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WASHING MACHINE SERVICE MANUAL

CAUTION

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

**MODEL : WD-8013(0~9)S
WD-8013(0~9)N
WD-1013(0~9)S
WD-1013(0~9)N**



LG Electronics Inc.

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1. SPECIFICATION

ITEM		WD-1013(0~9)S WD-8013(0~9)S	WD-1013(0~9)N WD-8013(0~9)N
POWER SUPPLY		220-240V~, 50Hz	
PRODUCT WEIGHT		52kg	57kg
ELECTRICITY CONSUMPTION	WASHING	190W	
	SPIN (800rpm)	300W	
	DRAIN MOTOR	32W	
	WASH HEATER	1900W	
REVOLUTION SPEED	WASH	50rpm	
	SPIN	WD-8013(0~9)S(N)	400/500/600/800rpm
		WD-1013(0~9)S(N)	400/600/800/1000rpm
OPERATION WATER PRESSURE		0.3-10kgf/cm ² (30-1000kPa)	
CONTROL TYPE		Electronic	
WASH CAPACITY		3.5kg	5.0kg
		Synthetic(1.5), Delicate(1.0) Wool(1.0), Hand Wash(1.0) Quick 30(1.0)	Synthetic(1.7), Delicate(1.5) Wool(1.5), Handwash(1.5) Quick 30(1.5)
DIMENSION		600mm(W) × 360mm(D) × 850mm(H)	600mm(W) × 440mm(D) × 850mm(H)
WASH PROGRAM		Cotton, Synthetic, Delicate, Wool, Hand Wash, Quick 30, Drain, Pump, Rinse+Spin	
OPTION		Time Save, Rinse +, Pre-Wash, Crease Care	
DOOR SWITCH TYPE		Bi-Metal type	
WATER LEVEL		9 steps (by sensor)	
RESERVATION		From 3 hours to 19 hours	
SENSING OF THE LAUNDRY AMOUNT		Adopted	
FUZZY LOGIC		Adopted	
DISPLAY OF THE REMAINING TIME		Adopted	
ERROR DIAGNOSIS		10 items	
POWER AUTO OFF		Adopted	
CHILD LOCK		Adopted	
AUTO RESTART		Adopted	

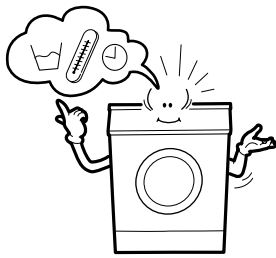
2. FEATURES & TECHNICAL EXPLANATION

2-1.FEATURES



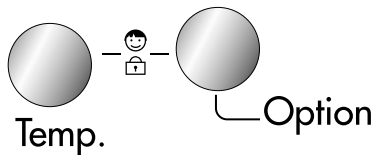
■ Protection against creases

With the alternate rotation of the drum, creasing in the laundry is minimized.



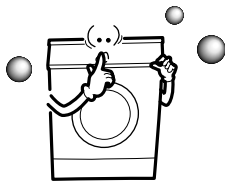
■ More economical by Fuzzy Logic System

FUZZY Logic System detects the amount of load and water temperature, and then determines the optimum water level and washing time to minimize energy and water consumption.



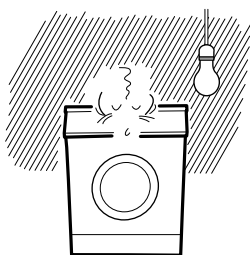
■ Child-Lock

The Child-Lock system has been developed to prevent children from pressing any button (except Power button) to change the programme during operation.



■ Low noise speed control system

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

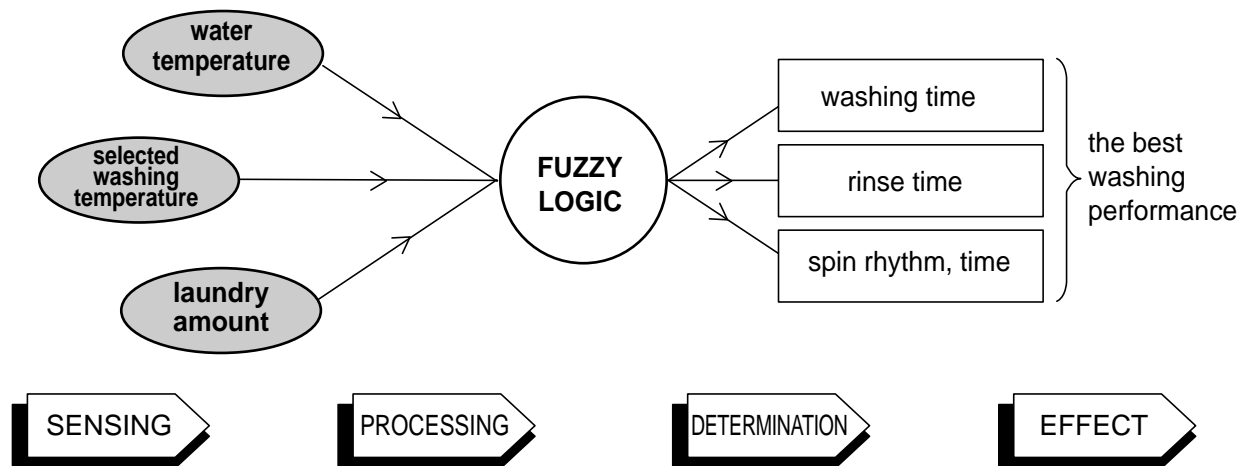


■ Auto Restart

Although the washing machine is turned off by a power failure, it restarts automatically where it stopped when power is supplied again. and it will be the same the machine is unplugged and is plugged in again.

2-2.DETERMINE WASHING TIME BY FUZZY LOGIC

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



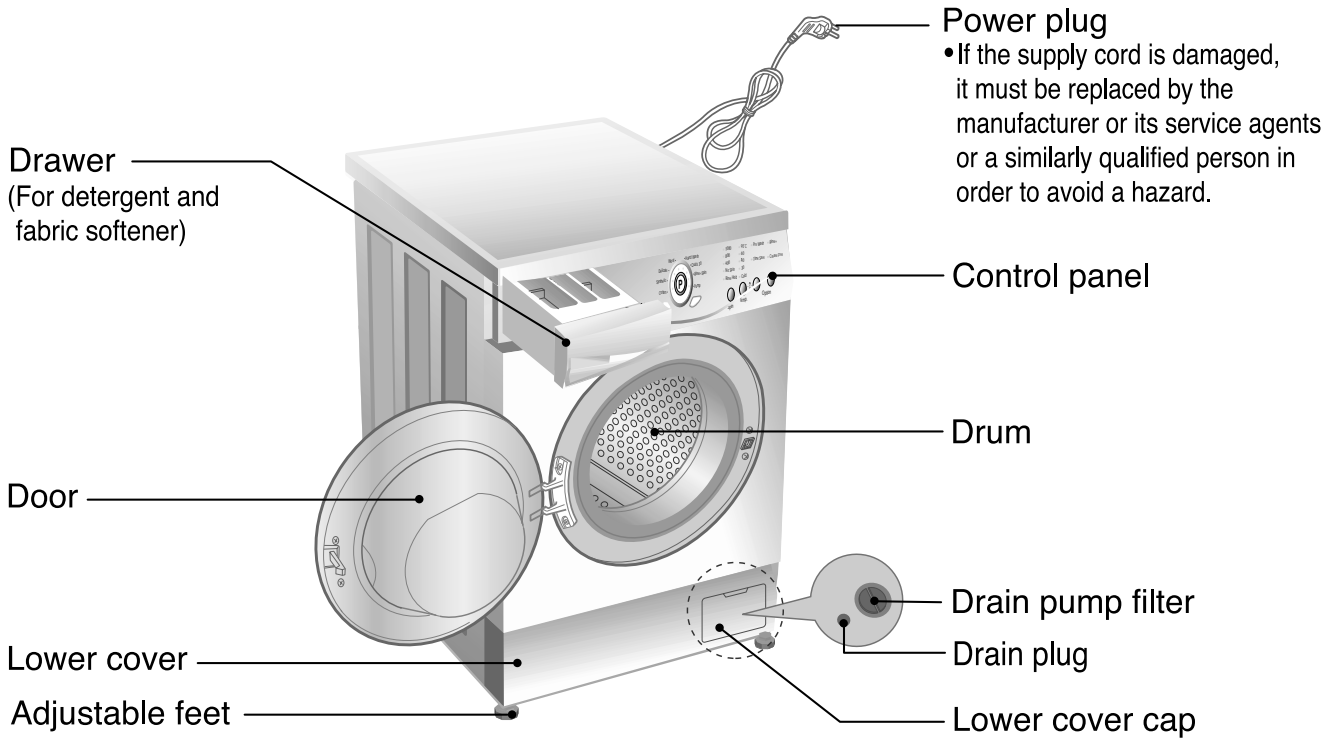
2-3.WATER LEVEL CONTROL

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

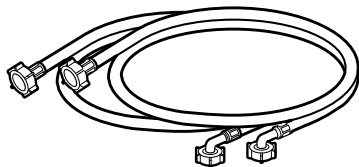
2-4.THE DOOR CAN NOT BE OPENED

- While program is operating.

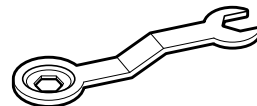
3. PARTS IDENTIFICATION



■ ACCESSORIES



Inlet hose 1EA ※ Option Hot/Cold (2 EA)



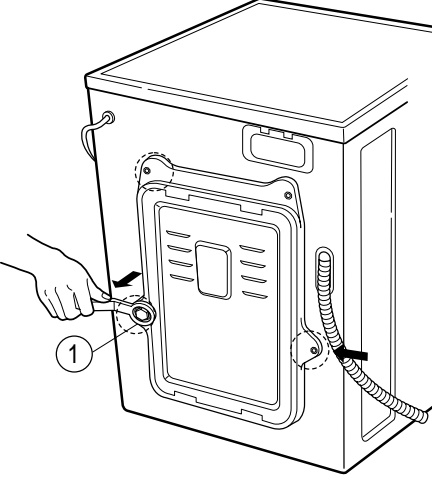
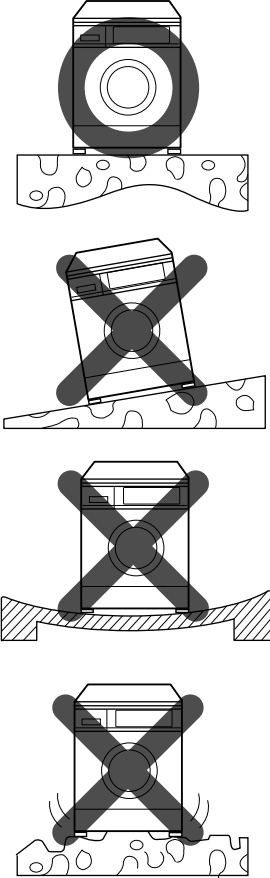
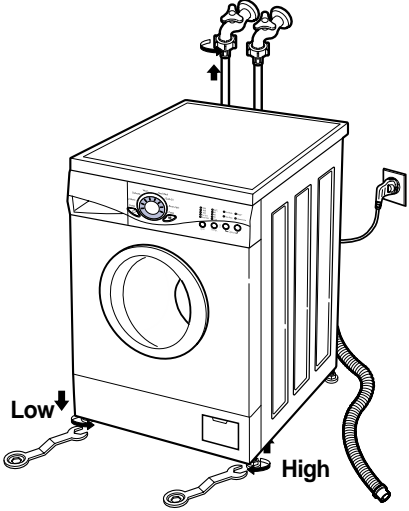
Spanner

4. INSTALLATION

- ① Before servicing ask the customer what the trouble is.
- ② Check the adjustment (power supply is 220-240V, remove the transit bolts....)
- 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 O·K or NOT.

