

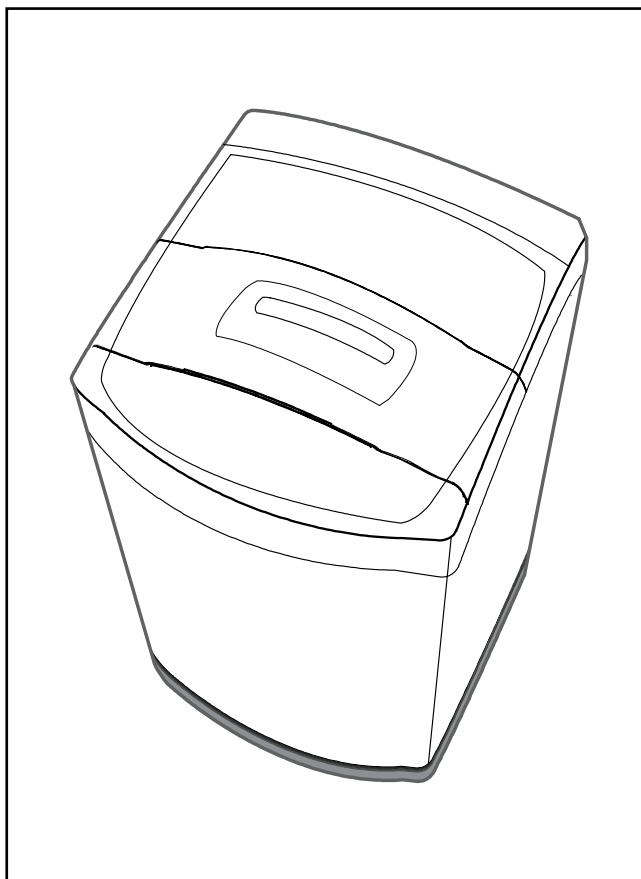


# WASHING MACHINE

WA10RAQ3IW/YGG

# ***SERVICE*** *Manual*

## WASHING MACHINE



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## 1. Precautions

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When performing trouble - shooting and part replacement during servicing note the following safety precautions.

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### 1-1 Safety Precautions

#### 1-1-1 Use Genuine Parts

The components of the washing machine have safety -features such as non - combustibility and voltage withstanding. Therefore, always use the same part as used when replacing parts. In particular, be sure to use only designated parts in case of major safety parts identified by the making.

#### 1-1-2 Grounding

Connect the grounding wire to the shell plate, and bury it under at least 25cm of earth ; alternatively, connect the ground wire to the appropriate pin on a properly grounded power receptacle.

Never ground it to the telephone line, lightning rod, or gas pipe.

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### 1-2 Servicing Precautions

#### 1-2-1 Observe warnings

Be sure to follow special warnings and precautions that are described on part labels and in the owner's manual.

#### 1-2-2 Special Precautions for Parts Assembly and wiring

When assembling parts that use safety - insulation material (such as tube and tape), or when installing internal wiring, be sure to restore all parts and wiring to their original positions.

Take special care to avoid contact with sharp edges.

#### 1-2-4 Insulation Check

Pull out the plug from the power receptacle, pour water into the spin tub, and then set the timer. Check to see that the insulation resistance between the terminals of the plug and the exposed metal is greater, than 1 MΩ .

**Note :** When it is impossible to perform the insulation check with a 500V insulation resistance tester, use other testers for inspection.

#### 1-2-3 Safety Checks after Servicing

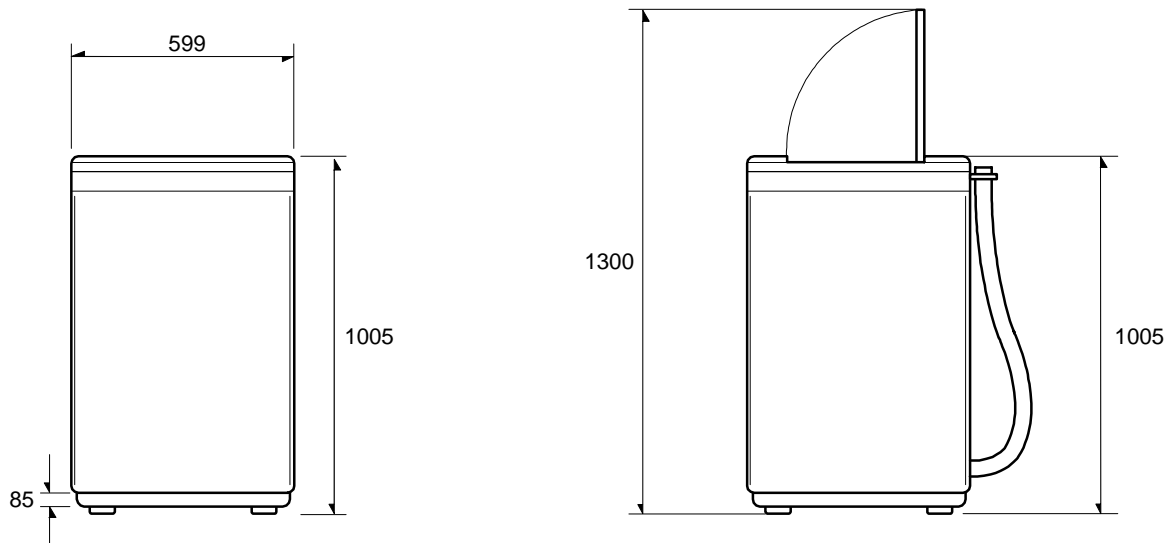
After servicing, check to see that the screws, parts, and wiring are restored to their original positions, and check the insulation between the external metals and the socket plug. In addition, place the washing machine in a level position (less than 1° of grade) to prevent vibration and noise during operations.

## 2. Specifications

Classifications		Specifications
Washing and Dehydrating Capacity		8.0 kg
Washing Method		Heavy duty rotation type (centripetal current)
Standard Volume of Water	Maximum Level	77
	High Level	65
	Medium Level	53
	Low Level	40
	Extra low level	28
Applicable Volume of Water		182 (high level of water)
Rotation of the Pulsator		100 rpm
Rotation of the Spin Tub		680 rpm
Power Consumption	Washing	426 W
	Spinning	270 W
Dehydration Method		Centrifugal dehydration type
Drain Control		Motor driven
Applicable Water Pressure		0.05~0.78Mpa (0.5 kgf / cm <sup>2</sup> ~ 8.0 kgf / cm <sup>2</sup> )
Weight	Gross	52kg
	Net	48kg
Dimension	Gross	W 652mm x D 713mm x H 1040mm
	Net	W 599mm x D 637mm x H 1005mm
Accessories		Water supply hose, drain hose, owner's manual

## 3. Features

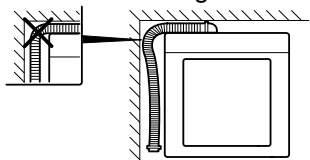
### 3-1 Dimensions



### 3-2 Installation

#### 3-2-1 Level Specifications and Wall - Clearance Distances

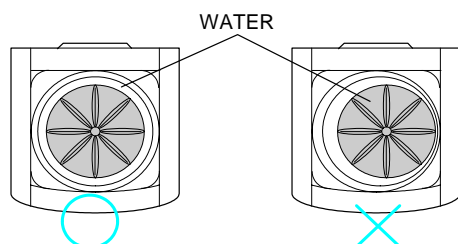
1. Install the washing machine on a solid and level floor.
2. Place the machine at least 10cm away from the wall.
3. Placement on an inclined, weak or rough floor may cause abnormal trembling.



#### 3-2-2 Balance

See if machine is placed level by checking the position of the washing tub.

- \* Open the lid of the machine, pour water into the tub up to the level just below the pulsator, and adjust the legs so that the pulsator is positioned at the center of the water as shown in the figure.
- \* Place the machine more than 10cm away the wall.

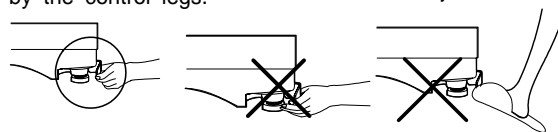


#### 3-2-3 Controlling the Front Adjustable Leg

To control the height, turn the adjustable leg.

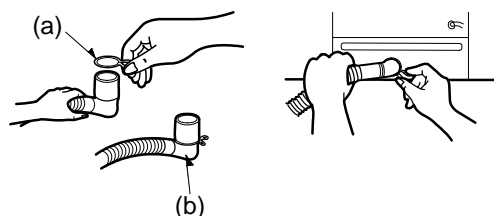
\* the user may be injured by the control legs.

\* Do not step on the adjustable handle.

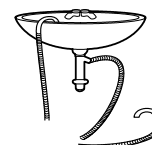


#### 3-2-4 Connecting the Drain Hose

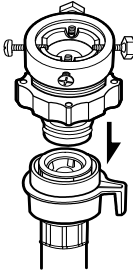
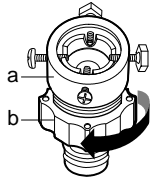
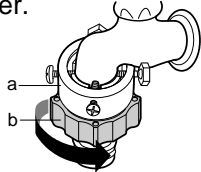
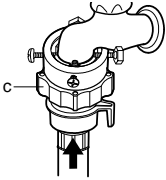
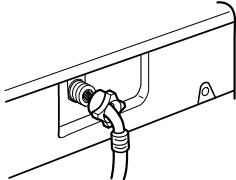
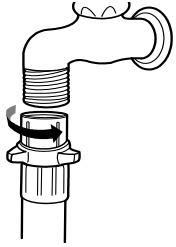
1. After pressing the joint ring(a), insert the drain hose (b) in the drain direction. (Same as pump model.)



2. Install the drain hose about 90-100cm above the ground (for pump model).

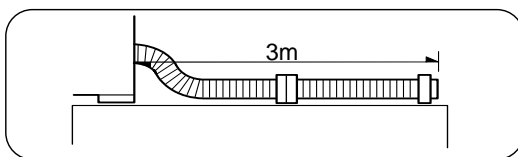


### 3-2-5 Connecting the water supply hose

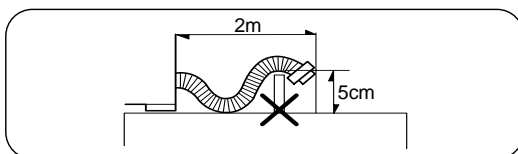
<p>1. Remove the adaptor from the water supply hose.</p> 	<p>2. First, using a "+" type screwdriver, loosen the three screws on the adaptor. Next, take the adaptor and hold parts (a) and (b) with a gap about 5mm between them.</p> 	<p>3. Connect adaptor to the water tap by firmly tightening the screws. Then turn part (b), following the arrow, and put (a) and (b) together.</p> 
<p>4. Connect the water supply hose to the adaptor. Pull down part (c) of the water supply hose. When part (c) is released, the hose is automatically connected to the adaptor, and makes a 'click' sound.</p> 	<p>5. Connect the other end of the water supply hose to the inlet water valve at the back of the washer. Screw the hose clockwise, all the way in.</p> 	<p>If the water tap is a screw type, connect a water supply hose that fits to the tap as shown.</p> 

### 3-2-6 Positioning the Drain Hose (without pump model)

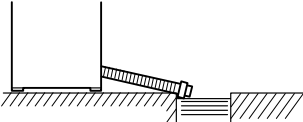
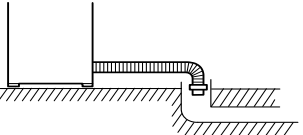
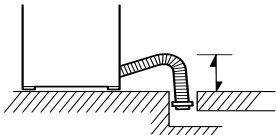
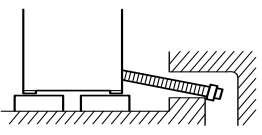
1. When there is no threshold, the length of the drain hose should not exceed 3m.
2. When it is necessary to connect the drain hose with the drain outlet located far away, connect the extension hose and applicable parts (available from dealers or service centers).



3. Do not install the drain hose where it must extend over a threshold of 5cm or more ; do not install where there is a threshold and the hose must extend for more than 2m.



#### 4. Other precautions

 <p>Do not put the end of the drain hose into the water.</p>	 <p>Do not place the hose below the floor level of the drain outlet.</p>
 <p>Do not make the mid part of the hose than the ends positioned higher.</p>	 <p>If the drain hose must be positioned at a high angle, install the washing machine so that it is in an even higher position.</p>

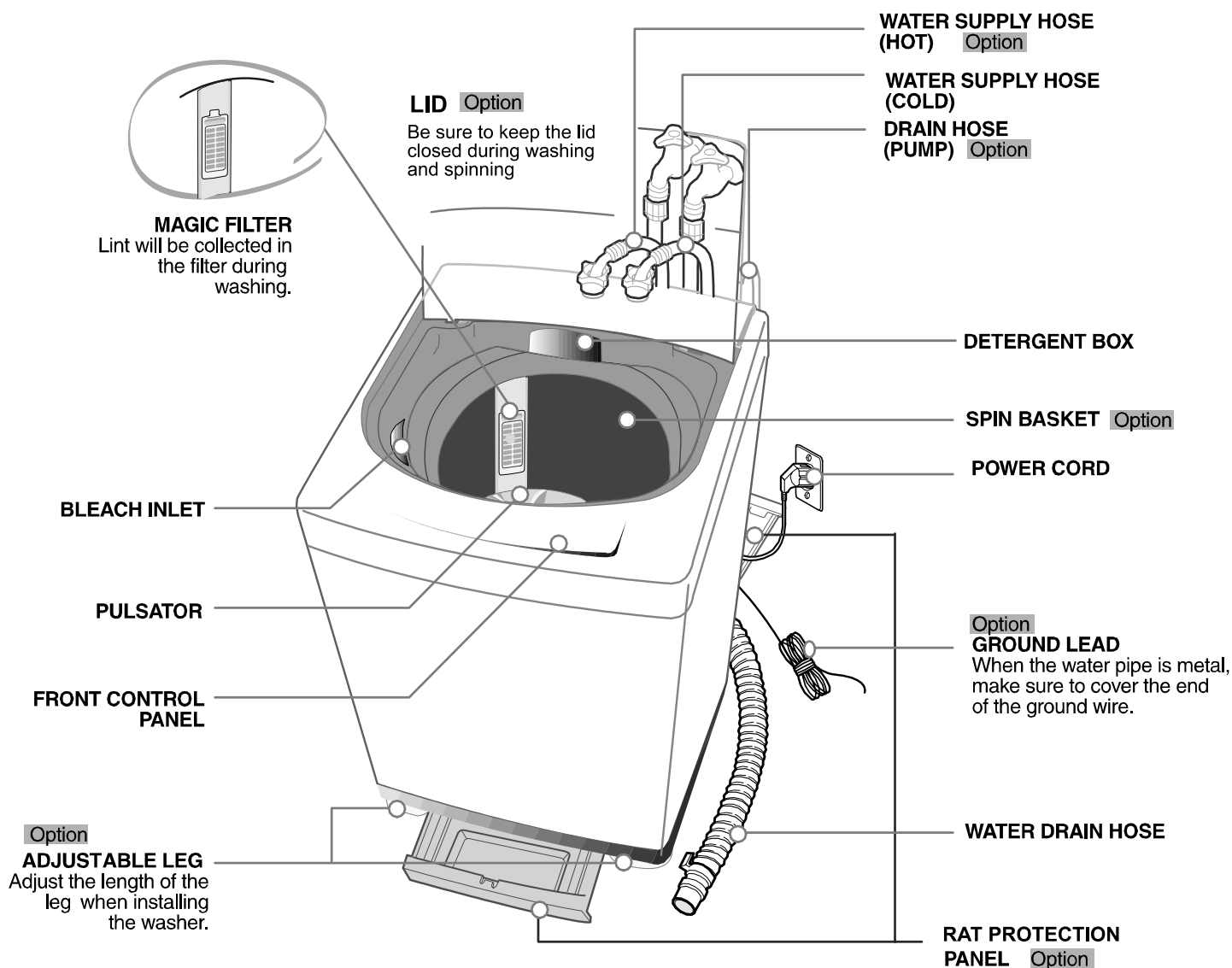
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## 4. Operating Instructions

