

WASHING MACHINE SERVICE MANUAL

▲ CAUTION

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

MODEL: WM3997H*A /01

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1. SPECIFIC ATIONS

17.5		
ITEM		WM3997H*A /01
COLOR		W: BLUE White. V: STAINLESS SIVER. R: CANDY APPLE RED. S: Titanium
POWER SUPP LY		AC 120 V, 60 Hz
PRODUCT	WEIGHT	96 kg
ELECTRIC POWER	WASHING	220 W
CONSUMPTION	DRAIN MOTOR	80 W
CONSUMPTION	HEATER	12A
REVOLUTION	WASH	46 rpm
SPEED	SPIN	0-1,300 rpm
CYCL	ES	14
WASH/RINSE TEN	MPER ATURES	5
SPIN SPI	EEDS	5
OPTIONS		Steam, Dry, Tub Clean, Delay Wash, Child Lock
WATER CIRC	CULATION	Incorporated
OPERATIONAL WA	TER PRESSURE	100 - 1000kPa
CONTROL TYPE		Electronic
WASH CAPACITY [cu.ft.]		(4.2 DOE)
DIMENSIONS		686(W) X 767(D) X 982(H)
DELAY WASH		up to 19 hours
DOOR FRAME		Chrome
WATER LEVEL		10 steps (by sensor)
LAUNDRY LOA	D SENSING	Incorporated
ERROR DIA	GNOSIS	Incorporated
AUTO POW	ER OFF	Incorporated
CHILD LOCK		Incorporated
STEAM		Incorporated
DRY		Washer/Dry

▲ WARNING

To reduce the risk of injury to persons, adhere to all industry recommended safety procedures including the use of long sleeved gloves and safety glasses. Failure to follow all of the safety warnings in this manual could result in property damage, injury to persons or death.

WARNING: This product contains chemicals knownto the State of California to cause cancer and birth defects or other reproductive harm.

Wash hands after handling

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.



■ Steam Washing

Steam washing features upgraded washing performance with low energy and water consumption.



■ 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.

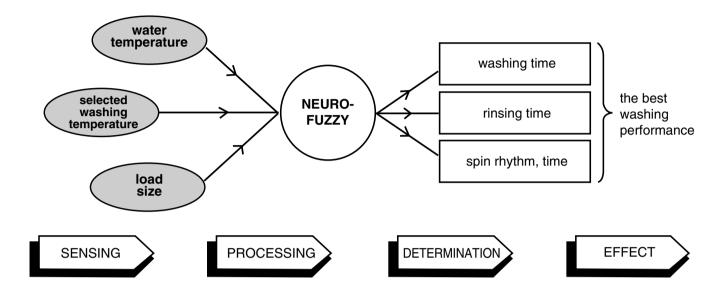


Child Lock

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

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 inertial 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 ® button. You can lock the controls of the washer while washing.
- CHILD LOCK lasts after the end of cycle. If you want to deactivate this function, Press and hold the Pre Wash button for 3 seconds.

2-8. WATER CIRCULATION

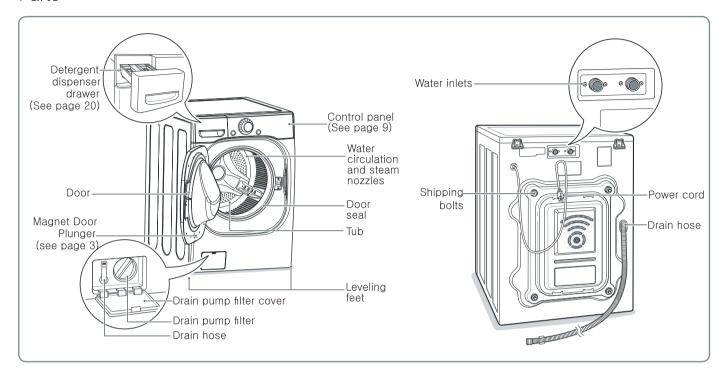
- When washing and rinsing function of shower at the upper part of Gasket.
- When washing, it continuously operates for 3 minutes and intermittently.
- When rinsing, it continuously operates after completion of water supply.

2-9. STEAM

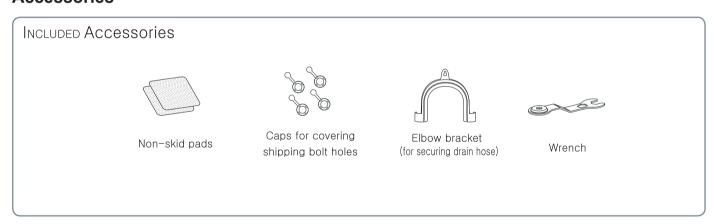
- For tough stained clothes, sick room linens, or baby clothes.
- Steam Wash is available with Sanitary, Bulk/Large, Perm. Press, Cotton/Normal, and Baby Wear cycles.
- This option features upgraded washing performance with low energy and water consumption.
- Do not load delicates such as wool, silk, and easily discolored clothes.

3. PARTS IDENTIFICATION

Parts and Accessories Parts



Accessories



-ONOTE-

- Contact LG Customer Service at 1-800-243-0000 (1-888-542-2623 in Canada) if any accessories are missing.
- For your safety and for extended product life, use only authorized components. The manufacturer is not responsible for product malfunction or accidents caused by the use of separately purchased unauthorized components or parts.
- The images in this guide may be different from the actual components and accessories, and are subject to change by the manufacturer without prior notice for product improvement purposes.

4. INSTALLATION & TEST

- 1 Before servicing, ask the customer what the trouble is.
- 2 When installing or repairing the washer, put on long gloves and safety glasses.
- 3 Check the setup (power supply is 120AV, remove the transit bolts, level the washer, etc.)
- 4 Check with the troubleshooting guide.
- [5] Plan your service method by referring to the disassembly instructions.
- 6 Service the unit.
- [7] After servicing, operate the appliance to see whether it functions correctly.

■ STANDARD INSTALLATION

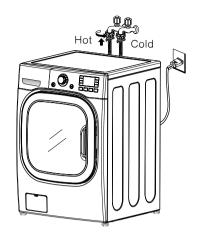
The appliance should be installed as follows:

REMOVE THE SHIPPING BOLTS	INSTALL THE APPLIANCE ON A FLAT AND FIRM SURFACE	ADJUST THE LEVELING
 Remove the 4 shipping bolts with the supplied wrench. * Remove the lower boits fist. It is easier that way. 		Turn the leveling feet to adjust the appliance.
 Keep the shipping bolts and spanner for future use. Insert the 4 caps (provided) into the hole. 		Lower
		Higher
Keeping		Turn clockwise to raise; counterclockwise to lower.