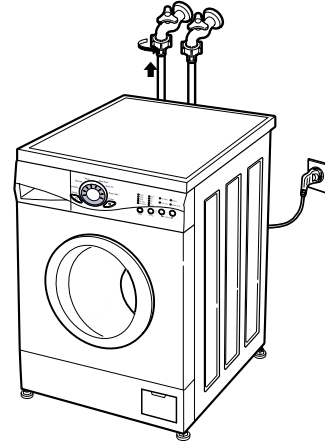
■ STANDARD INSTALLATION

The appliance should be installed as follows.

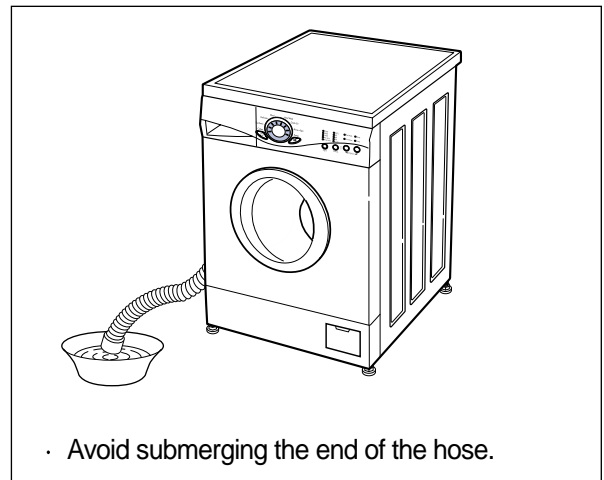
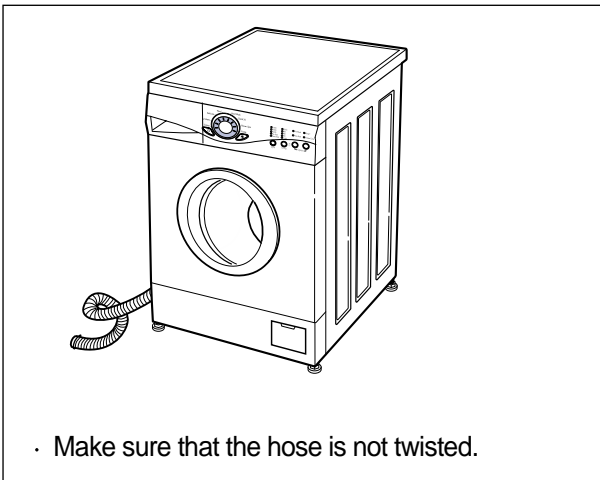
REMOVE THE TRANSIT BOLTS	INSTALL THE APPLIANCE ON FLAT AND FIRM SURFACE	ADJUST THE HORIZONTAL
<ul style="list-style-type: none"> • Remove the transit bolts (4EA: ①) with supplied wrench. • Keep the transit bolts and wrench for future use. • Insert the 4 caps provided into the hole. 		<ul style="list-style-type: none"> • Turn the adjustable feet to set the appliance horizontally.  <ul style="list-style-type: none"> • The appliance goes up by rotating the feet clockwise. • The appliance comes down by rotating the feet counter-clockwise.

■ HOW TO CONNECT INLET HOSE

- Check that the rubber washer is inside of the valve connector.
- Connect the inlet hose firmly to prevent leak.

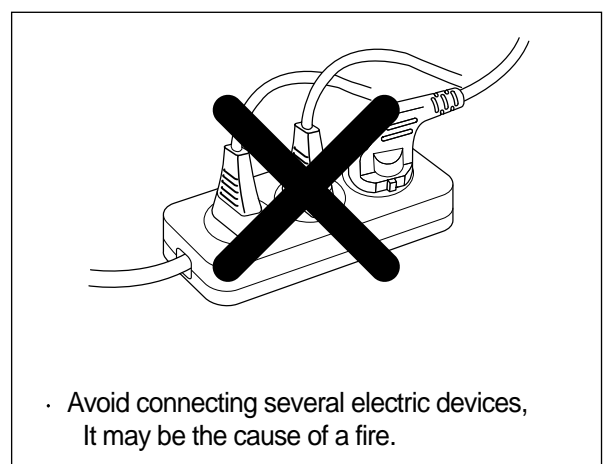
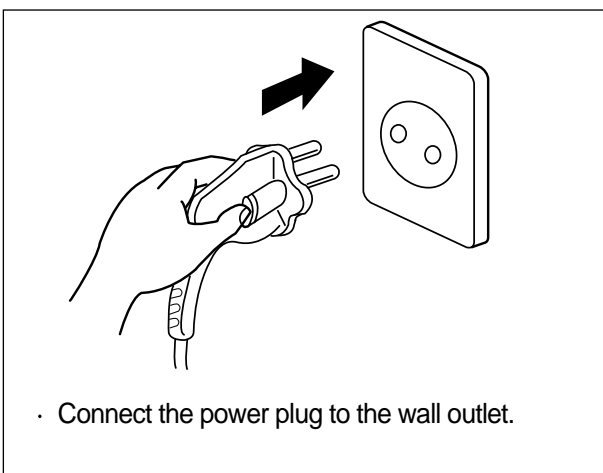


■ CONNECT DRAIN HOSE

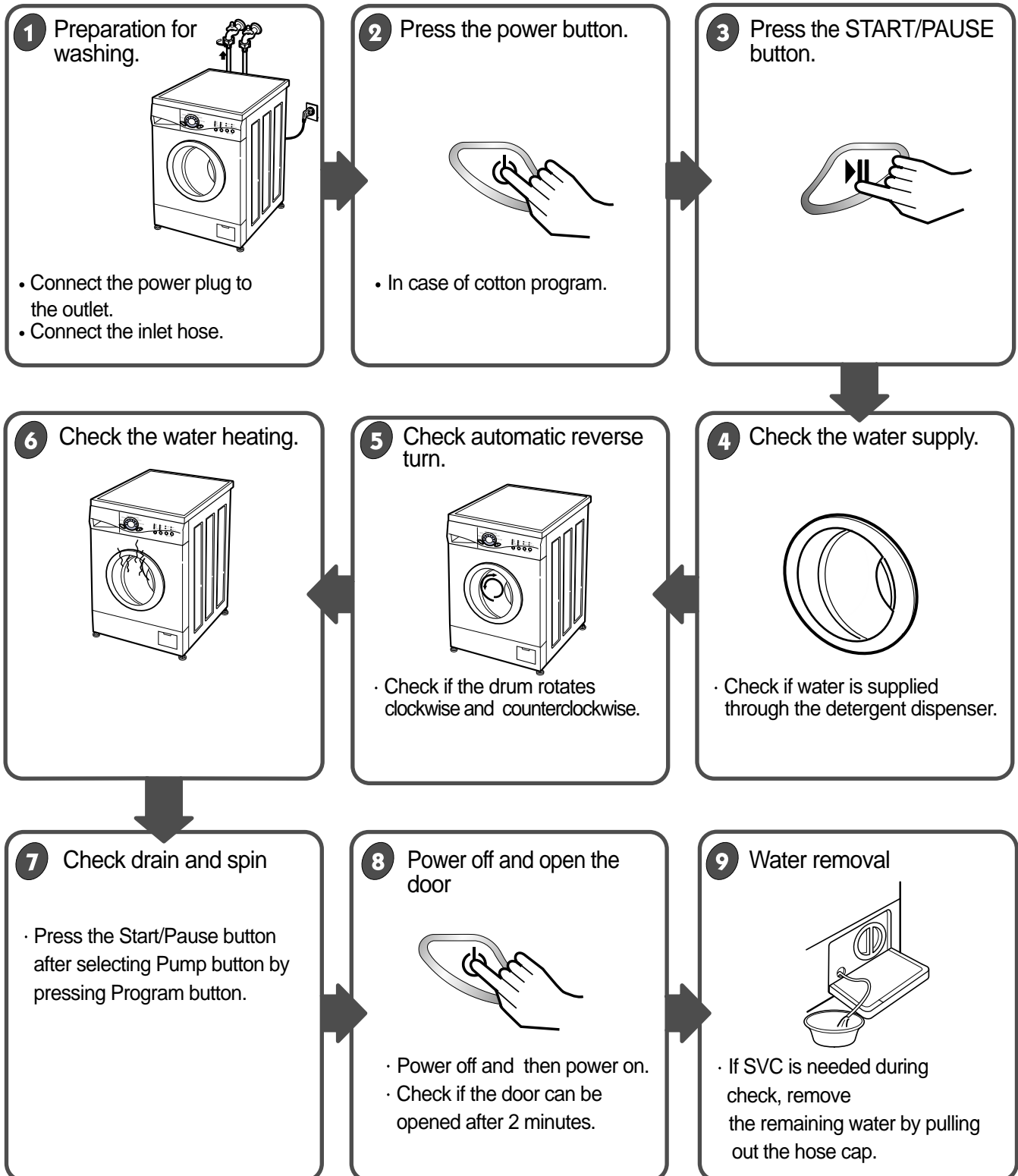


※ The drain hose should be placed under 100cm from the floor.

■ CONNECT POWER PLUG



7 TEST OPERATION



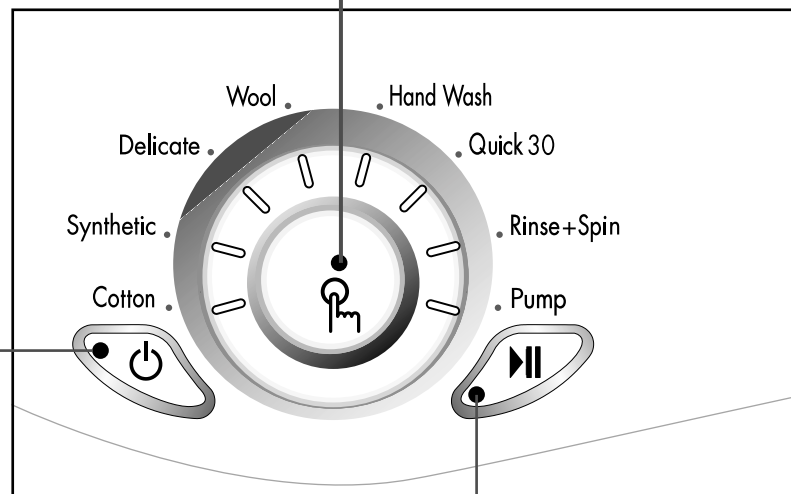
5. OPERATION

Wash program selector

- 8 programs can be set depending on the type of the laundry.
- By pressing the button
[Cotton → Synthetic → Delicate → Wool → Hand Wash → Quick 30 → Rinse+Spin → Pump]
can be selected.

