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WASHING MACHINE SERVICE MANUAL

A CAUTION

READ THIS MANUAL CAREFULLY TO DIAGNOSE PROBLEMS CORRECTLY BEFORE SERVICING THE UNIT.

MODEL: WM2496H*M



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1. SPECIFICATIONS

ITEM		WM2496H*M							
COLOR		W:BLUE WHITE, S: TITANIUM							
POWER SUPPLY	Y	AC 120 V, 60 Hz							
PRODUCT WEIGH	IT	192 lbs (87kg)							
	WASHING	280 W							
ELECTRIC POWER	DRAIN MOTOR	80 W							
CONSUMTION	WASH HEATER	1000 W							
REVOLUTION SPEED	WASH	46 rpm							
REVOLUTION SPEED	SPIN	0-1200 rpm							
CYCLES		9							
WASH/RINSE TEMPER	RATURES	5							
SPIN SPEEDS		5							
OPTIONS		Prewash, Rinse+Spin, Extra Rinse, Water Plus, Stain Cycle							
WATER CIRCULAT	ION	Incorporated							
OPERATIONAL WAT	ER PRESSURE	14.5–116 psi (100-800 kPa)							
CONTROL TYPE	E	Electronic							
WASH CAPACITY [c	cu.ft]	3.47 (4.0 IEC)							
DIMENSIONS		27" (W) X 29 $^{3}\!/_{4}$ " (D) X 38 $^{11}\!/_{16}$ " (H), 50 $^{13}\!/_{16}$ " (D, door open)							
DELAY WASH		up to 19 hours							
DOOR SWITCH TY	ΈE	PTC + Solenoid							
WATER LEVEL		10 steps (by sensor)							
LAUNDRY LOAD SEN	ISING	Incorporated							
ERROR DIAGNOS	SIS	Incorporated							
AUTO POWER OF	F	Incorporated							
CHILD LOCK		Incorporated							
RLM ENABLE		Incorporated							

2. FEATURES & TECHNICAL EXPLANATION

2-1. FEATURES



Ultra Capacity

The Larger drum enables not just higher head drop and stronger centrifugal force, but also less tangling and wrinkling of the laundry. Heavier loads, such as king size comforters, blankets, and curtains, can be washed.



Direct Drive System

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



Tilted Drum and Extra Large Door Opening

Tilted drum and extra large opening make it possible to load and unload clothing more easily.

Water Circulation

Spray detergent solution and water onto the load repeatedly. Clothes are soaked more quickly and thoroughly during the wash cycle. Detergent suds are eliminated more easily by the water shower during rinse cycle. The water circulation system uses both water and detergent more efficiently.



RollerJets

Washing ball enhances the wash performance and reduces damage to the clothing. The jets spray and help tumble clothes to enhance washing performance while maintaining fabric care.



Automatic Wash Load Detection

Automatically detects the load and optimizes the washing time.



Built-in Heater

Internal heater helps to maintain water temperature at its optimum level for selected cycles.



Child Lock

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

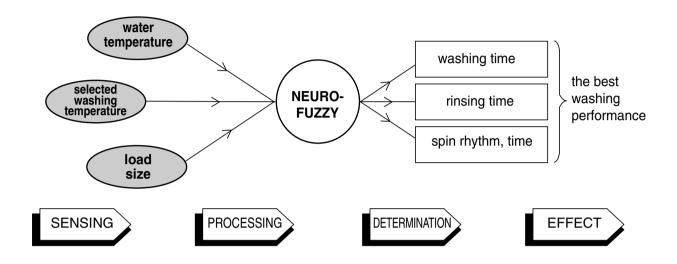


Using the RLM (Remote Laundry Monitor)

The RLM monitors status of your washer and/or dryer. You can plug the display unit

2-2. NEURO FUZZY WASHING TIME OPTIMIZATION

To get the best washing performance, optimal time is determined by the water temperature, the selected washing temperature, and the size of the load.



2-3. WATER LEVEL CONTROL

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

2-4. DOOR CONTROL

- The door can be opened by pulling the door handle whenever washer is not in operation.
- When the cycle is completed, the DOOR LOCKED light will turn off.
- If a power failure has occurred while in operation, the door will unlock after 5 minutes.
- Clicking sounds can be heard when the door is locked/unlocked.

2-5. THE DOOR CAN NOT BE OPENED

- While program is operating
- When a power failed and power plug is taken out in operation
- While Door Lock lights turn on.
- White the motor is in the process of intertial rotating, through the operation is paused.

2-6. DOOR LOCKED LAMP LIGHTS

- When the frequency of water level is lower than 22.9 kHz (It can be canceled when the frequency is more than 23.8 kHz)
- When the temperature inside the tub is higher than 45 °C and water level is not 25.5 kHz (It can be canceled when the water level is 25.5 kHz or the temperature inside the tub is lower than 40 °C)

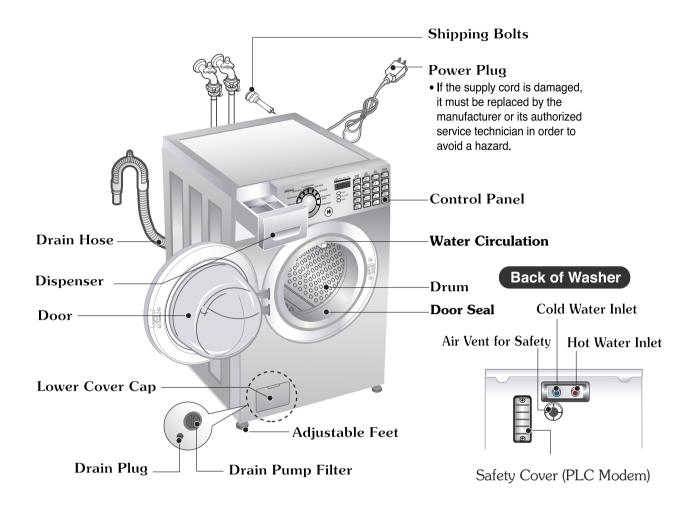
2-7. CHILD LOCK

- Use this option to prevent unwanted use of the washer. Press and hold PRE WASH button for 3 seconds to lock/unlock control.
- When Child lock is set, CHILD LOCK lights and all buttons are disabled except the Power (a) button. You can lock the washer while it is operating.

2-8. WATER CIRCULATION

- When Washing and Rinsing function of shower at the upper part of Gasket.
- When Washing, it continuously operates for 3 minutes and intermittently.
- When Rinsing, it continuously operates after completion of water supply.

