is shown on the display the washing machine rotates slowly and detects how much laundry is loaded in the drum. It will take a short time.

6. WIRING DIAGRAM / PCB LAYOUT

■ Wiring Diagram



■ PCB Layout (Main)



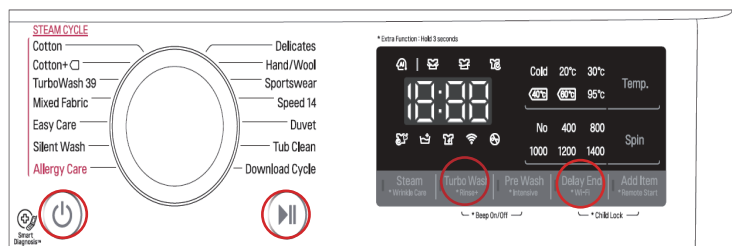
7. TROUBLESHOOTING

7-1. CHECK BEFORE SERVICE

- ① Before servicing ask the customer what the trouble is.
- ② Check the adjustments. (Power supply :220-240V~, Removal of transit bolts etc..)
- ③ Check the troubles referring to the troubleshooting.
- ④ Decide service steps referring to disassembly instructions.
- ⑤ Then, service and repair.
- ⑥ After servicing, operate the appliance to see whether it works OK or NOT.

7-2. LOAD TEST MODE

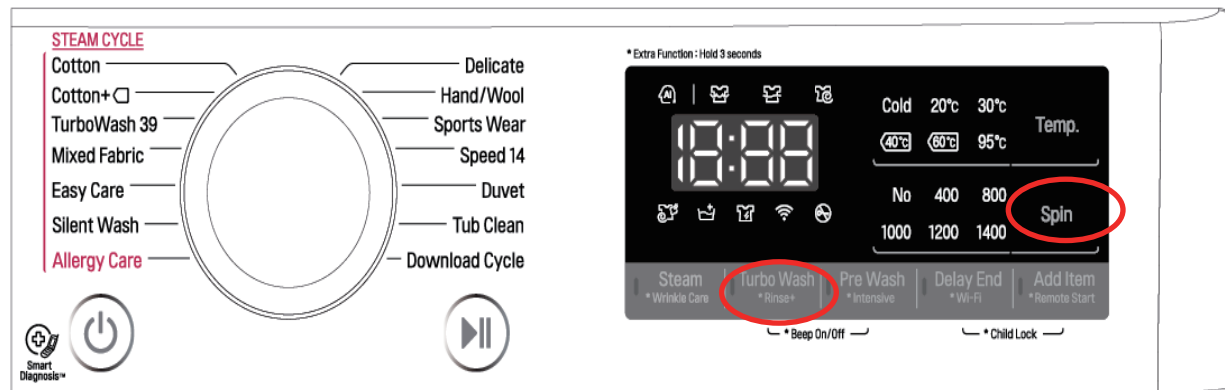
- ① Turn on, and touch 'Rinse+' and 'Delay End' at the same time in 1 second.
- ② The washer must be empty and the controls must be in the off state.
- ③ Press Power with above two buttons pressed and then buzzer will sound.
- ④ Press the Start/Pause button repeatedly to cycle through the test modes



Numbers	Check Point	Display Status	Remark
0	Turns on all light and locks the door.	PGM Version Information	
1	Tumble clockwise	rpm(42~50)	
2	Low speed spin	rpm (60)	
3	High speed spin	rpm (130~140)	
4	Inlet valve for prewash turns on.	Water level frequency	
5	Inlet valve for main wash turns on.	Water level frequency	
6	Inlet valve for hot water turns on.	Water level frequency	For Hot&Cold Model
7	Inlet valve for atomizing turn on.	Water level frequency	
8	Tumble counterclockwise	rpm	
9	Heater turns on for 3 sec.	Water temperature	
10	Drain pump turns on.	Water level frequency	
11	Off	-	
















7-3. HOW TO CHECK THE WATER LEVEL FREQUENCY





Touch the **Spin** and **RINSE+** button simultaneously.
Keeping touch, the digits indicate the water level frequency.



7-4. ERROR DISPLAY

- If you press the Start/Pause button in error condition, any error except 『PE』 will disappear and the machine will change into the pause status.
- In case of 『PE』, 『LE』, if the error is not resolved within 20 sec., and in case of all other errors, if the error is not resolved within 4 min., the power will turn off automatically and the error only will blink. But in the case of 『FE』, the power will not turn off.

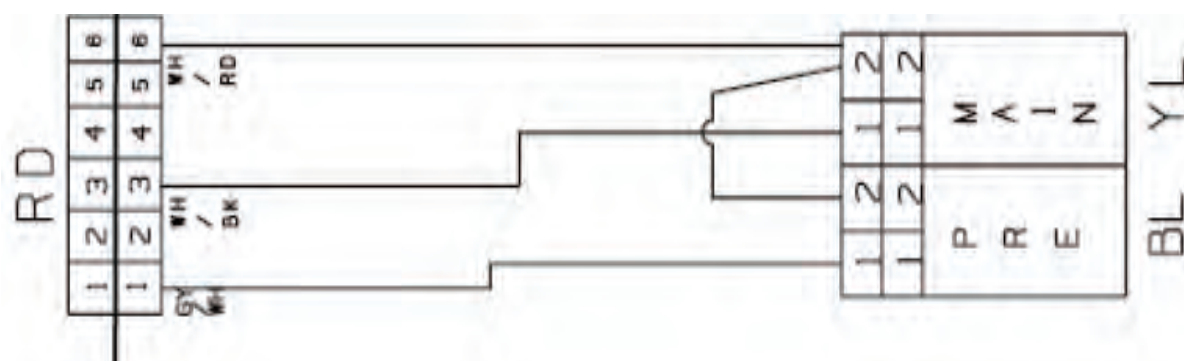
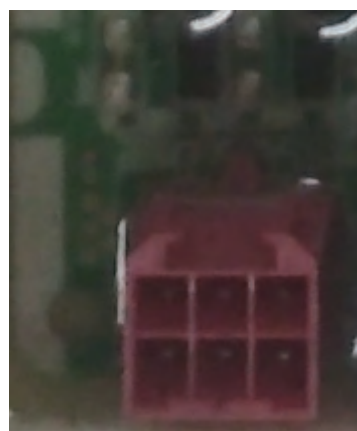
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> • Not reached the water level(248) within 10 minutes after water supplied or not reached to the preset water level within 25 minutes.  Page 24
2	WATER OUTLET ERROR		<ul style="list-style-type: none"> • Not fully drained within 10 minutes.  Page 26
3	OVERFLOW ERROR		<ul style="list-style-type: none"> • Water is overflowing (under 21.3kHz). ※ If " " is displayed, the drain pump operates to drain the water automatically.  Page 28
4	PRESSURE SENSOR S/W ERROR		<ul style="list-style-type: none"> • The pressure sensor switch is out of order.  Page 29
5	DOOR OPEN ERROR	 	<ul style="list-style-type: none"> • In case of operating the reservation function or the other function with door opened. Close the door, then the error display is resolved. • The door switch is out of order.  Page 31
6	UNBALANCE ERROR		<ul style="list-style-type: none"> • The appliance is tilted. • Laundry is gathered to one side.  Page 25
7	THERMISTOR(HEATING) ERROR		<ul style="list-style-type: none"> • The THERMISTOR is out of order.  Page 33

	ERROR	SYMPTOM	CAUSE
8	MOTOR L OCKED E RROR		<ul style="list-style-type: none"> The connector in the LEAD WIRE ASSEMBLY is not connected to the connector of STATOR ASSEMBLY. ☞ Reconnect or repair the connector. <p style="text-align: right;">☞ Page 36</p>
9	P OWER F AILURE		<ul style="list-style-type: none"> The washer experienced a power failure ☞ Press the start/pause button
10	NFC MODULE ERROR		<ul style="list-style-type: none"> The connector in the DISPLAY PCB ASSEMBLY is not connected to the connector of NFC PCB ASSEMBLY. ☞ Reconnect or repair the connector. The NFC HARNESS between the NFC PCB ASSEMBLY and DISPLAY PCB ASSEMBLY is cut (open circuited). ☞ Replace the DISPLAY PCB ASSEMBLY. The NFC PCB ASSEMBLY is out of order/defective. ☞ Replace the NFC PCB ASSEMBLY. <p>* nC is displayed only in the first screen of the Load Test Mode.</p>
11	NFC VERSION ERROR		<ul style="list-style-type: none"> NFC version is not matched. ☞ Replace the NFC PCB ASSEMBLY. <p>* nU is displayed only in the first screen of the Load Test Mode.</p>



