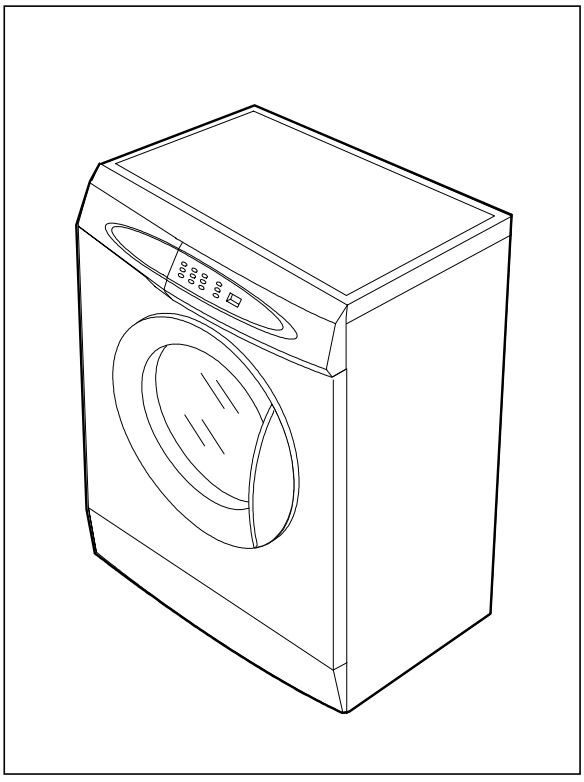
SAMSUNG

WASHING MACHINE

R1031GWS/YLR
R831GWS/YLR

SERVICE Manual

WASHING MACHINE



CONTENTS

⚠ Caution for the safety during servicing

1. Do not allow the customer to repair the product.

☞ The person may be injured or the product life may be shortened.

2. Execute A/S after unplugging the power supply unit.

☞ Be care of the electric shock.

3. Do not plug several plugs in the same outlet.

☞ It may cause the fire due to overheat.

4. Check the damage, pressing or burning of the power plug or outlet.

☞ Replace it promptly if it has problem.(may cause the electric shock or fire)

5. Do not clean the main body with the water.

☞ It may cause the electric shock and fire and shorten the product life.

6. The wiring of the harness shall be free from the moisture and tightened during serving.

☞ It shall not be deviated by certain impact.

7. Remove any dust or filth on the housing section,wiring section,connection section during servicing.

☞ Protect the cause of the fire such as the tracking,and etc.

8. Check any mark of the moisture on the electrical parts, harness section and etc.

☞ Replace the parts or remove the moisture.

9. Check the assembly status of the parts after servicing.

☞ Maintain the status before servicing.

10. Pull out the power cord with holding the plug.

☞ Be care of the electric shock and fire when the cord is damaged.

11. Unplug the power plug from the outlet when the wash machine is not used.

☞ Be care of the electric shock and fire due to the strike of the lightening.

12. Do not use or store the spray or flammable materials(including gasoline,alcohol and etc.) around the wash machine.

☞ Be care of the explosion or fire due to the electric spark.

13. Do not put the bowl of water or wet laundry on the wash machine.

☞ If the water is penetrated to the wash machine, this may cause the electric shock or fire.

14. Do not install the wash machine in the place where the snow or rain falls.

☞ It may cause the electric shock and fire and shorten the product life.

15. Do not push the control buttons with the awl,pin, or sharp materials.

☞ It may the electric shock and trouble.

16. Check the wash machine is leveled horizontally and installed properly on the floor.

☞ The vibration may shorten the product life.

17. Joint the wire by the connector correctly.

☞ When the wire is jointed by the tape, this may cause the fire due to the tracking.

18. When the wash machine is to be laid for the service, put the pad on the floor and lay the product at side slowly.

☞ If the wash machine is laid front, the relay may be damaged by the tub.

19. When the wash-heater is replaced, check it is inserted in the bracket-heater and screw the nut.

☞ If the wash--is not inserted in the bracket-heater properly, this may cause the noise and leakage since it is contacted to the drum.

1. Specifications

WASH TYPE	FRONT LOADING TYPE				
DIMENSION	GROSS		W 661mm X D 576mm X H 850mm		
	NET		W 598mm X D 450mm X H 844mm		
WATER PRESSURE	50 kPa ~ 800 kPa				
WEIGHT	GROSS		69 kg		
	NET		66 kg		
WASH and SPIN CAPACITY	5.2 kg (DRY LAUNDRY)				
POWER CONSUMPTION	WASHING		220 V	180 W	
			240 V	180 W	
	WASHING and HEATING		220 V	1800 W	
			240 V	2100 W	
	SPIN	MODEL	R1031	R831	R631
		230V	500W	430W	380W
	PUMPING		34 W		
WATER CONSUMPTION	49 ℓ (STANDARD COURSE)				
SPIN REVOLUTION	MODEL		R1031	R831	R631
	rpm		1000	800	600

2. Safety Devices

※ We adapt 5 safety devices for users to use this wash machine safely.

1) Balancing device (ASSY-Main PCB)
   → When the laundry is out of balance, to prevent the noises and vibrations, the unbalance detecting sensor helps the laundry laid even and continue the dehydating process.

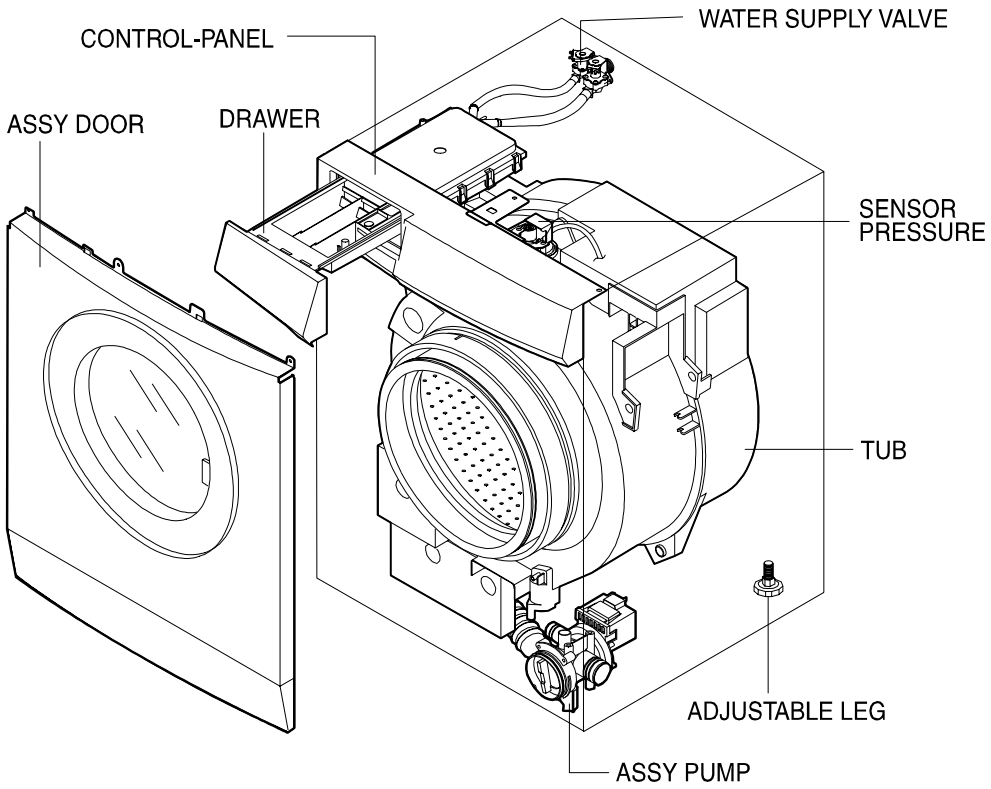
2) Anti-over water supply device
   → Because water supply value is broken, once water is supplied to the 2/3 level of the door, the water supplied is drained automatically, Over -flow error is displayed on the panel

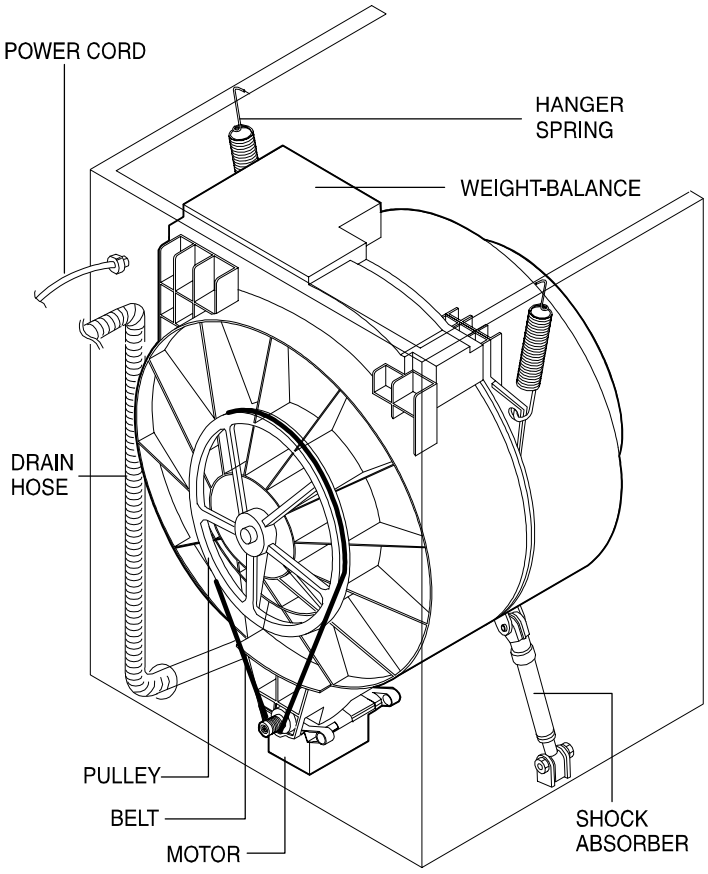
3) Temperature-regulating device(thermistor)
   → To prevent over-heating over the temperature setted up, THERMISTOR senses the temperature of the machine continuously and helps the wash machine to work at the temperature given by users.

4 Overheating- controlling system
   → Under the circumstances of THERMISTOR inferiority or abnormal condition, if wash-heater is overheated, automatically, assy -thermal fuse cuts off the power supply to protect the machine to keep it safe.

5) Delicate clothing safeguard function(ASSY-Main PCB)
   → To protect the clothings which is weak to high temperature, the wash machine senses the temperature inside the washing tub. if the temperature rises over 50℃ wool washing course and Delicate washing course display abnormal water temperature on the panel , after draining the water.

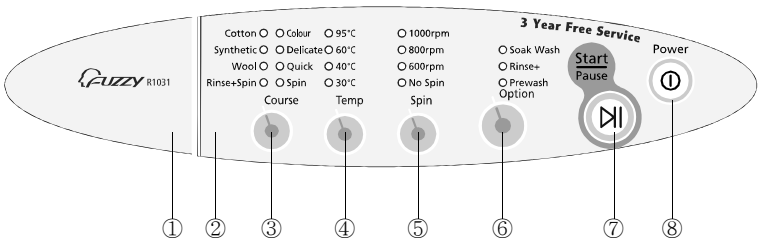
3. Overview of the Washing Machine



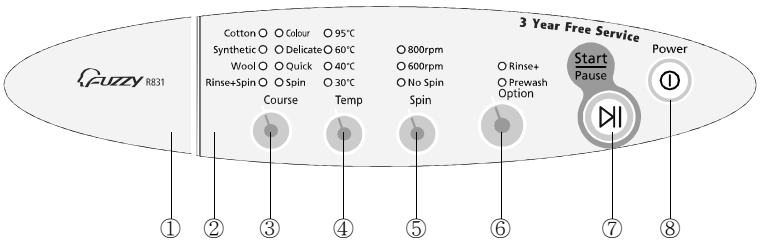


4. Overview of the control panel

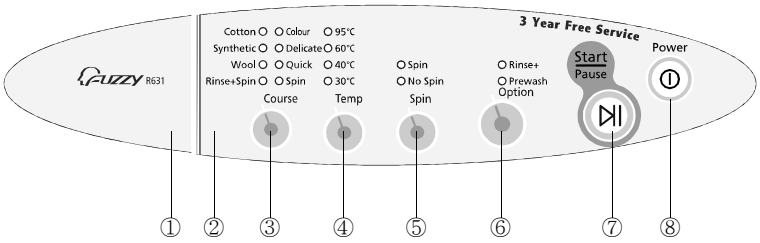
R1031



R831



R631



1. **Detergent dispenser**
2. **Display panel**
   Displays wash cycle and error messages by LED lamps.
3. **Course button**
   Press the button repeatedly to select one of the six available wash program.
   {Cotton → Colour → Synthetics → Delicates → Wool → Quick → Rinse+Spin → Spin}.
4. **Temperature selection button**
   Press the button repeatedly to cycle through the available water temperature options (cold, 30 C , 40 C , 60 C and 95 C).
5. **Spin selection button**
   Press the button repeatedly to cycle through the available spin speed options.

R1031	No Spin, 600, 800, 1000
R831	No Spin, 600, 800
R631	No Spin, Spin(600)

   ▶ **No spin** : The laundry remains in the drum without being spin after the final drain.
6. **Option button**
   Press the button repeatedly to cycle through the available options.

R1031/R1032	Soak wash → Rinse+ → Prewash → (Soak wash+Rinse+) → (Rinse+Prewash) → Cancel
R831/R832	Rinse+ → Prewash → (Prewash + Rinse+) → Cancel
R631/R632	Rinse+ → Prewash → (Prewash + Rinse+) → Cancel

   Note: Prewash is available only with cotton, colour, synthetic or delicates programs (see page 7).
7. **Start/Pause button**
   Press to pause and restart programs.
8. **⏻(On/Off) button**
   Press once to turn the washing machine on, press again to turn the washing machine off.
   If the washing machine power is left on for longer than 10 minutes without any buttons being touched, the power automatically turns off.

5. Main function

1) Auto power S/W off function

- After power on, the auto power S/W off function automatically switches power off for you if you do not press selection button for 10 minutes
- After selecting the function, the auto power S/W off function automatically switches power off for you if you do not press start/pause button for 10 minutes
- After finishing the last function, the auto power S/W off function automatically switches power off for you if you do not re-select the course button or manual button

2) Door open function

- If door is open during the operating, all operating is halted, and door error message will be displayed and error melody will coming out
- Door open error can be cleared by colosing the door. the operating keeps going on

3) No spin function

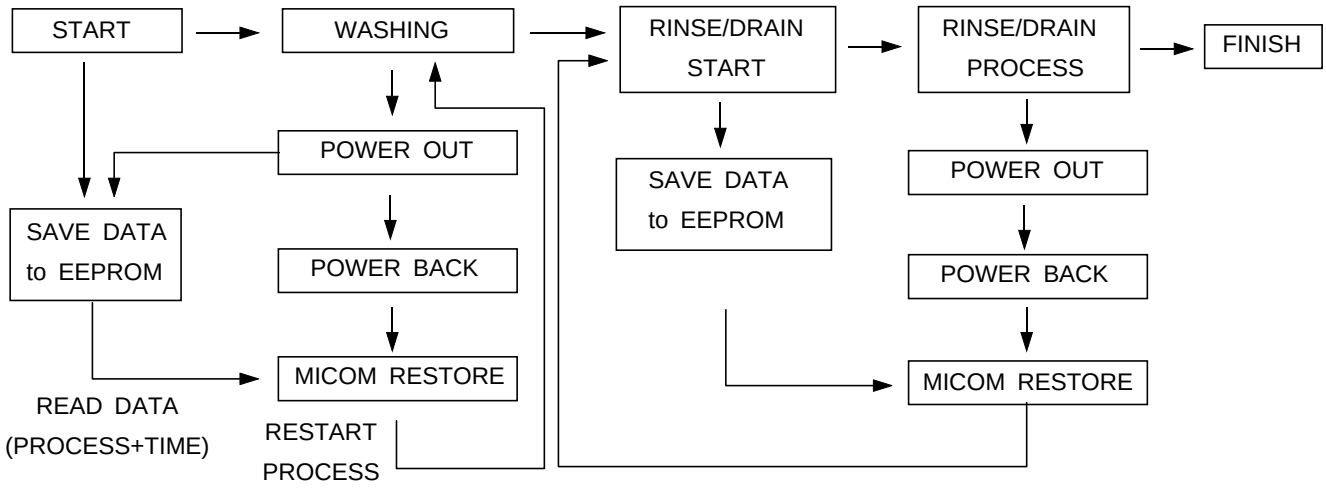
- If no spin function selected, the operating is finished after last rinse

5. Main function

4) Power-out compensation function

- If power is out on selected process, the process before power out is stored to EEPROM, once power is back the process before power out continues.
- When power is back, washing process starts from the process at the point of the power out, rinse/drain process starts from the initial process.