3. PARTS IDENTIFICATION



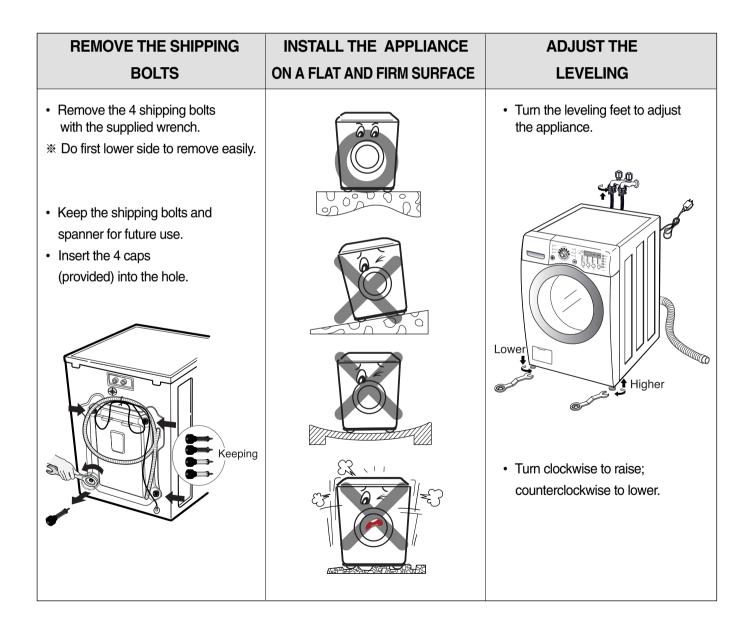
ACCESSORIES

 ACCESSORIES

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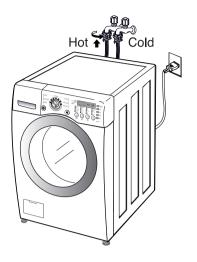
4. INSTALLATION & TEST

- 1 Before servicing, ask the customer what the trouble is.
- 2 Check the setup (power supply is 120 V AC, remove the transit bolts....).
- 3 Check with the troubleshooting guide.
- 4 Plan your service method by referring to the disassembly instructions.
- 5 Service the unit.
- 6 After servicing, operate the appliance to see whether it functions correctly.
- STANDARD INSTALLATION The appliance should be installed as follows:

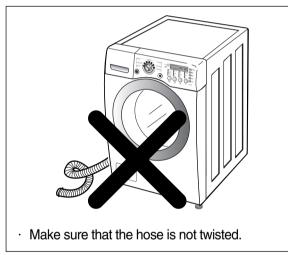


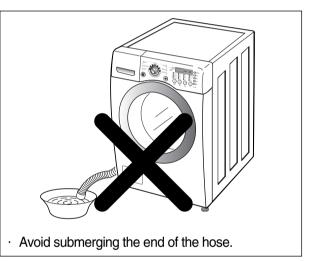
■ HOW TO CONNECT THE INLET HOSE

- Verify that the rubber washer is inside of the valve connector.
- Tighten the inlet hose securely to prevent leaks.



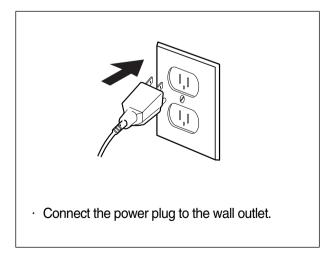
■ CONNECT THE DRAIN HOSE

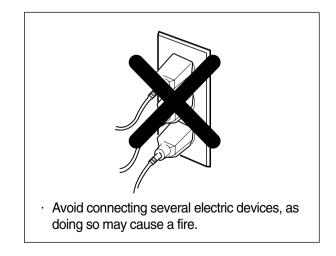




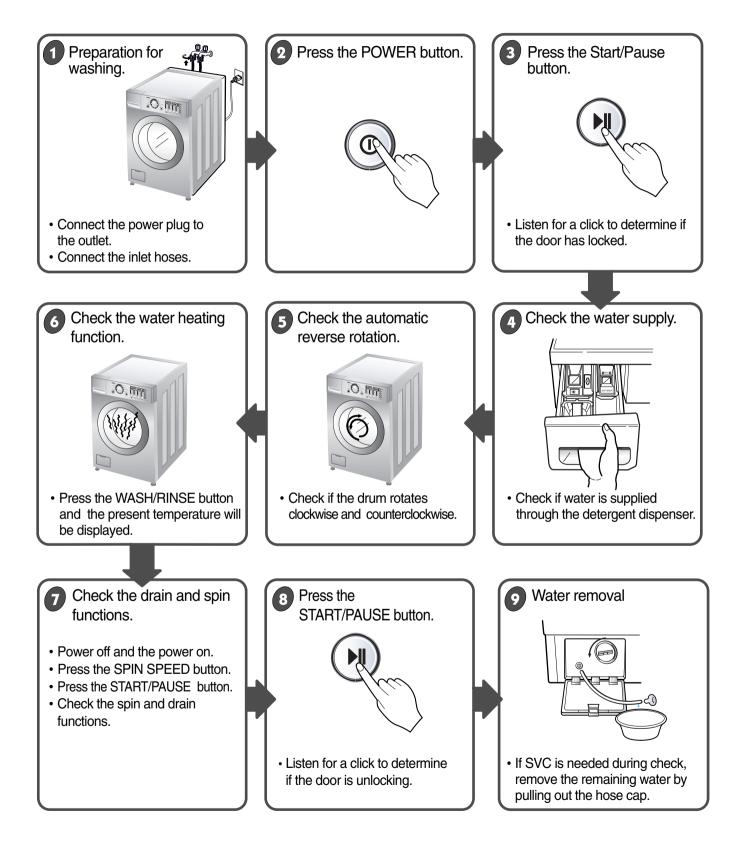
% The end of the drain hose should be placed less than 96" from the floor.