7-5. TROUBLESHOOTING WITH ERROR

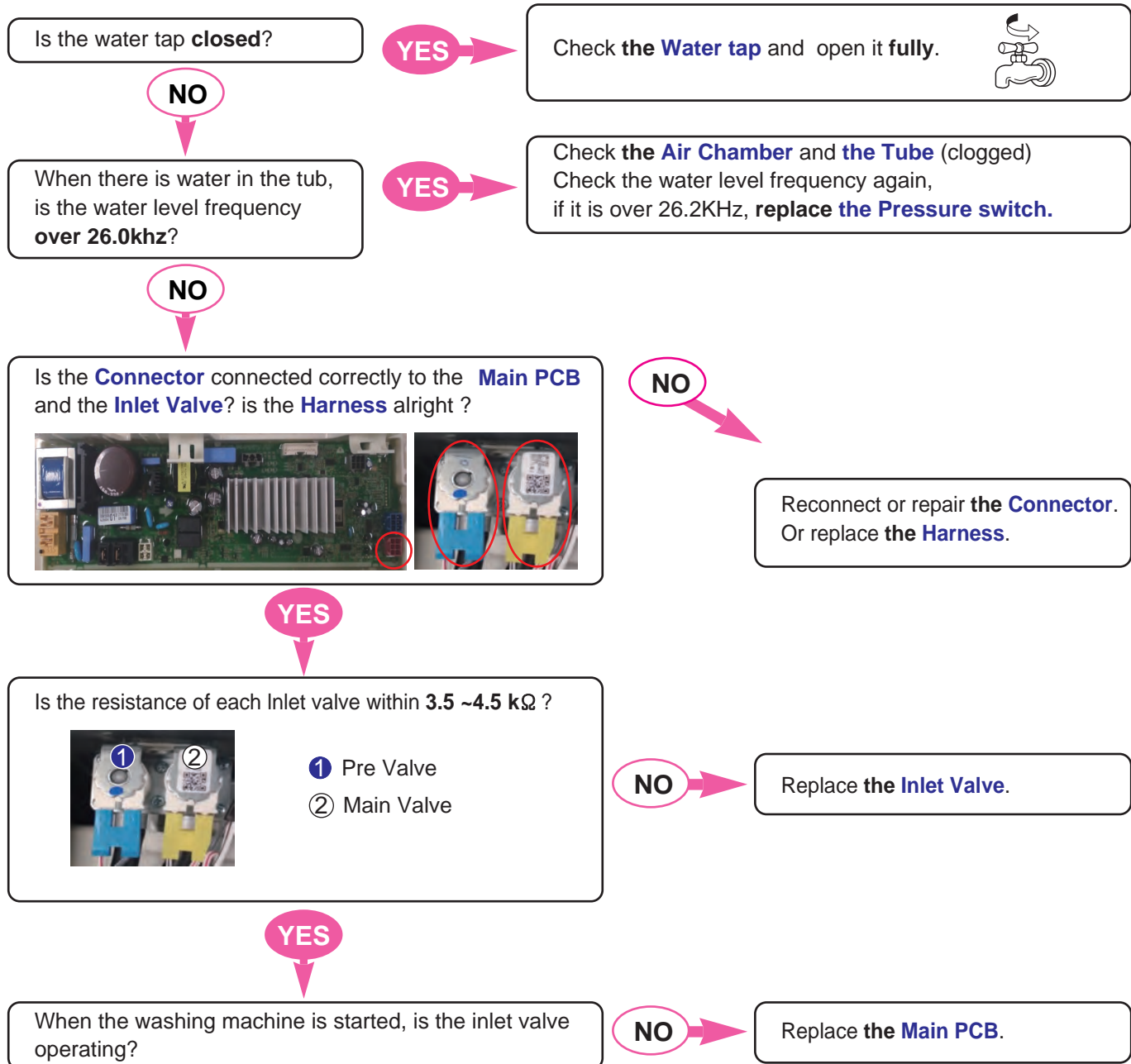
Symptom	Check Point
1.INLET VALVE ERROR	1.Check Electric Wiring. 2.Check Inlet valve's Resistance. 3.Check Inlet valve clogged. 4.Voltage of the inlet valve's connector. -.Valve running : 12Vdc \pm 5%



Water Inlet Error (IE)

[Note] Environmental safety check list

1. No water tap leakage or freeze
2. No water shortage.
3. The inlet filter is not clogged.
4. No entanglement of water supply hose.
5. No water supply hose leakage



Unbalanced Error (UE)

Does the load lean toward **one side**, or is the load a **few items**?

YES

The few items of clothing will clump together and their weight will be in one place on the drum, throwing the weight off during spin mode.

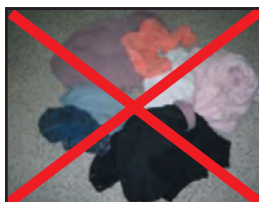
**So add some laundry to overcome UE error.
And rearrange load to allow proper spinning.**

NO

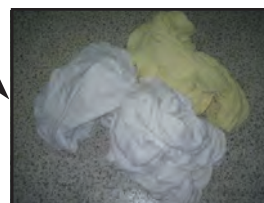
Is the laundry **mixed**?

YES

Try **rearranging** the laundry in drum
Or the laundry is **separated** by size, type, and color.



Separate by size,
type and color



NO

Is the washing machine **installed**
at an **angle**?

YES

Adjust the height of washing
machine to be kept **horizontally**.
(Page 7)

Water Outlet Error (OE)

Is the drain hose kinked ?

YES

Check drain hose for kink and **straighten the Hose**.



Drain Hose



NO

Is the **Pump filter** clogged ?

YES

Check & Clean **Pump Filter**.

This kind of accumulation on the drain filter not only prevents proper drainage, but also will promote bacteria growth and cause odors.
This drain filter should be cleaned once a month.

NO

Next Page

* How to disassemble and clean pump filter

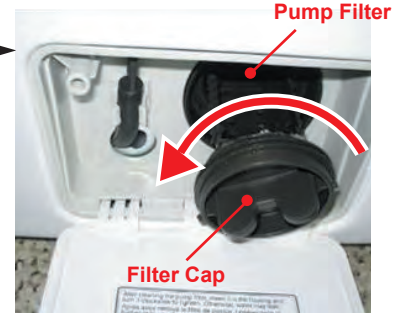
Open the Cover by coin or finger(only new model)



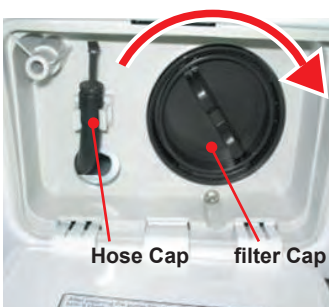
Drain water by removing the hose cap.



Disassemble the pump filter by turning the filter cap counterclockwise.



Assemble & close cap

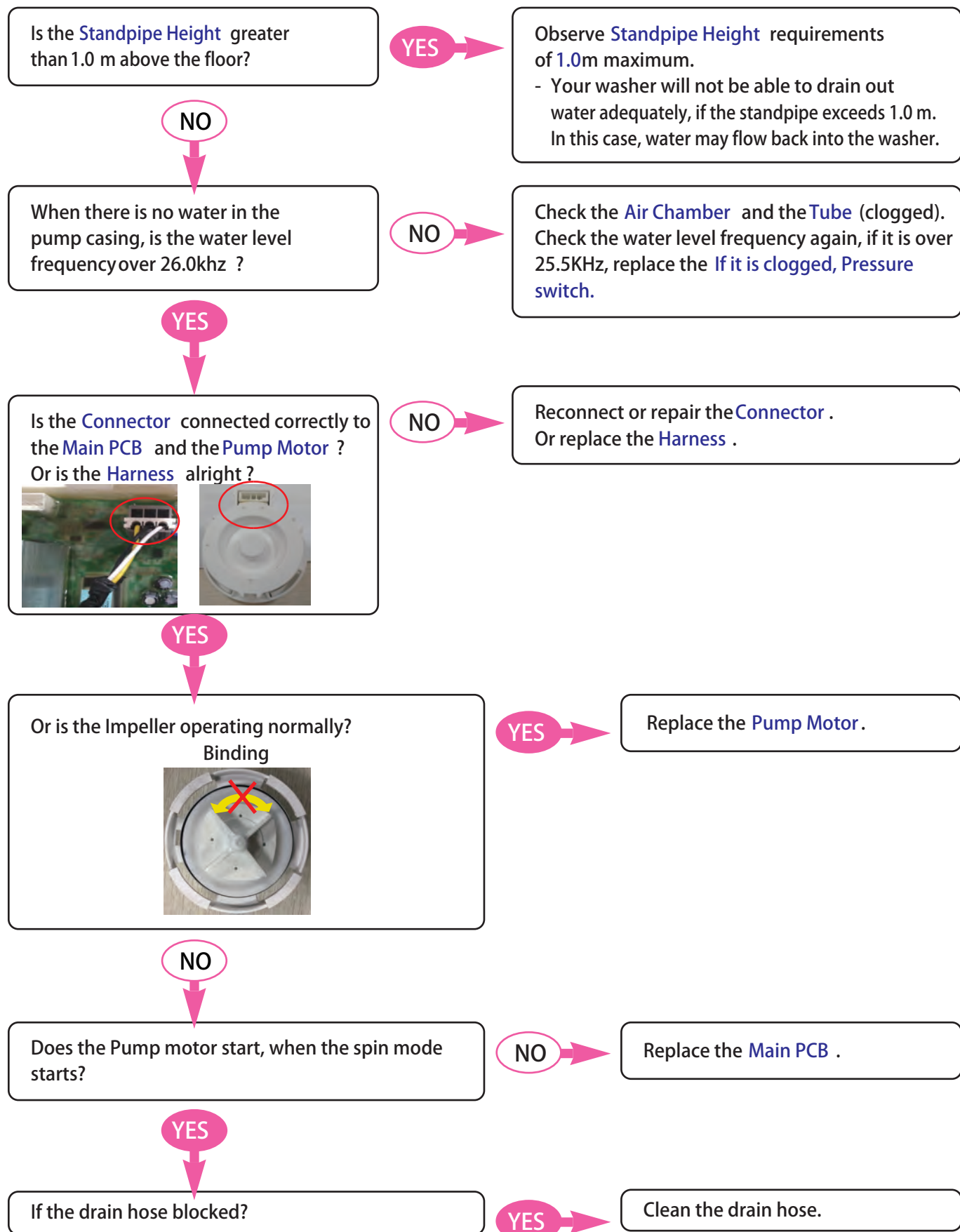


Filter clogged by foreign objects



Clean the filter





FE (Overflow Error)

Power off for 10sec. Then power on.

Is the water level over reference line and is the water level frequency under 21.3kHz?



* Water level frequency

- Touch and Hold 'Spin' & 'Rinse +' simultaneously.

NO

Is water **continuously** coming into the drawer?



YES

Replace the **Inlet Valve** assembly.

NO

Replace the **Main PCB**.

YES

Drain out the water and then check the **Air Chamber** and the **Tube** (clogged).

If FE is displayed again, then replace the **Pressure Switch**.

