

# WASHING MACHINE SERVICE MANUAL

#### **CAUTION**

READ THIS MANUAL CAREFULLY TO DIAGNOSE TROUBLECORRECTLY BEFORE OFFERING SERVICE.

**MODEL: WD-3243RHD** 

**WD-3245RHD** 



JUL. 2001 PRINTED IN KOREA

P/No.:3828ER3008S

# **CONTENTS**

1. SPECIFICATION	3
2. FEATURES & TECHNICAL EXPLANATION	4
3. PARTS IDENTIFICATION	6
4. INSTALLATION	7
5. OPERATION	10
6. WIRING DIAGRAM / PROGRAM CHART	12
7. TROUBLESHOOTING	13
7-1.BEFORE PERFORMING SERVICE	13
7-2.QC TEST MODE	13
7-3.HOW TO KNOW THE WATER LEVEL FREQUENCY	13
7-4.ERROR DISPLAY	14
8. ERROR DIAGNOSIS AND CHECK LIST	16
8-1. DIAGNOSIS AND ANSWER FOR ABNORMAL OPERATION	16
8-2. FAULT DIAGNOSIS AND TROUBLESHOOTING	19
9. DISASSEMBLY INSTRUCTIONS	29
10. EXPLODED VIEW AND PARTS LIST	39
10-1. THE EXPLODED VIEW OF CABINET ASSEMBLY	39
10-2. THE EXPLODED VIEW OF CONTROL PANEL AND DISPENSER ASSEMBLY	40
10-3. THE EXPLODED VIEW OF DRUM AND TUB ASSEMBLY	41
10-4. THE EXPLODED VIEW OF DRYER	42
APPENDIX (Replacement parts list)	43

# 1. SPECIFICATION

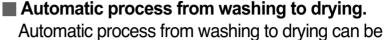
ITE	EM	WD-3243RHD/WD-3245RHD	
POWER SUPPLY		120-127V~ 60Hz	
PRODUCT WEIGHT		156 <sup>1</sup> / <sub>2</sub> lbs. (71 kg)	
WASHING		140W	
ELECTRICITY	SPIN	300W	
CONSUMPTION	FAN MOTOR	25W	
	DRAIN MOTOR	40W	
	WASH HEATER	1000W	
	DRY HEATER	1200W	
REVOLUTION	WASH	45rpm	
SPEED	SPIN	No spin/400/600/800/1000/1200 rpm	
OPERATION W	ATER PRESSURE	4.5 ~ 145 PSI (30 ~ 1000 KPa)	
CONTR	OL TYPE	Electronic	
WASH CA	APACITY	14 <sup>1</sup> / <sub>2</sub> lbs. <b>[</b> 6.5 kg <b>]</b>	
DRY CAPACITY3.0kg		6 <sup>5</sup> / <sub>8</sub> lbs. <b>[</b> 3.0 kg <b>]</b>	
DIMENSION		600×600×850mm	
WASH PROGRAM		Cotton, Permant Press, Quick, Delicate, Wool , Rinse+Spin	
OPTION		Extra Wash, Rinse Pluse	
DOOR SWITCH TYPE		Automatic type by pressing <b>Door Open</b> botton	
WATER I	LEVEL	8 steps (by sensor)	
RESERV	ATION	From 3 hours to 19 hours	
SENSING OF THE L	AUNDRY AMOUNT	Adapted	
FUZZY L	OGIC	Adapted	
DISPLAY OF THE REMAINING TIME		Adapted	
ERROR DIAGNOSIS		10 items	
POWER AUTO OFF		Adapted	
CHILD LOCK		Adapted	
AUTO RESTART		Adapted	
RAPID		Adapted	

# 2. FEATURES & TECHNICAL EXPLANATION

#### 2-1.FEATURES







Automatic process from washing to drying can be selected easily.

Washing capacity :  $14 \, {}^{1}/_{2}$  lbs. [6.5 kg] Drying capacity :  $6 \, {}^{5}/_{8}$  lbs. [3.0 kg]



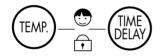
water temperature, and then determines the optimum water level and washing time to minimize energy and water

consumption.



#### ■ Direct Drive system

The advanced Brushless DC motor rotates the Drum directly without belt and pulley.



#### **■ Child-Lock**

The Child-Lock system has been developed to prevent children from pressing any button to change the program during operation.



#### ■ Low noise speed control system

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

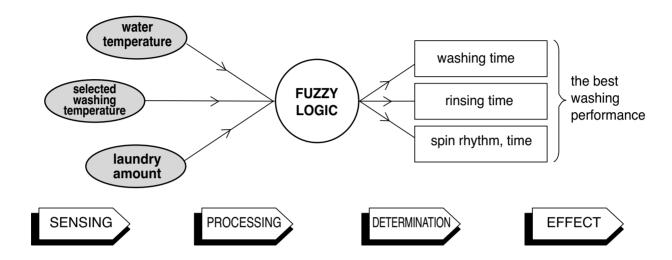


#### ■ Auto Restart

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 if the machine 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.



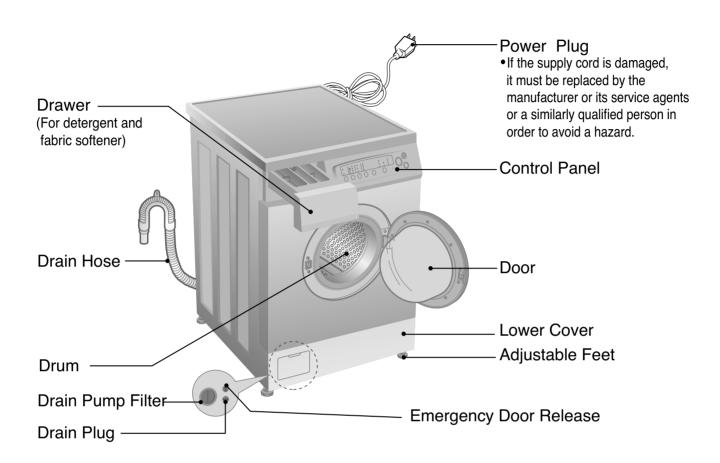
#### 2-3.WATER LEVEL CONTROL

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

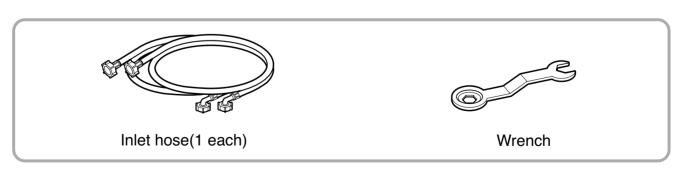
#### 2-4.CONTROL OF DOOR OPEN

- The door can be opened by pressing **DOOR OPEN** button after finishing program.
- When the revolution of drum is stopped and in case water leel is below level 2, door can be opened by pressing the DOOR OPEN button.
- If there is no power, the door can be opened by pulling the door strap.
   (If the water level is high, first drain the water by pulling out the hose cap)

