



WASHING MACHINE SERVICE MANUAL

CAUTION

READ THIS MANUAL CAREFULLY TO DIAGNOSE TROUBLECORRECTLY BEFORE OFFERING SERVICE.

MODEL: WD-3274RHD/WD-3276RHD

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1. SPECIFICATION

ITE	EM	WD-3274RHD / WD-3276RHD	
POWER SUPPLY		120V~, 60Hz	
PRODUCT WEIGHT		156 ¹ / ₂ 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/400/800/1000/1400 rpm	
OPERATION W	ATER PRESSURE	4.5 ~ 145 PSI (30 ~ 1000 KPa)	
CONTR	OL TYPE	Electronic	
WASH CA	APACITY	15 ² / ₅ lbs. [7.0 kg]	
DRY CAP	PACITY3.0kg	8 ⁴ / ₅ lbs. [4.0 kg]	
DIMENSION		23 ⁵ / ₈ x 23 ⁵ / ₈ x 33 ¹ / ₂ in. (600 x 600 x 850mm)	
WASH PROGRAM		Cotton, Perm. Press, Wool/Silk, Rinse+Spin, Sanitary	
WASH/DRY F	PROGRAM	Cotton, Perm. Press, Rinse+Spin, Sanitary	
OPTION		Dry only, Extra Rinse, Extra Wash	
DOOR SWITCH TYPE		Bi-Metal type	
WATER L	LEVEL	8 steps (by sensor)	
RESERV	ATION	From 3 hours to 19 hours	
SENSING OF THE LAUNDRY AMOUNT		Adapted	
FUZZY LOGIC		Adapted	
DISPLAY OF THE REMAINING TIME		Adapted	
ERROR DIAGNOSIS		10 items	
POWER AUTO OFF		Adapted	
CHILD LOCK		Adapted	
AUTO RE	START	Adapted	
RAPID		Adapted	

2. FEATURES & TECHNICAL EXPLANATION

2-1.FEATURES





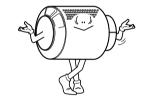
■ Automatic process from washing to drying.

Automatic process from washing to drying can be selected easily.

Washing capacity : 15 $^{5}/_{2}$ lbs.; 2 c7.0 kg; d Drying capacity : 8 $^{4}/_{5}$ lbs.; 2 c4.0 kg; d

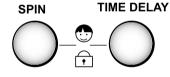
■ More economical by Intelligent Wash System

Intelligent Wash 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.



■ 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.

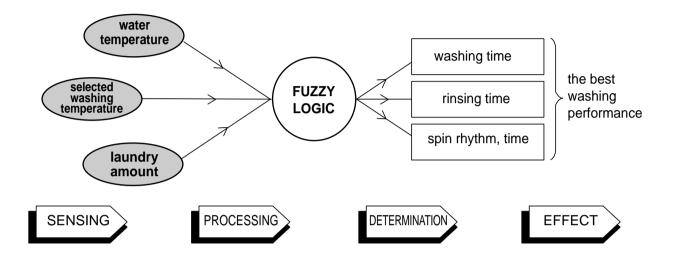


■ Auto Restart

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

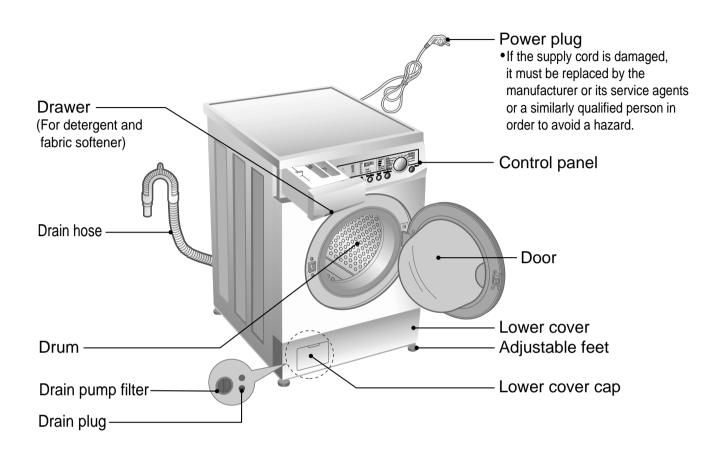
To get the best washing performance optimal time is determined by sensing of water temperature, selected washing temperature and laundry amount.



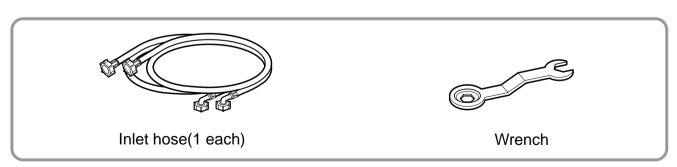
2-3.WATER LEVEL CONTROL

- 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.

3. PARTS IDENTIFICATION



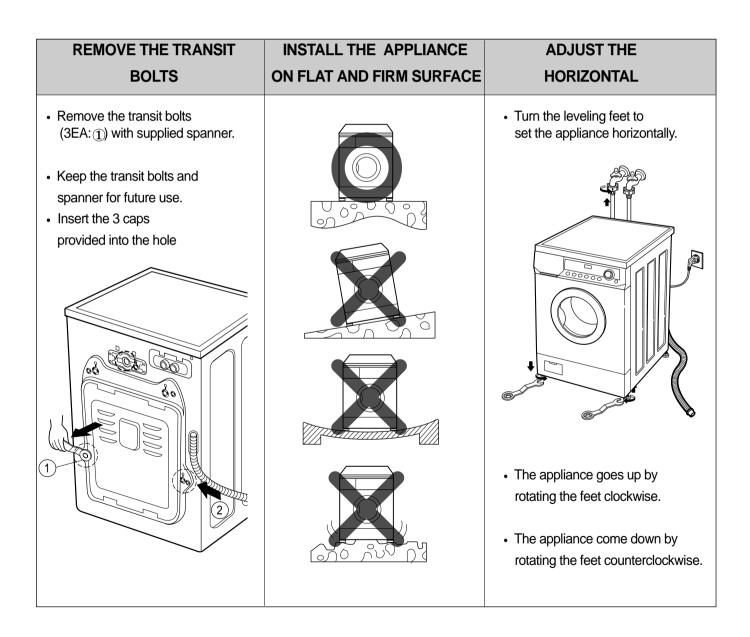
ACCESSORIES



4. INSTALLATION

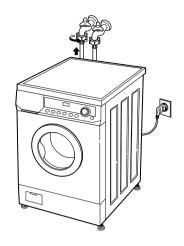
- 1 Before servicing ask trouble the customer, what the trouble is.
- 2 Check the adjustment (power supply is 120V~ remove the transit bolts....)
- (3) Check the troubles referring to the troubleshooting.
- 4 Decide service steps referring to disassembly instructions.
- [5] Then, service and repair.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

The appliance should be installed as follows.