■ CONNECT POWER PLUG





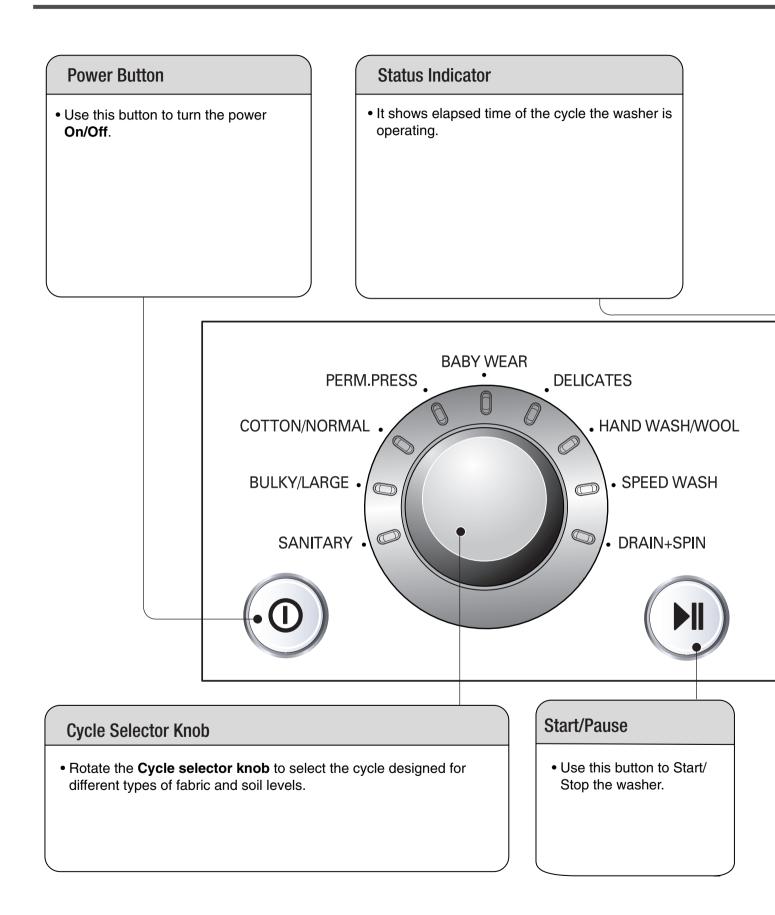
7 TEST OPERATION



5. OPERATION

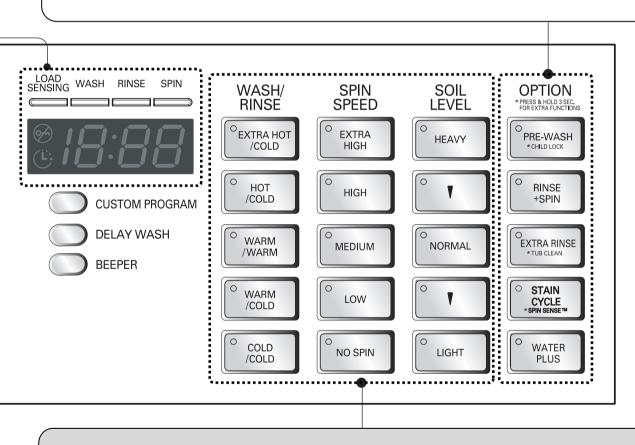
■ WM2496H*M





Option Button

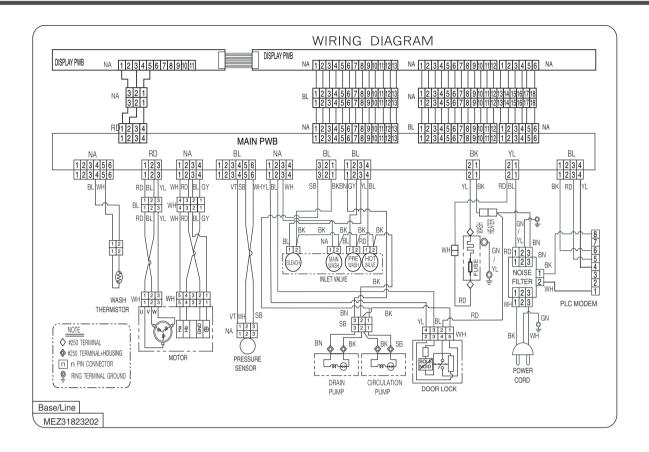
- PREWASH: Use this option for loads that need pretreatment. It adds 16 minutes prewash and a spin cycle.
- RINSE+SPIN: Use this option to rinse and then spin.
- EXTRA RINSE: This option provides an additional rinse.
- STAIN CYCLE: Adds time to the wash and rinse cycles for better stain removal. Automatically provides a rinse.
- WATER PLUS: Add extra water to the wash and rinse cycles for superior results.



Wash/Rinse, Spin speed, Soil Level Button

- Select a water temperature based on the type of load you are washing.
- To change the spin speed, press the Spin Speed button repeatedly to cycle through available options.
- To change the soil level, press the Soil Level button repeatedly until the desired setting is on.

6. WIRING DIAGRAM/PROGRAM CHART



PROGRAM	1 C	HA	RT	-								*	Wa	ater	Su	pply	: W	-s		*	nte	rmit	ten	t Sp	oin:	I-8	5	*	Dis	ent	anç	gle: D - T
Wash													F	Rins	е								Spin				A					
		Pre				Main					Normal							Extra or Stain					Extra & Stain					1		UT		
						W	ash	Co	Cool-down			1		1		2				3				3	_					EN	ó	**Approx.
	W S	Wash	Drain	 	W - S	Heat	Wash	W 	Rinse	Drain	Drain	$\frac{1}{s}$	W S	Rinse	Drain	$\frac{1}{s}$	W - S	Rinse	Drain	<u> </u> s	W _ S	Rinse	Drain	<u> </u> s	W - S	Rinse	Drain	Spin	D T	D	O F F	Working Time (Minutes)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	20	20	(Minutes)
U E E R P S Time E (SEC)	60		60	300	60		*	60	60	60	60	360	60	240	60	360	60	240	60	300	60	240	60	300	60	240	60	360 ~ 660	~	20	20	
Sanitary		8		-	-		60 67	1	TIM	_																						105
Cotton /Normal		8					13		\sim																							58
Bulky /Large		8					25		\succ																							57
Perm Press		8		 			18		\succ																				_			55
Delicates		8					14		\succ	$\overline{}$														>	\leq							34
Baby Wear		\geq	<				70		\times																						F	120
Hand Wash /Wool		>	<				14		\succ															>	<							34
Speed Wash		>	<				8		\succ	\leq				120				120				120		>	<							30
Drain+Spin																			n		<i>n</i>						_					14
Wash + Rinse		8					19		\succ											_									\geq	<	$\overline{}$	45
Rinse + Spin						>	_	\leq	\leq													>	\leq	\leq								19
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Pre-Setting Time : Water Supply - 60 sec. Drain - 60 sec. ** The total working time will vary with the load size, water temperature and ambient temperature.

7. TROUBLESHOOTING

7-1. BEFORE PERFORMING SERVICE

- Be careful of electric shock when disconnecting parts while troubleshooting.
- The voltage of each terminal is 120 V AC and DC when the unit is plugged in.

7-2. QC TEST MODE.

The washer must be empty and the controls must be in the off state.

- 1. Press the NO SPIN and LIGHT buttons simultaneously.
- 2. Press the Power (1) button, while the above condition. Then buzzer will sound twice.
- 3. Press the Start/Pause) button repeatedly to cycle through the test modes.

Number of times the Start/Pause button is pressed	Check Point	Display Status
None	Turns on all lamps and locks the door.	
1 time	Tumble clockwise.	rpm (42~50)
2 times	Low speed Spin.	rpm (55~65)
3 times	High speed Spin.	rpm (125~135)
4 times	Inlet valve for prewash turns on.	Water level frequency (25~65)
5 times	Inlet valve for main wash turns on.	Water level frequency (25~65)
6 times	Inlet valve for hot water turns on.	Water level frequency (25~65)
7 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
8 times	Tumble counterclockwise.	rpm (42~50)
9 times	Heater turns on for 3 sec.	Water temperature
10 times	Circulation pump turns on.	Water level frequency (25~65)
11 times	Drain pump turns on.	Water level frequency (25~65)
12 times	Off	-

7-3. HOW TO CHECK THE WATER LEVEL FREQUENCY

* Press the WARM/COLD and LOW button simultaneously.



The digits indicate the water level frequency (x.1 kHz).

