SAMSUNG

WASHING MACHINE FULLY AUTOMATIC

BASIC MODEL : WA17L9W

MODEL   **: SW85ASP/SW82ASP**

MODEL CODE   : SW85ASPIW1/XSA
                         SW85ASPIW1/YMI
                         SW82ASPIW/XSA
                         SW82ASPIW/YMI

SERVICE Manual

PRODUCT IMAGE	THE FEATURE OF PRODUCT
	1. Digital Fuzzy Logic Control 2. Opaque Steel Door 3. Water Saving Tub 4. Magic Filter 5. Centerjet Pulsator 6. Adjustable Leg

Refer to the service manual in the itself (http://itself.sec.samsung.co.kr/) for the more information.

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1. PRECAUTIONS

## 1-1. SAFETY PRECAUTIONS

1. Do not allow the customer to repair product.
   ☞ The person may be injured or the product life may be shortened.

2. Be sure to unplug the power cord before starting to service (especially when servicing the electrical parts).
   ☞ Take extreme 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 it power plug or outlet is damaged, pressed, dented, or melted by hot temperature.
   ☞ Replace promptly if it is defective. (electric shock or fire hazard)

5. Be sure to ground. (Check grounding of outlet + additional grounding of metal water pipe)
   ☞ Electric shock hazard due to electric leakage

6. Do not clean the main body by directly using water.
   ☞ It may cause electric shock or fire and may shorten the product life.

7. Avoid exposing the wire harness to moisture and secure tightly during servicing.
   ☞ Secure wiring so as not to get loosened or deviated when given an impact.

8. Remove dirts or foreign materials around the housing, wire harness, contact points during servicing.
   ☞ Prevent the possibility of catching fire due to tracking or short.

9. Check if there is any evidence that electrical parts or harness has been exposed to moisture.
   ☞ If it has been exposed to moisture, replace the part or completely remove moisture.

10. Check the parts assembly status after servicing.
    ☞ Maintain the same status as before servicing.

11. When unplugging the power cord, hold the head part of the power cord.
    ☞ There may be dangers of electric shock or fire when the power cord is damaged.

12. Leave the power cord unplugged when the washing machine is not being used.
    ☞ There may be dangers of electric shock or fire due to a strike of lightening.

13. Do not use or store the spray or inflammable materials (including gasoline, thinner, alcohol etc.)
    nearby the washing machine.
    ☞ There may be dangers of explosion or fire due to electric spark.

14. Do not put a water-containing bowel or wet laundry on the washing machine.
    ☞ If the water is spilled, it may cause electric shock or fire to the washing machine.

15. Do not install the washing machine in a place which is exposed to rain or snow.
    ☞ It may cause electric shock or fire and may shorten the product life.

16. Do not press control buttons by using a pointed tool such as awl or pin.
    ☞ It may cause electric shock and trouble to the product.

17. Check if the washing machine is leveled horizontally and securely installed on the floor.
    ☞ The product life may be injured by the spinning tub. (checking)

18. If the washing machine does not stop the dehydration tub within 15 seconds after there
    cover is opened, stop using immediately and let it repaired.
    ☞ The user may be injured by the spinning tub. (check shaft)

19. Use connectors for joining the wires and secure them firmly.
    ☞ It may cause fire due to tracking if connected by using the adhesive tapes.

20. When the washing machine is to be laid for servicing, put the pad on the floor first and then lay the ma chine by
    side carefully.
    ☞ The parts may be damaged by TUB, if the washing machine is to be laid on front.

1-2. PRECAUTIONS UPON INSTALLATION

1-2-1. Instruction for Installation Environment

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.
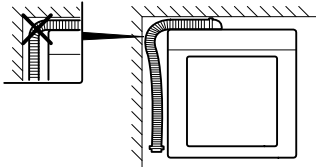
1-2-2. Balance

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.
* To control the machine level, turn 10cm away the wall.

WATER
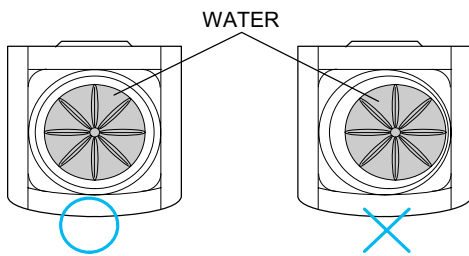
1-2-3. Controlling the Front Adjustable Leg

To control the height, turn the adjustable leg.
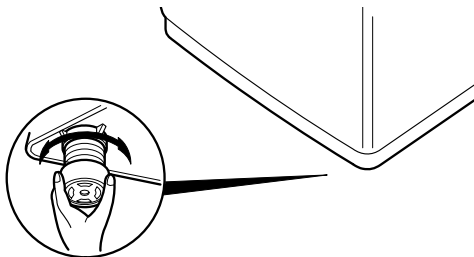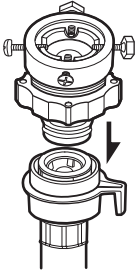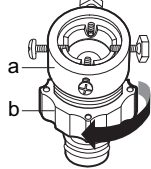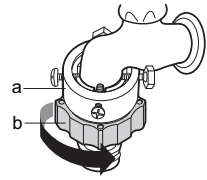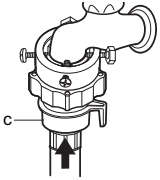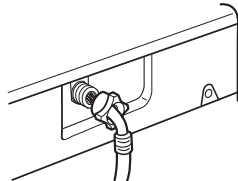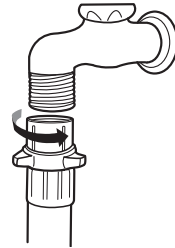
1-2-4. Connecting the Drain Hose

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

2. Install the drain hose about 80~100cm above the ground. (for pump model)

(a)
(b)
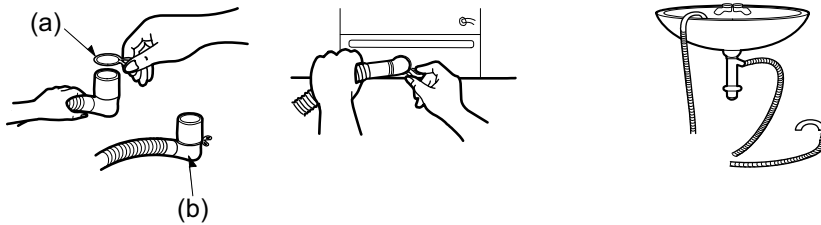
1-2-5. Connecting the water supply hose

1. Remove the adaptor from the water supply hose. 	2. First, using a "+" type screw-driver, and then loosen the three screws on the adaptor. Next, take the adaptor and hold parts (a) and (b) with a gap about 5mm between them. a b 	3. Connect adaptor to the water tap by firmly tighten-ing the screws. Then turn part (b), follow-ing the arrow, and put (a) and (b) together. a b
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. c 	5. Connect the other end of the water supply hose to the inlet water valve at the washer. Screw the hose clockwise, all the way in. 	6. In case that the water tap is a screw type, connect a water supply hose that fits to the tap as shown.

1-2-6. Positioning the Drain Hose (pump model)

Take out the cap-hose and connect the outlet-hose.
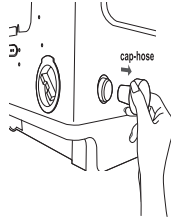
Be sure to join tightly the drain hose into the drain-outlet on the back of the machine.
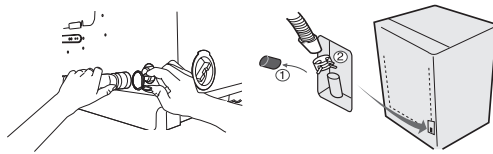
Be sure to join tightly the drain hose into the drain-outlet on the side of the machine.
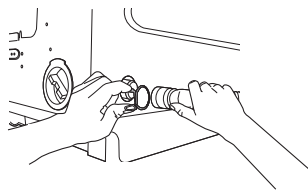
Install the drain hose in the position of about 90~100cm above the ground.
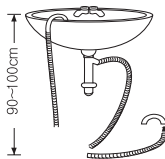
2. PRODUCT SPECIFICATIONS

2-1. THE FEATURE OF PRODUCT

WATER SUPPLY HOSE
RED-HOT WATER

DRAIN HOSE

WATER SUPPLY HOSE
WHITE-COLD WATER

LID

DETERGENT BOX

MAGIC FILTER

POWER PLUG

BLEACH INLET

FABRIC SOFTENER DISPENSER

HEIGHT ADJUSTING LEG
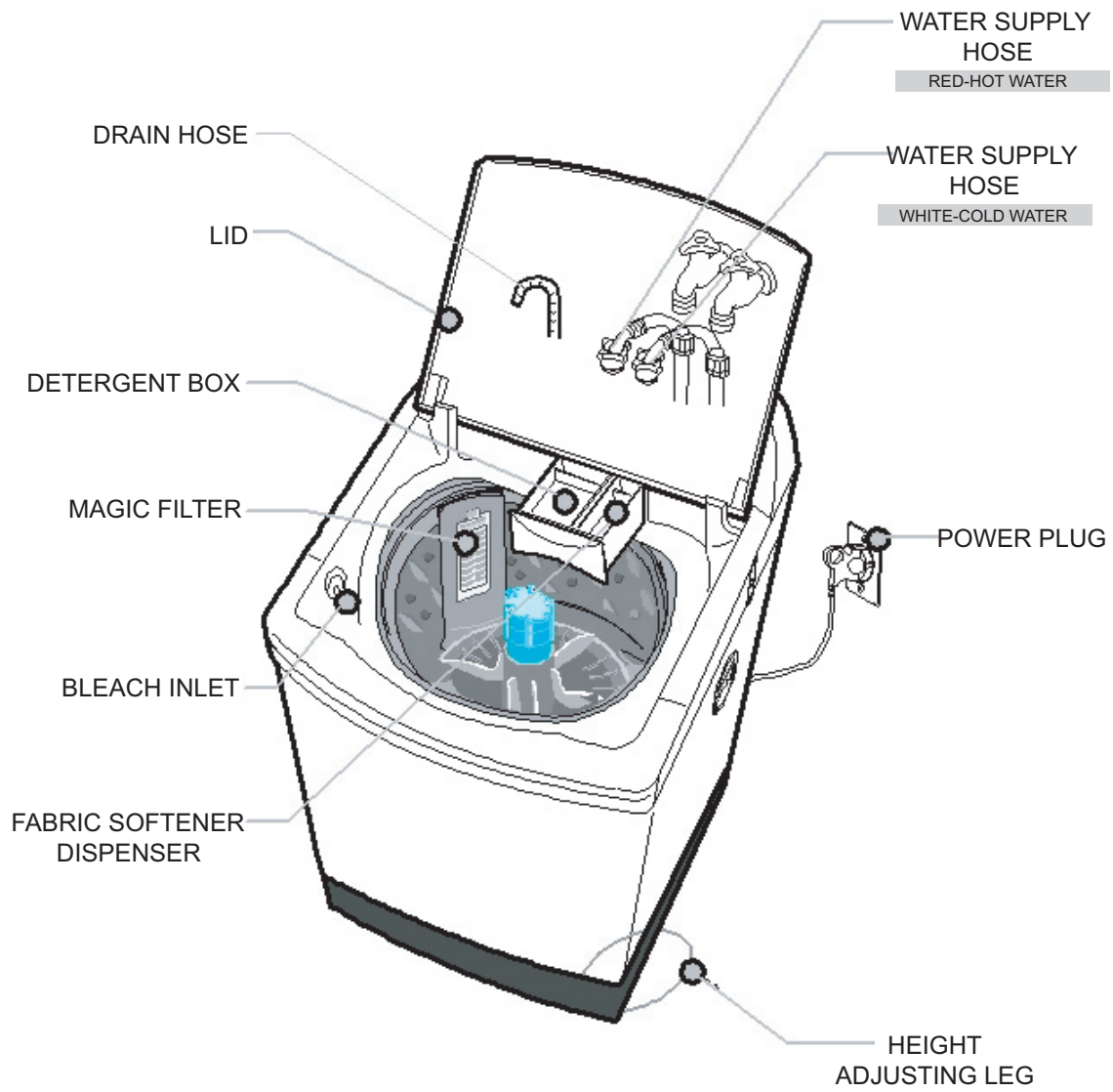
2-2. SPECIFICATIONS OF PRODUCT

Classifications		Specifications
Model		SW85ASP/SW82ASP
Washing Capacity		8.5kg
Washing Method		Stirring Type
Rated Voltage		230~30V/50Hz
Power Consumption	Wash	550W
	Spin	310W
Standard Water Level	Maximum	92 ℓ
	High	78 ℓ
	Medium	62 ℓ
	Med-Low	48 ℓ
	Extra Low	32 ℓ
Maximum Water Usage		240 ℓ
Applicable Water Pressure		0.05~0.78 Mpa (0.5~8.0kgf/㎠)
Spin Speed		710 rpm
Weight		47kg
Dimension		W630×D675×H1060

2-3. THE COMPARATIVE SPECIFICATIONS OF PRODUCT

Model		SW85ASPIW1/XSA SW85ASPIW1/YMI	SW82ASPIW/XSA SW82ASPIW/YMI
Specifications	Washing Capacity	8.5kg	8.5kg
	Rated Voltage	230~40V/50Hz	230~40V/50Hz
	Water Supply	Hot+Cold+Rinse	Hot+Cold+Rinse
	Basket Type	All Stainless	All Stainless
	Control Panel Type	Mirror + Button	Inlay
	Door	Steel	Steel
	Color	Neat White	Neat White
	Weight	47kg	
	Dimension	W630×D675×H1060	

2-4. OPTION SPECIFICATIONS

Item	Item Name	CODE.NO	QTY	REMARK
	ASSY-HOSE WATER	DC91-10229E DC91-10229F	2	
	ASSY-HOSE DRAIN(O)	DC97-00139C	1	
	MANUAL-BOOK	DC68-02340*	1	

3. OPERATING INSTRUCTIONS AND INSTALLATION

3-1. EACH KEY AND DISPLAY
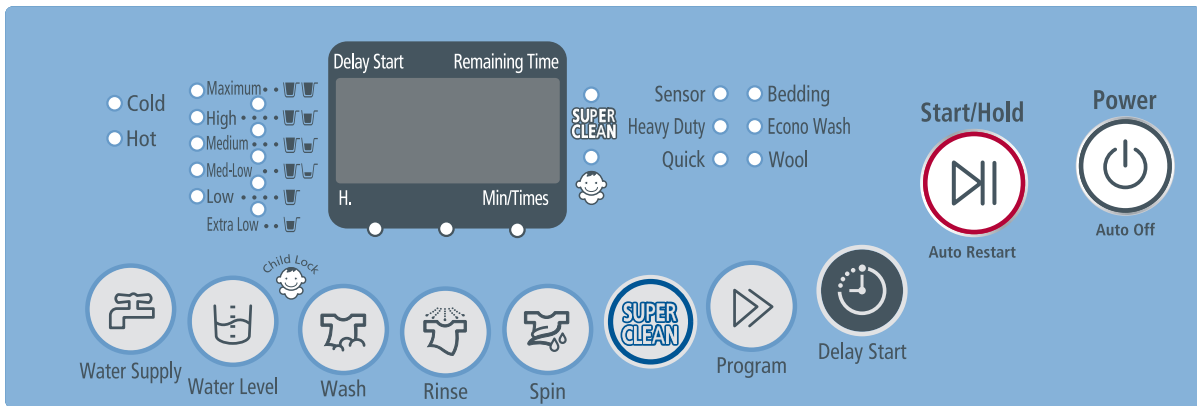
✱ Note : The real control panel has the same layout and function as the above figure's expression.

