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# WASHING MACHINE SERVICE MANUAL

## CAUTION

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

**MODEL : WD(M)-80150FB**

**WD(M)-90150(5)FB**

**WD(M)-10150(5)FB/WD-10160(5)FB/WD-10164FB**

**WD(M)-11150(5)FB/WD-11151(6)FB/DWD-11151(6)FB/NWD-11151(6)FB**

**WD(M)-12150(5)FB/WD-12160(5)FB/WD-12164FB**

**WD(M)-13150(5)FB/WD-13151(6)FB/DWD-13151(6)FB/NWD-13151(6)FB**

**WD-1025FB/WD-10150(5)F**



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# 1. SPECIFICATION

|                               |               |                                                                                                                                                                                                                                                                          |                        |
|-------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| ITEM                          |               | WD(M)-80150FB, WD(M)-90150(5)FB, WD(M)-10150(5)FB, WD-10160(5)FB, WD-10164FB, WD(M)-11150(5)FB, WD(M)-11151(6)FB, DWD-11151(6)FB, NWD-11151(6)FB, WD(M)-12150(5)FB, WD-12164FB, WD(M)-13150(5)FB, WD-13151(6)FB, DWD-13151(6)FB, NWD-13151(6)FB, WD-1025FB, WD-10150(5)F |                        |
| POWER SUPPLY                  |               | 220-240V~, 50Hz                                                                                                                                                                                                                                                          |                        |
| PRODUCT WEIGHT                |               | 65kg                                                                                                                                                                                                                                                                     |                        |
| ELECTRICITY CONSUMPTION       | WASHING       | 150W                                                                                                                                                                                                                                                                     |                        |
|                               | SPIN (800rpm) | 300W                                                                                                                                                                                                                                                                     |                        |
|                               | DRAIN MOTOR   | 32W                                                                                                                                                                                                                                                                      |                        |
|                               | WASH HEATER   | 2000W                                                                                                                                                                                                                                                                    |                        |
| REVOLUTION SPEED              | WASH          | 45rpm                                                                                                                                                                                                                                                                    |                        |
|                               | SPIN          | WD(M)-80150FB                                                                                                                                                                                                                                                            | 400/500/600/800 rpm    |
|                               |               | WD(M)-90150(5)FB                                                                                                                                                                                                                                                         | 400/600/800/900 rpm    |
|                               |               | WD(M)-10150(5)FB / WD-10160(5)FB / WD-1025FB / WD-10164FB                                                                                                                                                                                                                | 400/600/800/1000 rpm   |
|                               |               | WD(M)-11150(5)FB / WD-11151(6)FB / DWD-11151(6)FB / NWD-11151(6)FB                                                                                                                                                                                                       | 400/600/800/1100 rpm   |
|                               |               | WD(M)-12150(5)FB / WD-12160(5)FB / WD-12164FB / WD-10150(5)F                                                                                                                                                                                                             | 400/800/1000/1200 rpm  |
|                               |               | WD(M)-13150(5)FB / WD-13151(6)FB/DWD-13151(6)FB / NWD-13151(6)FB                                                                                                                                                                                                         | 400/800/1100/1300 rpm  |
| OPERATION WATER PRESSURE      |               | 0.3-10kgf/cm² (30-1000kPa)                                                                                                                                                                                                                                               |                        |
| CONTROL TYPE                  |               | Electronic                                                                                                                                                                                                                                                               |                        |
| WASH CAPACITY                 |               | 7.0kg                                                                                                                                                                                                                                                                    | 8.0kg ( WD-10150(5)F ) |
|                               |               | Synthetic (3.5kg), Delicate (3.0kg)                                                                                                                                                                                                                                      |                        |
|                               |               | Wool (2.0kg), Hand Wash(2.0kg), Quick 30(2.0kg)                                                                                                                                                                                                                          |                        |
| DIMENSION                     |               | 600mm(W) × 600mm(D) × 850mm(H)                                                                                                                                                                                                                                           |                        |
| WASH PROGRAM                  |               | Cotton, Synthetic, Delicate, Wool, Hand Wash, Quick 30, Rinse+Spin                                                                                                                                                                                                       |                        |
| OP                            |               | Bio, Time Save, Rinse +, Pre-Wash, Crease Care, Rinse Hold                                                                                                                                                                                                               |                        |
| 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

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### 2-1.FEATURES



#### ■ Jumbo drum

LG's jumbo drum can wash about 40% more per load than conventional washing machine. A bigger drum improves the wash performance.



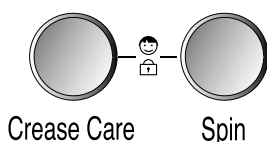
#### ■ Protection against creases

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



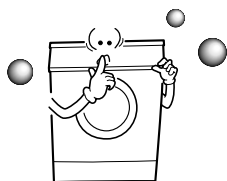
#### ■ More economical by Fuzzy Logic System

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.



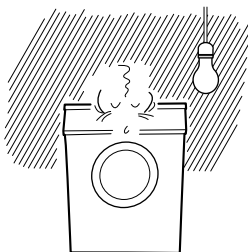
#### ■ Child-Lock

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.



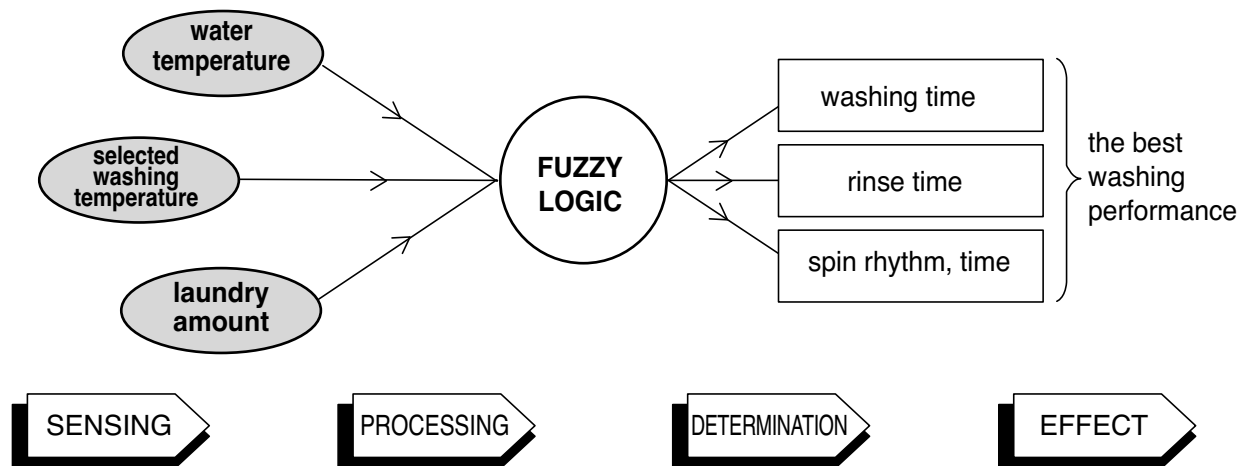
#### ■ Auto Restart

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.

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## 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.



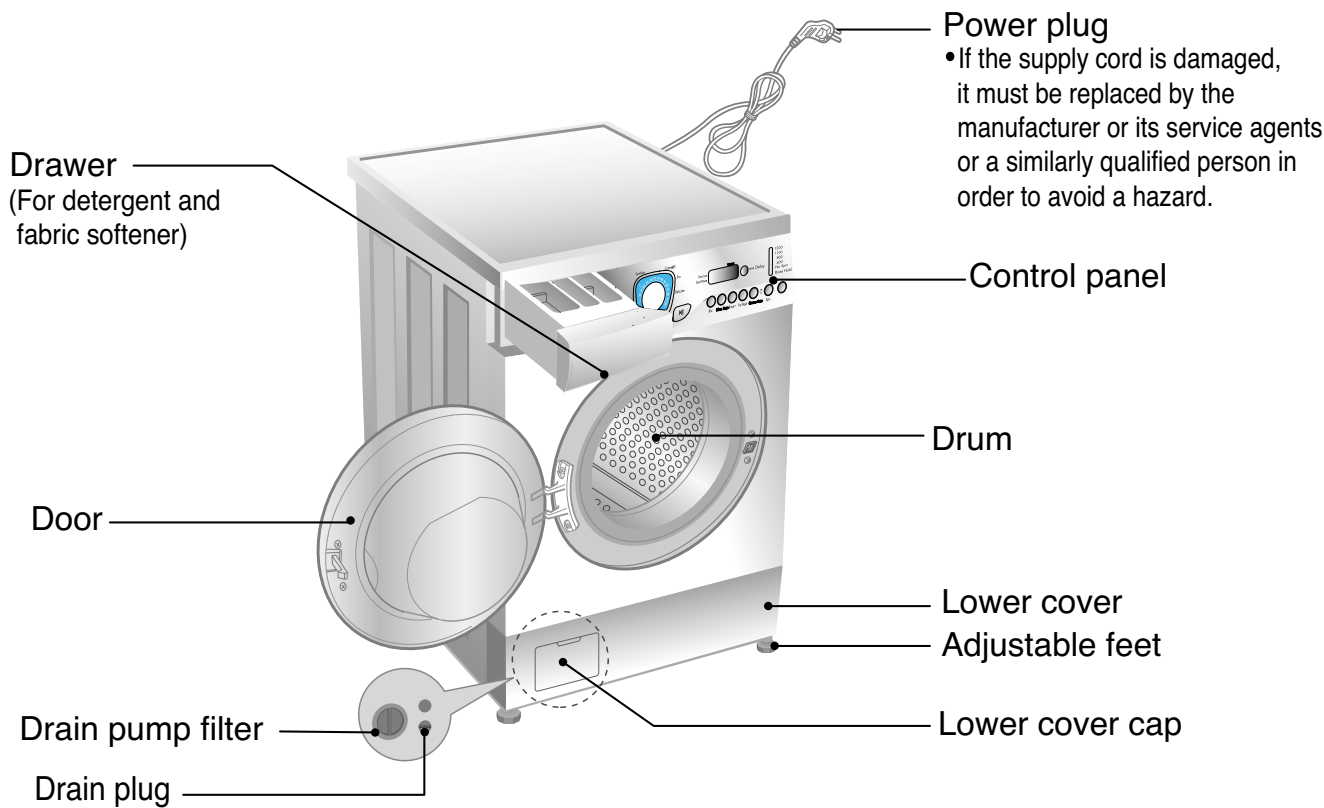
## 2-3.WATER LEVEL CONTROL

- 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.

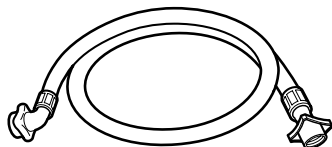
## 2-4.THE DOOR CAN NOT BE OPENED

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

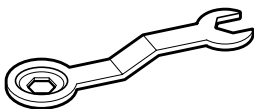
# 3. PARTS IDENTIFICATION



## ■ ACCESSORIES



Cold (1EA)



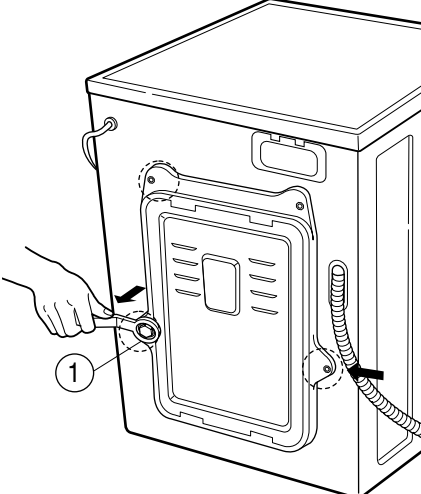
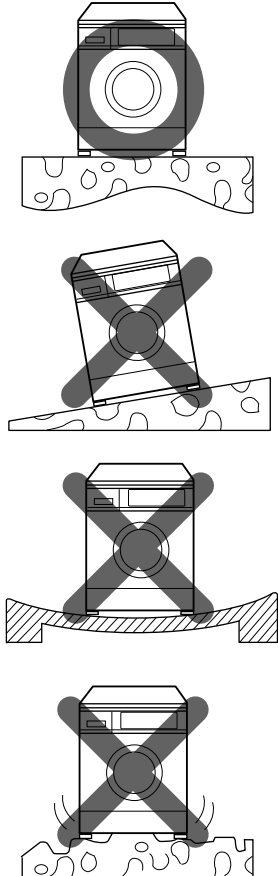
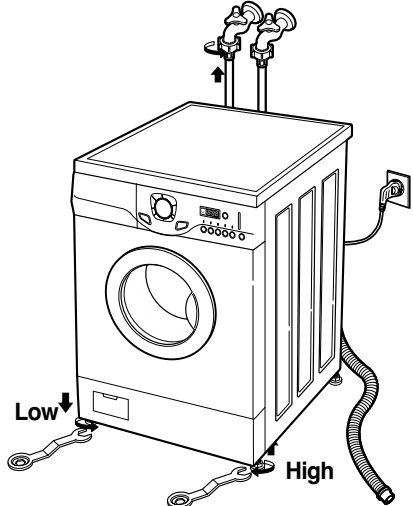
Wrench

## 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

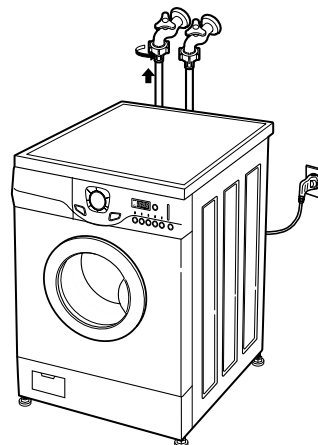
The appliance should be installed as follows.