If FE is displayed again, then replace the **Main PCB**.

Pressure Sensor S/W Error (PE)

Is the **Connector** connected correctly to the **Main PCB** and the **Pressure Switch** ?
Is the **Harness** alright ?

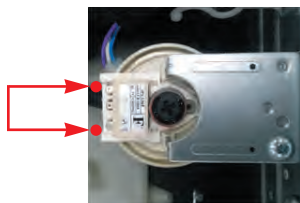


NO

Reconnect or repair the **Connector**.
Or replace the **Harness**.

YES

Is the resistance of the **Pressure Switch** out of range?
[Pin1 ~ Pin3]
→ 21~23Ω



YES

Replace the **Pressure Switch**.

NO

Is the air chamber and the tube clogged?

YES

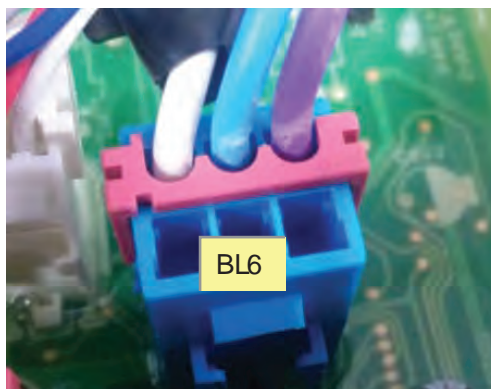
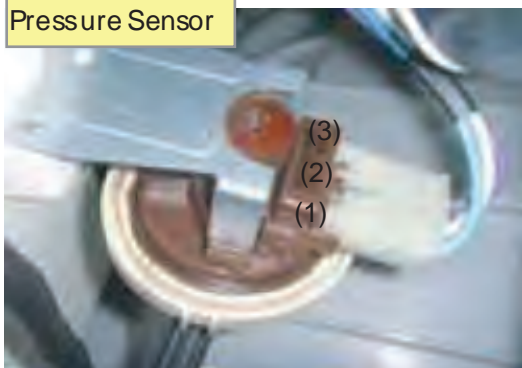
Check air chamber and remove foreign material.

NO

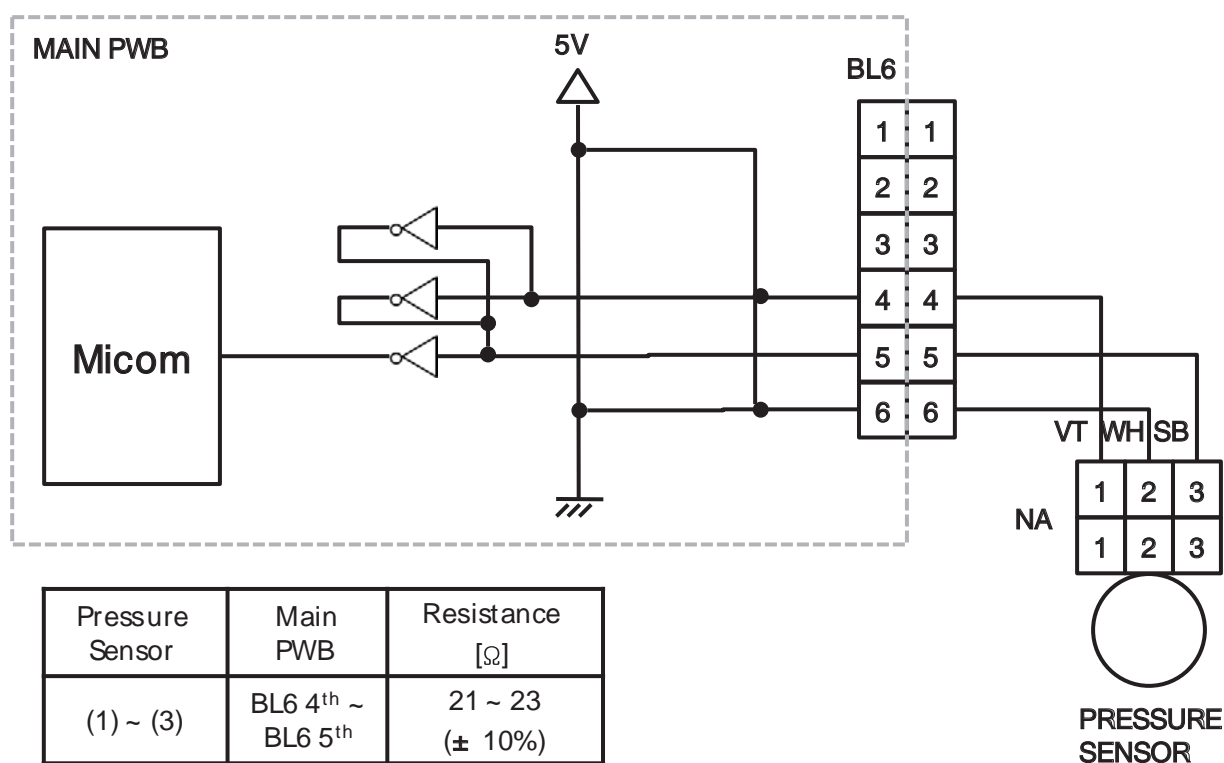
Replace the **Main PCB**.

Symptom	Check Point
1.PRESSURE SENSORERROR(PE)	1.Check Electric Wiring. 2.Check Pressure sensor's Resistance. 3.Check Air Chamber and Tube clogged.

Pressure Sensor



Circuit in the MAIN PWB / Wiring Diagram



Door Open Error (dE2)

Is the door closed?

NO

Close the door fully.

YES

Is the Door assembly in line with door switch ?

Scratch by Latch Hook or Touching



or



YES

Lift up & Close the door.

If the dE is displayed, Replace the **Door Bracket**.

NO

Does the **Spring** of **Latch Hook** actuate?

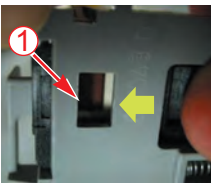


NO

Replace the **Spring**

YES

Does the **Door Switch** operate as follows?



* Door Locking time : 1~8 sec.
Check the time between from input the power to parts move up, then Door locked. ①

* Door Releasing time : 25~100 sec.
Check the time between from off the power to parts move down, then Door ① released.

NO

Replace the **Door switch**.

Door Switch Error (dE1)

Is the **Connector** connected correctly to the **Main PCB** and the **Door Switch**?
Is the **Harness** alright ?



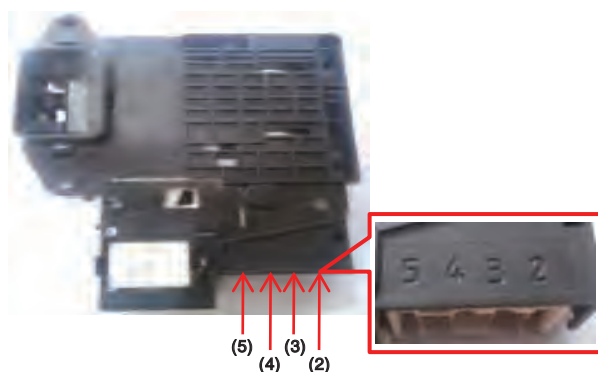
NO

Reconnect or repair the **Connector**.
Or replace the **Harness**.

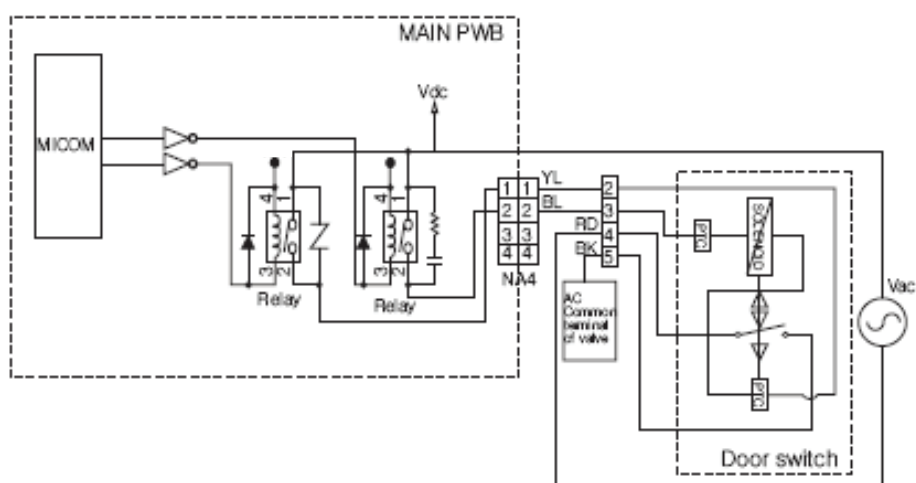
YES

Is there clicking sound once or twice when the START/PAUSE button is pressed to start the cycle? No → Replace the MAIN PWB ASSEMBLY.

Symptom	Check Point
1. DOOR OPEN ERROR(dE)	1.Check Electric Wiring. 2.Check latch hook sping.(Cracked) 3.Check Door switch's Resistance. 4.Check Voltage of Door switch's connector.



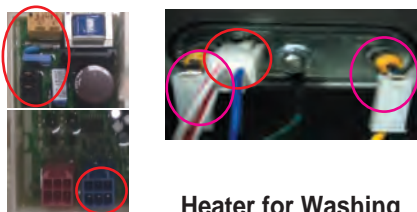
Circuit in the MAIN PWB / Wiring Diagram



Door switch (Type2)	Result	Remark
(2) ~ (4)	700~1500 Ω	At 77 \square (25 \square)
(3) ~ (4)	90~120 Ω	At 77 \square (25 \square) With Latch
	Infinity	Without Latch
(4) ~ (5)	Infinity	
(2) ~ (4)	230Vac	Voltage Input

Thermistor (Heating) Error (tE)

Is the **Connector** connected correctly to the **Main PCB** and the **Thermistor** and the **Heater**?
Is the **Harness** alright ?