Power button

- Press the button to turn on and off.



Start/Pause button

- Use the button to start or pause wash cycle.
- The power turn off automatically 4 minutes after the pause button is pressed.

Spin

- WD-1013(0~9)S / 1013(0~9)N
No Spin → Rinse Hold → 400 → 800 → 1000
- WD-8013(0~9)S / 8013(0~9)N
No Spin → Rinse Hold → 400 → 600 → 800

Option

Pre Wash : • If the laundry is heavily soiled, "Pre Wash" course is effective.
• Pre Wash is available in Cotton and Synthetic Program.

Time Save : • By selecting the Time Save option, the wash time may be reduced, depending on the program selected.

Option

• Rinse+ : If you wish to rinse more, the Rinse+ option will remove any trace of detergents.

• Crease Care : If you want to prevent crease, select this function after selecting spin speed.

- 1000
- 800
- 400
- No Spin
- Rinse Hold
- 95 °C
- 60
- 40
- 30
- Cold
- Pre Wash
- Time Save
- Rinse+
- Crease Care

Spin

Temp.

Option

Water temperature selector

- Press the button to select water temperature.
- The water temperature [40 °C → 60 °C → 95 °C → Cold → 30 °C] can be selected in Cotton.
- 95 °C is selected for Cotton only.

Child - lock

NOTE

If the Program lamps are blinked at the same time after the power off or the end of the washing, the child lock mode is set. Cancel the child lock mode by pressing the [Temp.] and the [Option] button simultaneously for 3 seconds.

- Child Lock system can be set and canceled by pressing both [Temp.] and [Option] button simultaneously for 3 seconds.
- Once Child Lock is set, all button are inoperable except power button.
- Child Lock system can be set anytime even during Power-off and operation.
- It is automatically cancelled when an operational error occurs.

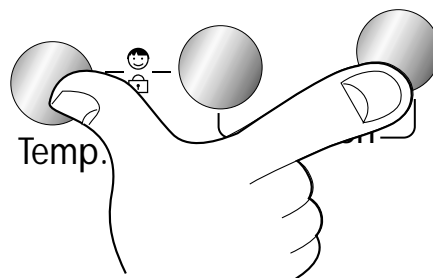
7. TROUBLESHOOTING

7-1. BEFORE PERFORMING SERVICE

- ⌋ Be careful of electric shock or disconnecting the parts while troubleshooting.
- ⌋ Voltage of each terminal in 220-240V~ and DC while applying an electric current.

7-2. QC TEST MODE.

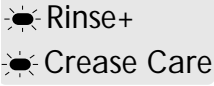

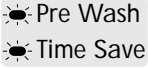
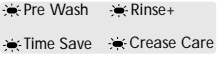
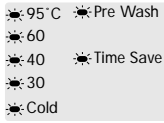
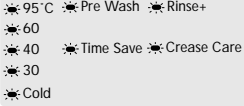
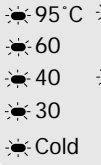
- ⊠ Pressing **Temp**, and **Option** button simultaneously.
- ⊠ Power supply ON with pressing upper two button.
- ⊠ Press the START/PAUSE button as follows.
[Press the START/PAUSE button more 4 times until stop spinning]



Pressing number of START/PAUSE button	Checking Point
None	All lamps turn on
1 time	Clockwise spin (right)
2 times	Low speed spin
3 times	High speed spin
4 times	Inlet valve for pre-wash operation
5 times	Inlet valve for main-wash operation
	Hot inlet valve in case of hot water fill
6 times	Inlet valve for main-wash operation
7 times	Counterclockwise spin (left)
8 times	A Heater is in operation for 3 sec.
9 times	Draining pump operation
10 times	Auto off operation

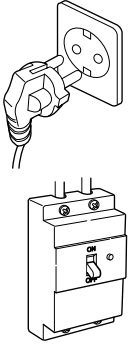
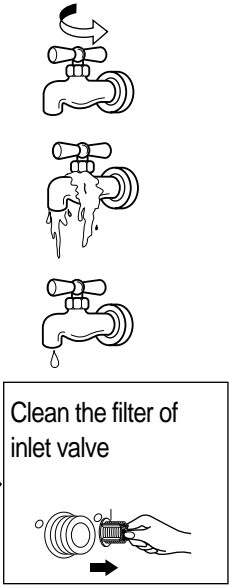
7-3.ERROR DISPLAY.


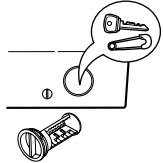
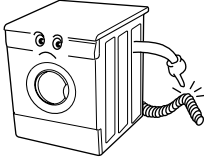
- If you press the [Start/Pause] button when an error is displayed, any error except **S/W ERROR** will disappear and the machine will change into pause status.
- In case of 『 **SENSOR PRESSURE S/W ERROR** 』, 『 **HEATING ERROR** 』, 『 **DOOR OPEN ERROR** 』, if the error is not resolved within 20 sec. In the case of other errors, if the error is not resolved within 4 min. power will be turned off automatically and the error code will be blinked. But in case of 『 **OVER FLOW ERROR** 』, power will not be turned off.

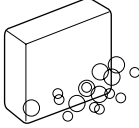
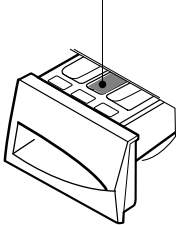
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> ○ Water has not reached to the pre-set level within 4 min. since inlet valve operated, or water has not reached to the normal level within 25 min.
2	IMBALANCE ERROR		<ul style="list-style-type: none"> ○ The appliance is tilted. ○ Laundry is gathered to one side. ○ Non distributable things are put into the drum.
3	DRAIN ERROR		<ul style="list-style-type: none"> ○ Water has not drained enough within 5 min.
4	OVERFLOW ERROR		<ul style="list-style-type: none"> ○ Water is automatically being pumped out because too much water is in the tub.
5	SENSOR PRESSURE S/W ERROR		<ul style="list-style-type: none"> ○ The sensor pressure switch is out of order.
6	DOOR OPEN ERROR		<ul style="list-style-type: none"> ○ The [Start/Pause] button is pressed with the door open. ○ The door switch is out of order.
7	HEATING ERROR		<ul style="list-style-type: none"> ○ The thermistor is out of order.

8. ERROR DIAGNOSIS AND CHECK LIST

8-1. DIAGNOSIS AND ANSWER FOR ABNORMAL OPERATION

SYMPTOM	GUIDE FOR SERVICE CALL	
<p>NO POWER</p>	<p>Is the power plug connected firmly to 220-240V~ outlet?</p> <p style="text-align: center;">YES</p> <p>Power failure? or Breaker opened? Is the outlet controlled by a switch.</p> <p style="text-align: center;">NO</p> <p style="text-align: center;">Visit to check</p>	
<p>Water inlet trouble</p> <p>☀ Rinse+ ☀ Crease Care</p>	<p>Is ☀ Rinse+ ☀ Crease Care displayed?</p> <p style="text-align: center;">YES</p> <p>Is the tap opened?</p> <p style="text-align: center;">YES</p> <p>Is the tap frozen?</p> <p style="text-align: center;">NO</p> <p>Is the water supply shut-off?</p> <p style="text-align: center;">NO</p> <p>Is filter in the inlet valve clogged with foreign material?</p> <p style="text-align: center;">NO</p> <p style="text-align: center;">Visit to check</p>	

SYMPTOM	GUIDE FOR SERVICE CALL
<p>◦ DOOR OPEN ERROR</p> <p>Refer to 7-3 ERROR DISPLAY</p>	<div data-bbox="525 421 1362 808"> <p>Did you press the Start/Pause button when the door is open?</p> <p>YES → Close the door</p>  <p>NO → Visit to check</p> <p>Check if the door switch is O.K</p> </div>
<p>◦ Drain Trouble</p> <p>☀ Pre Wash ☀ Time Save</p>	<div data-bbox="525 927 1430 1442"> <p>Is ☀ Pre Wash ☀ Time Save displayed?</p> <p>YES → Is the debris filter clogged with foreign material such as pins, coins, etc.?</p> <p>YES → Clean up the filter.</p>  <p>NO → Is the drain hose frozen with water, kinked, or crushed?</p> <p>NO → Visit to check</p>  </div>

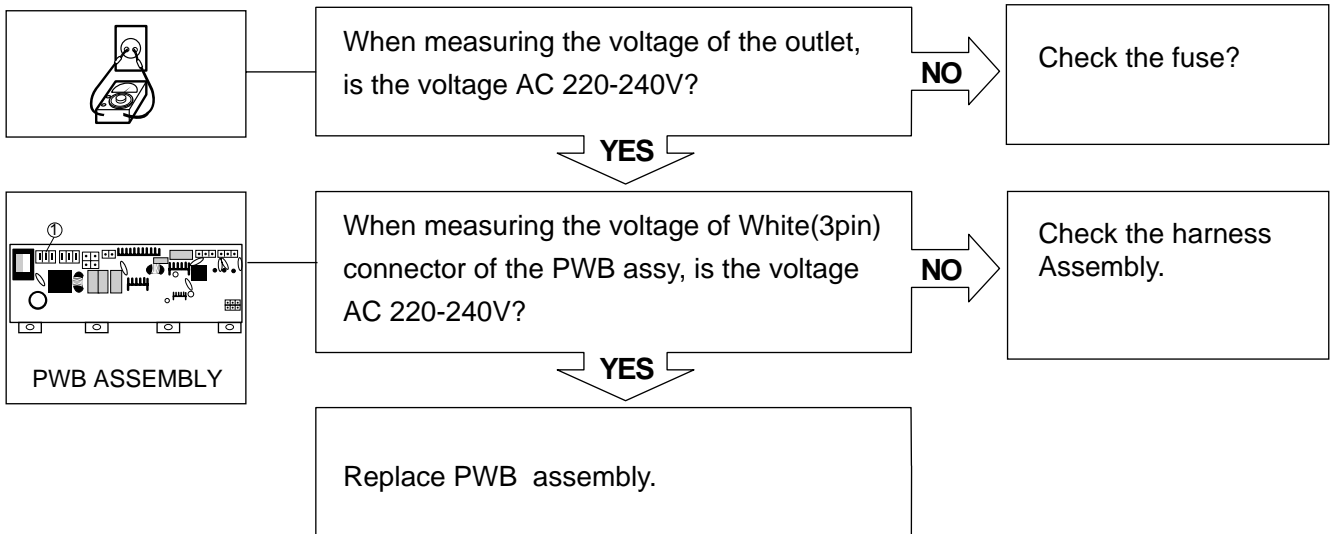
SYMPTOM	GUIDE FOR SERVICE CALL
<p>◦ Suds overflow from the appliance. (In this condition, wash and spin do not operate normally)</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 65%;"> <p>Is low-sudsing detergent for the drum washing machine used?</p> <p style="text-align: center;">YES</p> <p>Is the proper amount of detergent used as recommended?</p> <p style="text-align: center;">YES</p> <p>Recommend to reduce the amount of detergent.</p> <ul style="list-style-type: none"> * This appliance has the automatic suds sensing function which operates under much suds condition for good rinse and preventing overflow. * When much suds are sensed, the suds removing function such as drain, water input, and pause will operate without rotating the drum. </div> <div style="width: 30%; text-align: center;">  <p>LOW SUDSING DETERGENT</p> </div> </div>
<p>◦ No effect of softener</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 65%;"> <p>Is softener put in the correct compartment of drawer?</p> <p style="text-align: center;">YES</p> <p>Is the drawer closed during wash?</p> <p style="text-align: center;">YES</p> <p>Is the softener cap clogged?</p> <p style="text-align: center;">YES</p> <p style="text-align: center;">Explain how to use softener</p> <p style="text-align: center;">Clean the compartment for softener</p> </div> <div style="width: 30%; text-align: center;"> <p>Compartment for softener</p>  </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>☀ Pre Wash ☀ Rinse+</p> <p>☀ Time Save ☀ Crease Care</p> </div> <div style="width: 45%; border-left: 1px dashed black; padding-left: 5px;"> <p>☀ 95 °C</p> <p>☀ 60</p> <p>☀ 40</p> <p>☀ 30</p> <p>☀ Cold</p> </div> </div> <hr style="border-top: 1px dotted black;"/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>☀ 95 °C ☀ Pre Wash ☀ Rinse+</p> <p>☀ 60</p> <p>☀ 40 ☀ Time Save ☀ Crease Care</p> <p>☀ 30</p> <p>☀ Cold</p> </div> </div>	<p style="text-align: center;">Visit to check</p>