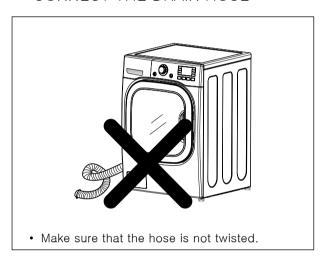
■ HOW TO CONNECT THE INLET HOSE

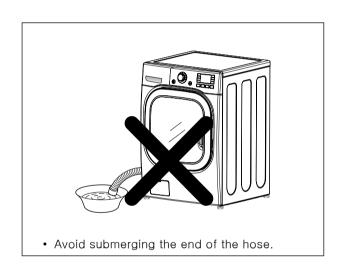
- Verify that the rubber washer is inside of the valve connector.
- Tighten the inlet hose securely to prevent leaks.
- Install the inlet hose to correct temperature water tap.

Otherwise, it cause drips on the drawer panel handle and drawer panel.



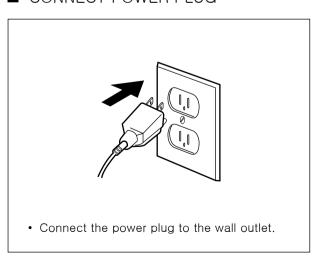
■ CONNECT THE DRAIN HOSE

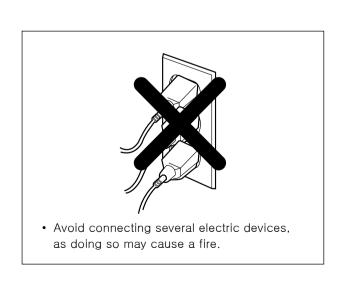




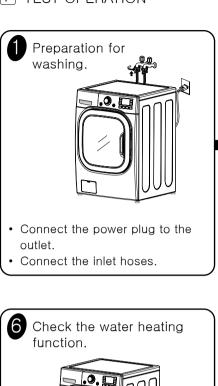
* The end of the drain hose should be placed less than 96" from the floor.

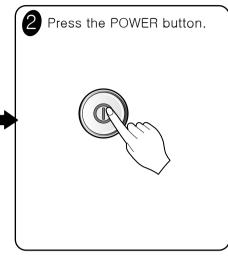
■ CONNECT POWER PLUG

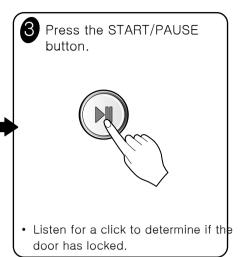


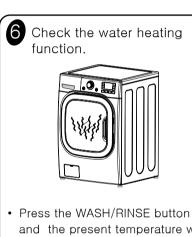


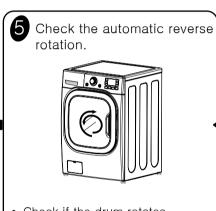
7 TEST OPERATION









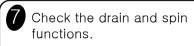




and the present temperature will be displayed.

· Check if the drum rotates clockwise and counterclockwise. · Check if water is supplied through the detergent dispenser.

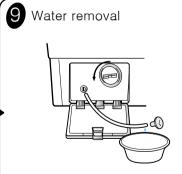




- Power off and the power on.
- Press the SPIN SPEED button.
- Press the START/PAUSE button.
- · Check the spin and drain functions



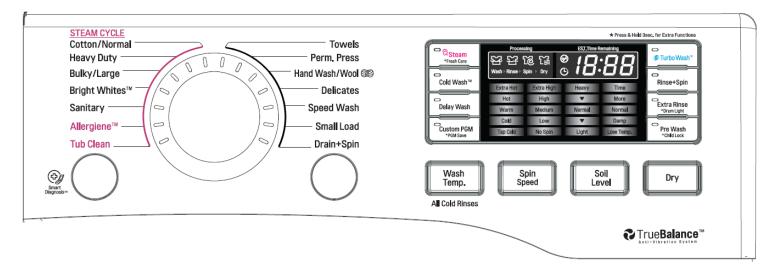
 Listen for a click to determine if the door is unlocking.



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

5. OPERATION

5-1 CONTROL PANEL FEATURES

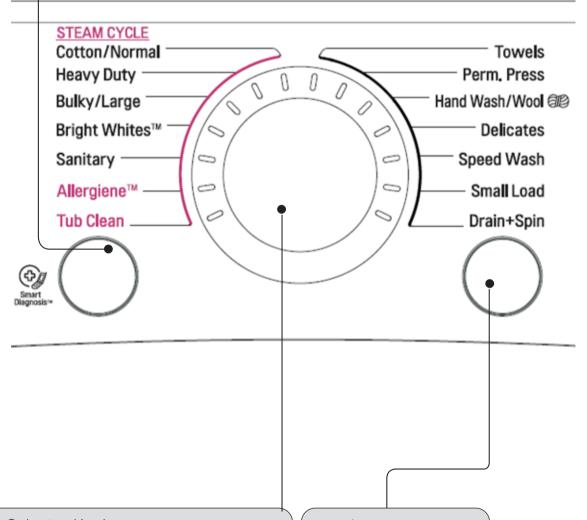


Power Button

• Use this button to turn the power On/Off.

Status Indicator

• It shows elapsed time of the cycle the washer is operating.



Cycle Selector Knob

 Rotate the Cycle selector knob to select the cycle designed for different types of fabric and soil levels.

Start/Pause

• Use this button to Start/Stop the washer.

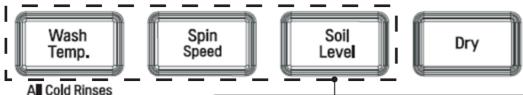
Option Button

- Steam: Use STEAM button to add steam to the cycle for the extra cleaning.
- Cold Wash: Use this option to save on energy consumption.
- Delay Wash: Set the delay time of starting the cycle.
- Custom PGM: Use this option to save a special combination of settings that you use frequently



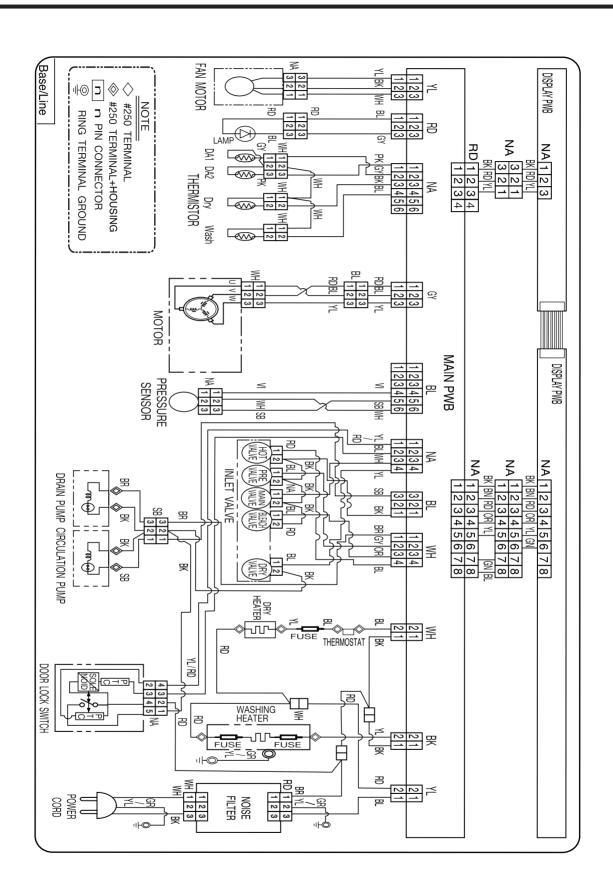
DRY

 Use this function when you want to dry wet laundry.