# 3. PARTS IDENTIFICATION



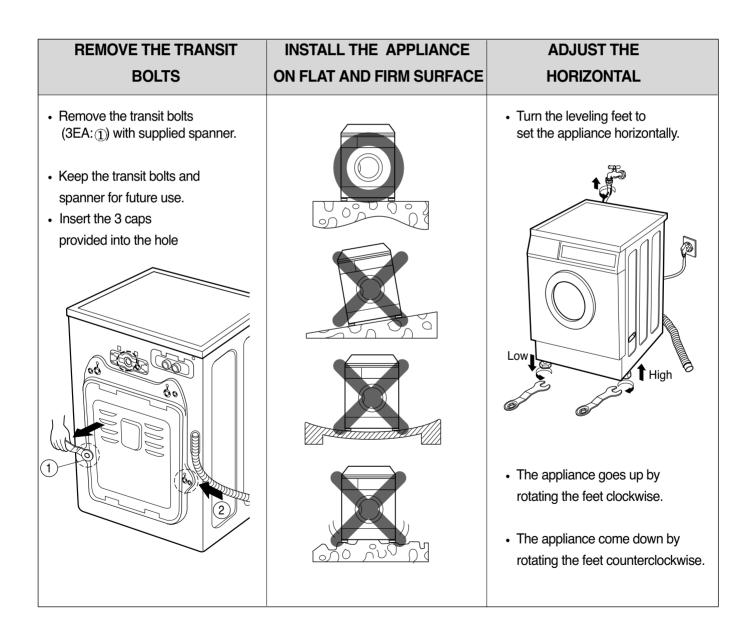
# **ACCESSORIES**



# 4. INSTALLATION

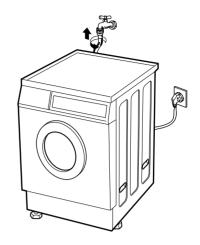
- 1 Before servicing ask trouble the customer, what the trouble is.
- 2 Check the adjustment (power supply is 120-127V~ remove the transit bolts....)
- (3) Check the troubles referring to the troubleshooting.
- 4 Decide service steps referring to disassembly instructions.
- [5] Then, service and repair.
- 6 After servicing, operate the appliance to see whether it works O·K or NOT.
- STANDARD INSTALLATION

The appliance should be installed as follows.

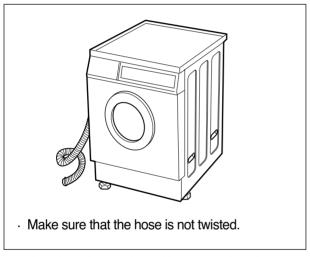


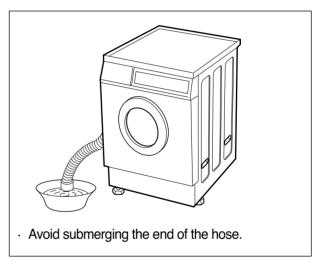
#### ■ HOW TO CONNECT INLET HOSE

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



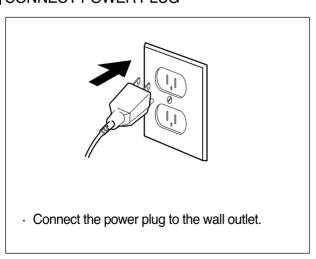
#### **■ CONNECT DRAIN HOSE**

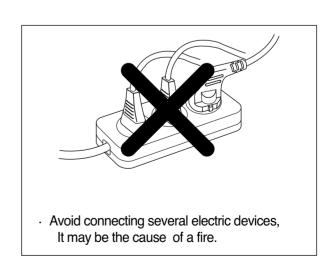




\*\* The drain hose should be placed under 100cm from the floor.

#### **■ CONNECT POWER PLUG**

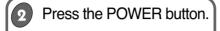




#### **7 TEST OPERATION**



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





Press the Start/Pause button.



• In case of Cotton program.

Check the water heating.

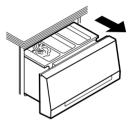


 Press the Temp. button and the present temperature will be displayed. Check automatic reverse turn.



· Check if the drum rotates clockwise and counterclockwise.

A Check the water supply.



 Check if water is supplied through the detergent dispenser.

- 7 Check drain and spin
- Turn off Wash and Rinse after pressing the Start/Pause button and start the machine again.
- · Check drain and spin.

8 Power off and open the door



- · Power off and then Power on.
- Check if the door can be opened by pressing Door open button.

Water removal



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

# **Rinse Hold**

 If you desire to leave fabrics in the machine without spinning after rinse to prevent wrinkling.

You may select rinse hold by pressing the Rinse Hold Button.

To drain and spin, press Rinse Hold Button or Start/Pause button to turn off the Rinse Hold lamp.

# **LED display**

- Display the remaining time (Hour: Minute) to finish.
- In case of abnormal operation, error indications are displayed.

(PE, FE, 3E, LE, EE, CE, 3HE)

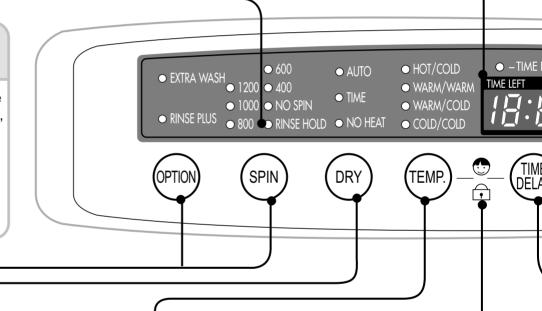
• See trouble shooting guide.

# Wash program s

- 6 programs can be selected type of the laundry.
- By pressing the button,
   [COTTON → PERM PRES WOOL → DELICATE → can be selected

# For manual option and spin

- Use these buttons to change washing method, rinse times, spinning speed.
- When lamp is off, no selection has been made.
- Extra wash is available for Cotton and Perm press program.



# **Dry selector**

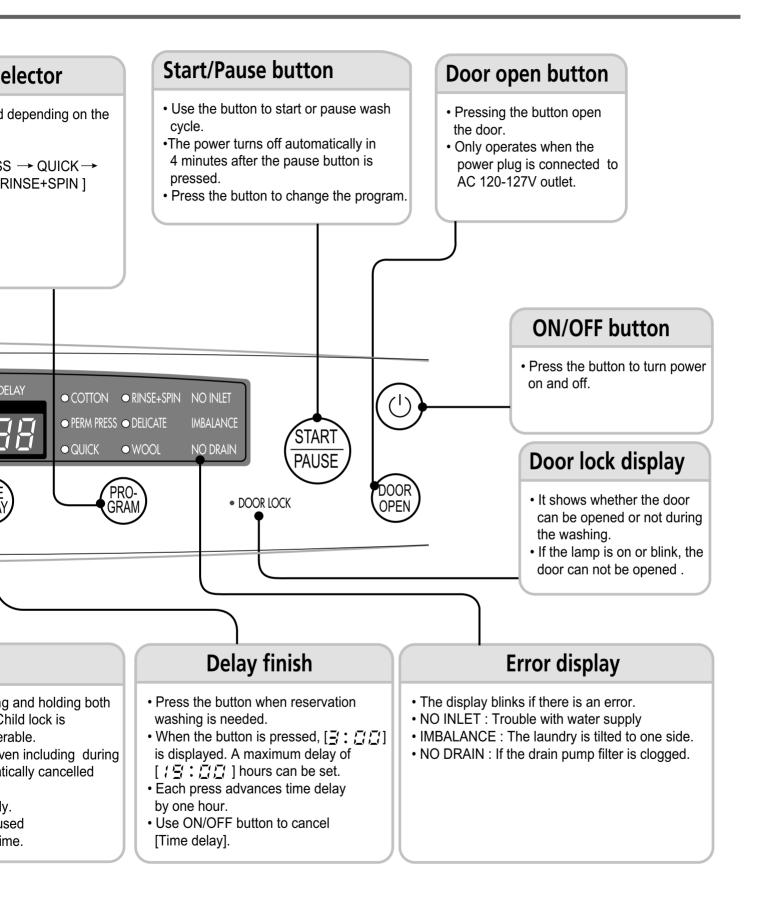
- Dry programs can be selected by pressing the [DRY] button.
- By pressing the button, [Auto → No Heat → Time (30/60/90/120/150)] can be selected.