So, for example a display indicating 241: a Water level frequency of 241 x.1 kHz = 24.1 kHz

7-4. ERROR DISPLAY

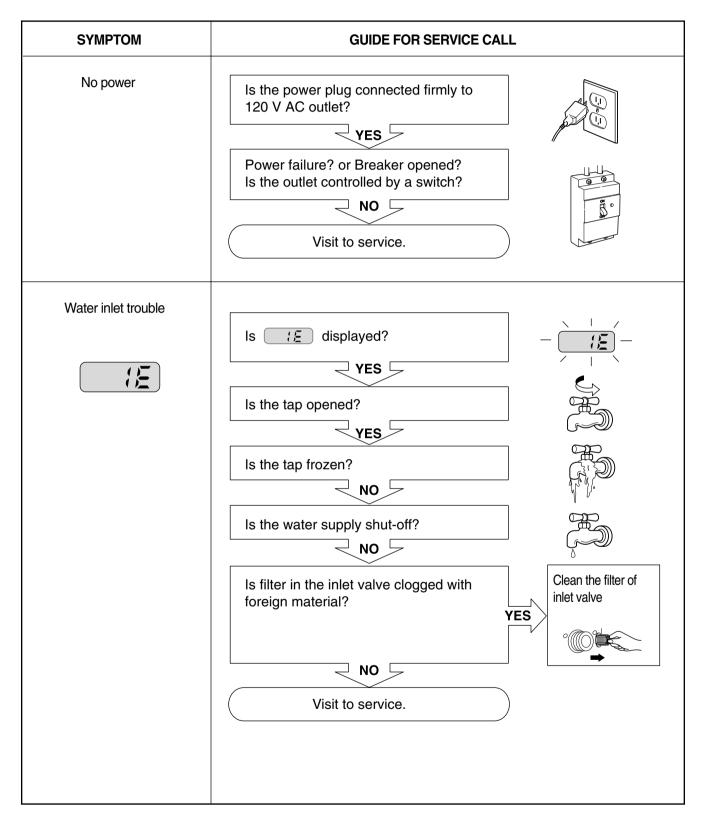
- If you press the START/PAUSE button when an error is displayed, any error except ^[]*PE*] will disappear and the machine will go into the pause status.
- In case of <code>"PE_", "EE_", "dE_"</code> if the error is not resolved within 20 sec., or the in case of other errors, if the error is not resolved 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.

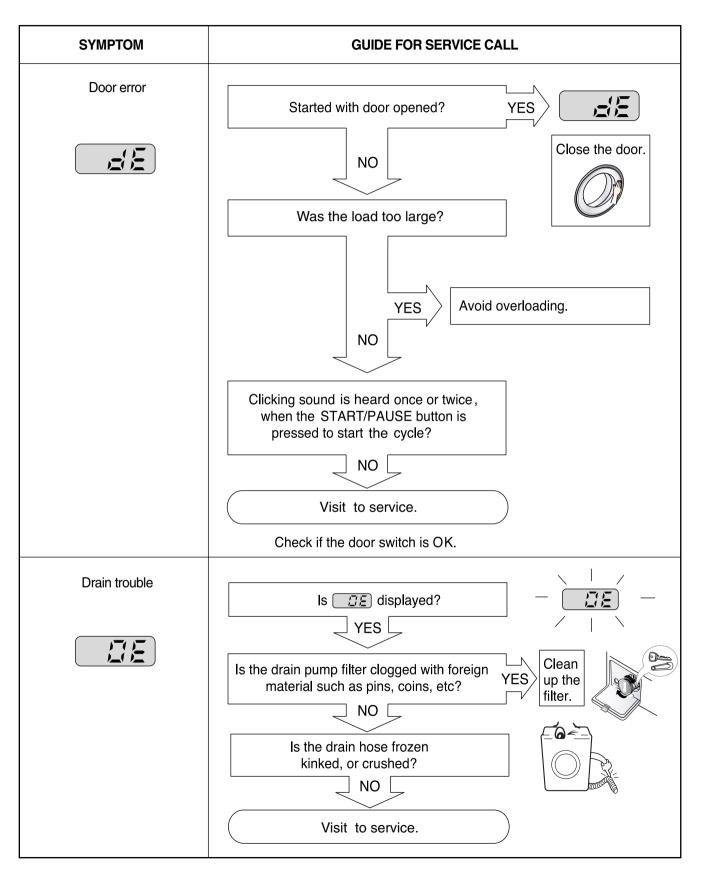
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		• Correct water level (246) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		 The load is too small. The appliance is tilted. Laundry is gathered to one side. Non distributable things are put into the drum.
3	DRAIN ERROR		• Not fully drained within 10 minutes.
4	OVER FLOW ERROR	ŗ,	 Water is overflowing (water level frequency is over 213). If FE is displayed, the drain pump will operate to drain the water automatically.
5	PRESSURE SENSOR ERROR	, - , <u>-</u> , <u>-</u> ,	The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR	e E	 Door not all the way closed. Loose electrical connections at Door switch and PWB Assembly. The DOOR SWITCH ASSEMBLY is out of order.
7	HEATING ERROR		The THERMISTOR is out order.

	ERROR	SYMPTOM	CAUSE
8	LOCKED MOTOR ERROR	LE	 The connector (3-pin, male, white) in the MOTOR HARNESS is not connected to the connector (3-pin, female, white) of STATOR ASSEMBLY. The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in the MAIN PWB ASSEMBLY is bad or unstable. The MOTOR HARNESS between the STATOR ASSEMBLY and MAIN PWB ASSEMBLY is cut (open circuited). The hall sensor is out of order/defective.
9	EEPROM ERROR	55	 EEPROM is out of order. Misplayed only when the START/PAUSE button is first pressed in the QC Test Mode.
10	POWER FAILURE	, - , -	• The washer experienced a power failure.