YES

Reconnect or repair the **Connector**.
Or replace the **Harness**.

NO

Is the resistance of the **Thermistor** out of range **44 ~ 53 K** at **25°C**? (Page 17)

YES

Replace the **Thermistor**.

NO

Is the resistance of the **Heater** out of range **24.5 ~ 28.5** (for Washing) ? (Page 19)

YES

Replace the **Heater**.

NO

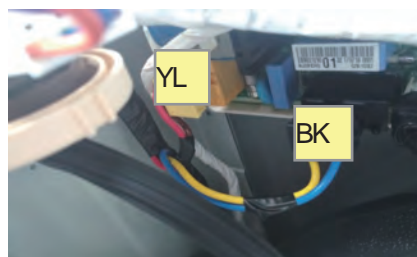
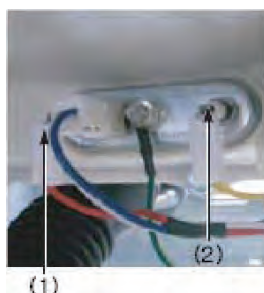
Replace the **Main PCB**.

[Note] Thermistor Spec

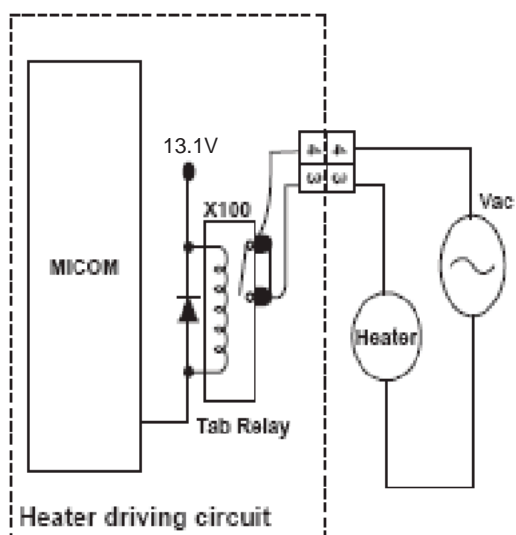
S P E C	Temp	Resistance (kΩ)		
		MIN	STD	MAX
C	30 °C	36.35	39.45	42.72
	40 °C	24.20	26.05	27.97
	60 °C	11.43	12.12	12.82
	70 °C	8.088	8.514	8.940
	95 °C	3.544	3.791	4.045
	105 °C	2.617	2.816	3.023

Symptom	Check Point
1.HEA TING ERROR(tE)	1.Check Electric Wiring. 2.Check Heater's Resistance. 3.Check Thermistor's Resistance. 4.Water Leaked into the Thermistor's Connector.

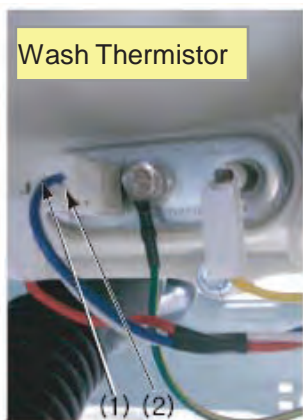
Wash Heater



Circuit in the MAIN PWB



Heater	Main PWB	Resistance [Ω]
Wash Heater (1) ~ (2)	BK 3 th ~ YL 3 th	12 ~ 18



Thermistor	Main PWB	Resistance [kΩ]	Remarks °F (°C)
Wash Thermistor (1) ~ (2)	NA3 4 th ~ NA3 5 th	39.5	86(30)
		26.1	104(40)
		12.1	140(60)
		8.5	158(70)
		3.8	203(95)
		2.8	221(105)

Motor Locked Error (LE)

[Pre Check]

- Gentle wash cycles, such as Perm Press, Delicates, Hand Wash, and Wool/Silk should only be used for smaller loads. Because these cycles are more gentle in tumbling and spinning, putting too much in the drum can register an issue with the motor. Remove items, reset unit and test with a Rinse/Spin cycle.

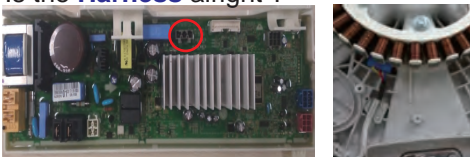
Press the **Power** button & **Start / Pause** button.

Does the **Drum stop** when the start/pause button is pressed to start the cycle ?

Or Sometimes does the **Drum** rotate **weakly** (under 15rpm)?

YES

Is the **Connector** connected correctly to the **Main PCB** and the **Motor**?
Is the **Harness** alright ?



NO

Reconnect or repair the **Connector**.
Or replace the **Harness**.

YES

Disassemble the **Rotor**.
Is the **Magnet** of rotor **cracked** or **broken**?



YES

Replace the **Rotor**.

NO

Is the resistance the same
between **Stator** points?
※ V~U / U~W / W~V : 8~11Ω



NO

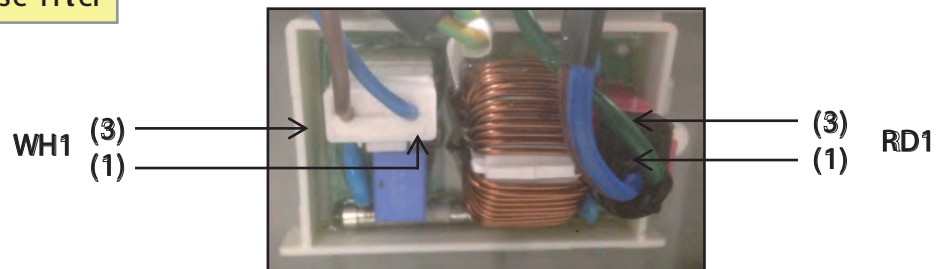
Replace the **Stator**.

YES

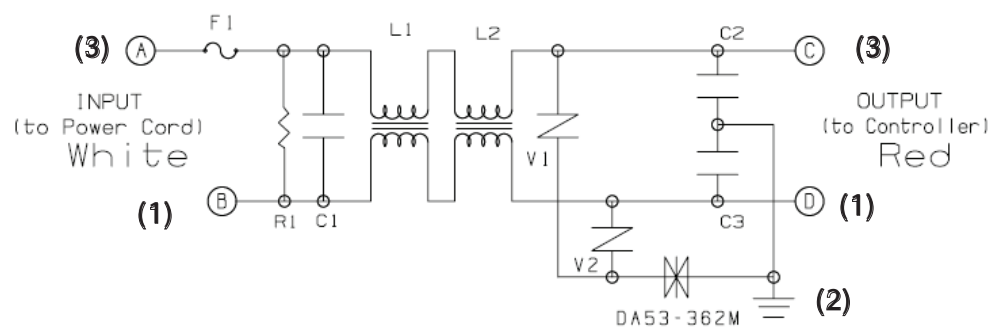
Replace the **Main PCB**.

Symptom	Check Point
1. NO POWER	1.Check Electric Wiring. 2.Check the Customer's outlet. 3.Check Noise Filter. 4.Check LED on in Main PWB

Noise Fiter



Circuit in the MAIN PWB / Wiring Diagram



Noise Filter	Resistance [Ω]
WH1 (1) ~ RD1 (3)	0
WH1 (3) ~ RD1 (1)	0

8. TROUBLESHOOTING WITHOUT ERROR CODES

PF (Power Failure or no power)

Is the Power Plug connected firmly to the power outlet?
And is the supply voltage 220~240V AC?



NO

Reconnect **Power Plug** firmly.
Check the fuse or reset the circuit breaker.

YES

Is Multi-plug socket used ?



YES

Don't use **Multi-plug** socket.
Use **Single Plug** socket for washing machine.

NO

Is the **Connector** connected correctly to the **Main PCB** and the **Noise Filter**?
Is the **Harness** alright ?



Noise Filter



PCB

NO

Reconnect or repair the **Connector**.
Or replace the **Harness**.

YES

Is **Red LED ON** while power supplied ?



NO

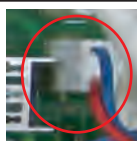
Check and replace **Main PCB**.

YES

Is the connectors connected Correctly to the Display PCB?



Main PCB



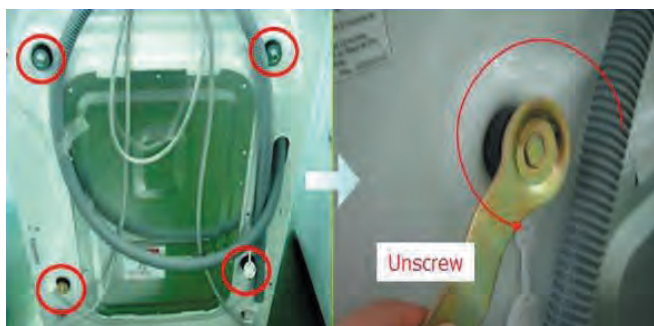
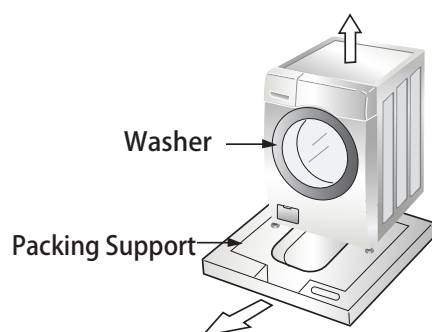
Noise Filter

YES

Check connectors otherwise.
Replace **Display PCB**.

Vibration & Noise During Spin

Have all the Transit Bolts been removed?