3-2. FUNCTION OF CONTROL KEYS

1. PROGRAM KEY

(1) Before the initial start key is entered or during the pause mode, each pressing of this key shows the selectable Programs as in the order below.

$$\longrightarrow \text{SENSOR} \rightarrow \text{BEDDING} \rightarrow \text{HEAVY DUTY} \rightarrow \text{ECONO WASH} \rightarrow \text{QUICK} \rightarrow \text{WOOL} \longrightarrow$$

(2) Each time you press the key during the valid operation, it gives a beep sound for each key-in but it does not perform any corresponding action.

(3) When you press PAUSE key and then change the current program into the new program, the current program will be reset as the initial default values of the newly selected program even though you have set up the current program which has it's own manual function by using the manual key (wash, rinse, spin).

(4) In case the selected program is available and being operated, you can press all of the keys except for the RESERVE key (DELAY START key) and PROGRAM key.

(5) Weight sensing function is valid only for Sensor, BEDDING(HEAVY), ECONO WASH(ECONO), QUICK,
SUPER CLEAN programs.
When you press WATER LEVEL key, water level is selected in the order below.

$$\text{Medium} \rightarrow \bullet \rightarrow \text{High} \rightarrow \bullet \rightarrow \text{Maximum} \rightarrow \bullet \rightarrow \text{High} \rightarrow \text{Medium} \rightarrow \bullet \rightarrow \text{Med-Low} \rightarrow \text{Low}$$

$$\text{Med-Low} \leftarrow \text{Low} \leftarrow \text{Estra Low} \leftarrow$$
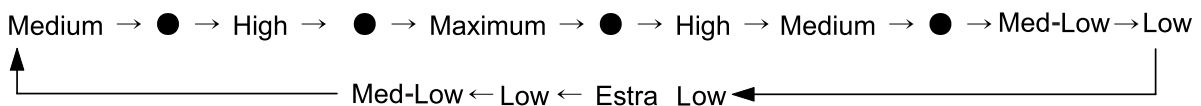
The initial key-in for WOOL program has the default value of the water level as Medium level even though you don't press WATER LELEL key.

(6) Function Table for Programs

	DIVISION	SENSOR	BEDDING/ HEAVY	HEAVY DUTY	ECONO WASH	QUICK	WOOL
WASH TIME	MANUAL SET	6~30 min	6~30 min	6~30 min	6~30 min	1~15 min	1~15 min
	MAXIMUM	20 min	15 min	20 min	18 min	5 min	5 min
	HIGH	20 min	15 min	20 min	18 min	5 min	5 min
	MEDIUM	20 min	15 min	20 min	18 min	5 min	5 min
	MED-LOW	15 min	15 min	20 min	18 min	3 min	5 min
	EXTRA LOW	15 min	15 min	20 min	18 min	3 min	5 min
RINSE	MANUAL SET	1~5 times	1~5 times	1~5 times	1~5 times	1~5 times	1~5 times
	INITIAL VALUE	2 times	2 times	2 times	1 time	1 time	2 times
SPIN TIME	MANUAL SET	1~9 min	1~9 min	1~9 min	1~9 min	1~9 min	1~9 min
	INITIAL VALUE	5 min	5 min	5 min	3 min	Max,High,Med : 3 min, Med-low Low : 1 min	1 min
INITIAL WATER SUPPLY		Cold Water	Cold Water	Cold Water	Cold Water	Cold Water	Cold Water
WEIGHT SENSING WATER LEVEL		Low~ Maximum	Low~ Maximum	Low~ Maximum	Low~ Maximum	Low~ Maximum	Medium

(7) When the PROGRAM key is available and being operated, you can update the corresponding function by pressing the manual key. But the cycle-off should be skipped.

(8) At the Sensor program which is the initial program mode after power-on, every press of the manual keys only performs the manual function. Sensor program is automatically selected when POWER key is pressed. You may change the Sensor program into the other programs before pressing the START key and also you can select the corresponding manual function by pressing the manual keys.

In case before pressing the START key, the manual function of each program can be per-formed
 by pressing the PROGRAM key first and then manual key. Otherwise, the press of the manual key after pressing the START key enables you to set up the corresponding function.

In case during the operation of any program, you can perform the manual-only function of each program by pressing the PAUSE key, changing the program, and selecting the manual-only function and then finally pressing the START key.

(9) During the operation of any program, every press of the manual control key after pressing the
PAUSE key may change the operating time of each manual function.
Ex) When the SPIN key is pressed, the spin time of "5 MIN" is displayed. If you sequentially press the
SPIN key at this time, it may be changed as follows. (effective only before the spin cycle starts)

5min → 4min → 3min → 2min → 1min → 9min → 8min → 7min → 6min

(10) After setting the spin time by pressing the SPIN key at the (9), and then if you press the WASH key,
the remaining time of any wash cycle would be added. Every press of the WASH key modifies
washing time as follows. (effective before the end of the wash cycle)

20min→22min→24min→26min→28min→30min→6min→8min→10min→12min→14min→16min→18min

In case of WOOL and QUICK program, the wash time is changed as follows exceptionally.

5min → 7min → 9 min → 1 1min → 1 3min → 1 5min → 1 min → 3min

(11) When the RINSE key is more pressed at the (8) and (9), Every press of the RINSE key modifies the
rinse time as follows. (effective before the end of the rinse cycle)

2time →3time →4time →5time →1time

2. WATER SUPPLY KEY

(1) This key is valid except for error cases.
(2) This key-in changes the mode as follows.

```
     ┌──→ Cold Water → Hot/Cold Water → Hot Water ──┐
     └──────────────────────────────────────────────┘
```
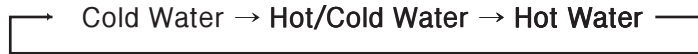
(3) If you select any water supply by pressing the WATER SUPPLY key, the selected water supply
   remains valid even if you change the program mode(except for WOOL program). If you move to
   the WOOL program, the cold water is automatically selected, but the previous setting is
   restored
   if you switch to the other program.
(4) Error cases as follows in above item (1).
   - Water supply error
   - Drain error
   - Water sensing error
(5) While water is being supplied, the corresponding water supply lamp ftwinkles by 1 sec.

3. START/PAUSE KEY

(1) This key-in toggles between start and pause as follows.

```
     ┌──→ Start → Pause ──┐
     └────────────────────┘
```
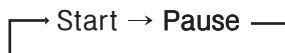
(2) This key performs error clear function.
   - Water supply error
   - Drain error
   - Water sensing error

4. WATER LEVEL KEY

(1) The WATER LEVEL key is always valid except for error cases as below.
* Error:
    - Water Supply Error
    - Drain Error
    - Water sensing error

(2) Pressing the Water Level key shows the options in the order as below.

Middle → ● → High → ● → Maximum → ● → High → ● → Middle → ● → Low → ●Extra low → Lowest

↑_____ ● Low ← ● ← Extra low ◄_____
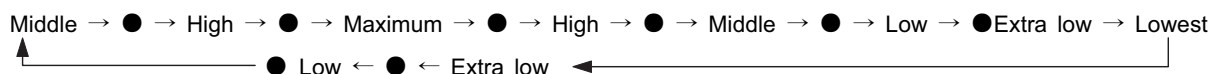
(3) When the WATER LEVEL key happen to be touched before the MOTOR starts to rotate after the water-feeding, the time of water feeding is automatically adjusted to the water level and so the time is recalculated.

(4) The washing time with any selected water level at each program can be modified only before the motor starts to rotate. Otherwise, after the motor started to rotate, the wash cycle will be performed with the washing time which was already set at the old water level regardless of the water level.

(5) In case of adjusting the washing time by the WASH key at the (4), the washing time is to be recalculated with the new time setup, regardless of the water level.

(6) When the water level is not selected, the segment display is "-:--".
When the WATER LEVEL key is pressed, the total cycle time is displayed in the segment.
Default value for the water level is selected medium.

5. RESERVE KEY (DELAY START KEY)

(1) Reserve key-in is available only before entering start-key under the condition of pressing any program.

(2) Default value of this key is 3 hours.

(3) Each key-in can update the reserved time by 1 hour to the maximum 19 hours.

(4) It's possible to change the reserved time within 10 min after pressing the START key. It's not valid to change the time after 10 min.

(5) Manual wash time, rinse time and spin time can be adjusted only after pressing the start key in 10 min. If total working time is over 3 hours automatic reserve process is canceled and return to the early condition.

3-3. MAIN FUNCTIONS

1. WATER SUPPLY
(1) The water supply function of each process opens the corresponding water valve ON until the selected water level is fulfilled.
(2) Water supply valve is open for the water supply function of each process as below.

Selected Wate	Wash	Rinse	Rinse2	Water plus	Intermittent spin
Cold Water	Cold Water	Cold Water	Cold Water	Cold Water	Cold Water
Hot/Cold Water	Hot/Cold Water	Hot/Cold Water	Cold Water	Cold Water	Cold Water
Hot Water	Hot Water	Hot/Cold	Cold Water	Cold Water	Cold Water

Remarks) Washing will progress in case only the warm water is selected.Cold water in 20 sec at the initial time of water feeding Make the valve ON
→ To protect the clothing and perfectly dissolve the detergent.

(3) Corresponding lamp flashes ON/OFF by 1 sec when water supply process is in operation and or keep the lamp ON when it's not in the water supply process. when water supply process is not in operation.
(4) If the water supply is not completed yet after the standard time allocated for water supplying has passed, the remaining time does not count down any more.
(5) If the water supply is already completed before the standard time allocated for water supplying has passed, the remaining time counts down as much as the standard time and then proceed to next step.
(6) If the water supply is not completed even after 60 minutes has passed, water supply error function is performed.
(7) If a WATER LEVEL key is entered again after the water supply is all finished, and if the newly set level is higher than the current level, then the water supply process is performed again, and the washing motor is turned OFF and the remaining time does not count down during water supply.
(8) Water supply washing motor table for each water level.

Water level	Maximum	High	Medium	Med-Low	Low, Extra Low
Supply level	5 min	4 min 30 sec	4 min	2 min 30 sec	2 min

(9) If the water level comes down under the reset level during in operation after the water is completely supplied up to the selected water level, the water supply process continues on up to the selected level.

2. INTERMITTENT SPINNING

(1) Opening the door while the intermittent spin is in operation stops spinning and generates door open alarm (door open melody 5 times).
(2) If the door is closed while the door open alarm is ongoing, the alarm status is terminated and proceeds to the next step in as identical order as in START/PAUSE key-in.
(3) If the safety S/W senses the unbalance state during the intermittent spinning cycle, it performs the unbalance clear function.

■ Unbalance Sensing Function
 - S/W Sensing Time
   UNBALANCE: 20~500mS
   Door Open: 501mS or more. .
 - When the door is opened, the OFF time of the motor is at the time that the 20mS is detected. If the door is closed while the door open alarm is undergoing, the alarm status stops and the drain motor turns ON. and then after 10 sec, the washing motor works.
■ Unbalance Clear Function
 - If the unbalance is detected at the spin cycle of any program (except for spin only mode), the spin cycle stops, the release wash/rinse function is performed and then the spin cycle works again.
   The unbalance clear function like this, which is valid until 2 times. But If it is 3 times, it displays "UE" error, all of cycle stop.

3. SPIN FUNCTION

(1) The spin function allows the washing motor to rotate to the left and to maintain the drain motor ON for the whole spinning time.
(2) Other functions are as identical as Intermittent spin function.
(3) The spinning time after each wash cycle, rinse cycle, and the final spin cycle follow the time chart.

4. PAUSE FUNCTION

(1) The pause function turns off the motor for 1 min and turns on only the drain motor on for 30 secs.
(2) If the door is opened while the pause function is in operation during the rinse cycle, it gives door open error and resumes the process after door is closed.
(3) If the door is opened while the pause function is in operation during the spin cycle, it ends the spin function.

5. WATER SUPPLY FUNCTION

(1) Identical as the water supply function of wash process.

6. RINSE FUNCTION

(1) If a selected water level is fulfilled, the rinse function is performed.
(2) Rinse time is 2 min 30 sec at 1 time for most of programs except for the following programs.
   (2 min for WOOL program, 1 min 30 sec for ECONO WASH program)

7. SPIN FUNCTION

(1) It is identical as the intermittent spin and spin function of the rinse process.
(2) Spin fuction performs for only 1 min at WOOL program.

8. EXIT FUNCTION

(1) After all the selected process is completed, it performs exit process.
(2) While the exit function is in operation it gives end melody and turns off all the driving com
   partment. The display shows "END".
(3) If the exit function is finished, it automatically turns power relay off.

4. ALIGNMENT AND ADJUSTMENTS

4-1. ERROR MODE

4-1-1. ERROR FUNCTION

1. WATER LEVEL SENSOR ERROR

(1) When the water level senser detects a frequency less than 15kHz or more than 30kHz for
    more than 5 seconds
(2) Generates ERROR MELODY 5 times.
(3) DISPLAY: '1E' 0.5 sec ON/OFF
(4) How to Clear: Press the START key to check again.

2. WATER SUPPLY ERROR

(1) When the water supply does not reach at the selected water level after 60 min has passed
    since starting to supply water.
(2) Generates ERROR MELODY 5 times.
(3) DISPLAY: '4E' 0.5 sec ON/OFF
(4) How to Clear: Press the START key to clear the error status and to resume the water supply function.

3. DRAIN ERROR

(1) When the water level does not fall under reset level after 15 min has passed since starting to drain.
(2) Generates ERROR MELODY 5 times.
(3) DISPLAY : '5E' 0.5 sec ON/OFF
(4) How to Clear : Press the START key to clear the error status and to resume the water drain function.

4. DOOR OPEN ERROR

(1) When the door is opened during the intermittent spin and spin.
(2) Generates ERROR MELODY 5 times.
(3) DISPLAY: 'dE' 0.5 sec ON/OFF
(4) How to Clear : Close the door.

5. UNBALANCE ERROR

(1) In case the unbalance is sensed three times during the same spin cycle.
(2) In case the ERROR MELODY sounds five times.
(3) DISPLAY: 'UE' 0.5 sec ON/OFF
(4) How to Release: Open the DOOR and then close it.

4-2. TEST PROGRAM MODE

4-2-1. TEST MODE FUNCTION (Drive and other test)

1) How to enter. (Water level+Course+Power s/w)
2) All of the PCB display when you press three buttons.
3) If you depress the three buttons, it shows the micom model number in 2 seconds and then shows the software version.
4) Mode change: you may change mode by pressing Start/Hold button in test mode.
5) Press the Start/Hold button one time. (Segment display: 'ㅂ')
   The wash course started only Maximum water level. (Digital course)
6) Press the Start/Hold button two times. (Segment display: 'ㅂH')
   The wash course started only Minimum water level. (Digital course)
7) Press the Start/Hold button three times. (Segment display: 'L')
   The water supply entered until Maximum water level.
8) Press the Start/Hold button four times. (Segment display: 'S')
   The Spin Course started by Semi-spin Course finished.
   PCB senses the motor error when they didn't exists 30 taco-pulses in Semi-spin runs on 4times,
   30 seconds. (Door error, Unbalance error)
9) Press the Start/Hold button five times. (Segment display: 'HA')
   The weights sensing runs, and display the weighting pulse on segment.
10)The washing machine power is off when press the Start/Hold button six times.
11)The washing machine runs the extra function when you press the Start/Hold button between one pressing and five pressing.
12)When the water supply button is entered, shows the selectable courses as in the order below.