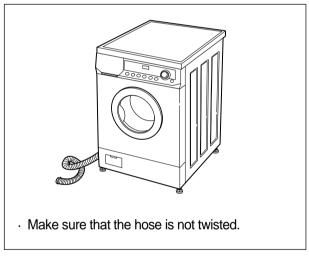


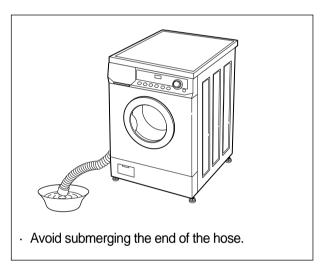
■ HOW TO CONNECT INLET HOSE

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



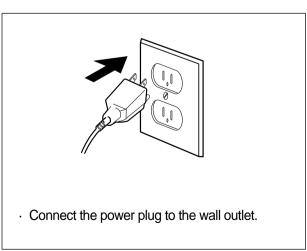
■ CONNECT DRAIN HOSE

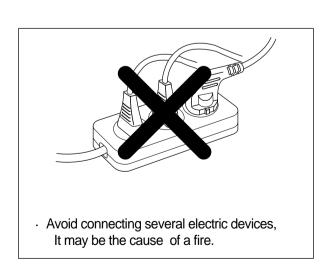




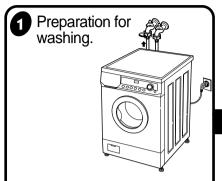
* The drain hose should be placed under 100cm from the floor.

■ CONNECT POWER PLUG





7 TEST OPERATION



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

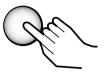
2 Press the power button.



• In case of Coloureds program.

Press the Start/Pause button.

START/PAUSE



6 Check the water heating.

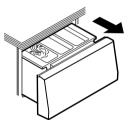


Press the button **TEMP.** and the present temperature will be displayed.

Check automatic reverse turn.



 Check if the drum rotates clockwise and counterclockwise. Check the water supply.



 Check if water is supplied through the detergent dispenser.

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

Power off and open the door



- · Power off and then power on.
- Check if the door can be opened after 3 minutes.

Water removal



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

Option

Extra Wash

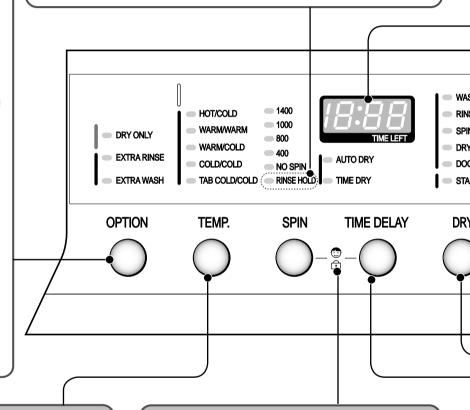
- If the laundry is heavily soiled, "Extra Wash" course is effective.
- Extra Wash is available in Sanitary, Cotton and Perm. press.

Extra Rinse

 This option can be used to add a rinse for people with sensitive skin. Selecting the Extra Rinse button is also recommended when washing heavily soiled fabrics which needs a lot of detergent, or when the wash load contains towelling fabrics that have a greater tendency to retain detergent.

Rinse hold

- If you desire to leave fabrics in the machine without spinning after rinse to prevent them wrinkling, you may select rinse hold by pressing the spin button.
- If you want to drain and spin, when Rinse Hold function is proceed, Press the Start/Pause button to cancel the Rinse Hold function and select spin speed or program. Press the Start/Pause button again to start program.
- If you want to drain only, select the no spin.
- If lamp turns on, that function has been selected.



Water temperature selector

- Press the button to select water temperature.
- \bullet The water temperature [WARM/COLD \to WARM/WARM \to HOT/COLD \to TAB COLD/COLD \to COLD/COLD] selected in Cotton or Perm. Press.
- [HOT/COLD] is selected for Sanitary only.
- By pressing the button while operating the washer, the present temperature is displayed.

Child - lock

- Child Lock system can be set and canceled by pressing both [SPIN] and [TIME DELAY] button simultaneously.
- Once Child Lock is set, all button are inoperable.
- Child Lock system can be set anytime even during Power-off and operation.
- It is automatically cancelled when an operational error occur.

LED display

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

(IE, OE, UE, dE, EE, FE, PE, LE, dHE, CE)|

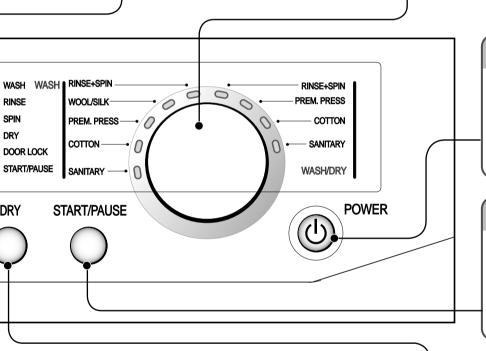
· See troubleshooting guide.

Wash & Wash/Dry program selector

- 9 programs can be set depending on the type of the laundry.
- By turning the program dial, Cotton→Perm.Press→
 Wool/Silk→Rinse+Spin→*Rinse+Spin→

*Perm. Press→*Cotton→*Sanitary→Sanitary [*:Wash/Dry]

(The opposite order is possible)



Power button

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

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.

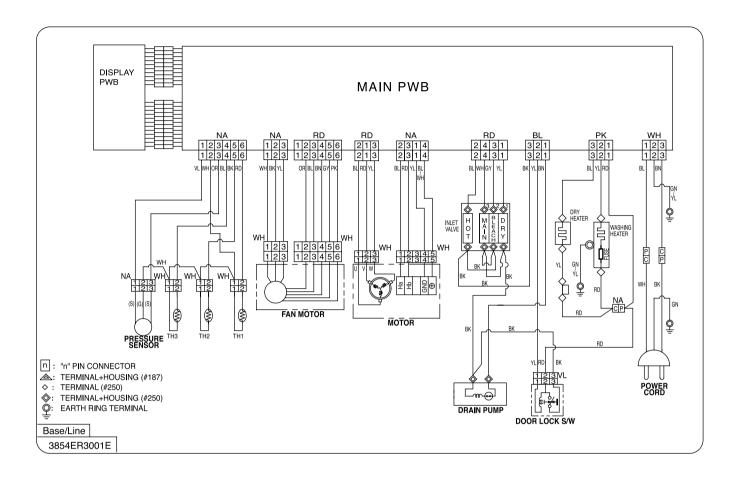
Time Delay

- 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.