POWER-OUT COMPENSATION FUNCTION PROCESS



5) Water heater Error function

① This function starts working, when the heater works abnormally.
(this function begins sensing the heater 1 minutes later, after the heater operating)

② The value of the initial thermistor(A1) is compared with that of the thermistor(A2) in 2 minutes (Y=A2-A1)
- For 10 minutes, the variance of temperature(Y) is less than 2℃ "course led 8ea on 40℃/60℃ led on" message is displayed on the panel.

③ The value of the initial thermistor(A1) is compared with that of the thermistor(A2) in 2 minutes (Y=A2-A1)
- For 2 minute the variance of temperature increases more than 7℃ "course led 8ea on 30℃/60℃ led on" message is displayed on the panel.

④ At this time heater, Error "course led 8ea on 30℃/60℃ led on" is displayed and all working process off

⑤ The heater operating continues during heating hours, if washing hour is left over, the residual washing process keeps going without heating.

5. Main function

6) Fuzzy washing function (weight-sensing)

☞ After finishing initial water supply, when the fall of the water level needs supplementary water supply, Sensing function perceives the weght with the supplementary water supply numbers and starts to work. Under the course of Cotton, if the supplementary water supply numbers become 3 - 4 times the function is going at default condition (high water level), if 1-2 below that is going at middle level, if 0 below low water level, heating hours and rinse hours depend on the above data.

	Washing hours	Rinse water level
	Cotton	
High	Default	Default
Middle	Default-12 min	23.30KHZ
Low	Default-25 min	23.70KHZ

※After sensing weight, above hours is decreased from above default hours

7) Bubble -detecting function

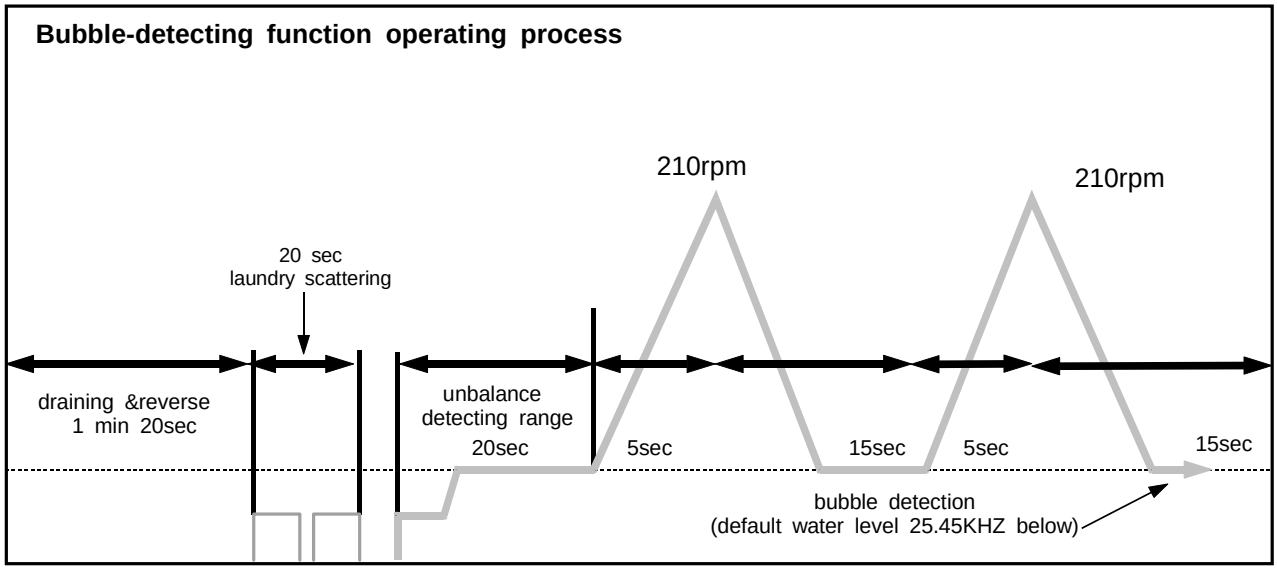
At the each condition of washing&dehydrating , rinse&dehydrating , hydrating, bubble -detecting function works, this function works 5times normally, if the function detects bubbles at 6 times , the bubble-detecting function stops and go on to the next process.

● The bubble-detecting function during washing & dehydrating to rinse & dehydrating
after 2 times instant dehydrating and before main dehydrating, if the water level is under 25.45KHZ, Bubble

→ Detecting function thinks there are bubbles and add the bubbles-removing rinse, needing hours are above hours and 6 min 40 sec.

→ The bubble-detecting function during single hydrating process
after 2 times instant dehydrating and before main dehydrating , if the water level is 25.45KHZ below or during main dehydrating, water level data is 23.80KHZ below Bubble-detecting function thinks there are bubbles and add the bubbles-removing rinse 1 times, needing hours are above hours and 5 min 50 sec.

Bubble-detecting function operating process



5. Main function

8) Unbalance detecting & laundry balance positioning system

① Just before the hydrating process and just after reversal rotation for balancing laundry position, this function is carried out

② The initial 6 sec is the period of reversal rotation for balancing laundry position , Drum rotates 50rpm for initial 6 sec

③ Next 10 sec, the rotation increases the speed from 50 rpm to 90 rpm slowly

④ During the next 18 sec, drum rotates at the speed of 90 rpm, the sensor decides the degree of laundry unbalance with TACHO data which is attached to motor

⑤ If the degree of unbalanced laundry is over 6 times to default value, laundry balancing system carryies out feed back process 6 times

6. Technical point

1) Final dehydrating r.p.m at each course

unit:rpm

Course \ Model	R1031	R831	R631
Cotton	1000	800	600
Colour	1000	800	600
Synthetics	800	800	600
Delicates	600	600	600
Wool	600	600	600
Quick	800	800	600

※ You can change the r.p.m to the above a table by use spin button under no spin situation.

2) The water level data at each course

unit:Khz

Course \ Water level		Default water level(khz)		Supplemetary water START(Khz)	Supplemetary water end(khz)
Cotton/Colour	**Washing**	23.60		24.20	23.85
	Rinse	large	23.00	24.20	23.90
		middle	23.30		
		small	23.70		
Synthetics	**Washing**	23.60		24.20	23.90
	Rinse	23.10		24.20	23.90
Delicates	**Washing**	23.25		24.00	23.70
	Rinse	23.00		24.20	23.90
Wool	**Washing**	23.00		24.00	23.70
	Rinse	22.80		23.80	23.50
Quick	**Washing**	23.50		24.00	23.70
	Rinse	22.45		24.00	23.50

6. Technical point

3) The other water level data

unit:Khz

The water data unter each conditon		
1st water supply (only preparation)	24.60	1st water supply level to washing tub
Overflow error	20.50	The water supplied reach 2/3 of door
Bubble detectingatwashing/rinse/dehydrating	25.45	Bubble -detecting water level
Bubble detecting rinse water level	22.60	The water level which can detect bubbles
Water level which can open door	24.10 over	It is possible to open the door
Water level which can drive heater	24.50(3.5ℓ)	Safety water level of wash heater
Water level which can reset the drain	24.50	The water level can be detected after 1st draining

※ If water level is 15KHZ below or 30 KHZ above , sensor-pressur is out of order so needs changing.

7. General Error Function

When an error occurs, this function starts to keep generating error melody sounds and displays error indicators as shown in the followings per corresponding error by blinking in 0.5sec interval until the error status is completely cleared out. In this case, all the driving devices are turned off until the error is cleared out.

○ : Light on
● : Light off

1. WATER SUPPLY ERROR
- Display shows such as fig. 1
- Water Supply Error occurs when water level frequency does not show changes more than 100Hz or water is not supplied up to the water level presetting for 20 min or more at the time of initial water supply.
- The error status can be cleared by turning POWER S/W OFF and resuming the POWER ON initial status.

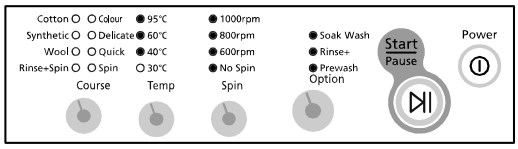


fig. 1

2. WATER DRAIN ERROR
- Display shows such as fig.2
- In case the water level frequency is 24.5KHz or less in the initial phase of UNB-detecting cycle.
- Water Drain error can be cleared by turning POWER S/W OFF and resuming the POWER ON initial status.

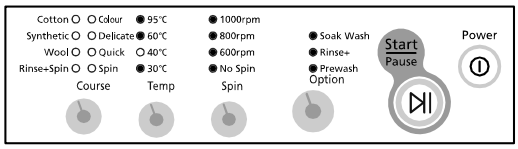


fig. 2

3. OVER-FLOW ERROR
- Display shows such as fig.3
- Over-Flow error occurs when the water level is in abnormal operation. It can be cleared by turning POWER S/W OFF. Water is drained prior to POWER S/W OFF and it is forced to be drained for 2 min if a frequency of more than 24.5 KHz is detected.

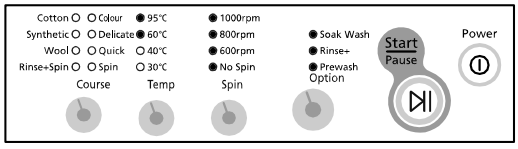


fig. 3

4. UNBALANCE ERROR
- Display shows such as fig4.
- Laundry load is unbalanced; loosen any tangled laundry.
- If only one item of clothing needs washing, such as a bathrobe or jeans, the final spin result might be unsatisfactory and an error message will be shown in the display panel such as fig 4..
- Unbalance error is cleared by POWER S/W OFF and by resuming the POWER ON initial status.

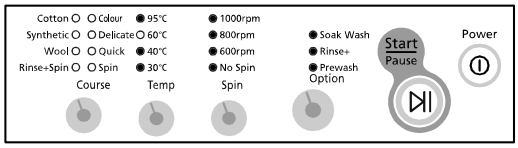


fig. 4

5. WATER HEATER ERROR
- Display shows such as fig.5 or fig.6
- In case the water temperature rises by 7∝C or more in 1 min. or by 2∝C less in 10 min after heating is started.
- It can be cleared by turning POWER S/W OFF.

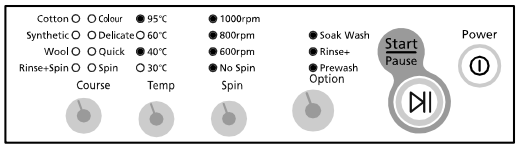


fig. 5

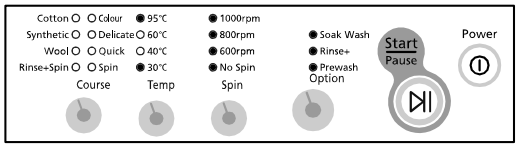


fig. 6

6 DOOR OPEN ERROR
- Display shows such as fig.7
- Door Open error can be cleared by closing the door.

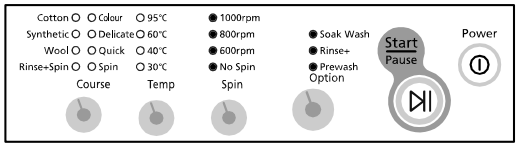


fig. 7

7. ASSí Y PRESSURE S/W ERROR

* Generated Frequency Signal of WATER LEVEL(W/L) S/W (KHz)

Level	Low Level	High Level
Abnormal W/L Frequency	30.00 KHz	15.00 KHz

7. General Error Function

- If the same signal as the above table is detected for more than 5 seconds, it is a PRESSURE S/W Error.
- When the error occurs, water drain pump will operate for 3 min. and then turn off the water drain pump.
  Then the display shows fig. 8 indicating a pressure s/w error indicator.

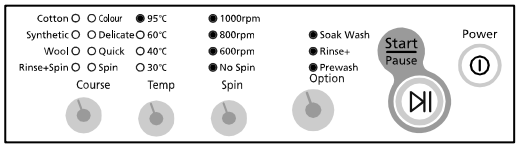


fig. 8

8. ABNORMAL WATER TEMPERATURE ERROR

- In case the water temperature is 50∝C or more in Delicate and Wool course.
- At the time of initial water supply, if the water temperature is not appropriate, water starts to be drained and it is forced to be drained for 2 min when the abnormal frequency of 24.5KHz is detected.
- Display shows fig. 9
- This error can be cleared by POWER S/W OFF.

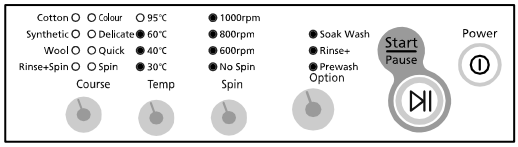


fig. 9

9. WATER LEAKAGE ERROR (E9)

- Water Leakage error occures when water is drained naturally after washing program starts.

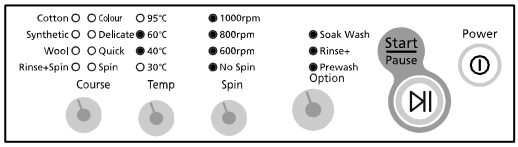


fig. 10

10. Tacho Error

- This error occurs in case motor thaco is out of order or tacho siganals inputted are fewer than 2
- Display shows fig. 11
- This error can be cleared by power s/w off

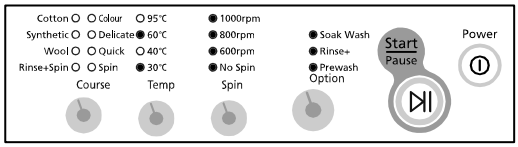


fig. 11

11. Motor Triac short Error

- This error occurs in case over 300 per 1 sec tacho signals are inputted power S/w should be off.
-fig. 12 is diplayed.
- This error can be cleared by power s/w off

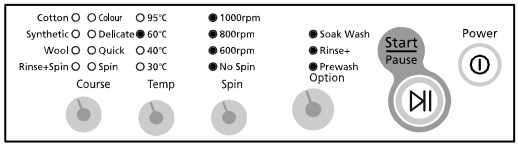


fig. 12

12. Thermistor error

- This error occurs, when Thermistor circuit is abnormal or the detected electrical volt is 0.2v below or 4.5v over
- fig. 13 is displayed
- This error can be cleared by power s/w off

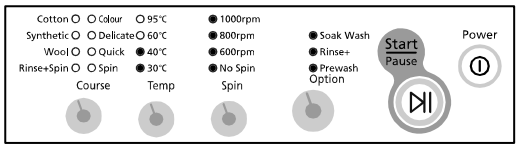


fig. 13

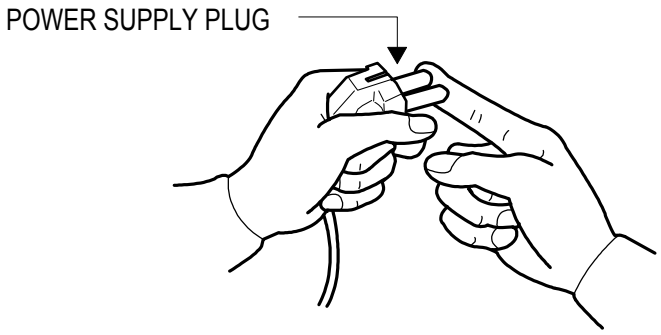
8. Trouble Diagnosis

- As the micom wash machine is configured of the complicate structure, there might be the service call. Below information is prepared for exact trouble diagnosis and suitable repair guide.