> ► Cold → Rinse → Hot → Off ─┐

   If you press the Water supply button when water supplies, it didn't effect.
13)When the water level button is entered, shows the selectable courses as in the order below.

> ► ML → OFF → MR → OFF ─┐

   If you press the Water level button when motor runs, it didn't effect.
14)When the Wash button is entered, shows the selectable courses as in the order below.

> ► Drain → OFF ─┐

   If you press the Wash button when drain-motor runs, it didn't effect.

W.S.: Water Supply S: Spin
W: Wash P: Pause(Stop)
D: Drain R: Rinse
I: Intermittent Spin

Column sections: **WASH** = (W.S, SOAK, W, D, I, S, P, W.S, R) · **RINSE #1** = (D, I, S, P, W.S, R) · **RINSE #2** = (D, I, S, P, W.S, R) · **SPIN** = (D, I, S, P)

Program	WATER LEVEL	W.S	SOAK	W	D	I	S	P	W.S	R	D	I	S	P	W.S	R	D	I	S	P	W.S	R	D	I	S	P	The remained wash time
Sensor	M	5:00		20:00	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	5:00	1:30	63m 00s
	H	4:30		20:00	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	5:00	1:30	61m 00s
	M	4:00		20:00	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	5:00	1:30	59m 00s
	M-L	2:30		15:00	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	5:00	1:30	48m 30s
	L	2:00		15:00	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	5:00	1:30	46m 30s
Heavy Duty	M	5:00		20:00	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	5:00	1:30	83m 00s
	H	4:30		20:00	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	5:00	1:30	81m 00s
	M	4:00		20:00	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	5:00	1:30	79m 00s
	M-L	2:30		20:00	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	5:00	1:30	73m 30s
	L	2:00		20:00	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	5:00	1:30	71m 50s
Quick	M	5:00		5:00	2:10	1:00	2:00	1:30	5:00	1:30	2:10	1:00	2:00	1:30	5:00	1:30							2:10	1:00	3:00	1:30	30m 50s
	H	4:30		5:00	2:00	1:00	2:00	1:30	4:30	1:30	2:00	1:00	2:00	1:30	4:30	1:30							2:00	1:00	3:00	1:30	29m 30s
	M	4:00		5:00	1:50	1:00	2:00	1:30	4:00	1:30	1:50	1:00	2:00	1:30	4:00	1:30							1:50	1:00	3:00	1:30	28m 10s
	M-L	2:30		3:00	1:30	1:00	0:30	1:30	2:30	1:30	1:30	1:00	0:30	1:30	2:30	1:30							1:30	1:00	1:00	1:30	19m 00s
	L	2:00	20:00	3:00	1:20	1:00	0:30	1:30	2:00	1:30	1:20	1:00	0:30	1:30	2:00	1:30							1:20	1:00	1:00	1:30	17m 40s
Bedding	M	5:00		15:00	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	5:00	1:30	58m 00s
	H	4:30		15:00	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	5:00	1:30	56m 00s
	M	4:00		15:00	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	5:00	1:30	54m 00s
	M-L	2:30		15:00	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	5:00	1:30	48m 30s
	L	2:00		15:00	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	2:00	1:30	2:00	2:30	1:20	1:00	5:00	1:30	46m 30s
Wol	M	5:00		5:00	2:10	1:00	0:30	1:30	5:00	2:00	2:10	1:00	0:30	1:30	5:00	2:00	2:10	1:00	0:30	1:30	5:00	2:00	2:10	1:00	1:00	1:30	40m 00s
	H	4:30		5:00	2:00	1:00	0:30	1:30	4:30	2:00	2:00	1:00	0:30	1:30	4:30	2:00	2:00	1:00	0:30	1:30	4:30	2:00	2:00	1:00	1:00	1:30	38m 00s
	M	4:00		5:00	1:50	1:00	0:30	1:30	4:00	2:00	1:50	1:00	0:30	1:30	4:00	2:00	1:50	1:00	0:30	1:30	4:00	2:00	1:50	1:00	1:00	1:30	36m 00s
	M-L	2:30		5:00	1:30	1:00	0:30	1:30	2:30	2:00	1:30	1:00	0:30	1:30	2:30	2:00	1:30	1:00	0:30	1:30	2:30	2:00	1:30	1:00	1:00	1:30	30m 30s
	L	2:00		5:00	1:20	1:00	0:30	1:30	2:00	2:00	1:20	1:00	0:30	1:30	2:00	2:00	1:20	1:00	0:30	1:30	2:00	2:00	1:20	1:00	1:00	1:30	28m 30s
S/C	M	5:00		20:00	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	2:00	1:30	5:00	2:30	2:10	1:00	5:00	1:30	63m 00s
	H	4:30		20:00	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	2:00	1:30	4:30	2:30	2:00	1:00	5:00	1:30	61m 00s
	M	4:00		20:00	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	2:00	1:30	4:00	2:30	1:50	1:00	5:00	1:30	59m 00s
	M-L	2:30		20:00	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	2:00	1:30	2:30	2:30	1:30	1:00	5:00	1:30	53m 30s
Econo Wash	M	5:00		18:00	2:10	1:00	1:30	1:00	5:00	2:00 Rinse With Water Inlet	2:10	1:00	1:30	1:00	5:00	2:00	2:10	1:00	1:30	1:00	5:00	2:00	2:10	1:00	5:00	1:00	63m 00s
	H	4:30		18:00	2:00	1:00	1:30	1:00	4:30		2:00	1:00	1:30	1:00	4:30	2:00	2:00	1:00	1:30	1:00	4:30	2:00	2:00	1:00	5:00	1:00	61m 00s
	M	4:00		18:00	1:50	1:00	1:30	1:00	4:00		1:50	1:00	1:30	1:00	4:00	2:00	1:50	1:00	1:30	1:00	4:00	2:00	1:50	1:00	5:00	1:00	59m 00s
	M-L	2:30		18:00	1:30	1:00	1:30	1:00	2:30		1:30	1:00	1:30	1:00	2:30	2:00	1:30	1:00	1:30	1:00	2:30	2:00	1:30	1:00	5:00	1:00	53m 30s
	L	2:00		18:00	1:20	1:00	1:30	1:00	2:00		1:20	1:00	1:30	1:00	2:00	2:00	1:20	1:00	1:30	1:00	2:00	2:00	1:20	1:00	5:00	1:00	

Memo

5. ASSEMBLY AND DISASSEMBLY

5-1. TOOLS FOR DISASSEMBLY AND ASSEMBLY

NO.	TOOL		
1	Box driver	10 mm 13 mm 19 mm	Heater (1) Motor (1), Balance (5), 2 holes of each left and right of the shock absorber 1 Pulley hole
2	Double-ended spanner	10, 13, 19 mm	Replaceable for the box driver. Since the bolt runs idle when the box driver is used, use the box driver 17mm.
3	Vice pliers		Tool to protect the idle and abrasion of the bolt for the box driver.
4	Other (Driver, Nipper, Long nose)		General tools for the after service.
5	JIG for the BASKET SPIN ASSY		1 (Disassemble and Assemble)
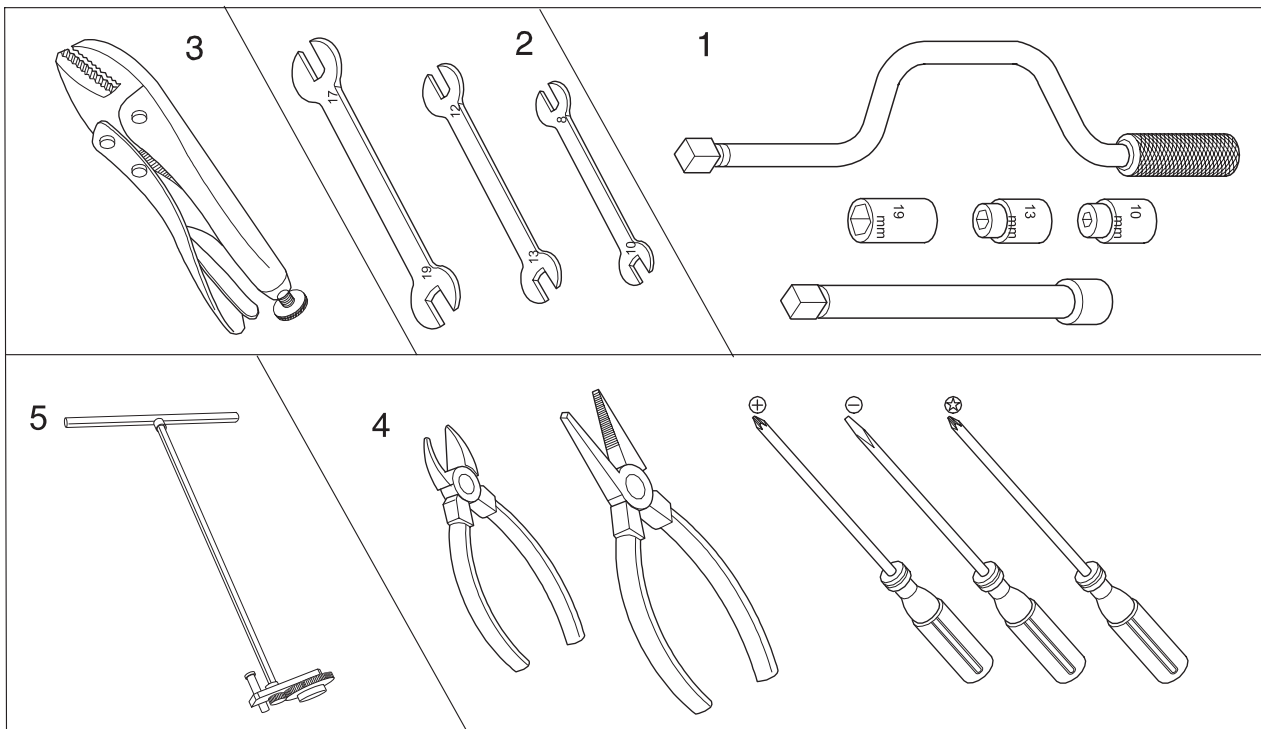
5-2. DISASSEMBLY

5-2-1. CAUTIONS FOR DISASSEMBLY AND REASSEMBLY

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.
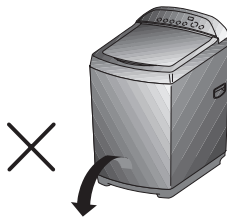
(2) When removing the top-cover from the outer-case, do not let the wire bundle fall downwards
    and touch the sharp edge of the outer-case. Also, do not allow tension to stress the wires.
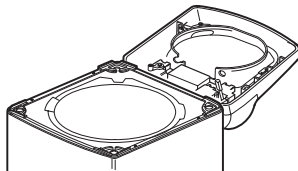
(3) When moving the washing machine to a place with a rough floor, do not drag it. If it is dragged,
    the rubber may get loose, thereby causing severe vibration and noise during washing.

2. BEFORE SERVICING

(1) Do not deform the check-S/W rod of the top-cover.
(2) 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.
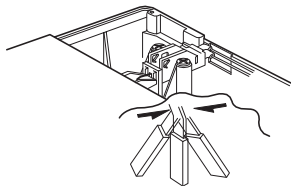
3. BEFORE SERVICING

(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.
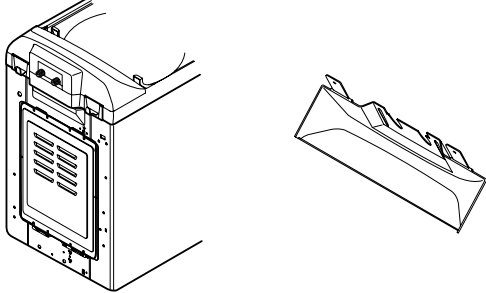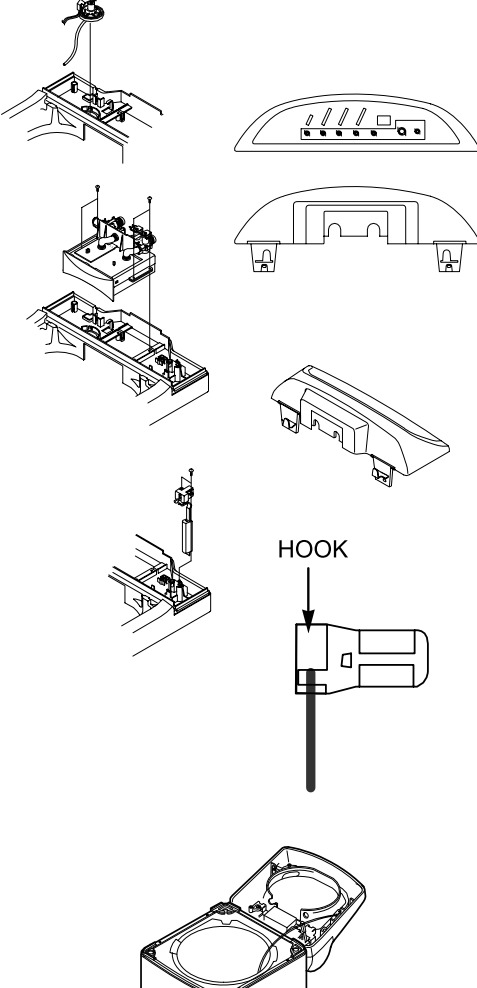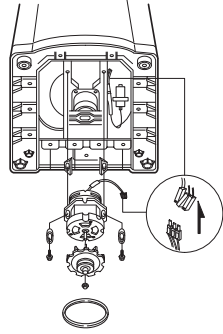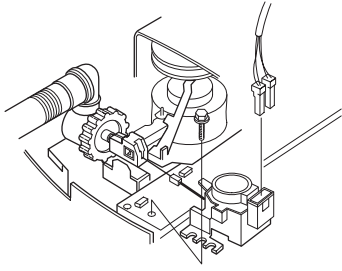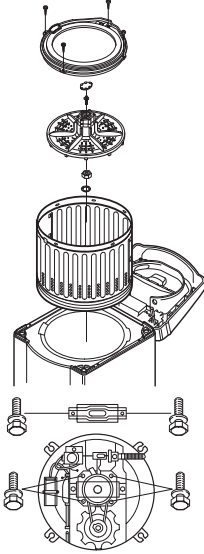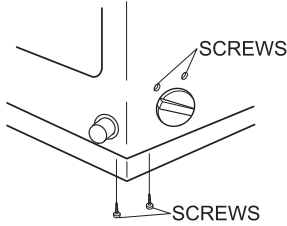
WIRE HOLDER
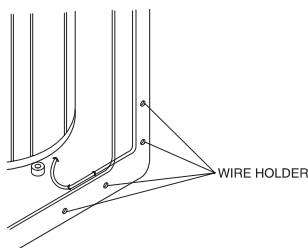
5-2-2. DISASSEMBLY

Warning! To avoid risk of electrical shock, personal injury or death, disconnect the power to the washing machine.