8. ERROR DIAGNOSIS AND CHECK LIST

8-1. DIAGNOSIS AND SOLUTION FOR ABNORMAL OPERATION



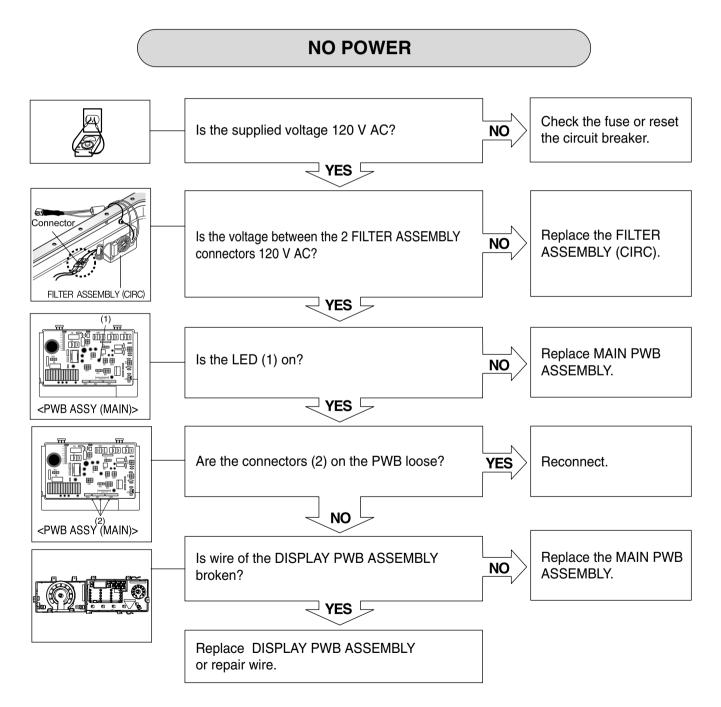


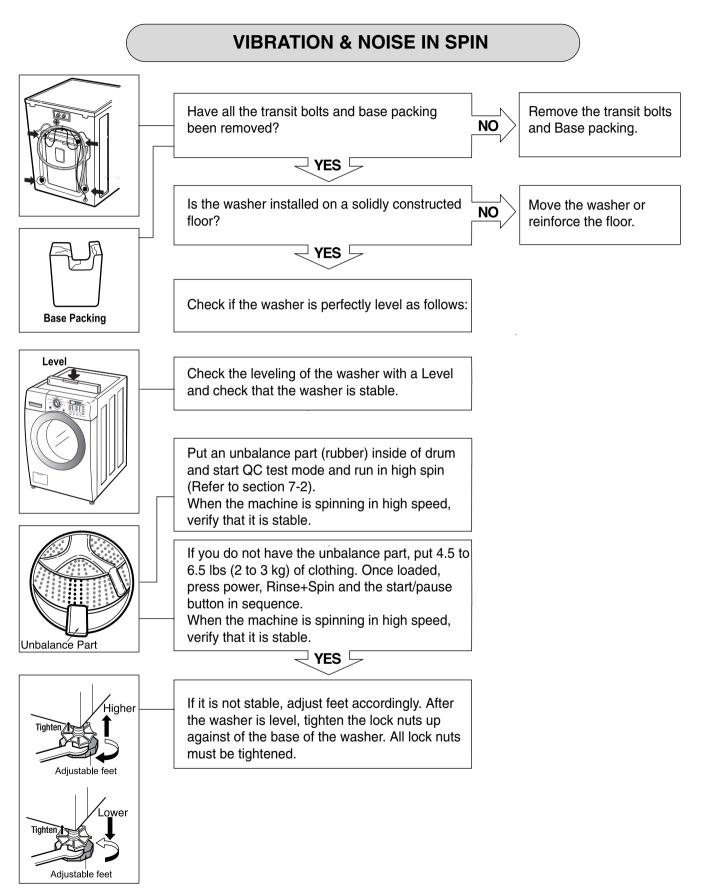
SYMPTOM	GUIDE FOR SERVICE CALL	
Suds overflow from the appliance. (In this condition, wash and spin do not operate normally)	Is a HE (High Efficiency) detergent used? YES Is the proper amount of detergent used as recommended? YES Recommend to reduce the amount of detergent. * This appliance has an automatic suds sensing function which prevents overflow. * When excessive suds are sensed, the suds removing implementations such as drain, water input, pause will operate, without rotating the drum.	
Liquid laundry products do not flow in.	Is liquid laundry product put in the correct compartment of the dispenser? VES Is the cap clogged? VES Explain proper use of liquid laundry products. Clean the compartment.	
F'E FE E LE	Visit to service.	

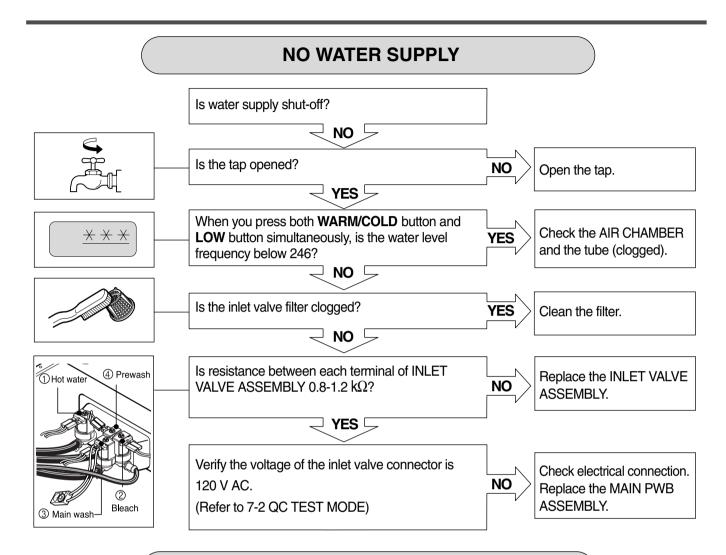
8-2. FAULT DIAGNOSIS AND TROUBLESHOOTING

▲ CAUTION

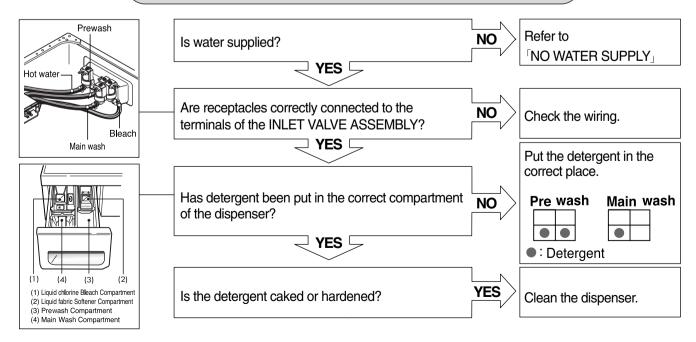
- 1. Be careful of electric shock if disconnecting parts while troubleshooting.
- 2. First of all, check the connection of each electrical terminal with the wiring diagram.
- 3. If you replace the MAIN PWB ASSEMBLY, reinsert the connectors correctly.