8-2.FAULT DIAGNOSIS AND TROUBLESHOOTING

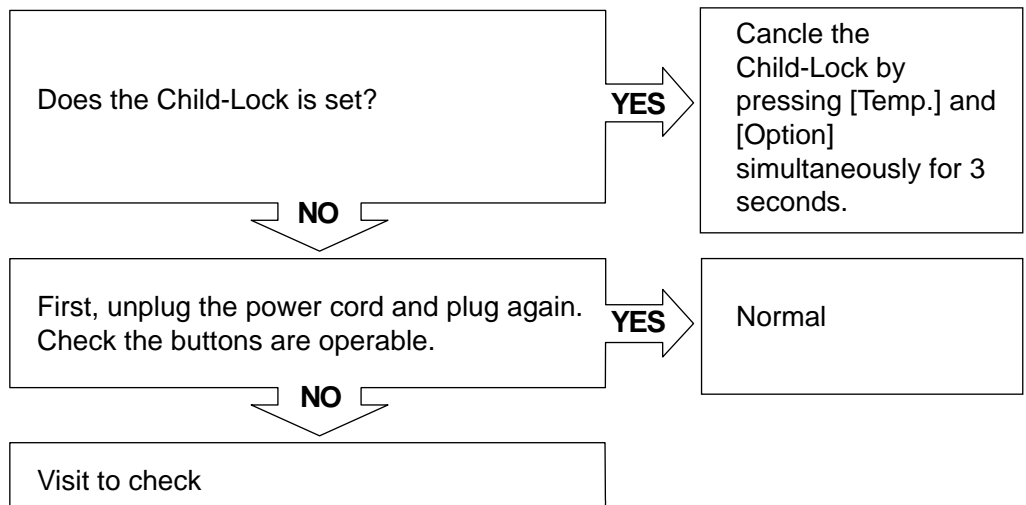
CAUTION

1. Be careful of electric shock or disconnecting the parts while troubleshooting.
2. First of all, check the connection of each part terminal with wiring diagram.
3. If you replace the PWB assembly (Main), put in the connectors correctly.

