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WASHING MACHINE SERVICE MANUAL

▲ CAUTION

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

MODEL: WM2688H*M



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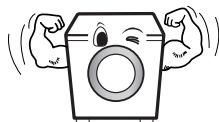
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1. SPECIFICATIONS

ITEM		WM2688H*M
COLOR		W:BLUE WHITE, N:NAVY BLUE
POWER SUPPLY		AC 120 V, 60 Hz
PRODUCT WEIGHT		192 lbs (87kg)
ELECTRIC POWER CONSUMPTION	WASHING	280 W
	DRAIN MOTOR	80 W
	WASH HEATER	1000 W
REVOLUTION SPEED	WASH	46 rpm
	SPIN	0-1320 rpm
CYCLES		9
WASH/RINSE TEMPERATURES		5
SPIN SPEEDS		5
OPTIONS		Prewash, Rinse+Spin, Extra Rinse, Water Plus, Stain Cycle
WATER CIRCULATION		Incorporated
OPERATIONAL WATER PRESSURE		14.5–116 psi (100-800 kPa)
CONTROL TYPE		Electronic
WASH CAPACITY [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 TYPE		PTC + Solenoid
WATER LEVEL		10 steps (by sensor)
LAUNDRY LOAD SENSING		Incorporated
ERROR DIAGNOSIS		Incorporated
AUTO POWER OFF		Incorporated
CHILD LOCK		Incorporated
RLM ENABLE		Incorporated
STEAM		Incorporated

2. FEATURES & TECHNICAL EXPLANATION

2-1. FEATURES



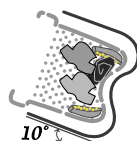
■ **Ultra Capacity**

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.



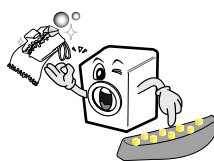
■ **Tilted Drum and Extra Large Door Opening**

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



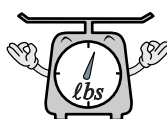
■ **Steam Washing and SteamFresh™**

Steam Washing features upgraded washing performance with low energy and water consumption. SteamFresh™ cycle removes wrinkles from dry clothes.



■ **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.



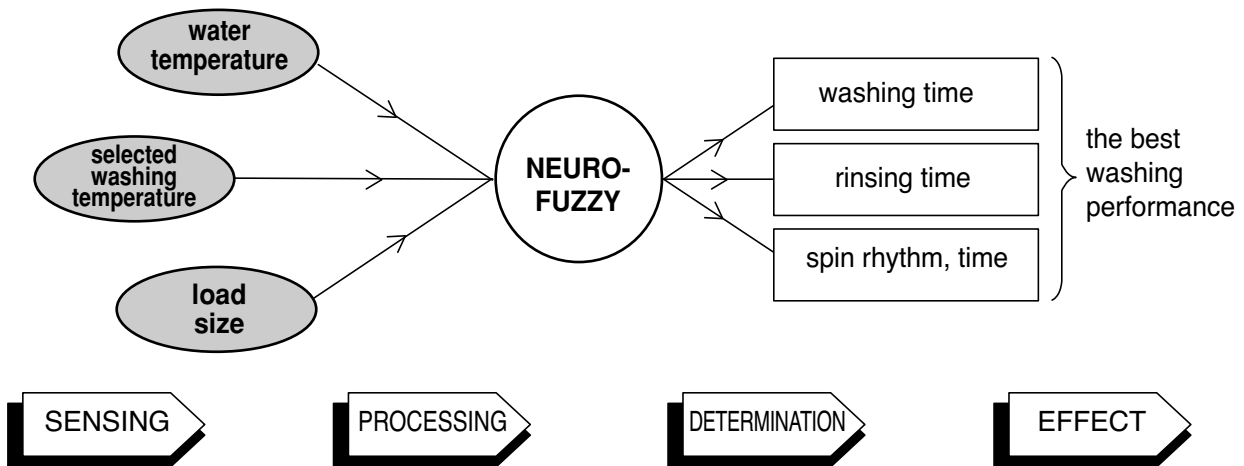
■ **Using the RLM (Remote Laundry Monitor)**

The RLM monitors status of your washer and/or dryer. You can plug the display unit into any power outlet in your home.

The RLM Display Unit can be purchased separately for this washer.

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.
- While 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 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.