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### 4-1 Component Identification

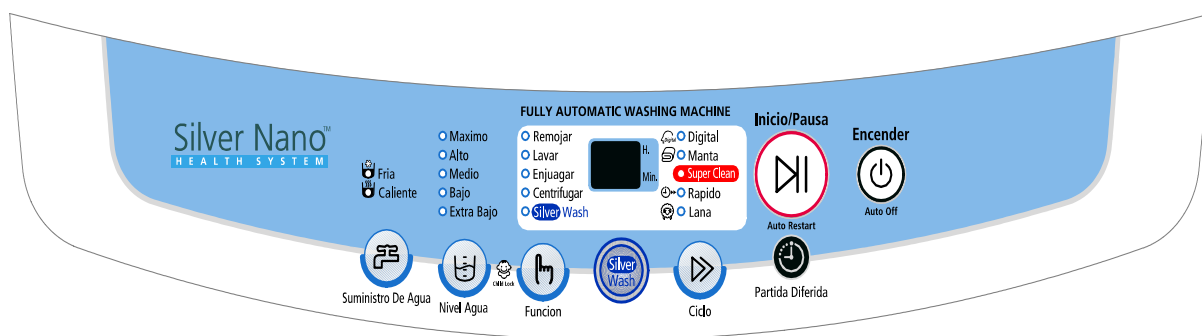
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## 4-2 Control Panel

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### 4-2-(1) REMAINING TIME INDICATOR LIGHT

1. Button controls and washing processes are displayed here.
2. Each icon is described under its control button.

### 4-2-(2) Function Indicator Light

1. In use indicated by a flashing symbol.
2. The light goes out at the end of the function.

### 4-2-(3) Start/Hold

1. Press this button to alternately 'start' or 'hold'.
2. This button is a convenient way to change washing courses or a commands.

### 4-2-(4) Power

1. Press this button for power ON/OFF.
2. When the washing operation is completed, the power automatically turns off and the buzzer sounds off 5 times.
3. Allow at least a 3-second interval before turning the washing machine again .

### 4-2-(5) Delay Start

1. This function is to finish the washing operation at the time user set.
2. You may change the delay start time by using this button. (from 3 hours to 18 hours)

### 4-2-(6) Water Level

1. Press this button to select the water height.
2. The selection order is :  
Medium → High → Maximum → Extra Low → Low

### 4-2-(7) Function

1. The selection order is :  
Wash, Rinse, Spin → Wash, Rinse, Spin, Wash+ → Wash, Rinse, Spin, Wash+, Soak → Wash, Rinse, Spin, Soak → Wash → Rinse → Spin → Wash, Rinse → Rinse, Spin → Wash, Rinse, Spin

### 4-2-(8) Course

1. Press this button to select the type of washing cycle.  
Fuzzy → Blanket → Eco+ → Speedy → Wool

### 4-2-(9) Silver wash

1. Press this button to select the Silver Wash System.

### 4-2-(10) Child lock ( )

1. This is a device to protect children from being accidentally hurt while playing with the washer.
2. Access & Exit : While operation, press and hold down the water level and the manual keys at the same time for 3 seconds
- 3 Feature : All keys except for POWER OFF are deactivated
4. DISPLAY : The cycle time and 'L' are displayed on the segment in turns

NOTE: In some regions, 'Digital' course means 'Fuzzy' course.

## 4-3 Function Descriptions

### 4-3-2 Water Level

1. In all the cases of prior to the first press of START/HOLD key, during operating or hold state, they follow the below sequences.

► MEDIUM → HIGH → MAXIMUM →  
EXTRA LOW → LOW

2. When Super Clean is selected, only MAXIMUM & HIGH & MEDIUM water level is possible.
3. If you change the course to WOOL, in case previous water level is low or medium, the water level is automatically selected High level and in case previous water level is over Low, the water level is not changed.
4. While water is supplying, if the water level is changed, the remaining time is changed.

### 4-3-3 Course

1. If this key is pressed before the first press of START/HOLD key or during HOLD state, the selection order is as follow.  
Even if manual washing is selected already, the selected course is cancelled, and the course is selected as follow.

► Fuzzy → Blanket → Super Clean → Speedy → Wool

2. During operating, all keys except for COURSE SELECTION key are valid. But, only START/HOLD is valid during spin operation.
3. During operating, If any key is pressed after pressing the START/HOLD key, new Selection course is performed, not related to previous course.
4. This key is invalid during operation.

### 4-3-4 Function Button

1. This key is valid except for weight sensing operation.
2. After START/HOLD during operation or under reset condition, as pressing this key display is changing as follows.

Wash, Rinse, Spin, Soak    Wash   Rinse   Spin  
Wash, Rinse   Rinse, Spin   Wash, Rinse, Spin

3. The beginning conditions are as follows when function key is selected. (ex.Maximum Level)

FUNCTION	TIME
WASH	18 min
RINSE	15 min
SPIN	11 min
WASH + RINSE	38 min
RINSE + SPIN	26 min

4. This key is used as adjusting function.

Rinsing times are added by one time when function key is pressed under general course operation and function operation as pressing this key.

Display is changing as follows.

► 2 (times) → 3 → 4 → 5 → 1

Washing time is adjusted by press of function key during washing only operation.

► 15(min) → 17 → 19 → 21 → 23 → 25 → 3 → 5 → 7 → 9 → 11 → 13

Spinning time is adjusted by press of function key during spinning only operation.

► 7(min) → 1 → 2 → 3 → 4 → 5 → 6

### 4-3-5 Delay Start

1. This function is to finish the washing operation at the time user set.
2. If the START/HOLD key is pressed after adjusting of reservation time by pressing the delay start button, reservation washing begins.
3. If you push START/HOLD key after selecting reservation washing, the machine carries out three-hour reservation washing.
4. The first beginning value of reservation washing is 3 hour and the order according to programacion key push is as follow.  
► 3 → 4 → 5 → ... → 16 → 17 → 18
5. Once reservation washing is selected, it follows the fuzzy course selected and reservation washing can not be changed in reservation procedure. But the change of water level and water supply selection are possible.
6. If the door is opened in the waiting state of normal reservation, it causes the door open error.

### 4-3-6 Start/Hold

1. Available only after selecting a course.
2. Sequence :

► START → HOLD → START

3. The display shows the remaining time, including the current function, when in 'start' status.  
The time decreases 1-min at a time.  
When in 'Hold' status, the time stays as it is.

### 4-3-7 Power

- 1) This key is always available when the power cord is connected.
- 2) sequence : ► ON → OFF → ON
- 3) After finishing operation, this key is automatically turned off.

### 4-3-8 Silver Wash

- 1) This is a special function for washing by silver nano system.
- 2) The key can be pressed before the first press of START/HOLD key
- 3) Sequence : ► Silver ON    OFF    ON



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## 4-4 Description of Technical Points

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### 4-4-1 Weight Recognizing Function

1. Weight recognizing function works first washing operating before water is supplied, not in WOOL course and Manual function operation (Wash, Rinse, Spin, ...)
2. Weight recognizing function is cancelled when water level key is pressed prior to the completion of weight recognizing function.
3. If the current water level is above lowest at the beginning of weight sensing, it is automatically decided as a high level.
4. If you change courses after sensing weight, the high water level is automatically selected irrespective of the water level decided by the sensing of weight.
3. If the water level does not reach to the water level selected for 60minutes after starting water supplying, the water supplying Error is displaying on the display.
4. Supplementary water supplying is performed every Washing or Rinsing operating. The steps are as follows.  
mentary water supplying is not oversupply water to the water level selected,  
perform the washing or Rinsing operation for 1.5 minutes.  
sense the present water level after stopping Motor.  
compare the present water level to the water level selected.  
if present water level < the water level selected, supply water to the water level selected.  
if present water level  $\geq$  the water level selected, continue the washing or Rinsing operation.  
But total time of supplier 60 seconds.

### 4-4-2 Water Supplying Function (Option)

1. Relations between water level, frequency & water supply capacity.

	amount of water supplied	fre
RESET	0	
EXTRA LOW	28	
LOW	40	
MED	53	
HIGH	65	
MAXIMUM	77	

2. Relations between Hot/Cold selection & cycle.

Hot/Cold selection	Wash	Rinse	Supplementary Watersupply	Prespinning
Cold	Cold	Cold	Cold	Cold
Hot/Cold	Hot/Cold	Hot/Cold	Hot/Cold	Hot/Cold
Hot	Hot	Hot/Cold	Hot/Cold	Hot/Cold

- \* The rinse of two times is selected to cold water automatically.

### 4-4-3 Soak Function

1. This function works only when Soak washing is selected by function select key.
2. It works repeatedly during set time by every 5 minutes(operation for 1 minute and pause for 4 minutes) for 30 minutes after water is filled to selected water level.
3. If water level is set higher during the Soak procedure, Soak procedure stops and water is refilled, and then, keeps on going the Soak procedure.
4. Washing cycle of 15 minutes begins after Soak function completion.  
Rinsing times can be adjusted according to Soak washing procedure.

### 4-4-4 Fuzzy Function

This function recognizes the quantity of laundry load and selects the water level by itself and keep on going washing operation automatically.

NOTE: In some regions, 'Digital' course means 'Fuzzy' course.

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## 4-4 Description of Technical Points

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### 4-4-5 Silver Wash Function

1. It's a new technology of washing by Silver Nano system. Ag+ Nano will be launched and mixed with water inside a case and flown down to tub if this key is pressed. Kill bacteria and detergent polluted.
2. This can only be selected when WASH, RINSE and SPIN are all selected.
3. When the Silver Nano course is selected, manually selecting the (function) keys is not allowed.
4. This is available as an option for all courses other than the Wool course.

## 4-5 Program Chart

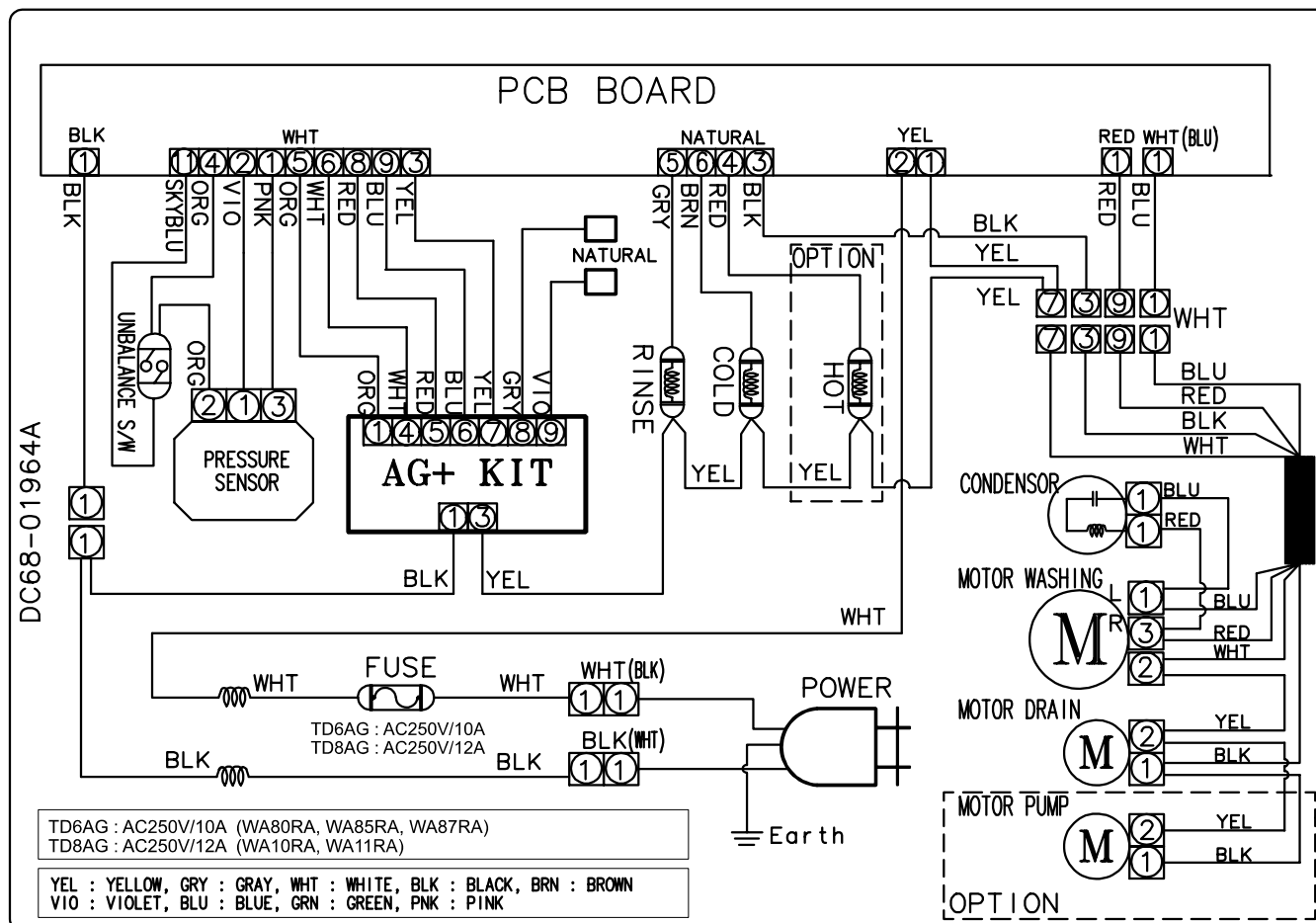
FUNCTION	COURSE	WATER LEVEL	WASH						RINSE 1						RINSE 2							SPIN					TOTAL		DISPLAY	silver WASH Display																
			WATER LEVEL		SOAK		OPTION	WASH		WATER DRAINAGE		INTERMITTENT SPIN		SPIN		STOP		WATER SUPPLY		SPIN		OPTION	WATER DRAINAGE		INTERMITTENT SPIN						SPIN		STOP													
			min	sec	min	sec		Silver	min	sec	min	sec	min	sec	min	sec	min	sec	min	sec	min		sec	Silver	min	sec	min	sec			min	sec	min	sec	min	sec										
FUZZY	M	5	0			20	15	0	2	10	1	0	1	30	1	30	5	0	2	0	2	10	1	0	1	30	1	30	5	0	2	0	10	2	10	1	0	7	0	1	30	55	180	58.0	88.0	
	H	4	30			20	15	0	2	0	1	0	1	30	1	30	4	30	2	0	2	0	1	0	1	30	1	30	4	30	2	0	10	2	0	1	0	7	0	1	30	52	240	56.0	86.0	
	ME	4	0			20	15	0	1	50	1	0	1	30	1	30	4	0	2	0	1	50	1	0	1	30	1	30	4	0	2	0	10	1	50	1	0	5	0	1	30	47	300	52.0	82.0	
	L	2	30			20	15	0	1	30	1	0	1	30	1	30	2	30	2	0	1	30	1	0	1	30	1	30	2	30	2	0	10	1	30	1	0	5	0	1	30	41	330	47.0	77.0	
	EL	2	0			20	15	0	1	15	1	0	1	30	1	30	2	0	2	0	1	15	1	0	1	30	1	30	2	0	2	0	10	1	15	1	0	5	0	1	30	41	195	45.0	75.0	
BLANKET	M	5	0			-	22	0	2	10	1	0	1	30	1	30	5	0	2	0	2	10	1	0	1	30	1	30	5	0	2	0	10	2	10	1	0	7	0	1	30	62	180	65.0	75.0	
	H	4	30			-	22	0	2	0	1	0	1	30	1	30	4	30	2	0	2	0	1	0	1	30	1	30	4	30	2	0	10	2	0	1	0	7	0	1	30	59	240	63.0	73.0	
	ME	4	0			-	22	0	1	50	1	0	1	30	1	30	4	0	2	0	1	50	1	0	1	30	1	30	4	0	2	0	10	1	50	1	0	5	0	1	30	54	300	59.0	62.0	
						-																																			0	0	0.0			
						-																																			0	0	0.0			
SUPER CLEAN	M	5	0	20		20	15	0	2	10	1	0	1	30	1	30	5	0	2	0	2	10	1	0	1	30	1	30	5	0	2	0	10	2	10	1	0	7	0	1	30	75	180	78.0	88.0	
	H	4	30	20		20	15	0	2	0	1	0	1	30	1	30	4	30	2	0	2	0	1	0	1	30	1	30	4	30	2	0	10	2	0	1	0	7	0	1	30	72	240	76.0	86.0	
	ME	4	0	20		20	15	0	1	50	1	0	1	30	1	30	4	0	2	0	1	50	1	0	1	30	1	30	4	0	2	0	10	1	50	1	0	5	0	1	30	67	300	72.0	82.0	
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	EL	2	0	20	↑	20	15	0	1	15	1	0	1	30	1	30	2	0	2	0	1	15	1	0	1	30	1	30	2	0	2	0	10	1	15	1	0	5	0	1	30	61	195	65.0	75.0	
SPEEDY	M	5	0			20	5	0	2	10	1	0	1	30	1	30	5	0	2	0													10	2	10	1	0	3	0	1	30	29	110	31.0	61.0	
	H	4	30			20	5	0	2	0	1	0	1	30	1	30	4	30	2	0													10	2	0	1	0	3	0	1	30	27	150	30.0	60.0	
	ME	4	0			20	5	0	1	50	1	0	1	30	1	30	4	0	2	0													10	1	50	1	0	3	0	1	30	25	190	29.0	59.0	
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	EL	2	0			20	5	0	1	15	1	0	1	30	1	30	2	0	2	0														10	1	15	1	0	3	0	1	30	21	120	23.0	53.0
WOOL	M	5	0			-	5	0	2	10	1	0		30	1	30	5	0	2	0	2	10	1	0		30	1	30	5	0	2	0	-	2	10	1	0	1	0	1	30	37	180	40.0	-	
	H	4	30			-	5	0	2	0	1	0		30	1	30	4	30	2	0	2	0	1	0		30	1	30	4	30	2	0	-	2	0	1	0	1	0	1	30	34	240	38.0	-	
	ME	4	0			-	5	0	1	50	1	0		30	1	30	4	0	2	0	1	50	1	0		30	1	30	4	0	2	0	-	1	50	1	0	1	0	1	30	31	300	36.0	-	
	L	2	30			-	5	0	1	30	1	0		30	1	30	2	30	2	0	1	30	1	0		30	1	30	2	30	2	0	-	1	30	1	0	1	0	1	30	25	330	31.0	-	
	EL	2	0			-	5	0	1	15	1	0		30	1	30	2	0	2	0	1	15	1	0		30	1	30	2	0	2	0	-	1	15	1	0	1	0	1	30	25	195	29.0	-	