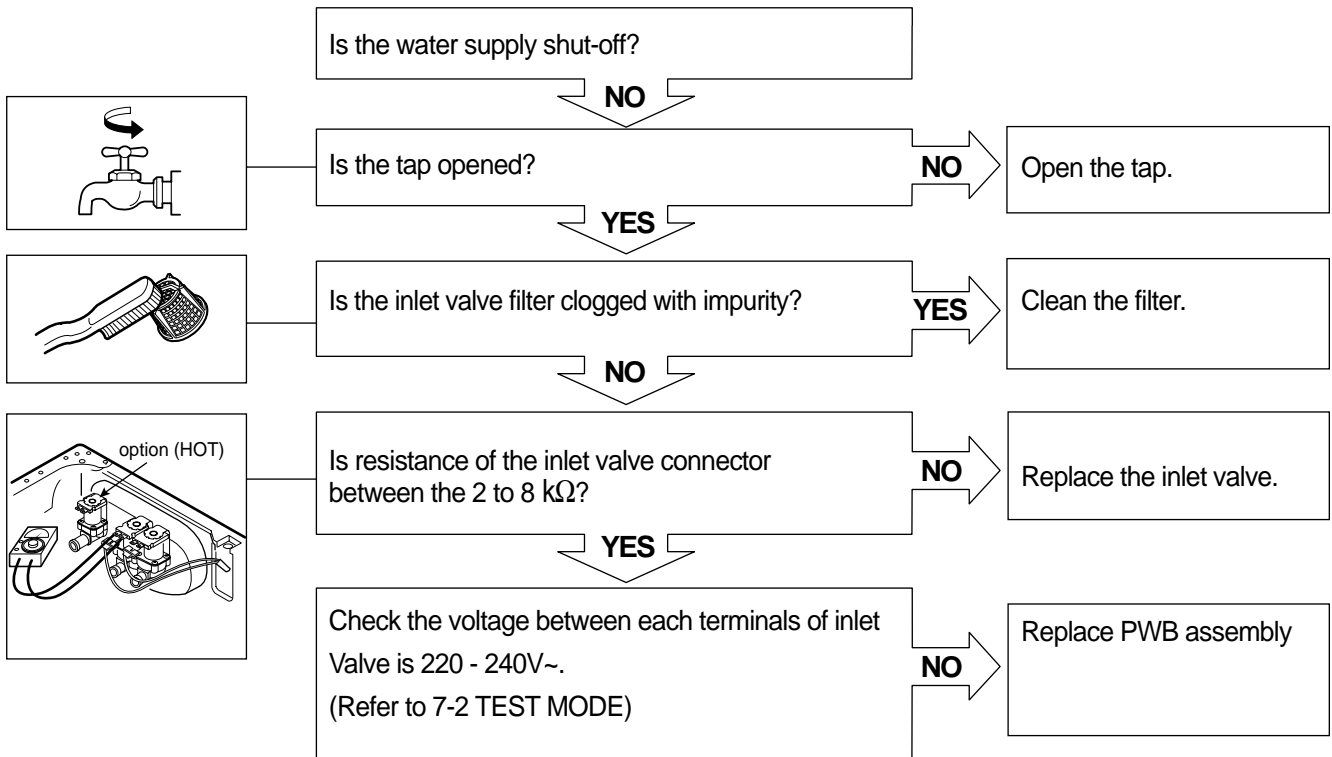
NO POWER



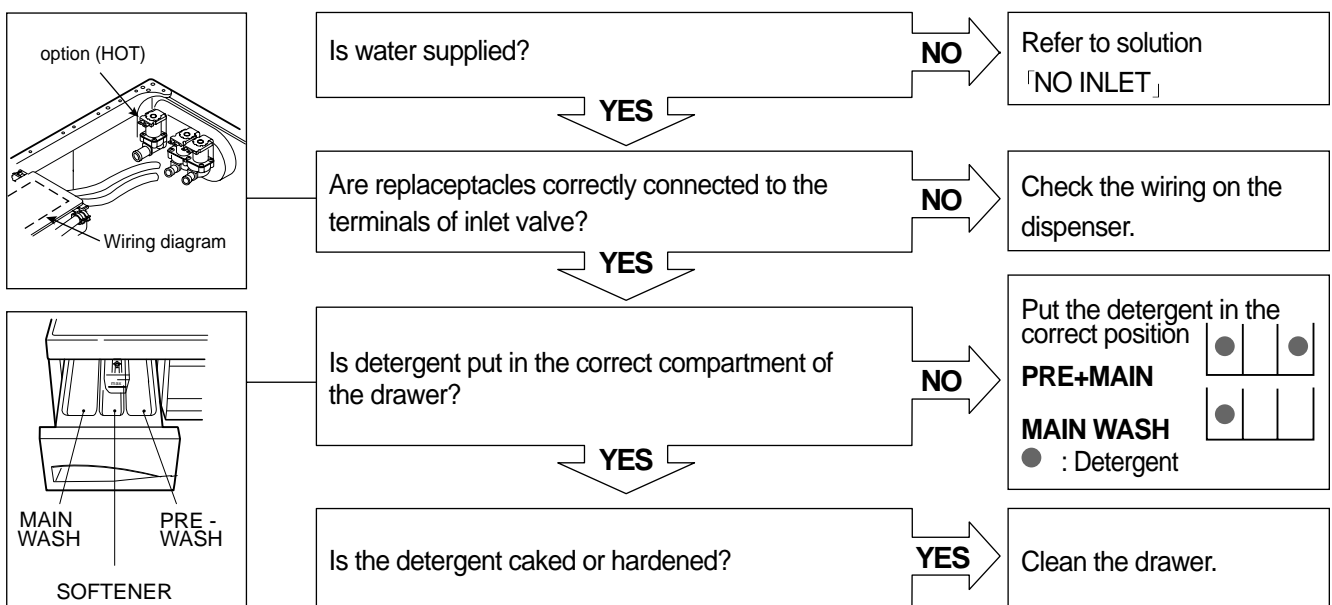
ALL BUTTONS ARE INOPERABLE EXCEPT POWER BUTTON



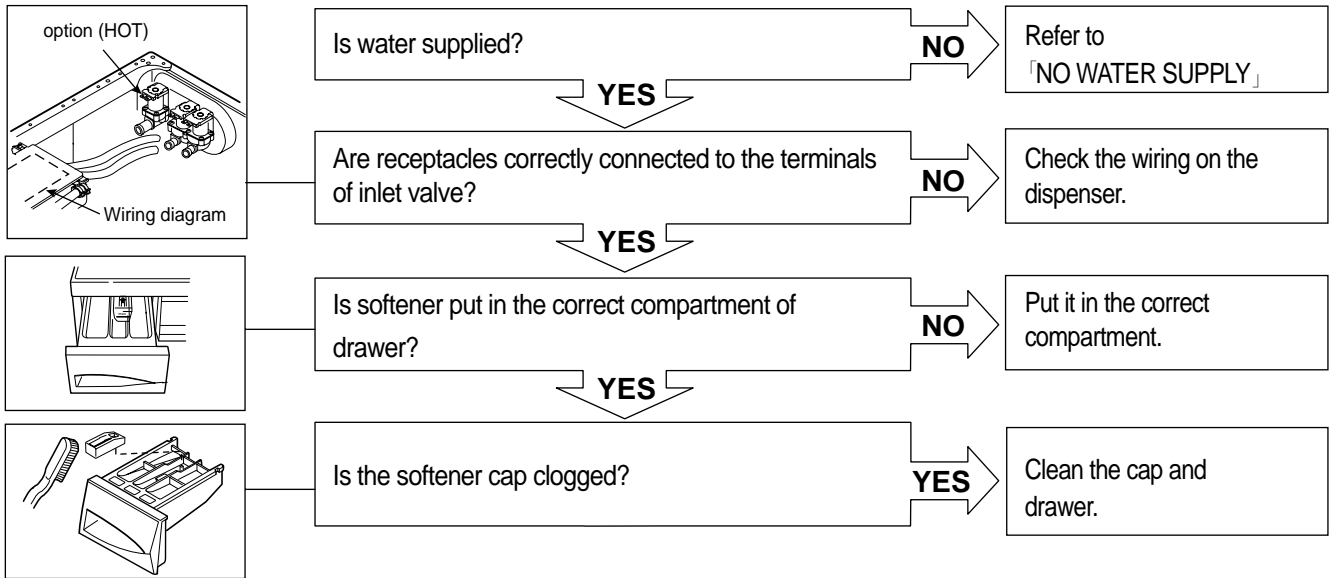
NO WATER SUPPLY



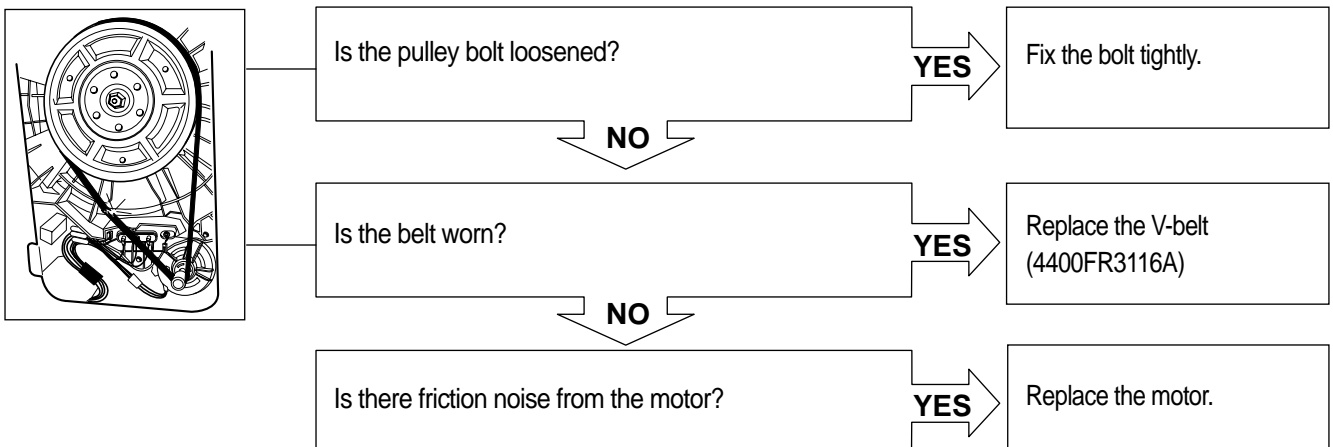
DETERGENT DOES NOT FLOW IN



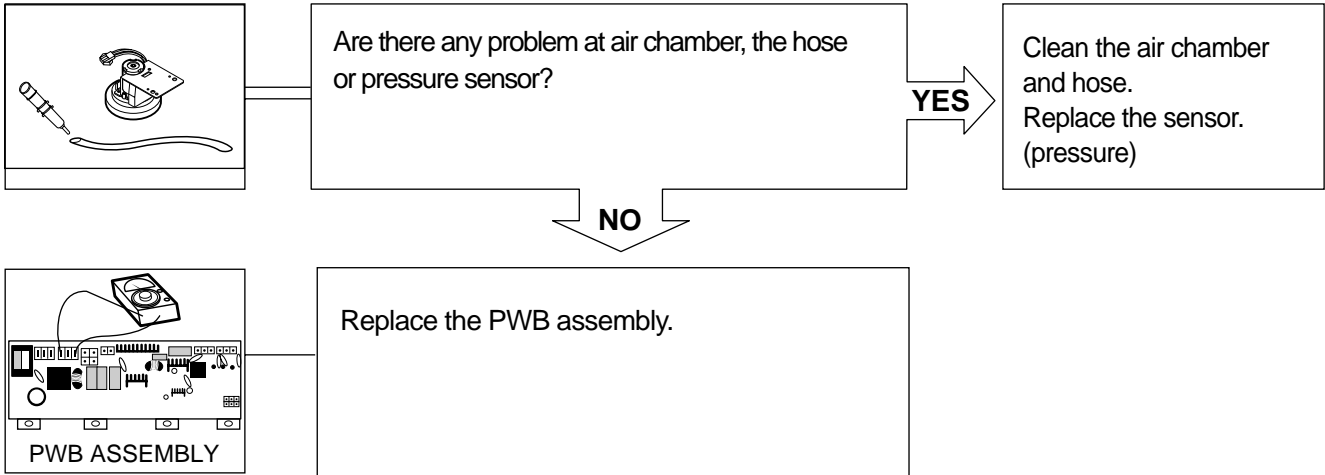
SOFTENER DOES NOT FLOW IN



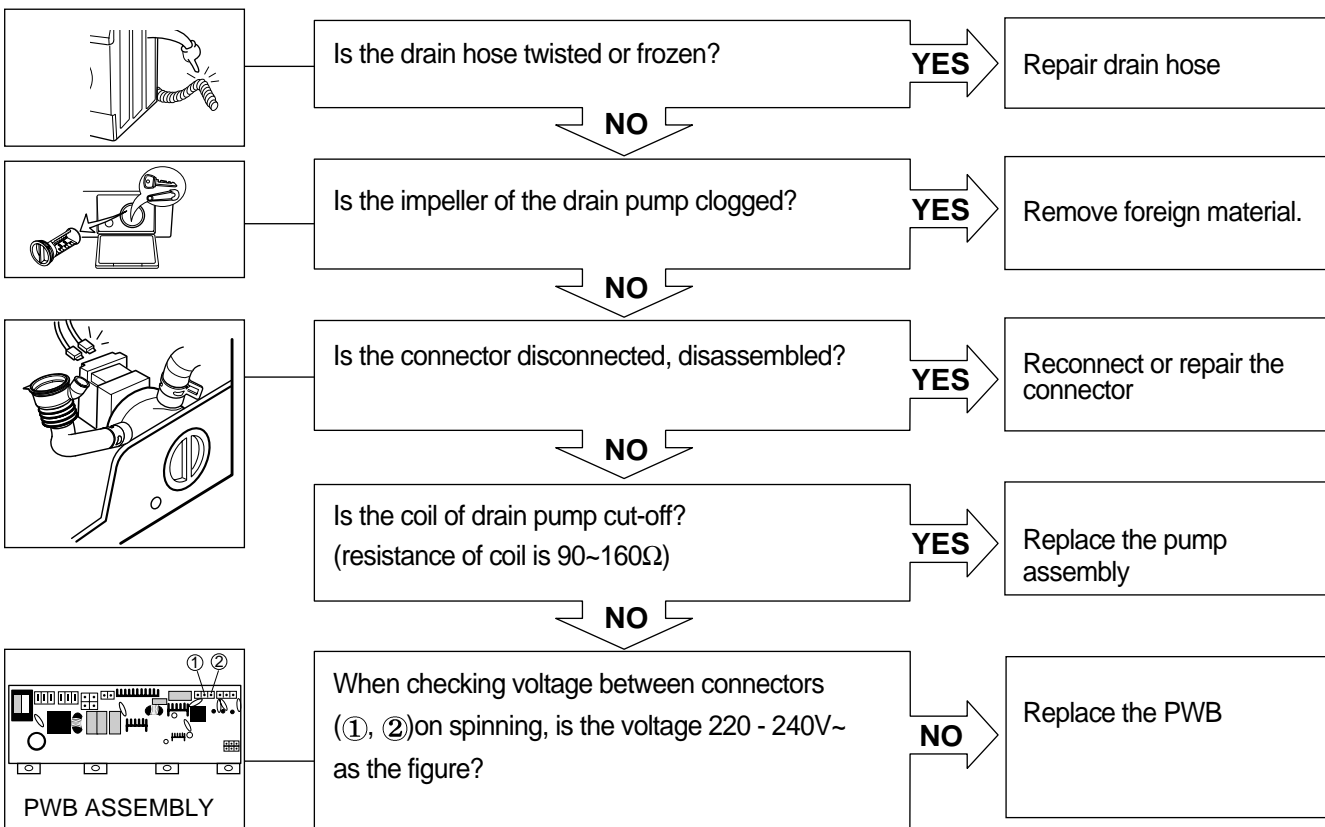
ABNORMAL SOUND



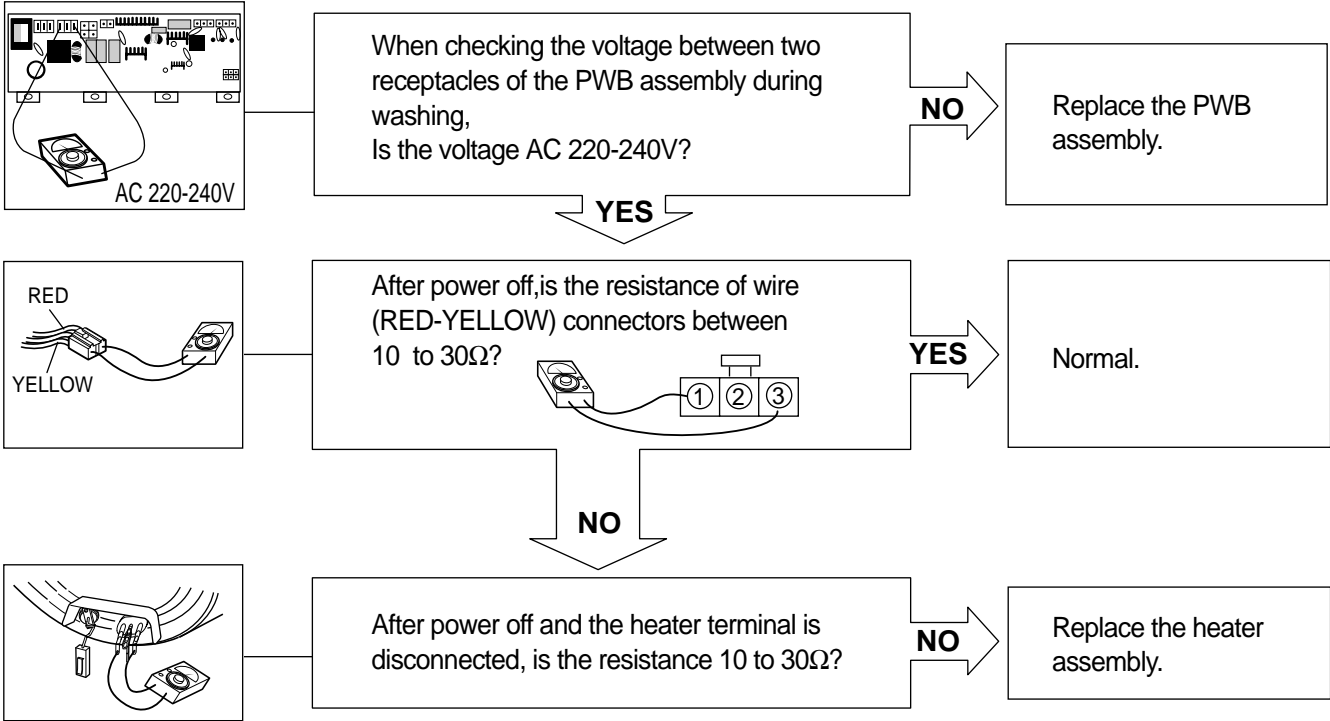
HEATING WITHOUT WATER



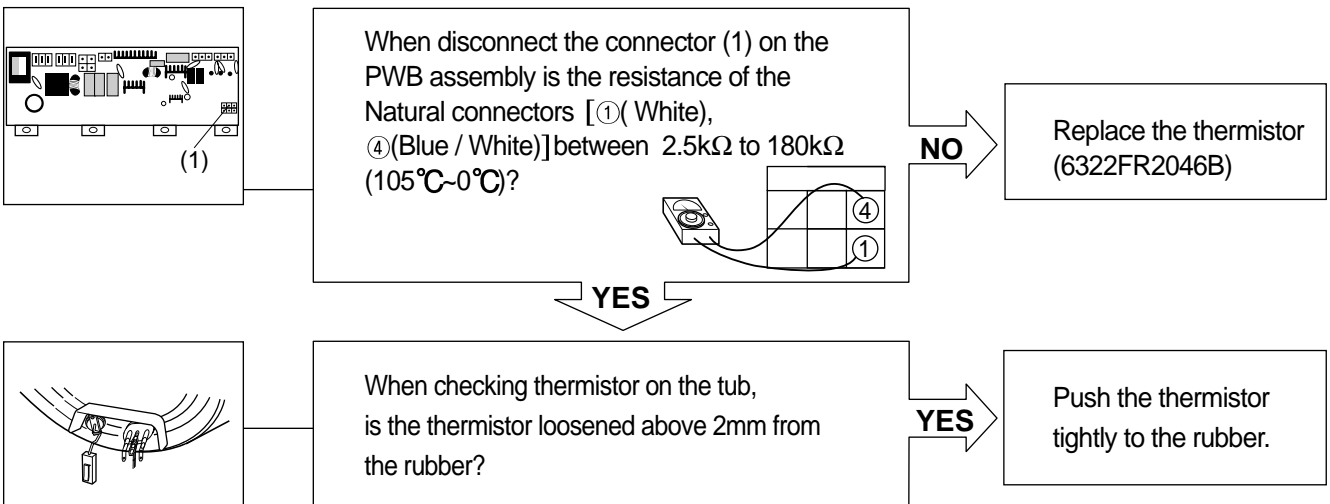
DRAIN MALFUNCTIONING



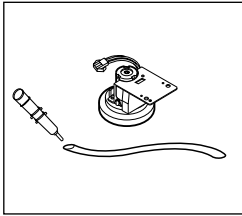
WASH HEATER TROUBLE



HEATING CONTINUOUSLY ABOVE THE SETTING WATER TEMPERATURE

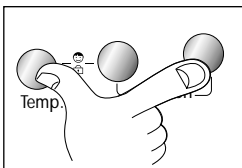


SPIN TROUBLE



Check the sensor (Pressure) or hose (Sensor).
If the problem is on the sensor or the hose,
replace the sensor or the hose.

YES

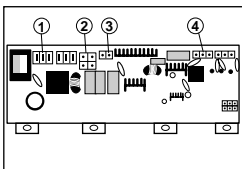


Press [Power] button with both [Temp.] and [Option]
buttons pressed after power off. Press [Start/Pause]
button 2 times. Does the drum rotate at low spin
speed?

YES

Normal.

NO

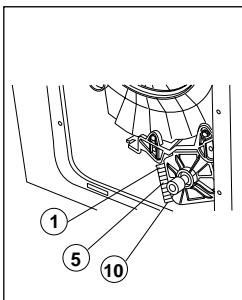


Is it disconnected or badly contacted?
[Red : 3pin (①), Natural : 4pin (②), White : 2pin(③),
Natural : 3pin(④)]

YES