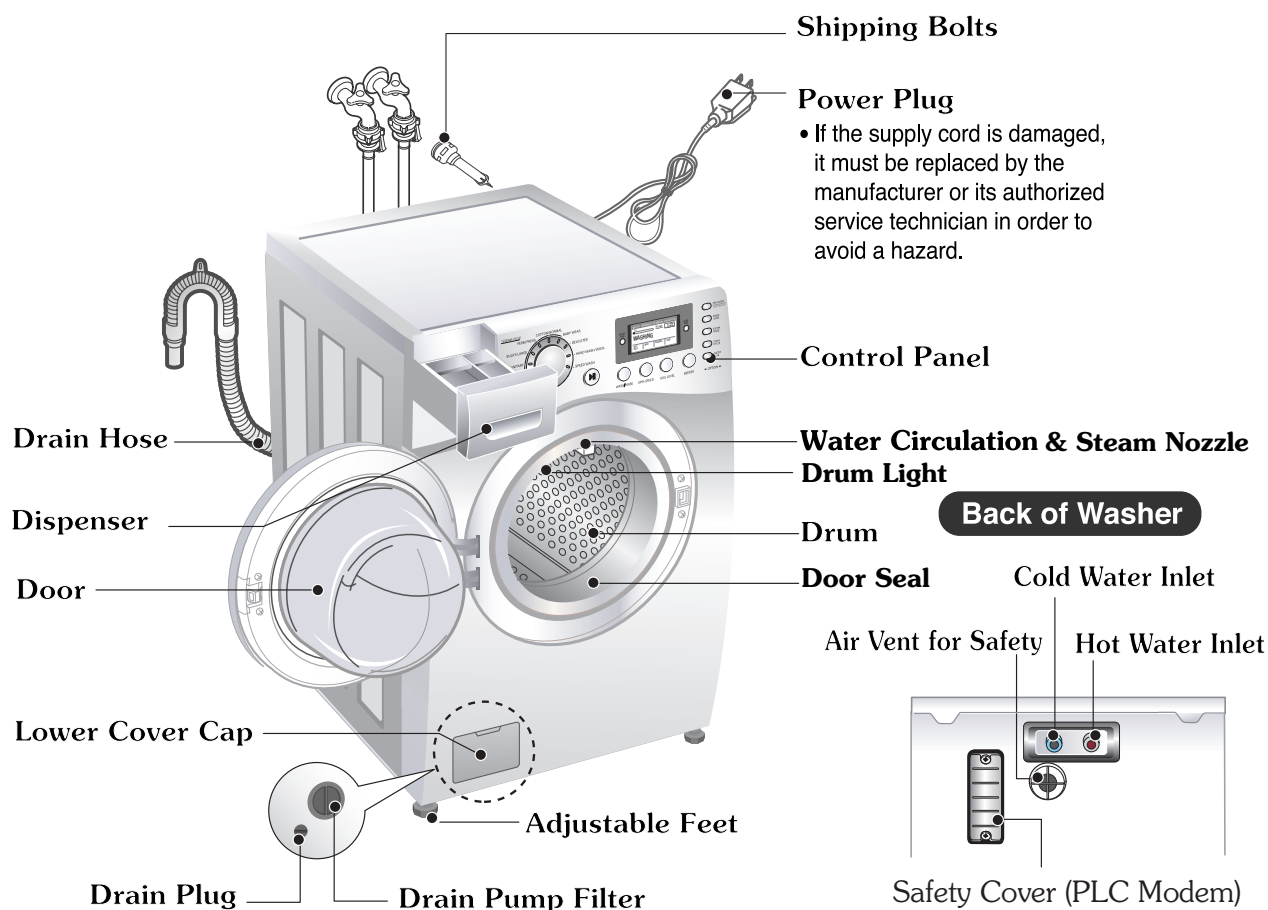
2-9. STEAM

- For tough stained clothes, underwear, 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.

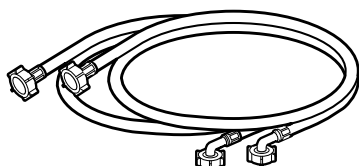
2-10. DRUM LIGHT

- The Drum Light comes on when the Power button is pressed. It goes off when the door is closed and the washer starts operation.
- The Drum Light remains off when the door is locked.
- The Drum Light can be turned on while the washer is in operation by pressing the Rinse+Spin button for 3 seconds. The light will turn off automatically 4 minutes later.
- The Drum Light comes on when the washing cycle is finished and goes off 4 minutes later.

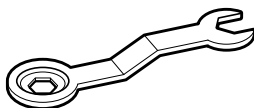
3. PARTS IDENTIFICATION



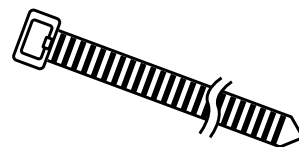
■ ACCESSORIES



Hot/Cold (1 each)
Hose



Wrench



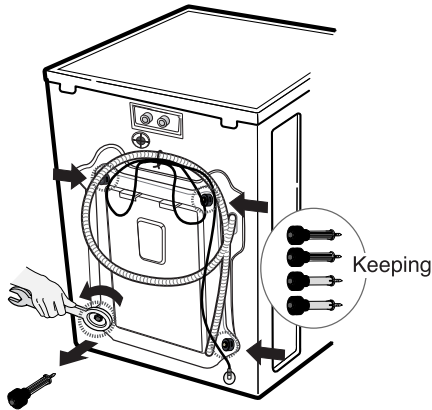
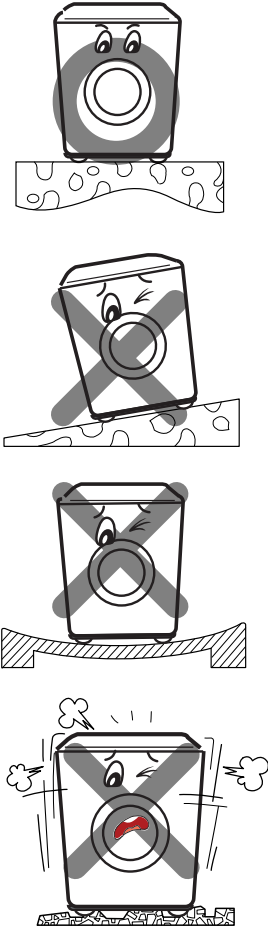
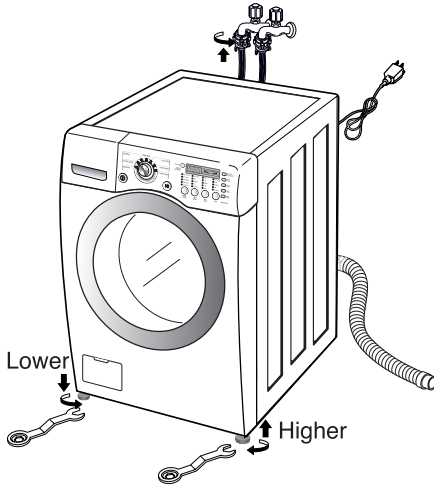
Tie strap (Option)
to secure drain hose to standpipe,
inlet hose, or laundry tub