Replace soaking function with silver nano function during silver nano function selection.

\*M:Maximum, H:High, ME:Medium, L:Low, EL:Extra Low

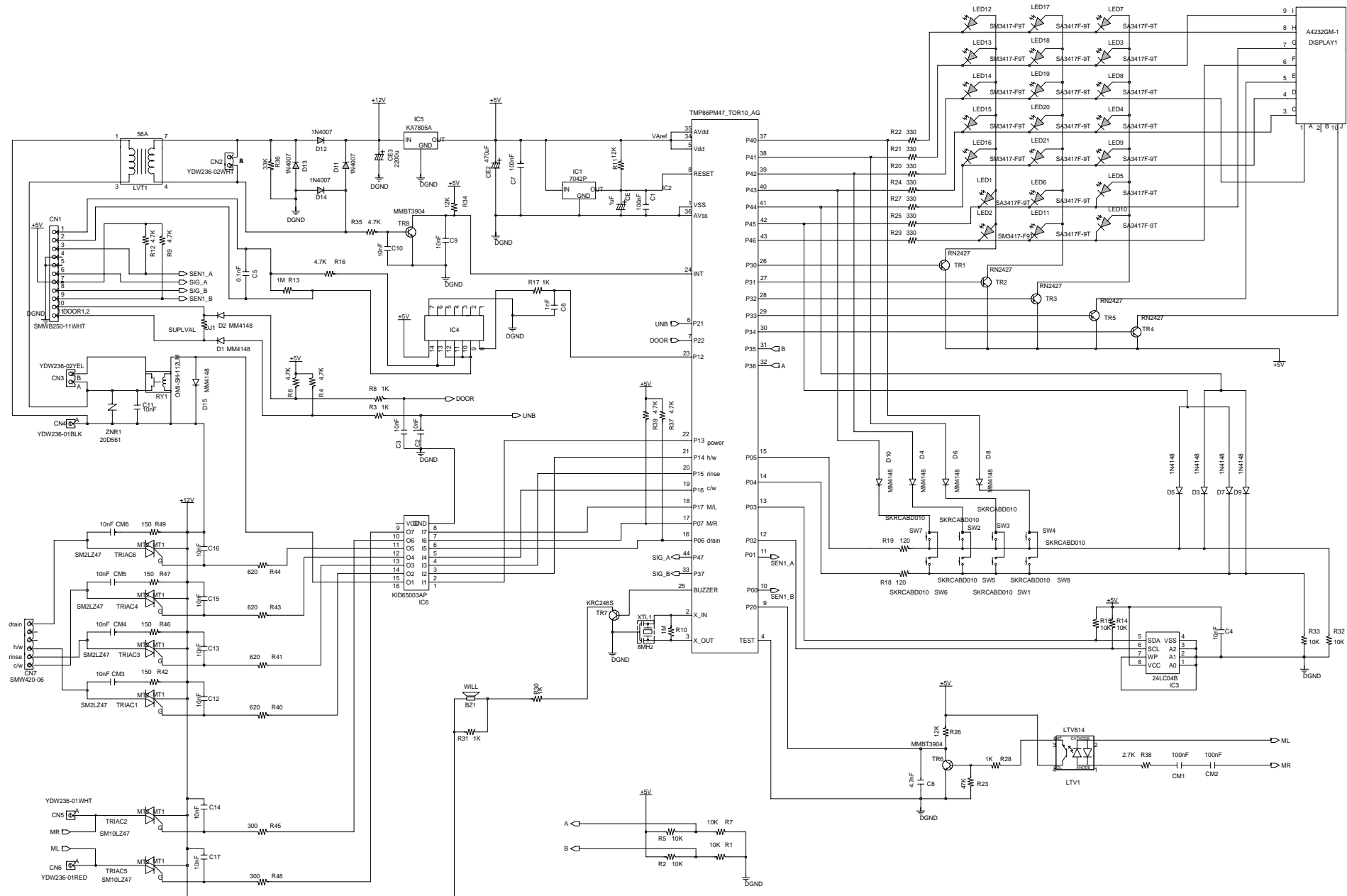
## 5. Schematic and Circuit Diagram

### 5-1 Schematic Diagram



## 5-2 Circuit Diagram

This Document can not be used without Samsung's authorization.



## 6. Disassembly and Reassembly

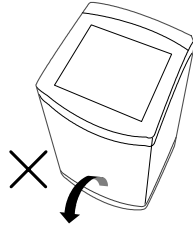
### 6-1 Cautions for Disassembly and Reassembly

#### 6-1-1 Before Servicing

1. When laying down the washing machine for repair, do not place the front side downwards. This may cause the following :

The round front face may be deformed.

The top-cover and the outer-case (round area) may not match.

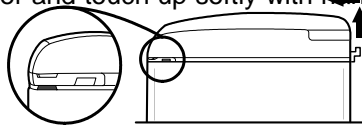


2. When removing the top-cover from the outer-case, remove 2 screws fixing the parts in back of the top-cover and remove the top-cover while pushing it

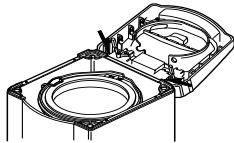
in the direction of the front at the same time lift up quietly the rear side.

**Caution)** When you do not remove like that 2 fixing hooks easy to break in the front side.

When removing the cover t. c from the top-cover, remove 2 screws fixing the parts in back of the top-cover and touch up softly with hands.



3. When removing the top-cover from the outer-case, do not let the wire bundle fall downwards and touch the sharp edge of the outer-case. Also, do not allow tension to stress the wires.

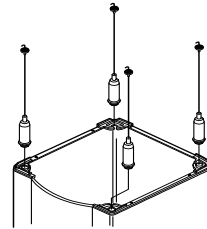


4. When moving the washing machine to a place with a rough floor, do not drag it. If it is dragged, the rubber may get loose, thereby causing severe vibration and noise during washing.

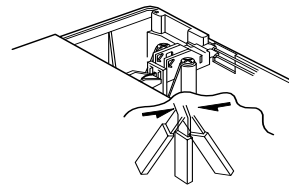
#### 6-1-2 During Servicing

1. When replacing the suspension-bar, be sure to check both the front and rear suspension-bar assemblies. This prevents installation of the front and rear sides in the reverse order.
2. Reversal may cause a severe vibration that might rock the washing machine.

Shape				
	CASE-D	BAR-S	SPRING	COLLOR-S
Front	White	Yellow	Yellow	Red
Rear	White	Yellow	Yellow	NTR

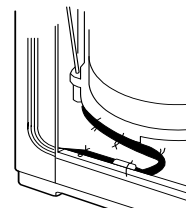


3. When replacing the suspension-bar, only use parts for this model.
4. Since the length of the bar varies among on models, installing the wrong size may cause severe vibration.
5. Do not deform the check-S/W rod of the top-cover.
6. The installation of a deformed check-S/W rod will result in malfunction of the safety switch during severe vibration, thus causing an unbalanced error.

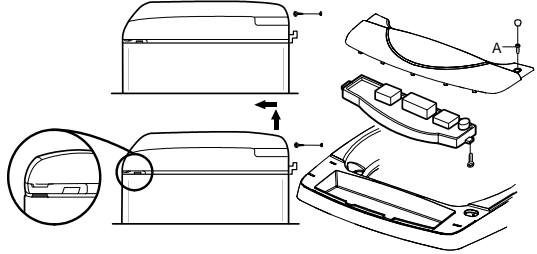
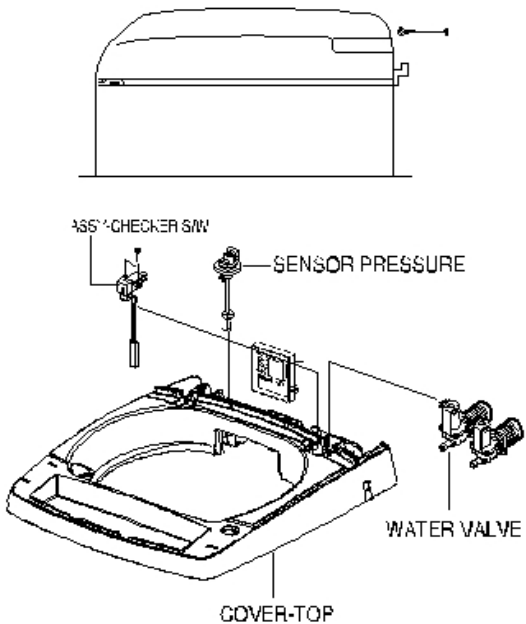


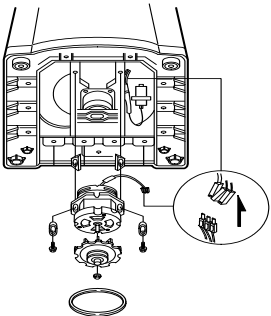
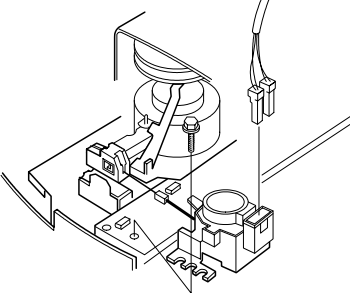
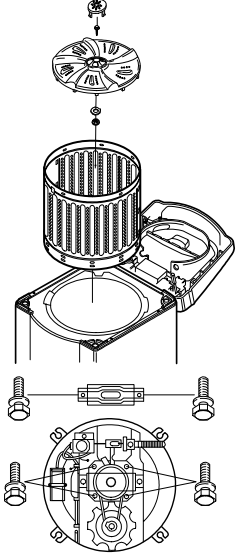
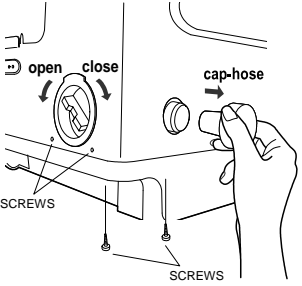
#### 6-1-3 After Servicing

1. Check the level of the washing machine.
2. When setting the wire bundle in the lower section, make sure that the wire bundle is not stressed by any tension due to tilting of the tub assembly.
3. When setting the wires, do not let the wires touch any sharp edges.
4. Remove any moisture on the wire bundle, and on areas surrounding the wire connector.