Wash Temp./Spin Speed/Soil Level Button

- Wash Temp.: Selects the water temperature for the wash cycle
- Spim Speed : Selects the spin speed
- Soil Level: Selects a wash cycle by soil level.



7. TEST MODE

7-1. SAFETY CAUTION

- There can be live AC and DC voltage on some terminals on the main board, even when the machine is turned off. Be cautious to avoid electric shock when disconnecting parts while troubleshooting. (Wear Static Discharge gloves when working.)
- After cutting off the power when changing the PWB disconnecting, or reassembling.
- Be careful static when handling the PWB assembly, and use Electro Static Discharge plastic pack when shipping or storing it.

7-2. LOAD TEST MODE

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

- 1. Hold the SPIN SPEED and SOIL LEVEL and then press the POWER button.
- 2. 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.LOAD TEST MODE		
1 time	Tumble clockwise.	Rpm (45~50)	
2 times	Low speed spin.	Rpm (55~60)	
3 times	High speed spin.	Rpm (110~115)	
4 times	Inlet valve for prewash turns on.	Water level frequency (0~255)	
5 times	Inlet valve for main wash turns on.	Water level frequency (0~255)	
6 times	Inlet valve for hot water turns on.	Water level frequency (0~255)	
7 times	Inlet valve for steam turns on.	Water level frequency (0~255)	
8 times	Inlet valve for bleach turns on.	Water level frequency (0~255)	
9 times	Tumble counterclockwise.	rpm (42~50)	
10 times	Heater turns on for 3 seconds.	Water temperature	
11 times	Circulation pump turns on.	Water level frequency (25~65)	
12 times	Drain pump turns on.	Water level frequency (25~65)	
13 times	Steam water level sensor operates.	AG tub water level frequency (0~255)	
14 times	Steam heater turns on for 1.2seconds	Steam generator temperature	
15 times	off	_	

7-3. HOW TO CHECK THE WATER LEVEL FFREQUENCY

Press and hold the WASH/RINSE and DELAY WASH 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

8. TROUBLESHOOTING

8-1. SAFETY CAUTION

- TThere can be live AC and DC voltage on terminals on the main board, even when the machine is turned off. Be cautious to avoid electric shock when disconnecting parts while troubleshooting. (Wear Electro Static Discharge gloves when working.)
- After cutting off the power when changing the PWB assembly, disconnecting, or reassembling.
- Be careful static when handling the PWB assembly, and use Electro Static Discharge plastic pack when shipping or storing it.

8-2. FRROR MODE SUMMARY

- 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 FE LE GE if the error is not resolved within 20 seconds, or the in case of other errors, if the error is not resolved within 4 minutes, power will be turned off automatically and the error code will blink. But in the case FE , power will not be turned off.

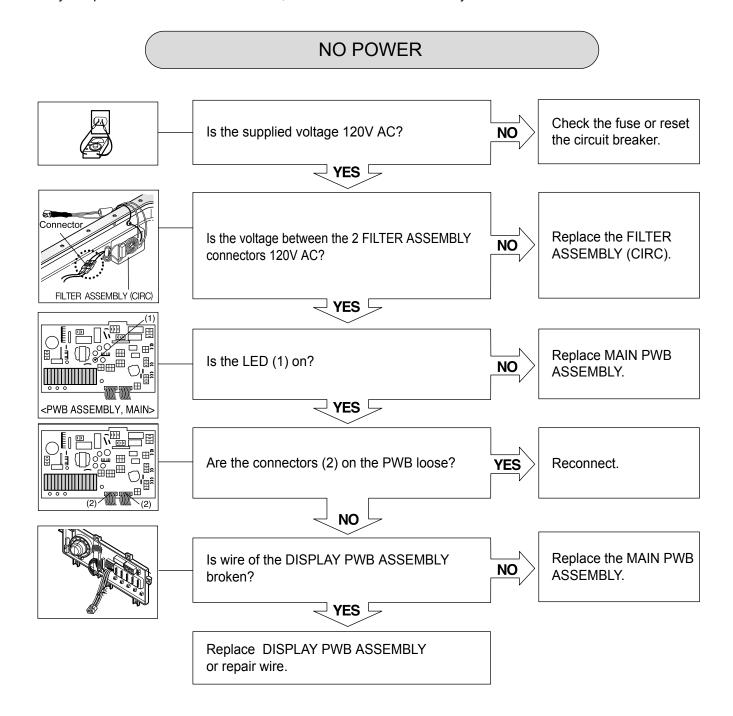
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR	! E	Correct water level (24.6kHz) is not reached within 8 minutes after water is supplied or it does not reached the preset water level within 20 minutes.
2	UNBALANCE ERROR	LIE	 The load is too small. The appliance is tilted. Laundry is gathered to one side. Non-distributable things are put into the drum.
3	DRAIN ERROR	Œ	Not fully drained within 10 minutes.
4	OVERFLOW ERROR	FE	 Water is overflowing. (water level frequency is over 21.3kHz). ※ If FE is displayed, the drain pump will operate to drain the water automatically.
5	PRESSURE SENSOR ERROR	PE	 The PRESSURE SENSOR ASSEMBLY is out of order. When water level frequency is consistently below 10 kHz or over 30 kHz.
6	DOOR OPEN ERROR	dE 1	 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	ŁE	The THERMISTOR is out of 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).
9	EEPROM ERROR	EE	 EEPROM is out of order. Displayed only when the START/PAUSE button is first pressed in the Load Test Mode.
10	POWER FAILURE		After the power supply is stopped while washing machine is working, the power is supplied rapidly.

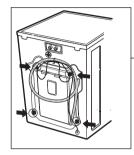
8-3. FAULT DIAGNOSIS AND TROUBLESHOOTING

▲ 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.



VIBRATION & NOISE IN SPIN



Have all the transit bolts and base packing been removed?

NO \

Remove the transit bolts and Base packing.



Is the washer installed on a solidly constructed floor?

NO)

Move the washer or reinforce the floor.

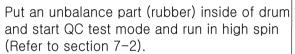


Check if the washer is perfectly level as follows:

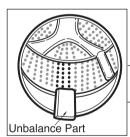
 $\overline{\mathord{\hspace{1pt} extstyle ext$



Check the leveling of the washer with a Level and check that the washer is stable.



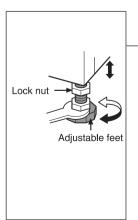
When the machine is spinning in high speed, verify that it is stable.



If you do not have the unbalance part, put 4.5 to 6.5 lbs (2 to 3 kg) of clothing. Once loaded, press power, Rinse+Spin and the start/pause button in sequence.