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

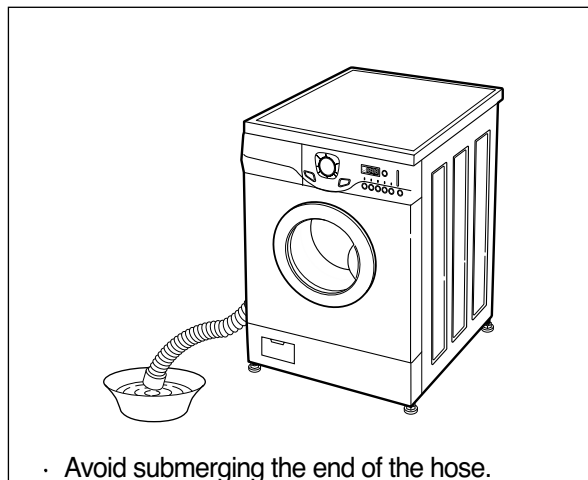
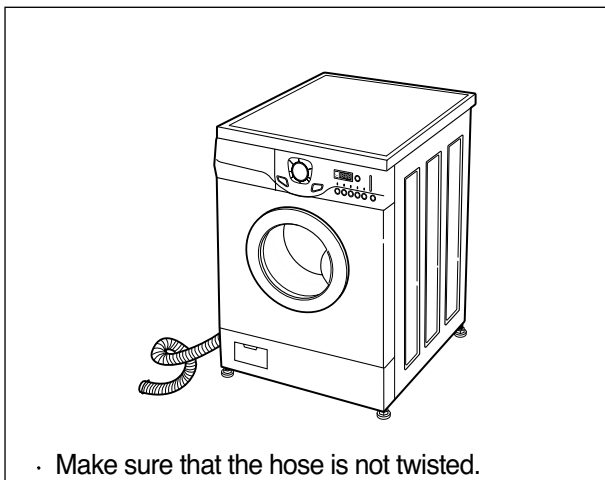


## ■ HOW TO CONNECT INLET HOSE

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

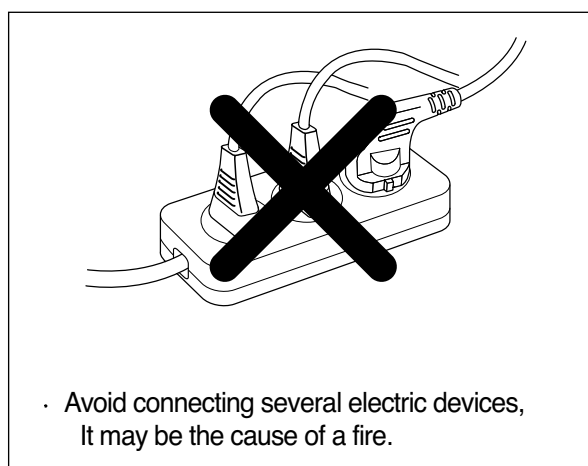
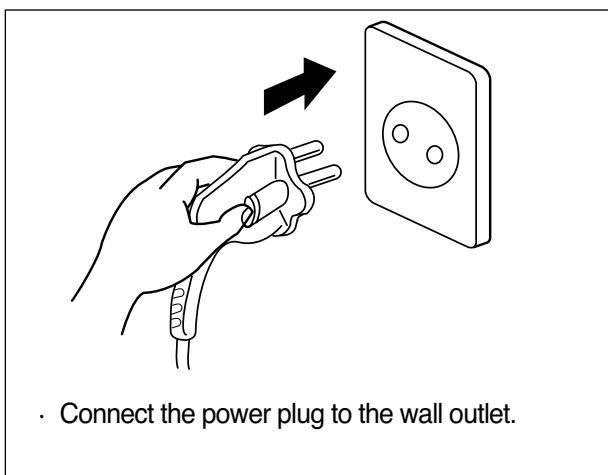


## ■ CONNECT DRAIN HOSE

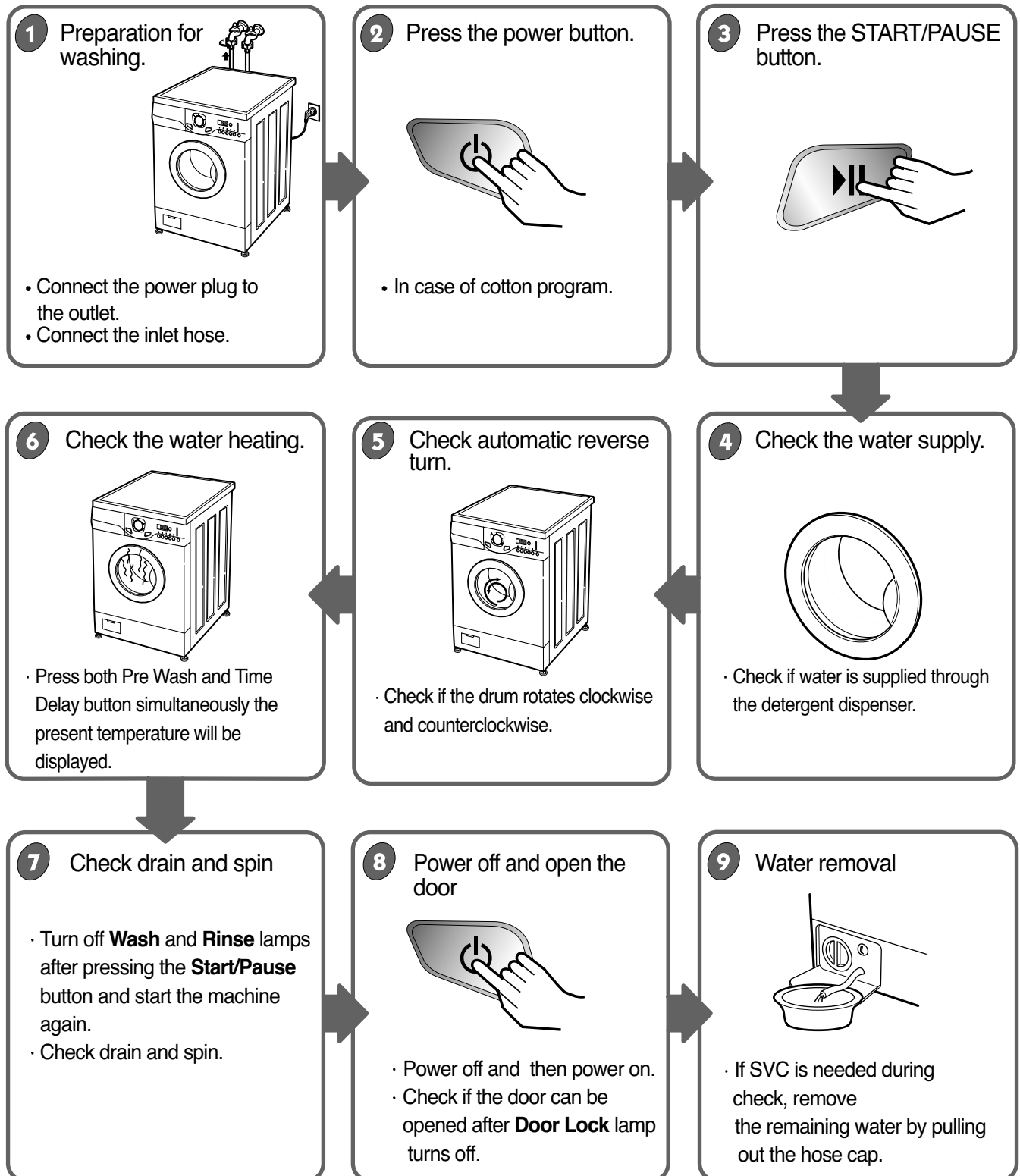


※ The drain hose should be placed under 100cm from the floor.

## ■ CONNECT POWER PLUG



## 7 TEST OPERATION



## 5. OPERATION

### Eco

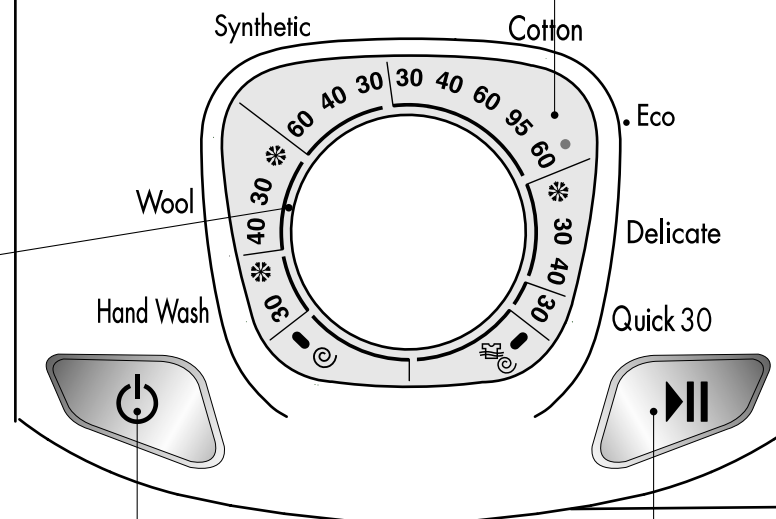
- It is possible in cotton course when 60° C

### LED display

- Display the estimated remaining time (Hour : Minute) to finish.
- In case of abnormal operation, error indications are displayed.  
(1E, OE, UE, dE, tE, FE, PE, CE,)
- See troubleshooting guide.

### Wash program selector

- 8 program can be set depending on the type of the laundry.
- If the power button is pressed, all lamps are on
- By turning the dial, [Cotton ⇄ Delicate ⇄ Quick 30 ⇄ Rinse + Spin ⇄ Spin ⇄ Hand Wash ⇄ Wool ⇄ Synthetic] can be selected.  
(The opposite is possible)



### Power button

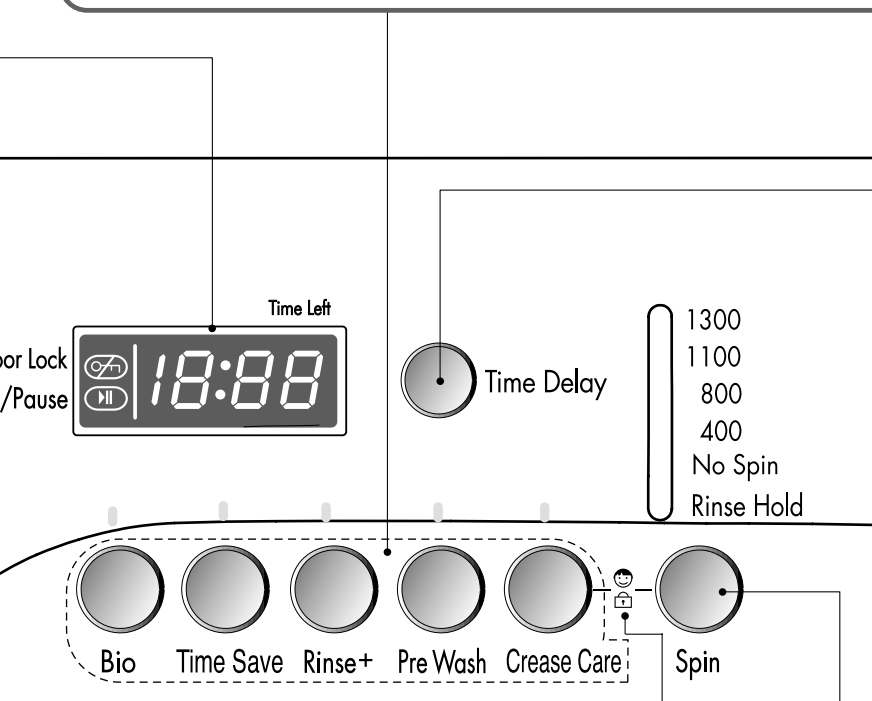
- Press the button to turn power on and off.
- Press the button to cancel the time delay.