## Water temperature selector

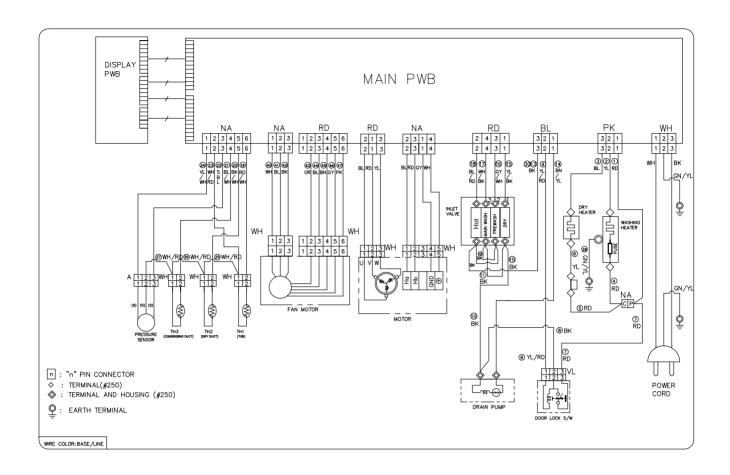
- Press the button to select water temperature.
- The water temperature is selected [Warm/Cold → Warm/Warm → Hot/Cold → Cold/Cold] during normal program.
- · Hot/Cold is selected only for cotton program.
- By pressing the button during operating the washer, the present temperature is displayed.

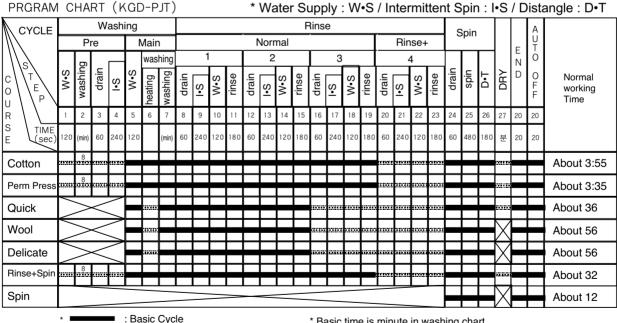
# **Child lock**

- Once Child-Lock is set, and canceled by pressir [Temp.] and [Time Delay] simutaneously once of set. Once Chold Lock is set, all buttons are irope
- The Child-Lock system can be set at any time e Power-Off, on Pause and operation. It is automated when an operational error occurs



# 6. WIRING DIAGRAM / PROGRAM CHART





- : Optional Cycle
- \* Pre-Setting Time : Water Supply 120 sec. Drain - 60 sec.
- \* Basic time is minute in washing chart
- \* The actual program time can be varied with the load amount.

# 7. TROUBLESHOOTING

#### 7-1.BEFORE PERFORMING SERVICE

- Be careful of electric shock or disconnecting the parts while trouble shooting.
- Voltage of each terminal in 120-127V~ and DC while applying an electric current.

#### 7-2.QC TEST MODE.

- ① Pressing SPIN, and DRY button simultaneously.
- 2 Power supply 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	Clockwise spin (right)	Drum rpm (About 40~52)
2 times	Low speed Spin	Drum rpm (About 70~90)
3 times	High speed Spin	Drum rpm (About 90~110)
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)
6 times	Inlet valve for dry operation	Water level frequency (25~65)
7 times	Counterclockwise spin (left)	Drum rpm (About 40~52)
8 times	Heater is in operation for 3 sec.	Water temperature
9 times	Draining pump operation	Water level frequency
10 times	Dry operation for 6 minutes	Auto off operation after 6 minutes

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

\* Press the SPIN and DRY button simultaneously.



The digits means water level frequency (10-1 kHz)

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

# 7-4.HOW TO KNOW TO TEMPERATURE OF EACH THERMISTOR AT OPERATING CONDITION.

- Thermistor in tub: Press the [WATER TEMP] button.
- Thermistor in dry duct : Press the [DRY] button.
- Thermistor in condensing duct : Press the [SPIN] and [DRY] button simultaneously.

## 7-5.ERROR DISPLAY.

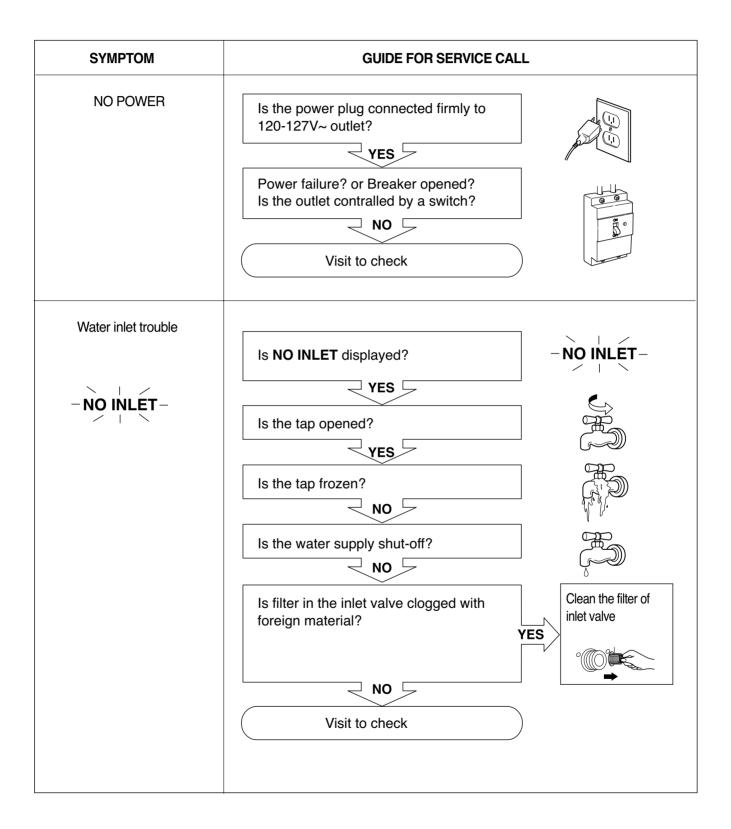
- If you press the START/PAUSE button when an error is displayed. any error except <code>"PE \_ will disappear</code> and the machine will change into pause status.
- In case of <code>FPE</code> <code>\_, FLE</code> <code>\_, FAE</code> <code>\_</code> if the error is not resolved within 20 sec., the in case of other errors, if the error is not resolved within 4 min., power will be turned off automatically and the error code will blink. But in the case of <code>FFE</code> <code>\_</code>, power will not be turned off.