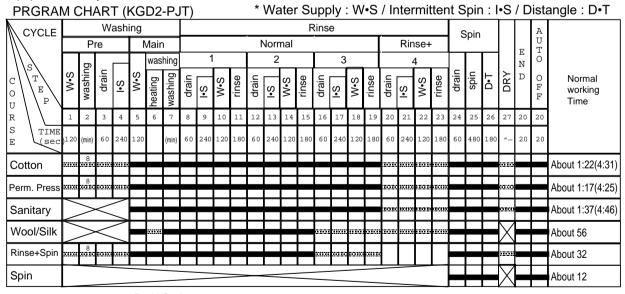
Dry Selector

- Dry programs can be selected by ressing the [DRY] button.
- ullet By pressing the button, [AUTO DRY ightarrow TIME DRY(30/60/150)] can be selected.

6. WIRING DIAGRAM / PROGRAM CHART



*(): Wash/Dry



- : Basic 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 120V~ and DC while applying an electric current.

7-2.QC TEST MODE.

max Pressing SPIN, and TEMP. button simultaneously.

¤ŁPower supply ON with pressing upper two button. Then buzzer sound twice.

¤ØPress 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 110~130)
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 OPTION and TEMP. button simultaneously.



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

ex) 241 : Water level frequency = 241×10^{-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.

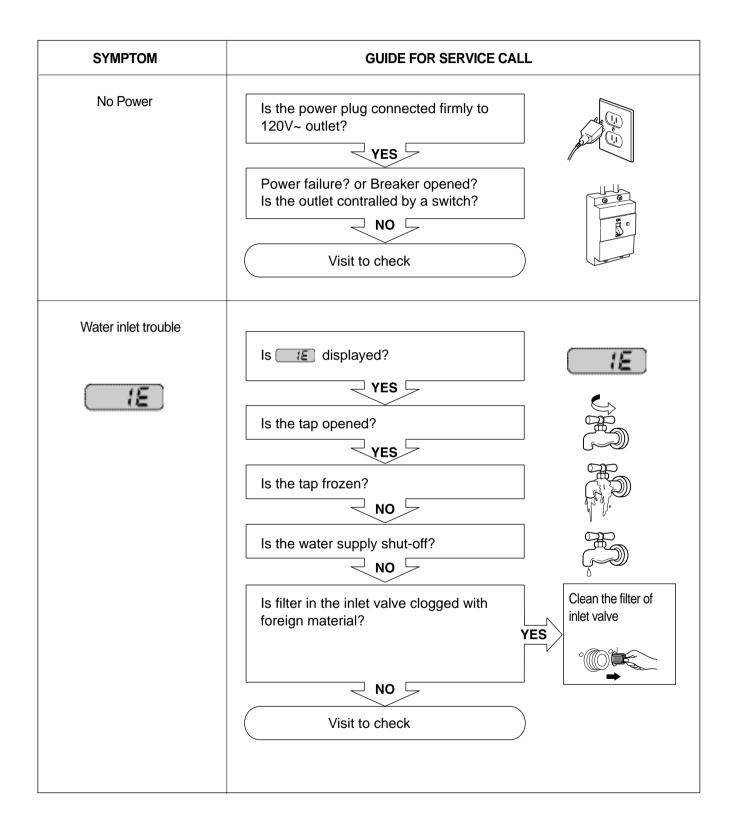
7-5.ERROR DISPLAY.

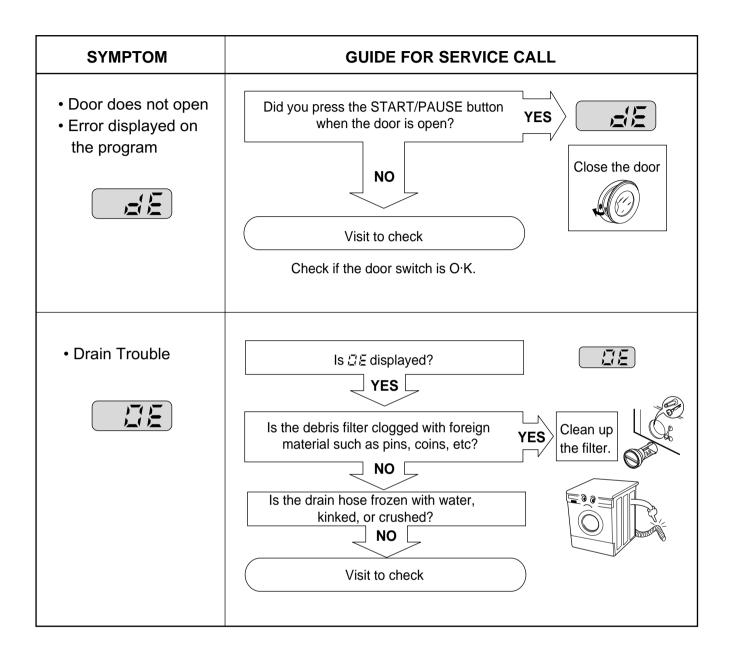
- If you press the START/PAUSE button when an error is displayed. any error except <code>"PE</code> will disappear and the machine will change into pause status.
- In case of <code>"PE_", "LE_", "dE_"</code> if the error is not resolved within 20 sec., the in case of other errors, if the error is not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

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR	(IE	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	 In case of operating the reservation function or the other function with door opened. Close the door, then the error display is resolved. The door switch is out of order.
6	IMBALANCE ERROR	LE	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>	 MAIN PWB ASSEMBLY is out of order Replace the MAIN PWB ASSEMBLY Winding in the STATOR ASSEMBLY is short-circuited. ■ Replace the STATOR ASSEMBLY EE is dispplayed during a high spin ■ Replace the LEAD WIRE ASSEMBLY (MOTOR)
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	<u>, 31-115</u>	 The Dry Heater is out of order Replace the Dry Heater The Connector of the Dry Heater is not connected properly to the connector in the Main PWB ASSEMBLY Reconnect or repair the connector The Dry fan motor is out of order Replace the fan Motor.