Disassembly Procedure	Illustration
■ Removing the PCB Assembly 1) Remove the Screw to fix the Cover-T.C. 2) Lift up the Cover-T.C with the Control-Panel assembled. 3) Turn the Cover-T.C "up". 4) Disconnect the Wire Harness from each electrical parts. 5) Remove the 4 Screws connecting the Control Panel with the Cover-T.C. and then dissemble the Control Panel. 6) Remove the 5 Screws connecting the Control Panel with the PCB Assembly. 7) Disconnect the Wire Harness of the PCB Assembly. 8) Pull away the PCB Assembly. 9) Do the reassembly in reverse order.	
■ Removing the Pressure-Senser, Water-Valve, and Checker Assembly ■ Pressure Senserl 1) Pull out the Lead Wire Terminal of the Pressure Digital. 2) Remove the Pressure Digital. 3) Pull out the Air Hose. ■ Water Valve 1) Pull out the Lead Wire Terminals. 2) Remove the Water valve while pushing it in the direction of the arrow. ■ Checker Assembly 1) Pull out the Lead Wire Terminals. 2) Remove the two Screws. 3) Lift out the Checker. ■ Wire Harness 1) Pull out the Lead Wire Terminals from the parts in back of the Top Cover. 2) Pull out the Lead Wire Terminals from the PCB after dissemble the Control-Panel from the Cover-T.C. 3) Remove the Wire Harness. ■ Door Switch <Magnet Switch> 1) Turn over the top-cover. 2) Remove the screw. 3) Remove the door switch.	HOOK

Disassembly Procedure	Illustration	Remarks
■ Removing the Motor 1) Remove the Back Cover. 2) Lay down the Washing Machine with the rear side facing the floor. 3) Pull out the Sound Absorption Panel. 4) Remove the Wire Housing. 5) Remove the V Belt. 6) Remove the two Bolts fastening the Motor. 7) Remove the Motor Pulley. 8) Pull out the Motor.		
■ Removing the Drain Motor 1) Lay down the Washing Machine with the rear side facing the floor. 2) Pull out the Lead Wire Terminal. 3) Remove the Bolt. 4) Remove the Drain Motor Wire from the Link. 5) Lift out the Drain Motor.		
■ Removing the Shaft Assembly 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. 2) Remove the four Screws fixing the Tub Cover. 3) Remove the Bolt fixing the Pulsator. 4) Remove the Spin Nut fixing the flange Shaft and the Shaft and pull out the Spin Basket. **Caution** Disassemble the Spin Nut in a clockwise direction. 5) Lay down the Washing Machine with the rear side facing the floor. 6) Remove the two Bolts fixing the Saddle. 7) Remove the four Bolts fixing the Shaft using the Box and take out the Shaft Assembly.		
■ Removing the Pump Assy 1) Remove the Back Cover. 2) Remove the Lead Wire Terminal and the Earth Wire. 3) Remove the Two Hoses. 4) Remove the 2screws which fix the filter. 5) Lay down the Washer with the right side facing the Floor. 6) Remove the 2 Screws which fix the pump. 7) Lift out the Pump.	SCREWS SCREWS	

5-3. Spin - Nut Repairing Box

⑥ HANDLE

⑤ CONNECTING ROD

③ JIG

④ GUIDE PIN
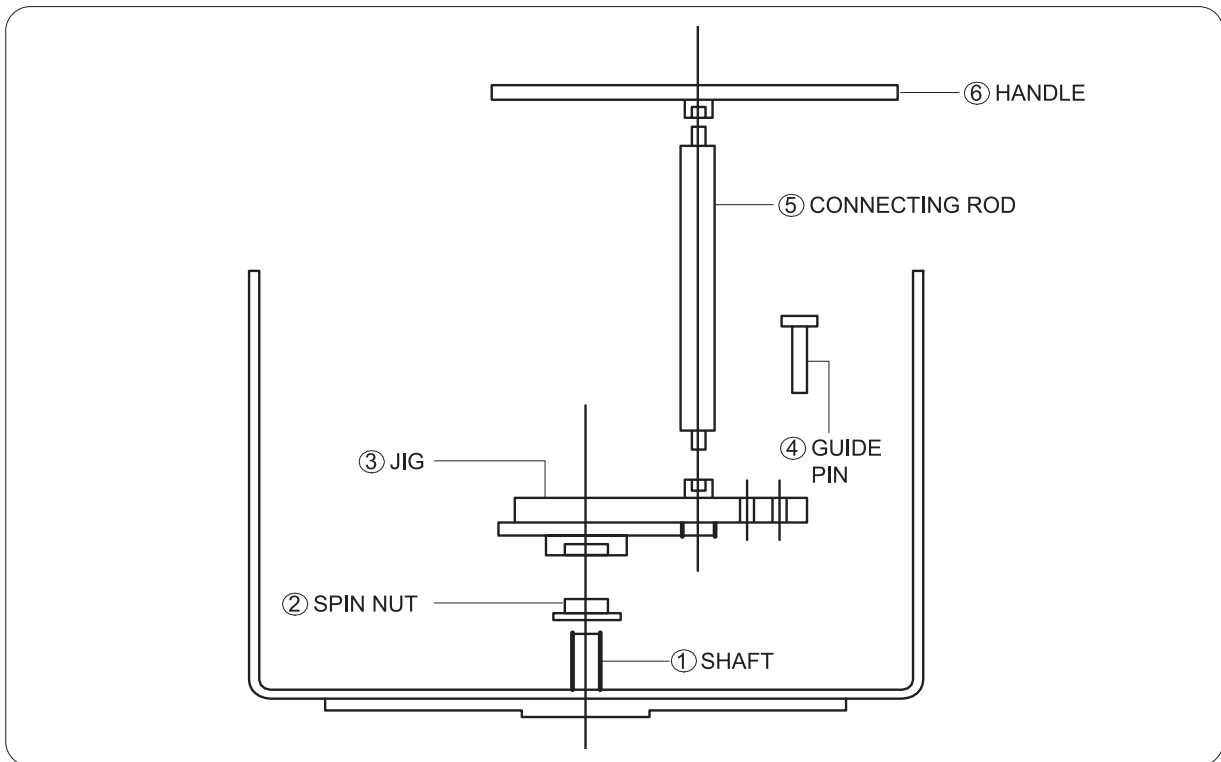
② SPIN NUT

① SHAFT

5-3-1. Procedure

1. Insert the jig ③ into the spin-nut - .
2. Insert the guide pin ¯ into the groove of the flange - shaft by rotating it to the right and left.

Guide Pin
Inserting Point

SPIN
BASKET

FLANGE
SHAFT
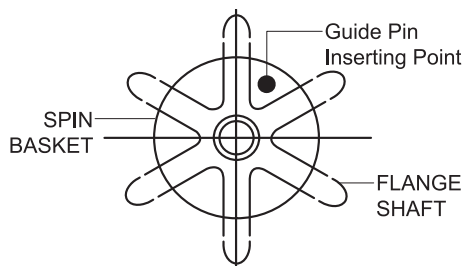
3. Insert the connecting rod ° and handle ± into the sq uare box. Then turn the handle clockwise on the axis of the small box to disassemble (Right-hand thread).*

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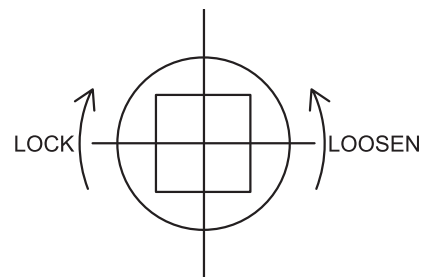
To disassemble the box, give three to four times of instantaneous shocks to the handle in the loosening direction, then disassemble it by turning the handle when the nut is loosened.

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.

5-4. REASSEMBLY

Reassembly procedures are in the reverse order of dissasembly procedures.

6. TROUBLE DIAGNOSIS

- As the washing machine which has the micom processor, is configured of the complicated structure, there might be many kind of the service call from the consumer even though there is no defect on the parts in the machine. Below information is prepared for the exact trouble diagnosis and the suitable repaire guide.

6-1. Precautions for the Repair and Replacement

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

(1) As the electric components are easily damaged by the static electricity charged in the resin part of the machine or in the human body, be sure to remove the potential difference between the human body the washing machine by touching the earth strap or the power supply which is connected to the machine if you need to contact PCB parts for servicing.

Earth Strap

Power Plug
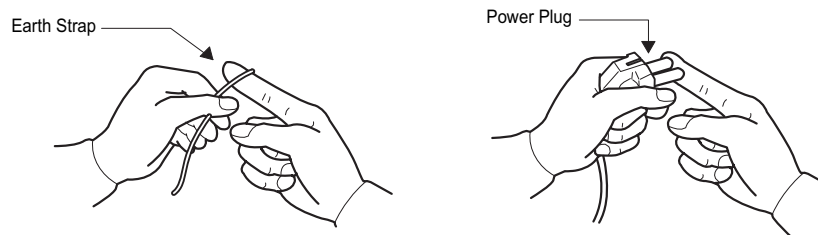
(2) The wiring should be properly connected in accordance with the wiring diagram. Erroneous wiring may cause the faulty operation, smoke, or fire. Speial attention should be paid to connection, insulation treat ment, and wiring work for the lead wire.
(3) Be sure to pull out the power plug during repair.
(4) Be sure to use only authoirzed replacement parts.
(5) Be careful that touching the radiating plate accidentally may cause electric shock, because AC 110V-220V is applied between T1 and T2 of the triac on the PCB assembly.
(6) As the parts on PCB are coated with urethane, they can not be inspected by the test bar on the multimeter. Check them normal or not by using the test mode first and then diagnose the trouble in an appropriated procedure as next troubleshooting method.

6-2. TROUBLE DIAGNOSIS AND SHOOTING ON MAIN FAILURE

6-2-1. POWER SUPPLY, DISPLAY, AND KEY SELECTION FAILURE

(1) In case of no power on when you plug in the power cord and then press the POWER key

```
┌─────────────────────┐
│     No Power ON      │
└─────────────────────┘
          │ Yes
    ╱───────────────╲         No    ┌─────────────────────────┐
   ╱ Is the rating    ╲──────────────│  Apply the rating voltage.│
   ╲ voltage supplied ?╱             └─────────────────────────┘
    ╲───────────────╱
          │ Yes
    ╱───────────────╲         No    ┌─────────────────────────────┐
   ╱ Is the power plug╲─────────────│ Plug in the power cord securely.│
   ╲ well connected?   ╱            └─────────────────────────────┘
    ╲───────────────╱
          │ Yes
    ╱───────────────╲         Yes   ┌─────────────────────────┐
   ╱  Fuse blown out? ╲─────────────│      Replace fuse.        │
   ╲                   ╱            └─────────────────────────┘
    ╲───────────────╱
          │ No
    ╱───────────────╲         No    ┌─────────────────────────┐
   ╱ Is the wiring on  ╲────────────│  Repair or Replace the wire│
   ╲ the power line     ╱           │      connection.          │
   ╲ well connected?   ╱            └─────────────────────────┘
    ╲───────────────╱
          │ Yes
┌─────────────────────┐
│ The PCB Assy is      │
│ defective. Replace it.│
└─────────────────────┘
```
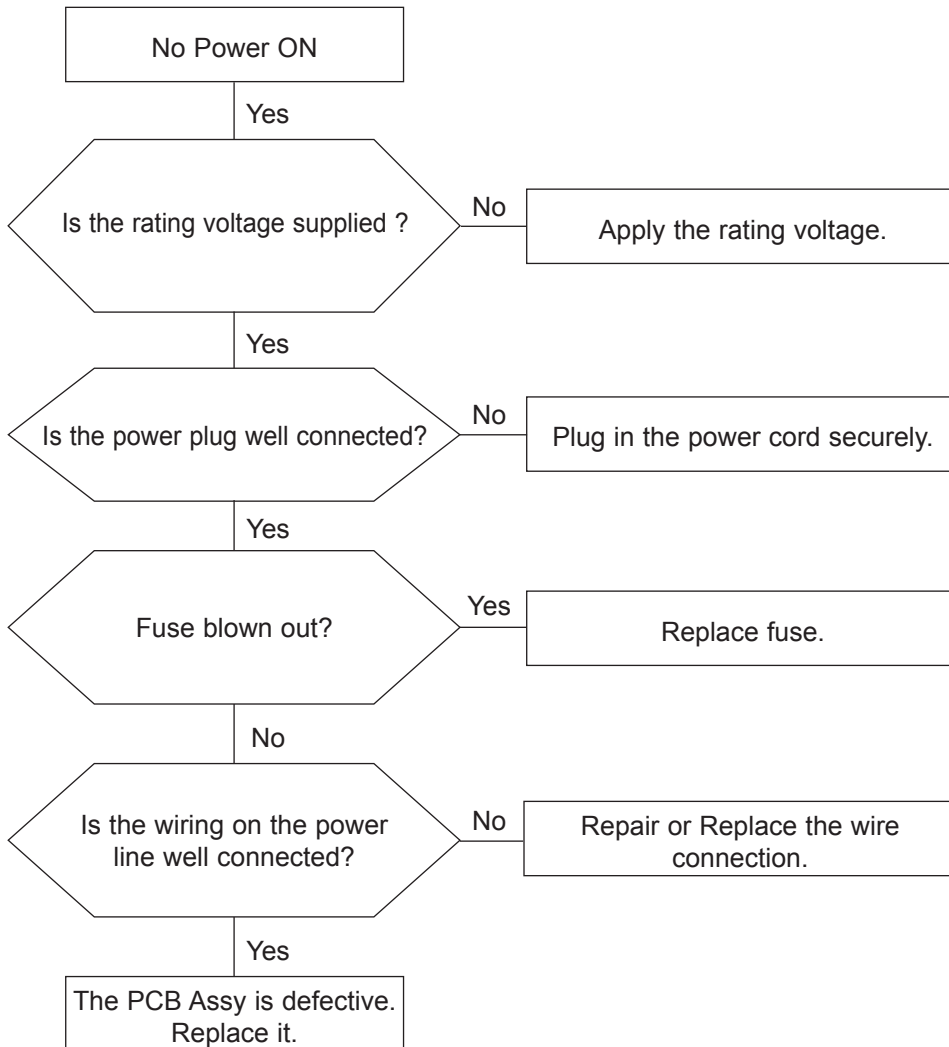
(2) In case the unselected indicator turns on.

```
┌─────────────────────────────────┐
│  Unselected indicator turns on. │
└─────────────────────────────────┘
                │
┌─────────────────────────────────┐
│  Replace defective PCB ASS`Y.   │
└─────────────────────────────────┘
```
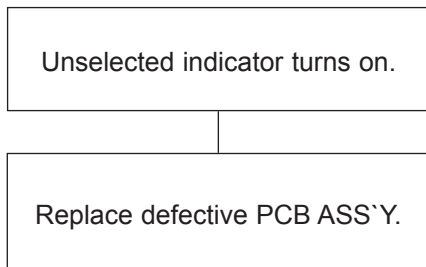
(3) In case there is no beep sound and also the indicator does not turn on at any key selection.

```
        ⬡ No beep sound and or no ⬡
          display in the indicator
                │
        ⬡ Power S/W ON? ⬡ ──No──→ ┌──────────────────────────────────┐
                │                  │      Turn Power S/W ON.           │
               Yes                 │ (All of key selections are valid  │
                │                  │  only when POWER S/W is on.)      │
        ⬡ S/W contacts ⬡ ──No──→  └──────────────────────────────────┘
          in good condition?       ┌──────────────────────────────────┐
                │                  │ Tact S/W or Tact S/W connection   │
               Yes                 │    with PBA is defective.         │
                │                  │    Replace PCB ASS`Y.             │
        ┌──────────────────┐       └──────────────────────────────────┘
        │ Replace defective│
        │   PCB ASS`Y.     │
        └──────────────────┘
```
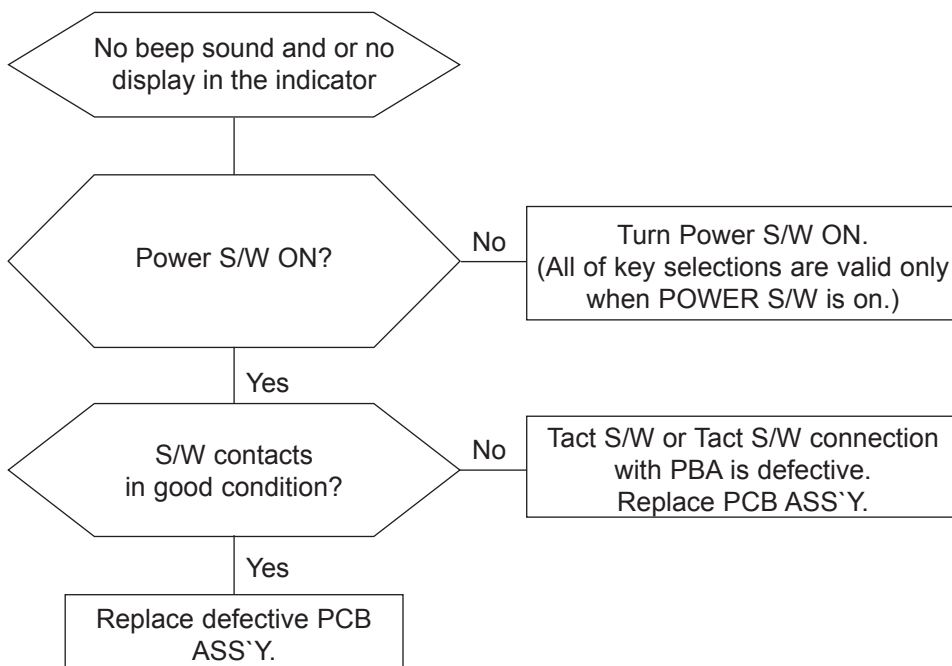
6-2-2. DRIVING UNIT FAILURE