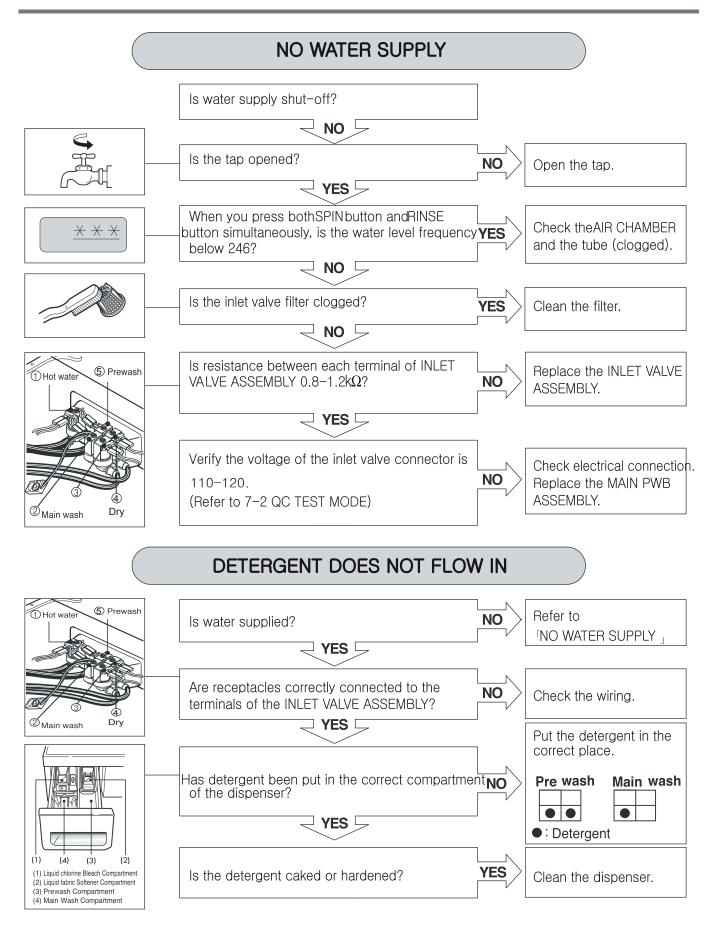
When the machine is spinning in high speed, verify that it is stable.



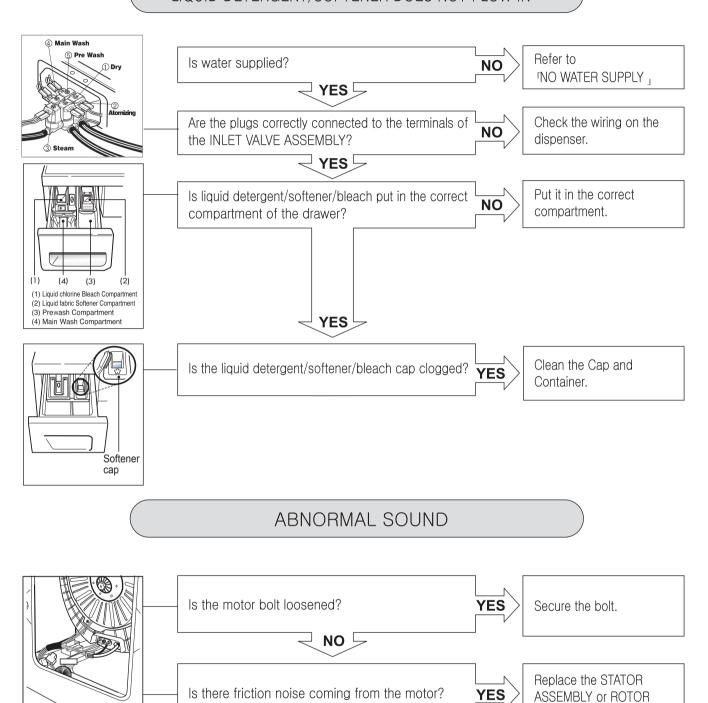


If it is not stable, adjust feet accordingly. After the washer is level, tighten the lock nuts up against of the base of the washer. All lock nuts must be tightened. If it still has severe vibration and noise, regulate a specific spin speed that generates excessive vibration and noise as follows:

- 1) Put an unbalance part (rubber) inside of the drum.
- 2) Start the QC test mode (Refer to section 7-2).
- 3) Press Delay Wash button, then ' \(\subseteq \frac{1}{2} \subsete \) is displayed.
- 4) Press the Spin Speed button repeatedly to select Extra High.
- 5) Press the Quick Cycle button, the spin speed is displayed.
- 6) Press the Start/Pause button.
- 7) Press the Beeper button repeatedly to set spin speed (600, 800, 1000, 1200 rpm) and check if there is vibration and noise.
- 8) If there is no vibration and noise, increase the spin speed by pressing Beeper button.
- 9) If there is vibration and noise, rotate the Cycle selector knob clockwise to reduce the Spin Speed (reduce by 50 and 100 rpm). In case of 600 rpm, it can not reduce the spin speed.
- 10) If vibration and noise are reduced, press the Quick Cycle button to store (2 beep sounds).
- * If you want to return to factory default spin speed setting, repeat above steps except step 9).

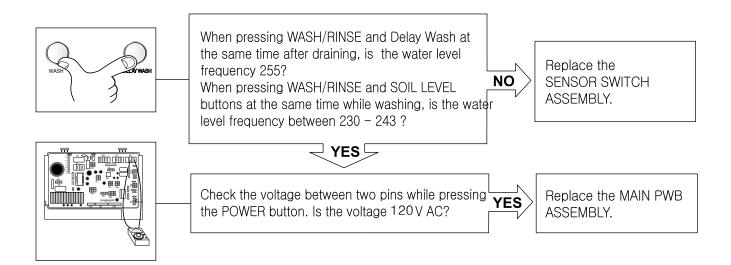


LIQUID DETERGENT/SOFTENER DOES NOT FLOW IN

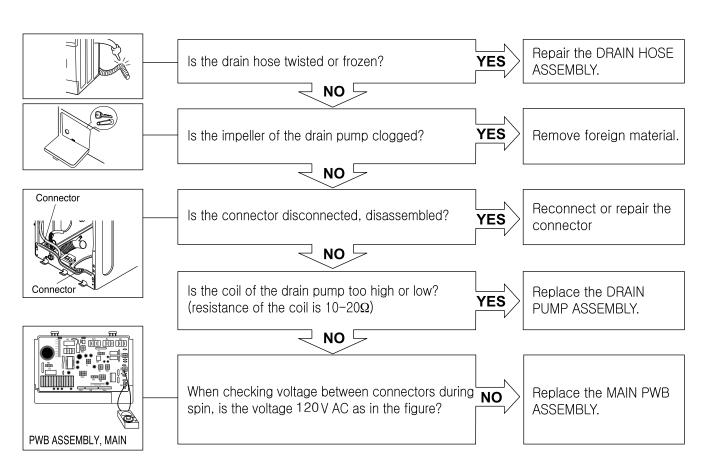


ASSEMBLY.