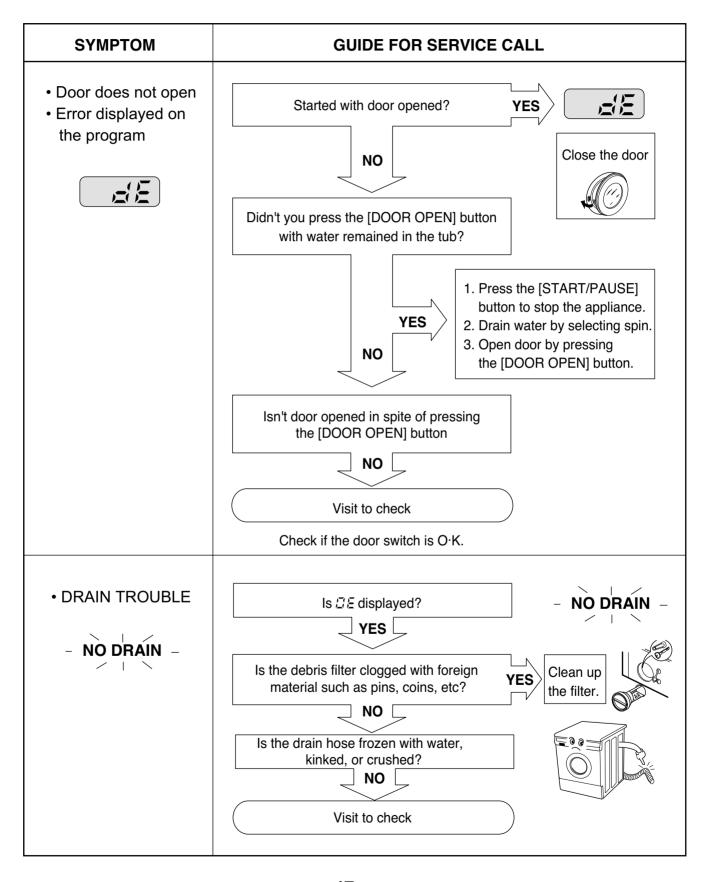
	ERROR	SYMPTOM	CAUSE	
1	WATER INLET ERROR	-NO INLÉT-	Not reached to the water level (2 level) within 4 minutes after water supplied or not reached to the preset water level within 25 minutes.	
2	DRAIN ERROR		Not fully drained within 5 minutes.	
3	OVERFLOW ERROR	FE	Water is over flowing (over 8 level).  If FE is displayed, drain pump operates to drain water automatically.	
4	SENSOR PRESSURE S/W ERROR	FE	The sensor pressure switch is out of order.	
5	DOOR OPEN ERROR	ZE	<ul> <li>The door does not open in spite of pressing the [DOOR OPEN] button.</li> <li>In case of operating the reservation function or the other function with door opened. Close the door, then the error display is resolved.</li> <li>The door switch is out of order.</li> </ul>	
6	IMBALANCE ERROR	The appliance is tilted. Laundry is gathered to one side.		
7	HEATING ERROR	FE	• The THERMISTOR is out of order.	

	ERROR	SYMPTOM	CAUSE
8	CURRENT ERROR	<u> </u>	<ul> <li>• MAIN PWB ASSEMBLY is out of order  Replace the MAIN PWB ASSEMBLY</li> <li>• Winding in the STATOR ASSEMBLY is short-circuited.  Replace the STATOR ASSEMBLY</li> <li>• ££ is dispplayed during a high spin</li> <li>□ Replace the LEAD WIRE ASSEMBLY (MOTOR)</li> </ul>
9	MOTOR ERROR	LE	The connector in the LEAD WIRE ASSEMBLY is not connected to the connnector of STATOR ASSEMBLY Reconnect or repair the connector  The hall sensor is out of order/defective. Replace the STATOR ASSEMBLY
10	DRY HEATOR ERROR		<ul> <li>The Dry Heater is out of order Replace the Dry Heater</li> <li>The Connector of the Dry Heater is not connected properly to the connector in the Main PWB ASSEMBLY Reconnect or repair the connector</li> <li>The Dry fan motor is out of order Replace the fan Motor.</li> </ul>

# 8. ERROR DIAGNOSIS AND CHECK LIST

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



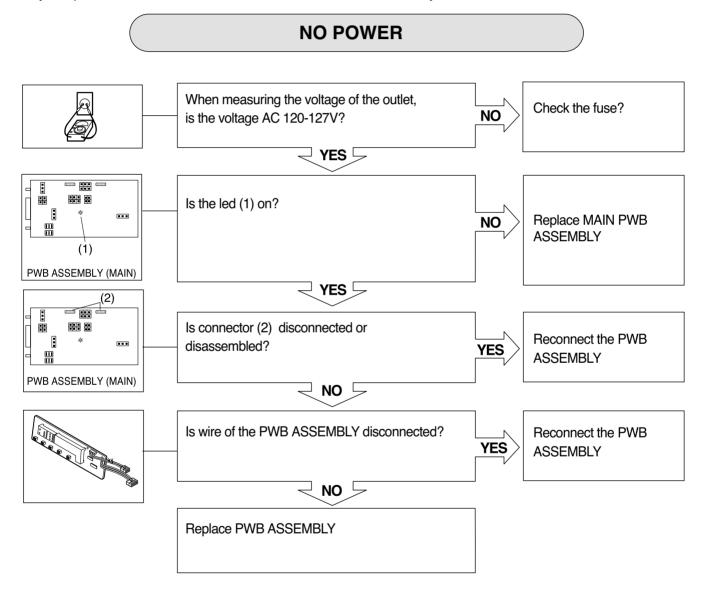


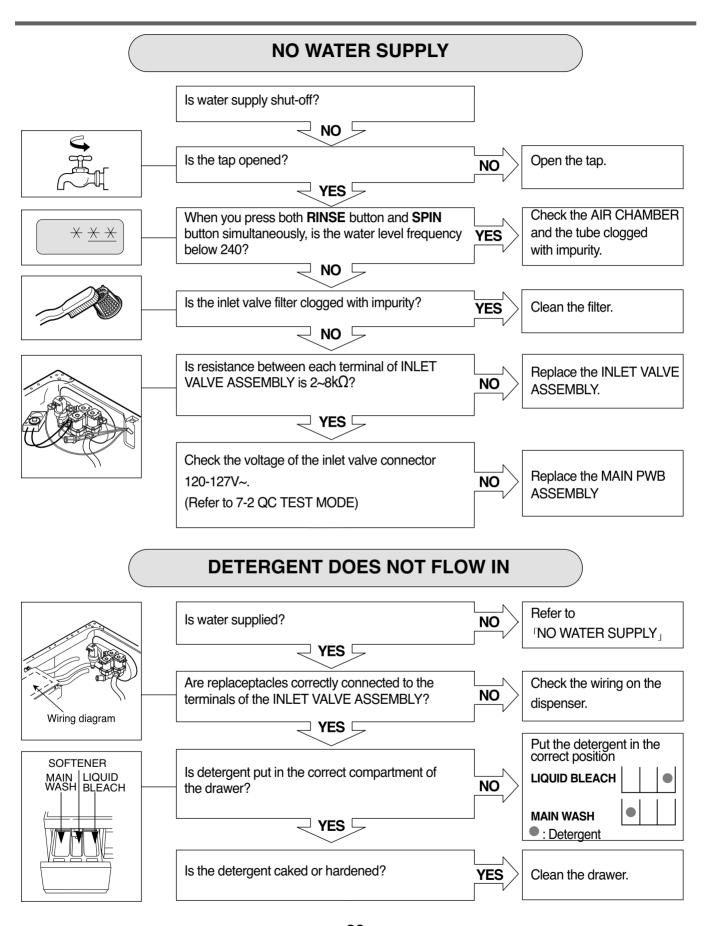
SYMPTOM	GUIDE FOR SERVICE	CALL
<ul> <li>Suds overflow from the appliance.</li> <li>(In this condition, wash and spin do not operate normally)</li> </ul>	Is low-sudsing detergent for the drum washing machine used?  YES  Is the proper amount of detergent used as recommended?  YES  Recommend to reduce the amount of detergent.  * This appliance has the automatic suds sens	LOW-SUDSING
	operates under much suds condition for good preventing overflow.  * When much suds are sensed, the suds rem as drain, water input, pause will operate with	od rinse and oving function such
No effect of softener	Is softener put in the correct compartment of the drawer?  YES  Is the drawer closed during wash?  YES  Is the softener cap clogged?  YES  Explain how to use softener  Clean the compartment for softener	Compartment for softener
FE SHE FE LE	Visit to check	

#### 8-2. FAULT DIAGNOSIS AND TROUBLE SHOOTING

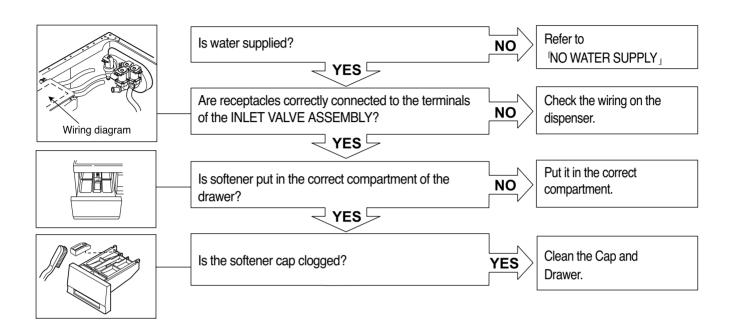
#### CAUTION

- 1. Be careful of electric shock or disconnecting the parts while trouble shooting.
- 2. First of all, check the connection of each part terminal with wiring diagram.
- 3. If you replace the MAIN PWB ASSEMBLY, Put in the connectors correctly.