Caution for the Repair and Replacement

Please follow below instruction for the trouble diagnosis and parts replacement.

1) As some electronic components are damaged by the charged static electricity from the resin part of wash machine or the human body, prepare the human body earth or remove the potential difference of the human body and wash machine by contacting the power supply plug when the work contacting to PCB is executed.



2) Since AC220~240V is applied to the triac T1 and T2 on P.C.B, the electric shock may occur by touching and be careful that the strong and weak electricity are mixed.

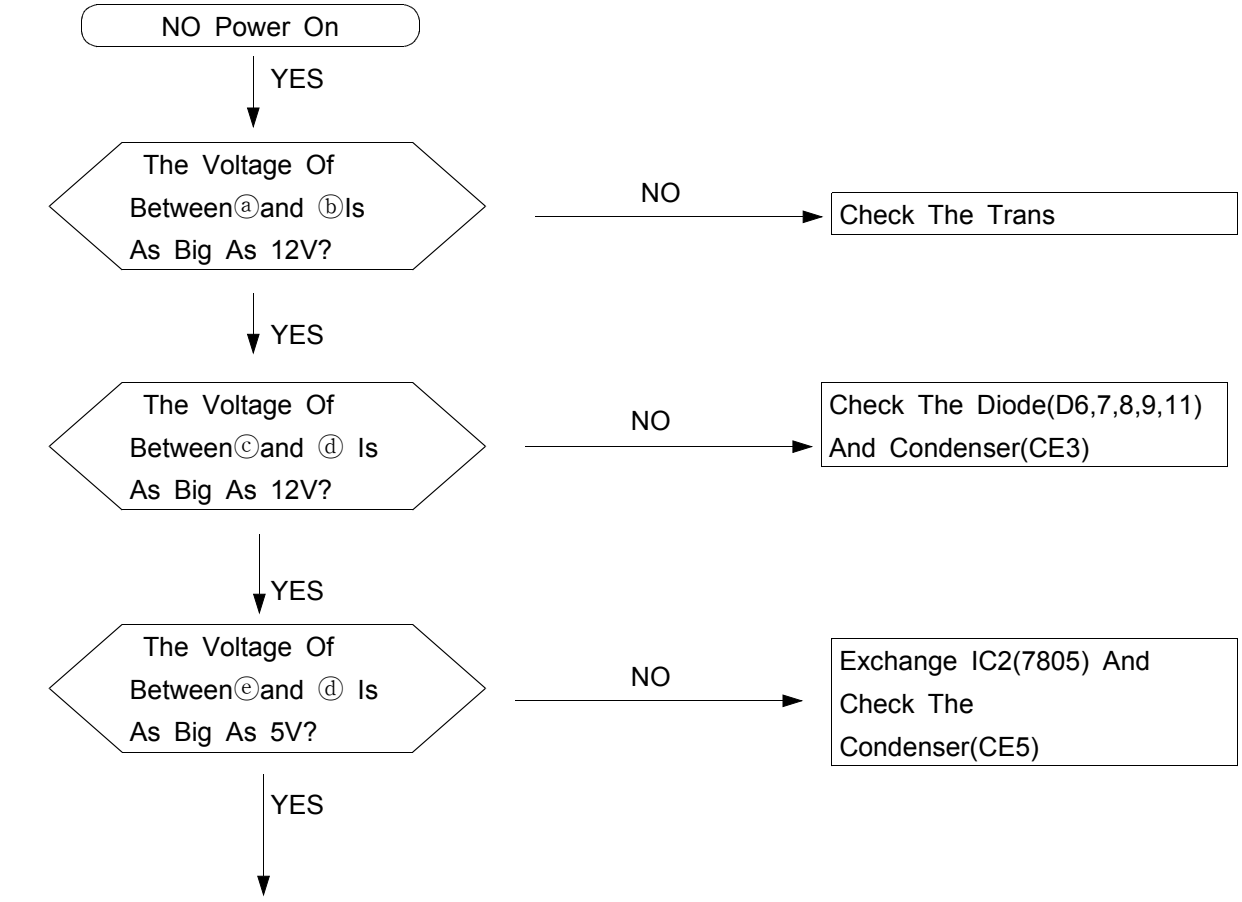
3) As the P.C.B assembly is designed for no trouble, do not replace the P.C.B assembly by the wrong diagnosis and follow the procedure of the trouble diagnosis when the micom is not operated normally.

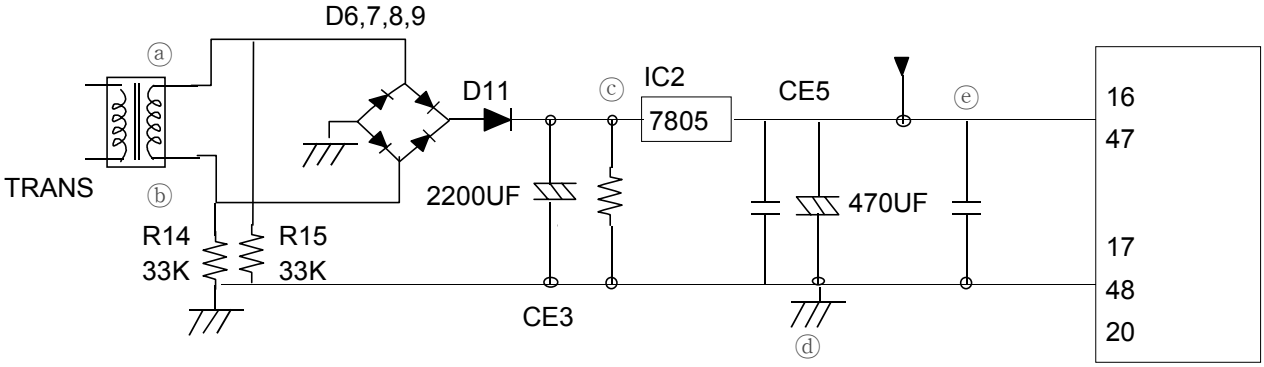
8-1. Trouble Diagnosis

No	Item	Cause and treatment
1	The power is not supplied	- Is the PCB connector connected well? - Is the voltage normal? - Is the power supply plug connected well? - Is the noise filter connected well? - Is the secondary output of the power supply transformation normal? - Is the fuse disconnected? (option) ï If above points are not found, the PCB assembly is out of order. Replace it.
2	The water is not supplied.	- Is the knob open? - Did you push START/PAUSE button after selecting the course? - Is the water supply valve connected well? - Is the winding of the water supply valve continuous? - Is the connection and operation of the pressure switch normal? ï If above points are not found, the PCB assembly is out of order. Replace it.
3	The wash does not start though the water supply is stopped.	- Is the connection and operation of the pressure switch normal? - Is the pressure switch hose damaged so that the air is leaked? - Is the pressure switch hose bent? - Check the operation of the water level switch. ï If above points are not found, the PCB assembly is out of order. Replace it.
4	The drum does not rotate during washing.	- Is the belt connected well? - Is the winding of the motor continuous? (Rotor winding, stator winding, generator) - Is the motor protector normal? ï If above points are not found, the PCB assembly is out of order. Replace it.
5	The drum rotates by one direction during washing. (The drum rotates to one direction for SPIN.)	- The PCB assembly is out of order. Replace it. (Inversion relay open trouble)
6	Drainage problem.	- Is the drainage hose bent? - Is the winding of the drainage pump continuous? - Is the drain filter clogged by the waste? ï If above points are not found, the PCB assembly is out of order. Replace it.
7	Dehydration problem.	- The unbalance is detected. - Put in the laundry uniformly and start again.
8	Abnormal noise during SPIN.	- Is the pulley nut loosen? - Is the transport safety device removed? - Is the product installed on the level and stable place? (Little noise may be generated during the high-speed SPIN.)
9	Leak breaker or current/leak breaker is down during washing.	<When the leak breaker and current breaker is installed separately> - When the leak breaker is down, check and make the earth of the outlet. - When the current is down, the current is leaked. <Is the breaker down when the leak/current breaker is combined?> - Check the rated capacity of the current and leak breaker. The current breaker may be down due to the lack of the current when the wash machine and other apparatus are used. In this case, execute the cold water wash to check whether the current capacity is lack.
10	The heating is not executed.	- Is the wash heater terminal unplugged? - Is the wash heater normal? - If above points are not found, the PCB assembly is out of order. Replace it.

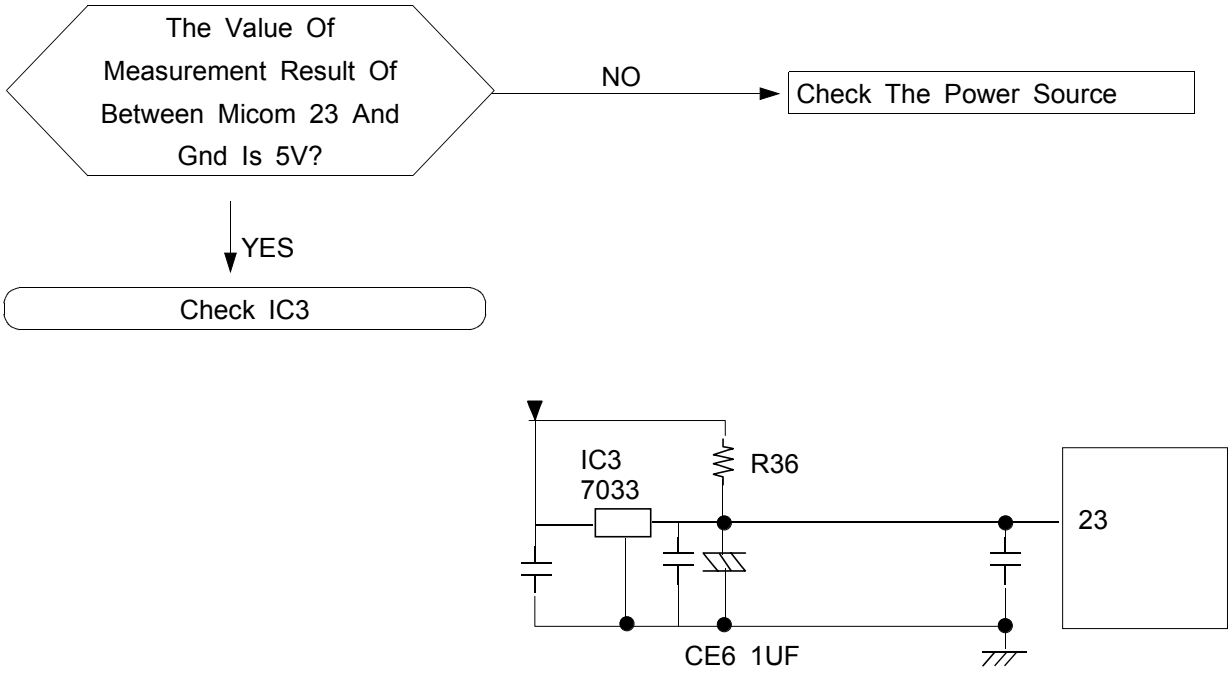
8-2 . Problem Checkking And Method Of Pcb