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.

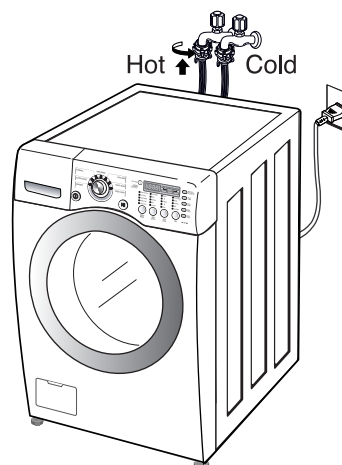
■ STANDARD INSTALLATION

The appliance should be installed as follows:

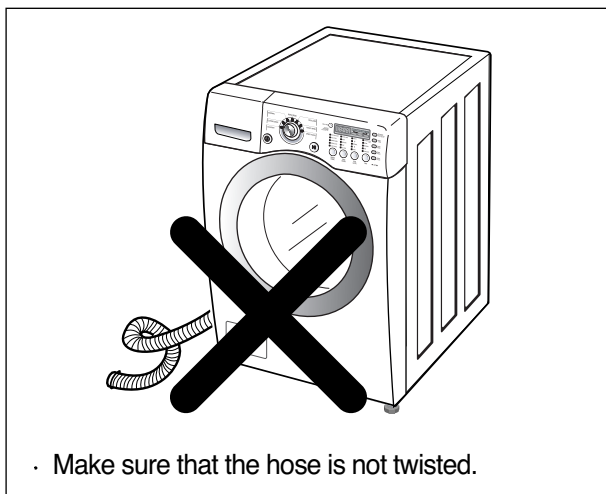
REMOVE THE SHIPPING BOLTS	INSTALL THE APPLIANCE ON A FLAT AND FIRM SURFACE	ADJUST THE LEVELING
- Remove the 4 shipping bolts with the supplied wrench. ※ Do first lower side to remove easily. - Keep the shipping bolts and spanner for future use. - Insert the 4 caps (provided) into the hole. 		- Turn the leveling feet to adjust the appliance.  - Turn clockwise to raise; counterclockwise to lower.

■ HOW TO CONNECT THE INLET HOSE

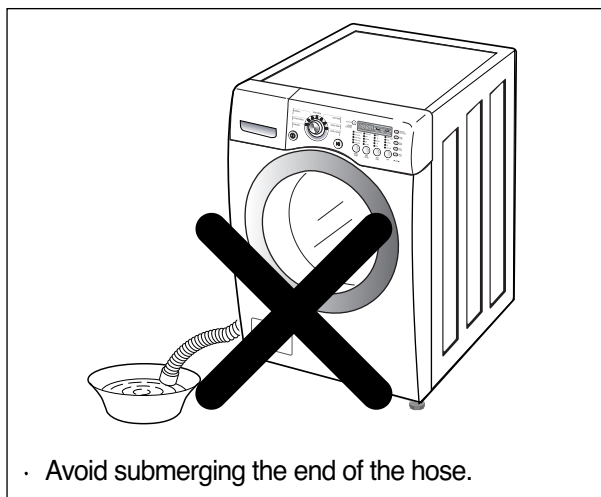
- Verify that the rubber washer is inside of the valve connector.
- Tighten the inlet hose securely to prevent leaks.



■ CONNECT THE DRAIN HOSE



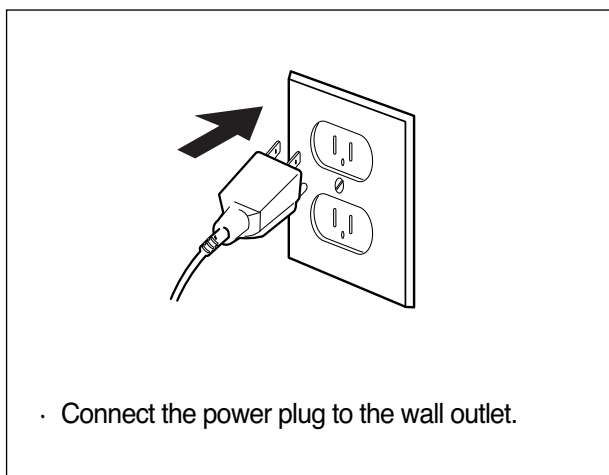
- Make sure that the hose is not twisted.