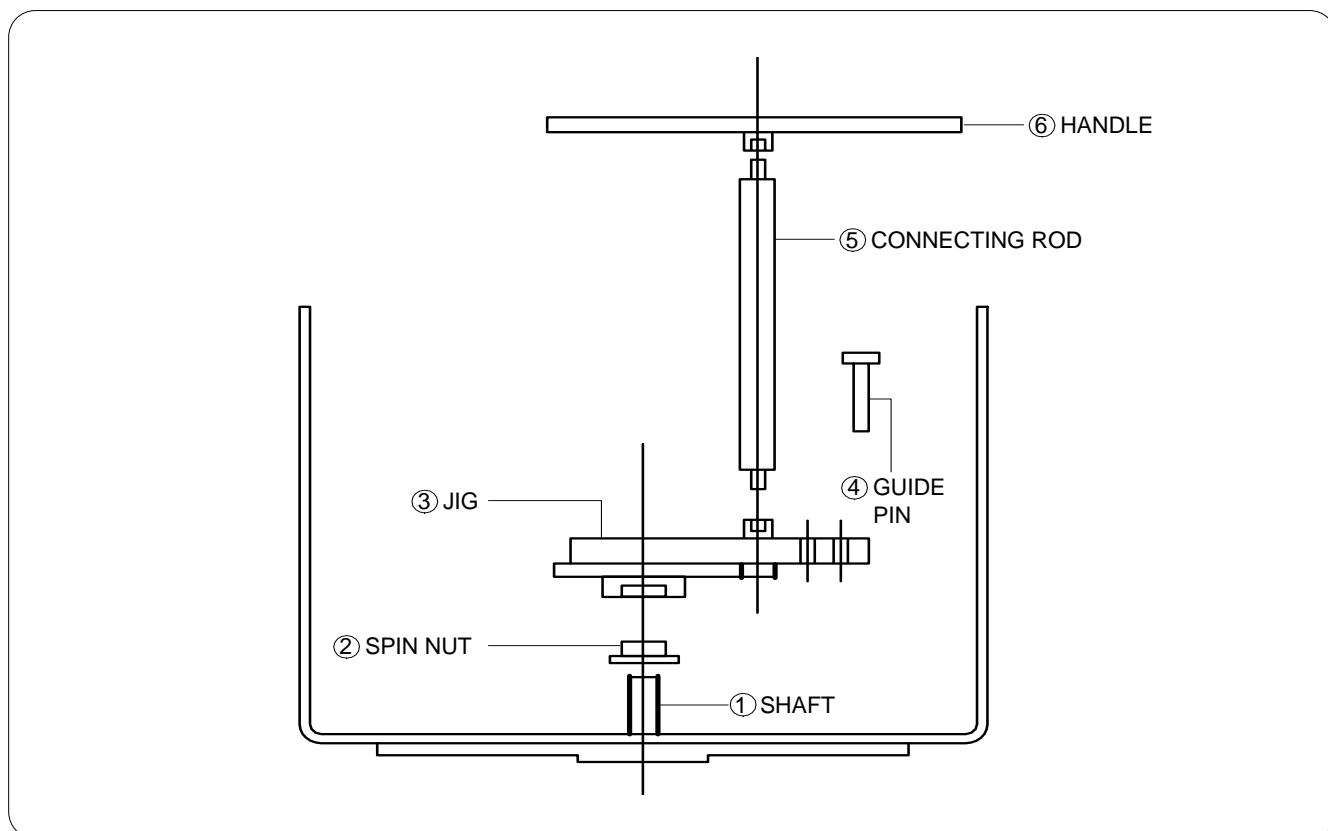
## 6-2 Disassembly

Disassembly Procedure	Illustration
<p>Removing the Top cover and PCB Assembly</p> <ol style="list-style-type: none"> <li>1) Remove screw cover and screw A.</li> <li>2) Loose 5 screws for fastening the PCB-Assembly.</li> <li>3) Take out the PCB-Assembly.</li> <li>4) Remove 2 screws at the front of the top-cover.</li> <li>5) Remove 2 screws fixing the parts in back of the top-cover.</li> <li>6) Remove the top-cover while pushing it in the direction of the front at the same time lift up quietly the rear side.</li> <li>7) Reverse the top cover.</li> </ol>	
<p>Removing the Ag kit, Pressure-Sensor, Water-Valve, Checker Assembly, and Transformer</p> <ol style="list-style-type: none"> <li>1) Remove two Screws fixing the Top-Cover and the Cover T.C.</li> <li>2) Lift up the Cover T.C. while pushing it in the direction of the arrow.</li> </ol> <p>Pressure Sensor</p> <ol style="list-style-type: none"> <li>1) Pull out the Lead Wire Terminal of the Pressure Sensor.</li> <li>2) Remove the Pressure Sensor.</li> <li>3) Pull out the Air Hose.</li> </ol> <p>Ag kit</p> <ol style="list-style-type: none"> <li>1) Remove two screws fixing the kit.</li> <li>2) Pull out the teminalns.</li> </ol> <p>Water Valve</p> <ol style="list-style-type: none"> <li>1) Pull out the Lead Wire Terminals.</li> <li>2) Remove the Water valve while pushing it in the direction of the arrow.</li> </ol> <p>Checker</p> <ol style="list-style-type: none"> <li>1) Pull out the Lead Wire Terminals.</li> <li>2) Remove the two Screws.</li> <li>3) Lift out the Checker.</li> </ol> <p>Wire Harness</p> <ol style="list-style-type: none"> <li>1) Pull out the Lead Wire Terminals from the PCB.</li> <li>2) Pull out the Lead Wire Terminals from the parts in back of the Top Cover.</li> <li>3) Remove the Wire Harness.</li> </ol> <p>Transformer</p> <ol style="list-style-type: none"> <li>1) Transformer is built in the PCB Assembly.</li> </ol>	

Disassembly Procedure	Illustration	Remarks
<p>Removing the Motor</p> <ol style="list-style-type: none"> <li>1) Remove the Back Cover.</li> <li>2) Lay down the Washing Machine with the rear side facing the floor.</li> <li>3) Pull out the Sound Absorption Panel.</li> <li>4) Remove the Wire Housing.</li> <li>5) Remove the V Belt.</li> <li>6) Remove the two Bolts fastening the Motor.</li> <li>7) Remove the Motor Pulley.</li> <li>8) Pull out the Motor</li> </ol>		
<p>Removing the Drain Motor</p> <ol style="list-style-type: none"> <li>1) Lay down the Washing Machine with the rear side facing the floor.</li> <li>2) Pull out the Lead Wire Terminal.</li> <li>3) Remove the Bolt.</li> <li>4) Remove the Drain Motor Wire from the Link.</li> <li>5) Lift out the Drain Motor</li> </ol>		
<p>Removing the Shaft Assembly</p> <ol style="list-style-type: none"> <li>1) Remove the two Screws fixing the Top Cover, and lift up the Top Cover gently tilt the Top Cover back to expose the Tub Cover.</li> <li>2) Remove the four Screws fixing the Tub Cover.</li> <li>3) Remove the Bolt fixing the Pulsator.</li> <li>4) Remove the Spin Nut fixing the flange Shaft and the Shaft and pull out the Spin Basket.</li> </ol> <div data-bbox="153 1301 863 1379" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b>Caution</b> Disassemble the Spin Nut in a counterclockwise direction.</p> </div> <ol style="list-style-type: none"> <li>5) Lay down the Washing Machine with the rear side facing the floor.</li> <li>6) Remove the two Bolts fixing the Saddle.</li> <li>7) Remove the four Bolts fixing the Shaft using the Box and take out the Shaft Assembly.</li> </ol>		
<p>Removing the Pump Assy</p> <ol style="list-style-type: none"> <li>1) Remove the Back Cover.</li> <li>2) Remove the Lead Wire Terminal and the Earth Wire.</li> <li>3) Remove the Two Hoses.</li> <li>4) Remove the 2screws which fix the filter.</li> <li>5) Lay down the Washer with the right side facing the Floor.</li> <li>6) Remove the 2 Screws which fix the pump.</li> <li>7) Lift out the Pump.</li> </ol>		

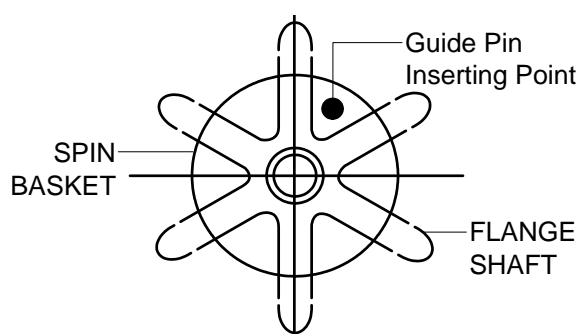


## 6-3 Spin - Nut Repairing Box

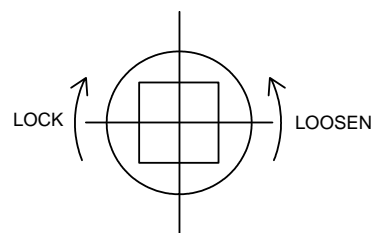


### 6-3-1 Procedure

1. Insert the jig into the spin-nut .
2. Insert the guide pin into the groove of the flange - shaft by rotating it to the right and left.



3. Insert the connecting rod and handle into the square box. Then turn the handle clockwise on the axis of the small box to disassemble (Right-hand thread).\*



\*To disassemble the box, give three to four times of instantaneous shocks to the handle in the loosening direction, then disassemble it by turning the handle when the nut is loosened.

4. To disassemble the box, strike the handle three or four times-quick shocks to loosen it-then complete the disassembly by turning the handle as the nut is loosened.

5. Reassemble in reverse order.

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## 7. Troubleshooting

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### 7-1 Self - diagnostic Functions (Buzzer Alarm)

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NO	ERROR	CONDITION	BUZZER	DISPLAY	SOLUTION
1	LID OPEN ERROR	In case DOOR is opened during the intermittent or ordinary dehydration.	0.5sec ON/OFF Sounding 5 times	<b>dE</b>	Press POWER KEY and close DOOR.
2	UNBALANCE ERROR	-In case 3-times UNBALANCE are sensed during the dehydration in the cycle.	0.5sec ON/OFF Sounding 5 times	<b>UE</b>	Press POWER KEY and open DOOR.
3	WATER FEED ERROR	In cases water feed won't reach the selected water level in 60 min, and no change of frequency is observed. (the functions of Rinse and UNBALANCE Release included)	0.5sec ON/OFF Sounding 5 times	<b>4E</b>	Press POWER KEY and START KEY.
4	DRAIN ERROR	In case the water level won't lower below the RESET level in 15 min since the drain started	0.5sec ON/OFF Sounding 5 times	<b>5E</b>	Press POWER KEY and START KEY.
5	WATER LEVEL SENSOR S/W POOR	In case the water-level frequency higher than 30.0KHZ or lower than 15.0KHZ appear longer than 5 sec.	0.5sec ON/OFF Sounding 5 times	<b>1E</b>	Press POWER KEY.

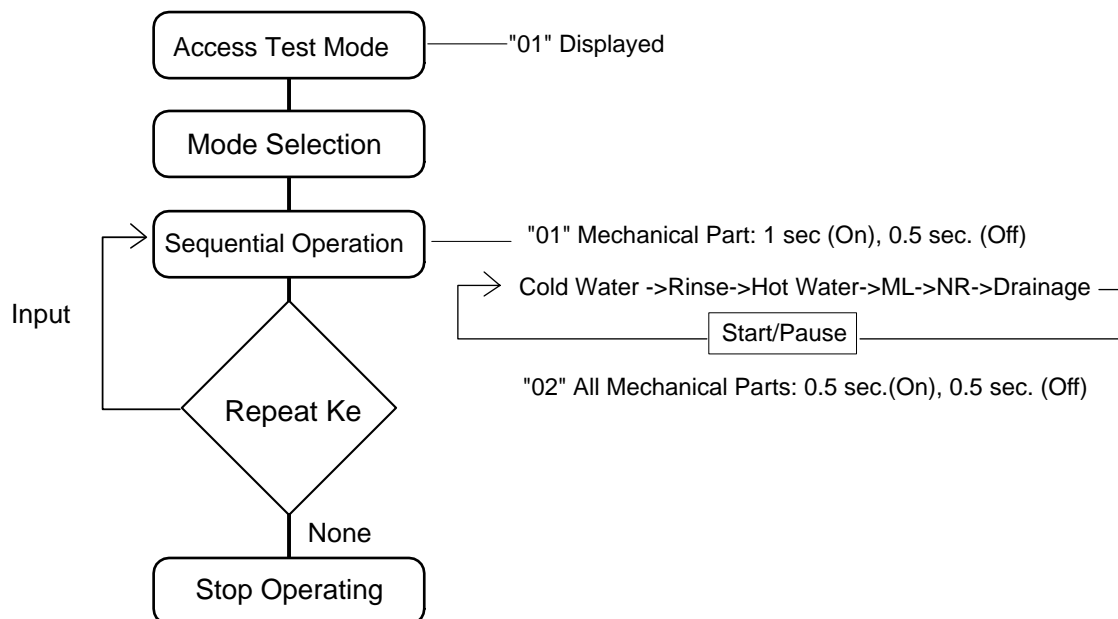
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## 7-2 Test Mode

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### (1) Auto Operating Part Test Mode

- Initial Access Mode: Turn on the course, manual and power keys at the same time
- Mode Switch: Use the water level keys to switch the mode
- Display and Control in Initial Access Mode ( Error Detection should occur less than 3 seconds after the machine starts operating)



### (2) Operating Test Mode

- Initial Access Mode: Turn on the water level, manual and power keys simultaneously.
  - In Initial Access Mode, the MICOM version will only be displayed after the LED lights up with "88-Seg All" displayed, and the course and manual keys are pressed and held down.
  - The model name should be displayed two seconds after the display of the MICOM version.
  - After the model name is displayed, 《Operation A》 should start.
- Progressive Control in Initial Access Mode: Use the Start key.
  - Press the Start key once: "H" is displayed.
    - => Detects the defined high water level before proceeding (Supplies water up to the "High" level)
    - Error Detection for the water-level sensor, the Ag+and the water supply
  - Press the Start key twice: "H" is displayed.
    - => Detects the defined low level before proceeding (Supplies water up to the "Low" level)
    - Error Detection for the water-level sensor, the Ag+and the water level
  - Start key pressed: "L" is displayed
    - => Water supply (Supplies water up to the "High" level)
    - Error Detection for the water-level sensor, the Ag+and the water supply
  - Press the Start key four times: "S" is displayed
    - => Dehydrating (Drain water before hydrating to the "Reset" level)
    - Motor Error Detection: If there are less than 30 pulses after 4 intermediate hydrations for 30 seconds. Also, Door & UNB Detection

- Press the Start key 5 times: "HA" is displayed  
=> Weight Detection (This should be performed right after the motor stops and the pulse value and the water level are displayed)
- Press the Start key 6 times: END (Auto power S/W operation) => The Auto Power S/W should initiate within 2 seconds (for mechanical switches).  
Error detection should initiate within 3 seconds of all operations mentioned above.  
(Water Level, Door/UNB, Hall-Sensor, Other Sensors)

《Operation A》 When a key is entered, the mechanical part operates separately	Pulsator	
	Selection Key	Mechanical Part
	Water Supply	Water Supply Valve (Sequential Operation in the order of Cold water=>Rinse => Hot water => Off Each keystroke should perform the corresponding operation.
	Water Level	ML=>Off=>MR=>Off
	Manual	Drainage Motor (On/Off)
	The operations above should be initiated for the corresponding modes; while the motor is running (Washing, Hydrating), the key should not be activated. Each keystroke should perform the corresponding operation. (However, the same input is not allowed during that operation)	

=> When the water supply cycle is being performed, the Ag+ test should be available.

The "H E" error occurs when any kind of disconnection between the KIT PCB and the terminal occurs, or in the overcurrent.