### Start/Pause button

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

## Option

- Bio** If you want to eliminate protein stains(milk, blood, chocolate...), you may select Bio by pressing the option button.[You can select Bio when temperature is higher than 60 °C in Cotton and Synthetic.]
- Time Save** By selecting the Time Save option, the wash time may be reduced, depending on the program selected.
- Rinse+** If you wish to rinse more, the Rinse+ option will remove any trace of detergents.
- Pre Wash** If the laundry is heavily soiled, "Pre Wash" course is effective.  
Pre Wash is available in Cotton and Synthetic Program.
- Crease Care** If you want to prevent crease, select this button with spin



## Time Delay

Press the button when delayed washing is needed.  
When the button is pressed, [ 3:00 ] is displayed, maximum delay of [ 19:00 ] hours can be set.  
Each press advances time delay by the hour.  
Use [Power] button to cancel [Time Delay]  
[Time Delay] means the time required from the present to the completion of washing.

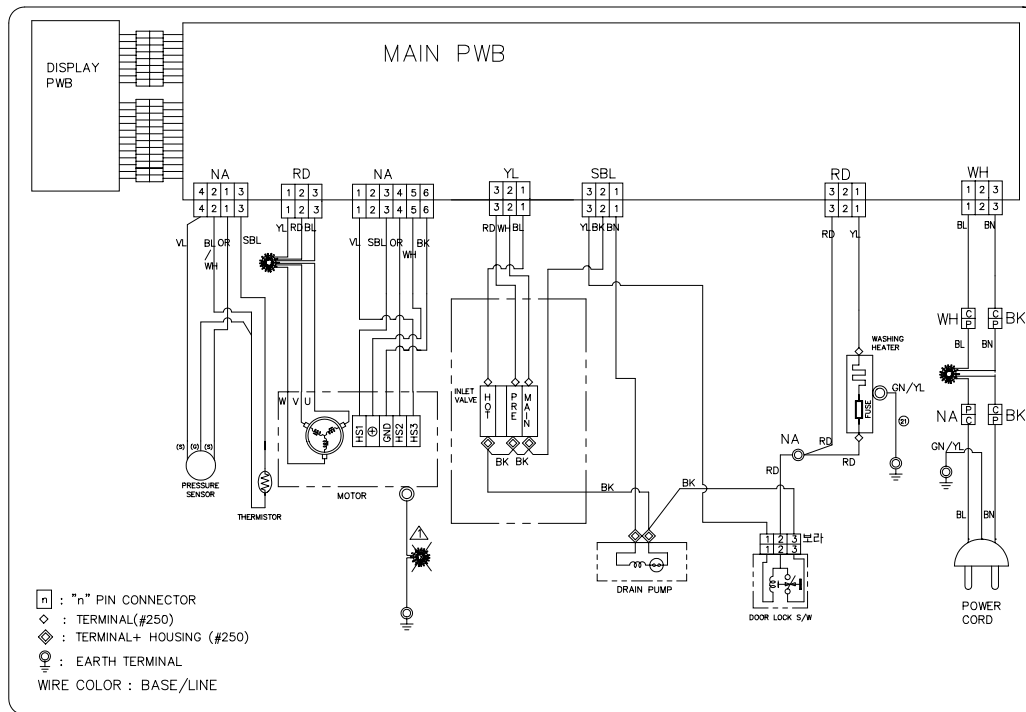
## Child - Lock

Child Lock system can be set and canceled by pressing and holding both [Spin] and [Crease Care] button simultaneously more than 2 seconds.  
Once Child Lock is set, all buttons are inoperable.  
Child Lock system can be set anytime even during Power-off and operation.  
It is automatically cancelled when an operational error occur.

## Spin

WD(M)-80150FB No spin/400/500/600/800  
WD(M)-90150(5)FB No spin/400/600/800/900  
WD(M)-10150(5)FB /WD-10160(5)FB/WD-1025FB  
/WD-10164FB/WD-10150(5)F No spin/400/600/800/1000  
WD(M)-11150(5)FB/WD-1151(6)FB/DWD-11151(6)FB / NWD-11151(6)FB  
No spin/400/600/800/1100  
WD(M)-12150(5)FB/WD-12160(5)FB/WD-12164FB  
No spin/400/800/1000/1200  
WD(M)-13150(5)FB/WD-13151(6)FB/DWD-13151(6)FB / NWD-13151(6)FB  
No spin/400/800/1100/1300

## 6. WIRING DIAGRAM / PROGRAM CHART



※ ( ) : WD-80150FB

\* Water Supply : W·S

\* Intermittent Spin : I·S

\* Disentangle : D·T

| C<br>Y<br>C<br>L<br>E<br>S<br>T<br>E<br>P | Washing |         |       |       |         |         |             |     |         |       | Rinse  |     |     |         |       |     |         |         |       |     | Spin |     |     | A<br>U<br>T<br>O<br>F<br>E<br>N<br>D<br>O<br>F | Normal<br>Working<br>Time<br>(Hour:Minute) |         |       |     |     |         |     |     |                  |    |
|-------------------------------------------|---------|---------|-------|-------|---------|---------|-------------|-----|---------|-------|--------|-----|-----|---------|-------|-----|---------|---------|-------|-----|------|-----|-----|------------------------------------------------|--------------------------------------------|---------|-------|-----|-----|---------|-----|-----|------------------|----|
|                                           | Pre     |         |       |       | Main    |         |             |     |         |       | Normal |     |     |         |       |     | Rinse + |         |       |     | Spin | D-T |     |                                                |                                            |         |       |     |     |         |     |     |                  |    |
|                                           | Washing |         | Drain |       | Washing |         | Staycooling |     | 1       |       | 2      |     | 3   |         | 4     |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     |                  |    |
|                                           | W.S     | Washing | I.S   | Drain | W.S     | Heating | Washing     | W.S | Rinsing | Drain | Drain  | I.S | W.S | Rinsing | Drain | I.S | W.S     | Rinsing | Drain | I.S |      |     | W.S |                                                |                                            | Rinsing | Drain | I.S | W.S | Rinsing |     |     |                  |    |
| Time (SEC)                                | 120     | MIN     | 60    | 240   | 120     | MIN     | 120         | 60  | 60      | 60    | 240    | 120 | 360 | 60      | 240   | 120 | 360     | 60      | 240   | 120 | 360  | 60  | 240 | 120                                            | 360                                        | 60      | 240   | 120 | 360 | 60      | 480 | 120 | 20               | 20 |
| Cotton                                    |         | 8       |       |       |         | 42      |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 2:35(2:34) |    |
| Synthetic                                 |         |         |       |       |         | 51      |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 1:24       |    |
| Delicate                                  |         |         |       |       |         | 18      |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 58         |    |
| Wool                                      |         |         |       |       |         | 18      |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 58         |    |
| Handwash                                  |         |         |       |       |         | 4       |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 57         |    |
| Quick 30                                  |         |         |       |       |         | 24      |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 30         |    |
| Rinse + Spin                              |         |         |       |       |         | 11      |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 20         |    |
| Spin                                      |         |         |       |       |         |         |             |     |         |       |        |     |     |         |       |     |         |         |       |     |      |     |     |                                                |                                            |         |       |     |     |         |     |     | About 13         |    |

\* Basic Cycle

\* Optional Cycle

\* Pre-Setting Time : Water Supply - 120 sec.

Drain - 60 sec.

\* ~ Time for varies as the temperature or the amount of laundry

\* Basic time is minute in washing chart

\* The actual program time can be varied with the load amount, water temperature or ambient temperature

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

※ Eco : By selecting Eco function, the water temperature is reduced and washing time is lengthened. So you can economize in your consumption of energy.

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

※ Bio : If you want to eliminate protein stains (milk, blood, chocolate...), you may select Bio function by pressing the option button.

※ Quick 30 : By selecting this function, you may wash a small quantity of colored laundry which is lightly soiled fast.

※ You can select Bio function and Eco function when temperature is higher than 60°C in Cotton and Synthetic. If the function is selected, the beginning water temperature can not be changed.

## 7. TROUBLESHOOTING

### 7-1.BEFORE PERFORMING SERVICE

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

### 7-2.QC TEST MODE.

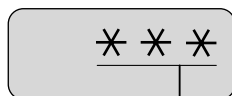
- ① Pressing **Crease Care**, and **Pre Wash** button simultaneously.
- ② Power button ON with pressing upper two button. then buzzer sound twice.
- ③ Press the START/PAUSE button as follows.

[Press the START/PAUSE button more 4 times until stop spinning]

| Pressing number of [START/PAUSE] button | Checking Point                            | Display Status                                                                                     |
|-----------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------|
| None                                    | All lamps turn on                         |                  |
| 1 time                                  | Counterclockwise spin (left)              | Motor rpm (About 45)                                                                               |
| 2 times                                 | Low speed Spin                            | Motor rpm (About 63~67)                                                                            |
| 3 times                                 | High speed Spin                           | Motor rpm (About 79~85) : WD(M)-80150FB                                                            |
|                                         |                                           | Motor rpm (About 100~106) : WD(M)-10150(5)FB/WD-90150(5)FB/WD-1025FB<br>/ WD-10160(5)FB/WD-10164FB |
|                                         |                                           | Motor rpm (About 107~103) : WD(M)-11150(5)FB/WD-11151(6)FB/DWD-11151(6)FB / NWD-11151(6)FD         |
|                                         |                                           | Motor rpm (About 114~120) : WD(M)-12150(5)FB/WD-12160(5)FB/WD-12164FB                              |
|                                         |                                           | Motor rpm (About 122~127) : WD(M)-13150(5)FB/WD-13151(6)FB/DWD-13151(6)FB / NWD-13151(6)FD         |
| 4 times                                 | Inlet valve for pre-wash operation        | Water level frequency (25~65)                                                                      |
| 5 times                                 | Inlet valve for main-wash operation       | Water level frequency (25~65)                                                                      |
|                                         | Hot inlet valve in case of hot water fill |                                                                                                    |
| 6 times                                 | Inlet valve for main-wash operation       | Water level frequency (25~65)                                                                      |
| 7 times                                 | Clockwise spin (Right)                    | Motor rpm (About 45)                                                                               |
| 8 times                                 | A Heater is in operation for 3 sec.       | Water Temperature                                                                                  |
| 9 times                                 | Draining pump operation                   | Water level frequency                                                                              |
| 10 times                                | Auto off operation                        |                                                                                                    |

### 7-3.HOW TO KNOW THE WATER LEVEL FREQUENCY

\* Press the **Bio** and **Time delay** button simultaneously.

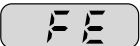
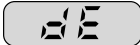
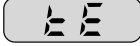


● The digits means water level frequency ( $10^{-1}$  kHz)

ex) 241 : Water level frequency =  $241 \times 10^{-1}$  kHz  
=24.1kHz

## 7-4.ERROR DISPLAY.

- If you press the [Start/Pause] button any error except  $FE$  will disappear and the machine will change into pause status.
- In case of 『 $PE$ 』, 『 $LE$ 』, 『 $DE$ 』, if the error is not resolved within 20 sec. In case of other errors, if the error is not resolved within 4 min. Power will be turned off automatically and the error only will be blinked. But in the case of 『 $FE$ 』, power will not be turned off.