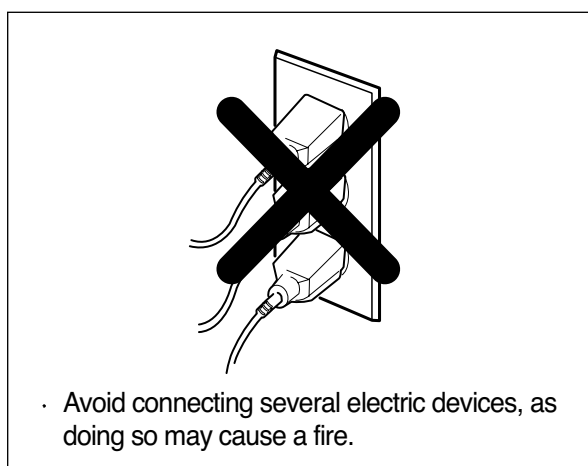
- Avoid submerging the end of the hose.

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

■ CONNECT POWER PLUG

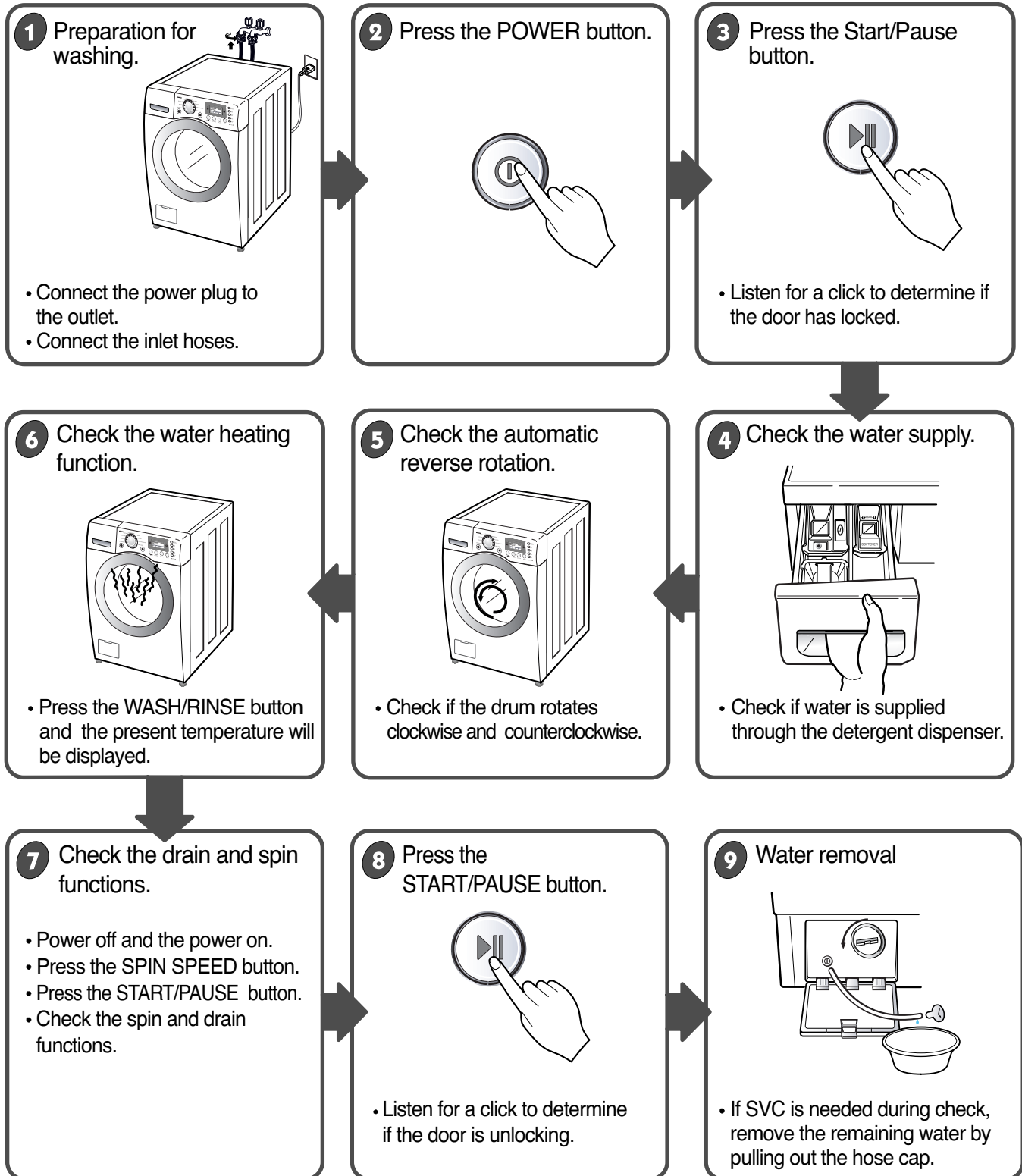


- Connect the power plug to the wall outlet.