8. ERROR DIAGNOSIS AND CHECK LIST



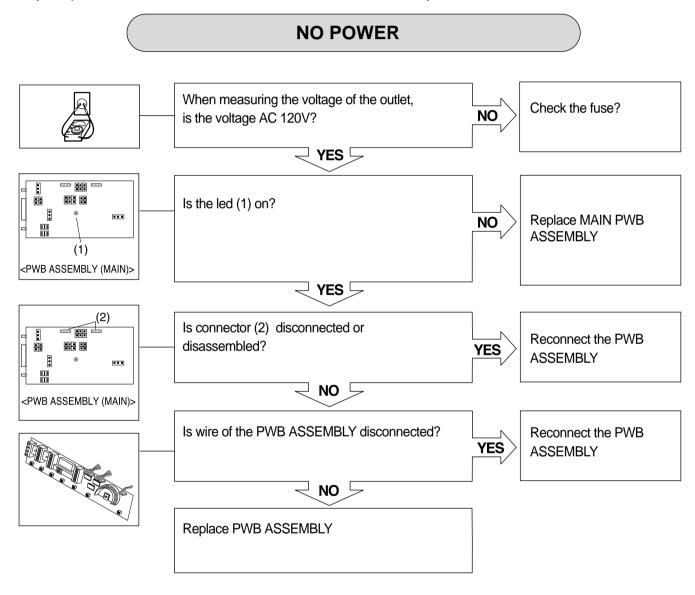


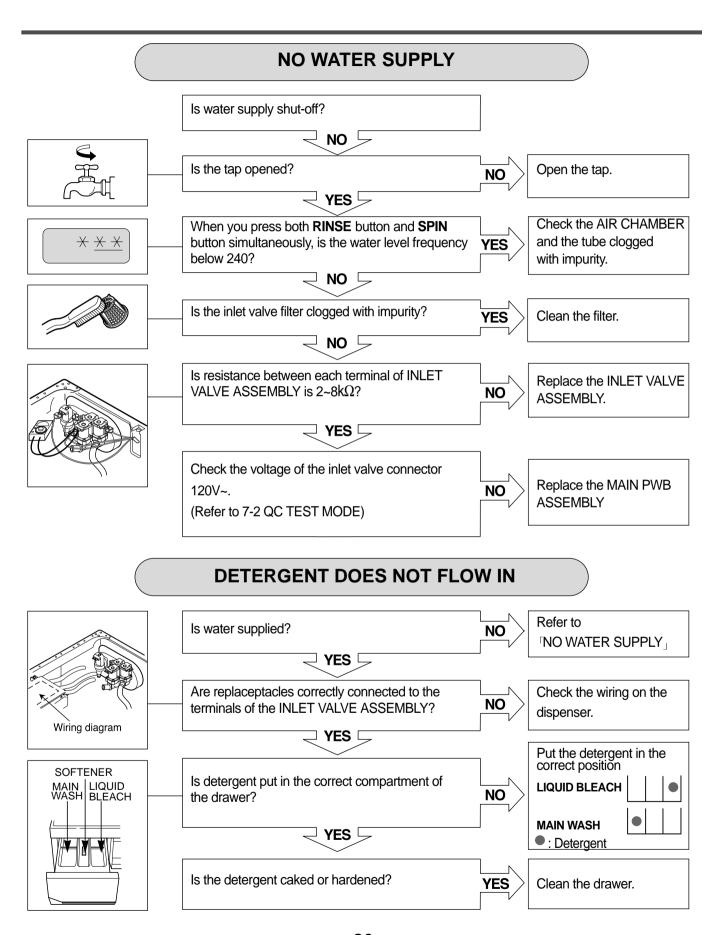
SYMPTOM	GUIDE FOR SERVICE	E CALL
 Suds overflow from the appliance. (In this condition, wash and spin do not operate normally) 	Is low-sudsing detergent for the drum washing machine used? YES Is the proper amount of detergent used as recommended? YES Recommend to reduce the amount of detergent. * This appliance has the automatic suds sens operates under much suds condition for good preventing overflow. * When much suds are sensed, the suds remas drain, water input, pause will operate with	od rinse and noving 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? Explain how to use softener Clean the compartment for softener	Compartment for softener
FE EME FE EE EE LE	Visit to check	

8-2. FAULT DIAGNOSIS AND TROUBLE SHOOTING

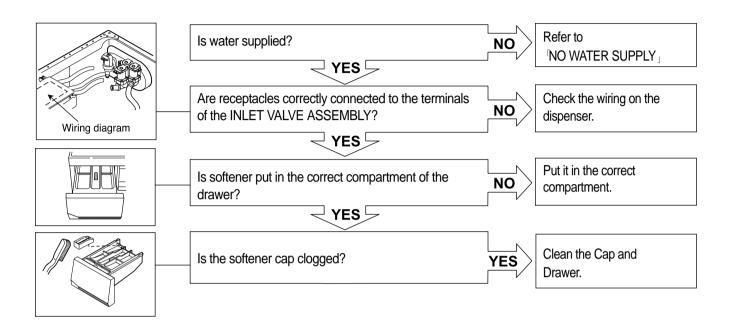
CAUTION

- 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.