NO

Remove the Transit Bolts

YES

Refer to INSTALLATION . (Page 7)

Detergent & Softener does not flow in

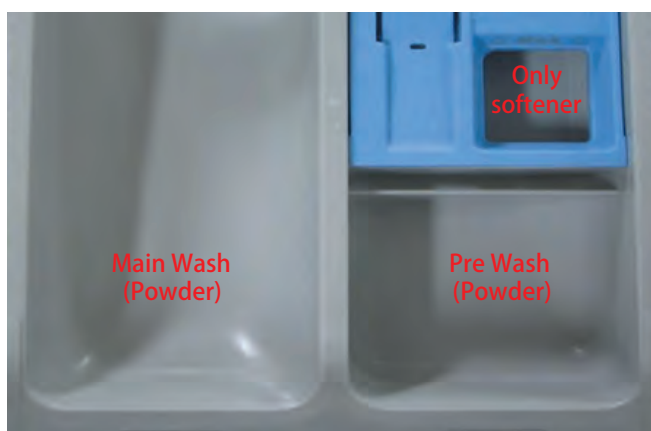
Is water supplied?

NO

Refer to [Water Inlet Error (IE)]
(page 23)

YES

Is detergent & softener put in
the correct compartment of the drawer?



NO

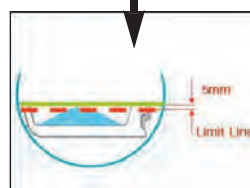
Put it in the **Correct Position** .

※ Reference (Amount of Detergent & Softener)

Detergent

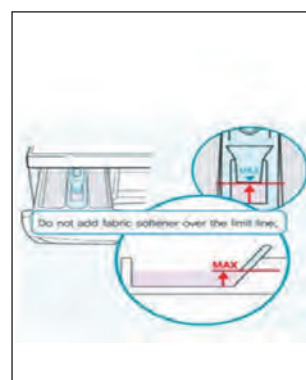


NO!!



OK!!

Softener

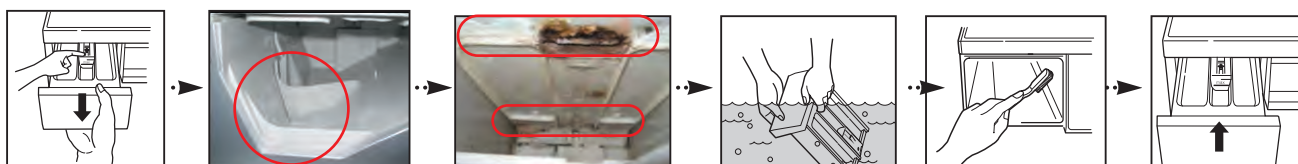


Is the **Detergent** caked or hardened?

YES

Clean the drawer and dispenser.

○ ※ Check point



Water Leak

1. Water Leak from Dispenser

Is the **Dispenser Tray** Damaged or warped?

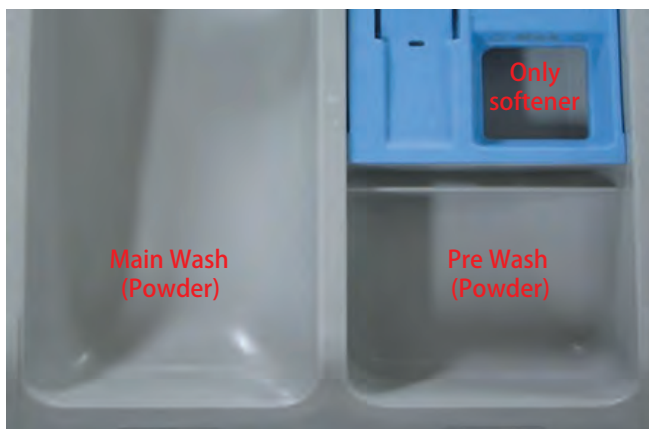


YES

Replace the **Dispenser Tray** .

NO

Is detergent & softener put in the correct compartment of the drawer?



NO

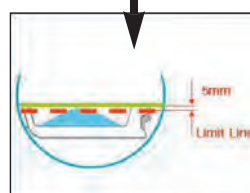
Put it in the **Correct Position** .

※ Reference (Amount of Detergent & Softener)

Detergent

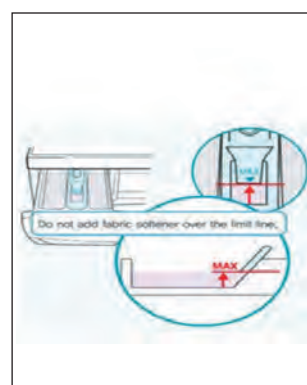


NO!!



OK!!

Softener

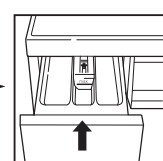
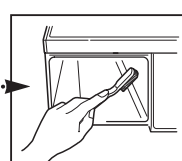
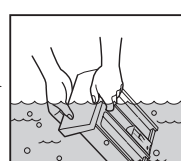
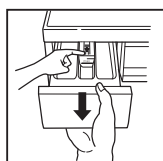


YES

Is the **Detergent** caked or hardened?

YES

Clean the drawer and dispenser.



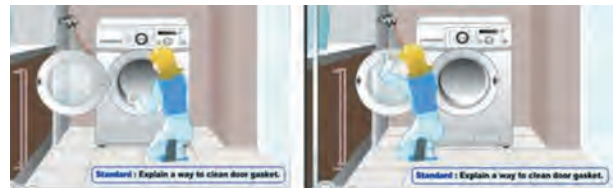
○ ※ Check point

2. Water Leak from Dispenser

Are the gasket (seal) and door cleaned regularly?

NO

Clean the periphery of **Gasket** and **Door** regularly.



YES

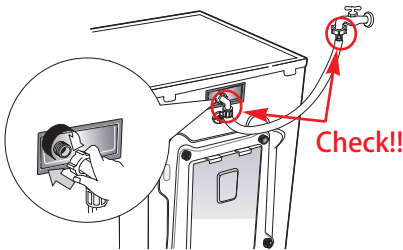
Is the door or gasket damaged?

YES

Replace the damaged parts.

3. Unknown – Water on Floor

Are the inlet hoses loose or cracked/split?



YES

Replace the **Inlet Hoses** .

NO

Is the washer horizontal ?

NO

Adjust the height of washing machine to be kept horizontally. (Page 7)

YES

Are the drain filter and manual drain hose open?

NO

Turn the filter cap clockwise to close.



Before using the Wi-fi function

Application Installation

Search for the LG Smart ThinQ application from the Google Play Store on a smart phone. Follow instructions to download and install the application.

Product Registration

- 1 Run the LG Smart ThinQ application on a smart phone.
- 2 Create an account and sign in.
- 3 Select **Register**.
- 4 Select **Front Load Washer**.
- 5 Follow the instruction on the smart phone.

NOTE

- To verify the Wi-Fi connection, check the Wi-Fi icon(📶) on the control panel is lit.
- LG Smart ThinQ is not responsible for any network connection problems or any faults, malfunctions, or errors caused by network connection.
- The machine supports 2.4 GHz Wi-Fi networks only.
- If the appliance is having trouble connecting to the Wi-Fi network, it may be too far from the router. Purchase a Wi-Fi repeater (range extender) to improve the Wi-Fi signal strength.
- The Wi-Fi connection may not connect or may be interrupted because of the home network environment.
- The network connection may not work properly depending on the internet service provider.
- The surrounding wireless environment can make the wireless network service run slowly.
- The application is subject to change for appliance improvement purposes without notice to users.

Using the Wi-Fi Function

Communicate with the appliance from a smart phone using the convenient smart features.

Using the Application

- 1 Select the appliance in the application.
- 2 Select the menu on the upper right side to access settings and features.

Washer Cycle

Set or download any preferred cycle and operate by remote control.

Tub Clean Coach

Check the appropriate Tub Clean period by washing frequency.

Energy Monitoring

Check the energy consumption of the recently used cycles and monthly average.

Smart Diagnosis

This function provides useful information for diagnosing and solving issues with the appliance based on the pattern of use.

Settings

Various functions are available.

Push Alert

Turn on the Push Alerts to receive appliance status notifications. The notifications are triggered even if the LG Smart ThinQ application is off.

Open Source Software Notice Information

To obtain the source code under GPL, LGPL, MPL, and other open source licenses, that is contained in this product, please visit <http://opensource.lge.com>.

In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download.

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to opensource@lge.com. This offer is valid for three (3) years from the date on which you purchased the product.

Declaration of Conformity



Hereby, LG Electronics European Shared Service Center B.V., declares that this Washing machine is compliant with the essential requirements and other relevant provisions of Directive 1999/5/EC. The complete Declaration of Conformity may be requested through the following postal address:

LG Electronics European Shared Service Center B.V.
Krijgsman 1
1186 DM Amstelveen
The Netherlands

or can be requested at our dedicated DoC website: <http://www.lg.com/global/support/cedoc/cedoc#>

This device is a 2.4 GHz wideband transmission system, intended for use in all EU member states and EFTA countries.

For consideration of the user, this device should be installed and operated with a minimum distance of 20 cm between the device and the body.

Wireless LAN Module Specifications

Model	LCW-004
Frequency Range	2412~2472 MHz
Output Power (Max.)	IEEE 802.11 b : 17.82 dBm
	IEEE 802.11 g : 17.72 dBm
	IEEE 802.11 n : 16.61 dBm

Using the Smart Diagnosis™ Function

Should you experience any problems with the appliance, it has the capability of transmitting data to a smart phone using the LG Smart ThinQ application or via the phone to the LG Customer Information Centre.

Smart Diagnosis™ can not be activated unless the appliance is turned on by pressing the **Power** button. If the appliance is unable to turn on, then troubleshooting must be done without using Smart Diagnosis™.

Smart Diagnosis™ Using a Smart Phone

- 1 Open the LG Smart ThinQ application on the smart phone.
- 2 Select the appliance and then the menu on upper right side.
- 3 Select the **Smart Diagnosis**, then press **Start Smart Diagnosis** button.