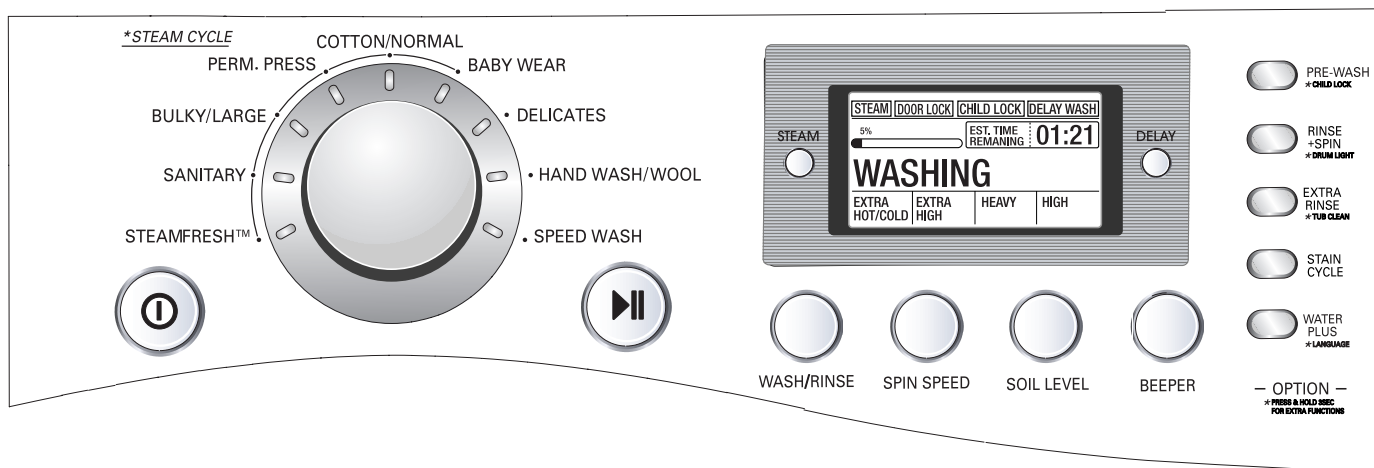
- Avoid connecting several electric devices, as doing so may cause a fire.

7 TEST OPERATION



5. OPERATION

■ WM2688H*M

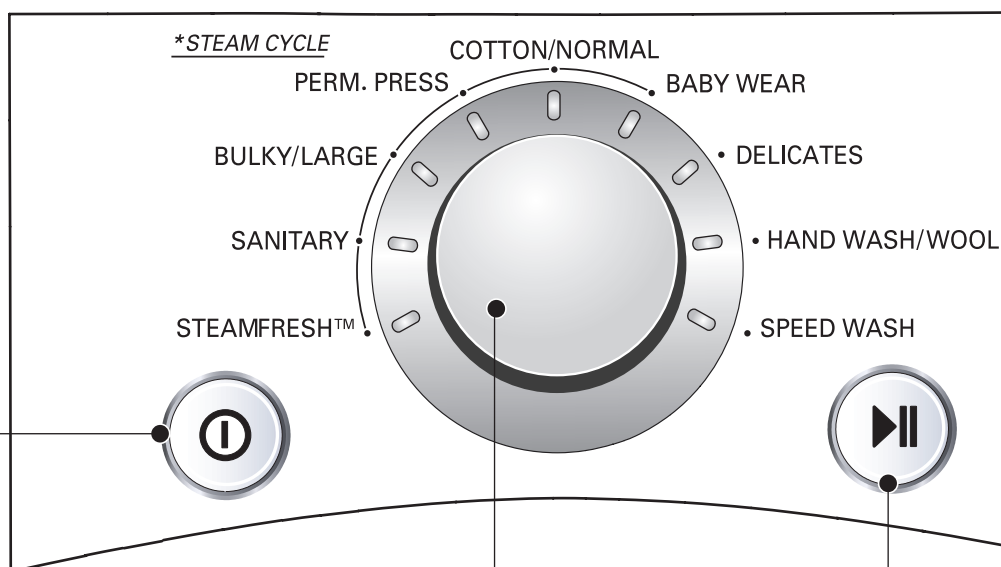


Power Button

- 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

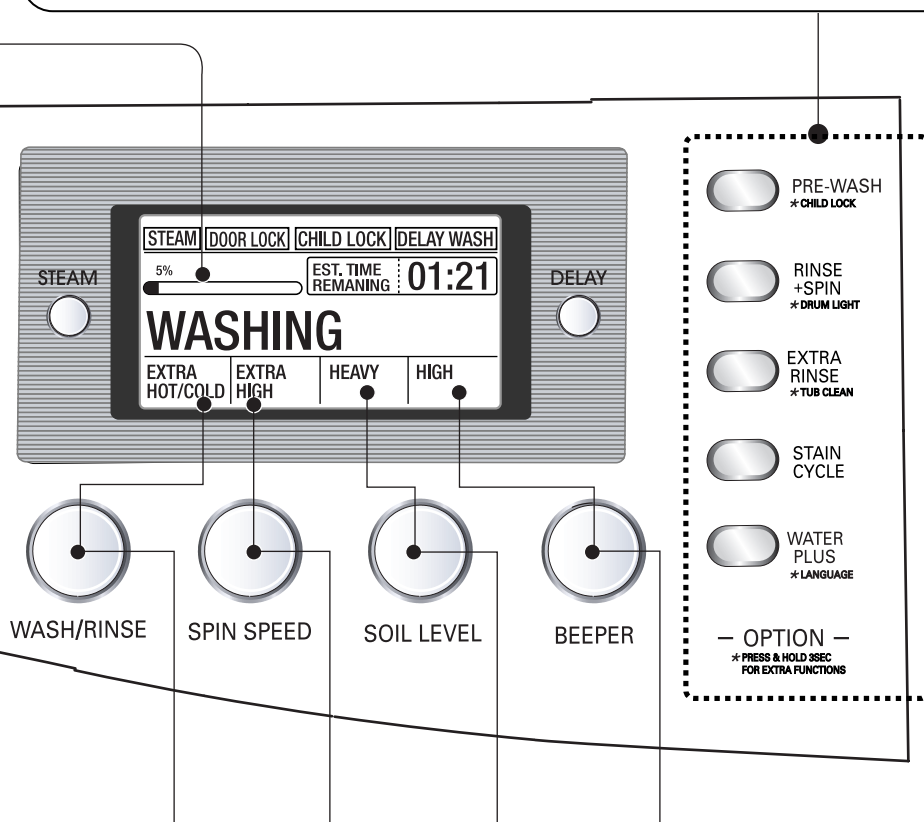
- Rotate the **Cycle selector knob** to select the cycle designed for different types of fabric and soil levels.