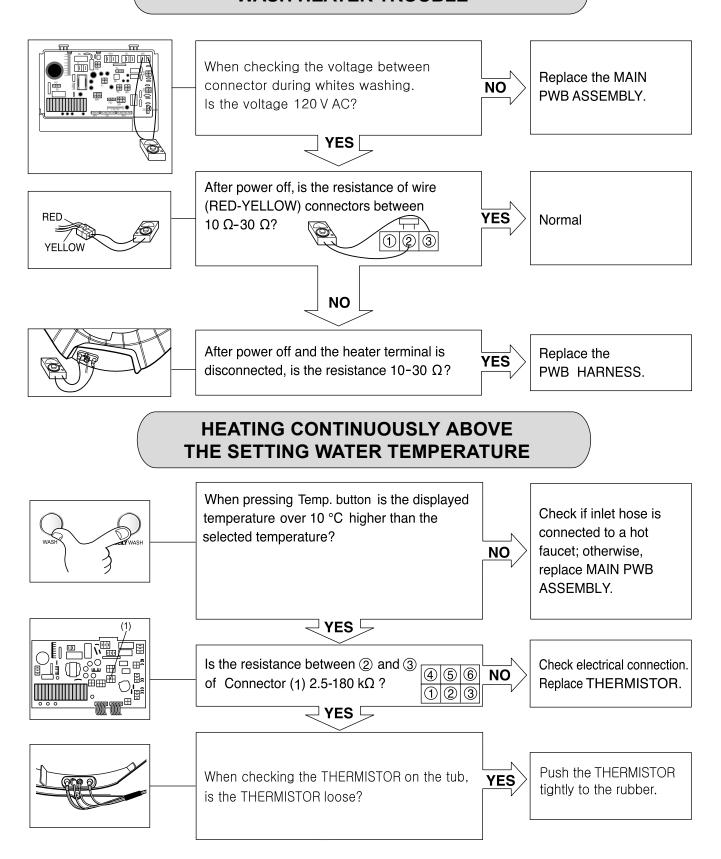
HEATING WITHOUT WATER



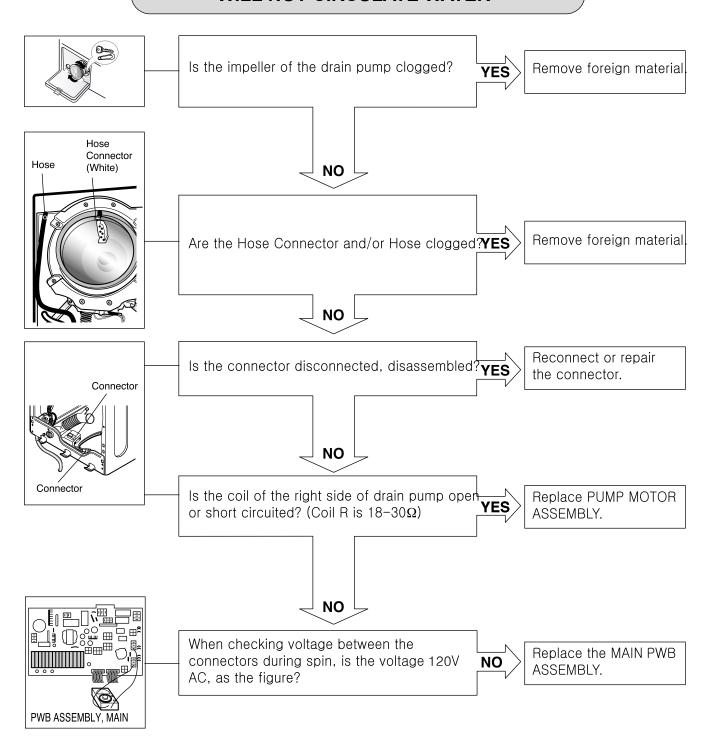
DRAIN MALFUNCTION

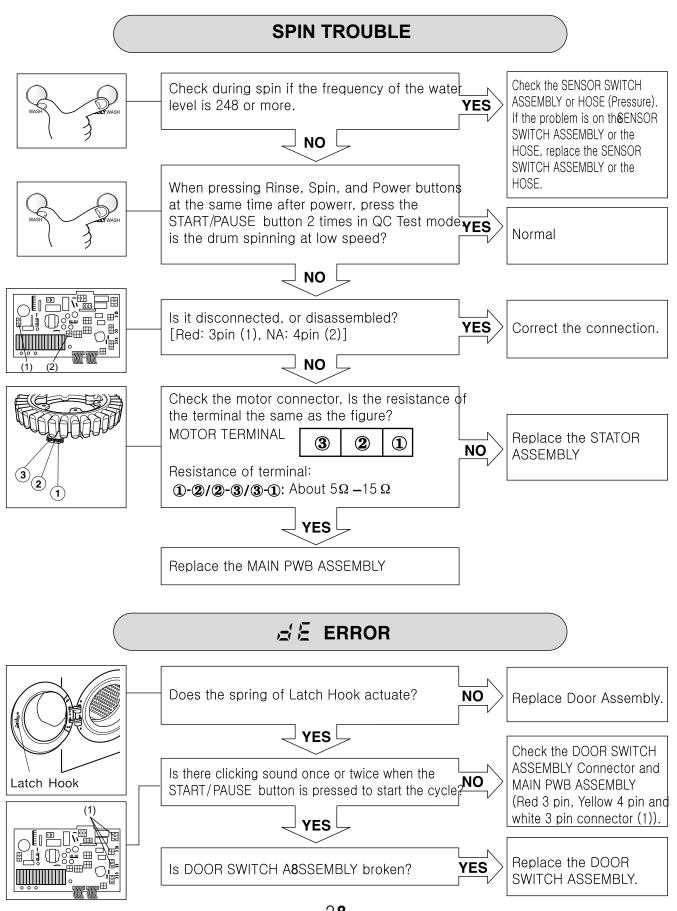


WASH HEATER TROUBLE

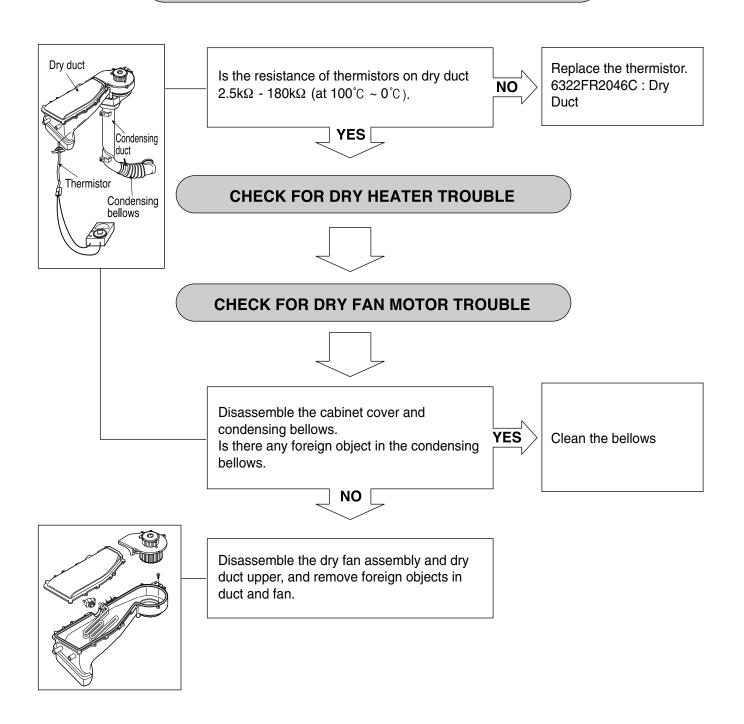


WILL NOT CIRCULATE WATER

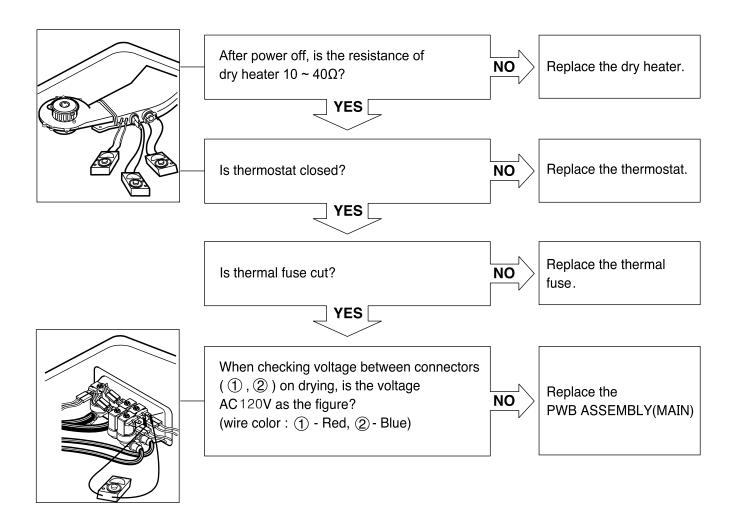




= 片层 ERROR DISPLAY



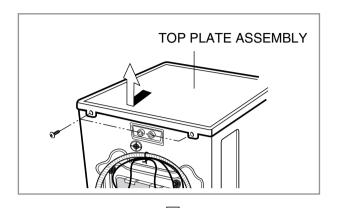
DRY HEATER TROUBLE



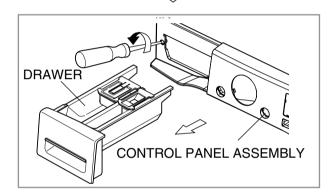
9. DISASSEMBLY INSTRUCTIONS

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

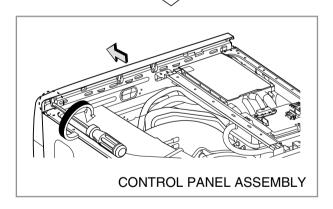
CONTROL PANEL



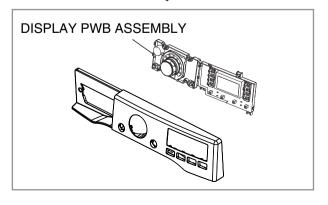
- ① Unscrew 2 screws on the back of the top plate.
- ② Pull the top plate backward and upward as shown.



- ③ Disconnect the Display PWB assembly connector from the cabling.
- 4 Pull out the drawer and unscrew 2 screws.

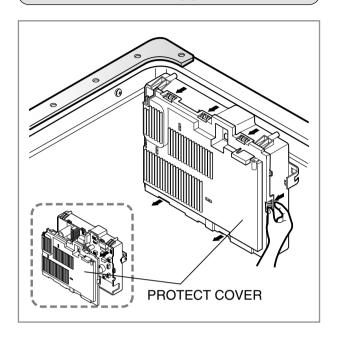


- (5) Remove one screw.
- 6 Lift the side the control panel assembly and pull it out.

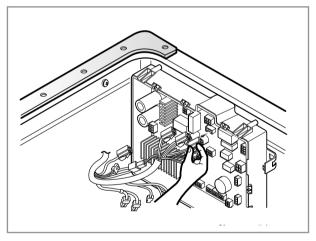


- ① Unscrew the 8 screws from the control panel assembly.
- (8) Disassemble the display PWB assembly.