Reconnect or repair it.

NO



Check the motor connector, Is the resistance between
the terminal in figure the same as below?

Resistance between terminals

① ~ ⑤ : 0.5~1.0Ω

⑤ ~ ⑩ : 1.5~2.5Ω

Be sure to unplug the machine before measuring.

MOTOR TERMINAL



NO

Replace the motor
assembly.
(4681FR1194A)

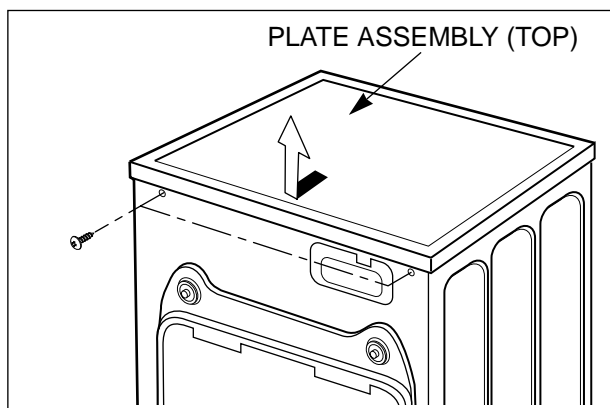
YES

Replace the PWB assembly.

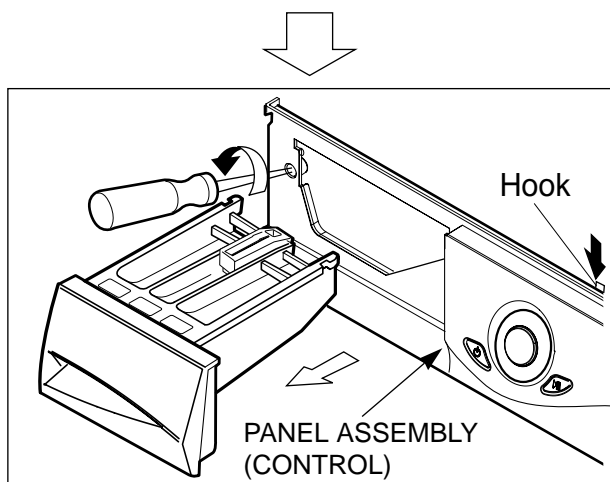
9. DISASSEMBLY INSTRUCTIONS

* Be sure to unplug the machine out of the outlet before disassembling and repairing the parts.

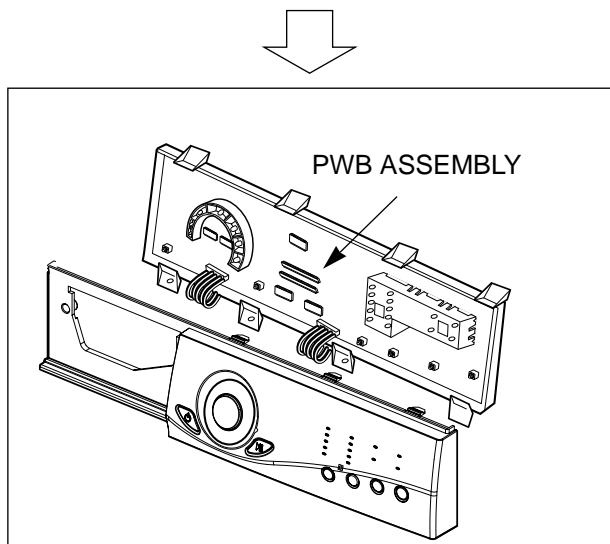
CONTROL PANEL



- ① Unscrew 2 screws on the back of the top plate.
- ② Pull the top plate backward and upward as shown.

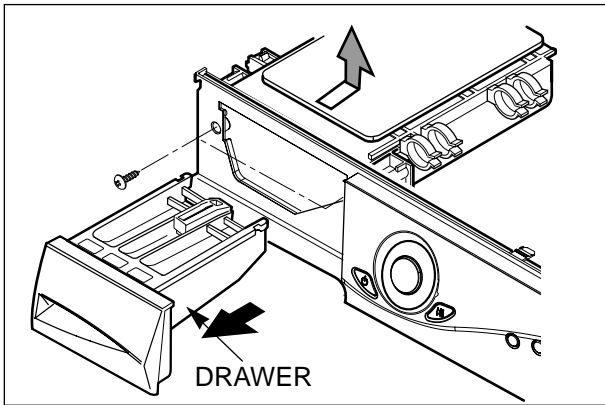


- ① Disconnect the PWB Assembly connector from Main lead wire Assembly.
- ② Pull out the drawer and unscrew 2 screws.
- ③ Push upper hooks down on the top and pull the control panel.

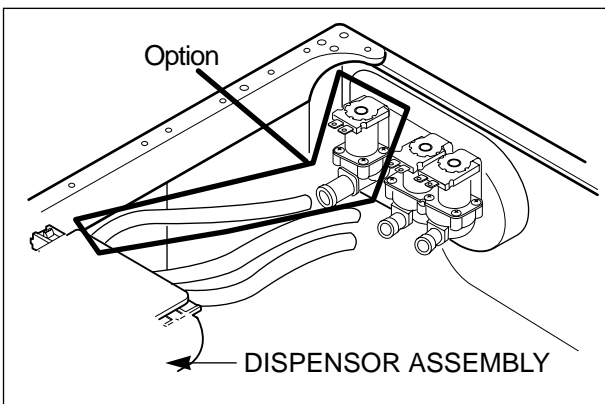


- ① Disconnect the PWB assembly from the control panel by pushing 4 hooks down.

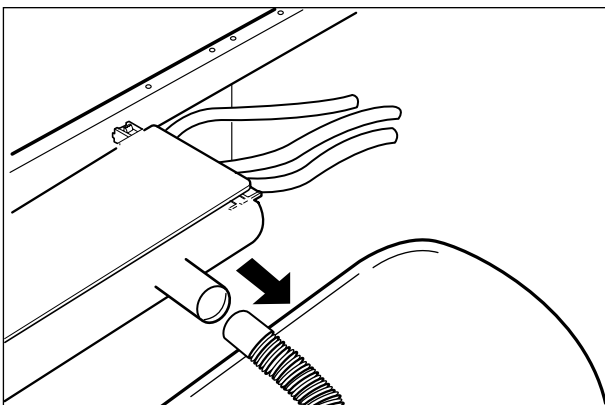
DISPENSER ASSEMBLY



- ① Disassemble the top plate assembly.
- ② Pull out the drawer to arrow direction.
- ③ Unscrew 2 screws.