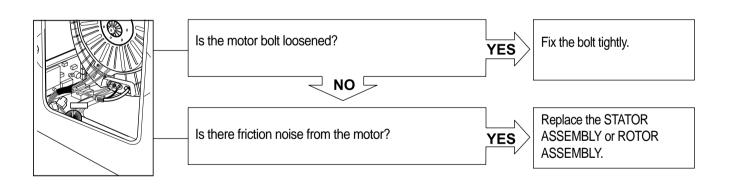




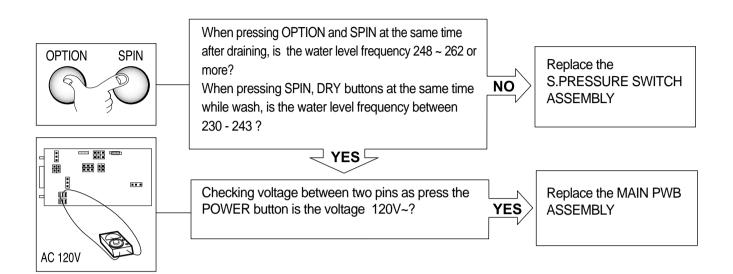
SOFTENER DOES NOT FLOW IN



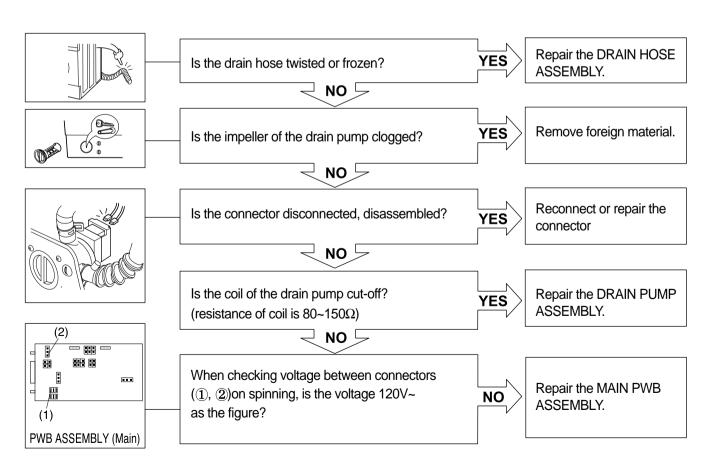
ABNORMAL SOUND



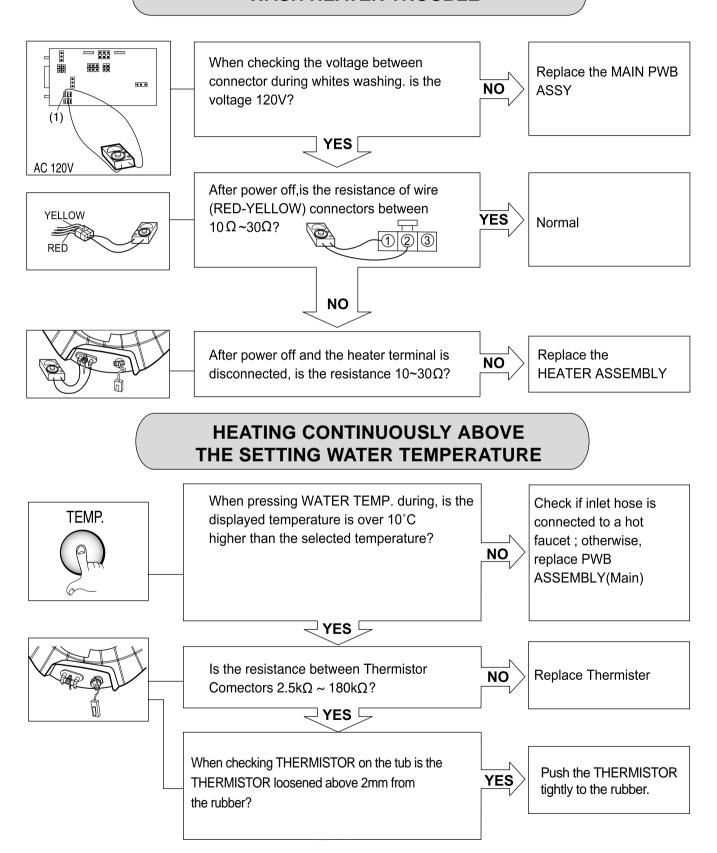
HEATING WITHOUT WATER



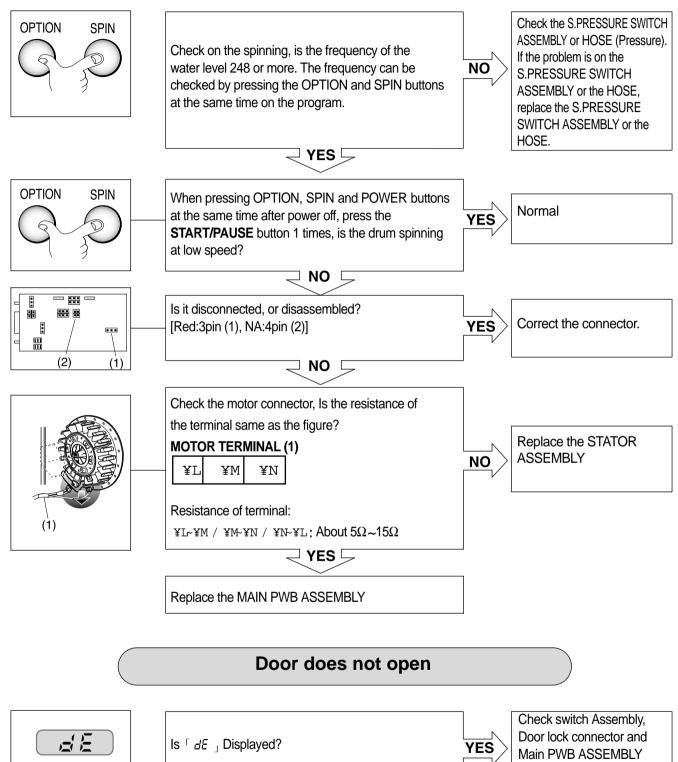
DRAIN MALFUNCTIONING



WASH HEATER TROUBLE

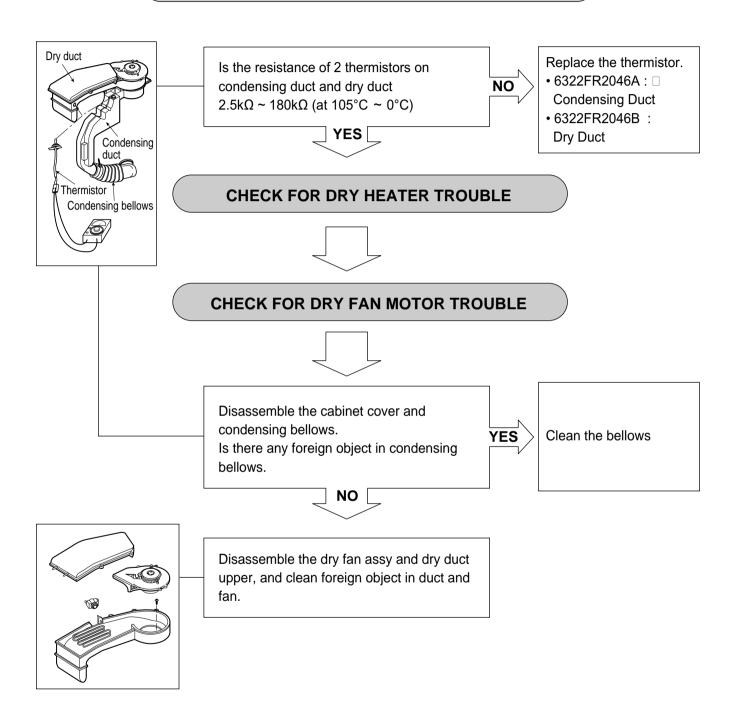




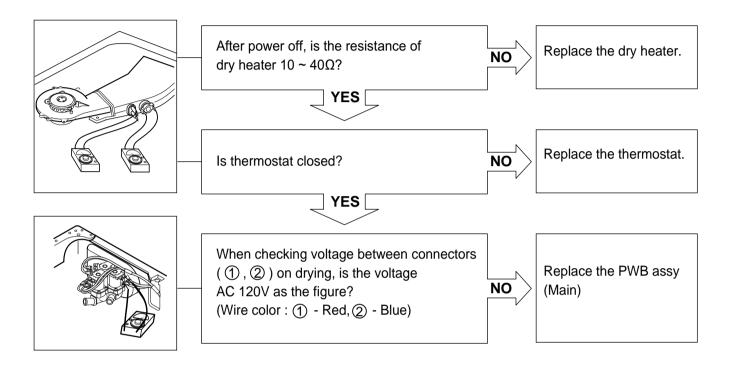


(Blue, 3pin)