Check the KIT PCB and terminal for any disconnections before proceeding with the water supply. If the silver kit is operating normally, "All Display" blinks for 10 seconds. (However, the over- and low current sensors should all be set to HIGH)

### (3) PCB Test Mode

- a. Initial Access Mode: This is accessed by turning on the water level, reservation and power keys at the same time and "All" is displayed.
- b. After Initial Access Mode starts, the EEPROM is checked
- c. EEPROM I/O Test
  - Any EEPROM I/O error will display a blinking "Et" and an alarm beep. When no error is detected, "Eg" appears.  
When an EEPROM error occurs, only the power key can deactivate the test mode (no other keystrokes are allowed).
- d. Mode Switch: Use the Silver Nano key ( 01 02 03)
- e. Displaying and controlling in Initial Access Mode

- 
- Press the Start key 5 times: "HA" is displayed  
=> Weight Detection (This should be performed right after the motor stops and the pulse value and the water level are displayed)
  - Press the Start key 6 times: END (Auto power S/W operation) => The Auto Power S/W should initiate within 2 seconds (for mechanical switches).  
Error detection should initiate within 3 seconds of all operations mentioned above.  
(Water Level, Door/UNB, Hall-Sensor, Other Sensors)

#### 【 01 】 Mode

##### DPT Test P/G

Consecutive Operations in the order of Cold Water=>Hot Water=>Rinse=>MR=>ML=>Drainage=>Silver Kit Signal A => Silver Kit Signal B  
Drainage, the Silver Kit Signals A and B are **On for 0.3 seconds** and **Off for one second**. The other operations are **On for 0.3 seconds** and **Off for 0.3 seconds**  
There is no error detection function (Water Level Sensor, Hall-Sensor, UNB, Door) for input mode

#### 【 02 】 Mode

Operates the ML, Cold Water and Hot Water cycles (Sequential Operation)  
Press the Spin key ( ) to switch the mechanical part  
Operates MR, Rinse and Drainage at the same time (Sequential Operations)  
There is no error detection function (Water Level Sensor, Hall-Sensor, UNB, Door) for input mode

#### 【 03 】 Mode

##### LED & 7-SEG Display Test

- => Each keystroke lights up the corresponding LED
- => Switching the mode is not allowed in 03 mode. Only the power key will deactivate the test.

### 4) Sequential Aging Test Mode

- a. Access: Press the Course + Reservation + Power keys to access the mode.
- b. Process: Proceeds with the digital washing cycle right after the mode is accessed and repeats fuzzy washing until the power turns off.
  - The water supply is either cold or hot water while the water level is fixed at the high level.

### 5) Experimental Test Mode

- a. Access: Press the Water Level and Power keys
- b. Mode Switch: Use the Course key

**01    02    03**

#### c. 01 Mode: Sequential Hydrating Aging Mode

- If the water level is below RESET, there will be 20 seconds of drainage before the intermediate hydrating cycle is started; If RESET or higher, there will be 40 seconds of drainage before starting the intermediate hydrating cycle.
- Intermediate hydrating proceeds for 30 seconds.
- Main Hydrating proceeds for 5 minutes and all mechanical parts are turned off for 3 minutes, except for the main relay.  
5 Minutes of Dehydrating    Off for 3 Minutes
- Detects any DOOR and UNBALANCE errors. And if any errors are found, these will be displayed.

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d. 02 Mode : Weight Detection

- When the operating key is pressed with "02" on the display, weight detection is performed.
- When done, the result is displayed on the segment in decimals.
- During the detection process, the water level LED is also displayed.

e. 03 Mode: Weight Detection Boundary Data Display

- When the operating key is pressed, the initial high level weight detection data is displayed in decimals.
- Each time the water level key is pressed, the corresponding weight detection data is displayed in decimals.

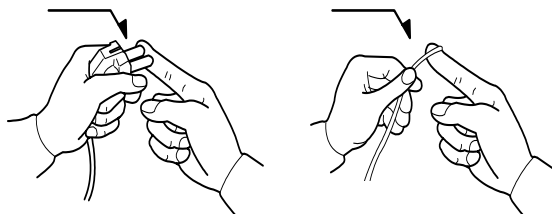
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## 7-3 Servicing Precautions

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When trouble shooting or parts, be sure to observe the following.

1. Be sure to let the resistance of 1 M contact the human body before grounding. When it is impossible to ground, let the human body contact the power plug and the grounding wire once to eliminate the potential damaging shock hazard. After replacing the controller, the defective parts should be returned to the suppliers of these parts for root-cause analysis and incorporation into for future product planning. At the time of return, be sure to pack them together with repair parts. Otherwise, it is impossible to perform root cause analysis due to the static electricity.



<Notice on disassembly and repair>

2. The wiring should be properly connected in accordance with the wiring diagram. Erroneous wiring may cause faulty operation, smoke, or fire.
3. Be sure to pull out the power plug during repair.
4. Special attention should be paid to connection, insulation treatment, and wiring work for the lead wire.

The lead wire should be soldered, and insulation-treated with vinyl tape, or connected to the pressure connection terminal for drain treatment. When connecting the lead wire, take care not to let it touch high components of metal sugared. This is a "wloow"

5. Be sure to use only authorized replacement parts.
6. AC 110V-220V is applied between T1 and T2 of the triac on the P.C.B. Therefore, touching the radiating plate accidentally may cause electric shock. Also, the P.C.B. Both high and low voltages exist on the P.C.B.
7. Do not replace any parts on the board, except the tact switch on the P.C.B. assembly is in trouble. The P.C.B assembly is treated with an insulation coating, the enhanced moisture-proofing.
8. When you suspect that the operation of the micom is faulty, take actions in accordance with the specified troubleshooting procedures. Do not attempt to replace the entire P.C.B. assembly without first doing a root-cause analysis.
9. Because the parts installed in the P.C.B. are treated with a urethane coating, they cannot be inspected by the test bar. Therefore, first check the lower parts for any abnormality using the lead wire of the housing (LP-09-1). Going down connected with the P.C.B.

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## 7-4 Troubleshooting

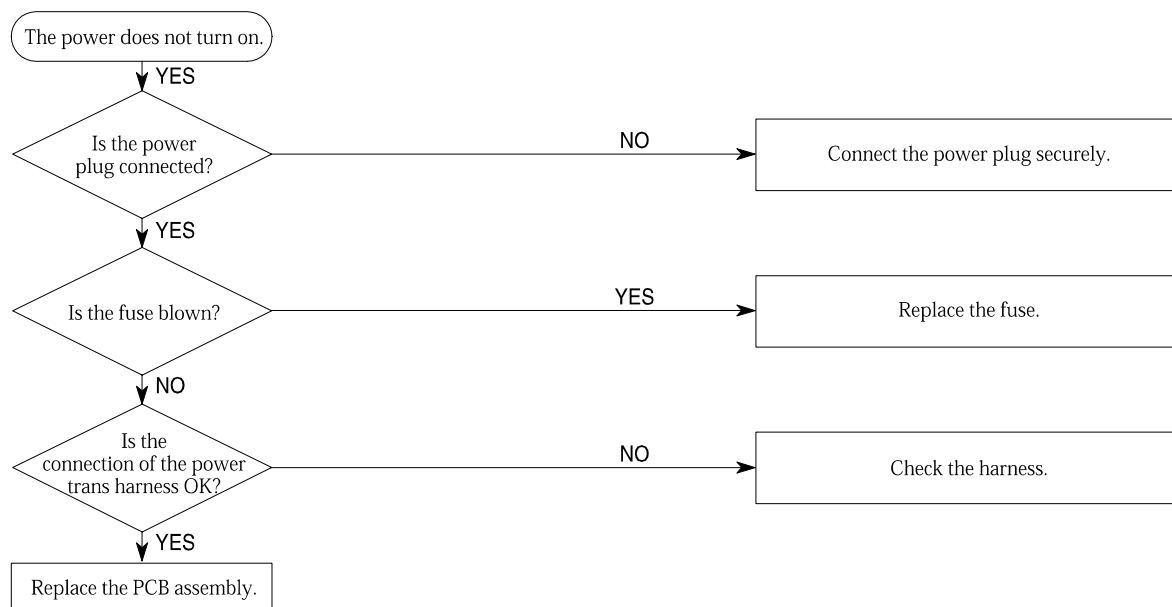
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### 7-4-1 Troubleshooting of the Power Supply Board

If any of the following occurs, the PCB is defective. Replace the PCB.

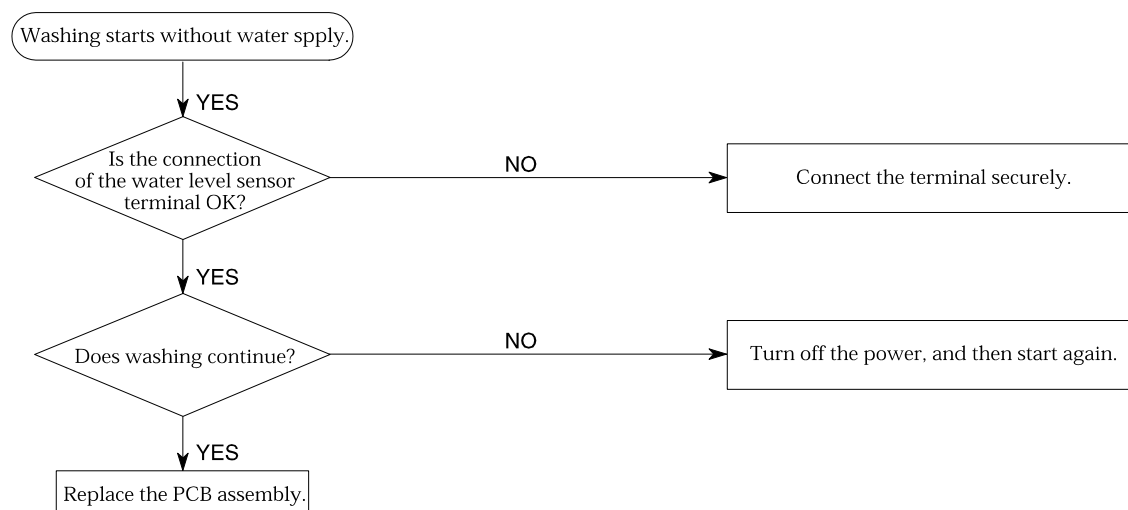
1. Pressing a selection button illuminates the LED display, but the buzzer does not sound.
2. Pressing a selection button sounds the buzzer, but does not illuminate the LED.
3. Pressing a selection button illuminates the wrong LED.

Insert the power plug into the receptacle and press the Power button. If the stored parameters do not display, check the following :



### 7-4-2 Keyboard

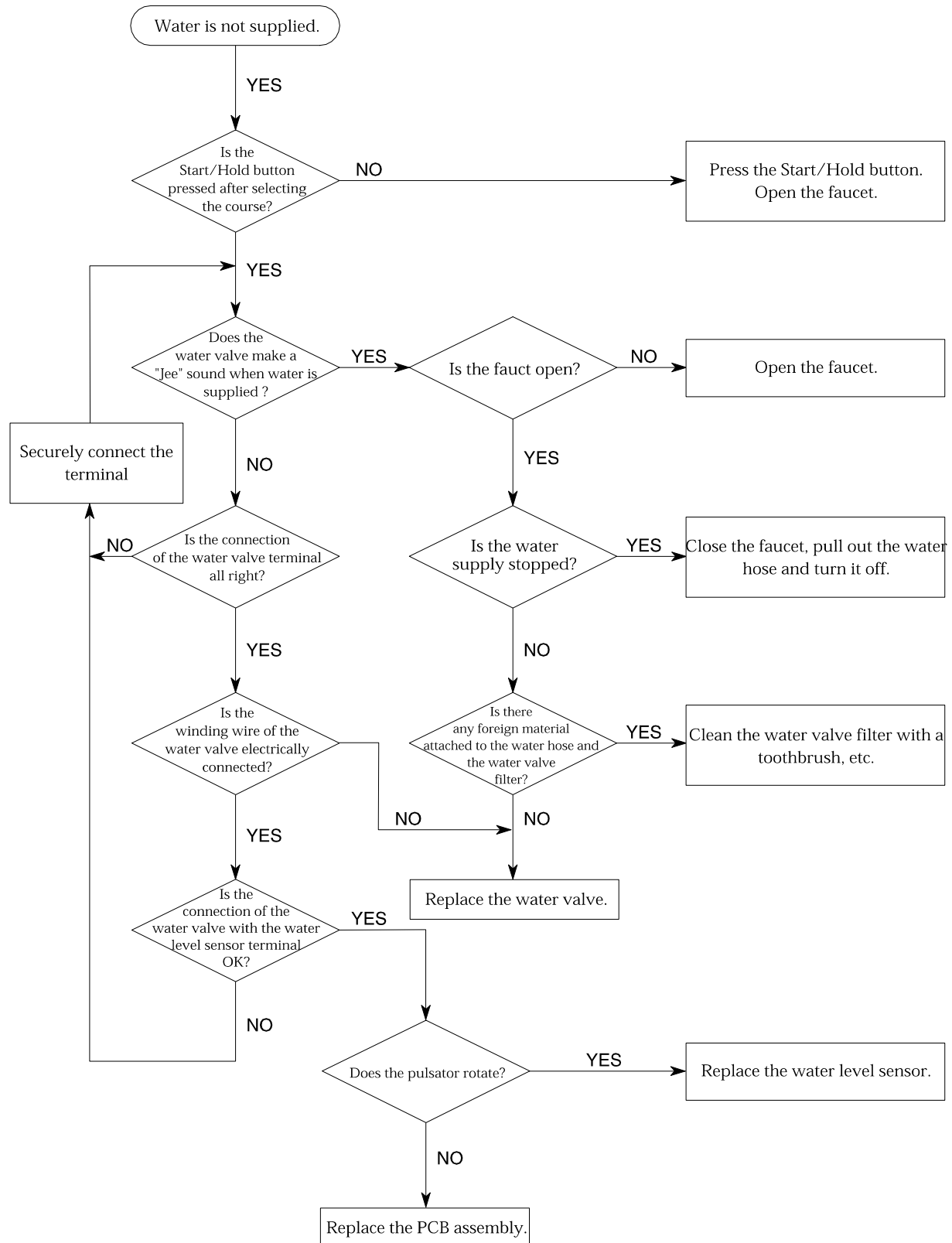
When pressing a selection button, the buzzer does not sound, or the LED does not display.