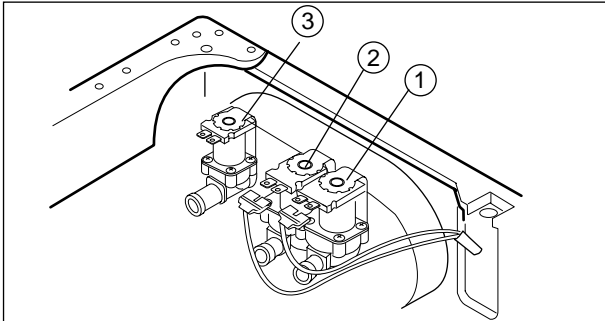


- ① The hose clamps and the hose are disassembled.
- ② The ventilation bellows and the water inlet bellows are disassembled on the tub.



- ① The ventilation bellows and the water inlet bellows are disassembled on the tub.

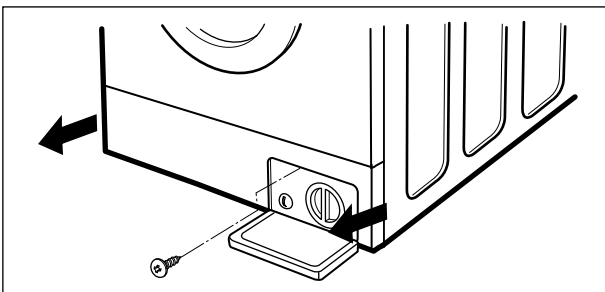
INLET VALVE



- ① Disconnect the wiring receptacle.
 - ② Unscrew 2 screws from the back.
- ※When reconnecting the connector

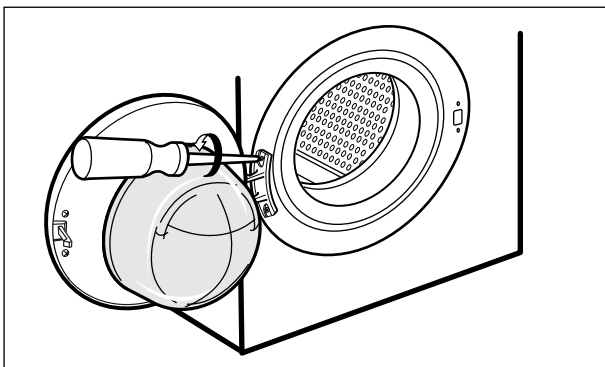
VALVE #1 (MAIN)	Whited/Black-Black
VALVE #2 (PRE)	Black - Gray
VALVE #3 (HOT)	Blue/White - Black

LOWER COVER



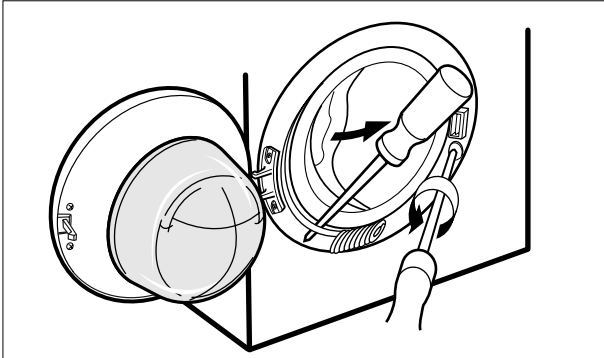
- Open the lower cover cap by using coin and pull out the lower cover in the arrow direction after a screw is unscrewed.

DOOR

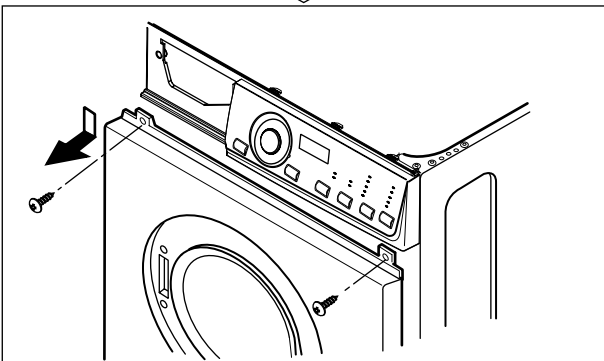


- ① Open the door completely.
 - ② Remove the two screws from the hinge.
- ※When removing the door assembly, it is necessary to hold the bracket that is inner of the cabinet cover.

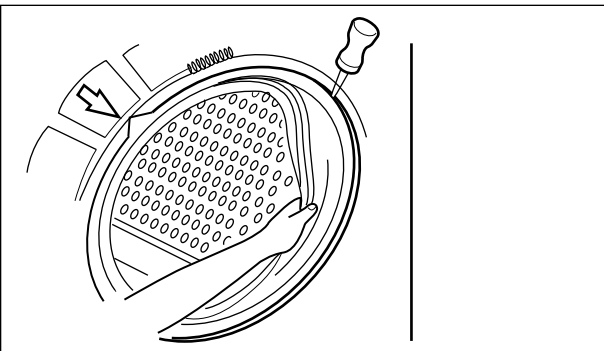
GASKET ASSEMBLY



- ① Take apart the cabinet gasket clamp.
- ② Unscrew 2 screws from the cabinet cover.
- ③ Open the lower cover cap and unscrew 1 screw inside.
- ④ Take apart the lower cover.

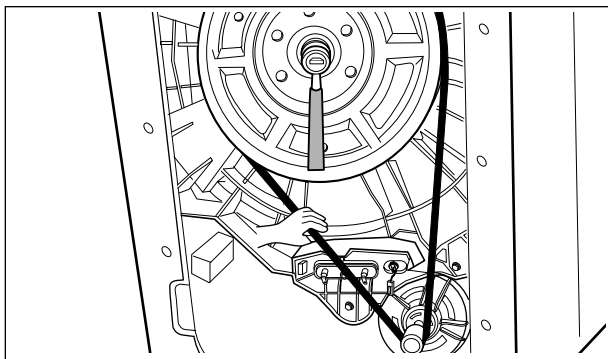


- ① Disassemble the control panel. (refer to the 25page)
- ② Unscrew all the screws on the upper and lower sides of the cabinet cover.



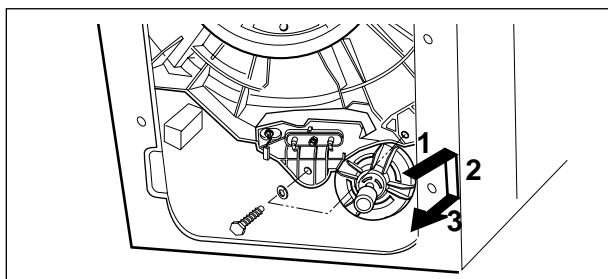
- ① Take apart the tub gasket clamp.
 - ② Make sure that the drain hole of the gasket is put beneath when reassembling the gasket.
- ※Refer to the arrow mark on the tub cover.

PULLEY, MOTOR, DAMPER



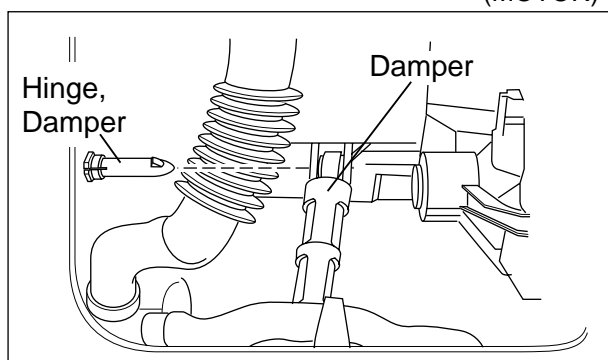
(PULLEY)

- ① Remove the back cover.
- ② Take off the belt turning the pulley.
- ③ Unscrew the bolt to pull out the pulley.



(MOTOR)

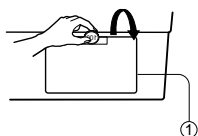
- ① Unscrew 2 screws from the bracket.
- ② Push the motor in the arrow direction for disassembling.
- ③ When reassembling the motor, make sure that motor mounting bushings are not taken off from the bracket.



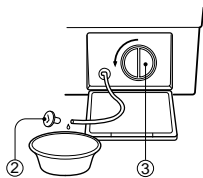
(DAMPER)

- ① Pull out the hinge, pressing its snap.
- ② Do not use the pulled out hinge again. It may be taken off during operation.

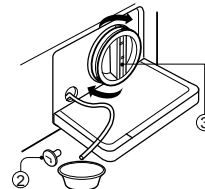
■ Clean the drain pump filter



Open the lower cover cap (①) by using a coin. Turn the drain plug (②) to pull out the hose.

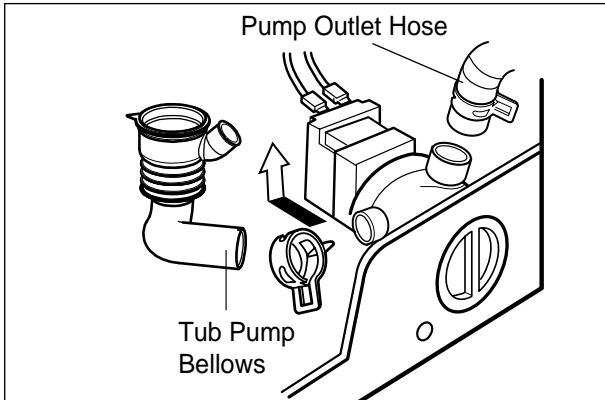


Unplug the drain plug (②), then the water flows out, At this time use a vessel to prevent water flowing on the floor. If the water does not flow any more, turn the pump filter (③) open to the left.



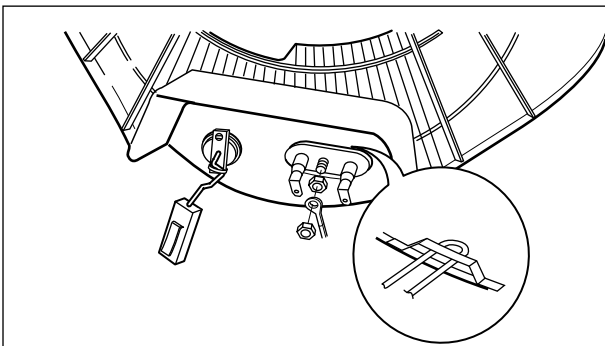
Take out any foreign material from the pump filter (③). After cleaning, turn the pump filter (③) clockwise and insert the drain plug (②) to the original place. Close the lower cover cap.

PUMP



- ① Remove pump outlet hose.
- ② Remove tub pump bellows.
- ③ Remove cap (Remaining Hose.)
- ④ Disconnect the wiring.
- ⑤ Unscrew 2 screws.
- ⑥ Remove the pump.