8-2-1 The Part Of Power Source

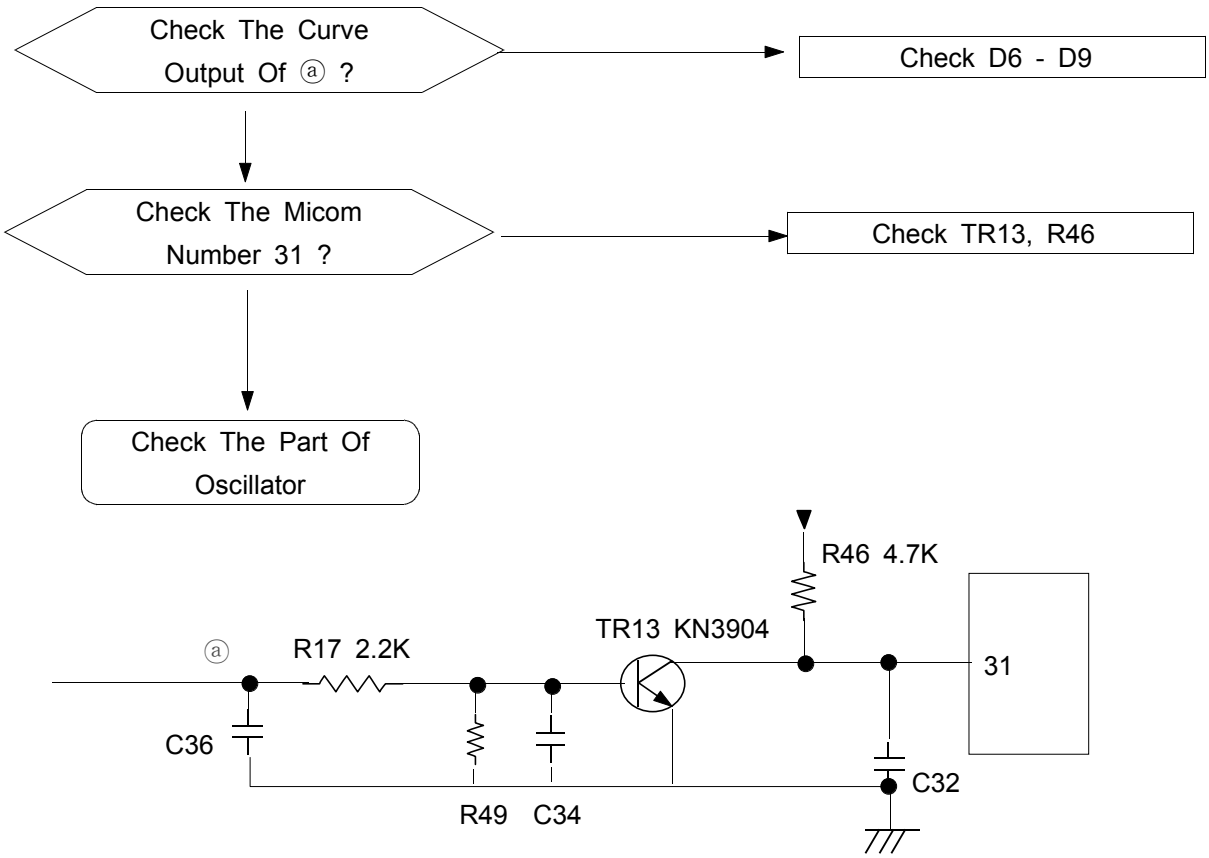




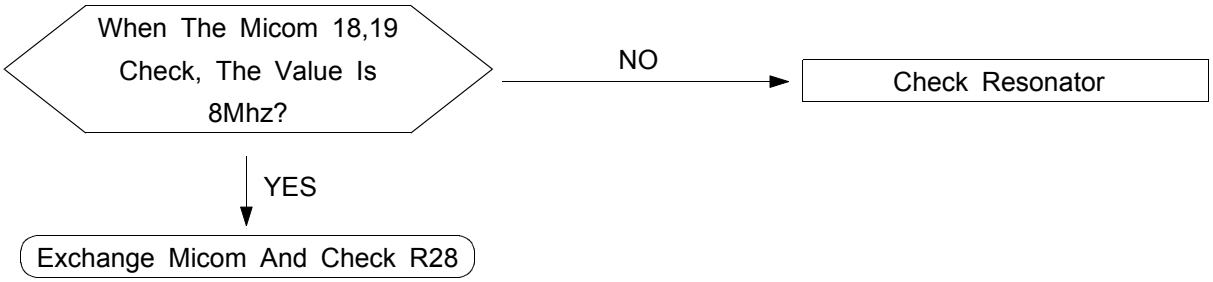
8-2-2. Reset Part

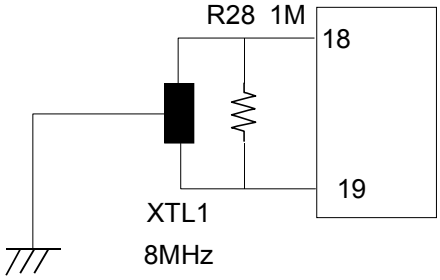


8-2-3. Interrupt Part



8-2-4. Checking The Part Of An Oscillator

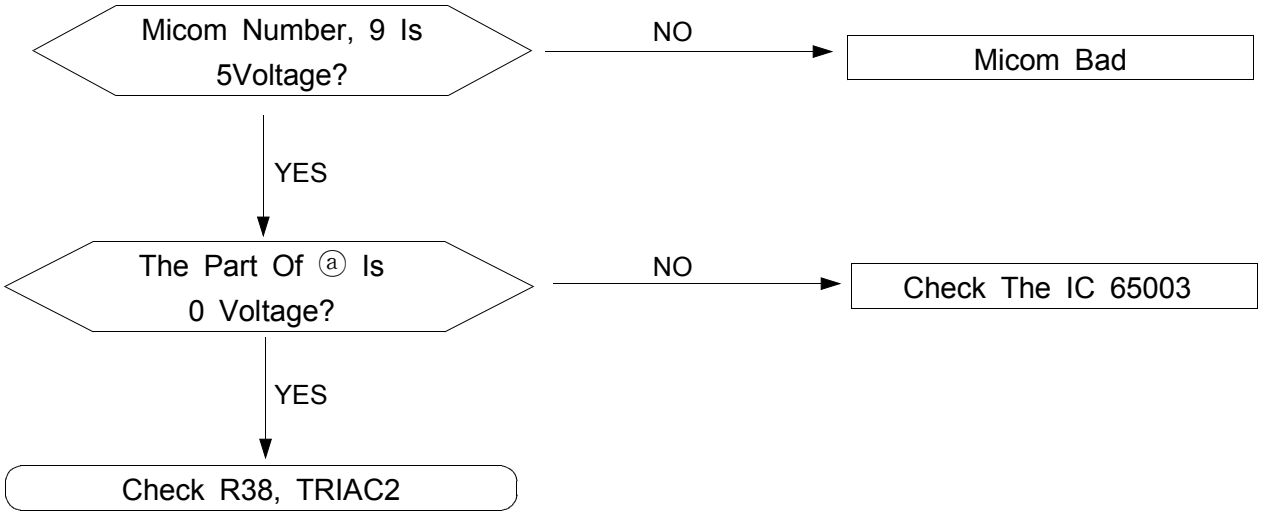


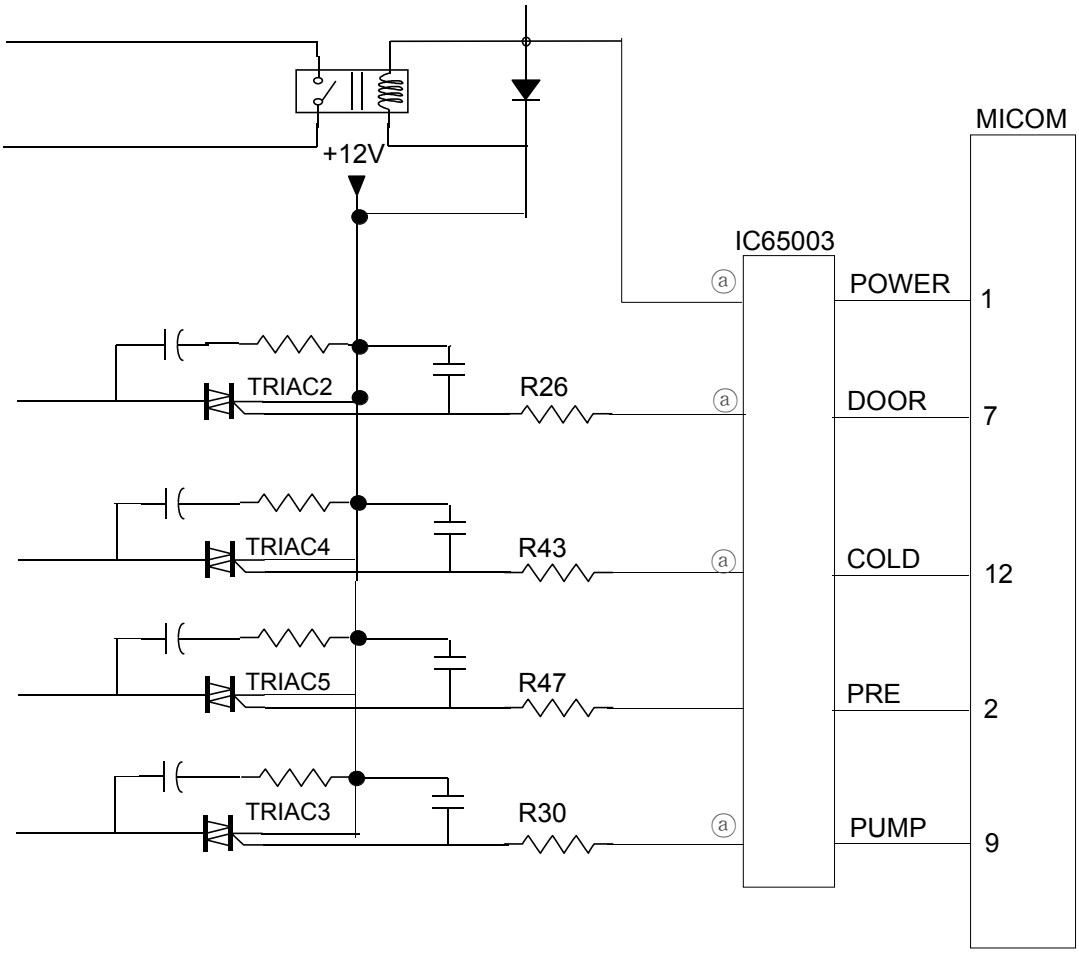


8-2-5. Driving Part Checking

◆ **Confirm The Output Of DC5V, When The Every Part Of Micom Number Check, According To The Some Problem Condition**

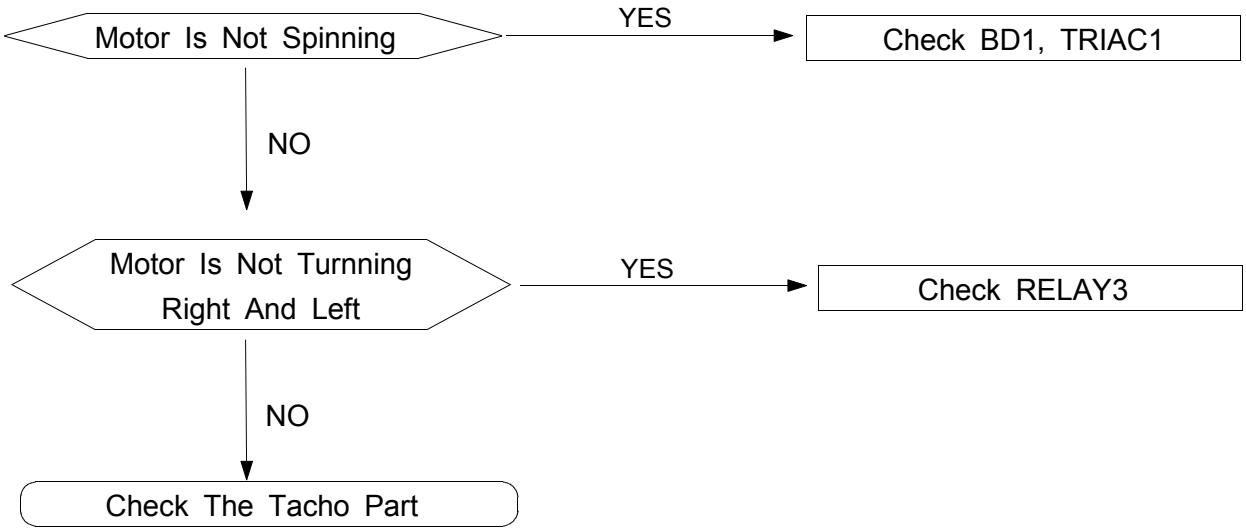
ex) When The Drain Is Not Operating But Pump Motor Is Operating, Check The 5Voltage Of Micom

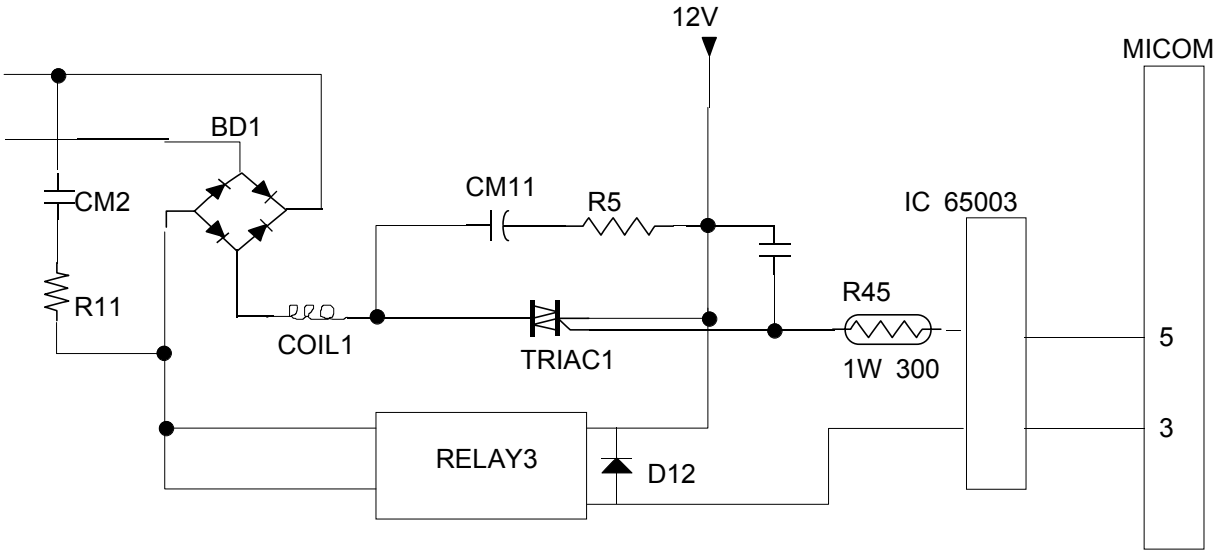




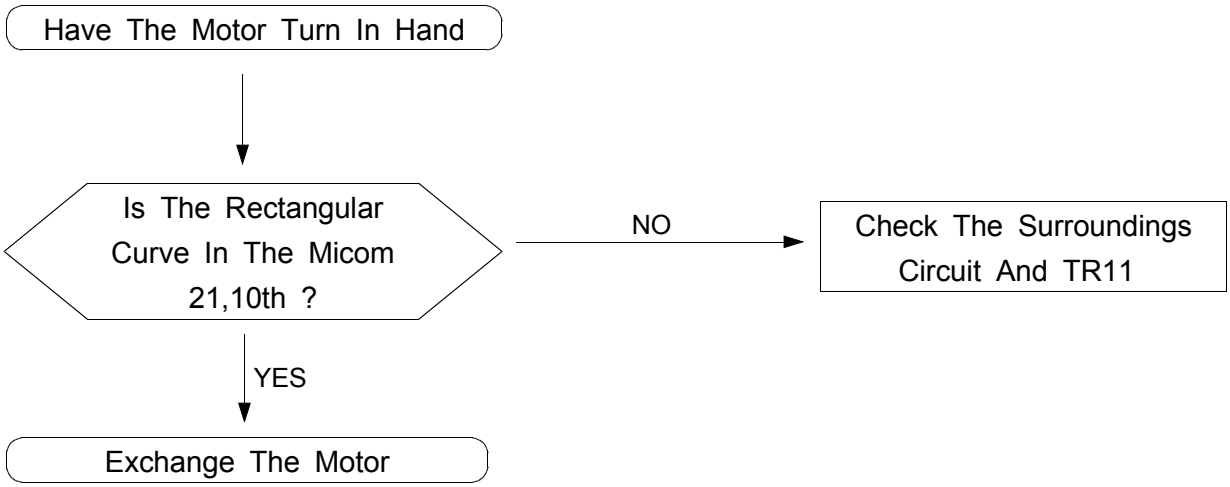
※ Check The Micom 12th In The Above Method When The Cold Water Is Bad

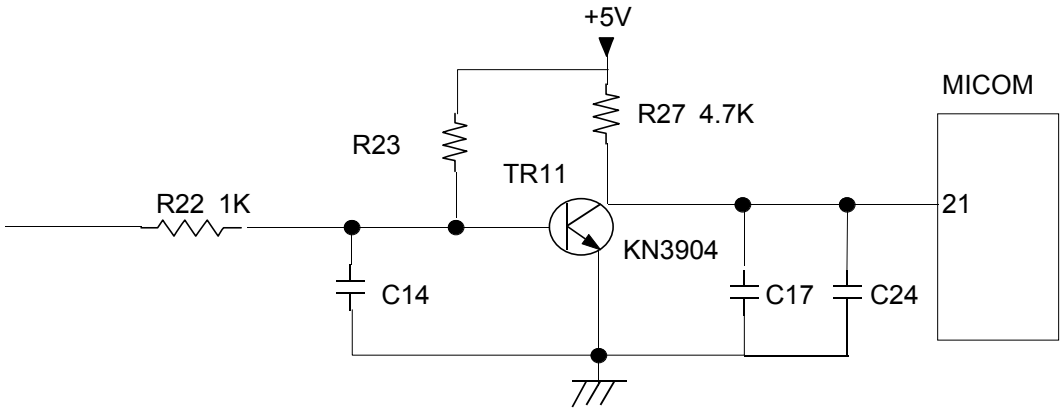
8-2-6. Confirm The Driving Part Of Motor



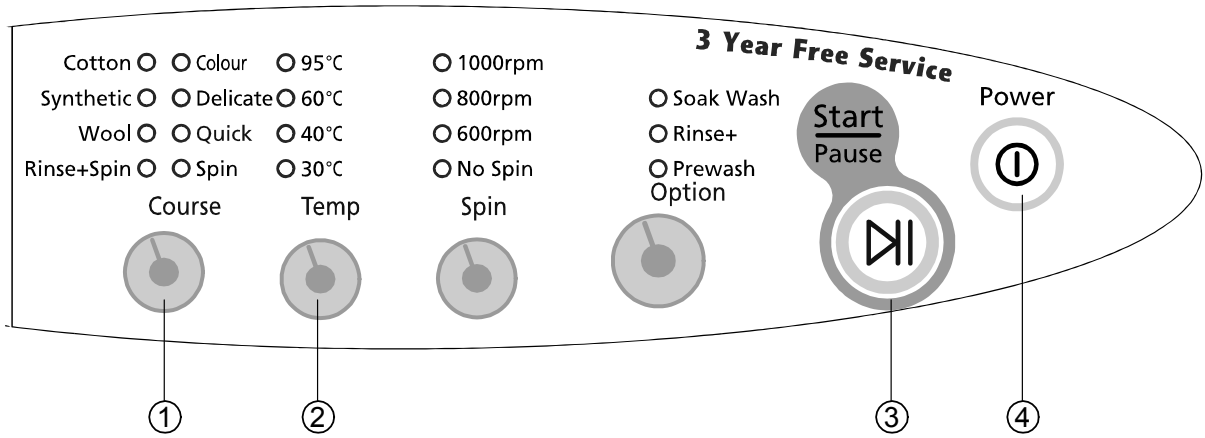


8-2-7. Checking The Tacho Part





9. Test Mode



1. Driving Compartment Test Mode

A. Hold down ì 1î and ì 2î keys simultaneously and then press POWER S/W ì 4î on.

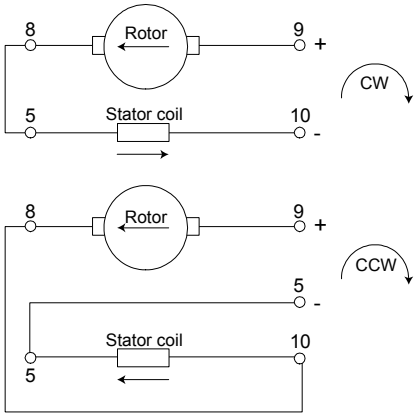
B. The driving compartment can be tested when you press ì 3î key right after entering into the initial stage of the TEST MODE.