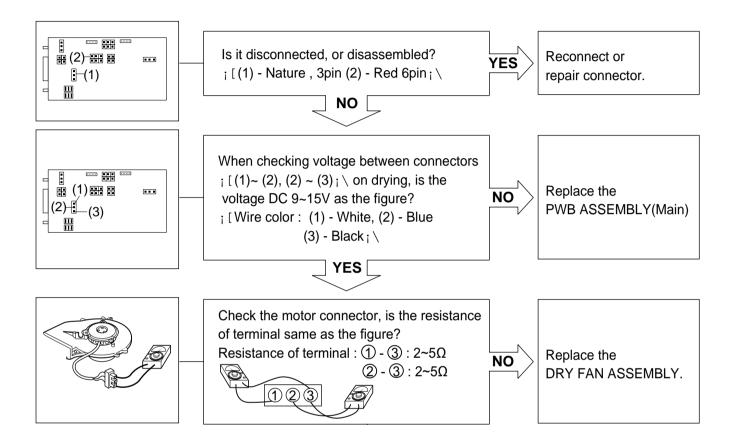
[dHE] ERROR DISPLAY



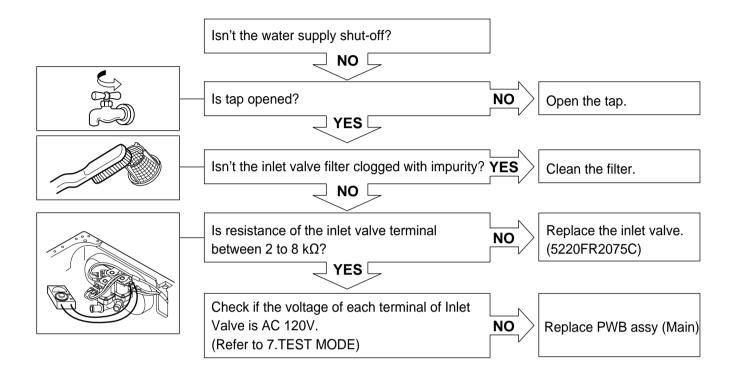
DRY HEATER TROUBLE



DRY FAN MOTOR TROUBLE



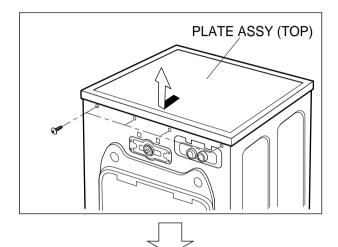
LOT OF VAPOR IN DRAWER WHEN DRYING



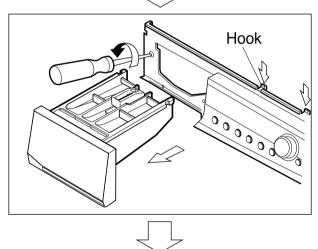
9. DISASSEMBLY INSTRUCTIONS

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

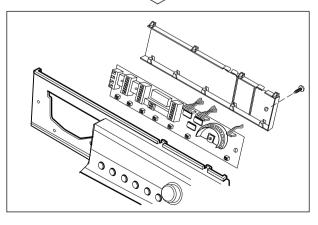
CONTROL PANEL



- ¥LUnscrew the 2 screws on the top plate.
- ¥M The PLATE ASSEMBLY (Top) is pulled back and then upward to arrow direction.
- ¥NThe cover (Inner) is disassembled.

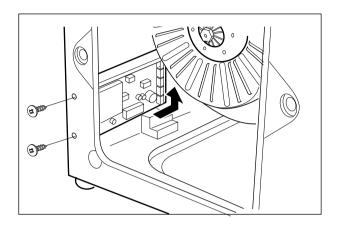


- ¥L The PWB ASSEMBLY (Display) connectors are disconnected.
- ¥M Pull out drawer, three screws are unscrewed.
- ¥N Press two upper hooks and pull the control panel forward.



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

PWB ASSEMBLY (POWER)



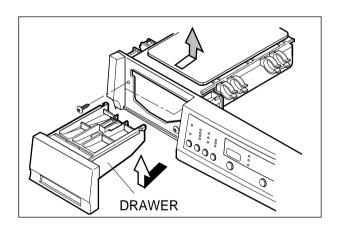
¥LThe back cover is removed.

¥MTwo screws are unscrewed.

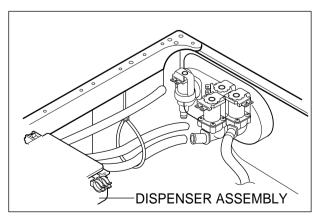
¥NDisconnect connector from the wiring.

¥OPull the PWB ASSEMBLY (Main) to arrow direction.

DISPENSER ASSEMBLY

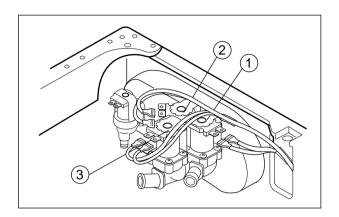


- ¥LThe PLATE ASSEMBLY (Top) and the cover (Inner) are disassembled.
- ¥MPull the drawer to arrow direction.
- ¥NTwo screws are unscrewed.



- ¥LThe hose clamps (6EA) and the hose are disassembled.
- ¥MThe ventilation bellows are disassembled on the tub.

INLET VALVE

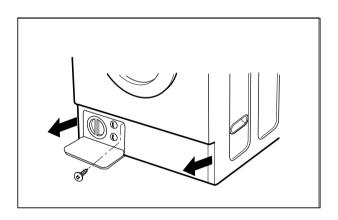


- ¥LDisconnect the wiring connector.
- ¥M Remove the valve by two screws of the valve holder.

f TWhen reconnecting the connector

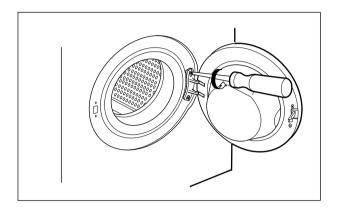
VALVE ¥L(DRY)	YL/BK - BK	
VALVE ¥M(LIQUID BLEACH)	GY/WH - BK	
VALVE ¥N (NORMAL-WASH)	WH/BK - BK	
VALVE (HOT)	BL/RD - BK	

COVER LOWER



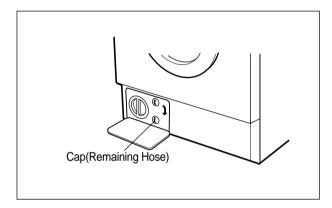
¥L Remove the lower cover to arrow direction after one screw is unscrewed.

DOOR



¥LOpen the door completely.

¥MRemove the two screws from the hinge.



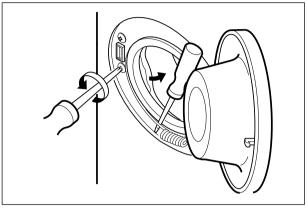
Removing method of remained water

¥LRotate the Cap(Remaining Hose) to arrow direction.

¥MPull it out from hose.

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

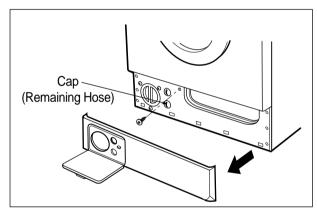
GASKET ASSEMBLY



¥LThe cabinet gasket clamp is released.

¥M Two screws are unscrewed from the cabinet cover.



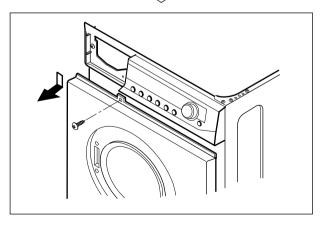


¥LOne screw is unscrewed from the lower cover.