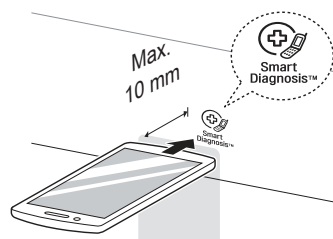
NOTE

- If the diagnosis fails several times, use the following instructions.

- 4 Select the **Try Again** or **Audible Diagnosis**.
- 5 Follow the instructions on the smart phone.
- 6 Keep the phone in place until the tone transmission has finished. View the diagnosis on the phone.

Smart Diagnosis™ Through the Customer Information Centre

- 1 Press the **Power** button to turn on the washing machine. Do not press any other buttons or turn the programme knob.
- 2 When instructed to do so by the call center, place the mouthpiece of your phone close to the Power button.



- 3 Press and hold the **Temp.** button for 3 seconds, while holding the phone mouthpiece to the icon or Power button.
- 4 Keep the phone in place until the tone transmission has finished. Time remaining for data transfer is displayed.
 - For best results, do not move the phone while the tones are being transmitted.
 - If the call centre agent is not able to get an accurate recording of the data, you may be asked to try again.
- 5 Once the countdown is over and the tones have stopped, resume your conversation with the call centre agent, who will then be able to assist you using the information transmitted for analysis.

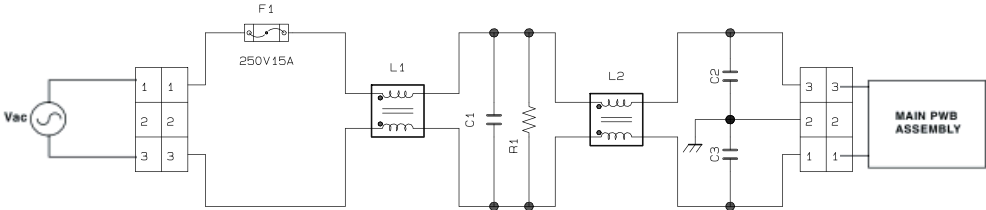
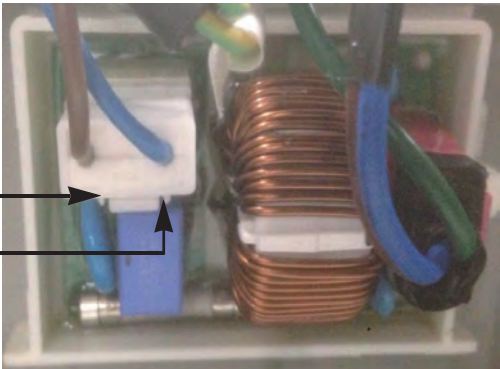
NOTE

- The Smart Diagnosis™ function depends on the local call quality.
- The communication performance will improve and you can receive better service if you use the home phone.
- If the Smart Diagnosis™ data transfer is poor due to poor call quality, you may not receive the best Smart Diagnosis™ service.

9. Part inspection

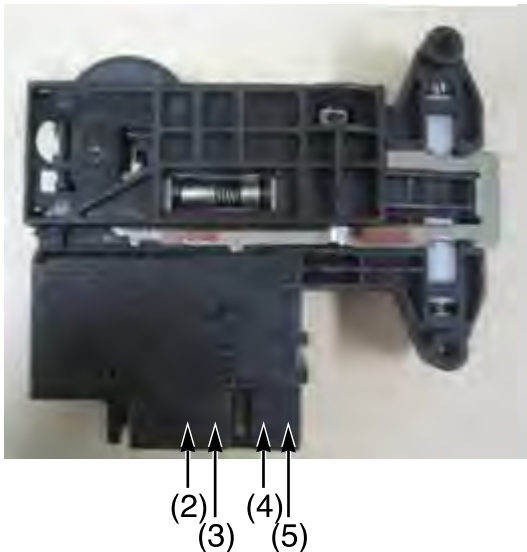
▲ WARNING When Resistance (Ohm) checking the Component, be sure to turn the power off, and do voltage discharge sufficiently.

9-1. FILTER ASSEMBLY (LINE FILTER)

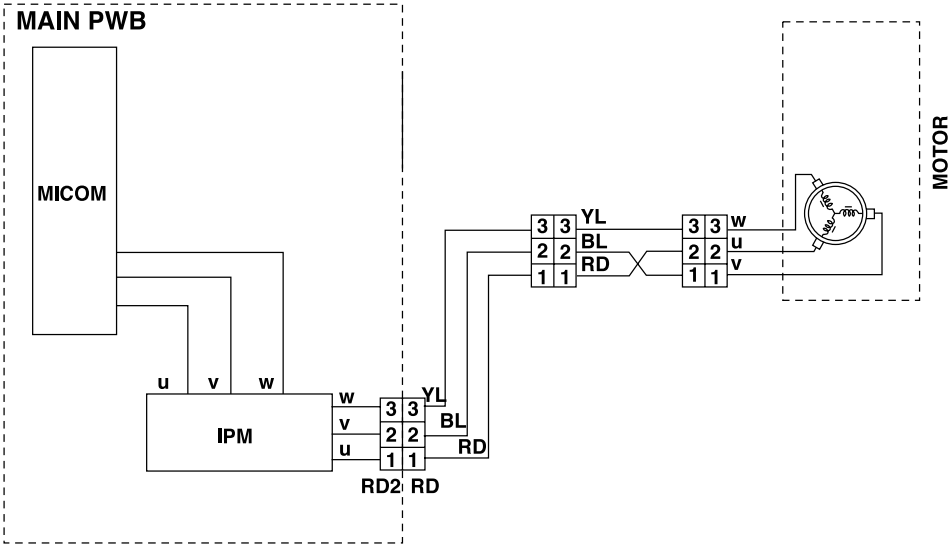

Wiring diagram	<div>Circuit in the MAIN PWB / Wiring Diagram</div> 						
Test points and Result	<div><div><div>WH</div><div>(1) →</div><div>(3) →</div></div><div><div>← RD (3)</div><div>← RD (1)</div></div></div> <table><tr><th>Test Points</th><th>Result</th></tr><tr><td>WH (1) to RD (3)</td><td>0 Ω</td></tr><tr><td>WH (3) to RD (1)</td><td>0 Ω</td></tr></table>	Test Points	Result	WH (1) to RD (3)	0 Ω	WH (3) to RD (1)	0 Ω
Test Points	Result						
WH (1) to RD (3)	0 Ω						
WH (3) to RD (1)	0 Ω						

9-2. DOOR LOCK SWITCH ASSEMBLY

Wiring diagram	<div data-bbox="451 455 1123 498" style="background-color: #cccccc; padding: 2px; text-align: center;">Circuit in the MAIN PWB / Wiring Diagram</div> <p>The diagram illustrates the electrical circuit for the door lock assembly. A MICOM (Microcomputer) is connected to two relays through 13.1V lines. The relays are connected to a terminal block with pins 1, 2, 3, 4, 5. The terminal block is connected to a door switch assembly containing a PTC, a Solenoid, and a Bimetal. The door switch assembly is connected to an AC Common terminal of a Valve and a Vac source.</p>
Function	<p>The Door Lock Switch Assembly consists of a Heating PTC, a Bimetal, a Protection PTC, and a Solenoid. It locks the door during a wash cycle.</p> <ol style="list-style-type: none"> Operation for door closing <ul style="list-style-type: none"> - After the system turns on, PTC heating starts up through terminal 2~4's authorizing the power on. - After PTC heating starts up and before solenoid operation is driven, force the system to the off position through CAM. ⇒ Door close - Authorizing one impulse through terminal 3~4 (PTC & solenoid) will make the door lock. - Door lock is detected when switches in terminal 4~5 are set closed. ⇒ CAM rotation will forcibly clear off the connection. The maximum, allowable number of impulse authorizations is 2. ⇒ Upon the third authorization of the impulse, the position of CAM goes back to the door-open position. - Authorizing the impulse occurs in 4.5 seconds upon input for max performance and two authorization processes are allowed at most. ⇒ Normal operation period of PTC heating: 1.5 – 5 seconds. (Defects from the development process.) Operation for door opening <ul style="list-style-type: none"> - With a temporary stop, door automatically opens by CAM rotations after authorizing the impulse from the terminal 3 ~ 4 and the power turns off – maximum of 3 times of the authorizing period. - Upon the fourth authorization of the impulse, the position of CAM goes back to the door-close position.

Test points																
Result	<table><tr><th>Test Points</th><th>Result</th><th>Remarks</th></tr><tr><td>(2) to (4)</td><td>700-1500 Ω</td><td>At 77°F (25°C)</td></tr><tr><td>(3) to (4)</td><td>60-90 Ω</td><td>At 77°F (25°C)</td></tr><tr><td>(4) to (5)</td><td>Infinity</td><td></td></tr><tr><td>(2) to (4)</td><td>120 Vac</td><td>Voltage Input</td></tr></table>	Test Points	Result	Remarks	(2) to (4)	700-1500 Ω	At 77°F (25°C)	(3) to (4)	60-90 Ω	At 77°F (25°C)	(4) to (5)	Infinity		(2) to (4)	120 Vac	Voltage Input
Test Points	Result	Remarks														
(2) to (4)	700-1500 Ω	At 77°F (25°C)														
(3) to (4)	60-90 Ω	At 77°F (25°C)														
(4) to (5)	Infinity															
(2) to (4)	120 Vac	Voltage Input														