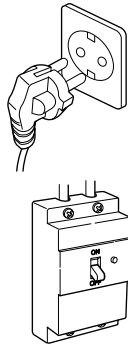
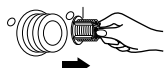
|   | ERROR                        | SYMPTOM                                                                             | CAUSE                                                                                                                                                                                                                                                  |
|---|------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | WATER INLET<br>ERROR         |    | <ul style="list-style-type: none"> <li>○ 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.</li> </ul>                                                   |
| 2 | IMBALANCE<br>ERROR           |    | <ul style="list-style-type: none"> <li>○ The appliance is tilted.</li> <li>○ Laundry is gathered to one side.</li> <li>○ Non distributable things are put into the drum.</li> </ul>                                                                    |
| 3 | DRAIN ERROR                  |                                                                                     | <ul style="list-style-type: none"> <li>○ Water has not drained enough within 5 min.</li> </ul>                                                                                                                                                         |
| 4 | OVERFLOW<br>ERROR            |  | <ul style="list-style-type: none"> <li>○ Water is automatically being pumped out because too much water is in the tub.</li> </ul>                                                                                                                      |
| 5 | SENSOR PRESSURE<br>S/W ERROR |  | <ul style="list-style-type: none"> <li>○ The sensor pressure switch is out of order.</li> </ul>                                                                                                                                                        |
| 6 | DOOR OPEN<br>ERROR           |  | <ul style="list-style-type: none"> <li>○ The [Start/Pause] button is pressed with the door open.</li> <li>○ The door switch is out of order.</li> </ul>                                                                                                |
| 7 | HEATING<br>ERROR             |  | <ul style="list-style-type: none"> <li>○ The thermistor is out of order.</li> </ul>                                                                                                                                                                    |
| 8 | SENSOR<br>ERROR              |  | <ul style="list-style-type: none"> <li>○ The connector (5-pin, male, white) in the wire harness is not connected to the connector (5-pin, female) of hall sensor in the MOTOR.</li> <li>■ Reconnect or repair the contact in the connector.</li> </ul> |

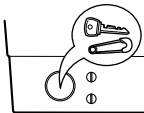
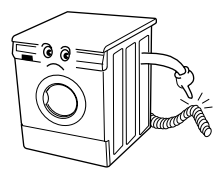
|    | ERROR         | SYMPTOM                                                                             | CAUSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|---------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | SENSOR ERROR  |    | <ul style="list-style-type: none"> <li>• The electric contact between the connectors (5-pin, male in the wire harness and 5-pin, female in the hall sensor) is bad or unstable. <ul style="list-style-type: none"> <li>☞ Reconnect or repair the contact in the connector</li> </ul> </li> <li>• The connector (6-pin, male, natural) in the wire harness is not connected to the connector (6-pin, female, natural) of PWB ASSEMBLY (Main) or the electric contact of connectors is bad/unstable. <ul style="list-style-type: none"> <li>☞ Reconnect or repair the contact in the connector</li> </ul> </li> <li>• The electric contact between the connectors [6-pin, male, in the wire harness and 6-pin, female in the controller (Main)] is bad or unstable. <ul style="list-style-type: none"> <li>☞ Reconnect or repair the contact in the connector</li> </ul> </li> <li>• The Wire Harness between hall sensor in the MOTOR and PWB ASSEMBLY (Main) is cut (open circuited). <ul style="list-style-type: none"> <li>☞ Repair/replace the damaged WIRE HARNESS</li> </ul> </li> <li>• The hall sensor is out of order/defective. <ul style="list-style-type: none"> <li>☞ Replace the motor</li> </ul> </li> <li>• The controller (Main) is out of order/defective. <ul style="list-style-type: none"> <li>☞ Replace the PWB ASSEMBLY (Main)</li> </ul> </li> </ul> |
| 9  | CURRENT ERROR |  | <ul style="list-style-type: none"> <li>• PWB ASSEMBLY (Main) is out of order <ul style="list-style-type: none"> <li>☞ Replace the PWB ASSEMBLY (Main)</li> </ul> </li> <li>• Winding in the MOTOR is short-circuited. <ul style="list-style-type: none"> <li>☞ Replace the MOTOR</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10 | LOCK ERROR    |  | <ul style="list-style-type: none"> <li>• The Connector (3-pin, male, white) in the wire harness is not connected to the Connector (3-pin, female, white) of MOTOR. <ul style="list-style-type: none"> <li>☞ Reconnect or repair the connector</li> </ul> </li> <li>• The electric contact between the connectors [3-pin, male, white in the wire harness and 6-pin, female, white in the PWB ASSEMBLY (Main)] is bad or unstable. <ul style="list-style-type: none"> <li>☞ Reconnect or repair the contact in the connector</li> </ul> </li> <li>• The wire harness between the MOTOR and PWB ASSEMBLY (Main) is cut (open circuited). <ul style="list-style-type: none"> <li>☞ Repair the damaged (open-circuited) WIRE HARNESS</li> </ul> </li> <li>• The hall sensor is out of order/defective. <ul style="list-style-type: none"> <li>☞ Replace the PWB ASSEMBLY (Main)</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

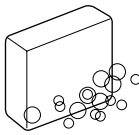
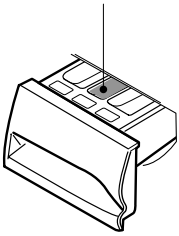
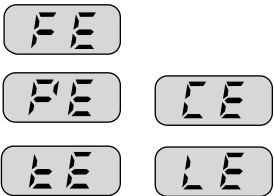


## 8. ERROR DIAGNOSIS AND CHECK LIST

### 8-1.DIAGNOSIS AND ANSWER FOR ABNORMAL OPERATION

| SYMPTOM                                                                                                                                                   | GUIDE FOR SERVICE CALL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>NO POWER</p>                                                                                                                                           | <div data-bbox="539 533 1099 629">Is the power plug connected firmly to 220-240V~ outlet?</div> <div data-bbox="746 629 892 674">YES</div> <div data-bbox="539 678 1099 779">Power failure? or Breaker opened?<br/>Is the outlet controlled by a switch.</div> <div data-bbox="746 779 892 824">NO</div> <div data-bbox="539 828 1099 898">Visit to check</div> <div data-bbox="1193 533 1321 875">  </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>Water inlet trouble</p> <div data-bbox="245 1055 400 1106">  </div> | <div data-bbox="539 1005 1099 1102">Is <b>IE</b> displayed?</div> <div data-bbox="746 1102 892 1146">YES</div> <div data-bbox="539 1151 1099 1220">Is the tap opened?</div> <div data-bbox="746 1220 892 1265">YES</div> <div data-bbox="539 1270 1099 1339">Is the tap frozen?</div> <div data-bbox="746 1339 892 1384">NO</div> <div data-bbox="539 1388 1099 1458">Is the water supply shut-off?</div> <div data-bbox="746 1458 892 1503">NO</div> <div data-bbox="539 1507 1099 1709">Is filter in the inlet valve clogged with foreign material?</div> <div data-bbox="1086 1592 1171 1637">YES</div> <div data-bbox="1177 1507 1402 1709"> <div data-bbox="1193 1529 1378 1597">Clean the filter of inlet valve</div> <div data-bbox="1203 1630 1369 1697">  </div> </div> <div data-bbox="746 1709 892 1753">NO</div> <div data-bbox="539 1758 1099 1827">Visit to check</div> <div data-bbox="1177 1032 1331 1496"> <div data-bbox="1177 1032 1331 1084">  </div> <div data-bbox="1214 1128 1310 1240">  </div> <div data-bbox="1214 1263 1310 1375">  </div> <div data-bbox="1214 1397 1310 1496">  </div> </div> |

| SYMPTOM                                                                                                   | GUIDE FOR SERVICE CALL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>◦ DOOR OPEN ERROR</p> <p>Refer to<br/>7-4 ERROR DISPLAY</p>                                            | <div data-bbox="536 421 1372 862"> <div data-bbox="536 421 1098 537">Did you press the <b>Start/Pause</b> button when the door is open?</div> <div data-bbox="1098 459 1173 504">YES</div> <div data-bbox="1173 421 1372 593">           Close the door<br/>  </div> <div data-bbox="790 604 837 649">NO</div> <div data-bbox="536 739 1098 817">Visit to check</div> <div data-bbox="614 828 997 862">Check if the door switch is O.K</div> </div>                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>◦ Drain Trouble</p>  | <div data-bbox="536 929 1436 1444"> <div data-bbox="536 929 1069 1030">Is <b>DE</b> displayed?</div> <div data-bbox="790 1030 853 1064">YES</div> <div data-bbox="536 1075 1069 1176">Is the debris filter clogged with foreign material such as pins, coins, etc.?</div> <div data-bbox="1061 1108 1117 1142">YES</div> <div data-bbox="1117 1075 1260 1176">Clean up the filter.</div> <div data-bbox="1260 1030 1436 1198">  </div> <div data-bbox="790 1176 853 1209">NO</div> <div data-bbox="536 1220 1069 1321">Is the drain hose frozen with water, kinked, or crushed?</div> <div data-bbox="790 1332 853 1366">NO</div> <div data-bbox="536 1377 1069 1444">Visit to check</div> <div data-bbox="1189 1209 1404 1377">  </div> </div> |

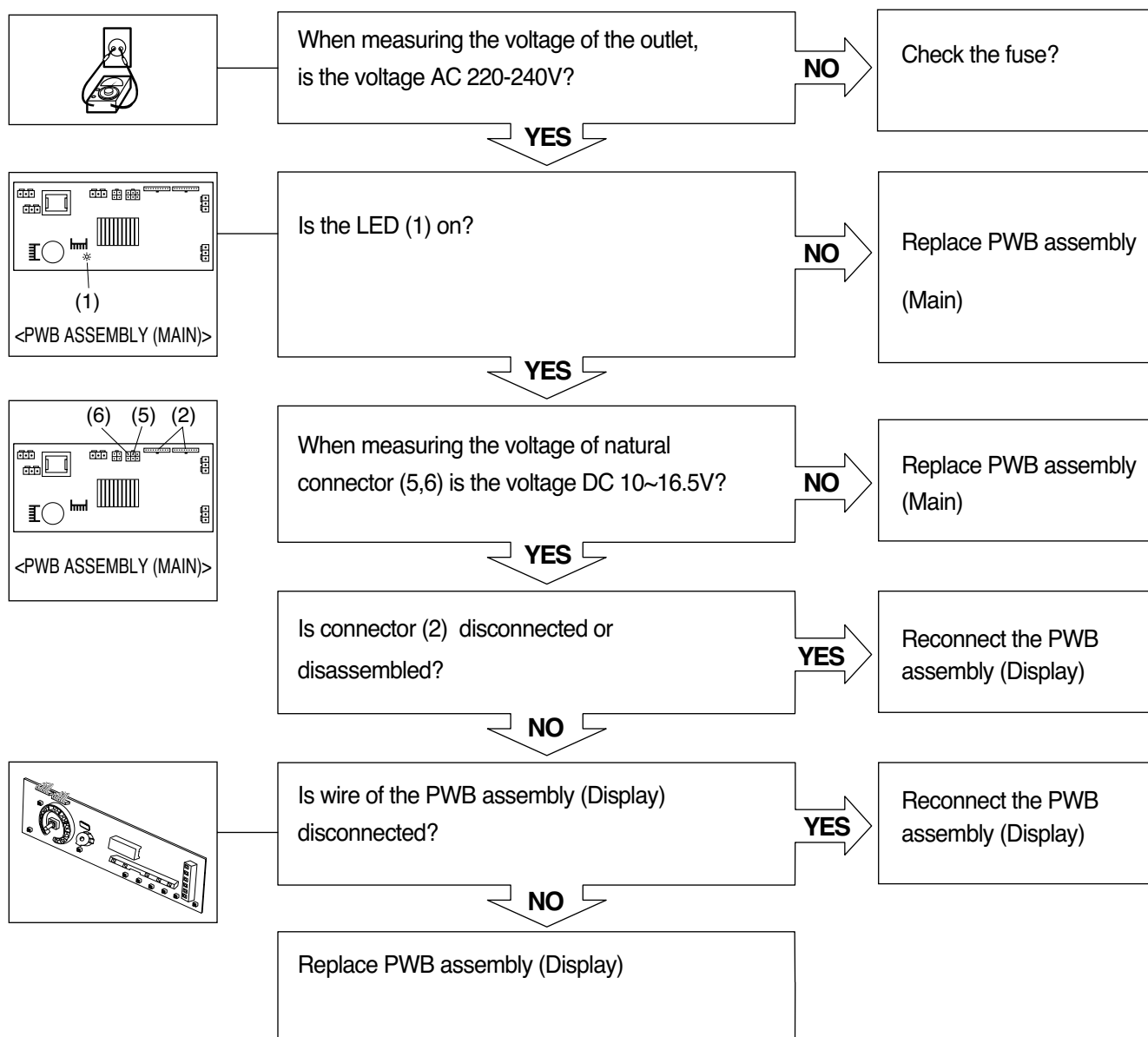
| SYMPTOM                                                                                                   | GUIDE FOR SERVICE CALL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>◦ Suds overflow from the appliance.<br/>(In this condition, wash and spin do not operate normally)</p> | <div data-bbox="571 394 1131 495">Is low-sudsing detergent for the drum washing machine used?</div> <div data-bbox="783 495 920 539">YES</div> <div data-bbox="571 551 1131 651">Is the proper amount of detergent used as recommended?</div> <div data-bbox="783 651 920 696">YES</div> <div data-bbox="571 696 1131 797">Recommend to reduce the amount of detergent.</div> <div data-bbox="619 797 1369 999"> <p>* This appliance has the automatic suds sensing function which operates under much suds condition for good rinse and preventing overflow.</p> <p>* When much suds are sensed, the suds removing function such as drain, water input, and pause will operate without rotating the drum.</p> </div> <div data-bbox="1203 405 1390 618">  <p>LOW SUDSING DETERGENT</p> </div> |
| <p>◦ No effect of softener</p>                                                                            | <div data-bbox="571 1070 1131 1171">Is softener put in the correct compartment of drawer?</div> <div data-bbox="783 1171 920 1216">YES</div> <div data-bbox="571 1227 1131 1301">Is the drawer closed during wash?</div> <div data-bbox="783 1301 920 1346">YES</div> <div data-bbox="571 1357 1131 1431">Is the softener cap clogged?</div> <div data-bbox="783 1431 920 1476">YES</div> <div data-bbox="571 1476 1131 1543">Explain how to use softener</div> <div data-bbox="635 1554 1066 1588">Clean the compartment for softener</div> <div data-bbox="1158 1111 1385 1435"> <p>Compartment for softener</p>  </div>                                                                                                                                                                   |
|                        | <div data-bbox="571 1686 1131 1753">Visit to check</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## 8-2.FAULT DIAGNOSIS AND TROUBLESHOOTING