HEATER

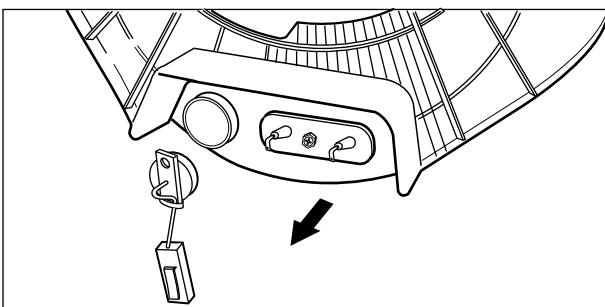


- ① Loosen the M6 heater nut to pull out the heater.

CAUTION

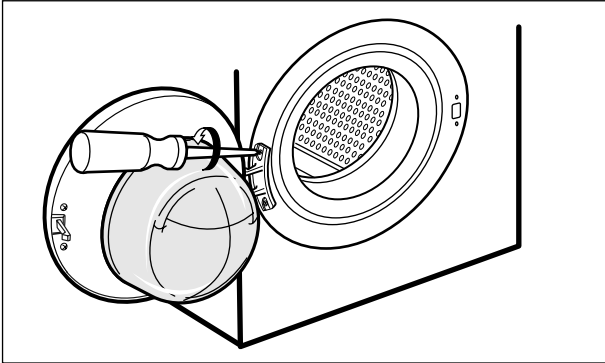
When mounting the heater, be sure to insert the heater into the heater clip on the bottom of the tub.

THERMISTOR



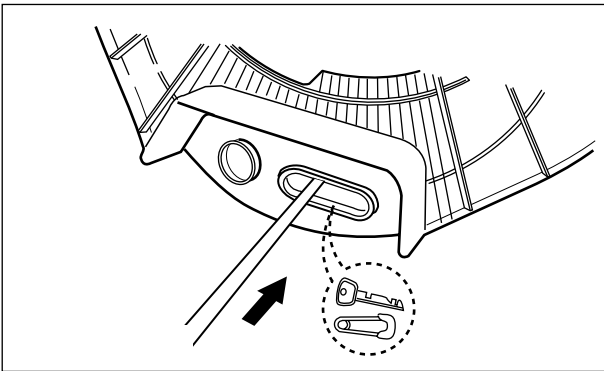
- ① Pull it out by holding the thermistor bracket.
* If it is pulled by the wire, it may be broken.
- ② When mounting the thermistor again, make sure that it is got back tight to the bushing.

SWITCH ASSEMBLY, DOOR LOCK



- ① Take apart the cabinet cover clamp and release the gasket.
- ② Unscrew 2 screws holding the door lock.
- ③ Disconnect the door lock from the wiring connector.

WHEN FOREIGN MATERIAL IS STUCK BETWEEN DRUM AND TUB



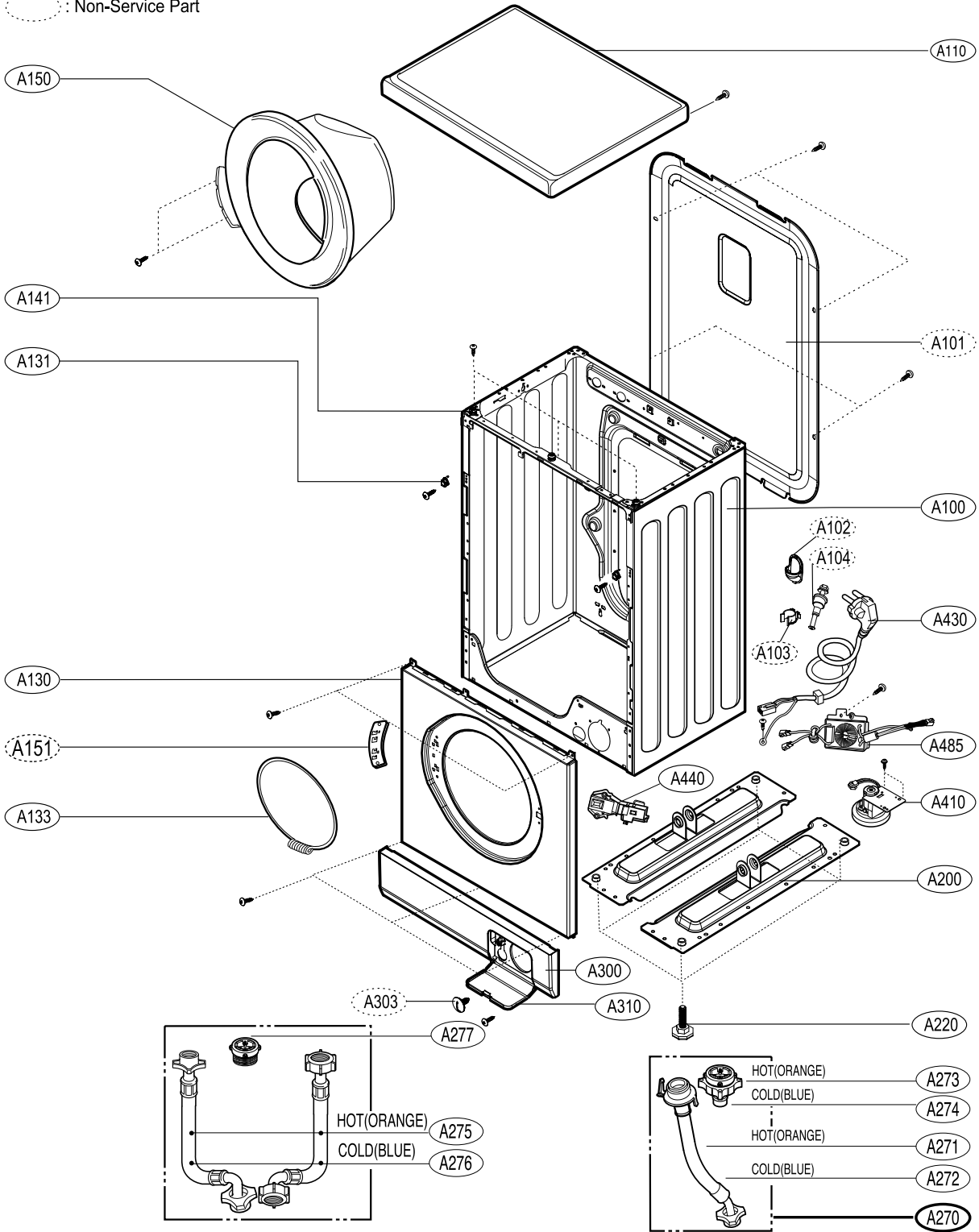
- ① Remove the heater.
- ② Remove the foreign material (wire, coin and others) by inserting a long bar through the hole.

10. EXPLODED VIEW

10-1. THE EXPLODED VIEW OF CABINET ASSEMBLY

○ : Service Part

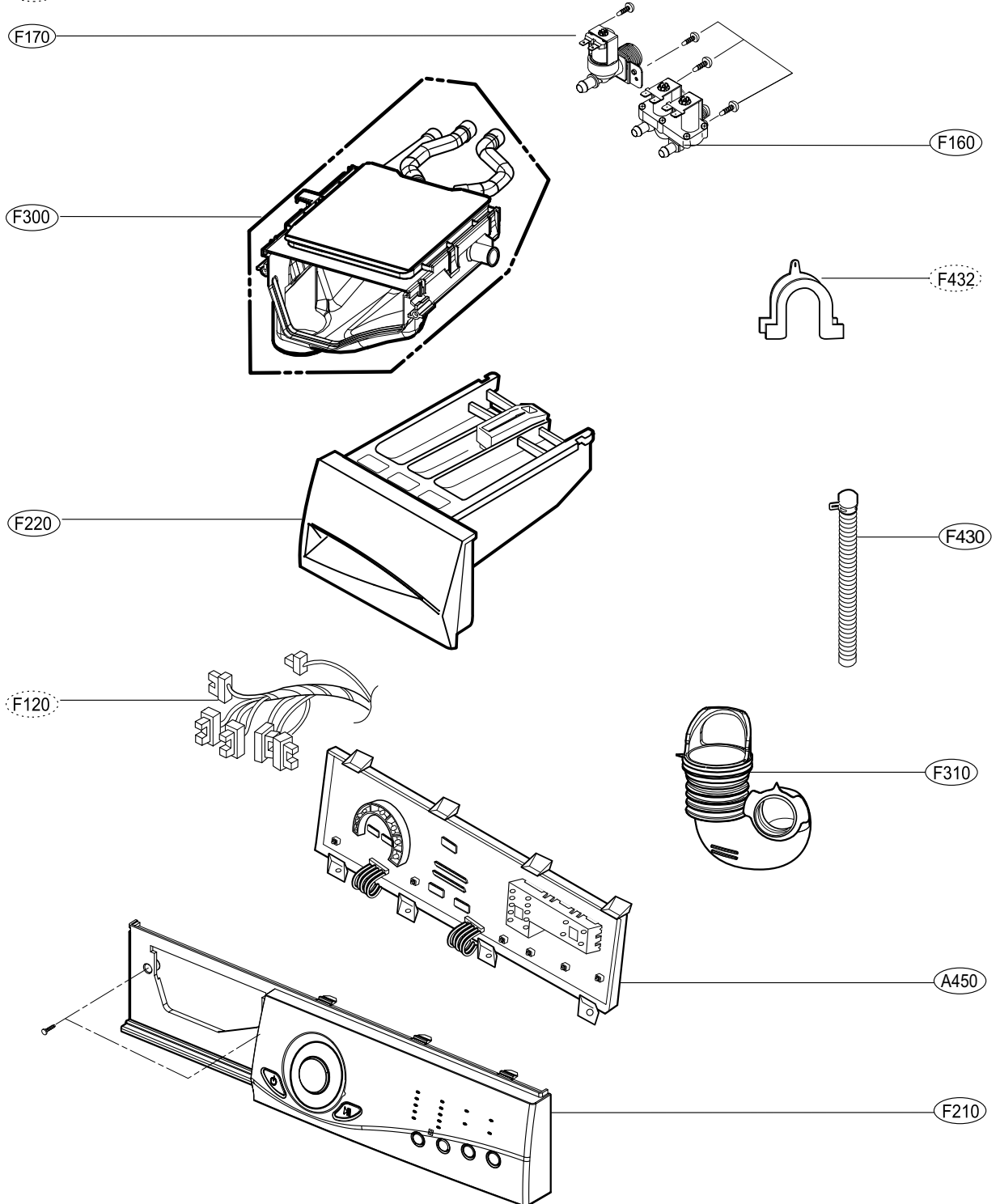
○ : Non-Service Part



10-2 THE EXPLODED VIEW OF CONTROL PANEL & DISPENSER ASSEMBLY

○ : Service Part

○ : Non-Service Part



10-3 THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY

- : Service Part
- (dashed) : Non-Service Part