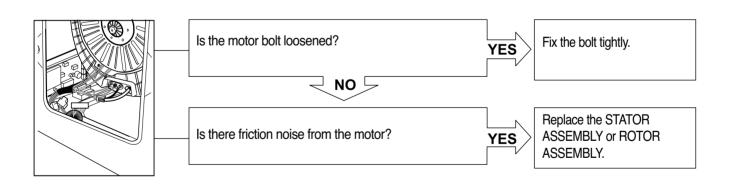




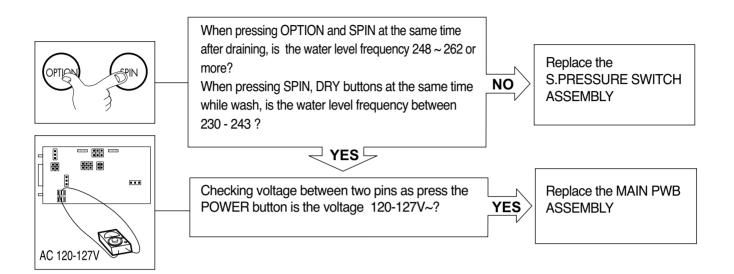
#### **SOFTENER DOES NOT FLOW IN**



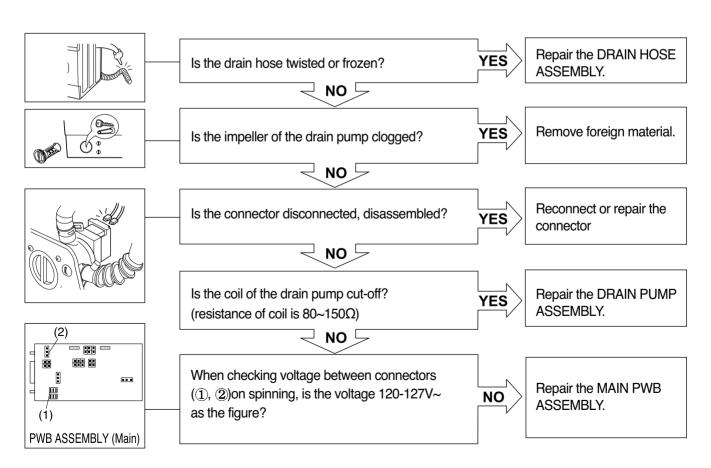
#### **ABNORMAL SOUND**



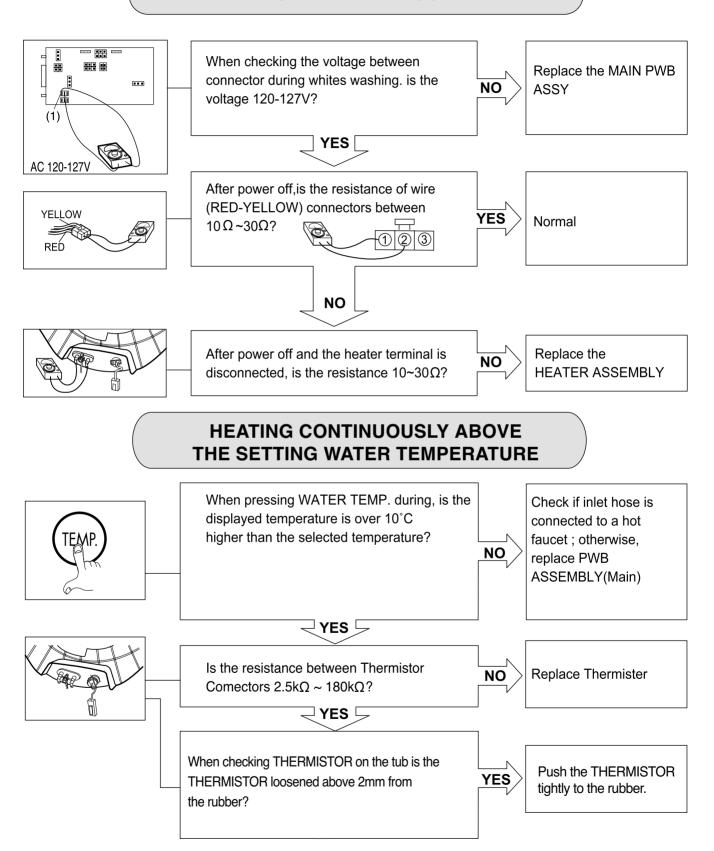
#### **HEATING WITHOUT WATER**



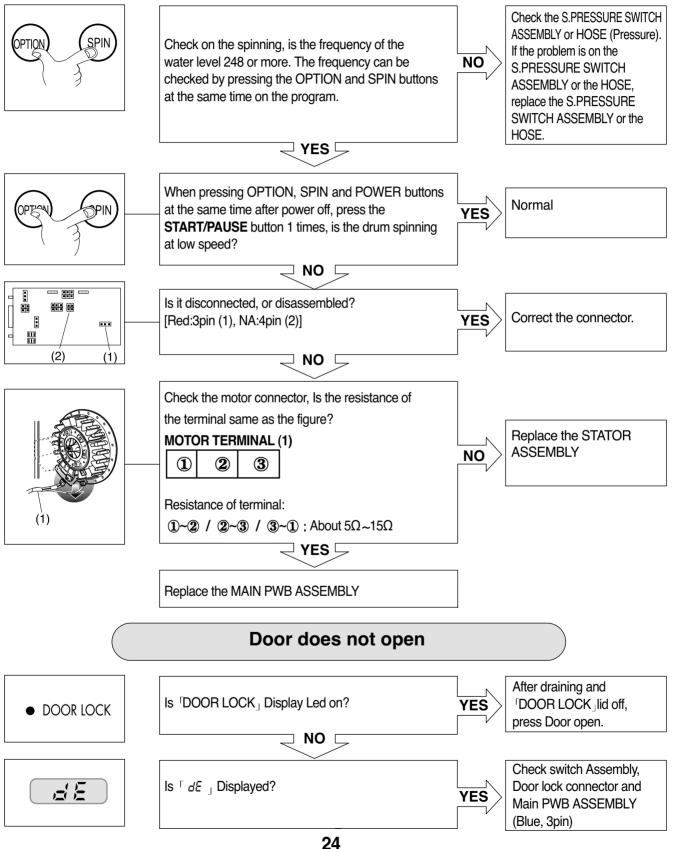
#### **DRAIN MALFUNCTIONING**



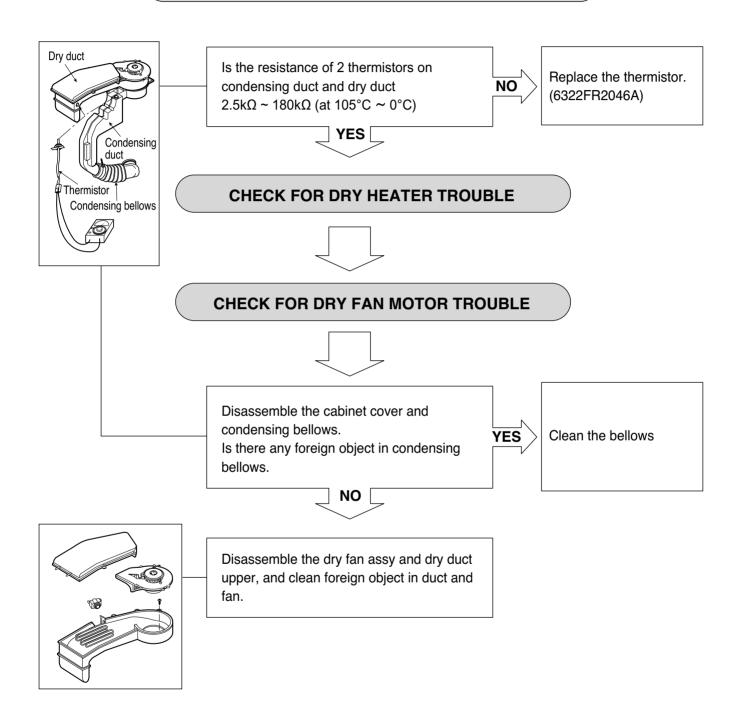




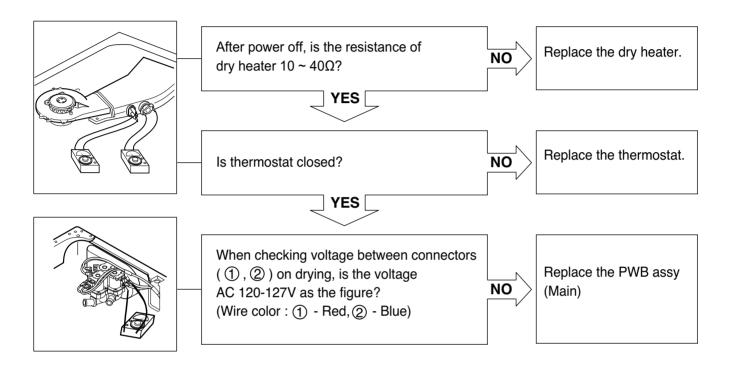




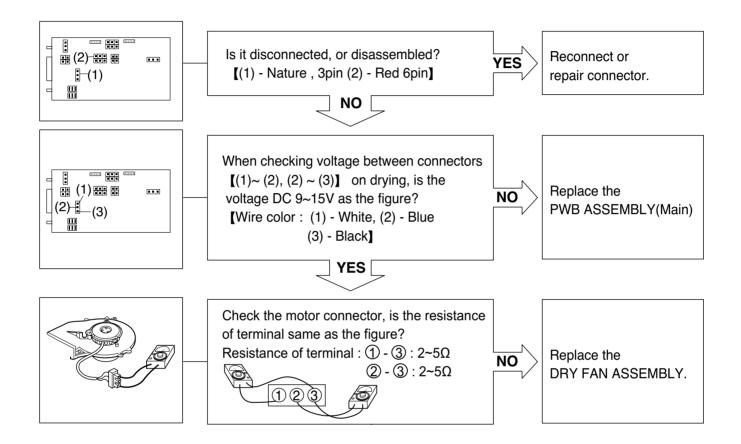
#### [dHE] ERROR DISPLAY



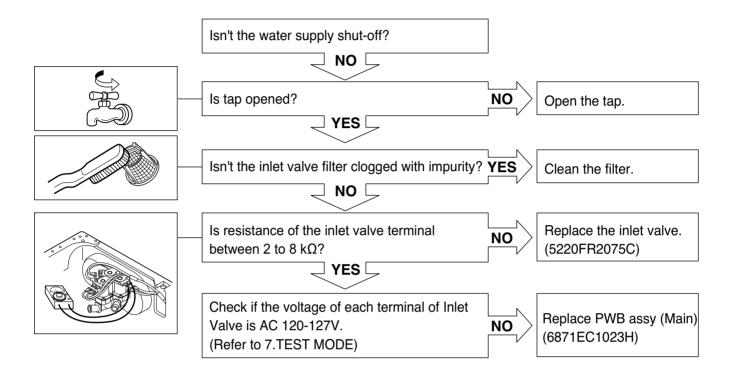
#### **DRY HEATER TROUBLE**



#### **DRY FAN MOTOR TROUBLE**



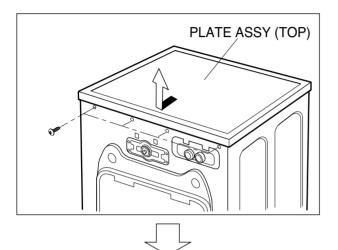
#### LOT OF VAPOR IN DRAWER WHEN DRYING



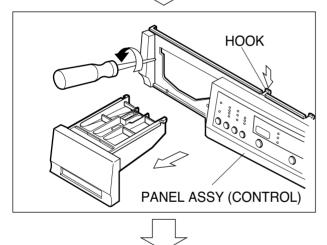
# 9. DISASSEMBLY INSTRUCTIONS

\* Disassemble and repair the parts after pulling out power cord from the outlet.

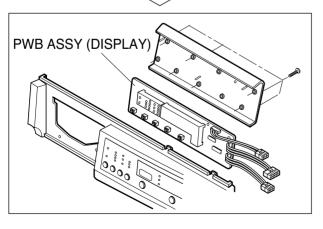
#### **CONTROL PANEL**



- ① Unscrew the screws on the top plate.
- ② The PLATE ASSEMBLY (Top) is pulled back and then upward to arrow direction.