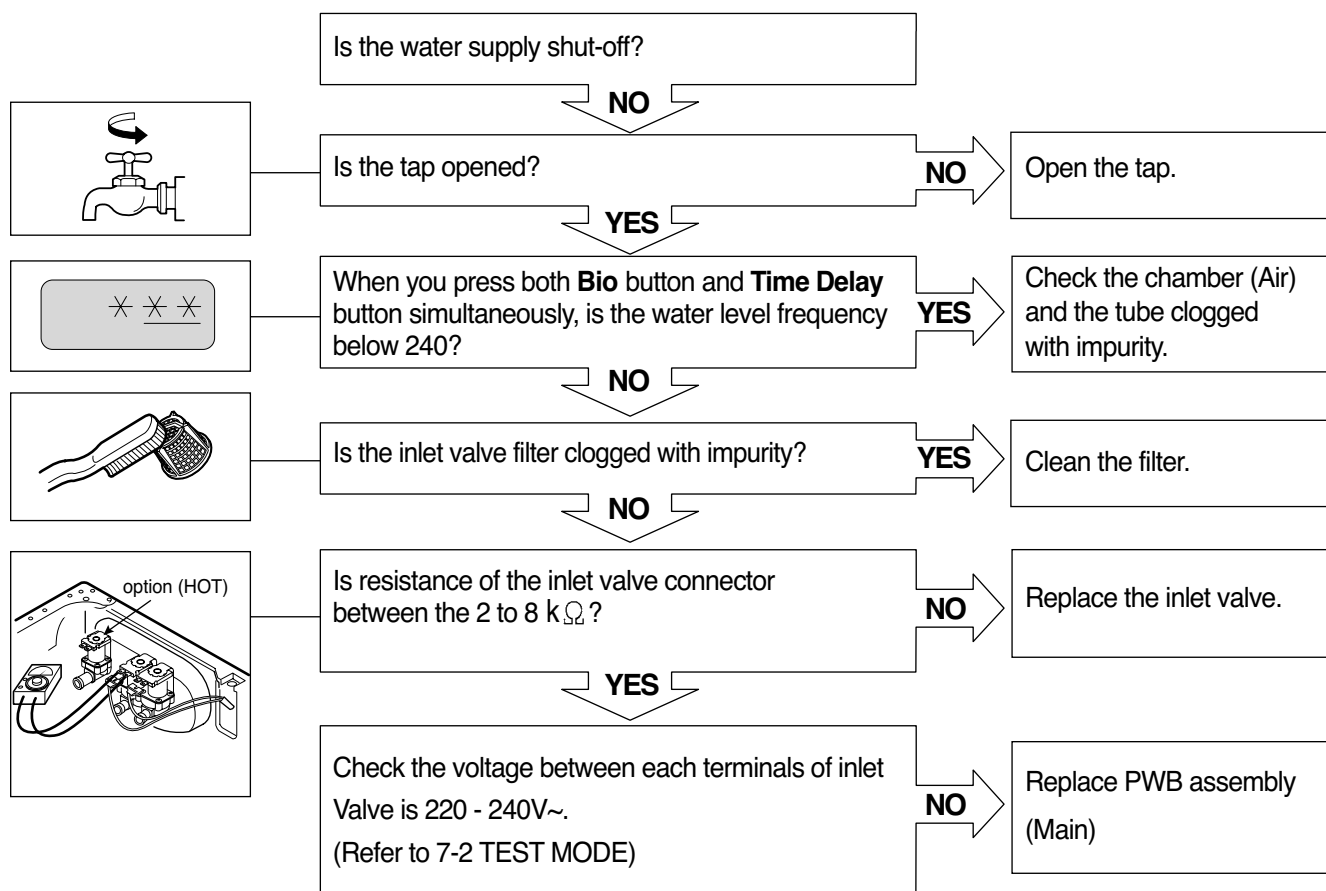
### CAUTION

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.