- At the below instruction, it is the case that there is no failure on the power supply and key selection. it is the diagnosis of any problem after POWER key and START key are selected and then any operation is being normally performed.

(1) In case of no water supply

```
                        ┌─────────────────────────┐
                        │   No W/S(water supply)   │
                        └─────────────────────────┘
                                    │
                    ╱────────────────────────╲
                   ╱   START/PAUSE key         ╲      No        ┌──────────────────────┐
                  ⟨  is pressed after selecting  ⟩──────────────│  Press Start/Pause key.│
                   ╲       a course?            ╱               └──────────────────────┘
                    ╲────────────────────────╱
                            │ Yes
          ┌─────────────────┤
          │      ╱────────────────────────╲
          │     ╱  Is there any sound like 'zee-' ╲  Yes    ╱──────────────────╲  No   ┌──────────────────┐
          │    ⟨   at the W/S valve during water   ⟩────────⟨ Water tap is opened? ⟩─────│ Open the water tap.│
          │     ╲         supply?           ╱          ╲──────────────────╱            └──────────────────┘
          │      ╲────────────────────────╱                      │ Yes
┌──────────────────┐       │ No                      ╱──────────────────────╲  Yes  ┌──────────────────────┐
│ Connect the terminal │   ╱────────────────────╲            ⟨  Water supply has been cut ⟩──────│ Turn off the water tap and │
│      firmly.     │   ╱  The terminal of W/S valve is ╲           ╲         off?          ╱      │   turn Power OFF.    │
└──────────────────┘  ⟨    well connected?      ⟩           ╲──────────────────────╱       └──────────────────────┘
          │      No   ╲────────────────────╱                      │ No
          │               │ Yes                     ╱──────────────────────╲  Yes  ┌──────────────────┐
          │      ╱────────────────────╲      Yes    ⟨ Foreign materials exist on ⟩──────│ Clean the filter by using a │
          │     ⟨  W/S valve is electrically  ⟩──────────⟨    W/S hose or valve?     ╱      │        brush.      │
          │      ╲      continuous?     ╱             ╲──────────────────────╱       └──────────────────┘
          │           │ Yes                              │ No
          │      ╱────────────────────╲         ┌──────────────────────┐
          │     ⟨ Is the water level senser well ⟩         │  W/S valve is defective. │
          │     ⟨       connected?       ⟩         │       Replace it.     │
          │      ╲────────────────────╱          └──────────────────────┘
          │           │ No
          └───────────┘           │ Yes
                            ╱──────────────────────╲   Yes   ┌──────────────────────┐
                           ⟨   Do the pulsator rotate?  ⟩─────────│  Water level senser is │
                            ╲──────────────────────╱          │ defective. Replace it. │
                                    │ No               └──────────────────────┘
                        ┌──────────────────────┐
                        │   PCB Assy is defective. │
                        │       Replace it.     │
                        └──────────────────────┘
```

(2) In case the water supply does not stop and also the wash does not start.

```
┌─────────────────────────────┐
│ The water supply does not stop │
└─────────────────────────────┘
              │ Yes
┌─────────────────────────────┐
│     Pull out the plug.      │
└─────────────────────────────┘
              │ Yes
      ╱───────────────╲                        ┌──────────────────────────────┐
     ╱ Does the water  ╲          Yes          │ The water valve is defective.  │
     ╲ supply stop?     ╱ ──────────────────── │ * Remove the foreign material  │
      ╲───────────────╱                        │ in the water velve.            │
              │ Yes                            └──────────────────────────────┘
      ╱───────────────╲                        ┌──────────────────────────────┐
     ╱ Is there water in ╲        Yes          │ Air is leaking. Check the      │
     ╲ the water level    ╱ ────────────────── │ connection, and apply the      │
      ╲ sensor hose?     ╱                      │ adhesives.                     │
       ╲──────────────╱                         └──────────────────────────────┘
  ┌ ─ ─ ─ ─ ─ ─ ┐      │ No
    For pump model
  └ ─ ─ ─ ─ ─ ─ ┘
 No   ╱───────────────╲        Yes             ┌──────────────────────────────┐
     ╱ Is the water level ╲ ──────────────────  │    Correct the bent hose.     │
     ╲ sensor hose bent?   ╱                     └──────────────────────────────┘
      ╲───────────────╱
              │ No                      ┌ ─ ─ ─ ─ ─ ─ ─ ─ ┐
      ╱───────────────╲                   For no pump model
     ╱ Is the water     ╲                └ ─ ─ ─ ─ ─ ─ ─ ─ ┘
    ╱ coming out through ╲   Yes  ┌──────────┐  ┌──────────────────────────────┐
    ╲ the drain hose with ╱ ───── │Check the │  │ Remove foreign materials such  │
    ╲ the operation of    ╱       │drain     │  │ as drawn thread, hair pin and  │
     ╲ the drain valve?  ╱        │valve.    │  │ buttons.                       │
      ╲───────────────╱           └──────────┘  └──────────────────────────────┘
              │ No
┌─────────────────────────────┐
│  Replace the PCB assembly.  │
└─────────────────────────────┘
```

(3) In case the wash starts without the water supply.

```
┌──────────────────────────────────────┐
│   Wash starts without the water supply │
└──────────────────────────────────────┘
                    │
         ╱──────────────────────╲
        ╱  Water Level Sensor     ╲          No          ┌──────────────────────────┐
        ╲  terminal is securely   ╱ ─────────────────────│ Connect terminals securely.│
         ╲  connected?           ╱                        └──────────────────────────┘
                    │ Yes
         ╱──────────────────────╲
        ╱                        ╲         No           ┌──────────────────────────┐
        ╲   Washing is going on?  ╱ ────────────────────│ Turn Power OFF and starts to│
         ╲                        ╱                      │ operate  again.            │
                    │ Yes                                └──────────────────────────┘
        ┌──────────────────────┐
        │ Replace defective PCB │
        │        ASS`Y.         │
        └──────────────────────┘
```
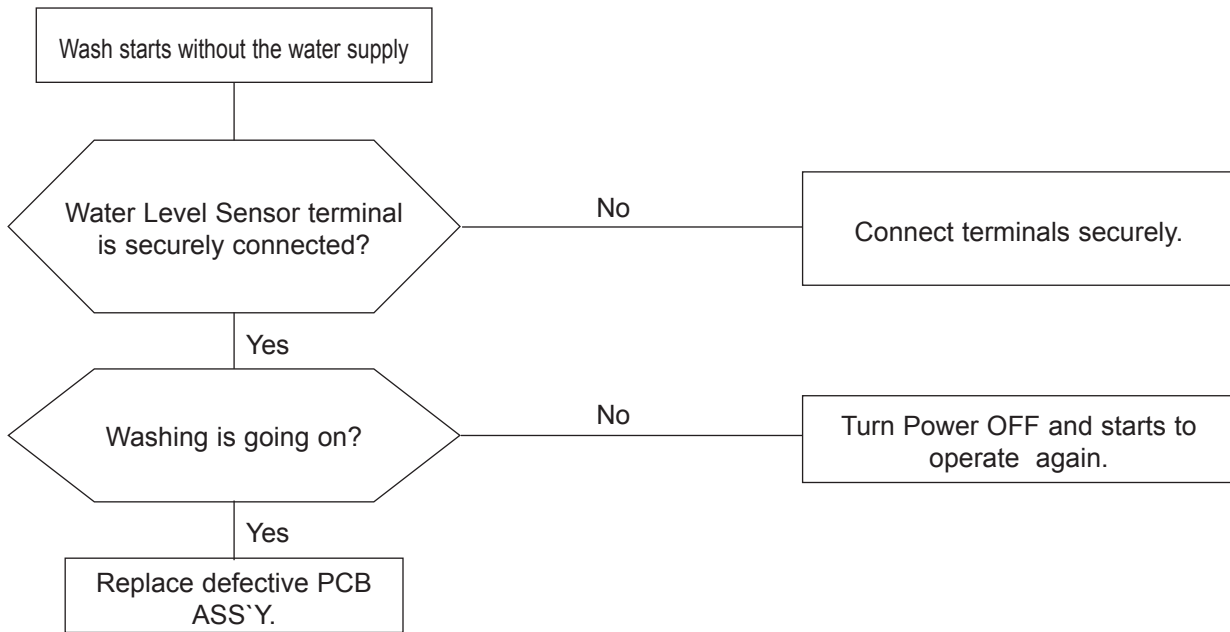
(4) In case the pusator does not rotate during washing.

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

```
┌─────────────────────────────┐
│ The pulsator dose not rotate.│
└─────────────────────────────┘
              │ Yes
   ╱────────────────────╲        No      ╱────────────────────╲   Yes   ┌──────────────────────┐
  ╱ Does the water supply ╲──────────────╱ Is the connection of  ╲───────│ Replace the water level│
  ╲ stop after filling to  ╱             ╲ the water lwvwl sensor ╱       │ sensor.               │
   ╲ the specified level?  ╱              ╲ terminal all right?   ╱        └──────────────────────┘
    ╲────────────────────╱                ╲────────────────────╱
              │ Yes                                 │ Yes
                                          ┌──────────────────────────┐
                                          │ Connect the terminal      │
                                          │ securely.                 │
                                          └──────────────────────────┘
                                                     │ No
   ╱────────────────────╲   No    ┌────────────────────┐    ╱──────────────────╲   No
  ╱ Does the motor make a ╲───────│ Replace the condenser.│   ╱ Is water supplied? ╲──────┐
  ╲ "woong" sound?        ╱        └────────────────────┘    ╲──────────────────╱         │
   ╲────────────────────╱                   │                        │ No        ┌──────────────────┐
              │ No                          │                                    │ Now it is normal │
                                 ╱──────────────────╲  No    ┌──────────────────────┐  └──────────────────┘
                                ╱ Dose the pulsator   ╲──────│ Replace the PCB assembly.│
                                ╲ operate normally?   ╱      └──────────────────────┘
                                 ╲──────────────────╱
┌──────────────────────────────┐
│ Check the motor for shortcircuit│
│ and replace it if necessary.   │
└──────────────────────────────┘
              │
   ╱────────────────────╲   No
  ╱ Dose the pulsator     ╲──────────┐
  ╲ operate normally?     ╱           │
   ╲────────────────────╱   ╱──────────────────╲   No   ┌──────────────────────────┐
              │ Yes        ╱ Is the V belt       ╲──────│ Install the V belt correctly.│
┌──────────────────────┐  ╲ positioned correctly?╱      └──────────────────────────┘
│ The motor is defective.│  ╲──────────────────╱        ☞ Check for a racing motor
└──────────────────────┘            │ Yes                 due to excessively strong
                        ┌──────────────────────┐          or weak tension of the
                        │ Replace the PCB assembly.│        V - belt.
                        └──────────────────────┘
```
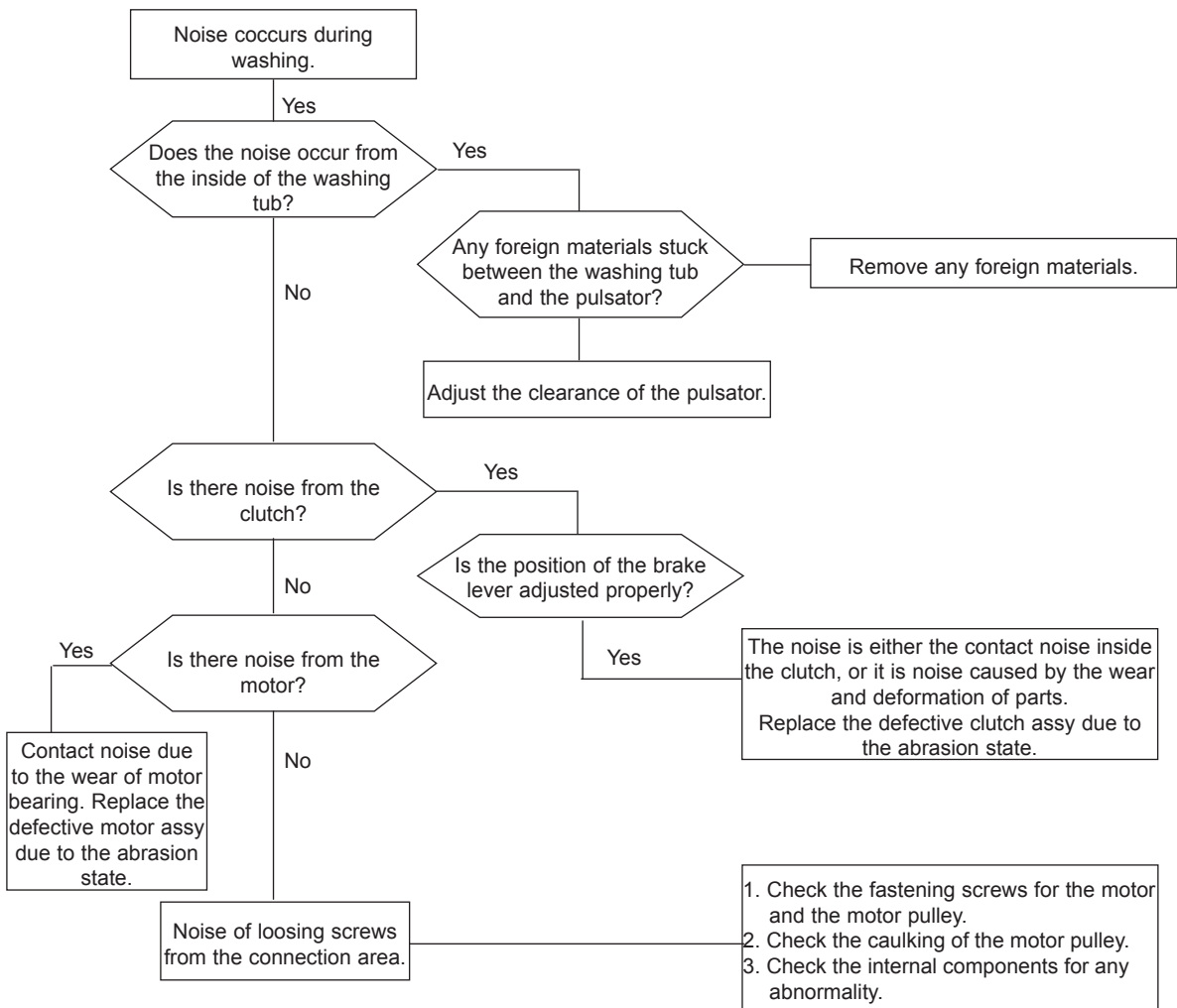
(5) In case the noise occurs during washing.

```
┌─────────────────────────┐
│  Noise coccurs during    │
│       washing.           │
└─────────────────────────┘
            │ Yes
      ╱─────────────╲                    Yes
     ╱ Does the noise  ╲───────────────────┐
    ╱ occur from the    ╲                   │
    ╲ inside of the      ╱          ╱─────────────╲
     ╲ washing tub?     ╱          ╱ Any foreign     ╲          ┌────────────────────────────┐
      ╲───────────────╱           ╱ materials stuck   ╲─────────│ Remove any foreign          │
            │ No                  ╲ between the washing╱         │ materials.                  │
            │                      ╲ tub and pulsator?╱          └────────────────────────────┘
            │                       ╲───────────────╱
            │                              │
            │                   ┌────────────────────────────┐
            │                   │ Adjust the clearance of     │
            │                   │ the pulsator.               │
            │                   └────────────────────────────┘
      ╱───────────────╲           Yes
     ╱ Is there noise   ╲───────────────┐
     ╲ from the clutch? ╱               │
      ╲───────────────╱         ╱─────────────╲
            │ No                ╱ Is the position ╲
            │                   ╲ of the brake lever╱
            │                    ╲ adjusted properly?╱
      ╱───────────────╲           ╲───────────────╱
  Yes ╱ Is there noise  ╲              │ Yes
  ┌───╲ from the motor? ╱       ┌────────────────────────────┐
  │    ╲───────────────╱        │ The noise is either the     │
  │          │ No               │ contact noise inside the    │
```