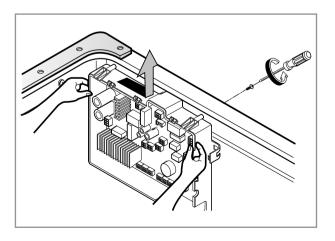
MAIN PWB ASSEMBLY



- 1 Disconnect the POWER connector and the pressure switch assembly.
- 2 Remove the protective cover.

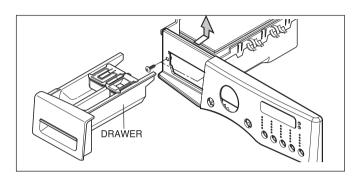


3 Disconnect the connectors.

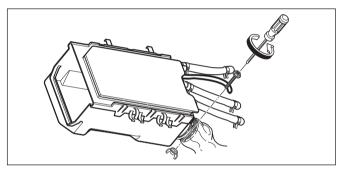


- (4) Unscrew 1 screw on the back.
- (5) Remove the main PWB.

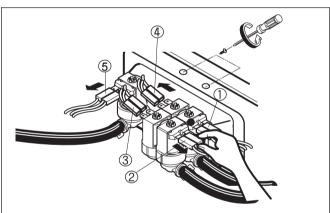
DISPENSER ASSEMBLY



- ① Disassemble the top plate assembly.
- ② Pull out the drawer.
- ③ Push out the DISPENSER ASSEMBLY after unscrew 2 screws.



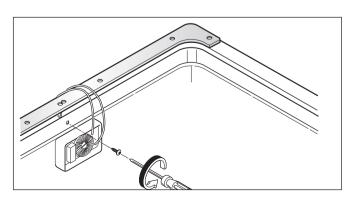
④ Unscrew the nut at the lower part of the dispenser.



⑤ Disassemble the 4 connectors from the valves.

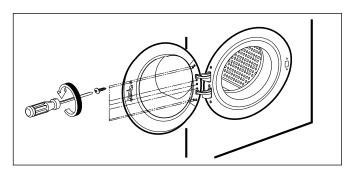
- Wire Color
- ① Blue Housing (YL-BK)
- ② Red Housing(VT-BK)
- 3 White Housing(WH-BK)
- Blue Housing(GY-BK)
- ⑤ Red Housing(BL-BK)
- 6 Unscrew 2 screws from the back of the cabinet.

NOISE FILTER

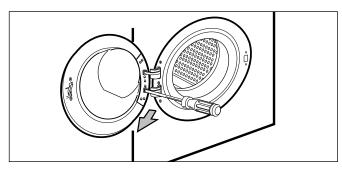


- ① Unscrew a screw from the TOP BRACKET.
- $\ensuremath{\textcircled{2}}$ Disassemble two connectors from the POWER CORD.