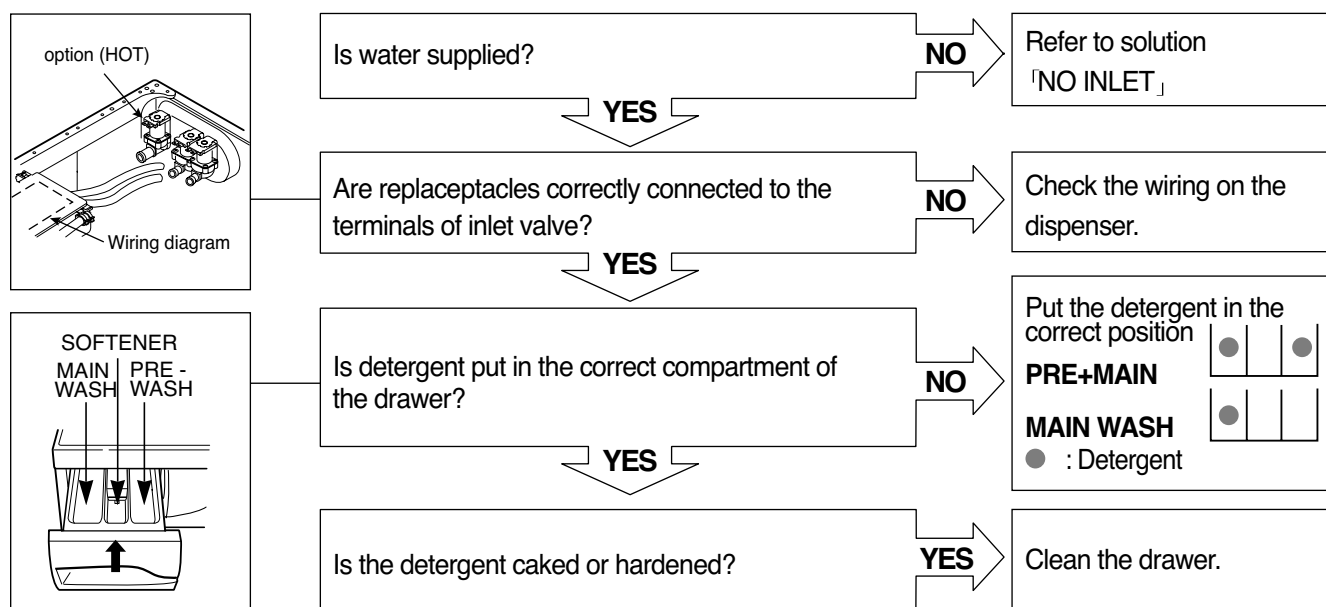
### NO POWER



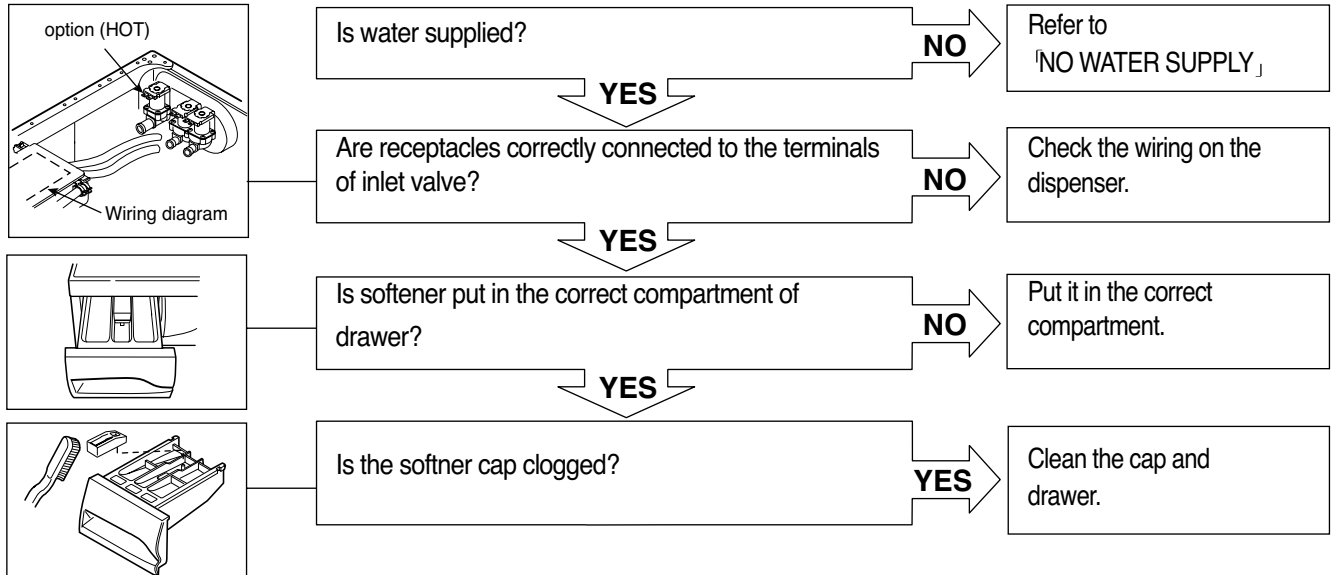
## NO WATER SUPPLY



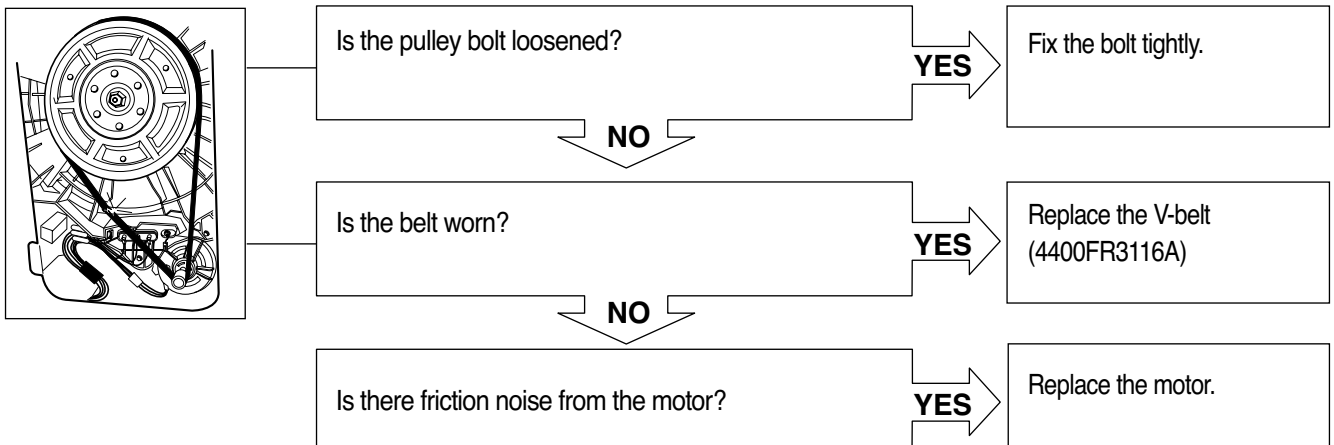
## DETERGENT DOES NOT FLOW IN



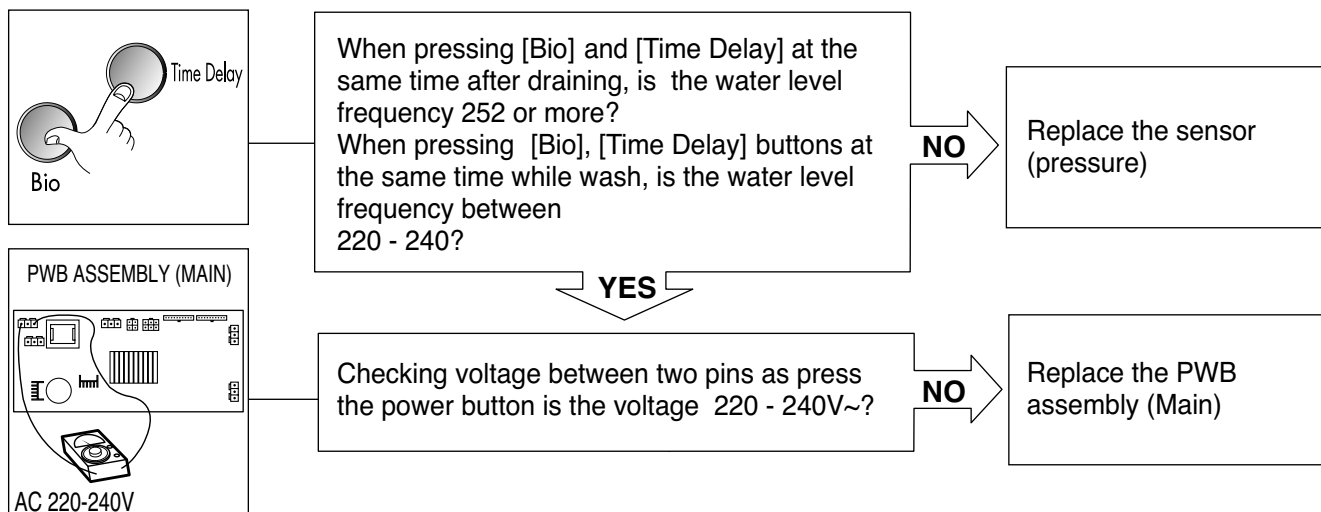
## SOFTENER DOES NOT FLOW IN



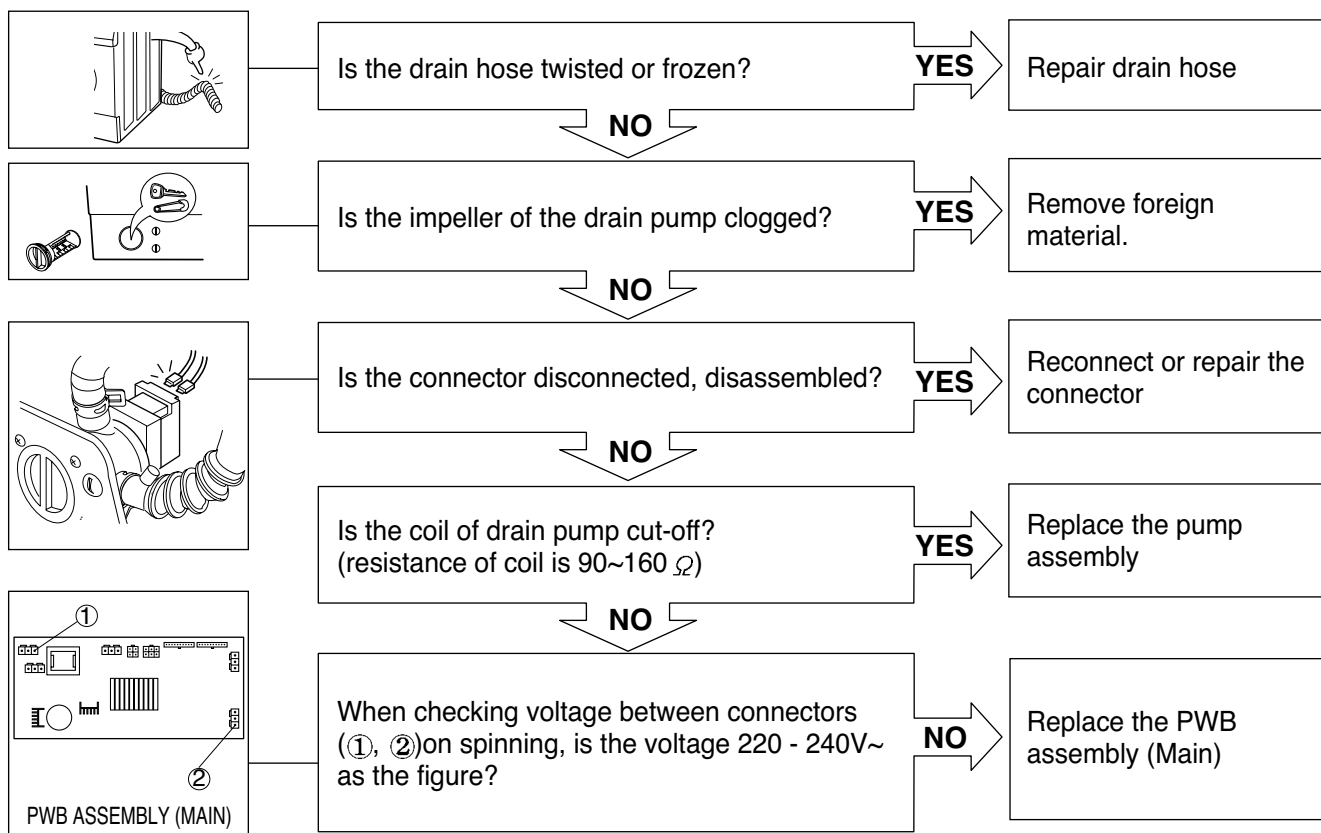
## ABNORMAL SOUND



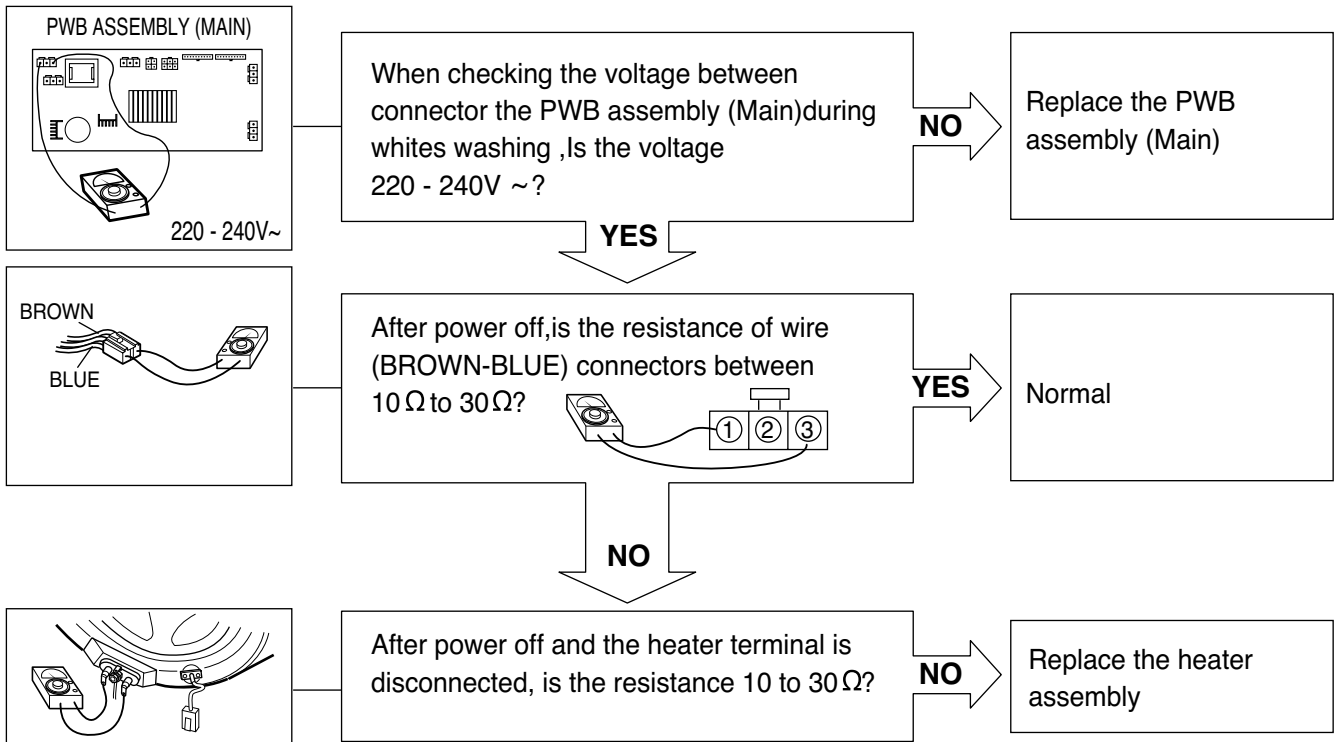
## HEATING WITHOUT WATER



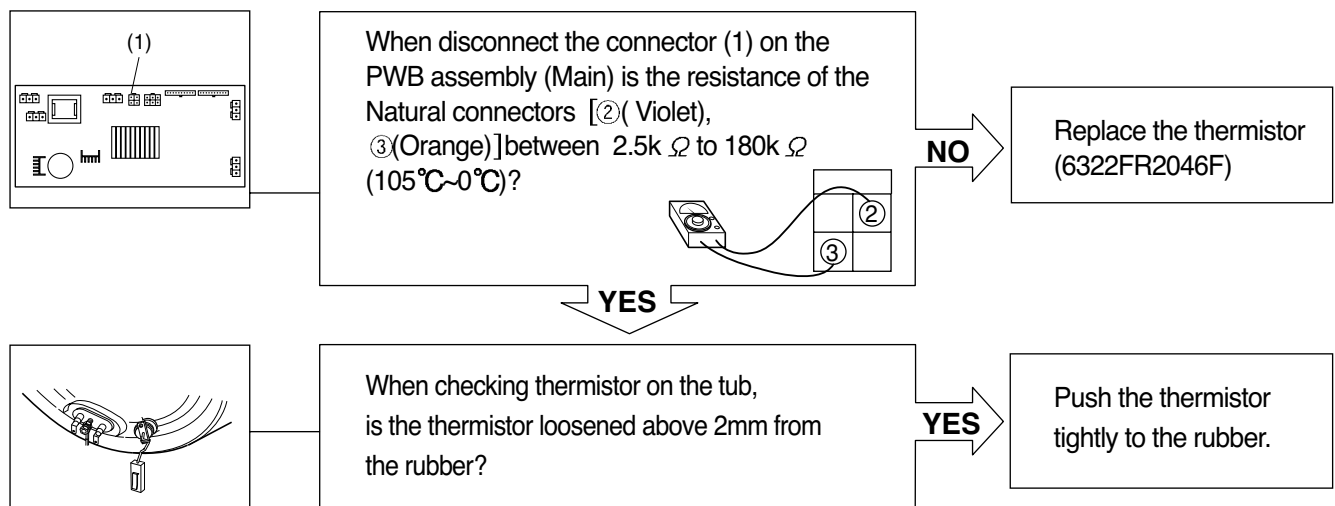
## DRAIN MALFUNCTIONING



## WASH HEATER TROUBLE

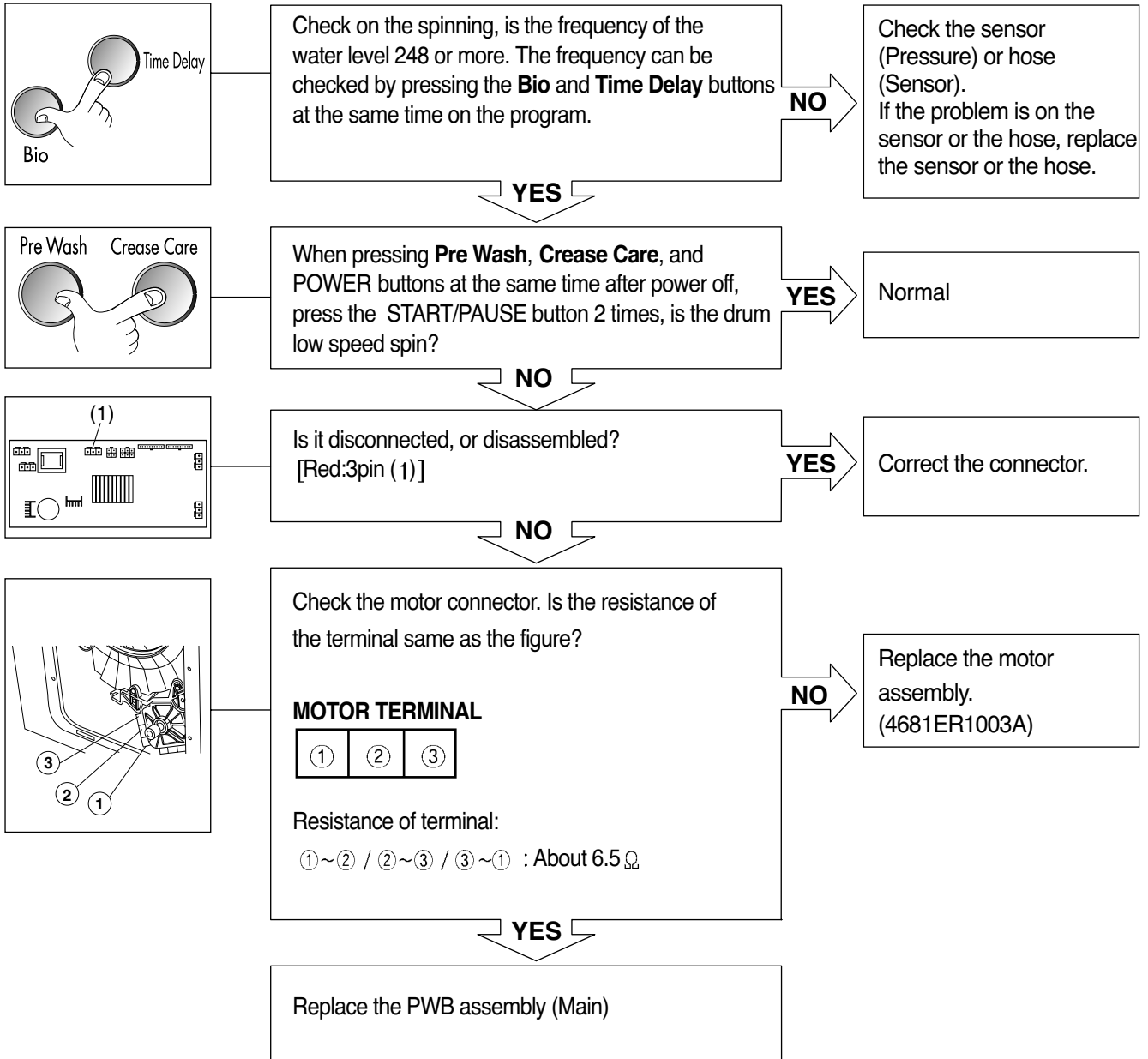


## HEATING CONTINUOUSLY ABOVE THE SETTING WATER TEMPERATURE





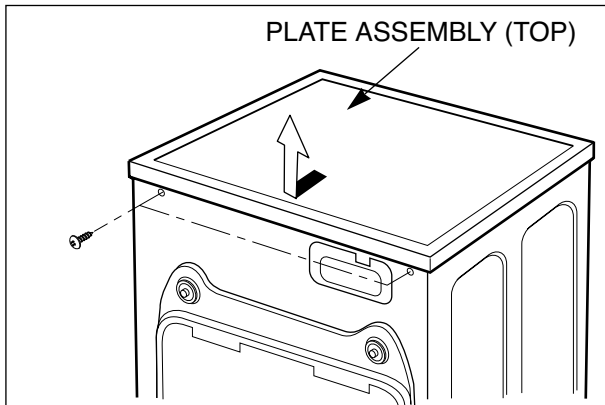
## SPIN TROUBLE



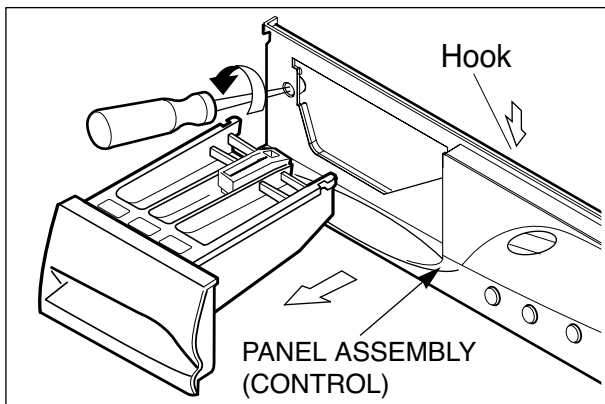
# 9. DISASSEMBLY INSTRUCTIONS

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

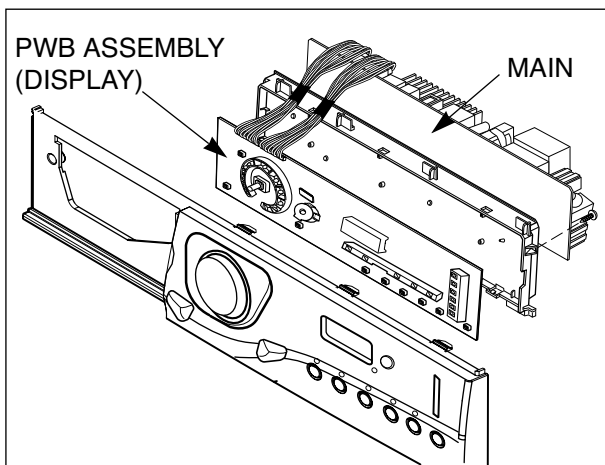
## CONTROL PANEL



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

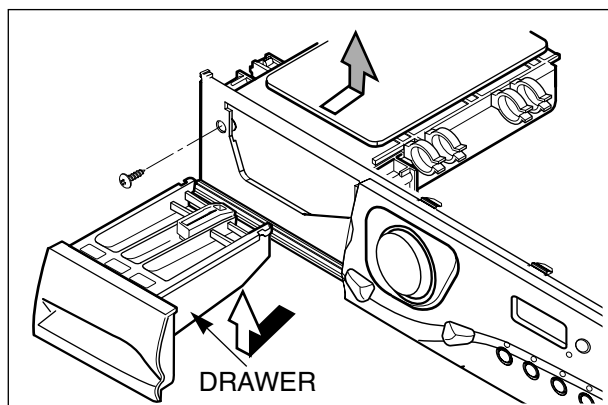


- ① Disconnect the PWB Assembly connector from Main lead wire Assembly.
- ② Pull out the drawer and unscrew 2 screws.