9-3. STATOR ASSEMBLY

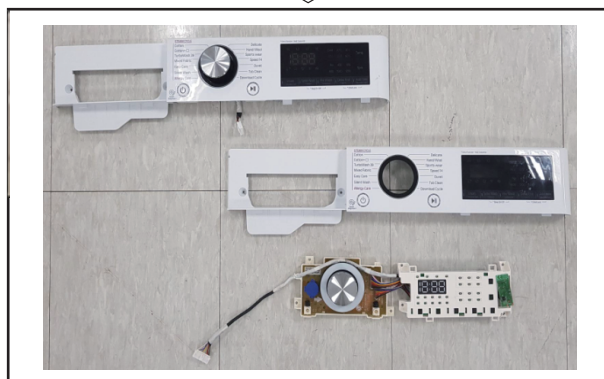
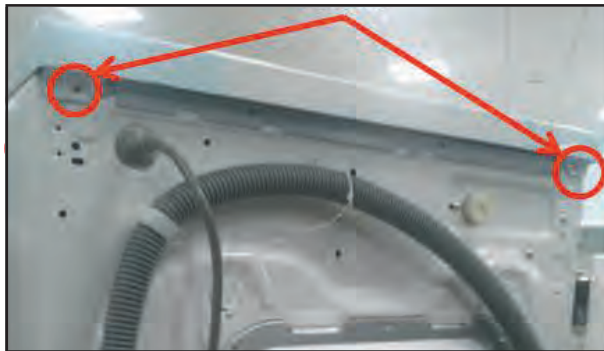
Wiring diagram	<div><div>Circuit in the MAIN PWB / Wiring Diagram</div></div>								
Function	<p>The DD motor can be driven from stopped to maximum speed in infinite steps in either direction.</p> <p>There are 36 poles on the stator; 12 permanent magnets spaced around the rotor. There are no brushes to wear out. Unlike a more traditional brushless motor, the rotor surrounds the stator rather than being attached to it.</p>								
Test points (Windings)	 <div>WINDINGS</div> <div>(1) (2) (3)</div>								
Result (Windings)	<table><tr><th>Test Points</th><th>Result</th></tr><tr><td>(1) to (2)</td><td>5-15 Ω</td></tr><tr><td>(2) to (3)</td><td>5-15 Ω</td></tr><tr><td>(3) to (1)</td><td>5-15 Ω</td></tr></table>	Test Points	Result	(1) to (2)	5-15 Ω	(2) to (3)	5-15 Ω	(3) to (1)	5-15 Ω
Test Points	Result								
(1) to (2)	5-15 Ω								
(2) to (3)	5-15 Ω								
(3) to (1)	5-15 Ω								

10. DISASSEMBLY INSTRUCTIONS

* Remove the power cord from the outlet before disassembling or repairing the unit.

CONTROL PANEL ASSEMBLY

Screws



- ① Unfasten the screws from the parts displayed in the fig.
- ② Disassemble the top plate assembly by sliding it back and then lifting it up.
- ③ Pull the drawer panel assembly out.
- ④ Unfasten the screws from the parts displayed in the fig.
- ⑤ Unfasten the screws from the parts displayed in the fig.
- ⑥ Disconnect the wiring connectors between the multi harness and the control panel assembly.
- ⑦ Disassemble the control panel assembly.
- ⑧ Disassemble the display PCB assembly from the control panel assembly by unfastening the screws.
- ⑨ Disassemble the NFC supporter.
- ⑩ Disconnect the wiring connector between the Display PCB assembly and the NFC PCB assembly.

PWB ASSEMBLY(MAIN)



① Unscrew two screw of the PWB



② First Disassembly atomizing hose from the PWB and Pull the PWB assembly in direction of red arrow



③ Disassembly PWB like the picture

DISPENSER ASSEMBLY



① The plate assembly(Top) are disassembled.

② Pull the drawer to arrow direction.

③ Two screws are unscrewed.

④ Clamp

⑤ Cutting cable ties and the ventillation hose are disassembly on the dispenser

INLET VALVE



- ① Disconnect the wiring connector.
- ② Remove the valve by two screws of the valve holder.

※ When reconnecting the connector

VALVE ① (PRE-WASH)	WHITE/BLACK-BLACK or GRAY-BLACK
VALVE ② (NORMAL-WASH)	GRAY/BLACK

- Rating : 12V
- Resistant : 3.5~4.5kΩ

DOOR



- ① Open the door completely.
- ② Remove the three screws from the hinge.

※ When removing the Door Assembly, it is necessary to hold the Bracket that is inner of the Cabinet Cover.

Removing method of remained water

Pull it out from hose.

※ First, prepare a bucket to put in the remained water.



→ CAP(REMAING HOSE)

CABINET COVER



- ① The plate assembly(Top) is disassembled.
- ② Pull out the drawer and unscrew 2 screws.
- ③ Lift the side the Control Panel Assembly and pull it out



- ① Two screws are unscrewed.
- ② Push out PANEL ASSEMBY, CONTROL after Push the hook(① , ②) below.



- ③ Unscrew the screws from the lower cover .



- ② Disassembly cap cover and pump case.

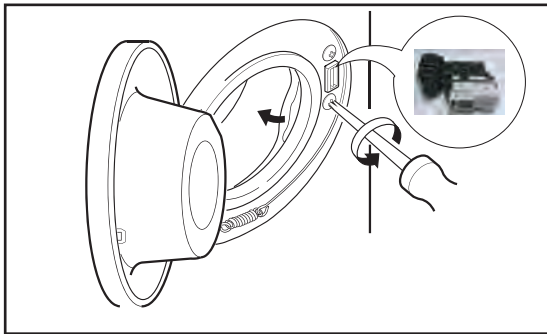
- ③ Unscrew the screw from the CABINET COVER.
- ④ Remove gasket clamp and release gasket from cabinet cover.



④ Lift and separate the cabinet cover.

※ NOTE : When assembling the CABINET COVER, connect the Door S/W connector.

SWITCH ASSY, DOOR LOCK



- ① Two screws are unscrewed and disassembly cabinet cover.
- ② The Door Lock S/W is disconnected form the wiring connector and the strap.

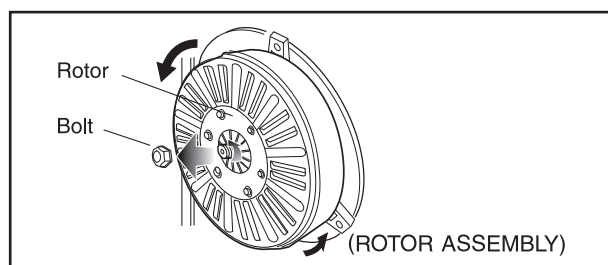


- Just check cut-off.
- Check the operating time.

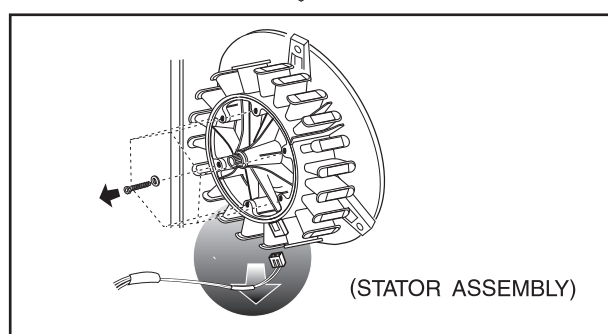


- * Door Locking time : 1~8 sec.
Check the time between from input the power to part ① move up, then Door locked.
- * Door Releasing time : 25~100 sec.
Check the time between from off the power to parts ① move down, then Door released.

ROTOR ASSEMBLY, STATOR ASSEMBLY, FRICTION DAMPER

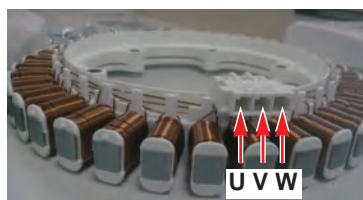


- ① Remove the back cover.
- ② After loosening the bolt, Rotor, pull out the rotor.



- ① Remove the 6 bolts from the stator.
- ② Disconnect the 2 connectors.

Motor Stator

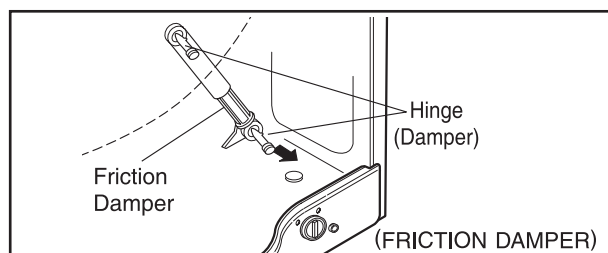


V ~ U (8~11)

U ~ W (8~11)

W ~ V (8~11)

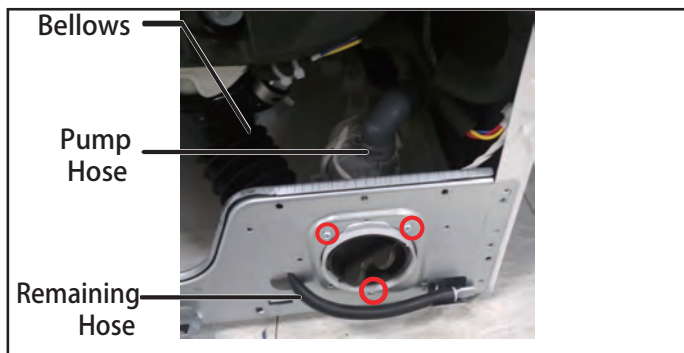
- ① Remove the hinges (Damper) at the Tub.
- ② The Hinge(Damper) at the base is pulled off by pressing on the snaps at the sharp end.
- ③ The hinge at the base is pulled off. (In directions of the arrow)



PUMP

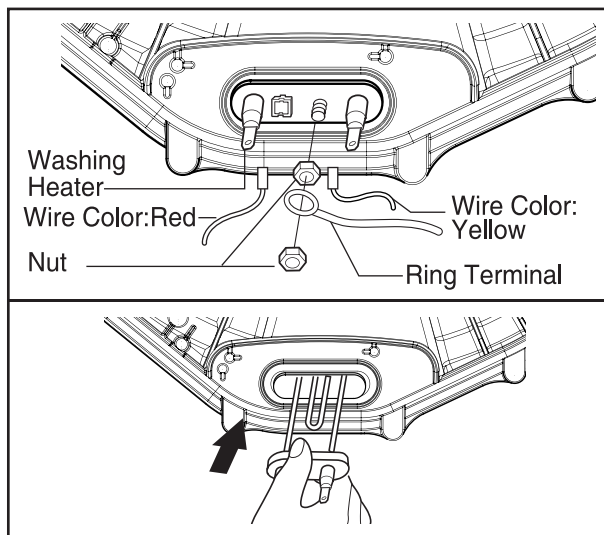


- ① Disassembly Top Plate, Control Panel, Drawer Panel Assembly, Cabinet Cover Assembly, Lower Cover Assembly



- ④ Remove pump outlet hose.
- ⑤ Remove tub pump bellows.
- ⑥ Remove cap(Remaining Hose).
- ⑦ Disconnect the wiring.
- ⑧ Three screws are unscrewed from the cabinet.
- ⑨ Remove the pump to arrow direction.
 - Rating : 26V
 - Resistant : 3.46~3.98 Ω

HEATER



- ① Loosen the nut.
- ② Remove washing heater by pulling out.