- 3 The cover (Inner) is disassembled.

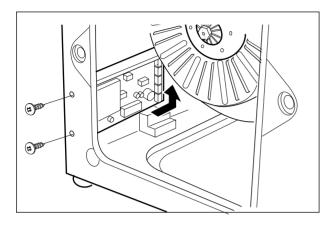


- ① The PWB ASSEMBLY (Display) connectors are disconnected.
- 2 Pull out drawer, three screws are unscrewed.
- 3 Press two upper hooks and pull the control panel forward.



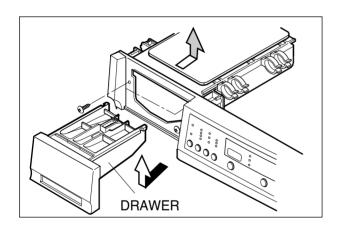
- ① The PWB assembly (Display) is disconnected.
- When 8 screws are unscrewed on the PWB insulator and the PWB assembly (Display) is disassembled from the PWB insulator.

#### **PWB ASSEMBLY (POWER)**

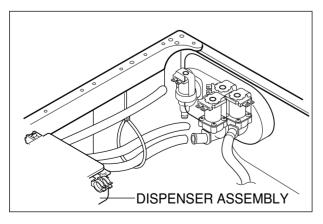


- 1) The back cover is removed.
- 2 Two screws are unscrewed.
- 3 Disconnect connector from the wiring.
- Pull the PWB ASSEMBLY (Main) to arrow direction.

#### **DISPENSER ASSEMBLY**

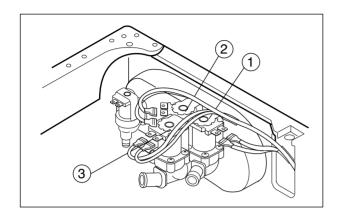


- ① The PLATE ASSEMBLY (Top) and the cover (Inner) are disassembled.
- 2 Pull the drawer to arrow direction.
- (3) Two screws are unscrewed.



- ① The hose clamps (6EA) and the hose are disassembled.
- ② The ventilation bellows are disassembled on the tub.