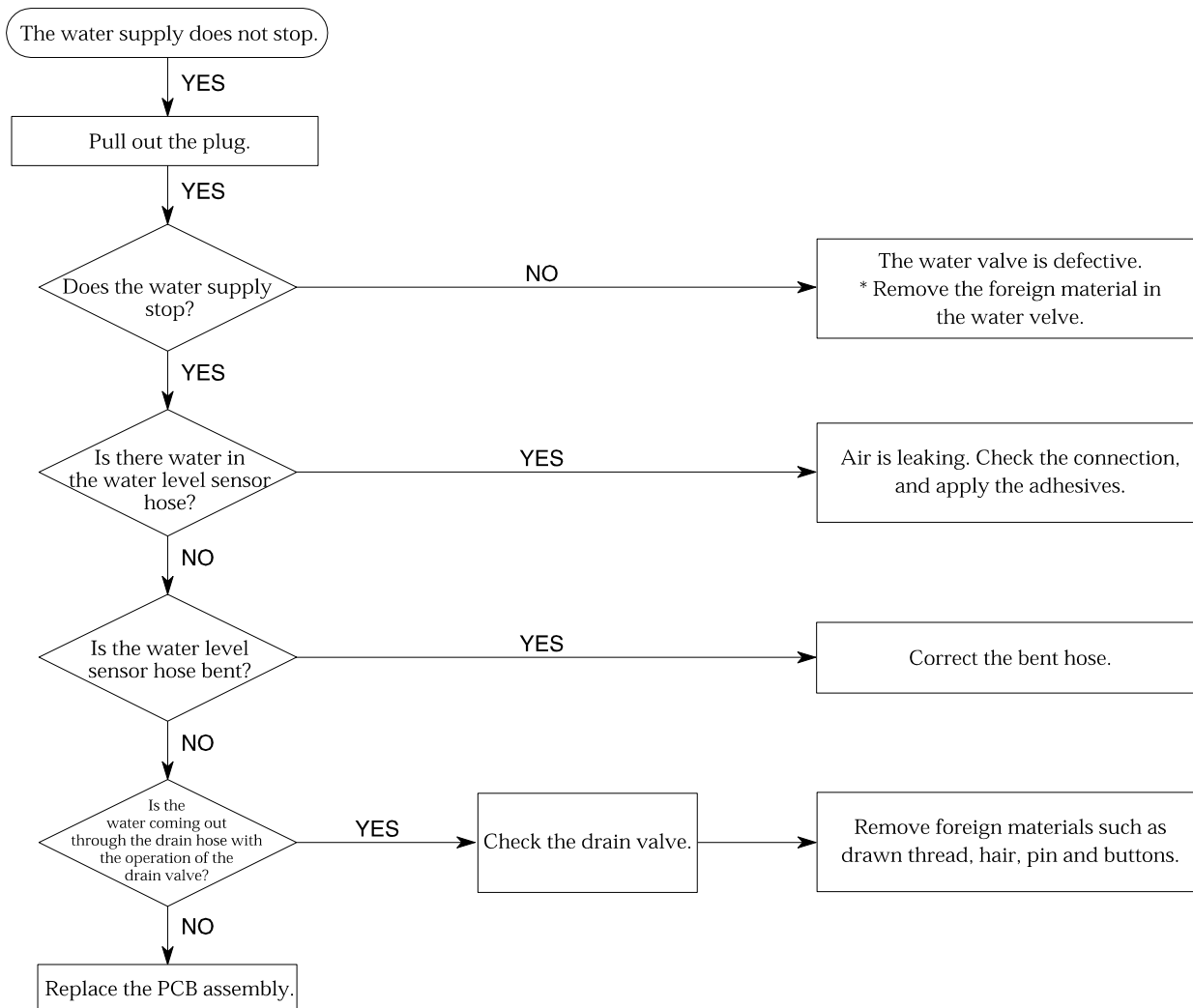
### 7-4-3 Driving Unit

#### Water supply Error

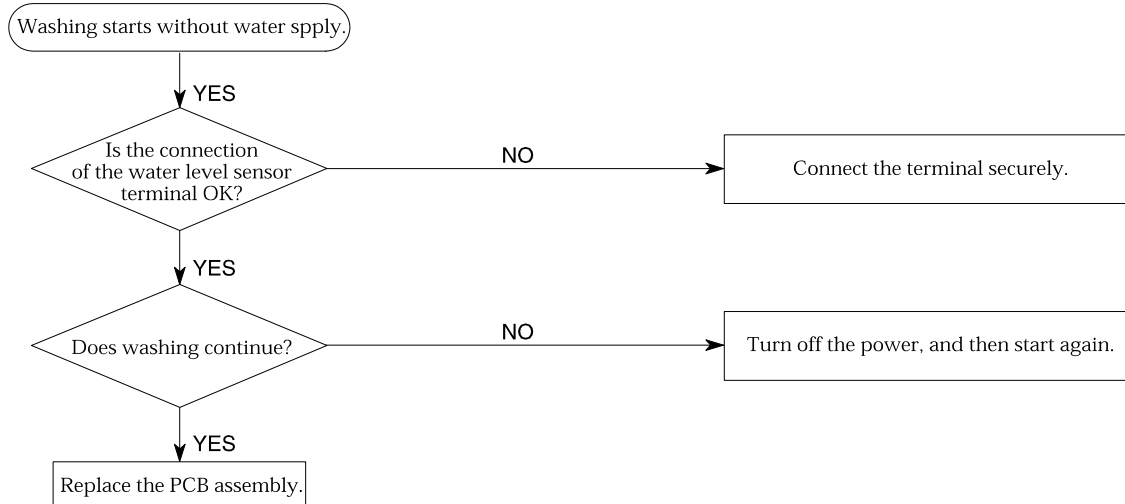


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## Water Stop Error



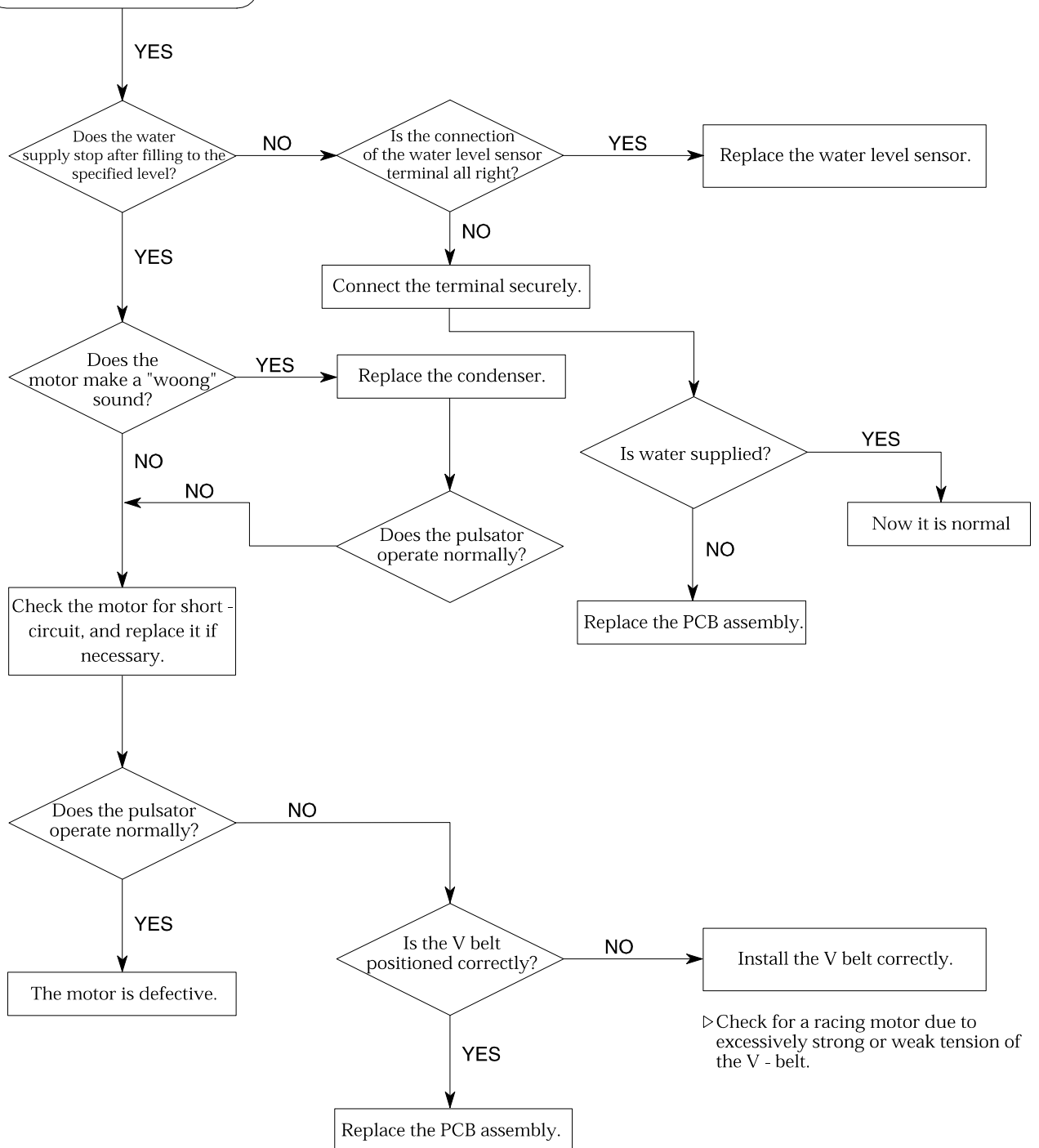
## Washing is started without water supply.



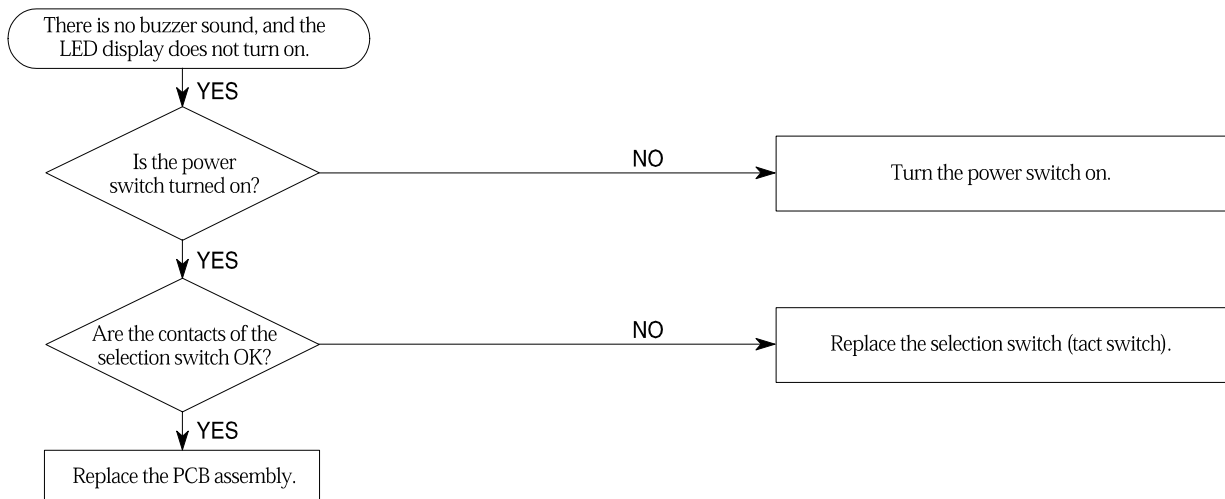
The pulsator does not rotate during washing.

This malfunction may be caused by defective contacts of the wire harness.

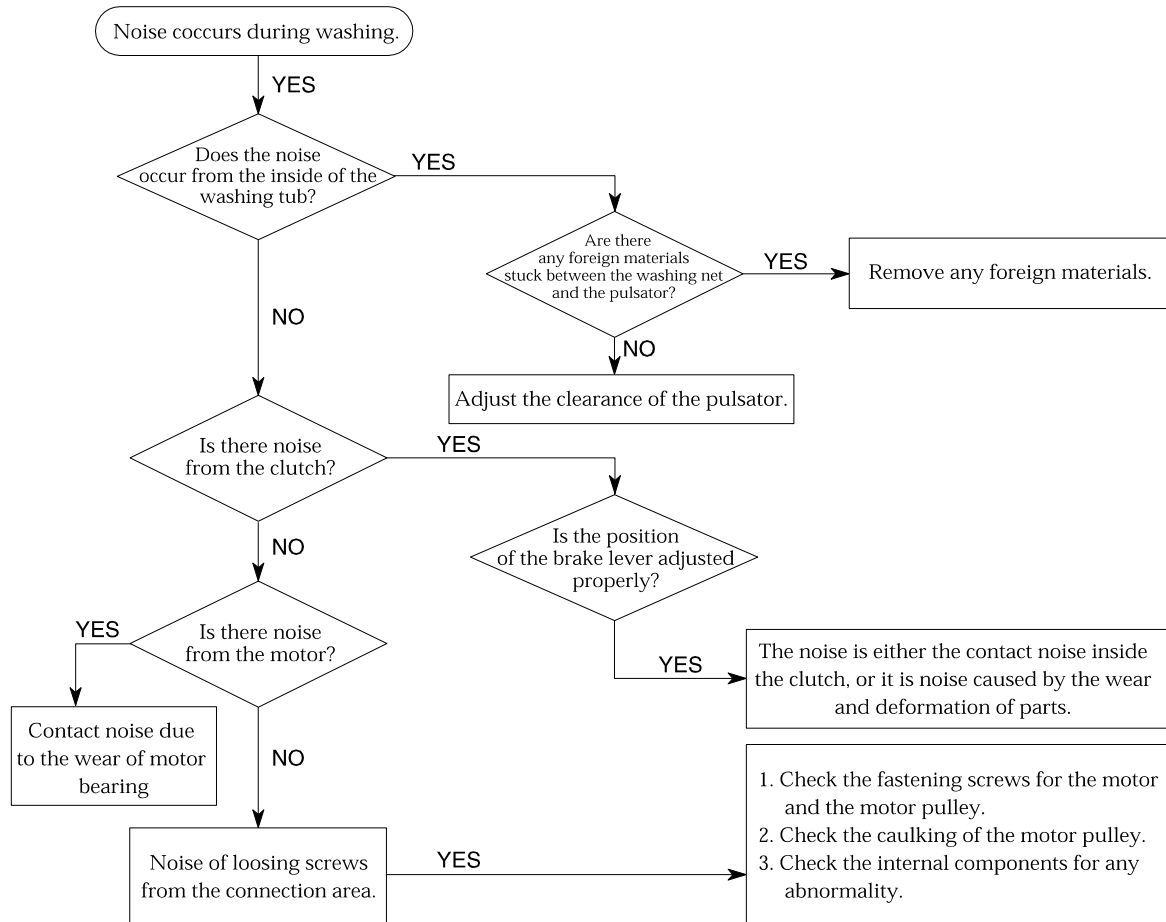
The pulsator does not rotate.