ï Driving Compartment Test

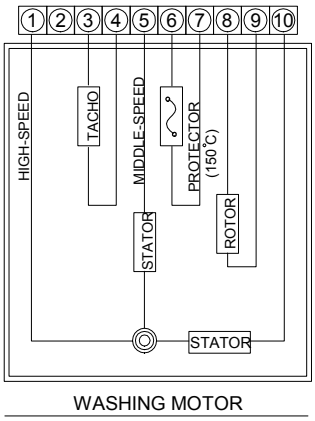
COLD VALVE ON(0.3sec) → OFF(0.3sec) → RRE VALVE ON(0.3sec) → OFF(0.3sec) → Pump MOTOR ON(0.3sec) → OFF(0.3sec) → MOTOR Left (0.5sec) → OFF(0.5 sec) → MOTOR Right (0.5sec) → OFF(0.3sec) → HEATER RELAY ON(0.3sec) → OFF(0.3sec) → DOOR OPEN (Function continues when door is closed)

10. Designation of Main Components

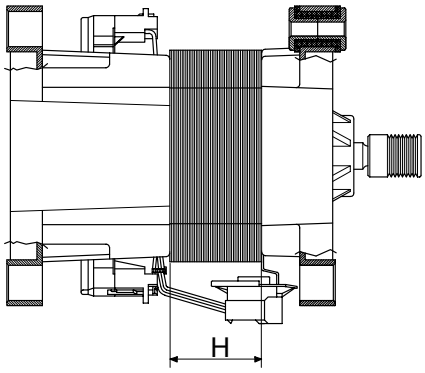
10-1 Normal / Reverse Revolution of Motor and R. P. M. Control



<Figure1>



<Figure2>

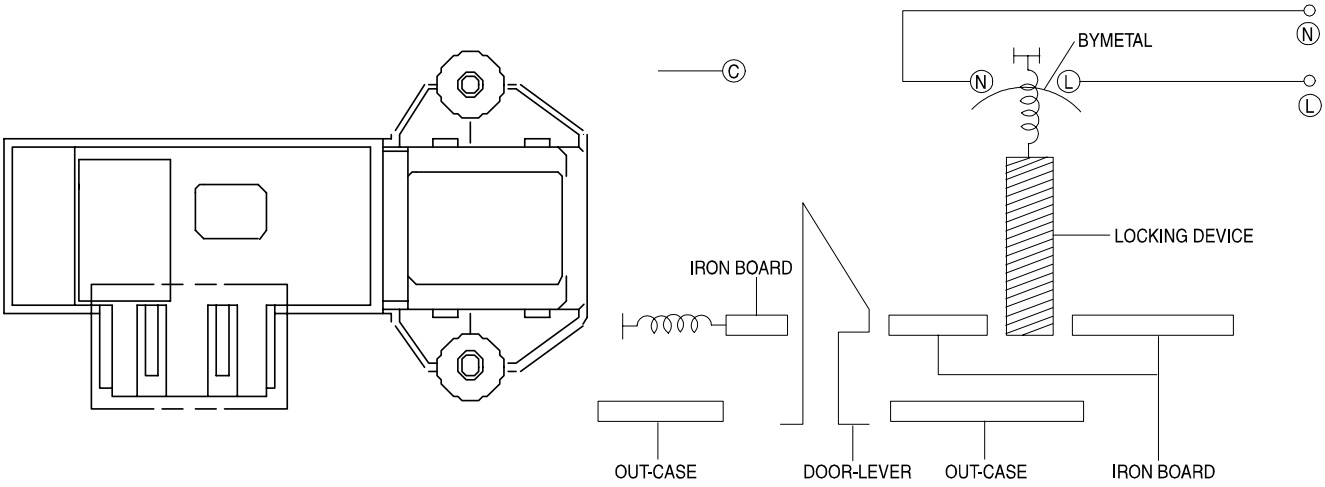


<Figure3>

(± 7%)	STATOR(51)	ROTOR(8.9)	TACHO(3.4)	PROTECTOR(6.7)	"H"(mm)	Code-No.	Remark
Resistance value	2.08Ω	1.99Ω	38.8Ω	0	39	DC31-00002E	R1031 R831 R631
Rated value	220~240V/50Hz						

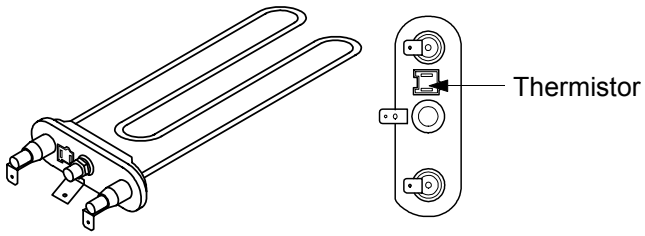
10-2 Door safety Device

When Door is closed, door stay closed. if "set" is operated, power supplied to Ⓝ , Ⓛ wires have bymetal keep the door closed, and electronical power flows between Ⓛ and Ⓒ make it operate.



10-3 Heater

1) Capacity : AC 230V/1900W
2) Location : Bottom of TUB
3) Function : Raise the water temperature
supplied at the wash process.
4) Resistance value : 23~29
5) Thermal Fuse : 169∝C



10-4 Detergent tub and water supply value

A Detergent tub is composed of housing and 3 drawers . supplied water flows into the 3 drawer-detergent tub by way of classifier at each washing process.

three open drainage way whith detergent and supplied water by way of connector located under the housing flows into washing tub.

the water supply valve is composed of a hot water valve(1 way) and a cold water valve(3way) and water flow per min in the valve is below.

	Hot water valve(1 way)
water flow(L/min)	10L
resistance value	4.3㏀
power consumption	AC 220v ~ 240V 50/60㎐
usable water pressure	0.5 ~ 8 ㎏/㎠

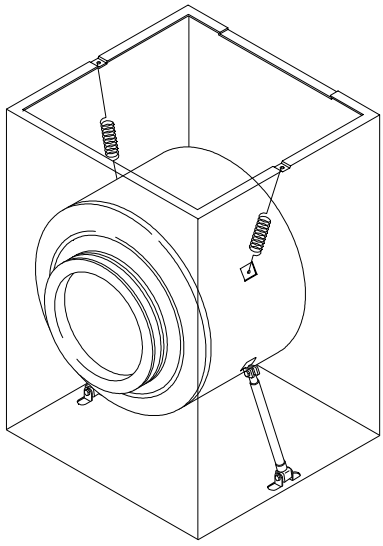
10-5 Shock absorber and buffer spring

This wash machine is equipped with 2 Shock absorbers with same capacity and with 2 buffer springs. 2 Shock absorber are placed under the tub and outside case , 4 buffer springs are placed on the right and left of the upper side of outside case.

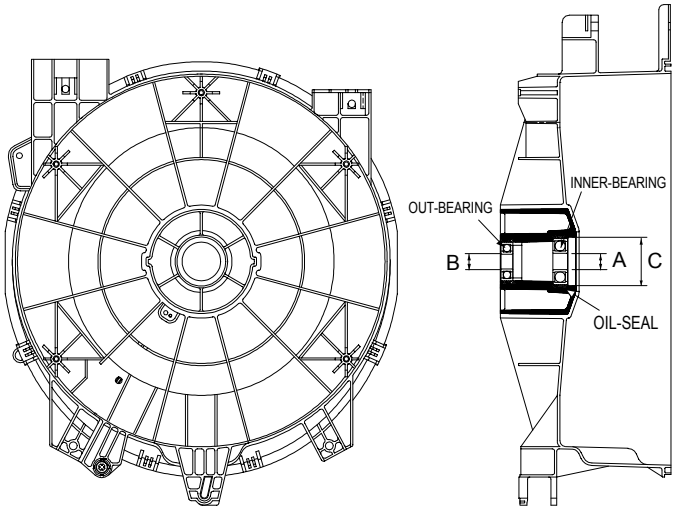
Shock absorber function: during wash, dehydration absorb the shock.

buffer spring: buffering the vibration

device	capacity of Shock absorber
Shock absorber	8±2kg



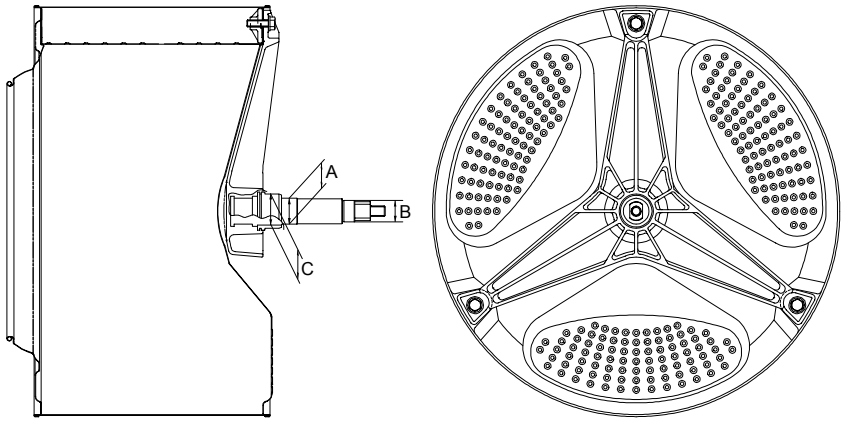
10-6 ASSY-TUB BACK



(unit : mm)

TYPE	INNER-BEARING(A)	OUT-BEARING(B)	OIL-SEAL(C)	Assy-Housing Bearing(D)	Assy-Tub Back
I	ø30	ø25	ø34	DC97-05168A	DC97-00214R

10-7 ASSY- DRUM

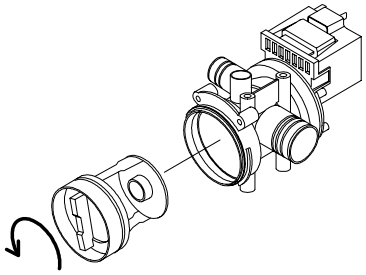


(unit : mm)

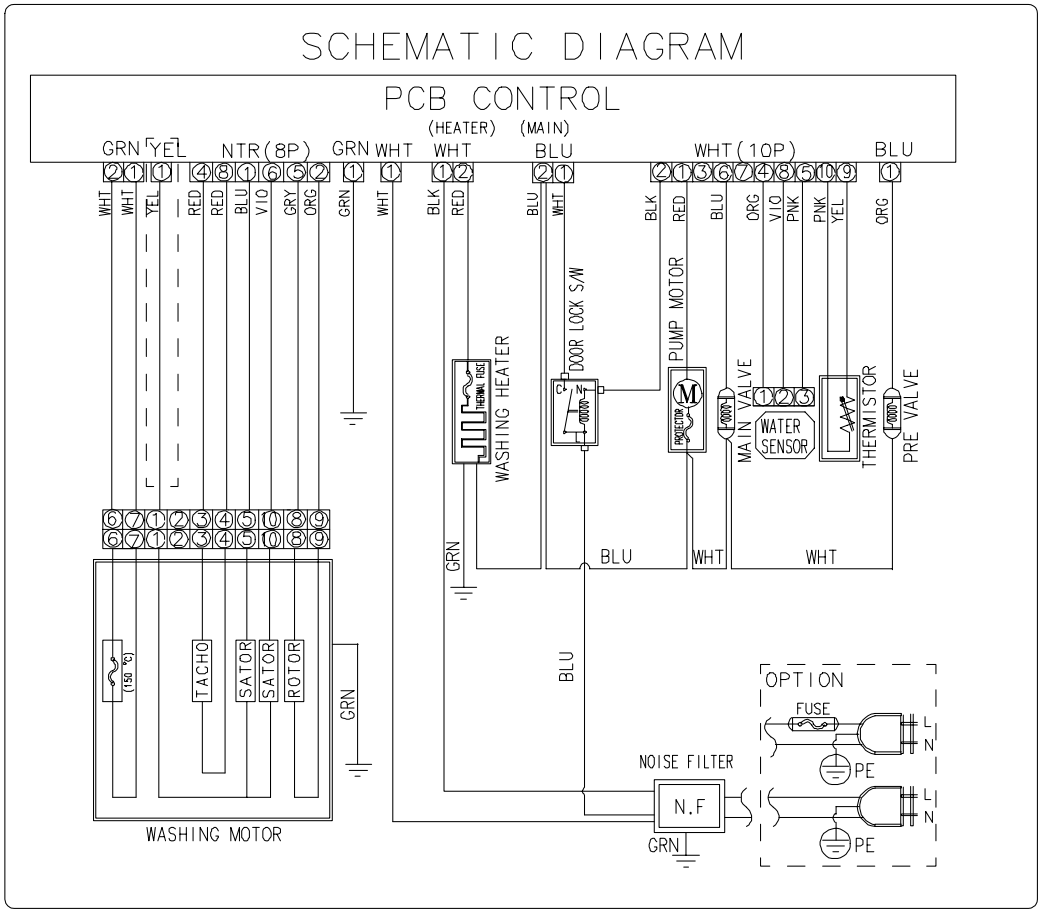
TYPE	(A)	(B)	(C)	CODE-NO.	REMARK
I	ø30	ø23	ø35	DC97-01463H	Lifter type R1031/R831/R631