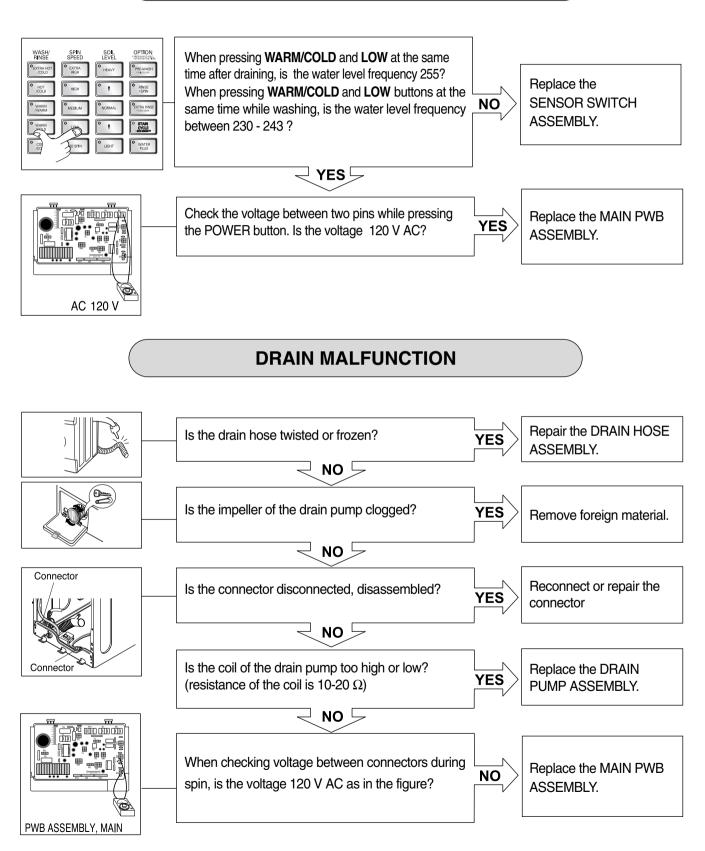
DETERGENT DOES NOT FLOW IN

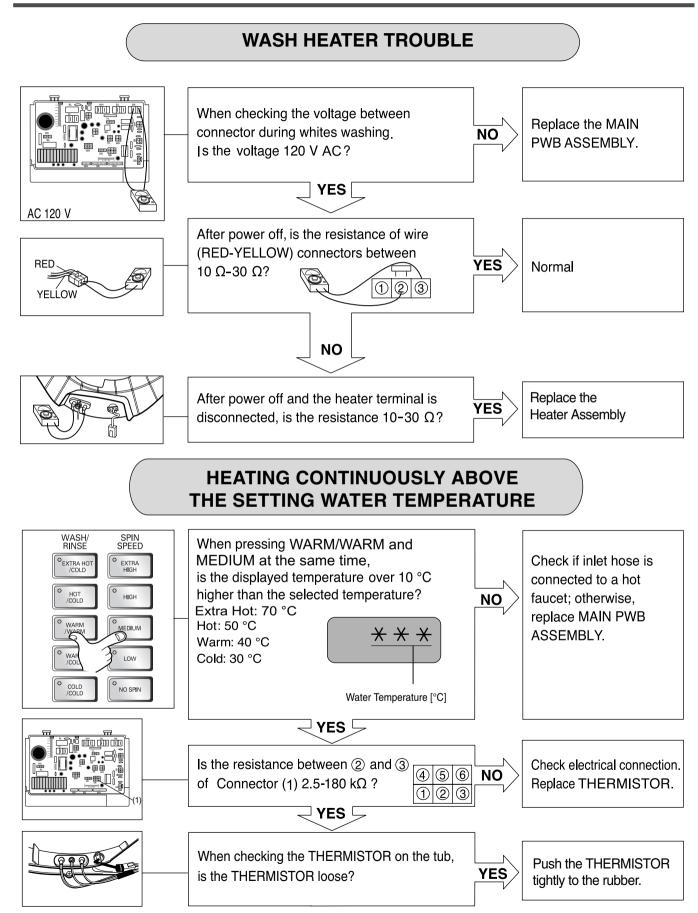


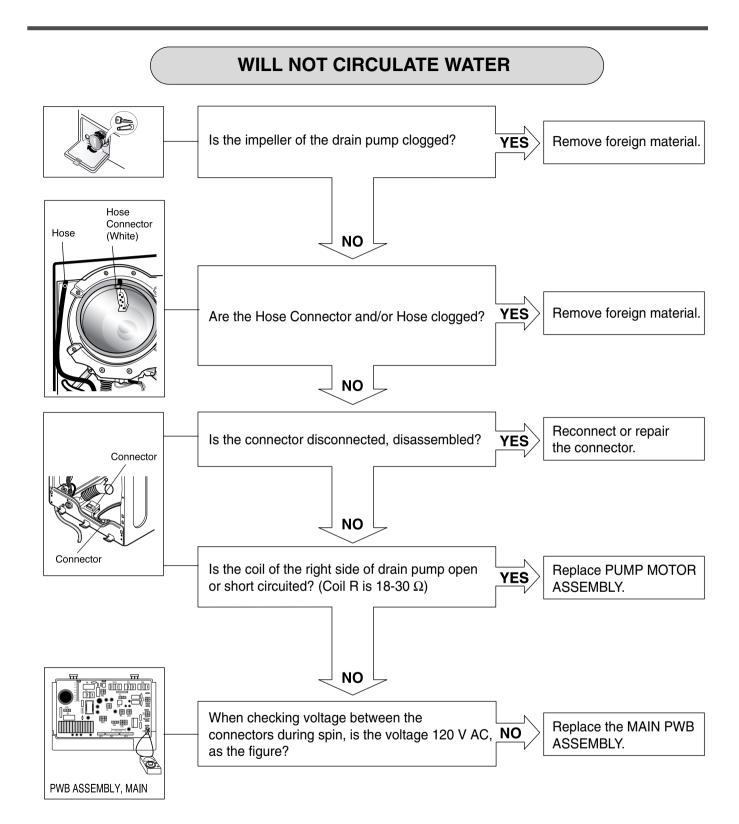
Prewash Refer to Is water supplied? NO Bleach Hot water NO WATER SUPPLY 🖵 YES 🖵 Are the plugs correctly connected to the terminals of Check the wiring on the NO the INLET VALVE ASSEMBLY? dispenser. → YES → Put it in the correct Is liquid detergent/softener/bleach put in the correct NO compartment. compartment of the drawer? (4)(3) (2) (1) Liquid chlorine Bleach Compartment (2) Liquid fabric Softener Compartment (3) Prewash Compartment(4) Main Wash Compartment YES Bleach cap Clean the Cap and Is the liquid detergent/softener/bleach cap clogged? YES Container. Softener cap Liquid detergent cap **ABNORMAL SOUND** Is the motor bolt loosened? YES Secure the bolt. Replace the STATOR Is there friction noise coming from the motor? YES ASSEMBLY or ROTOR ASSEMBLY.

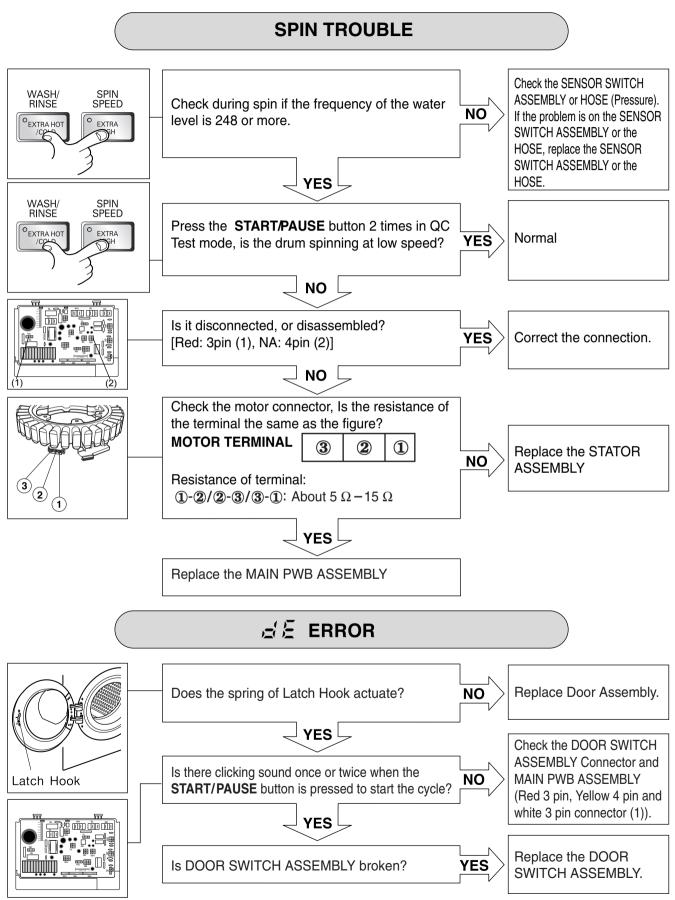
(LIQUID DETERGENT/SOFTENER/BLEACH DOES NOT FLOW IN)