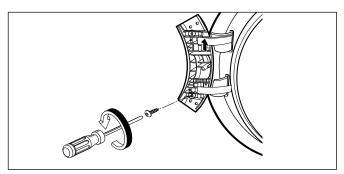
DOOR



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

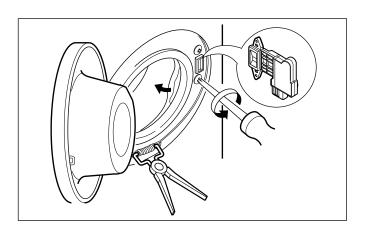


③ Put a flat (-) screwdriver into the opening of the hinge, and pull out the hinge cover.



- ④ Unscrew a screw from the lower side of door.
- ⑤ Disassemble the door upward.
 - **** Be careful!** The door is heavy.

DOOR LOCK SWITCH ASSEMBLY

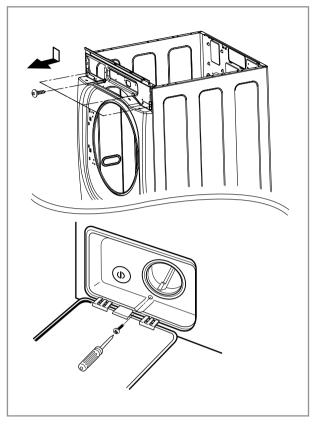


- ① Open the door and disassemble the CLAMP ASSEMBLY.
- ② Unscrew the 2 screws.

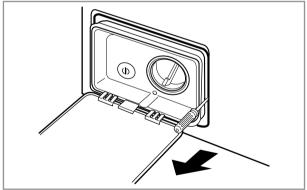
*** NOTE**

• Reconnect the connector after replacing the DOOR SWITCH ASSEMBLY.

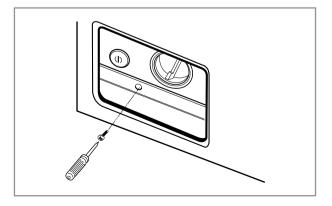
CABINET COVER



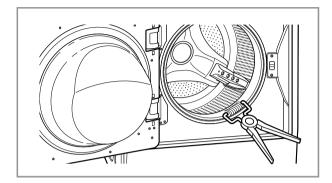
- ① Unscrew the 5 screws from upper of the cabinet cover.
- (2) Unscrew the screw from the filter cover.

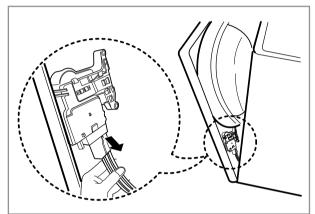


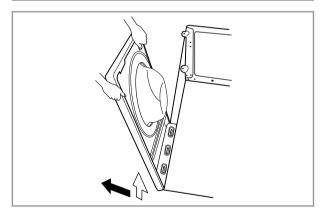
③ Put a flat (-) screwdriver or putty knife into the hinge slots at the bottom of the cover and pry it out.

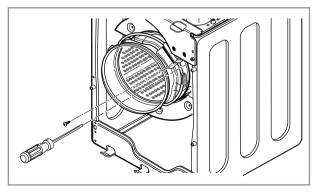


4 Unscrew the screw from the lower side of the cabinet cover.







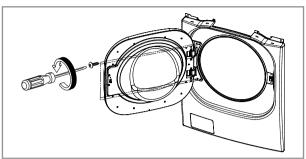


- ⑤ Open the door.
- (6) Disassemble the clamp assembly.

- 7 Tilt the cabinet cover.
- 8 Disconnect the door switch connector.
- NOTE: When assembling the cabinet cover, connect the door switch connector.
- 9 Lift and separate the cabinet cover.

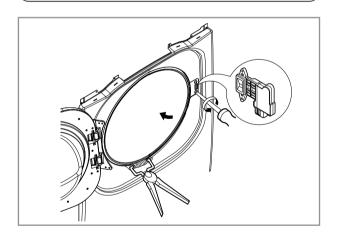
- 10 Disassemble the clamp assembly.
- 1 Disassemble the gasket.

DOOR



- 1 Open the door.
- ② Unscrew the 4 screws from the hinge. (Use the 8mm tool.)
- 3 Disassemble the door upward.

DOOR LOCK SWITCH ASSEMBLY

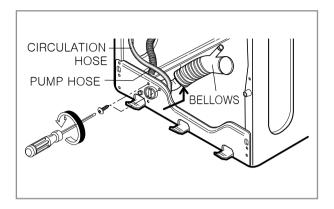


- ① Open the door and remove the gasket using the special gasket pliers.
- 2 Unscrew the 2 screws.

*** NOTE**

 Reconnect the connector after replacing the door switch assembly.

PUMP



- (1) Disassemble the cabinet cover.
- ② Separate the pump hose, the bellows, the circulation hose assembly from the pump assembly.
- (3) Disassemble the pump assembly.

HEATER



- 1) Disassemble the cabinet cover.
- (2) Separate 2 connectors from the heater.
- (3) Loosen the nut and pull out the heater.

***** CAUTION

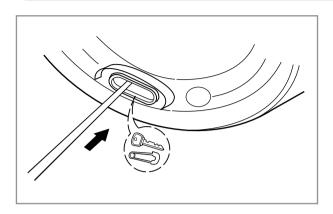
- When assembling the heater, insert the heater into the heater clip on the bottom of the tub.
- Tighten the fastening nut so the heater is secure.

THERMISTOR



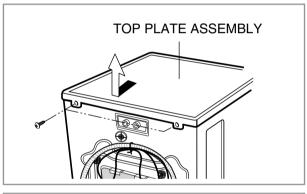
- (1) Disassemble the cabinet cover.
- ② Unplug the white connector from the thermistor.
- ③ Pull it out by holding the bracket of the thermistor.

(WHEN FOREIGN OBJECT IS STUCK BETWEEN DRUM AND TUB)

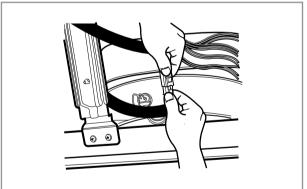


- 1 Disassemble the cabinet cover.
- (2) Separate the heater from the tub.
- ③ Remove any foreign objects (wire, coin, etc.) by inserting a long bar in the opening.

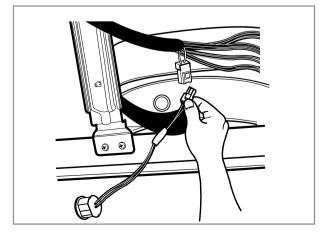
LAMP ASSEMBLY



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

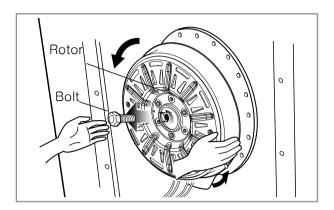


(3) Disconnect the connector.



4 Disassemble the lamp assembly.

MOTOR/DAMPER



- 2
- HINGE, DAMPER

 DAMPER

- (1) Disassemble the back cover.
- (2) Remove the bolt.
- 3 Pull out the rotor.