## Defective Rotation during Washing



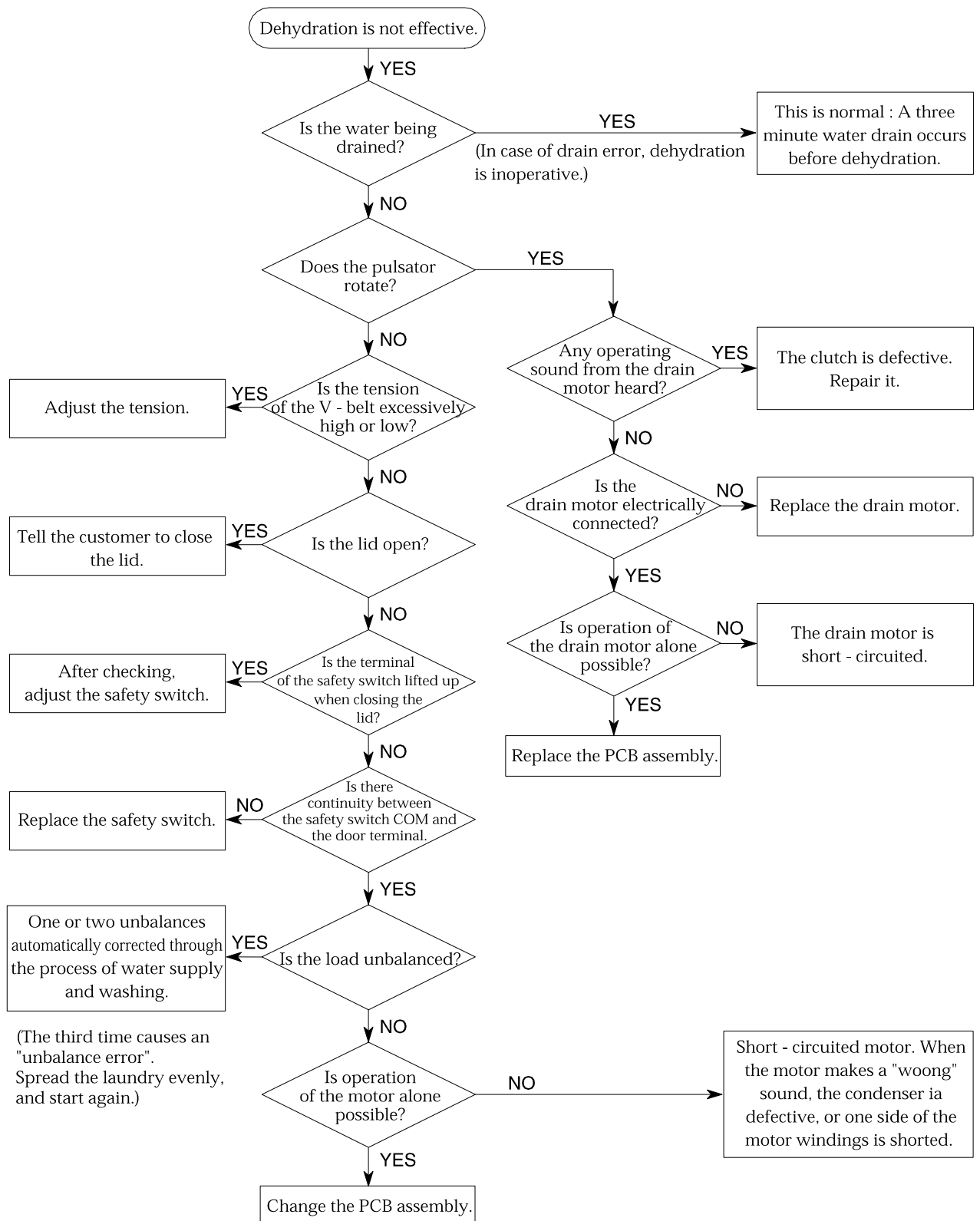
## Noise Occurs during Washing.



(The following sound does not indicate any problem :

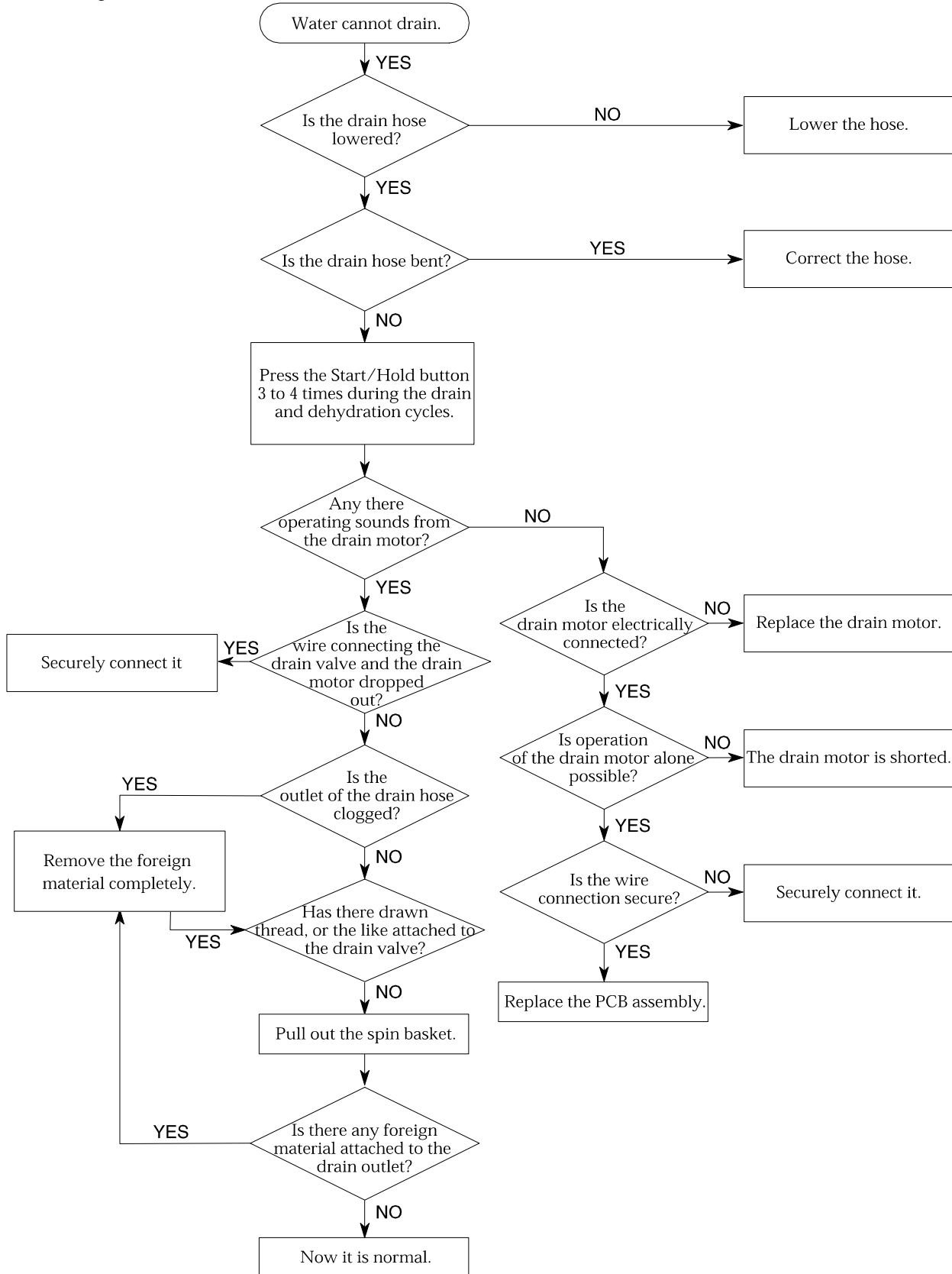
The "Sha" sound generated during the stop of the dehydration tub is the sound of the water moving by automatic balance in the dehydration tub.)

## Defective Dehydration

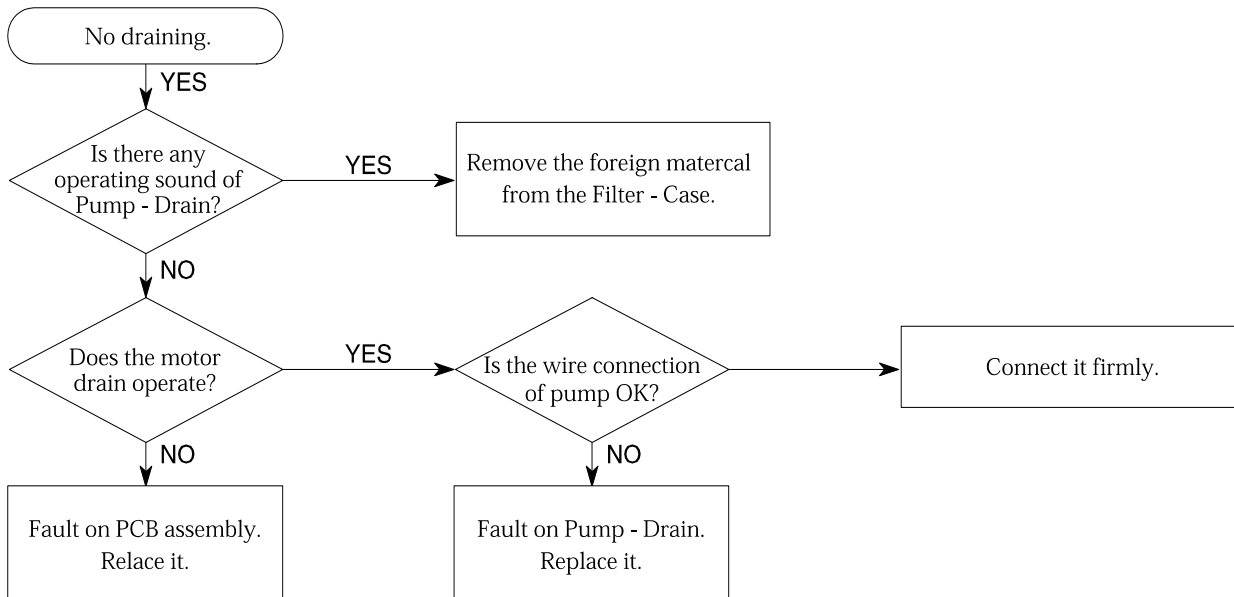


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## Draining Water is not Possible.

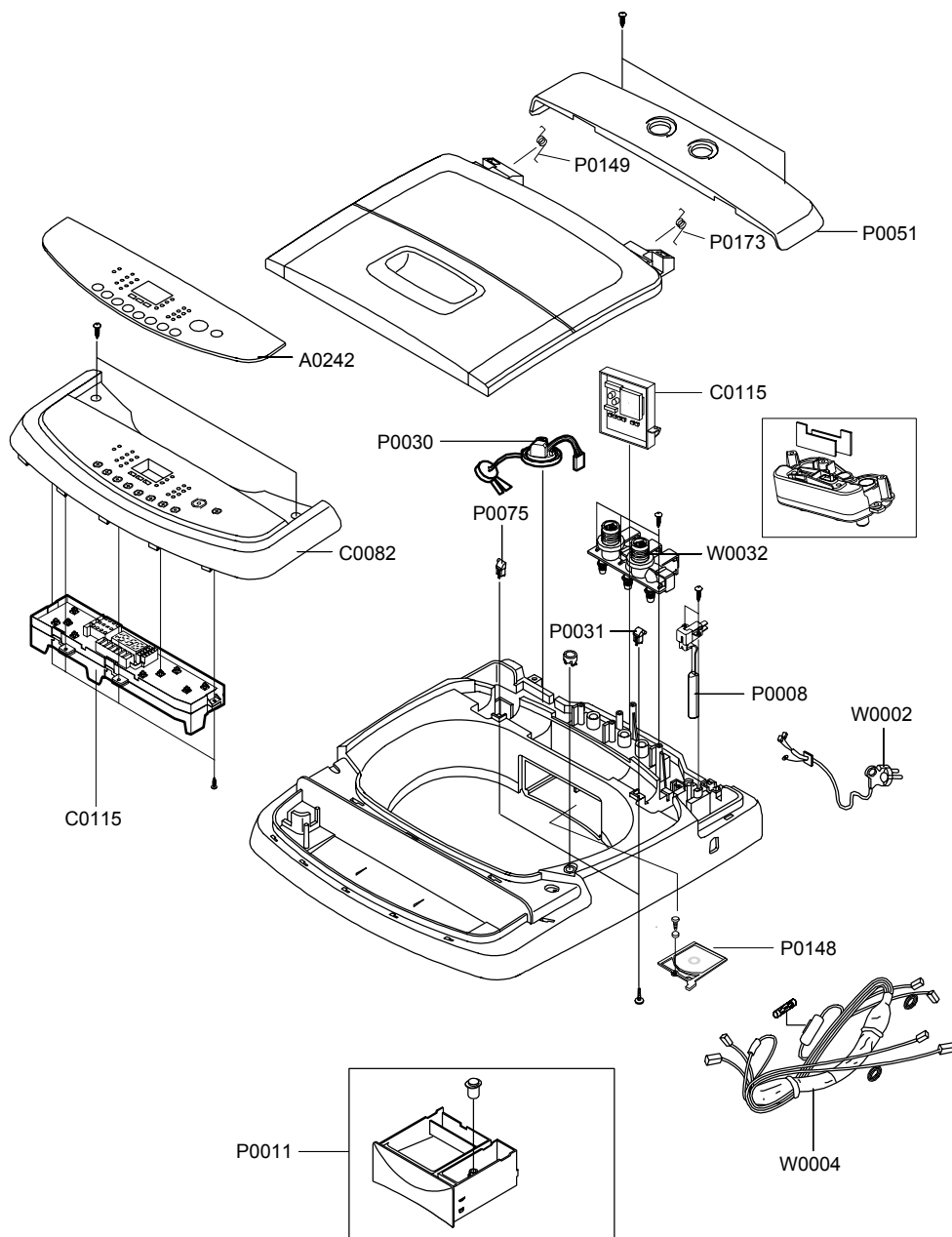


No draining. (With PUMP MODEL)