HEATING WITHOUT WATER





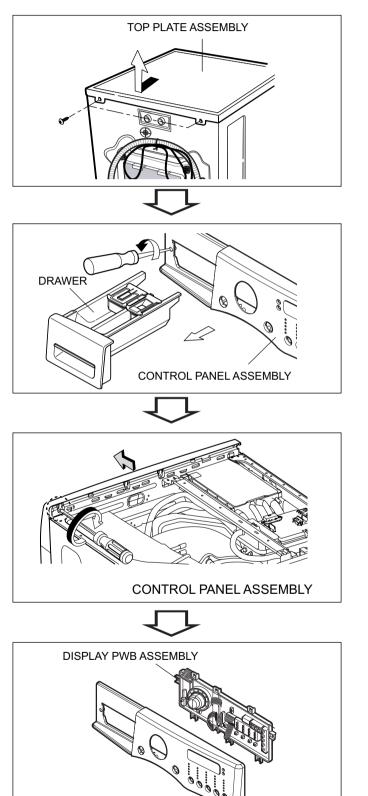




9. DISASSEMBLY INSTRUCTIONS

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

CONTROL PANEL ASSEMBLY



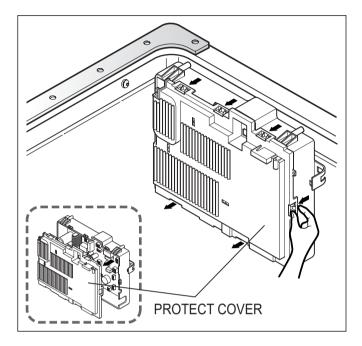
- ① Unscrew 2 screws on the back of the top plate.
- ② Pull the top plate backward and upward as shown.

- ③ Disconnect the Display PWB Assembly connector from Trans cable.
- ④ Pull out the drawer and unscrew 2 screws.

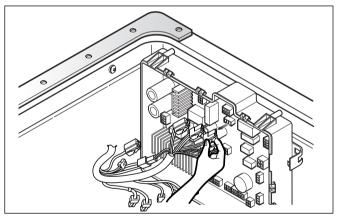
- ⑤ Taking out 1 screw.
- (6) Lift the side the Control Panel Assembly and pull it out

- ⑦ Unscrew the 8 screws from the Control Panel Assembly.
- (8) Disassemble the Display PWB Assembly.

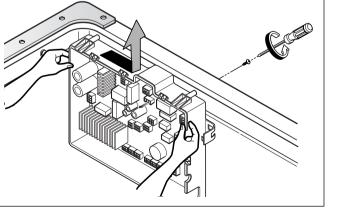
MAIN PWB ASSEMBLY



- Disconnect the POWER connector and SENSOR SWITCH ASSEMBLY.
- ② Remove the Protect Cover.

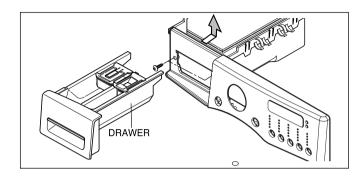


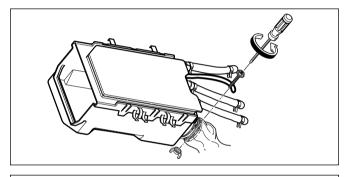
Disconnect the connectors.

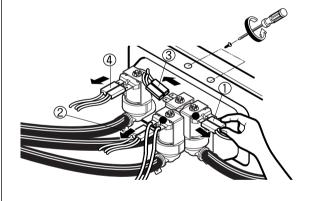


- (4) Unscrew 1 screw on the back.
- (5) Disassemble the Main PWB.

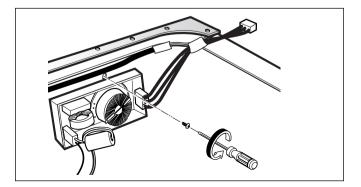
DISPENSER ASSEMBLY







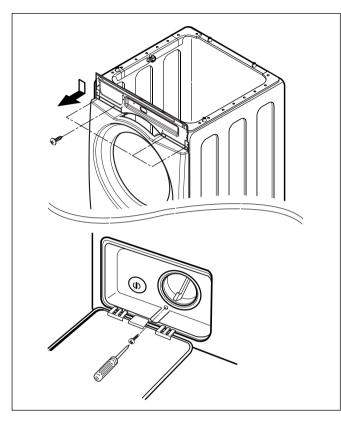
NOISE FILTER

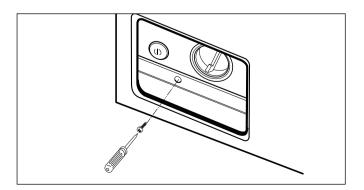


- ① Disassemble the top plate assembly.
- 2 Pull out the drawer.
- ③ Push out the DISPENSER ASSEMBLY after unscrew 2 screws.
- ④ Unscrew the nut at the lower part of the dispenser.

- (5) Disassemble the 4 connectors from the valves.
 - Wire Color
 - ① Blue Housing (OR-BK)
 - ② White Housing (WH-BK)
 - ③ Blue Housing (GY-BK)
 - ④ Red Housing (BL-BK)
- (6) Unscrew 2 screws from the back of the cabinet.
- ① Disassemble two (or three) connectors from the NOISE FILTER.
- ② Unscrew a screw from the TOP BRACKET.

CABINET COVER

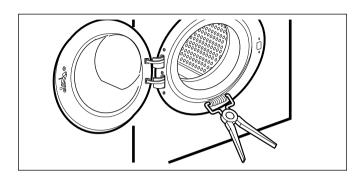


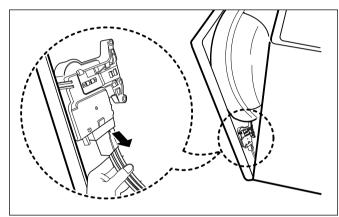


- ① Unscrew the 5 screws from upper of the canbinet cover.
- ② Unscrew the screw from filter cover.

③ Put a flat (–) screwdriver or putty knife into the both sides of the filter cover, and pull it out.

(4) Unscrew the screw from the lower side of the cabinet cover.

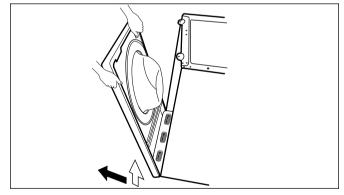




⑤ Open the door.⑥ Disassemble the clamp assembly.

- ⑦ Tilt the cabinet cover.
- (8) Disconnect the door switch connector.

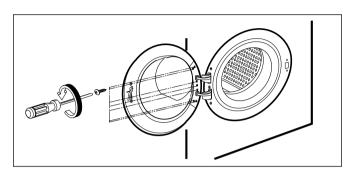
* NOTE: When assembling the CABINET COVER, connect the connector.

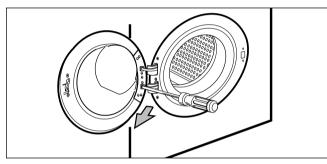


(9) Lift and separate the cabinet cover.

Disassemble the clamp assembly.Disassemble the Gasket.

DOOR

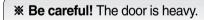




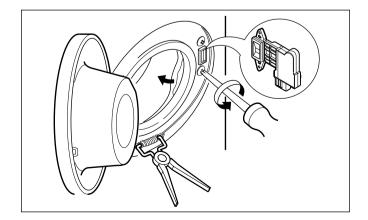
- ① Open the door.
- (2) Unscrew the 7 screws from the HINGE COVER.

③ Put a flat (-) screwdriver into the openng of the hinge, and pull out the hinge cover.

- ④ Unscrew a screw from the lower side of door.
- (5) Disassemble the door upward.