Start/Pause

- Use this button to Start/Stop the washer.

Option Button

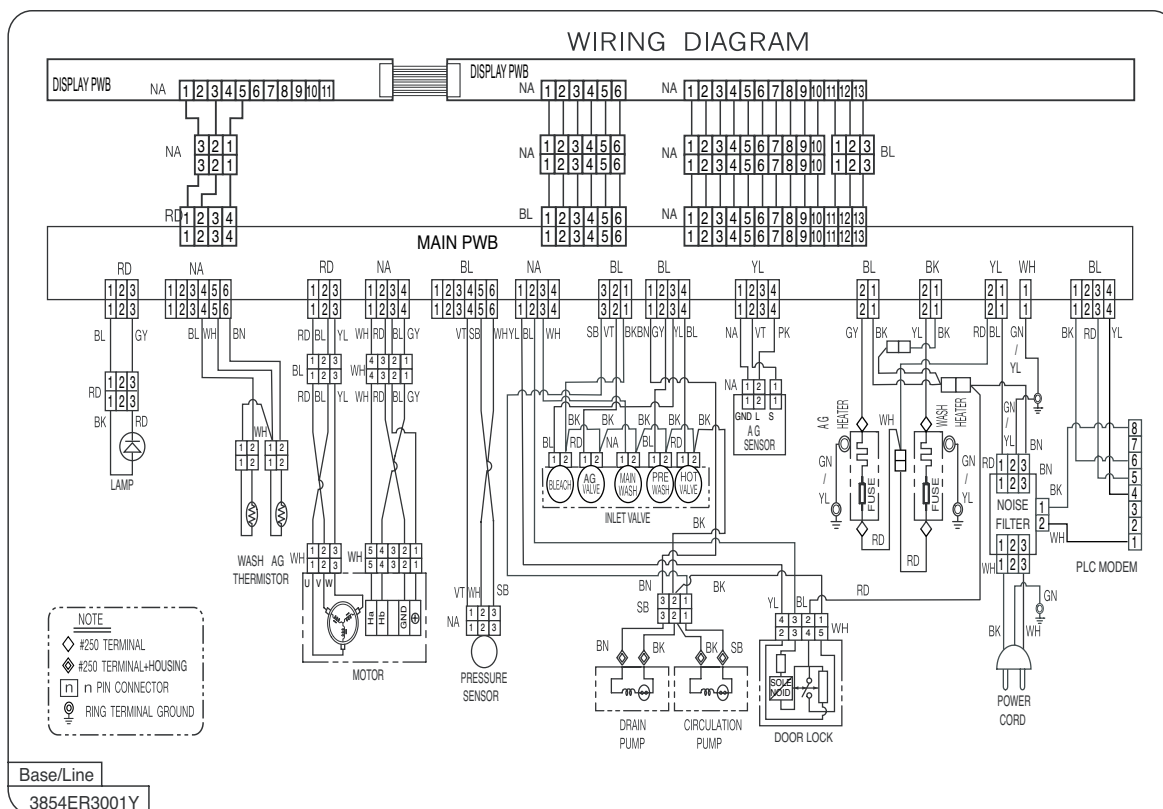
- **PREWASH:** Use this option for loads that need pretreatment. It adds 16 minutes prewash and a spin cycle.
- **RINSE+SPIN:** Use this option to rinse and then spin.
- **EXTRA RINSE:** This option provides an additional rinse.
- **STAIN CYCLE:** Adds time to the wash and rinse cycles for better stain 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, Beeper 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.
- Press repeatedly to adjust the volume of the Beeper

6. WIRING DIAGRAM/PROGRAM CHART



PROGRAM CHART

* Water Supply: W-S

* Intermittent Spin: I-S

* Disentangle: D-T

CYCLE STEP Time (SEC)	Wash										Rinse										Spin			A U T O O F F	**Approx. Working Time (Minutes)					
	Pre				Main						Normal					Extra or Stain			Extra & Stain											
	W I S	Wash	Drain	I S	W I S	Wash		Cool-down			1			2			3			3										
						Heat	Wash	W I S	Rinse	Drain	Drain	I S	W I S	Rinse	Drain	I S	W I S	Rinse	Drain	I S	W I S	Rinse								
																							W I S			Rinse	Drain	Drain	I S	W I S
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
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	60 ~ 180		
Sanitary		8				60																								105
Cotton /Normal		8				13																								58
Bulky /Large		8				20																								57
Perm Press		8				25																								55
Delicates		8				18																								34
Baby Wear						14																								120
Hand Wash /Wool						70																								34
Speed Wash						14																								30
Drain+Spin						8								120			120					120								14
Wash + Rinse		8																												45
Rinse + Spin																														19

Basic Cycle
Optional Cycle
Pre-Setting Time : Water Supply - 60 sec.
Drain - 60 sec.