- ③ Push upper hooks down on the top and pull the control panel.

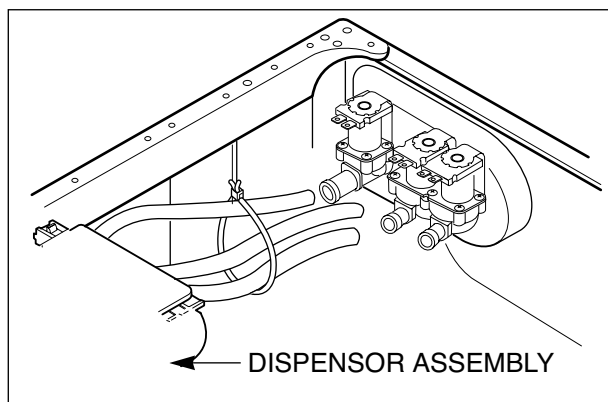


- ① Disconnect the PWB assembly (Main & Display) from the control panel by pushing 4 hooks down.

## DISPENSER ASSEMBLY

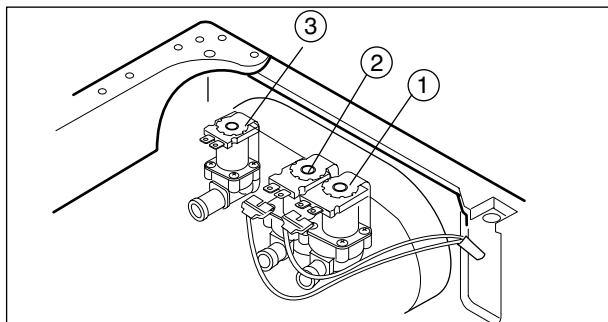


- ① Disassemble the top plate assembly.
- ② Pull out the drawer to arrow direction.
- ③ Unscrew 2 screws.



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

## INLET VALVE



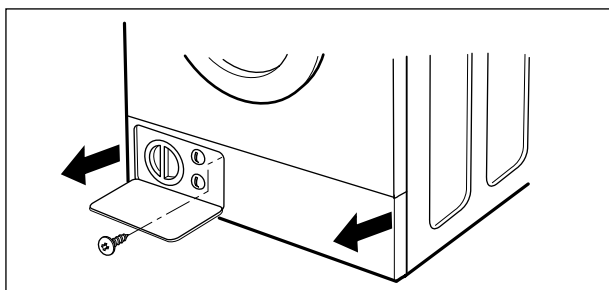
① Disconnect the wiring receptacle.

② Unscrew 2 screws from the back.

※When reconnecting the connector

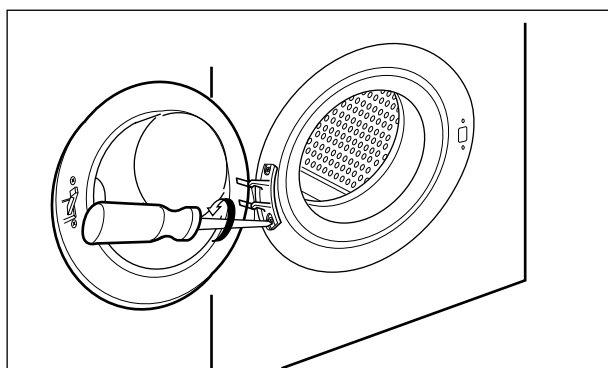
|                 |                    |
|-----------------|--------------------|
| VALVE #1 (MAIN) | Whited/Black-Black |
| VALVE #2 (PRE)  | White/Red - Black  |
| VALVE #3 (HOT)  | Blue/White - Black |

## LOWER COVER



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

## DOOR

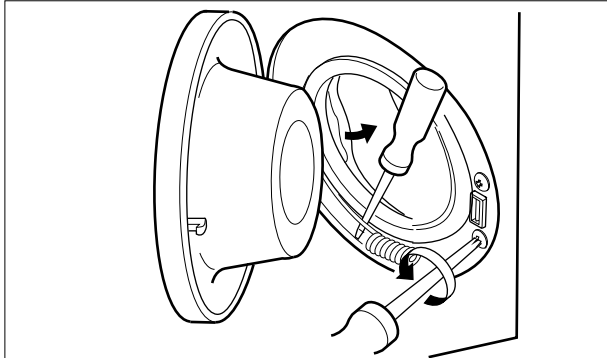


① Open the door completely.

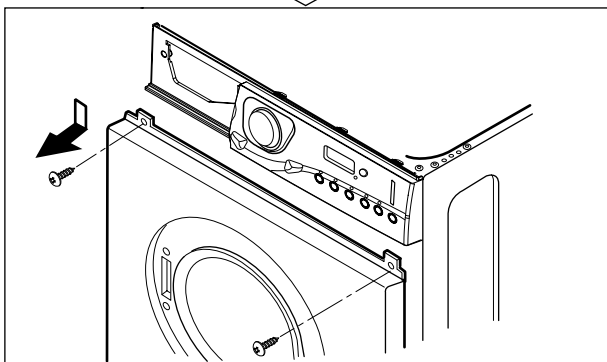
② Remove the two screws from the hinge.