¥M The lower cover is disassembled by pulling out.

¥NThree screws are unscrewed from the cabinet.

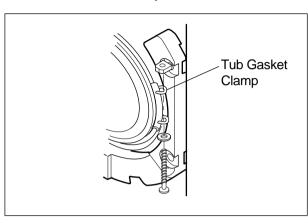




¥LThe control panel is removed.

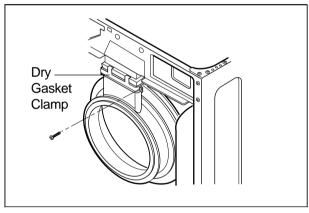
¥MScrew is unscrewed from the cabinet cover.





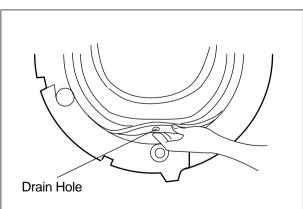
¥L Remove tub gasket clamp by loosening the screw.





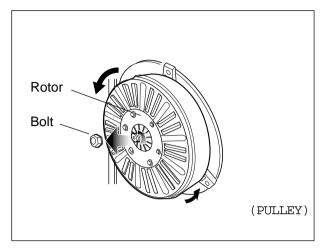
 ${\bf YL}$ Remove dry gasket clamp by loosening the screw.





 ${\tt YL}$ When reassembling the gasket, put the drain hole of the gasket downward, then assemble.

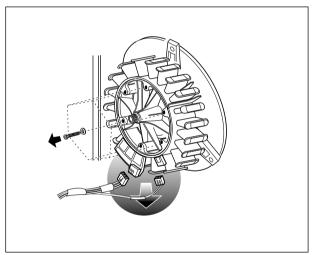
PULLEY, MOTOR, DAMPER



¥LRemove the back cover.

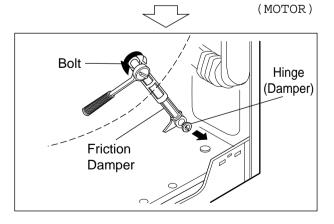
¥M After loosening the bolt, Rotor, pull out the rotor.





 $\mathtt{YL}Remove$ the 6 bolt from the stator.

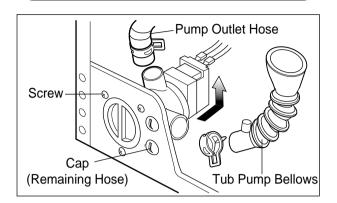
¥MDisconnect the 2 connectors.



- ¥LRemove the bolts at the Tub.
- ¥M The Hinge (Damper) at the base is pulled off pressing on the snaps at the sharp end.
- ${\mathbb Y}{\mathbb N}$ The hinge at the base is pulled off. (To arrow direction)

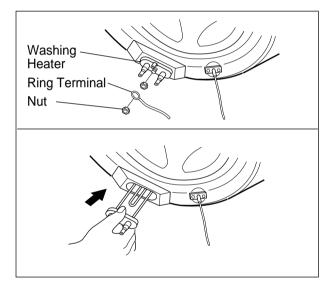
(FRICTION DAMPER)

PUMP



- ¥LRemove pump outlet hose.
- ¥MRemove tub pump bellows.
- ¥NRemove cap (Remaining Hose).
- ¥ODisconnect the wiring.
- ¥PThree screws are unscrewed from the cabinet.
- ¥QRemove the pump to arrow direction.

HEATER



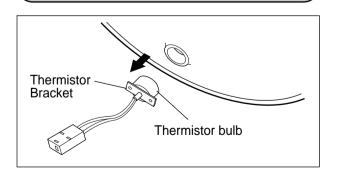
¥LLoosen the nut.

¥MRemove washing heater by pulling out.

CAUTION

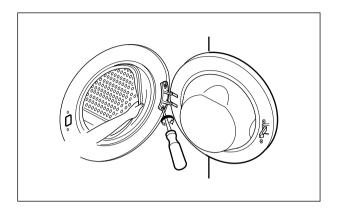
When assembling the washing heater, insert the heater to heater clip on the bottom of tub.

THERMISTOR



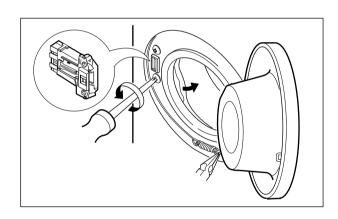
- ¥LPull it out by holding the thermistor bracket.
- fT If holding the wire and pulling out it, it may be broken.

DOOR HINGE ASSEMBLY



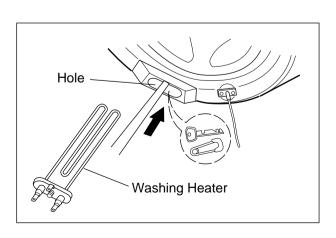
- ¥LTwo screws are unscrewed on the door and the door is disassembled.
- ¥MThe cabinet cover clamp is removed and the gasket is released.
- ${\tt YN}{\sf Two}$ screws are unscrewed on the door hinge.
- ¥OThe door hinge is disassembled by pushing the door hinge arm inside the cabinet cover.

SWITCH ASSEMBLY, DOOR LOCK



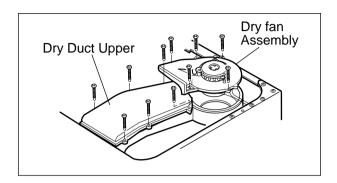
- ¥LThe cabinet cover clamp is removed and the gasket is released.
- ¥MTwo screws are unscrewed.
- ¥NThe door lock S/W is disconnected form the wiring connector and the strap.

WHEN FOREIGN OBJECT STUCK BETWEEN DRUM AND TUB

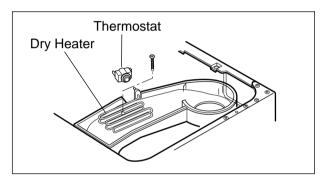


- ¥LRemove washing heater.
- ¥MRemove the foreign object(wire,coin,etc) by inserting long bar in the hole.

DRY DUCT



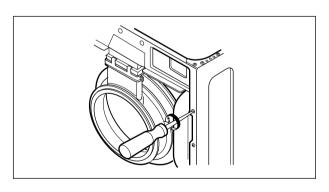
 ${\tt YLRemove}$ 5 screws and dry fan assembly. ${\tt YMRemove}$ 6 screws and dry duct upper.



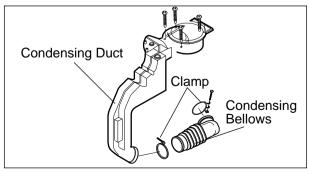
¥LRemove 1 screw and dry heater.

¥MRemove thermostat.