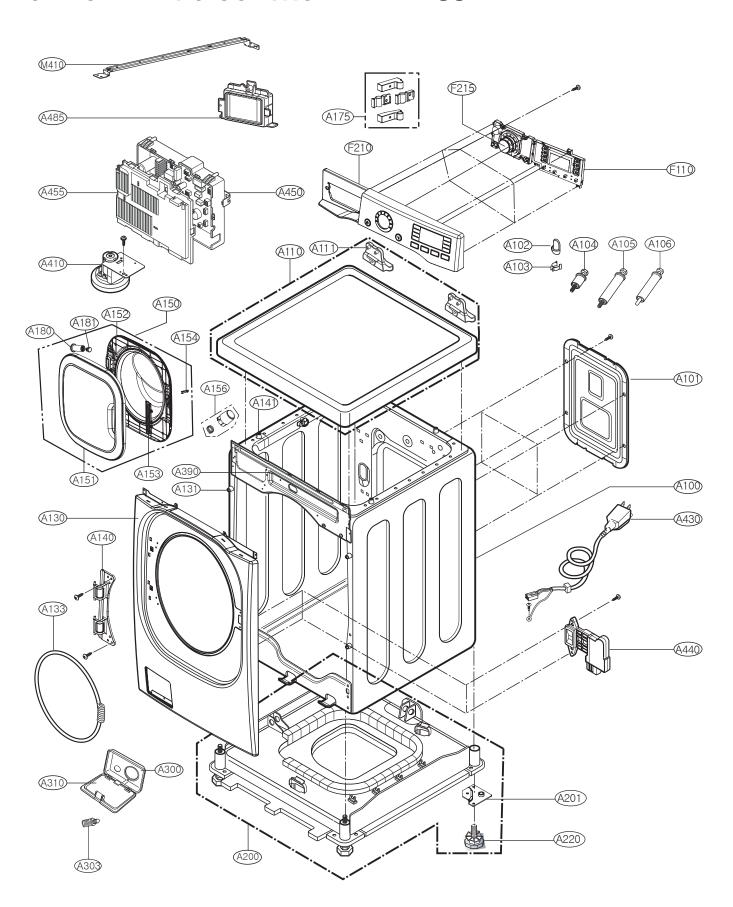
- (1) Unscrew the 2 screws from the tub bracket.
- (2) Remove the 6 bolts on the stator.
- (3) Unplug the 1 connectors from the stator.

① Disassemble the damper hinges from the tub and base.

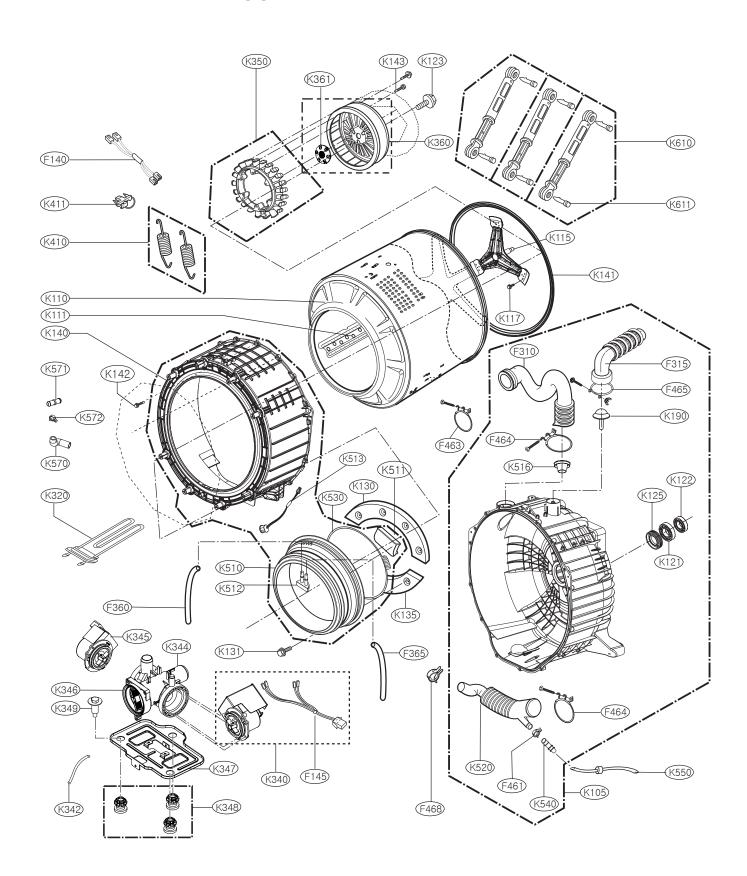
***** NOTE

 If you pull the dampers apart, the must be replaced. If you do not separate them, they can be re-used.

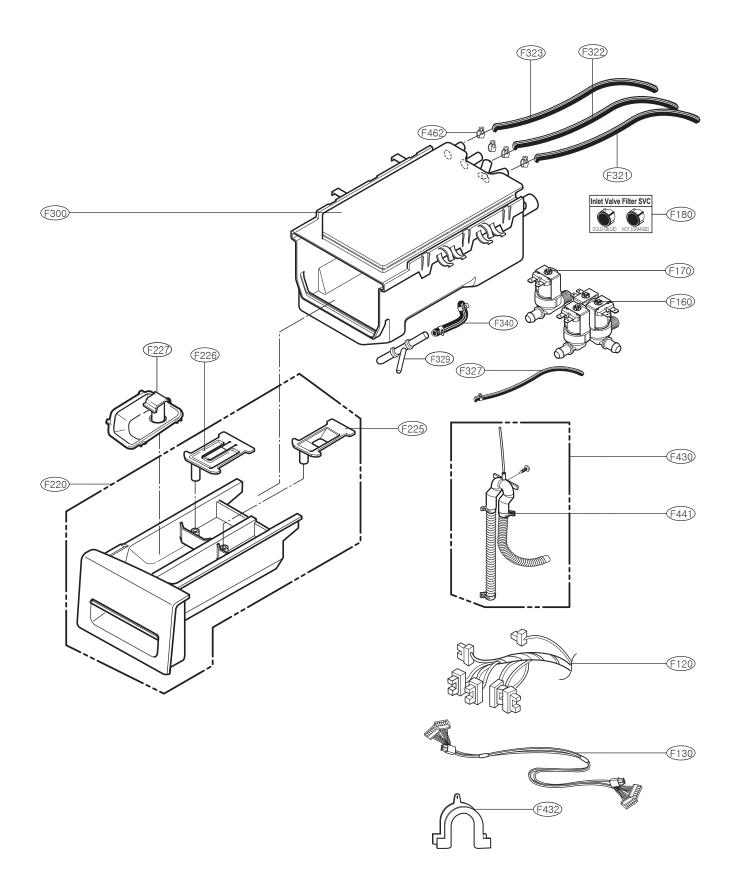
8-1. CABINET & CONTROL PANEL ASSEMBLY



8-2. DRUM & TUB ASSEMBLY



8-3. DISPENSER ASSEMBLY



8-4 Dry Duct ASM