※When removing the door assembly, it is necessary to hold the bracket that is inner of the cabinet cover.

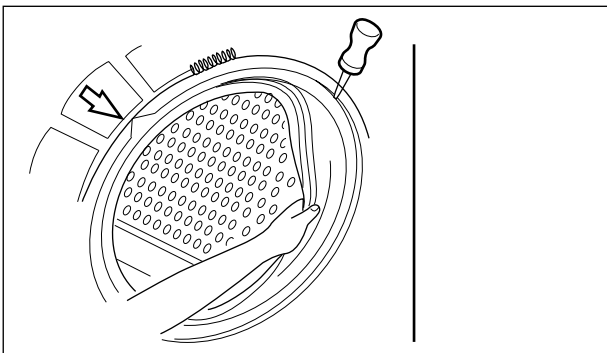
## GASKET ASSEMBLY



- 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.

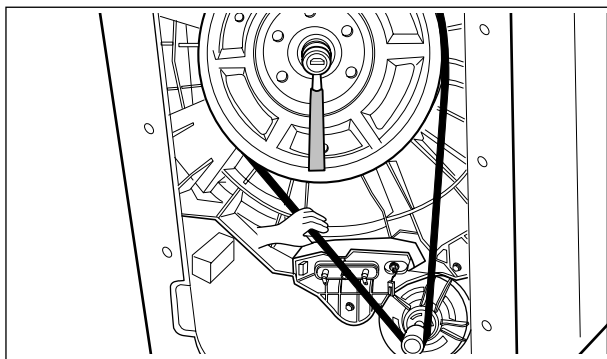


- ① Unscrew all the screws on the upper and lower sides of the cabinet cover.



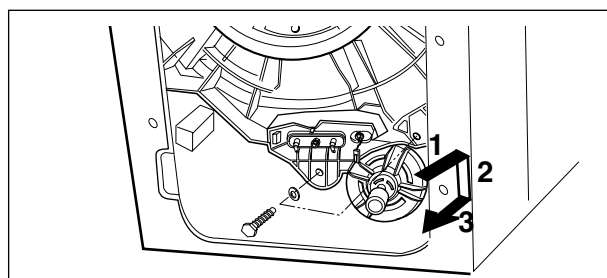
- ① Take apart the tub gasket clamp.
  - ② Make sure that the drain hole of the gasket is put beneath when reassembling the gasket.
- ※ Refer to the arrow mark on the tub cover.

## PULLEY, MOTOR, DAMPER



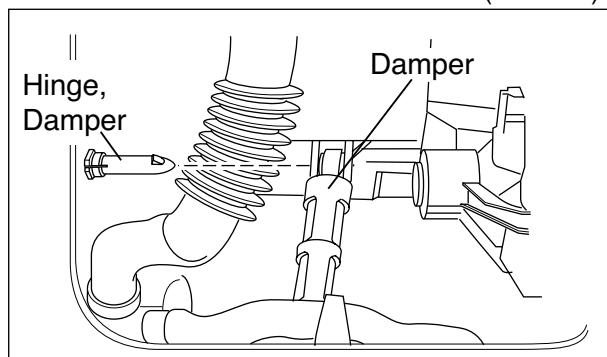
(PULLEY)

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



(MOTOR)

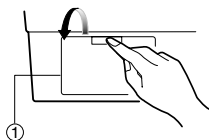
- ① Unscrew 2 screws from the bracket.
- ② Push the motor in the arrow direction for disassembling.
- ③ When reassembling the motor, make sure that motor mounting bushings are not taken off from the bracket.



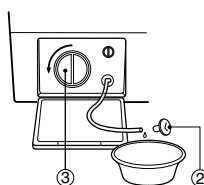
(DAMPER)

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

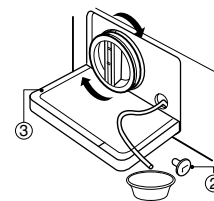
## ■ Clean the drain pump filter



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

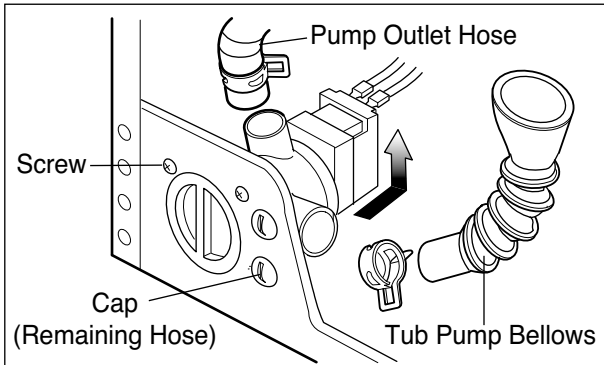


Unplug the drain plug (②), then the water flows out. At this time use a vessel to prevent water flowing on the floor. If the water does not flow any more, turn the pump filter (③) open to the left.



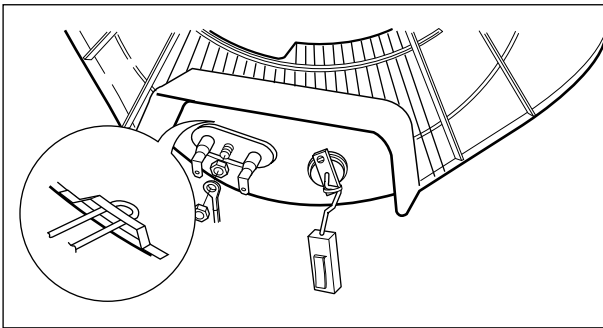
Take out any foreign material from the pump filter (③). After cleaning, turn the pump filter (③) clockwise and insert the drain plug (②) to the original place. Close the lower cover cap.

## 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

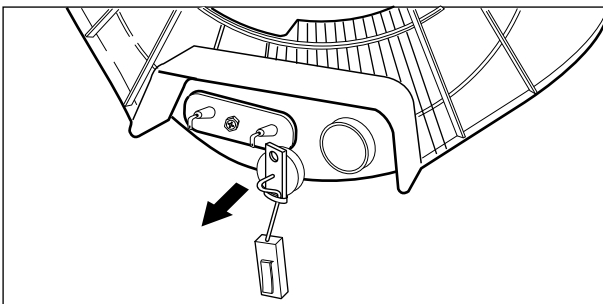


- ① Loosen the M6 heater nut to pull out the heater.

### CAUTION

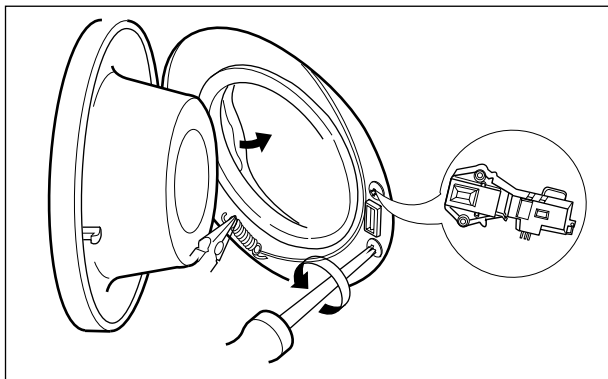
When mounting the heater, be sure to insert the heater into the heater clip on the bottom of the tub.

## THERMISTOR



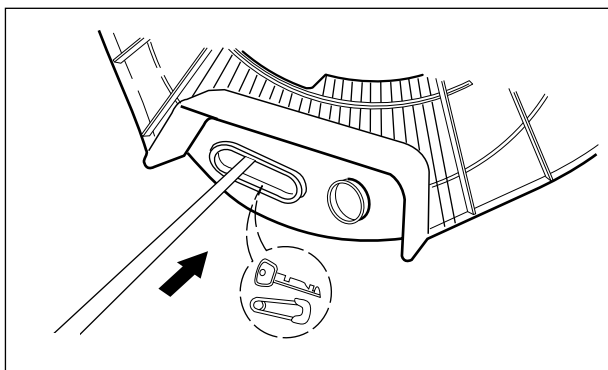
- ① Pull it out by holding the thermistor bracket.  
\* If it is pulled by the wire, it may be broken.
- ② When mounting the thermistor again, make sure that it is got back tight to the bushing.

## 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

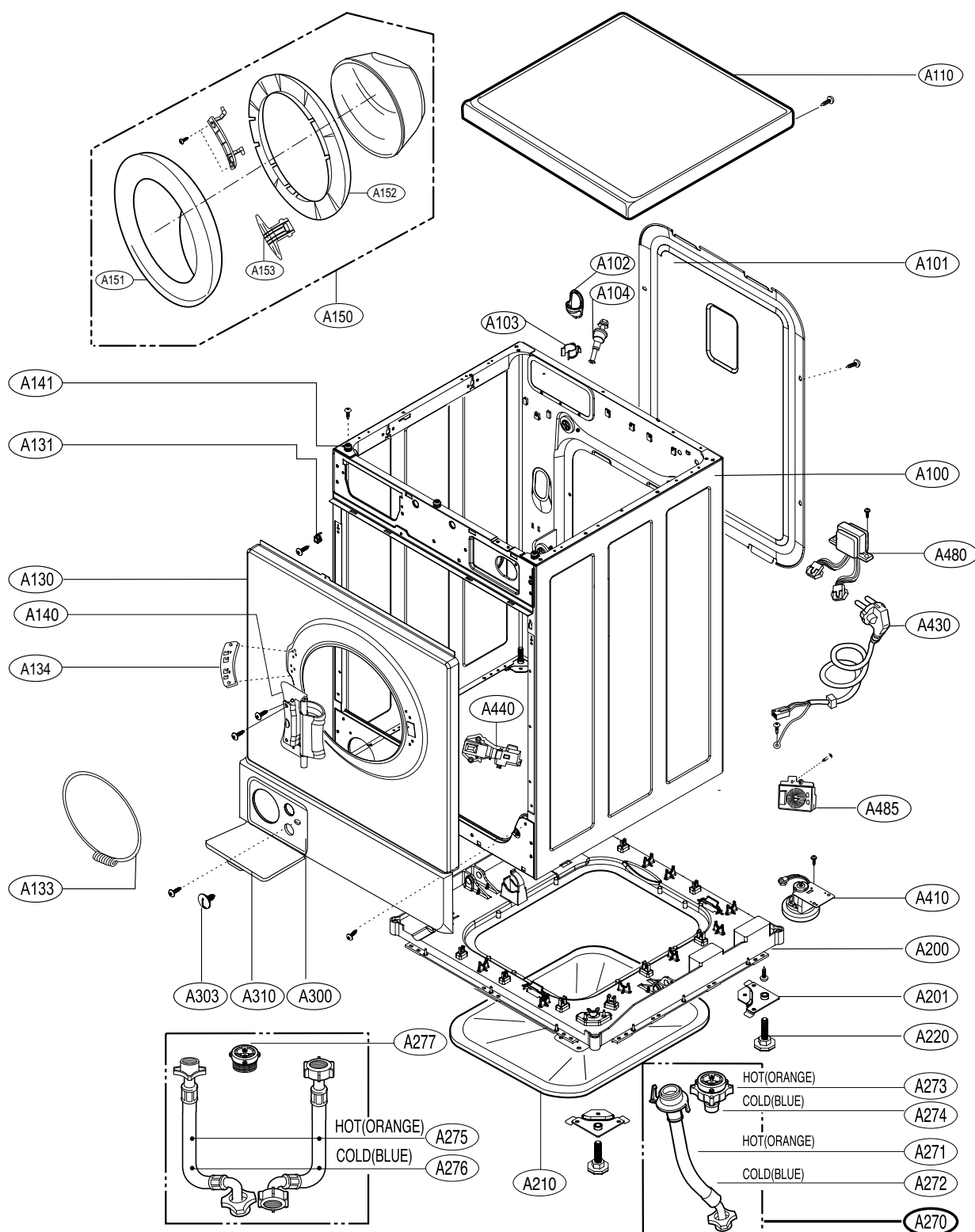


- ① Remove the heater.
- ② Remove the foreign material (wire, coin and others) by inserting a long bar through the hole.



# 10. EXPLODED VIEW

## 10-1.THE EXPLODED VIEW OF CABINET ASSEMBLY



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