CONDENSING DUCT



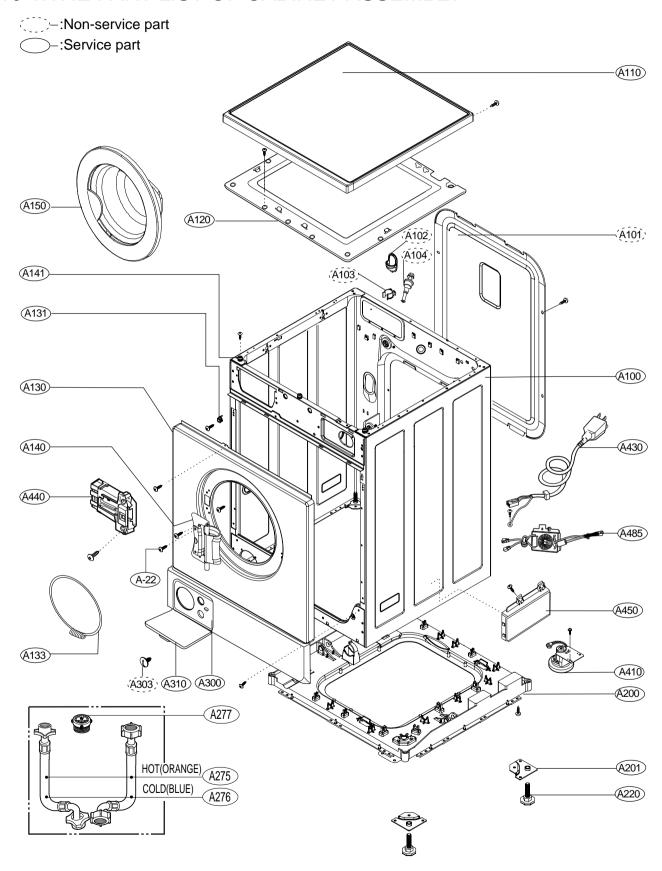
¥LRemove 2 screws from cabinet.



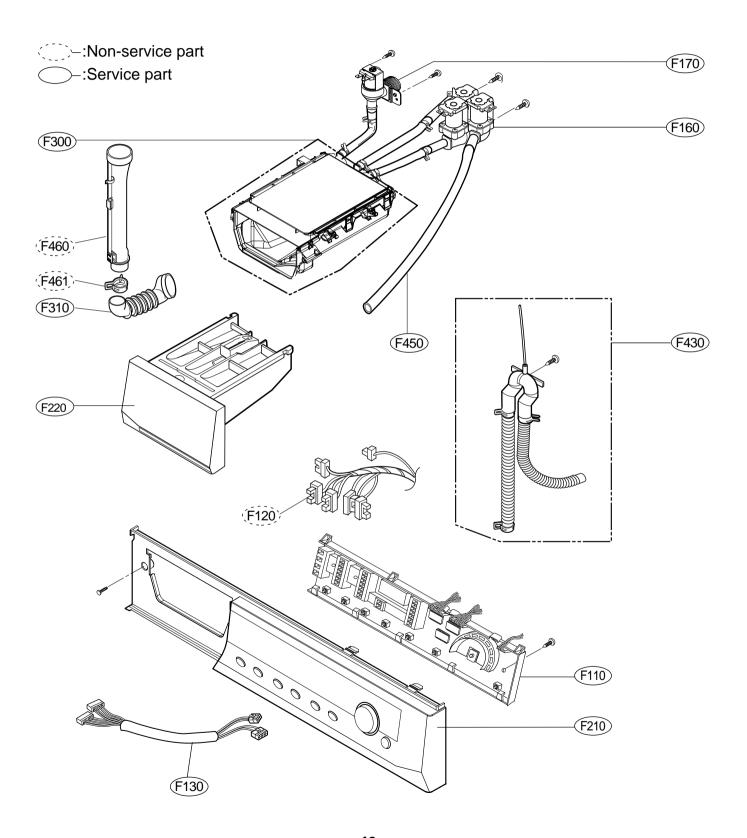
¥LRemove clamp and condensing duct.

10. EXPLODED VIEW AND PART LIST

10-1.THE PART LIST OF CABINET ASSEMBLY



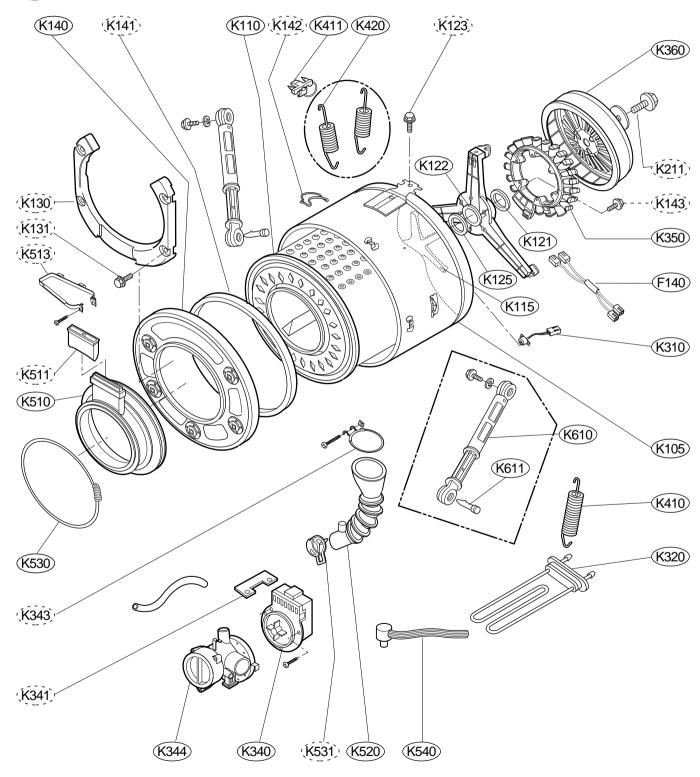
10-2 THE EXPLODED VIEW OF CONTROL PANEL & DISPENSER ASSEMBLY



10-3 THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY

:Non-service part

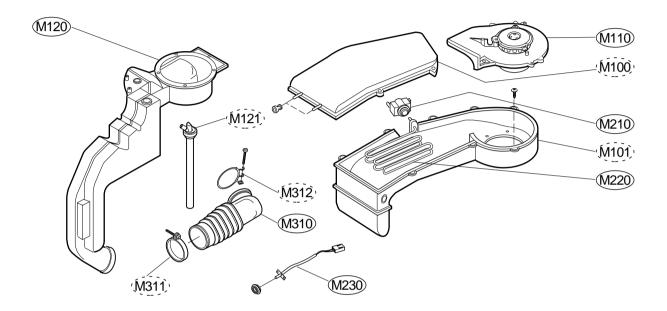




10-4 THE EXPLODED VIEW OF DRYER

:Non-service part

_:Service part





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