10-8 ASSY-PUMP DRAIN

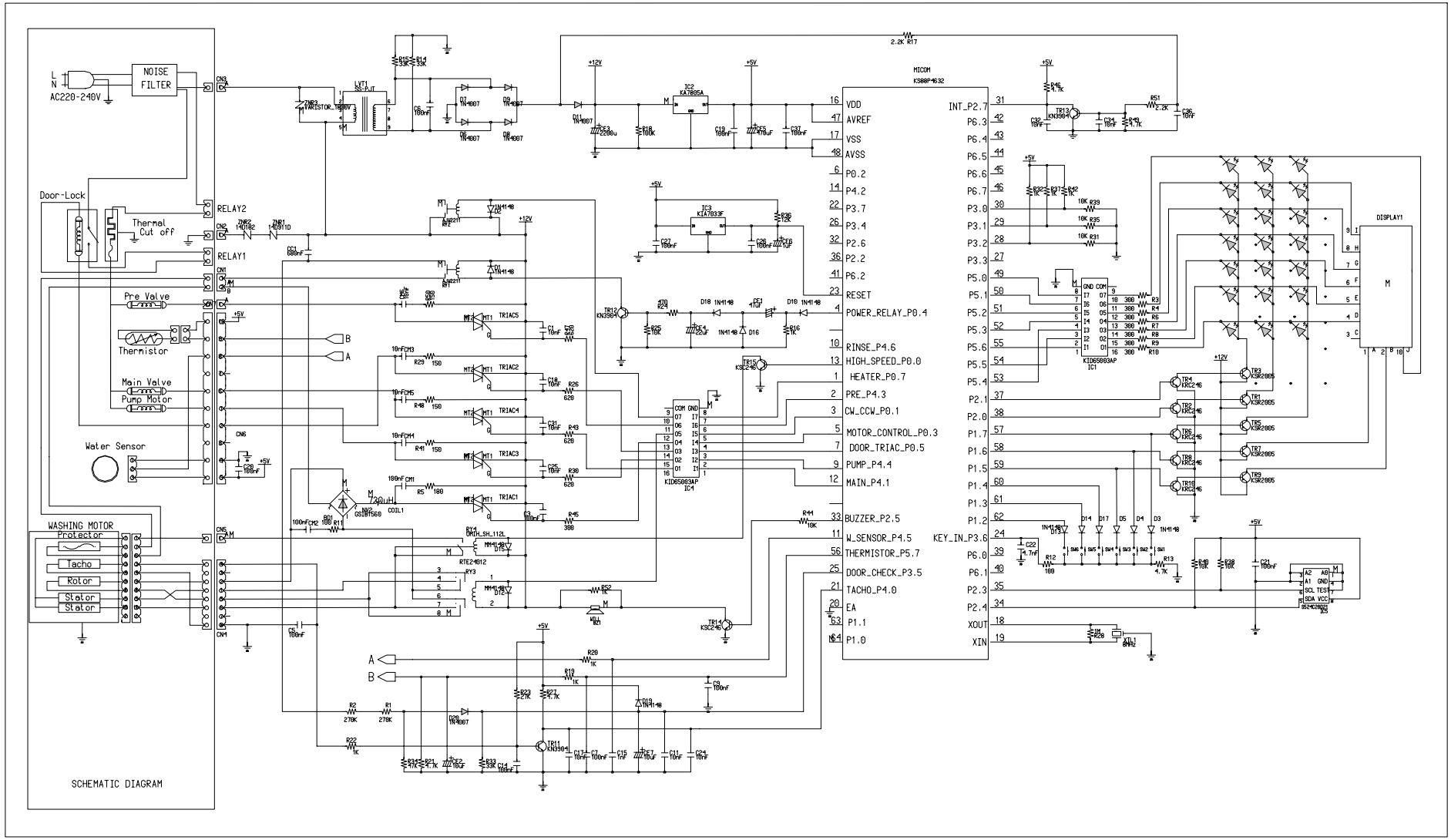
1) Capacity : AC 230V 34W
2) Location : Front bottom(R)
3) Resistance : 150Ω ~ 180Ω



11. PCB Schematic Diagram



11-1. PCB CIRCUIT DIAGRAM



11-1. ASSY-PCB Part List

NO.	Part Code	Code NO	Q'ty	Description	Spercificatio	Remark
1	WB002	1401-001007	1	THYRISTOR-TRIAC	10A,SM10LZ47(TOSHIBA)	TRIAC4
2	WB002	1401-001024	5	THYRISTOR-TRIAC	2A,SM2LZ47(TOSHIBA)	TRIAC2
3	WB003	0402-001023	1	DIODE-BRIDGE	RBV1506,600V,15A,SIP-4	BD1
4	WB004	3501-001180	1	RELAY-MINIATURE	12VDC,RTE24012	RELAY3
5	WB004	3501-001156	2	RELAY-POWER	12VDC,0.53W16000MA,1FORMC	RELAY5
6	WB004	3501-001157	3	RELAY-POWER	12VDC,0.53W16000MA,1FORMC	RELAY1,2
7	WB004	3501-001007	1	RELAY	12Vdc,200mW,5A,(TAKAMISAYA)	RELAY6
8	WB010	DC26-00005B	1	TRANS-FORMER	450MA,220~240VAC,11VDC	TRANS
9	WB003	0402-000137	6	DIODE-RECTIFIER	1N4007,1000V,1A	D15~D19
10	WB006	0504-000130	2	TR-DIGITAL	KSR1105	TR3,TR4
11	WB006	DE13-20016A	1	IC-VOLTREGU	KA7805A	TR7
12	WB006	0504-000159	2	TR-DIGITAL	KSR2105	TR1,TR2
13	WB006	0504-001080	2	TR-DIGITAL	KRC246S	TR3,TR4
14	WB006	0501-000465	1	TR-SMALL	MMBT390X	TR11-13
15	WB007	1202-000141	1	IC-DRIVE	7033,SOT-89	IC4
16	WB008	2802-001058	1	RESONATOR-CERAMIC	8MHz,02%,TP,10×5×8mm	RESO
17	WB007	DE13-20017A	3	IC-DRIVE	KID65003AP,DIP,STICK	IC3,IC5,IC6
18	WB007	1103-001160	1	IC-EEPROM	4C010,128×8BIT,DIP,8P	IC2
19	WB009	DE30-20016A	1	BUZZER	CBE2220BA,STICK	BZ
20	WB010	3404-001022	7	SWITCH-TACT	15V,20mA,130°±40gf,6×6×5mm	SW1~7
21	WB011	DE07-20040A	*	LED LAMP	SLH-34VC70F,RED,T,P15	
22	WB012	0703-001056	1	LED DISPLAY	Y-GRN,4dig,7seg,46×19×24.6mm	

12. Setting up a wash machine.

12-1 Remove the safety device for carriage

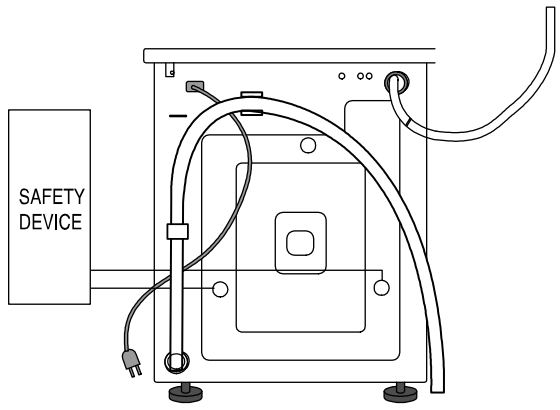
1) Remove 3 safety device volts with a enclosed wrench for safety device remove
2) Plug the 3 holes with 3 caps after removing the 3 safety device volts.

* Take care of 3 safety device volts and a wrench , you need these when you move wash machine safely.

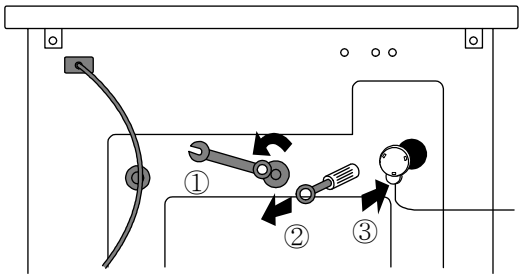
Caution

You must remove safety device before use , if not, you have much vibration or much load can br impacted on the machine.

1. Remove safety device behind of machine
   - To protect the machine, remove the assembled 3 safety device



2. Plug the 3 holes
   - Plug the 3 holes after safety device with the caps enclosed inside of washing tub



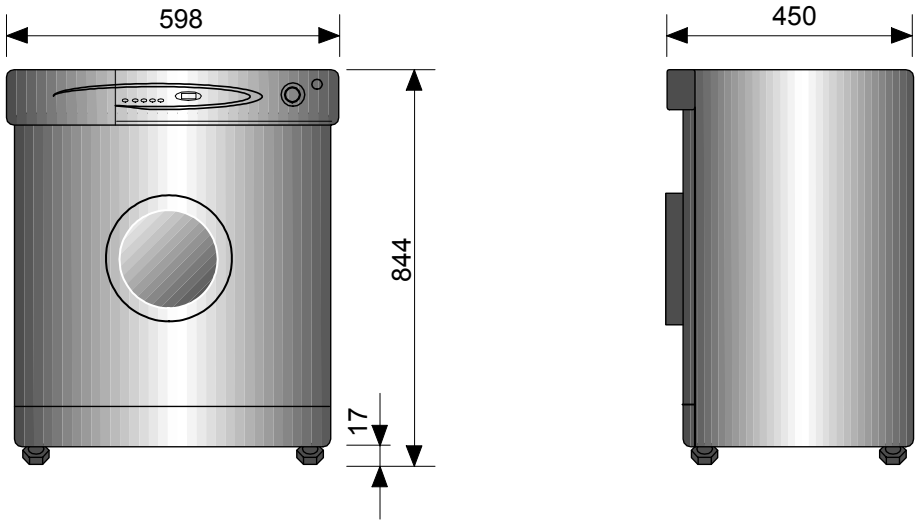
12-2 Install the wash machine on the leveled place.

With the water level adjustment device, adjust the 4 adjustment legs to install the machine leveled on the right, left, front and rear side. machine's install condition and size is following.

12-2-1 Initial assembled condition (ass'y cover top)

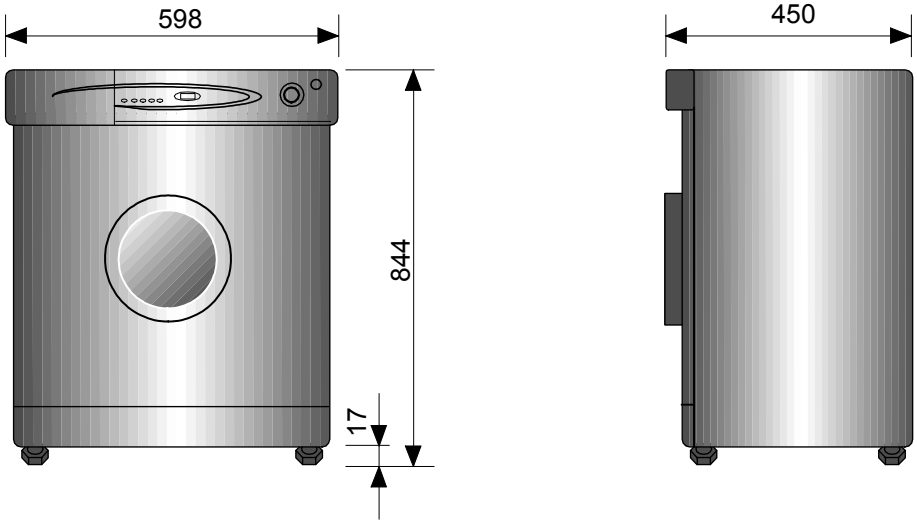
1) Adjustment legs are stick to the bottom of the machine, when the machine comes out of factory. this condition is ideal for vibration and noise.
2) When you install the machine initially or move the machine in use, unscrew the 4 legs to the left and place the machine level and spin the locking nuts and tighten it strongly.

3) Even though adjustment legs came out all the way, if machine is not levled , prop up the machine with the wood or brick to make it even.
(Do not use fragile material or slippery material such as laminated paper)



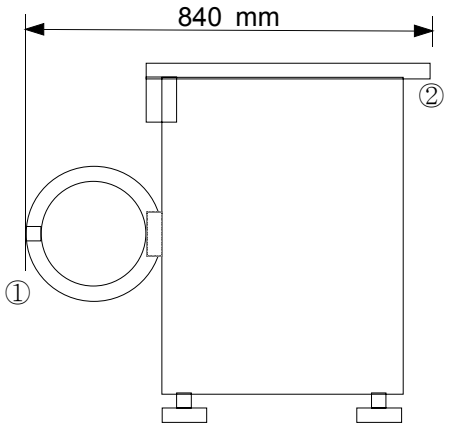
12-2-2 The condition of setting up sink(Disassembled Ass'y- Cover Top)

1) Spin the adjustment leg to the left and remove them from the front and rear side of the machine.
2) Remove the 4 locking nuts from adustment legs, and put only adjustment legs back whert those were.
3) After removing the fixing screws(each on right, left side) from the machine whichi is behind ass'y- cover top, disassemble the assy-cover top.
4) Install the sink.



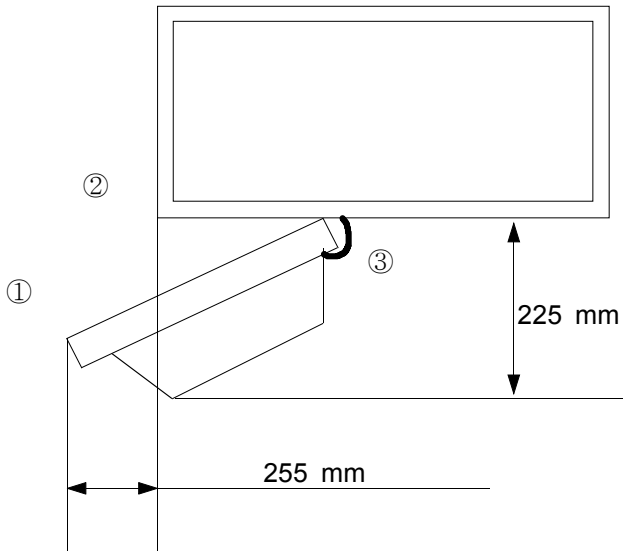
12. Setting up a wash machine.

12-3. Door Opening Dimension(Slim Model)



Side

● (When The Door Vertically Open)
The distance between door① and the rear side② is 760mm



Upper

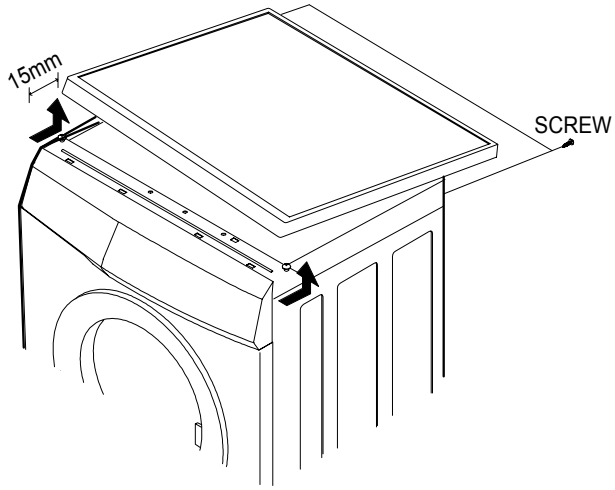
● (When the door extremely open ※)
The distance between the door edge(①) and the left side of washing machine(②) is 255mm

※ Maximum door angle(③) is 170˚

13. Assemble and Disassemble

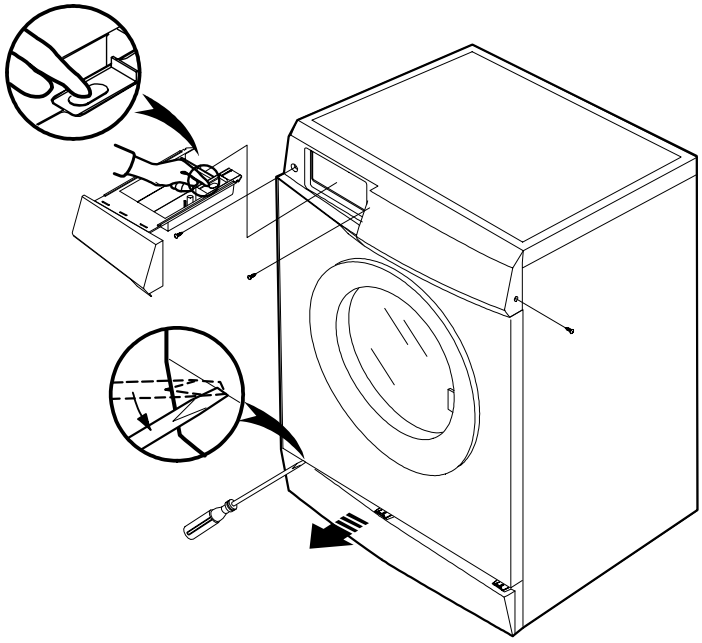
1. ASSí Y-COVER TOP

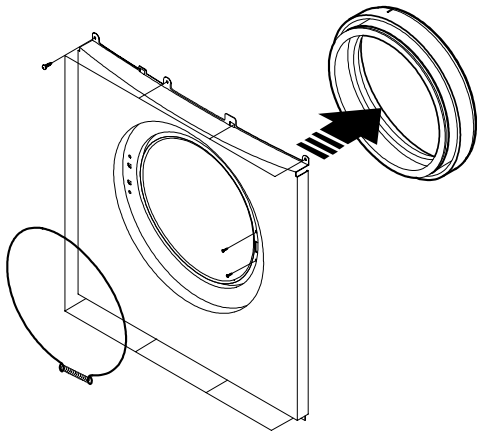
1) Remove two screws fixing the top-cover on back side.
2) Push the top-cover back about 15mm and pull it up.
3) Ití s possible to exchange and service Assy-Panel (PCB), the pressure-sensor, the noise-filter, the water valve and trans(option).