DOOR LOCK SWITCH ASSEMBLY



- ① Open the door and disassemble the CLAMP ASSEMBLY.
- 2 Unscrew the 2 screws.

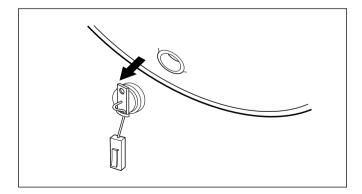
※ NOTE

• Reconnect the connector after replacing the DOOR SWITCH ASSEMBLY.

PUMP CIRCULATION HOSE PUMP HOSE BELLOWS

HEATER

THERMISTOR



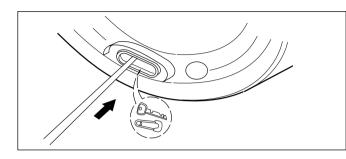
- ① Disassemble the cabinet cover.
- ② Separate the pump hose, the bellows and the circulation hose assembly from the pump assembly.
- ③ Disassemble the pump assembly in arrow direction.
- ① Disassemble the cabinet cover.
- ② Separate 2 connectors from the heater.
- ③ Loosen the nut and pull out the heater.

*** CAUTION**

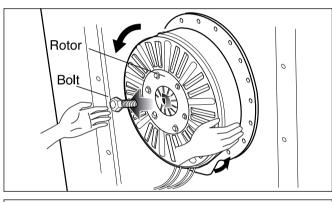
- When assembling the heater, insert the heater into the heater clip on the bottom of the tub.
- Tighten the fastening nut so the heater is secure.

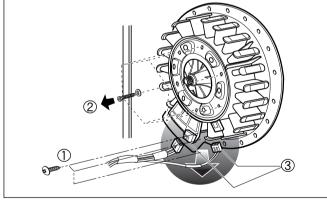
- ① Disassemble the cabinet cover.
- ② Unplug the white connector from the thermistor.
- ③ Pull it out by holding the bracket of the thermistor.

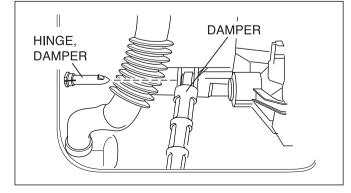
WHEN FOREIGN OBJECT IS STUCK BETWEEN DRUM AND TUB



MOTOR/DAMPER







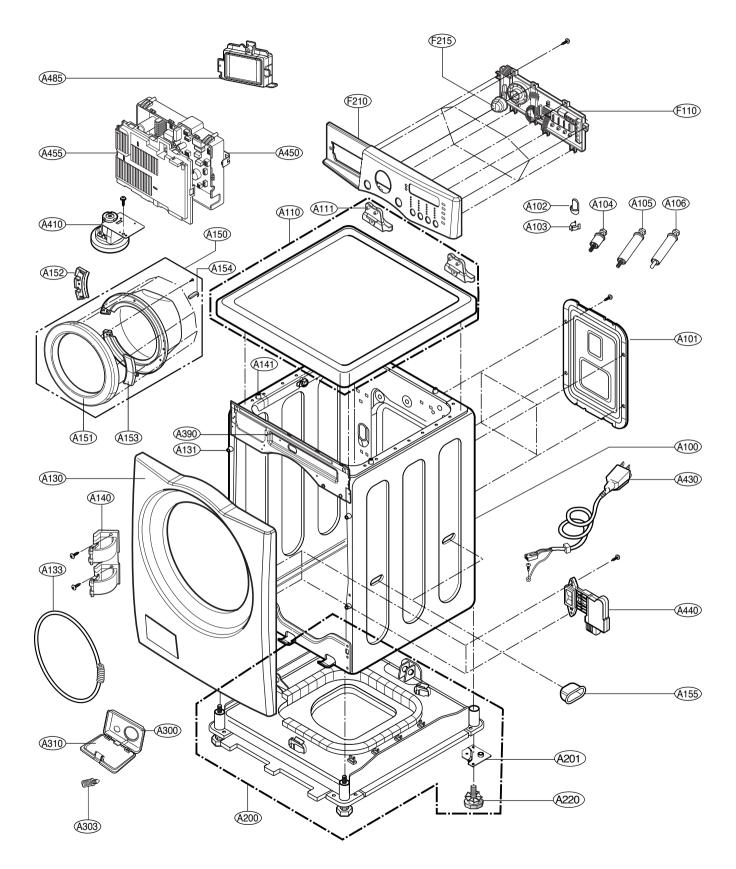
- ① Disassemble the cabinet cover.
- ② Separate the heater from the tub.
- ③ Remove any foreign objects (wire, coin, etc.) by inserting a long bar in the opening.

- ① Disassemble the back cover.
- ② Remove the bolt.
- ③ Pull out the Rotor.

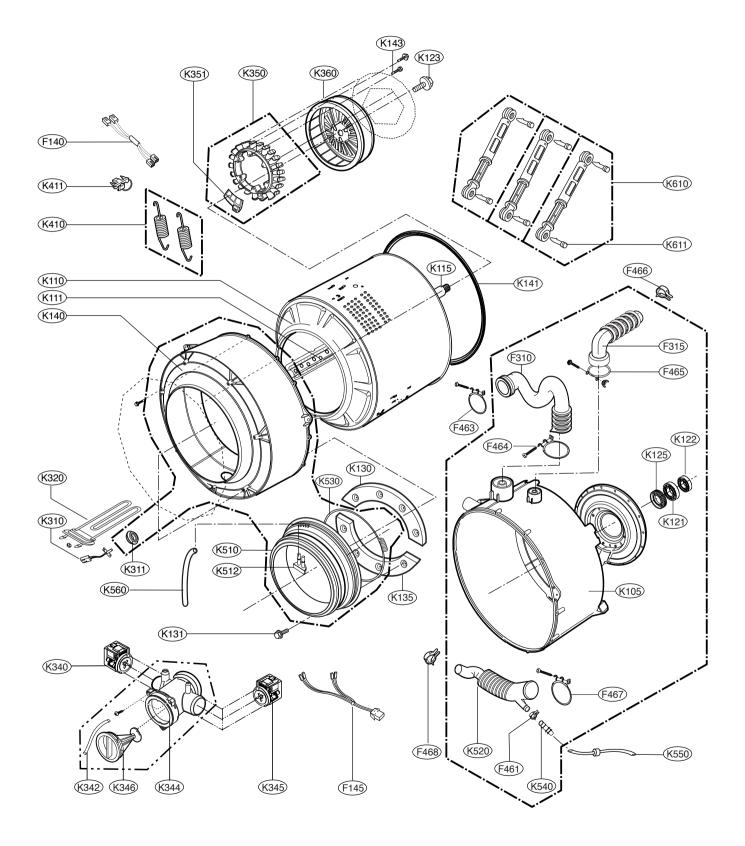
- ① Unscrew the 2 screws from the tub bracket.
- ② Remove the 6 bolts on the stator.
- ③ Unplug the 2 connectors from the stator.

- ① Disassemble the damper hinges from the tub and base.
- Separate the dampers.
 - *** NOTE**
 - Once removed, replace the damper with new one.

10-1. CABINET & CONTROL PANEL ASSEMBLY



10-2. DRUM & TUB ASSEMBLY



10-3. DISPENSER ASSEMBLY