┌──────────────────┐   │ clutch, or it is noise caused by the wear
│ Contact noise due │   │ and deformation of parts.
│ to the wear of   │   │ Replace the defective clutch assy due to
│ motor bearing.   │   │ the abrasion state.
│ Replace the   │
│ defective motor   │
│ assy due to the   │
│ abrasion state.   │
└──────────────────┘

┌──────────────────┐   1. Check the fastening screws for the motor
│ Noise of loosing │   and the motor pulley.
│ screws from the   │   2. Check the caulking of the motor pulley.
│ connection area. │   3. Check the internal components for any
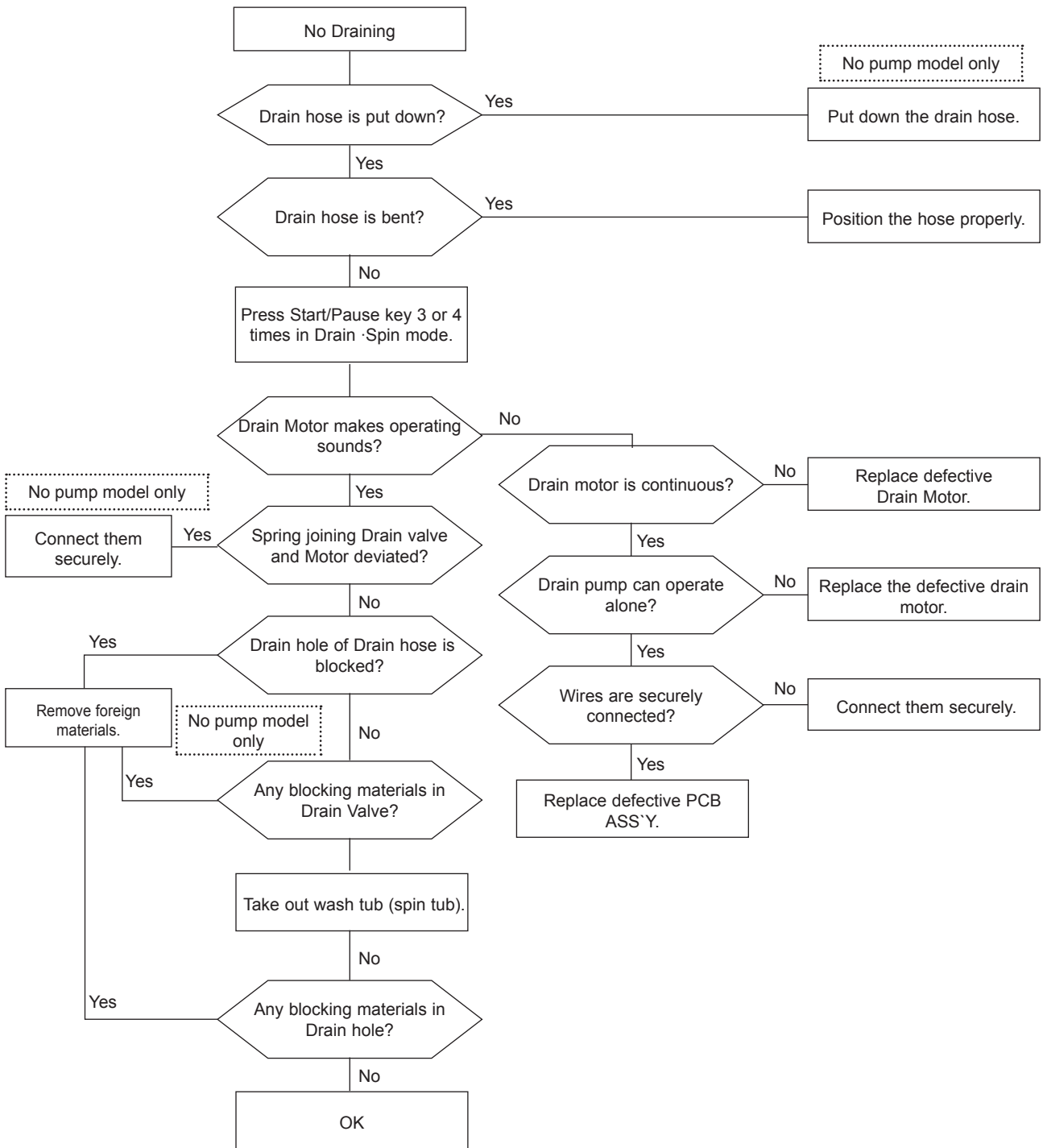└──────────────────┘   abnormality.

* The 'Sha-ah' sounds may be heard when the Spin tub comes to a halt but that is
   not problem of the washing machine as they are coming from normal water
   flowing inside the spin tub by auto balancing function.
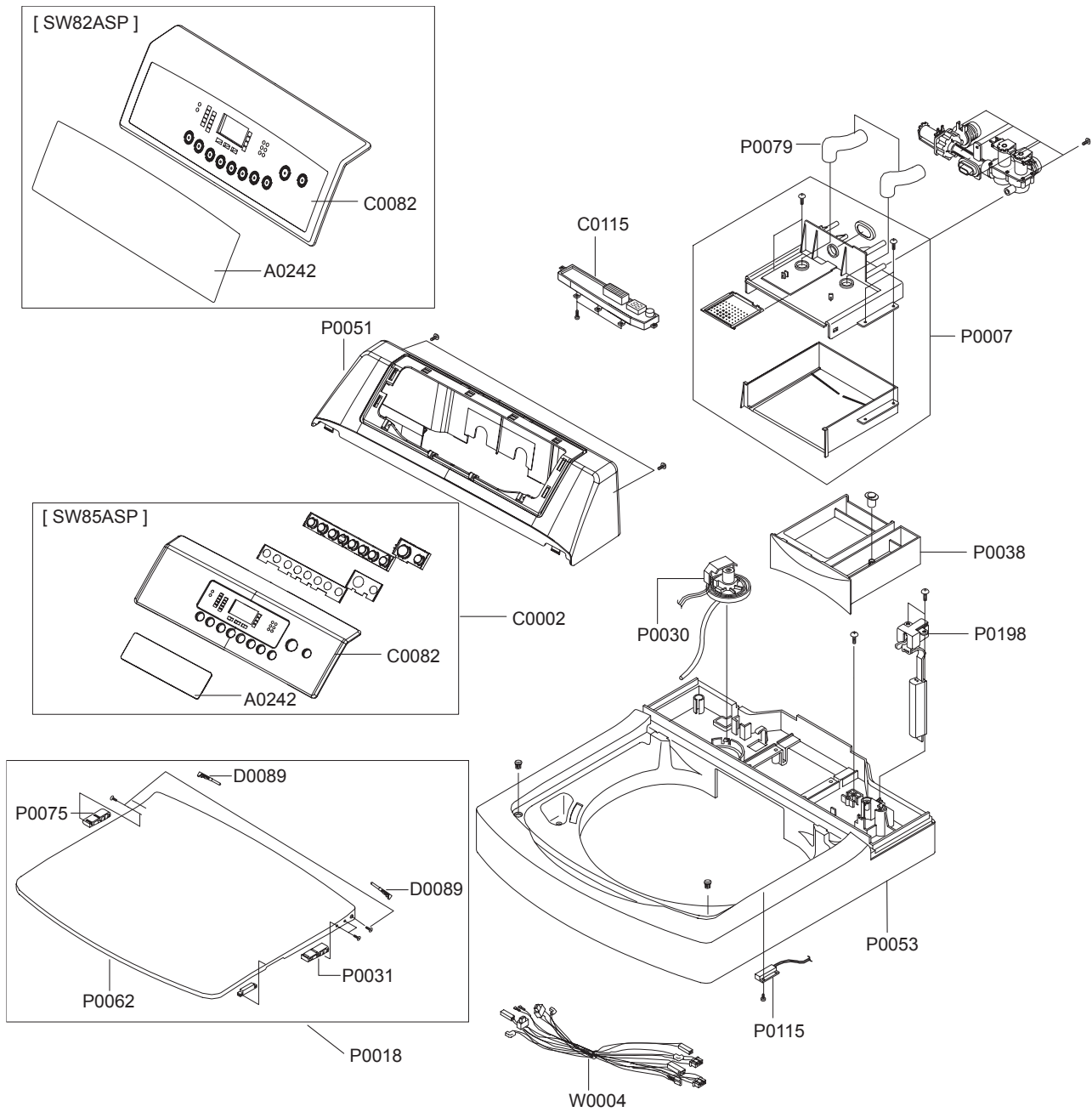
(6) In case of no spinning

```
                          ┌─────────────────┐
                          │   No Spinning    │
                          └─────────────────┘
                                   │
                          ╱────────────────╲        Yes    ┌──────────────────────────┐
                          ╲  Is it draining? ╱─────────────│ This is normal as designed│
                          ╱────────────────╲             │ to drain before spinning. │
                                   │                       └──────────────────────────┘
                                   │ No
                          ╱────────────────╲  Yes  ╱────────────────╲  Yes  ┌────────────────────┐
                          ╲ Pulsator blades ╱──────╲  Drain motor    ╱──────│ Improper adjustment│
                          ╱ are rotating?   ╲      ╱ makes operating ╲      │ of Clutch part.    │
                                   │                ╲  sounds?        ╱      │ Repair it.         │
                                   │ No                     │                └────────────────────┘
┌──────────────────┐  Yes ╱─────────────────╲              │ Yes
│Adjust tension of │──────╲ V-belt tension is ╱     ╱────────────────╲  No  ┌────────────────────┐
│the V-belt.       │      ╱ too strong or    ╲     ╲ Drain motor     ╱──────│ Replace Drain Motor│
└──────────────────┘      ╲ too weak?        ╱     ╱ shows continuity?╲     └────────────────────┘
                                   │                        │ Yes
                                   │ No              ╱────────────────╲  No  ┌────────────────────┐
┌──────────────────┐  Yes ╱─────────────────╲       ╲ Drain Motor     ╱──────│Replace defective   │
│Educate customer  │──────╲  Is the lid open?╱       ╱ operable as a   ╲     │drain motor lead    │
│to close the lid. │      ╱                 ╲       ╲ single unit?     ╱     │wires.              │
└──────────────────┘               │                        │ Yes          └────────────────────┘
                                   │ No              ┌────────────────────┐
┌──────────────────┐  Yes ╱─────────────────╲       │Improper adjustment │
│Check and adjust  │──────╲ Safety S/W       ╱       │of Clutch part.     │
│safety switch.    │      ╱ terminal is lifted╲      │Repair it.          │
└──────────────────┘      ╲ up when lid closed?╱     └────────────────────┘
                                   │
                                   │ No
┌──────────────────┐  Yes ╱─────────────────╲
│Replace safety S/W│──────╲ Terminals of     ╱
└──────────────────┘      ╱ safety S/W COM   ╲
                          ╲ and DOOR         ╱
                          ╱ continuous?      ╲
                                   │ No
┌──────────────────┐  Yes ╱─────────────────╲
│Unbalance 1st,2nd │──────╲ Unbalance status?╱
│times automatically│     ╱                 ╲
│dose water Supply │
│→ Wash.           │
└──────────────────┘               │ No
┌──────────────────┐
│Remove foreign    │
│materials.        │  Yes ╱─────────────────╲
└──────────────────┘──────╲ Any foreign      ╱
        │                 ╱ materials between╲
╱──────────────╲  No      ╲ the spin tub and ╱
╲ Spin tub is   ╱─────────╱ TUB?            ╲
╱ rotating      ╲                 │ No
╲ correctly?    ╱         ┌────────────────────┐
        │ Yes            │ Check motor lead   │
┌──────────────┐         │ wire.              │
│     OK.      │         └────────────────────┘
└──────────────┘                  │ No
┌──────────────────┐  Yes ╱─────────────────╲
│Replace defective │──────╲ Spin tub is      ╱
│PCB ASS`Y.        │      ╱ rotating correctly?╲
└──────────────────┘               │ No
                         ┌────────────────────┐
                         │ Motor is defective │
                         │ Replace it.        │
                         └────────────────────┘
```

(7) In case of no draining

```
                        ┌─────────────────┐
                        │   No Draining   │
                        └─────────────────┘
                                 │
                        ╱─────────────────╲          Yes    ┌·················┐
                       ╱ Drain hose is put ╲─────────────── : No pump model  :
                       ╲    down?          ╱               : only           :
                        ╲─────────────────╱                └─────────────────┘
                                 │ Yes                     │ Put down the    │
                                 │                         │ drain hose.     │
                        ╱─────────────────╲          Yes    └─────────────────┘
                       ╱ Drain hose is     ╲──────────────┌─────────────────┐
                       ╲    bent?          ╱              │ Position the    │
                        ╲─────────────────╱               │ hose properly.  │
                                 │ No                      └─────────────────┘
                        ┌─────────────────┐
                        │ Press Start/Pause key 3 or 4 │
                        │ times in Drain ·Spin mode.   │
                        └─────────────────┘
```

No pump model only

Connect them securely.