* Wash time is in minutes.

** 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.

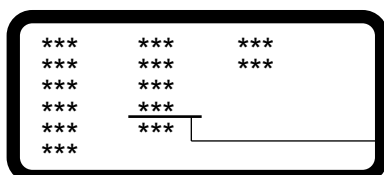
The washer must be empty and the controls must be in the off state.

1. Press the SPIN SPEED and SOIL LEVEL buttons simultaneously.
2. Press the Power (⏻) 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.	QC TEST MODE
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 steam turns on.	Water level frequency (25~65)
8 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
9 times	Tumble counterclockwise.	rpm (42~50)
10 times	Heater turns on for 3 sec.	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	Water level Sensor for Steam	Water level frequency of TSG(0~255)
14 times	Steam Heater turns on for 1.2 sec.	TSG temperature
15 times	Off	-

7-3. HOW TO CHECK THE WATER LEVEL FREQUENCY

* Press the WASH/RINSE and SOIL LEVEL button simultaneously.



• The digits indicate the water level frequency.

So, for example a display indicating 058: a Water level frequency of $20+(58 \times 0.1)$

= 25.8 kHz

7-4. ERROR DISPLAY

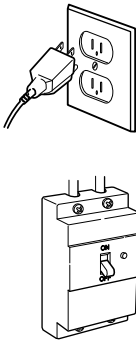
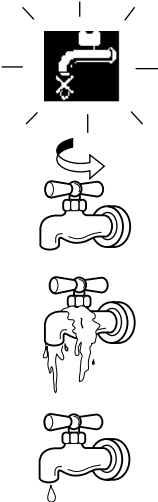
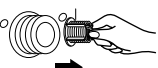
- If you press the START/PAUSE button when an error is displayed, any error except 『PE』 will disappear and the machine will go into the pause status.
- In case of 『PE』, 『tE』, 『FE』 if the error is not resolved within 20 sec., or the in case of other errors, if the error is not resolved within 4 min., power will be turned off automatically and the error code will blink. But in the case of 『FE』, power will not be turned off.

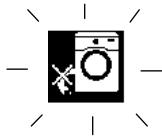
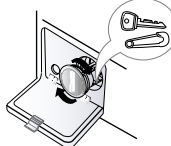
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		• Correct water level (246) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		• The load is too small. • The appliance is tilted. • Laundry is gathered to one side. • Non distributable things are put into the drum.
3	DRAIN ERROR		• Not fully drained within 10 minutes.
4	OVER FLOW ERROR		• 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		• The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR		• 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.

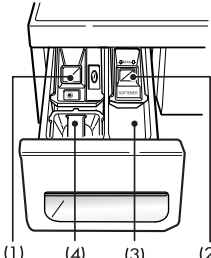
	ERROR	SYMPTOM	CAUSE
8	LOCKED MOTOR ERROR		• The connector (3-pin, male, white) in the MOTOR HARNESS is not connected to the connector (3-pin, female, white) of STATOR ASSEMBLY. • The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in 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.
10	EEPROM ERROR		• EEPROM is out of order. ※ Displayed only when the START/PAUSE button is first pressed in the QC Test Mode.
11	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
No power	Is the power plug connected firmly to 120 V AC outlet? YES Power failure? or Breaker opened? Is the outlet controlled by a switch? NO Visit to service. 
Water inlet trouble 	Is  displayed? YES Is the tap opened? YES Is the tap frozen? NO Is the water supply shut-off? NO Is filter in the inlet valve clogged with foreign material? YES NO Visit to service.  Clean the filter of inlet valve 

SYMPTOM	GUIDE FOR SERVICE CALL
Door error 	Started with door opened? YES →  Close the door.  NO ↓ Was the load too large? YES → Avoid overloading. NO ↓ Clicking sound is heard once or twice , when the START/PAUSE button is pressed to start the cycle? NO ↓ Visit to service. Check if the door switch is OK.
Drain trouble 	Is  displayed? YES ↓  Is the drain pump filter clogged with foreign material such as pins, coins, etc? YES → Clean up the filter.  NO ↓ Is the drain hose frozen kinked, or crushed? NO ↓  Visit to service.