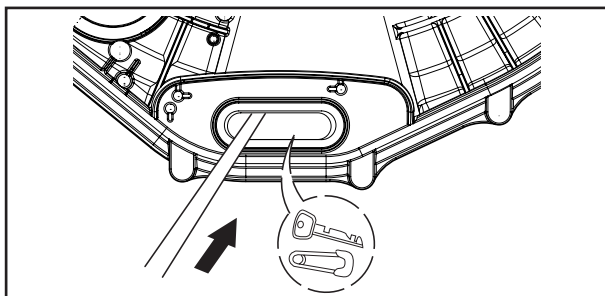
< Heater for Washing >

- Rating : 230V 2000W
- Resistant : 24.5~28.5 Ω

CAUTION

When assembling the washing heater, insert the heater to heater clip on the bottom of tub and check the position of wire color.

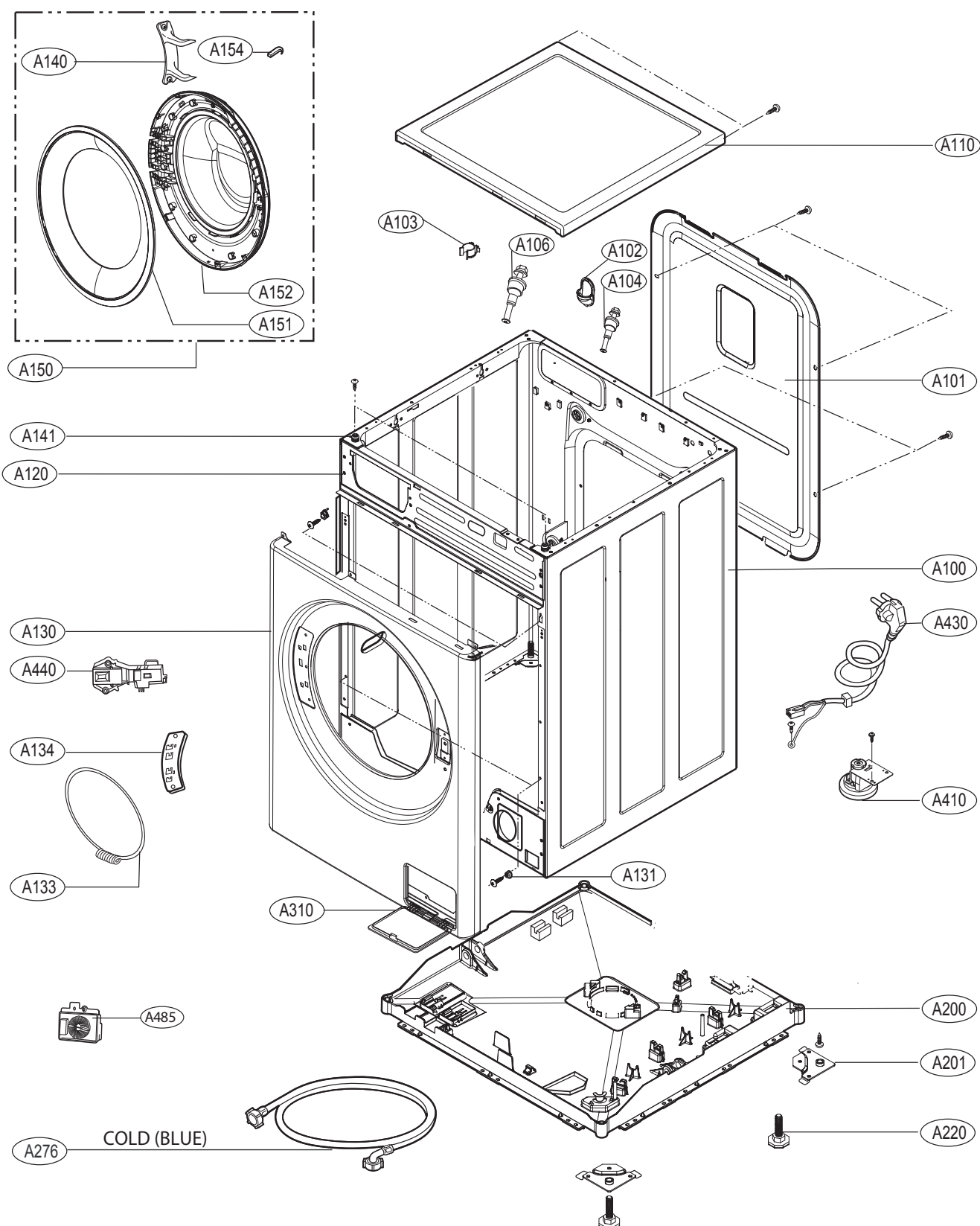
WHEN FOREIGN OBJECT STUCK BETWEEN DRUM AND TUB



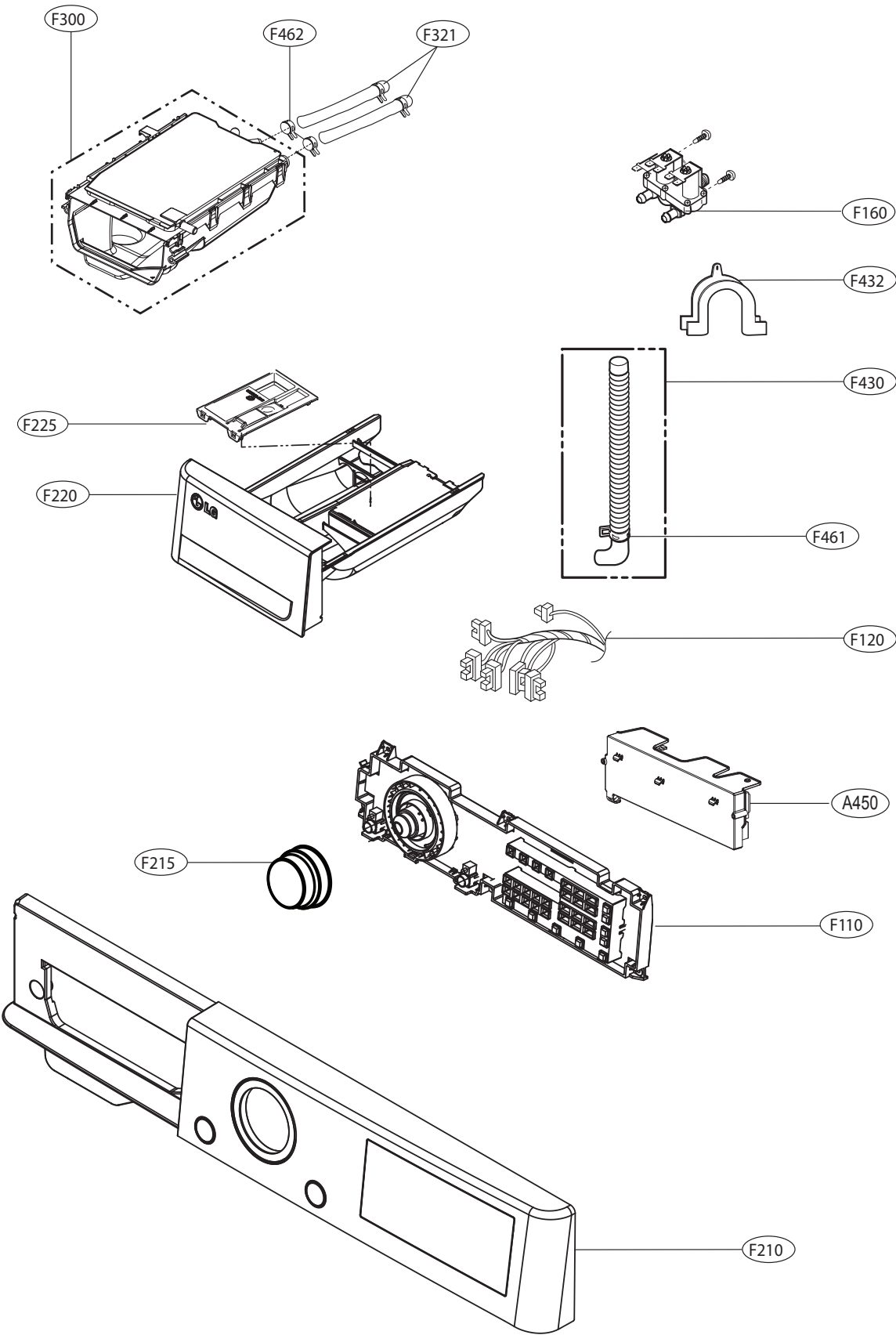
- ① Remove washing heater.
- ② Remove the foreign object(wire,coin,etc) by inserting long bar in the hole.

11 - 1. THE PARTLIST OF CABINET ASSEMBLY

11 - 1. THE PARTLIST OF CABINET ASSEMBLY



11-2. THE EXPLODED VIEW OF CONTROL PANEL & DISPENSER ASSEMBLY



11-3 THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY