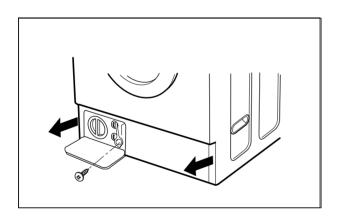
#### **INLET VALVE**



- ① Disconnect the wiring connector.
- ② Remove the valve by two screws of the valve holder.
- \* When reconnecting the connector

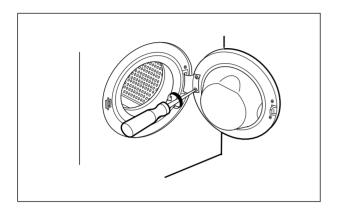
VALVE ① (DRY)	YL/BK - BK
VALVE ② (LIQUID BLEACH)	GY/WH - BK
VALVE ③ (NORMAL-WASH)	WH/BK - BK
VALVE (HOT)	BL/RD - BK

#### **COVER LOWER**

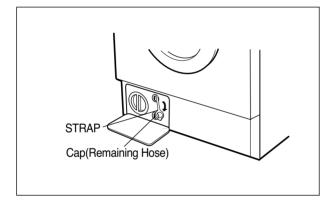


① Remove the lower cover to arrow direction after one screw is unscrewed.

#### **DOOR**



- When the power cord is plugged, the door can be opened by pressing the **DOOR OPEN** button
- ① Open the door completely.
- 2 Remove the two screws from the hinge.



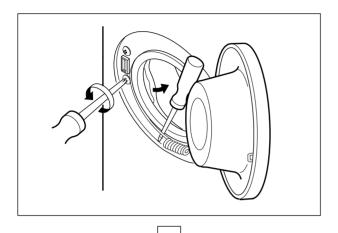
#### Door opening method in case of no electricity

1 Pull the strap.

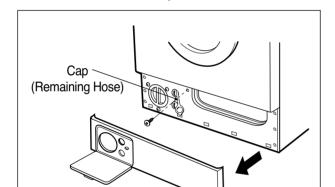
#### Removing method of remained water

- ① Rotate the Cap(Remaining Hose) to arrow direction.
- 2 Pull it out from hose.
- \* First, prepare a bucket to put in the remained water.

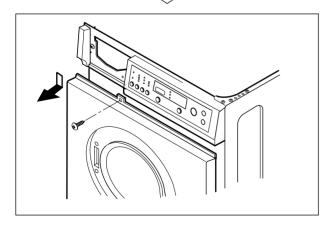
#### **GASKET ASSEMBLY**



- ① The cabinet gasket clamp is released.
- ② Two screws are unscrewed from the cabinet cover.

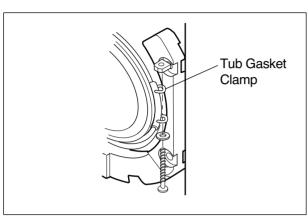


- ① One screw is unscrewed from the lower cover.
- 2 The lower cover is disassembled by pulling out.
- 3 Three screws are unscrewed from the cabinet.



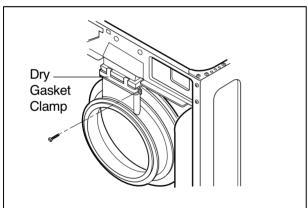
- 1) The control panel is removed.
- 2 Screw is unscrewed from the cabinet cover.





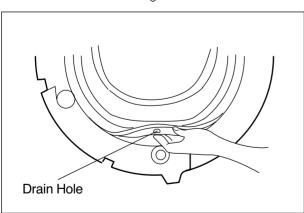
① Remove tub gasket clamp by loosening the screw.





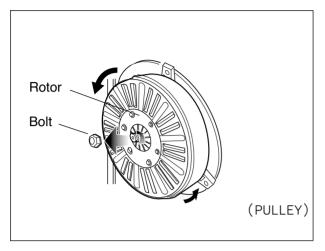
① Remove dry gasket clamp by loosening the screw.





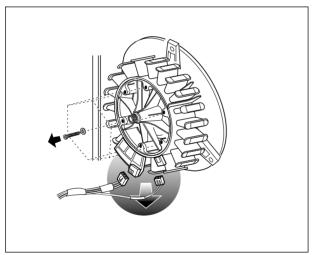
① When reassembling the gasket, put the drain hole of the gasket downward, then assemble.

#### **PULLEY, MOTOR, DAMPER**

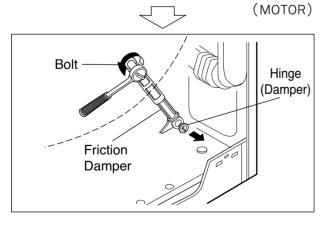


- 1 Remove the back cover.
- 2 After loosening the bolt, Rotor, pull out the rotor.





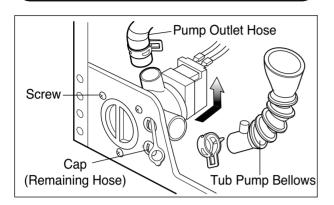
- ① Remove the 6 bolt from the stator.
- 2 Disconnect the 2 connectors.



(FRICTION DAMPER)

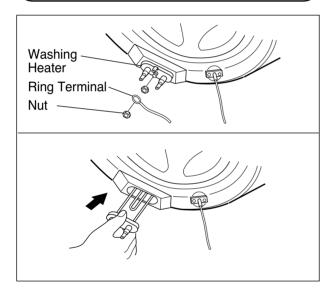
- ① Remove the bolts at the Tub.
- ② The Hinge (Damper) at the base is pulled off pressing on the snaps at the sharp end.
- The hinge at the base is pulled off. (To arrow direction)

#### **PUMP**



- ① Remove pump outlet hose.
- 2 Remove tub pump bellows.
- 3 Remove cap (Remaining Hose).
- 4 Disconnect the wiring.
- **⑤** Three screws are unscrewed from the cabinet.
- **6** Remove the pump to arrow direction.

#### **HEATER**

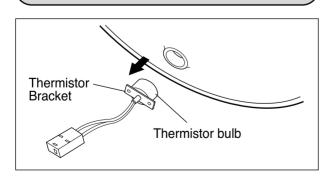


- 1 Loosen the nut.
- 2 Remove washing heater by pulling out.

#### **CAUTION**

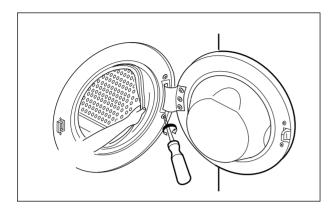
When assembling the washing heater, insert the heater to heater clip on the bottom of tub.

#### **THERMISTOR**



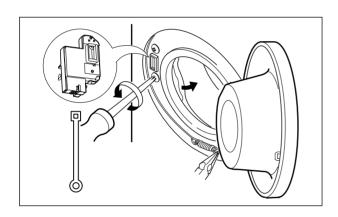
- ① Pull it out by holding the thermistor bracket.
- \* If holding the wire and pulling out it, it may be broken.

#### **DOOR HINGE ASSEMBLY**



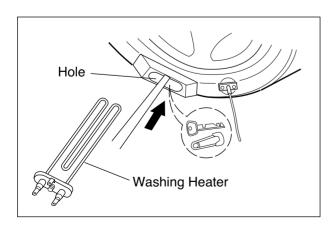
- ① Two screws are unscrewed on the door and the door is disassembled.
- ② The cabinet cover clamp is removed and the gasket is released.
- 3 Two screws are unscrewed on the door hinge.
- The door hinge is disassembled by pushing the door hinge arm inside the cabinet cover.

#### **SWITCH ASSEMBLY, DOOR LOCK**



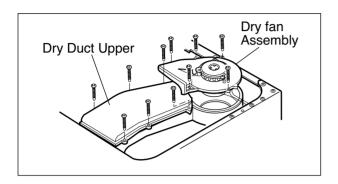
- ① The cabinet cover clamp is removed and the gasket is released.
- 2 Two screws are unscrewed.
- The door lock S/W is disconnected form the wiring connector and the strap.

#### WHEN FOREIGN OBJECT STUCK BETWEEN DRUM AND TUB

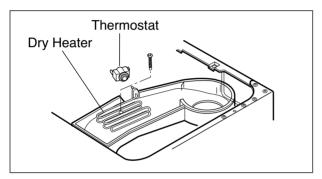


- 1 Remove washing heater.
- ② Remove the foreign object(wire,coin,etc) by inserting long bar in the hole.

#### **DRY DUCT**

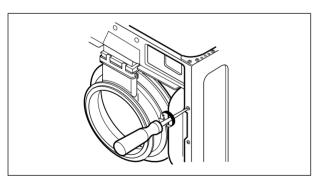


- ① Remove 5 screws and dry fan assembly.
- 2 Remove 6 screws and dry duct upper.

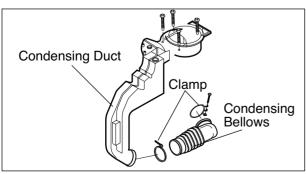


- ① Remove 1 screw and dry heater.
- 2 Remove thermostat.

#### **CONDENSING DUCT**



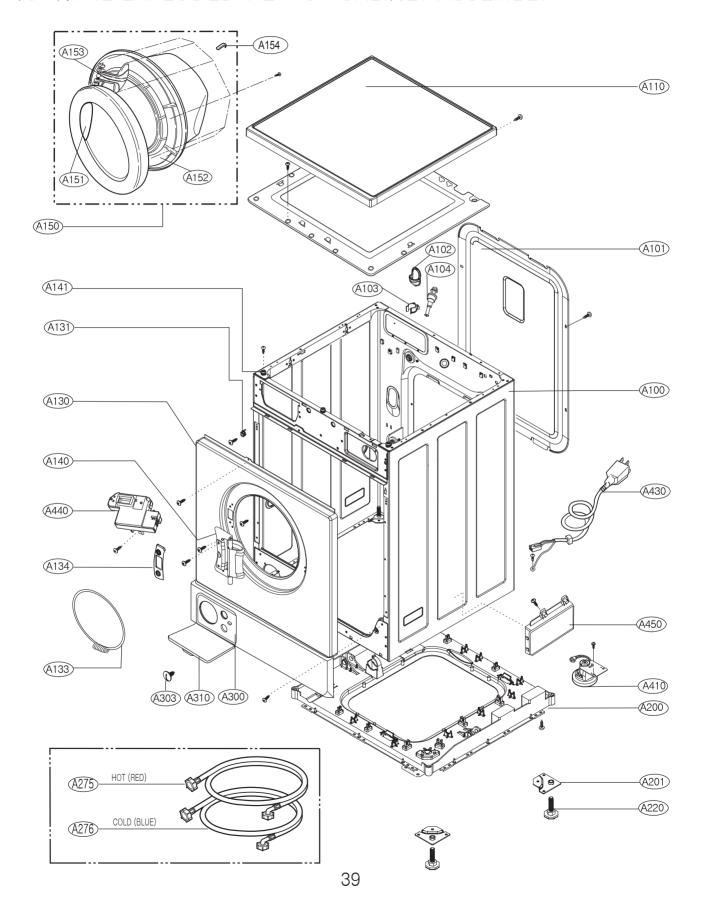
① Remove 2 screws from cabinet.



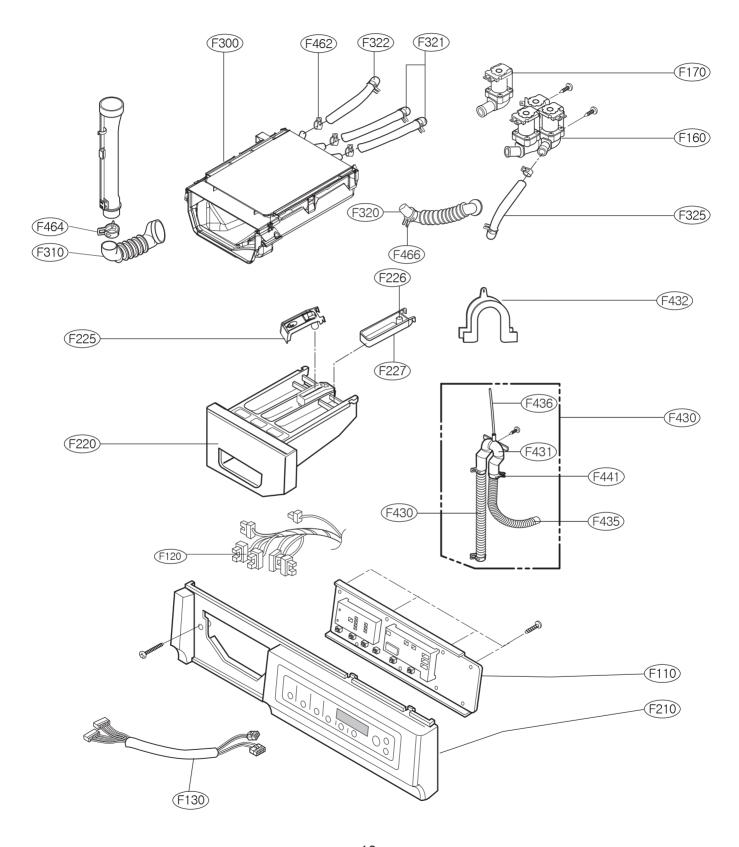
① Remove clamp and condensing duct.

# 10. EXPLODED VIEW AND PART LIST

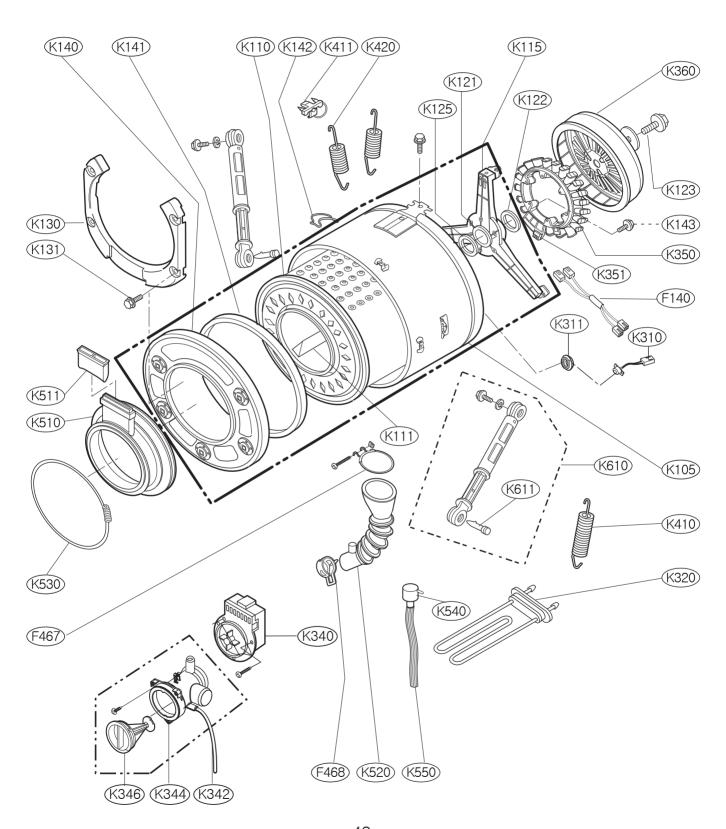
# 10-1.THE EXPLODED VIEW OF CABINET ASSEMBLY



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



## 10-3 THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY



# 10-4 THE EXPLODED VIEW OFDRYER