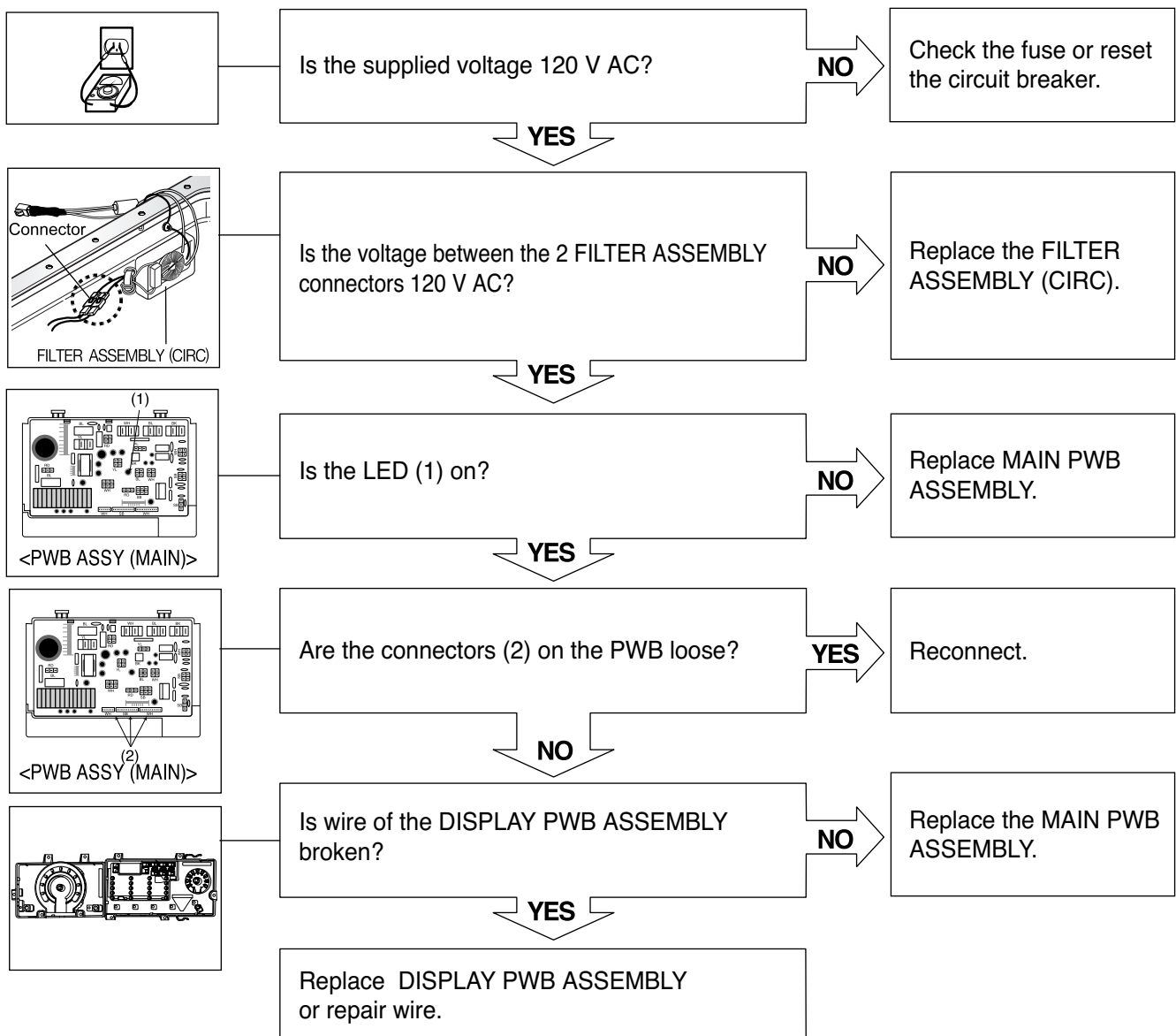
SYMPTOM	GUIDE FOR SERVICE CALL
Suds overflow from the appliance. (In this condition, wash and spin do not operate normally)	Is a HE (High Efficiency) detergent used? YES Is the proper amount of detergent used as recommended? YES Recommend to reduce the amount of detergent. * This appliance has an automatic 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? YES Is the cap clogged? YES Explain proper use of liquid laundry products. Clean the compartment.  (1) Liquid chlorine Bleach Compartment (2) Liquid fabric Softener Compartment (3) Prewash Compartment (4) Main Wash Compartment
	Visit to service.

8-2. FAULT DIAGNOSIS AND TROUBLESHOOTING

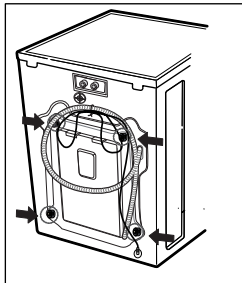
CAUTION

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.

NO POWER



VIBRATION & NOISE IN SPIN



Have all the transit bolts and base packing been removed?

NO

Remove the transit bolts and Base packing.

YES

Is the washer installed on a solidly constructed floor?

NO

Move the washer or reinforce the floor.

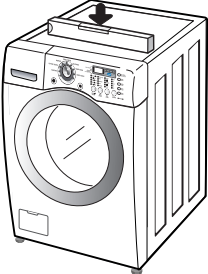
YES



Base Packing

Check if the washer is perfectly level as follows:

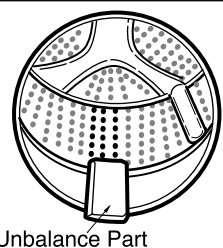
Level



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

Put an unbalance part (rubber) inside of drum and start QC test mode and run in high spin (Refer to section 7-2).

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

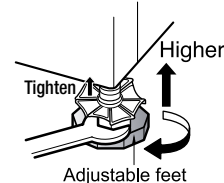


Unbalance Part

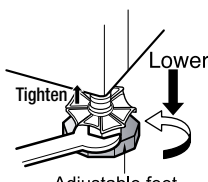
If you do not have the unbalance part, put 4.5 to 6.5 lbs (2 to 3 kg) of clothing. Once loaded, press power, Rinse+Spin and the start/pause button in sequence.

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

YES



Adjustable feet



Adjustable feet

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.