2. FRAME FRONT

1) Remove the top-cover and the assí y drawer.
2) Remove two screws fixing the control-panel on front side and the screw on right side.
3) Remove the cover-front(L) by using the (-)driver.
4) Pull the lever and open the assí y-door.
5) Part the diaphragm and the wire diaphragm away from the frame-front.
6) Remove the eight screws fixing the frame-front.
7) Ití s possible to exchange and service the heater, the pump, the shock-absorber and the door lock s/w.

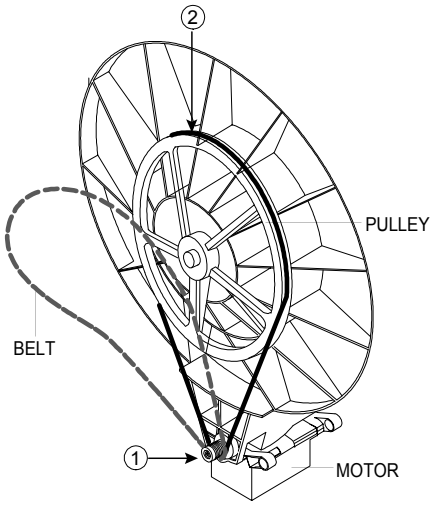




13. Assemble and Disassemble

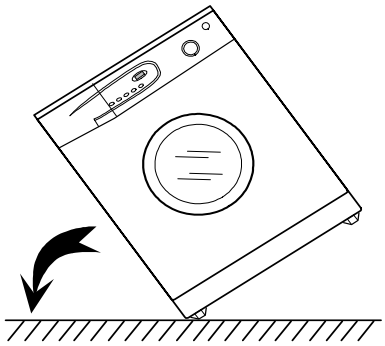
3. BELT

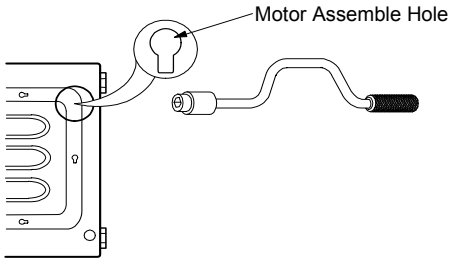
1) Remove the top-cover.
2) Disassemble and assemble the belt.
3) Check the belt is located at center of the motor-pulley.
   <When assemble the belt>
   Hook the belt on the motor pulley 1) and place it around the pulley 2).



4. MOTOR

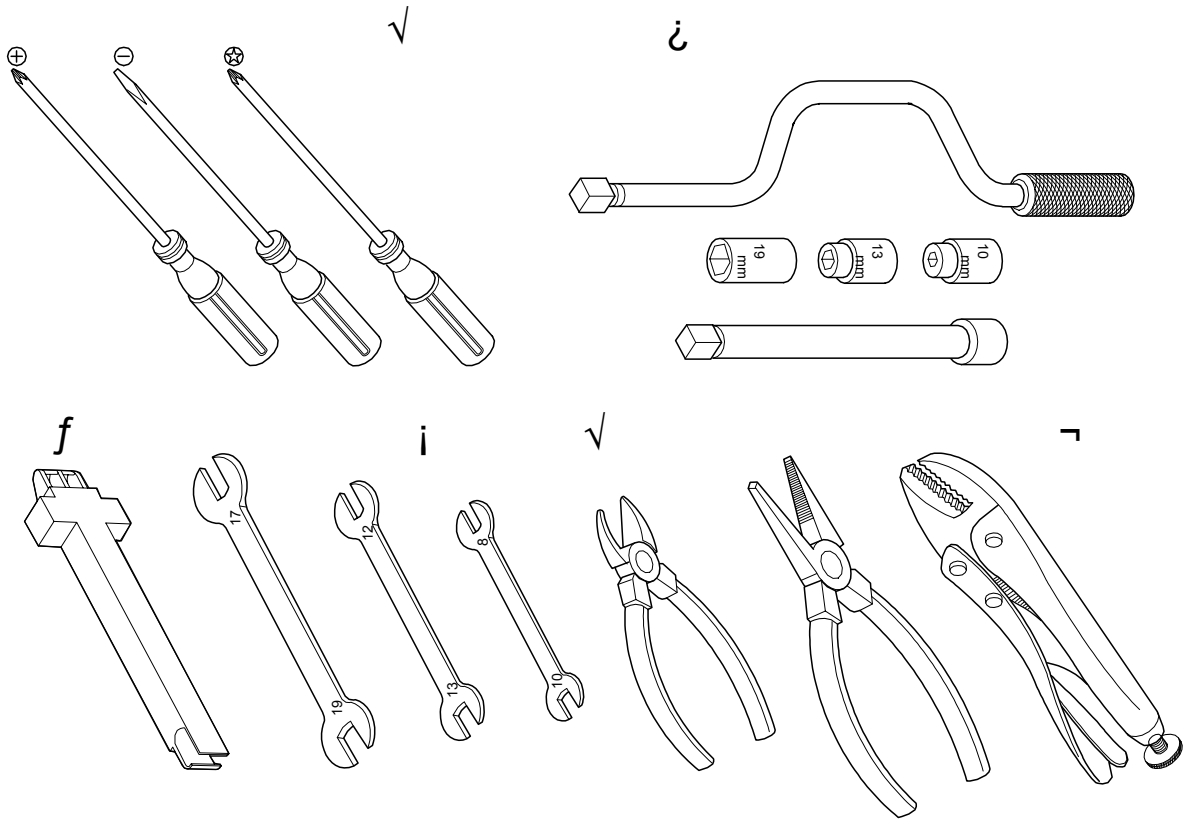
1) Lay down the washer on left side.
2) Remove the wire housing from the motor.
3) Remove the bolt fixing the motor with the box drive on back side.
4) Remove the motor.



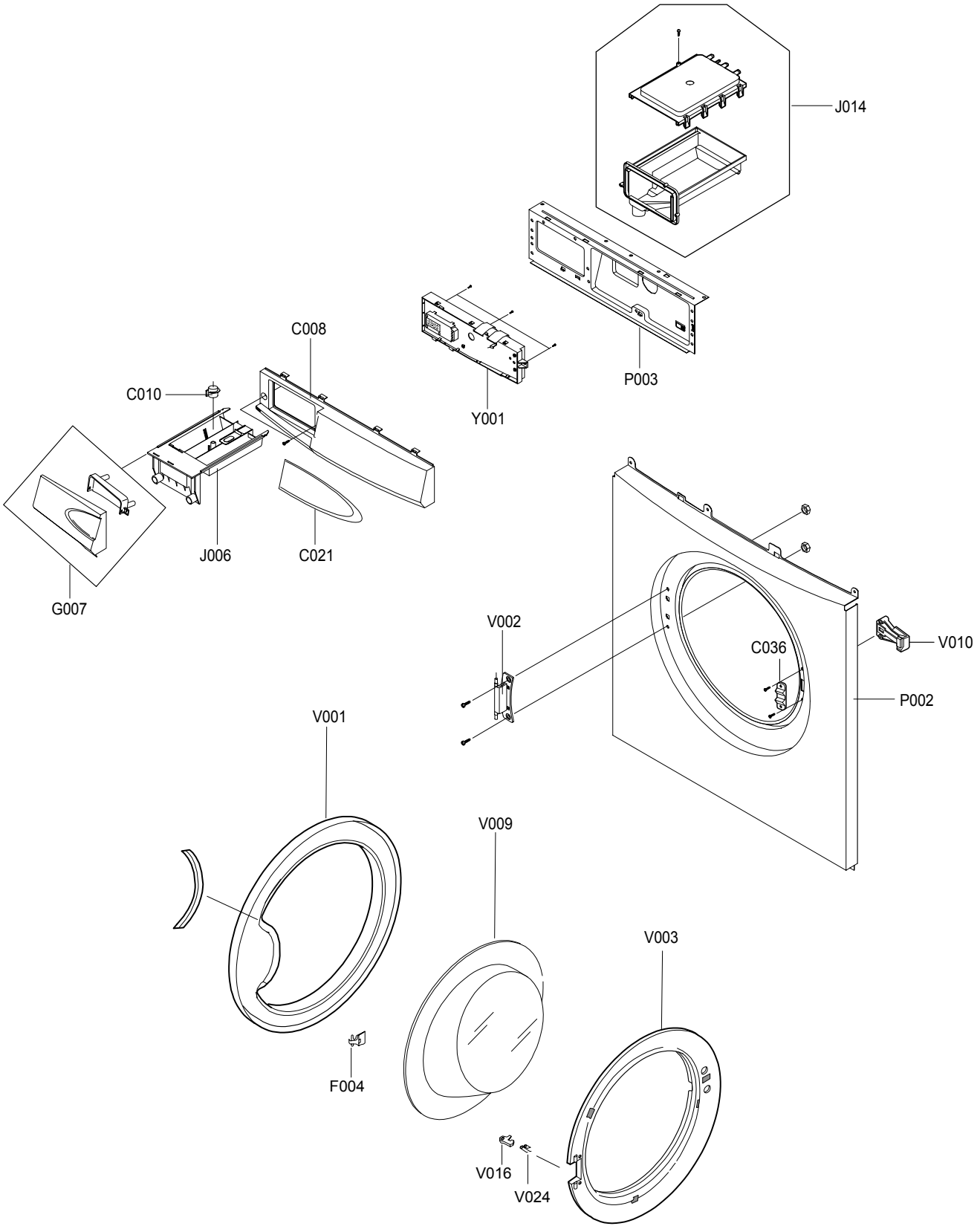


14. Tools for Disassembly and Assembly

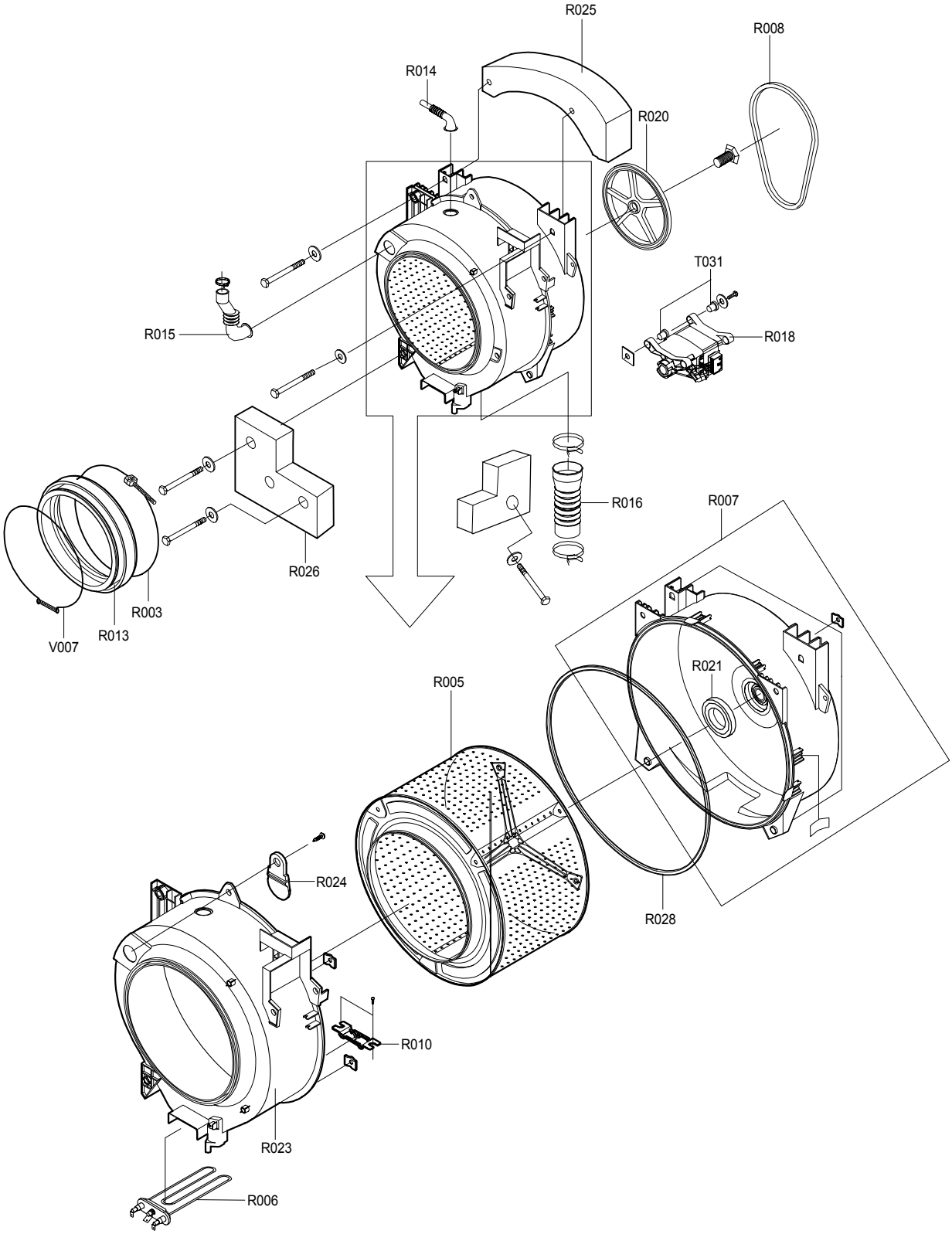
NO.	TOOL		
¿	Box driver	10mm 13mm 19mm	Heater (1) Motor (1), Balance (5) 1 Pulley hole
¡	Double-ended spanner	10, 13,19mm	Replaceable for the box driver.
¬	Vice pliers		Tool to protect the idle and abrasion of the bolt for the box driver.
√	Other(Driver, Nipper, Long nose)		General tools for the after service.
ƒ	JIG for the Tub		1 (Disassemble and Assemble)