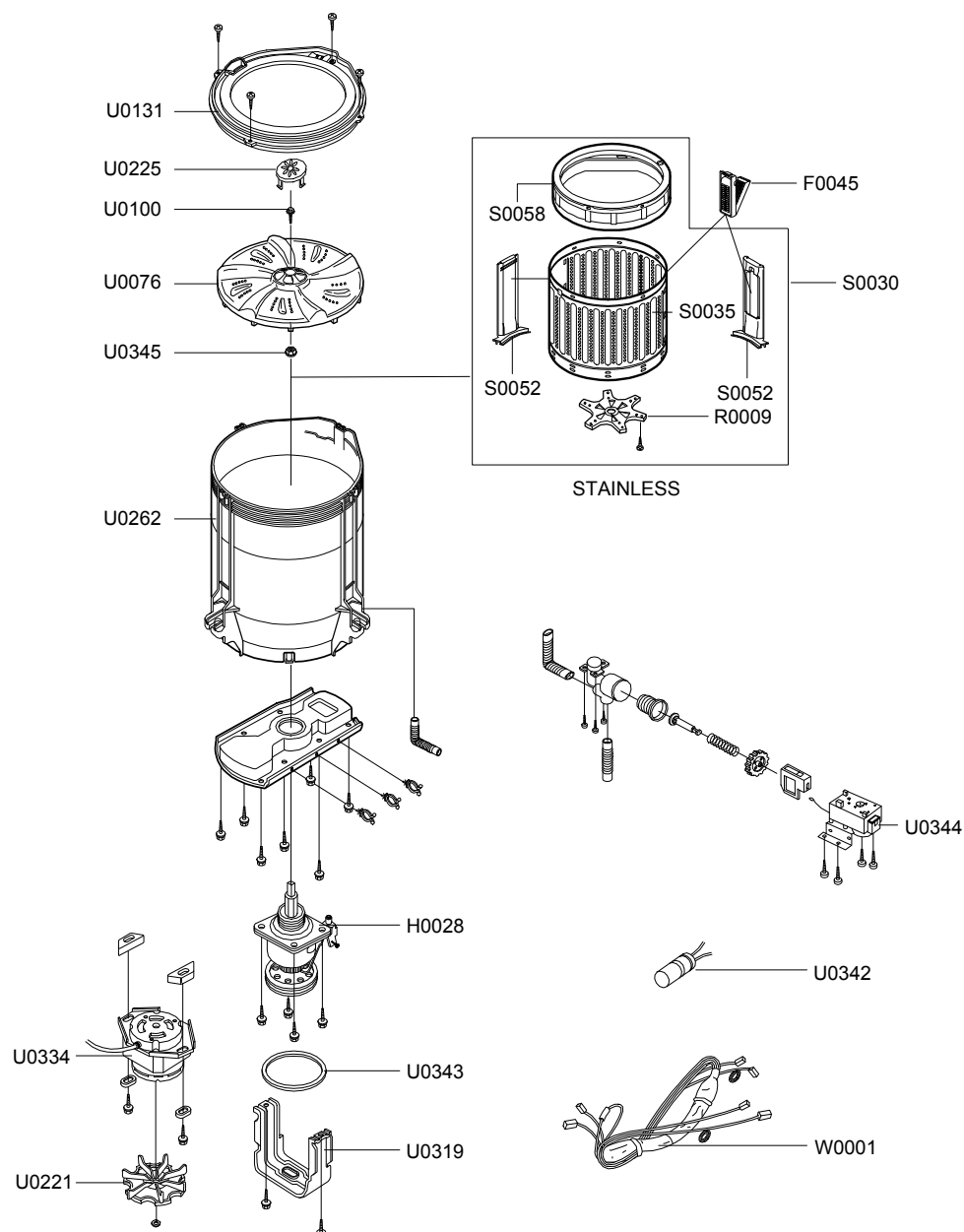
#### 7-4-4 Inspection After Repair

Inspection Item	Description						
Check grounding	Check that the original grounding wire of the washing machine is securely grounded. Connection of the grounding wire? wire to a gas or water pipe made of vinyl chloride is very dangerous.						
Check the safety system	Check the operation of the brake. If the following braking times are exceeded, readjust or repair the brake system. <table border="1"> <tr> <th>Load</th><th>Braking Time</th></tr> <tr> <td>No load</td><td>Below 7 seconds</td></tr> <tr> <td>Rated load (8.0/9.0kg)</td><td>Below 10 seconds</td></tr> </table>	Load	Braking Time	No load	Below 7 seconds	Rated load (8.0/9.0kg)	Below 10 seconds
Load	Braking Time						
No load	Below 7 seconds						
Rated load (8.0/9.0kg)	Below 10 seconds						
Dressing the lead wires	Tie the lead wires with a separate wire to prevent them from scattering. Check that they are securely connected.						
Check the locking nuts and screws	Check that the nuts and screws are securely locked, and be sure to apply screw lock.						
Check inside the washing machine	Check for any vinyl wires, screws, or foreign materials inside the washing machine.						
Check for oil (lubricant) or water leakage	In particular, check the surrounding areas of driving units for oil (lubricant) leakage, and check the moving parts of the drain valve for water leakage.						
Checking the connection of the power cord	Check the power cord, plug, and receptacle for any damage. Make sure they comply						
Adjustment of horizontal level of the washing machine	Adjust the height of the two adjusting legs (front of the washing machine) so that the washing machine is horizontally level.						

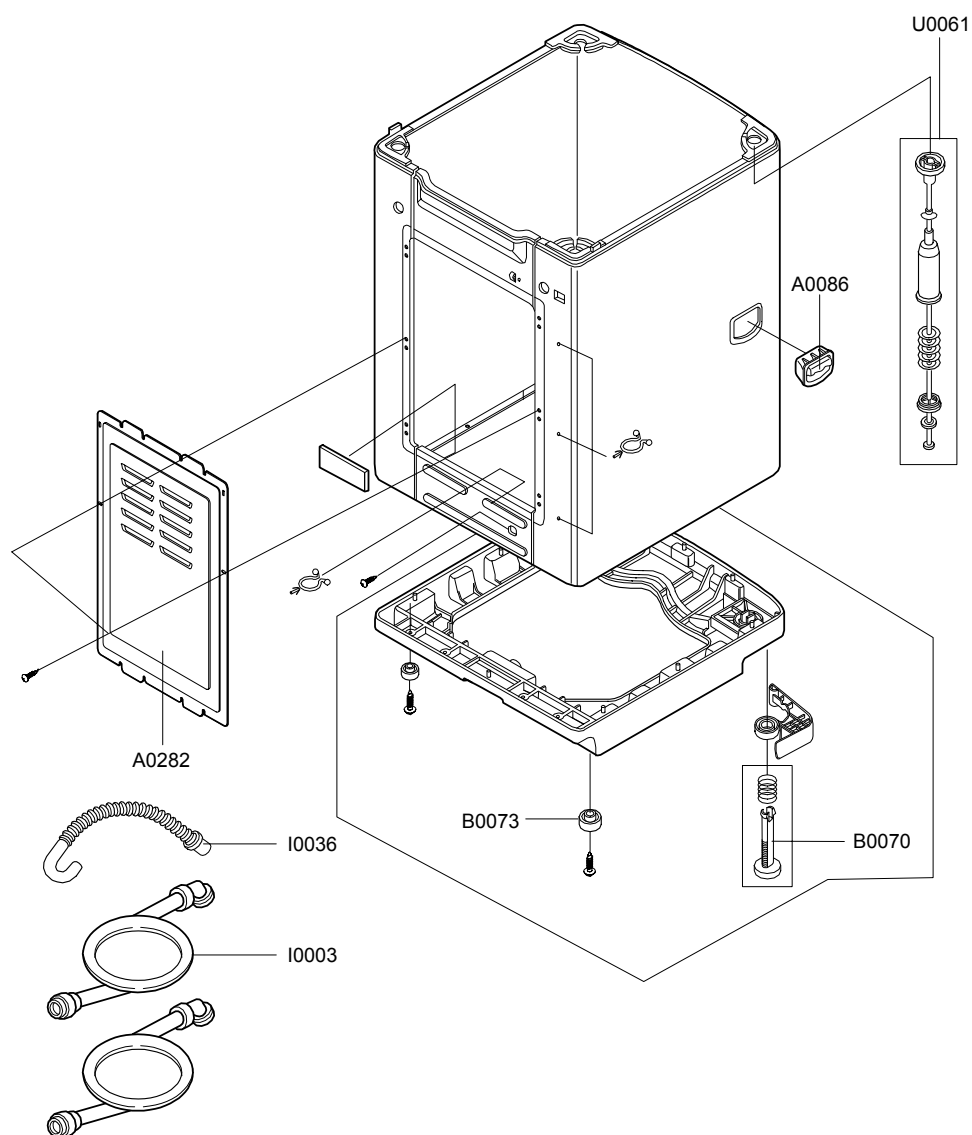


**TOP(FRONT)**





(TUB)



**(CASE)**

## Parts List

NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA
A0065	DC69-00767A	CUSHION-BALANCER	TORNADO8-PJT,PS-FOAM,-,	1	SA
A0086	DC61-20016U	HANDLE	WSLS1100A,PP,-,-,-,-,SNOW-WHT,-	2	SA
A0242	DC64-00710R	INLAY-PANEL	WA11RAQ3DW/XAP,PET,T0.188,-,	1	SA
A0282	DC61-10571B	COVER-BACK	-,SBHG1-A,-,-,-,-,-,EDGE-BEND	1	SA
A0360	DC61-60074A	CLAMPER-WIRE SADDLE	-,NYLON#66(DAWS-6NB)	2	SA
B0070	DC91-10264M	ASSY-LEG	SW90V2,NIGHT/GRY(LEFT)	1	SA
B0070	DC91-10264N	ASSY-LEG	SW90V2,NIGHT/GRY(RIGHT)	1	SA
B0073	DC61-50012B	LEG-RUBBER	SW-90V2,NBR,-,BLK,-,AIR-SEAL	2	SA
C0082	DC64-00717B	PANEL-CONTROL	WA10R3Q3,ABS,-,-,-,-,SNOW-	1	SA
C0115	MES-AGMODB3-S2	ASSY PCB PARTS	MES-AGMODB3-S2	1	SA
C0115	MFS-A8TT20A-01	ASSY PCB PARTS(M)	MFS-A8TT20A-01	1	SA
F0045	DC97-00252J	ASSY-FILTER	WA11RAS3EG/XST,AG+RESIGN/SAV	1	SA
F0223	DC62-00018A	VALVE-CHECK	SW10C1,EPDM,-,-,-,WHT,-	1	SA
H0028	SCA-10RF42	ASSY-CLUTCH	SCA-10RF42(SEM-10T	1	SA
I0003	DC62-10289B	HOSE-WATER(C)	WIP4013SRW,PVC+NYLON,ID10.	1	SA
I0036	DC97-04942A	ASSY-HOSE(O)	SWT65,PCV+ABS/PUMP	1	SA
I0036	DC91-11264A	ASSY-HOSE(O)	-,NEW-TYPE/PUMP-MODEL	1	SA
J0013	DC96-00256E	ASSY-PUMP DRAIN	BP8-PJT,220-240V50HZ/ASK	1	SA
J0024	DC62-00187A	SEAL-WASHER	SW80ASPIW/YMI,NBR,BLK,-,-,-,	1	SA
J0025	DC31-30008D	PUMP-DRAIN	SW-70XP,220/240V,50Hz,SYNCHRO	1	SA
P0008	DC90-10104D	ASSY-CHECKER S/W	SEW-110J,DC15V/50mA	1	SA
P0010	DC97-07550W	ASSY-SEMI COVER TOP	TD8 AG/S/WHT/L/G-BLU	1	SA
P0011	DC97-03241S	ASSY-DETERGENT	WA14M3Q5DW/XAX,MEXICO-WHT	1	SA
P0030	DC32-30006S	SENSOR PRESSURE	DN-S17,-,-,-,10KG/STANDARD	1	SA
P0031	DC61-20029U	HINGE-DOOR(R)	WSLS1100A,POM,-,-,-,-,-,-	1	SA
P0051	DC63-00545P	COVER-T.C	WA10RAQ3EW/YGI,ABS,-,-,-,-,-,S	1	SA
P0075	DC61-20029T	HINGE-DOOR(L)	WSLS1100A,POM,-,-,-,-,-,-	1	SA
P0148	DC61-00108D	GUIDE-WATER	ALL(LOW MODEL),ABS,-,-,-,-,NTR	1	SA
P0149	DC61-00342C	SPRING-Q(L)	BB-PJT,STEEL WIRE,CD1.6,-,-,-,	1	SA
P0173	DC61-00343E	SPRING-Q(R)	BB-PJT,STEEL-WIRE,CD1.6,-,-,-,	1	SA
P0177	DC62-00048A	SEAL-WATER	-,NBR,PINK,-,-,-,L6,PI4/T1.0	1	SA
R0009	DC66-40006D	FLANGE-SHAFT	ALDC8,SEM-10T(7KG),NTR,	1	SA
R0048	DC67-00113A	CAP-GUIDE WATER	SEW-3G105A,ABS,-,-,-,-,NTR	1	SA
R0113	DC62-00186A	SEAL-CAP GUIDE	SEW-3G105A,RUBBER(NBR),NT	1	SA
R0160	DC61-70029A	SPRING-CLIP	-,HSWR67,-,-,ID7.5,OD9.9,-,-,-,-	1	SA
S0030	DC97-00355N	ASSY-BASKET SPIN	SEW-MA850,G8(10T)/(SPIN	1	SA
S0035	DC91-10145D	ASSY-S.BASKET SPIN	WA1065(SPIN/GRY),STS4	1	SA

## Parts List

NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA
S0052	DC61-00029B	GUIDE-W.F(S)	WA1065,PP(BJ-730),-, -, -, SPI	1	SA
S0052	DC61-00030B	GUIDE-W.F(S)	WA1065,PP(BJ-730),-, -, -, SPI	1	SA
S0058	DC97-00251B	ASSY-BALANCER	SW10C1(G8),SPIN/GRY	1	SA
U0061	DC91-11771E	ASSY-DAMPER	SEW-7G/SW90V,FRONT	2	SA
U0061	DC91-11771F	ASSY-DAMPER	SEW-7G/SW90V,REAR	2	SA
U0076	DC97-05920B	ASSY-PULSATOR	WA11RAS3EG/XST,AG+/PP/SAVO	1	SA
U0100	DC60-40133A	BOLT-PULSATOR	M8,L25,-,STS 304	1	SA
U0131	DC61-10241Q	COVER-TUB	WA1065,PP(BJ-730),-, -, -, SPIN	1	SA
U0221	DC66-10174A	PULLEY-MOTOR	ALDC,M20,PCD51,SW80W1P,-	1	SA
U0225	DC66-00342C	PULSATOR-CAP	TORNADO,ABS,SAVOY-BLUE,-,6K	1	SA
U0262	DC61-30095C	TUB-OUTER	7-8KG(#2),PP(BJ-730),-, -, -, NEW	1	SA
U0319	DC60-80017B	PIN-LINK	-, -, -, MSWR10	1	SA
U0319	DC61-40054A	SUPPORT-SADDLE	SEW-PB10,SBHG1-A,-,T1.4,-	1	SA
U0333	DC96-00875A	ASSY-MOTOR WASHING	BP8&KS8,230V50Hz	1	SA
U0334	DC31-10025R	MOTOR-WASHING	WAS245AUVA,230V/240V,50HZ,	1	SA
U0342	DC62-50125E	CONDENSER-M.F	ABS,L128,W35,-,450VAC/11MF	1	SA
U0343	DC66-10142A	BELT-V	STATIC,M22,-,SEW-60FX,-	1	SA
U0344	DC31-20014A	MOTOR DRAIN	KD-SM22TA,220~240VAC,50/60HZ	1	SA
U0345	DC60-50004A	NUT-SPIN	-,ZNDC1,M24,-, -, L14,-, -, CW	1	SA
U0358	6006-001170	SCREW-ASSY TAPP	WS,TH,+,M4,L10,ZPC(YEL)	2	SA
W0001	DC96-00381B	ASSY-WIRE HARNESS	KS8(SERIES),SUB/PUMP/G	1	SA
W0002	DC90-10065B	ASSY POWER CORD	UCP2,-,250V/7A,L182,-, -,	1	SA
W0004	DC96-00802A	ASSY-M.WIRE HARNESS	TORNADO8 AG+/NEW PCB	1	SA
W0030	DC62-10291B	HOSE-PUMP	WSLS1100A,EPDM,ID30.5,OD36.5,-	1	SA
W0031	DC65-60118J	BAND-RING	-,HSWR,-, -, -, YEL,PI2.0/ID23	1	SA
W0032	DC62-00024A	VALVE-WATER	SEW-GF100C,PP,-, -, -, GRY,3-WAY	1	SA
Y0002	DC61-01243A	GUIDE-PCB	WA10RA,HIPS,-, -, -, NTR,TD-8KG/A	1	SA
Z0004	DC60-50153A	NUT-HEX	-,FE,M8,-, -, -, FZY,-, -	1	SA
Z0005	6002-001309	SCREW-TAPPING	TH,+,1,M5,L25,ZPC(YEL)	2	SA



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