Remove foreign materials.

No pump model only

Take out wash tub (spin tub).

OK

Drain Motor makes operating sounds? — No — Drain motor is continuous? — No — Replace defective Drain Motor.

Spring joining Drain valve and Motor deviated? — Yes (Connect them securely)

Drain hole of Drain hose is blocked? — Yes (Remove foreign materials)

Any blocking materials in Drain Valve? — Yes

Drain pump can operate alone? — No — Replace the defective drain motor.

Wires are securely connected? — No — Connect them securely.

Any blocking materials in Drain hole? — Yes (Remove foreign materials)

Replace defective PCB ASS`Y.

7. EXPLODED VIEW AND PARTS LIST

7-1. ASSY-COVER TOP

[SW82ASP]

C0082

A0242

P0051

C0115

P0079

P0007

[SW85ASP]

C0002

C0082

A0242

P0038

P0030

P0198

D0089

P0075

D0089

P0031

P0062

P0053

P0018

P0115

W0004

Location. No	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA	Remark
A0242	DC64-01207A	INLAY-PANEL	WA17L9,PC,T1.5,W186.5,L57.3,	1	SA	
A0242	DC64-01275A	INLAY-PANEL	WA15L5W,PET,T0.188,W395.6,L9	1	SA	
A0242	DC64-01275B	INLAY-PANEL	WA15L4W,PET,T0.188,W395.6,L9	1	SA	
A0242	DC64-01275C	INLAY-PANEL	WA17L7W,PET,T0.188,W395.6,L9	1	SA	
A0242	DC64-01275H	INLAY-PANEL	NEW-SKIPPY/WA14L1/4,PET,-,-,	1	SA	
A0242	DC64-01275J	INLAY-PANEL	NEW-SKIPPY/WA14L2/5,PET,-,-,	1	SA	
A0242	DC64-01275K	INLAY-PANEL	SKIPPY2,PET,T0.188,W395.6,L9	1	SA	
A0242	DC64-01275L	INLAY-PANEL	SKIPPY2,PET,T0.188,W395.6,L9	1	SA	
A0242	DC64-01275M	INLAY-PANEL	SKIPPY2,PET,T0.188,W395.6,L9	1	SA	
C0002	DC97-11213A	ASSY-PANEL CONTROL	WA17L9,-,BUTTON-TYPE,	1	SA	
C0002	DC97-11213D	ASSY-PANEL CONTROL	B27L9WDP/YE,-,-,NEW-	1	SA	
C0002	DC97-11213E	ASSY-PANEL CONTROL	NEW SKIPPY,WA15L*,PAN	1	SA	
C0002	DC97-11213F	ASSY-PANEL CONTROL	NEW SKIPPY,WA14L1/L4,	1	SA	
C0002	DC97-11213G	ASSY-PANEL CONTROL	NEW SKIPPY,WA14L2/L5,	1	SA	
C0082	DC64-01174A	PANEL-CONTROL	WA14L1,ABS,-,-,-,NEAT-WH	1	SNA	
C0082	DC64-01174D	PANEL-CONTROL	WB27L9,ABS,-,-,-,SPRAY-S	1	SNA	
C0082	DC64-01208A	PANEL-CONTROL	WA14L1,ABS,-,-,-,NEAT-WH	1	SNA	
C0082	DC64-01208C	PANEL-CONTROL	WA14 L1/2/4/5 WDP/XAX,ABS,	1	SNA	
C0082	DC64-01208D	PANEL-CONTROL	WA14 L1/2/4/5 WDP/XAX,ABS,	1	SNA	
C0115	MFS-S1TT25B-09	ASSY PCB PARTS	MFS-S1TT25B-09	1	SNA	
D0089	DC61-00523A	HINGE-DOOR PIN	SW95ASP,NYLON66(GRASS30%)	2	SA	
P0007	DC97-01766F	ASSY BODY DETERGENT	WA15L1W,NEW SKIPPY (	1	SA	
P0198	DC90-10104D	CHECKER S/W	SEW-110J,DC15V/50MA,-,-	1	SA	
P0030	DC32-30006S	SENSOR PRESSURE	DN-S17,10KG/STANDARD	1	SA	
P0031	DC61-20223A	HINGE-DOOR(R)	ABS,SW90K1SP	1	SA	
P0038	DC63-00041R	CASE-DETERGENT	WA14H6Q3DW/XAX,ABS,	1	SA	
P0051	DC63-00698A	COVER-T.C	WA14L1,ABS,-,-,-,-,NEAT-WHT,	1	SA	
P0051	DC63-00698B	COVER-T.C	WA15L5,ABS,-,-,-,-,SEM,NEAT-WH	1	SA	
P0051	DC63-00698C	COVER-T.C	WA17L7W,ABS,-,-,-,-,SEM/MEXICO	1	SA	
P0051	DC63-00698D	COVER-T.C	WA15L1W,ABS,-,-,-,-,SEM/MEXICO	1	SA	
P0051	DC63-00698G	COVER-T.C	WA15L1W,ABS,-,-,-,-,SELA-P(PAN	1	SA	
P0051	DC63-00698J	COVER-T.C	WA15L4W,ABS,-,-,-,-,SELA-P(PAN	1	SA	
P0051	DC63-00698K	COVER-T.C	WA17L9W,ABS,-,-,-,-,SELA-P(PAN	1	SA	
P0051	DC63-00698L	COVER-T.C	WB27L1W,ABS,-,-,-,-,SAMCOL/Col	1	SA	
P0051	DC63-00698M	COVER-T.C	WB27L9W,ABS,-,-,-,-,SAMCOL/Col	1	SA	
P0051	DC63-00698S	COVER-T.C	WA14L1WDP/XAX,ABS,-,-,-,-,SEM	1	SA	
P0051	DC63-00698T	COVER-T.C	WA14L2WDP/XAX,ABS,-,-,-,-,SEM,	1	SA	
P0051	DC63-00698U	COVER-T.C	WA14L4WDP/XAX,ABS,-,-,-,-,SEM,	1	SA	
P0051	DC63-00698V	COVER-T.C	WA14L5WDP/XAX,ABS,-,-,-,-,SEM,	1	SA	
P0051	DC63-00698W	COVER-T.C	WA15L4WDP/YCX,-,-,-,-,-,SELA-P	1	SA	
P0051	DC63-00698X	COVER-T.C	WA15L1,ABS,-,-,-,-,SELA-P,NEAT	1	SA	
P0051	DC63-00973D	COVER-T.C	SKIPPY2/WA15L3WDP/XAX,ABS,-,-,	1	SA	

Location. No	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA	Remark
P0051	DC63-00973E	COVER-T.C	SKIPPY2/WA15L6WDP/XAX,ABS,-,-,	1	SA	
P0051	DC63-00973F	COVER-T.C	SKIPPY2/WA15L4GDP/XAX,ABS,-,-,	1	SA	
P0051	DC63-00973G	COVER-T.C	SKIPPY2/WA15L5GDP/XAX,ABS,-,-,	1	SA	
P0051	DC63-00973H	COVER-T.C	SKIPPY2/WA17L9GDP/XAX,ABS,-,-,	1	SA	
P0051	DC63-00973J	COVER-T.C	SKIPPY2/WA15L3WDP/XAP,ABS,-,-,	1	SA	
P0051	DC63-00973K	COVER-T.C	SKIPPY2/WA15L3WDP/YCX,ABS,-,-,	1	SA	
P0051	DC63-00973L	COVER-T.C	SKIPPY2/WA15L4GDP/XAP,ABS,-,-,	1	SA	
P0051	DC63-00973M	COVER-T.C	SKIPPY2/WA15L4GDP/YCX,ABS,-,-,	1	SA	
P0051	DC63-00973N	COVER-T.C	SKIPPY2: WA17L9GDP/XAP,ABS,-,-	1	SA	
P0053	DC63-00074C	COVER-TOP	WA14H6Q3DW/XAX,ABS,N	1	SA	
P0062	DC61-20225E	DOOR LID-T.C	WA14H6Q3DW/XAX,SECC,T1.0,-,	1	SA	
P0062	DC64-01135A	DOOR LID-T.C	WA14H1,ABS,-,-,-,NEAT-WHT	1	SA	
P0062	DC64-01764A	DOOR LID-T.C	WA14L4W,ABS,T2.8,-,-,NEAT	1	SA	
P0075	DC61-20224A	HINGE-DOOR(L)	ABS,SW90K1SP	1	SA	
P0079	DC62-10306A	HOSE-RINSE	EPDM,BLK,SW90K1SP	2	SNA	
P0115	DC34-00001G	SWITCH REED	DC5V,1.5A,L370/OKI/OR	1	SA	
W0004	DC96-01165C	ASSY M. WIRE HARNESS	NEW-SKIPPY,-,H+C+	1	SA	
P0018	DC97-10575A	ASSY LID T.C	WA14H1,-,-,-,NEAT-WHT/SEM	1	SA	
P0018	DC97-10575B	ASSY LID T.C	WA15L4,-,-,-,NEAT-WHT/SEM	1	SA	
P0018	DC97-15380B	ASSY LID T.C	SKIPPY2,WA14L6W,ABS+POM+SCR	1	SA	

7-2. ASSY-TUB

U0131

U0225

U0076

U0345

S0033

S0058

S0050

F0045

S0030

R0009

I0043

P0082

I0046

U0085

U0371

U0195

U0344

U0343

U0075

U0334

U0136

W0001
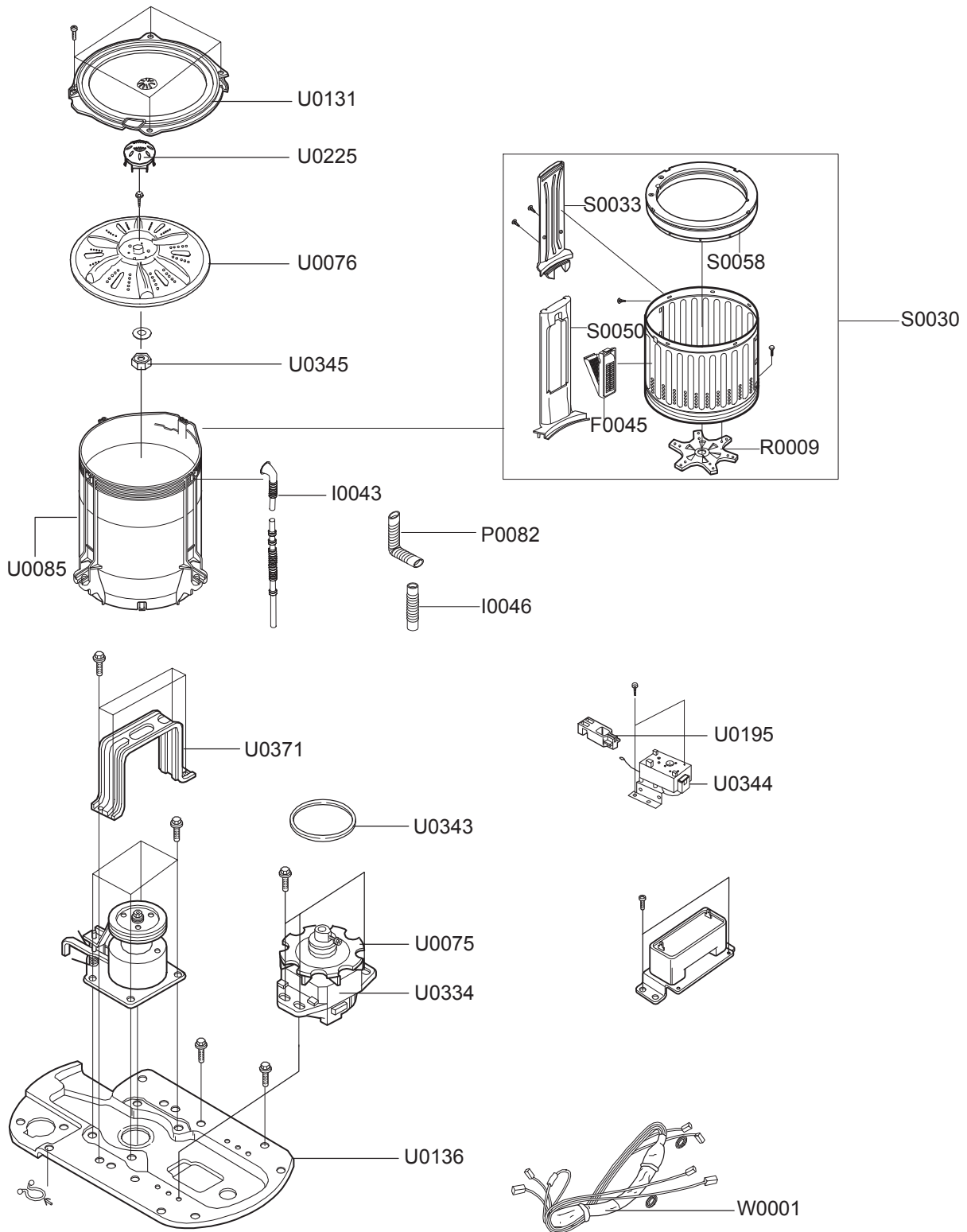
Location. No	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA	Remark
F0045	DC97-00252J	ASSY-FILTER	WA11RAS3EG/XST,SAVOY-BLUE,-,	1	SA	
F0045	DC97-09928C	ASSY-FILTER	Q2,SVC/2LEGS,-,-	1	SA	
I0043	DC62-10272A	HOSE-AIR	PVC,ID4.5,-,-,L610,NTR,SEW-10	1	SNA	
I0046	DC62-00092A	HOSE-DRAIN	SW85ASP,EPDM,L287,BLK,H	1	SA	
R0009	DC66-40167C	FLANGE-SHAFT	WA13V2QMDW/XAX,ALDC8,	1	SNA	
S0030	DC97-15272A	ASSY-BASKET SPIN	WA17R3(12KG),MAGIC(1)/F	1	SA	
S0030	DC97-15272B	ASSY-BASKET SPIN	WA15R3(10KG),MAGIC(1)/F	1	SA	
S0030	DC97-05443X	ASSY-BASKET SPIN	WA17XPM,DIAMOND DRUM/MA	1	SA	
S0030	DC97-05443Y	ASSY-BASKET SPIN	WA15X7R,DIAMOND DRUM/MA	1	SA	
S0033	DC97-05763D	ASSY-GUIDE W.F	WA17XPM,-,FALL-TYPE,-,-,K	1	SA	
S0050	DC61-00861C	GUIDE-W.F(M)	WA17XPM,PP,-,-,-,KTL GRY,M-	1	SA	
S0049	DC61-00862C	GUIDE-W.F(F)	WA17XPM,PP,-,-,-,KTL GRY,FA	1	SNA	
S0058	DC97-00526H	ASSY-BALANCER	WA15X7R,KTL-GRY/OMEGA BALA	1	SA	
S0058	DC97-01806C	ASSY-BALANCER	WA17XPM,KTL-GRY/WIDE BALAN	1	SA	
U0075	DC90-11070J	ASSY-PULLEY MOTOR	SEW-100,O.P=64.25(50HZ	1	SA	
U0076	DC97-06130E	ASSY-PULSATOR	TORNADO,KTM-GRY,-,-,-,-	1	SA	
U0131	DC61-10670H	COVER-TUB	WA15X7R,PP(TB53),-,-,-,-,KTL	1	SA	
U0131	DC63-00251C	COVER-TUB	WA17XPM,PP(TB53),-,-,-,-,KTL	1	SA	
U0136	DC61-70061E	DIE-MOTOR	WA13V2QMDW/XAX,SBHG1,SEM	1	SA	
U0195	DC66-30024A	LINK-DRAIN	PP,L66.5,SEW-PB10	1	SA	
U0225	DC66-00349B	PULSATOR-CAP	WA12RAN3IS/YFQ,ABS,SAVOY BL	1	SA	
U0085	DC97-08071D	ASSY TUB OUTER	10 KG MODELS,PW70 / SEM,-	1	SA	
U0334	DC31-00058B	MOTOR INDUCTION-WASHING	SEW-G100,WAS360Z	1	SNA	
U0334	DC31-10026J	MOTOR INDUCTION-WASHING	PWS360WSEA,50(	1	SNA	
U0343	DC66-10142A	BELT-V	STATIC,M22,SEW-60FX	1	SA	
U0343	DC66-10170B	BELT-V	SEW-950,RUBBER,-,-,L541.5,-,-,M21	1	SA	
U0344	DC31-20014C	MOTOR DRAIN	SWD-118,120,60,-,-,-	1	SA	
U0345	DC60-50004A	NUT-SPIN	ZNDC1,M24,L14,CW	1	SA	
U0371	DC61-40054C	SUPPORT-SADDLE	SBHG-A,T1.2,SEM/CKD	1	SA	
W0001	DC96-00572H	ASSY-WIRE HARNESS	WA17XPM,-,SUB/PUMP/C	1	SA	
P0082	DC62-10291B	HOSE-PUMP	WSLS1100A,EPDM,ID30.5,OD36.5	1	SA	
P0082	DC67-00356A	HOSE-PUMP	SEM,PP,ID20.5,OD24.13,-,L1500,	1	SA	