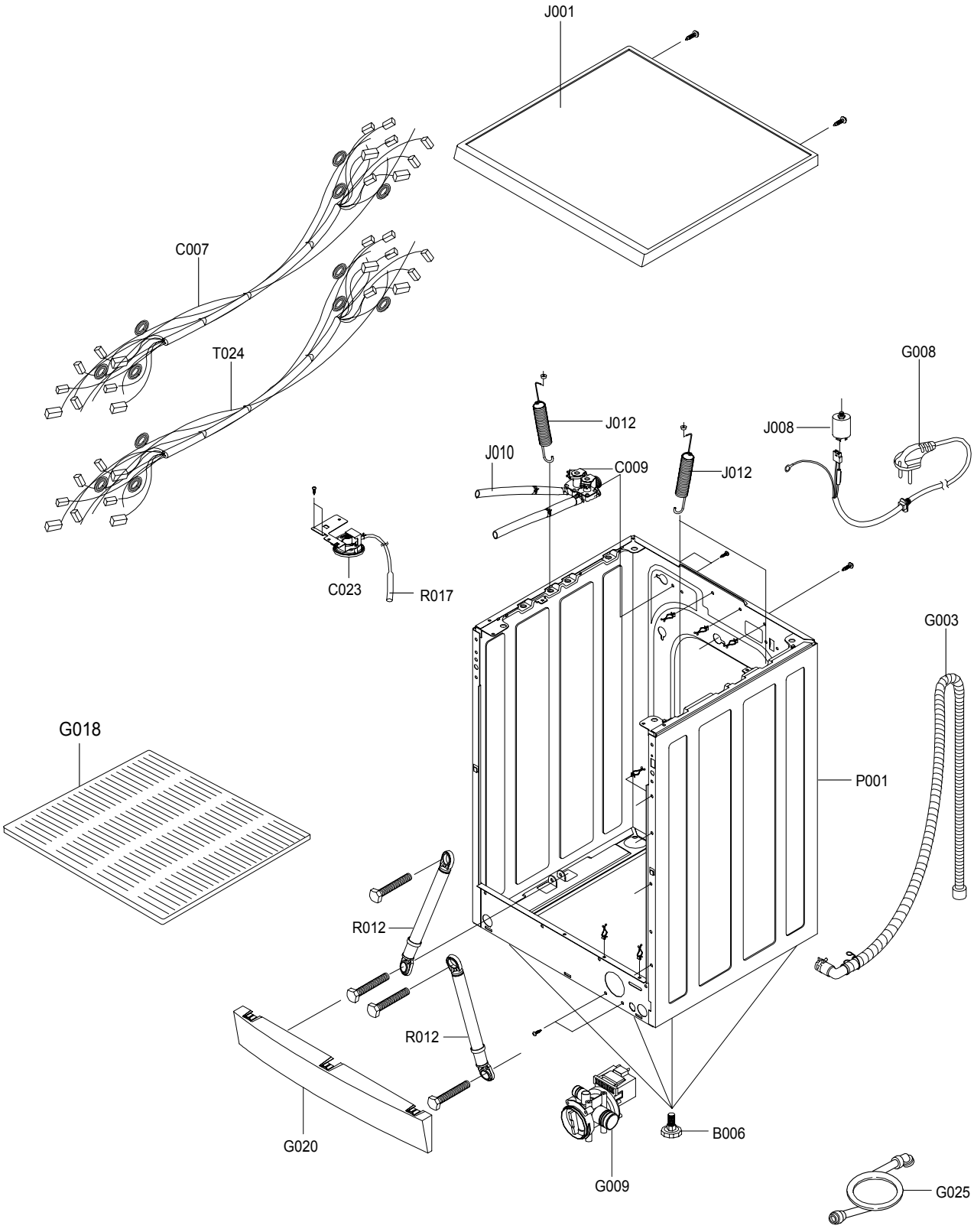
15. TOP(FRONT) - Exploded View



15. TUB - Exploded View



15. CASE - Exploded View



15. Parts List

NO.	CODE NO.	DESCRIPTION;SPECIFICATION	Q'TY	REMARK
B006	DC97-02079D	ASSY-LEG;SBP2,SD455,SD405,FLANG TYPE/25M	4	
C007	DC96-00625A	ASSY-M.WIRE HARNESS;SD405,ROLD-DOOR	1	
C008	DC64-00647A	PANEL-CONTROL;SBP-2,HIPS,-,-,-,-,WHT,40c	1	
C009	DC62-00024F	VALVE-WATER;B1215J,NYLON66/250TRMN,-,-,N	1	
C010	DC61-10316B	CAP-RINSE;SEW-740DR,PP(TB-52),-,-,-,WHT,	1	
C013	DC63-00455A	COVER-TOP;SD455-PJT,ABS,-,-,-,-,-,SNOW/W	1	
C021	DC64-00739A	INLAY-PANEL;R1031GWS/YLR,PC,T0.5,-,-,SIL	1	R1031
C021	DC64-00739B	INLAY-PANEL;R831GWS/YLG,PC,T=0.5,-,-,SIL,ICON/SEBO/SEKO	1	R831
C023	DC32-30006P	SENSOR PRESSURE;DN-S14(P1291),TERMINAL-T	1	
C036	DC63-00450A	COVER-FRONT;S821,PP,T1.8,-,-,-,-,WHT,ROL	1	
F004	DC64-00646A	HANDLE-DOOR;SD455-PJT,POM,-,-,-,-,WHT,RO	1	
G003	DC97-00139K	ASSY-HOSE DRAIN(O);SLIM/L1735MM,PP(BP110	1	
G007	DC97-04628V	ASSY-PANEL FRONT;R1031GWS/YLR,SBP/WHT/SI	1	R1031
G007	DC97-04628W	ASSY-PANEL FRONT;R831GWS/YLR,SBP/WHT/SILVER-INLAY	1	R831
G008	DC96-00146A	ASSY-POWER CORD;P1291~P6091,250V/16A(PV)	1	
G009	DC96-00149A	ASSY-PUMP DRAIN;P8091/P6091,220~240V/50H	1	
G018	DC64-00693A	SHUTTER;SD455,PP,4,-,-,WHT,45CM SLIM	1	
G020	DC61-10672A	COVER-FRONT(L);SWF-P12,PP(BJ-730),-,-,-,	1	
G025	DC62-10289B	HOSE-WATER(C);WIP4013SRW,PVC+NYLON,ID10.	1	
J006	DC61-00366A	BODY-DRAWER;SL-600,TB-53,-,-,-,-,-,-	1	
J008	DC29-00006A	FILTER-EMI;DFC-2712R,P/PV/SLIM,250V,12A,	1	
J010	DC67-00051B	HOSE-DRAWER;Q1636GW/XEU,EPDM,ID9.5,OD13.	0.42	
J012	DC61-00708A	SPRING-HANGER;F-PJT,HSWR,CD2.8,-,-,L170,	2	
J012	DC61-00708B	SPRING-HANGER;F-PJT,HSWR,CD2.8,-,-,L181,	2	
J014	DC97-04748L	ASSY-HOUSING DRAWER;SD455,5.2KG/COLD/2-W	1	
J014	DC97-02132C	ASSY-HOUSING DRAWER;S1093~S6093/2-WAY,SL	1	
P001	DC99-00415A	ASSY-PAINT;SD455/WHT,COLD	1	
P002	DC97-00702A	ASSY-FRAME FRONT;P6091,ROUND-TYPE	1	
P003	DC97-00417A	ASSY-FRAME PLATE(U);SWF-P12,FRAME-PLATE(	1	
R003	DC91-12077A	ASSY-CLAMP DIAPHGRAM;SWF-P12,TUB	1	
R005	DC97-01463H	ASSY-DRUM;SD405/SD455/LEFTER,5.2KG/NEW-D	1	
R006	DC47-00006B	HEATER;KAWAI,P-SLIM MODEL,SUS316L,-,-,23	1	
R007	DC97-00214R	ASSY-TUB BACK;SD405/SD455,5.2KG/1200rpm	1	
R008	6602-001072	BELT-TIMING GEAR;POLYURETHAN,L1270,J5,ME	1	
R010	DC61-00856A	BRACKET-HEATER;SB-PJT,STS430,-,-,-,-,-	1	
R012	DC66-00320A	DAMPER-SHOCK;SB-PJT,ABS,-,-,-,-,WHT,AKS-	2	
R013	DC61-20219E	DOOR-DIAPHRAGM;SEW-HW107,EPDM,-,-,-,-,GR	1	
R014	DC62-10303A	HOSE-AIR;-,EPDM,ID24,-,-,L130,BLK,SWF-P1	1	
R015	DC62-10305A	HOSE-DRAWER TUB;-,EPDM,ID35,-,-,L158,BLK	1	
R016	DC62-00121A	HOSE-FILTER TUB;S1005J,EPDM,ID65,-,-,-,-	1	
R017	DC67-00107A	HOSE-PRESSURE;S821,PE-BLOW,ID13.2,OD6.2,	1	

15. Parts List

NO.	CODE NO.	DESCRIPTION;SPECIFICATION	Q'TY	REMARK
R018	DC31-00002E	MOTOR-DRUM;HXGN2I.02,SFW-P8,-,50Hz,-,-,L	1	
R020	DC66-10176F	PULLEY;SD405/SD455,ALDC,-,-,-,D297,-,DRU	1	
R021	DC62-00160A	SEAL-OIL;TS0-PJT,NBR(SD35),BLK,-,-,-,JIN	1	
R023	DC61-00365B	TUB-FRONT;SL-600,FRPP(GR15%)SAMBAK,-,-,-	1	
R024	DC62-20311A	VANE-CHECK;SWF-P12,EPDM,-,-,BLK,-,	1	
R025	DC67-00042B	WEIGHT-BALANCER;F1215,GC-150(CHINA),-,-,	1	
R026	DC67-00050B	WEIGHT-BALANCER;F-1215,GC-150,-,-,-,-,F-	1	
R028	DC62-40183A	PACKING-TUB;SWF-P12,EPDM,-,-,-,-,-,BLK,-	1	
T024	DC96-00626A	ASSY-WIRE HARNESS;SD405,SUB(HIGH)	1	
T031	DC61-00041A	CUSHION-MOTOR;SWF-6V,BUTYL,-,-,-,ID16/OD	1	
V001	DC63-00353A	COVER-DOOR;SB-PJT,ABS,-,-,-,-,-,-,ROUND	1	
V002	DC97-00100C	ASSY-HINGE;S1005J,OPEN ANGLE 180DEG	1	
V003	DC97-04750A	ASSY-HOLDER GLASS;SB-PJT,HOLDER+HINGE	1	
V007	DC91-12078A	ASSY-WIRE DIAPHRAGM;SWF-P12,FRAME-FRONT	1	
V009	DC61-00013A	DOOR-GLASS;GLASS,NTR,SWF-P12	1	
V010	DC64-00653A	DOOR-LOCK S/W;DA,PA6-G,-,H82,W50,-,BLK,2	1	
V016	DC66-00355A	LEVER-DOOR;SD455-PJT,POM,-,-,-,-,WHT,EMZ	1	
V024	DC61-01065A	SPRING-HANDLE;SEW-HR805,STS304,CD1.0,-,O	1	
Y001	MFS-R1031-00	ASSY PCB PARTS;MF-R1031-00	1	R1031
Y001	MFS-R831-00	ASSY PCB PARTS;MF-R831-00	1	R831

15. Screw/Bolt List

CODE NO.	DESCRIPTION	SPECIFICATION	Design LOC	Q'TY
DC97-02412A	ASSY-BOLT	SWF-P12,MOTOR, M8*L62	MOTOR	1
DC97-02412A	ASSY-BOLT	SWF-P12,MOTOR, M8*L62	WEIGHT BALANCE(R)	1
DC97-02412A	ASSY-BOLT	SWF-P12,MOTOR, M8*L62	WEIGHT-BALANCER(L)	1
DC97-06080A	ASSY-BOLT	SEW-3HR107,BOLT+WASHER	PULLEY+SHAFT	1
6011-001421	BOLT-FLANGE	M7,L61(29.4),ZPC(YEL),SWRCH18A	WEIGHT(L)	1
6011-001492	BOLT-FLANGE	M8,L25,PASS,STS304,NYLOCK,P1.25	-	3
6011-001421	BOLT-FLANGE	M7,L61(29.4),ZPC(YEL),SWRCH18A	-	1
6011-001447	BOLT-HEX	M8,L123(25),ZPC(YEL),SWRCH18A,WP,NYLOCK	WEIGHT(U)	1
6011-001448	BOLT-HEX	M8,L170(25),ZPC(YEL),SWRCH18A,WP,NYLOCK	WEIGHT(U)	1
6011-001499	BOLT-HEX	M8,L104.5(50),ZPC(YEL),SWCH10AK,2BODY,DAMPER	TUB+DAMPER	2
DC60-40005A	BOLT-HEX	M4,L60,ZPC2(YEL),SS41C,-,-,-,-	-	1
DC60-40144A	BOLT-HEX	M10,L41,ZPC2(YEL),SM10C/DAMPER	DAMPER+FRAME	2
DC61-00201A	BRACKET-NUT	SBHG-R,P1291,T3,-,-,-,NO-PAINT/MOTOR	MOTOR	1
DC61-40348B	BRACKET-NUT	SBHG-R,P1291,T3,-,-,-,NO-PAINT	-	2
DC61-00201A	BRACKET-NUT	SBHG-R,P1291,T3,-,-,-,NO-PAINT/MOTOR	-	1
DC61-40348B	BRACKET-NUT	SBHG-R,P1291,T3,-,-,-,NO-PAINT	-	2
DC60-50010A	NUT-DIAPHRAGM	EGI,M4,-,-,2.5TX20X8	-	1
DC60-50010B	NUT-DIAPHRAGM	EGI,M4.2,-,-,2.5TX20X8	-	1
DD60-50018A	NUT-FLANGE	-,M5XP0.8,FZY,MSWR10,-	HINGE	2
6006-001170	SCREW-ASSY TAPP	WS,TH,+,M4,L10,ZPC(YEL)	B/K-PRESSURE+FRAME	1
6006-001170	SCREW-ASSY TAPP	WS,TH,+,M4,L10,ZPC(YEL)	P/CORD(E/W)	1
6006-001170	SCREW-ASSY TAPP	WS,TH,+,M4,L10,ZPC(YEL)	E/W(SUB)+FRAME(F)	1
6006-001172	SCREW-ASSY TAPP	WE,TH,+,M4,L12,ZPC(YEL)	FRAME-FRAME FRONT	7
6006-001172	SCREW-ASSY TAPP	WE,TH,+,M4,L12,ZPC(YEL)	FRAME-PLATE-UPPER	4
6001-001773	SCREW-MACHINE	TH,+,M5,L12,	HINGE+FRAME	2
6001-001773	SCREW-MACHINE	TH,+,M5,L12,	HINGE+HOLDER	2
6009-001342	SCREW-SPECIAL	TH,+,,M5,L11,ZPC(YEL)	FRAME(TOP)	2
6009-001343	SCREW-SPECIAL	PH,TORX,,M4,L10,PASS	P/CORD	1
6002-000471	SCREW-TAPPING	TH,+,1,M4,L12,PASS,STS304,-	COVER-DOOR	4
6002-001310	SCREW-TAPPING	TH,+,2S,M3.5,L20,PASS	S/W-DOOR+FRAME	2
6002-000445	SCREW-TAPPING	TH,+,2S,M4,L18,NTR,STS304	PANEL+FRM+HOUSING-D	3
6002-001327	SCREW-TAPPING	PWH,+,1,M4,L12,NI PLT	C/TOP+FRAME	2
6002-000630	SCREW-TAPPING	PH,+,2S,M3,L8,ZPC(YEL),SWRCH18	B/K+PRE-S/W	2
6002-000213	SCREW-TAPPING	TH,+,1,M4,L12,ZPC(YEL),SWRCH18	TUB-FRONT+PRESSURE	1
6002-000444	SCREW-TAPPING	TH,+,2S,M4,L14,NTR,STS304	B/K-HEATER	2
6002-000471	SCREW-TAPPING	TH,+,1,M4,L12,PASS,STS304,-	VANE-CHECK	1
6002-000213	SCREW-TAPPING	TH,+,1,M4,L12,ZPC(YEL),SWRCH18	C-PANEL+PCB	3
6002-000525	SCREW-TAPPING	FH,+,1,M4,L12,PASS,STS304	C-PANEL+FRAME	1
6002-001006	SCREW-TAPPING	TH,+,2S,M4,L12,-,STS410	PUMP+FRAME	2
6002-000630	SCREW-TAPPING	PH,+,2S,M3,L8,ZPC(YEL),SWRCH18	-	2
6003-000226	SCREW-TAPTITE	TH,+,S,M4,L8,ZPC(YEL),SWRCH18A	W/V+FRAME	2
6003-000226	SCREW-TAPTITE	TH,+,S,M4,L8,ZPC(YEL),SWRCH18A	EARTH	1
DC60-60040A	WASHER-NYLON	-,ID10.5,OD32,T2,-,PBSP-1/2H	FIXER	1
DC60-60044A	WASHER-PLAIN	-,ID10.5,OD30,T3,-,STS304	DAMPER+TUB	2
DC60-60044B	WASHER-PLAIN	SBC,ID8.4,OD30,T3,-,-,-	FIXER	1

ELECTRONICS

Printed in Korea
Code No. : DC68-01956A