7-3. ASSY-CASE

U0061

A0086

A0282

I0039

I0040

I0040

B0072

B0073

B0044

B0070
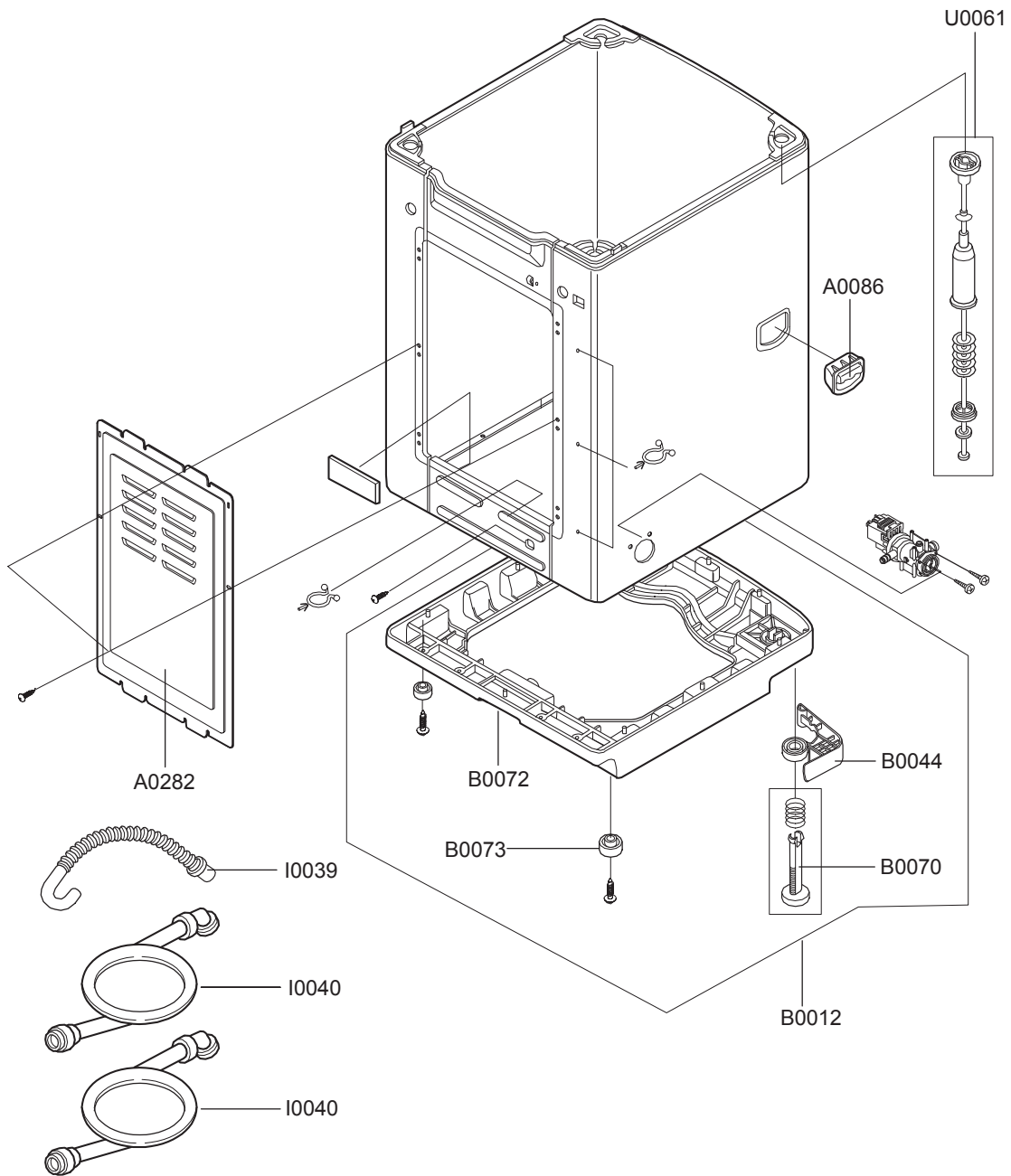
B0012

Location. No	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA	Remark
A0086	DC64-01083C	HANDLE	POSEIDON-BIG(ASIA),PP,-,-,-,-,NEA	2	SA	
A0282	DC61-10571B	COVER-BACK	SBHG1-A,-,-,-,-,-,EDGE-BEND	1	SA	
B0012	DC97-00287K	ASSY-BASE	WA15X7R(X100),PUMP/10kg/LOW	1	SA	
B0012	DC97-00287L	ASSY-BASE	WA17XPM(X100),PUMP/12kg/HIGH	1	SA	
B0044	DC61-50164B	LEG-LEVER	POSEIDON-MAX,PP,-,KT GRY,-,-	2	SA	
B0070	DC91-11795D	ASSY-LEG	SEW-D107,RUBBER-LEG+ADJUST	2	SA	
B0072	DC61-30330B	BASE	WA15X7R,PP, KT GRY,10kg/LOW/PU	1	SA	
B0072	DC61-30333B	BASE	WA17XPM,PP, KT GRY,12kg/HIGH/P	1	SA	
B0073	DC61-50166A	LEG-RUBBER	BUTYL,10/12KG,D41(FRONT)	2	SNA	
B0073	DC61-50167A	LEG-RUBBER	BUTYL,10KG/12KG,D29(BACK)	2	SA	
I0003	DC62-10289B	HOSE-WATER(C)	WIP4013SRW,PVC+NYLON,ID10.	1	SA	
I0039	DC97-00139Z	ASSY-HOSE DRAIN(O)	SEM-MODELS,SEM,PUMP-T	1	SA	
U0061	DC97-05280C	ASSY-DAMPER	GENERAL,FRONT/SPRING_DAMPER	2	SA	
U0061	DC97-05280D	ASSY-DAMPER	GENERAL,REAR/SPRING_DAMPER,-	2	SA	

8. PARTS LIST (SA)

-You can search for updated part codes through ITSELF web site.
 URL : http://itself.sec.samsung.co.kr/

Location. No	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	SA/SNA	Remark
J0013	DC96-01113A	ASSY-PUMP DRAIN	WA17R3Q3AW/YCX,-,-,110-1	1	SA	
J0013	DC96-01113G	ASSY-PUMP DRAIN	WA17R3Q3DW/XAX,-,-,110-1	1	SA	
P0010	DC97-07779G	ASSY-SEMI COVER TOP	WA17L9/NEW SKIPPY,	1	SNA	
P0010	DC97-07779L	ASSY-SEMI COVER TOP	SKIPPY2,GLASS DOOR M	1	SNA	
P0036	DC67-00080J	CAP-RINSE	SEW-3G100A,ABS,PEACOCK/G	1	SA	
P0148	DC61-60384A	GUIDE-WATER	SEW-V12,SHV-945EG1(KEC),	1	SNA	
R0160	DC61-70029A	SPRING-CLIP	HSWR67,-,ID7.5,OD9.9,-,-,-	1	SA	
S0040	DC61-00974C	BASKET-BOWL	WA17XPM,PP,-,-,KTL GRY,-	1	SNA	
U0161	DC61-01151A	GUIDE-WIRE	SEW-3G100A,ABS(5VA),-,-,-,-,P	1	SA	
U0342	DC75-00010F	CONDENSER-M.F	UP25B456JSF,-,-,-,-,W35,L1	1	SA	
U0342	DC75-00010H	CONDENSER-M.F	UP25B606JSF,-,-,-,-,W35,L1	1	SA	
U0358	DC97-04458C	ASSY-SCREW	SEW-3G100A,-,-,D_TYPE/L20/N	4	SNA	
U0358	DC91-11258U	ASSY-SCREW	MOTOR(COAT,-,M8*30FE/FZY(	4	SNA	
W0002	DC96-00038B	ASSY POWER CORD	125V/10A,W752P,1500	1	SA	
W0002	DC90-10079A	ASSY POWER CORD	EP2,125V/12A,-,1500	1	SA	

Memo

9. BLOCK DIAGRAM

Memo

DC68-02351A

PCB [10KEY] NEW SKIPPY

BLK:BLACK, YEL:YELLOW, WHT:WHITE
GRN:GREEN, VIO:VIOLET, ORG:ORANGE
BLU:BLUE, PNK:PINK
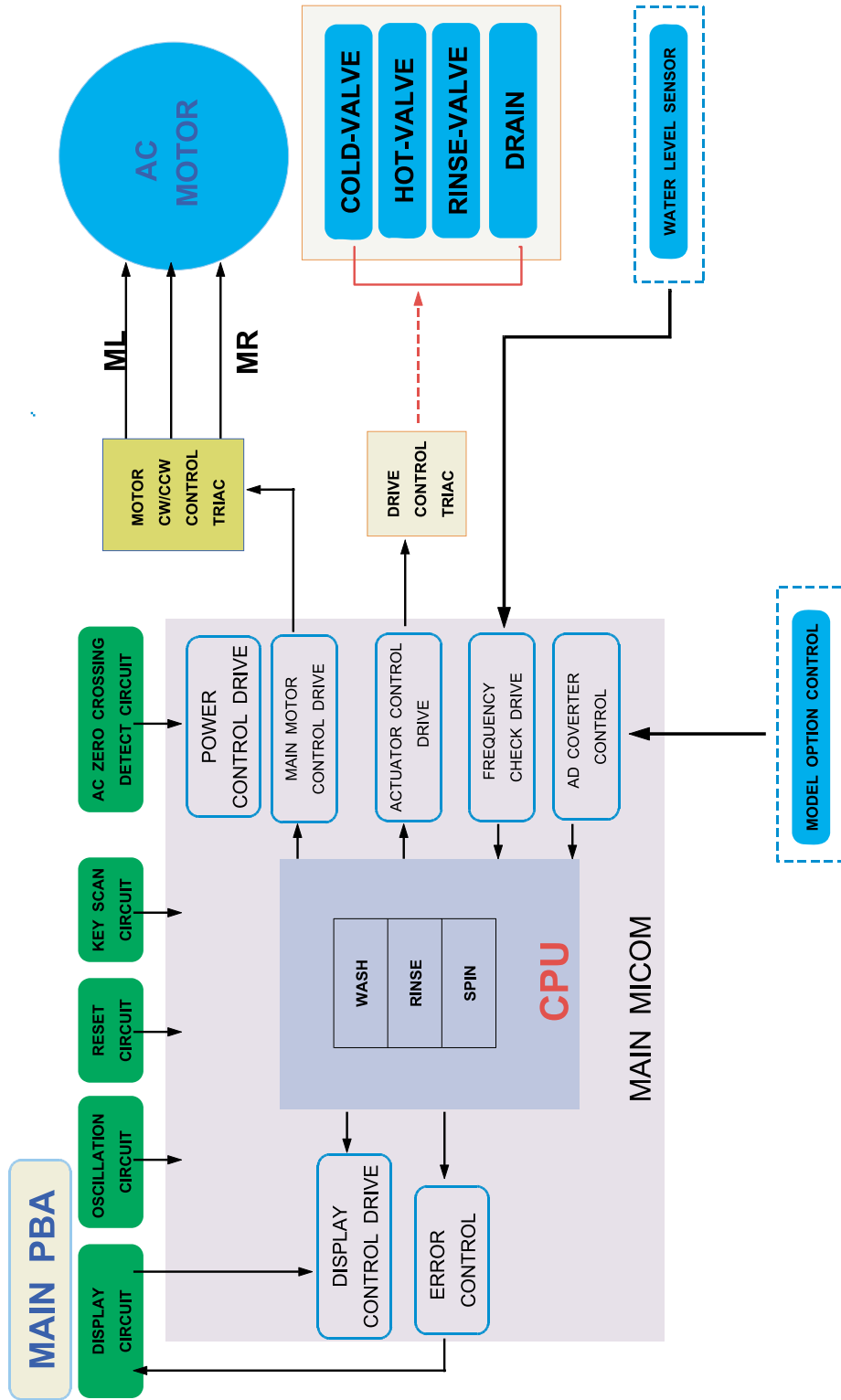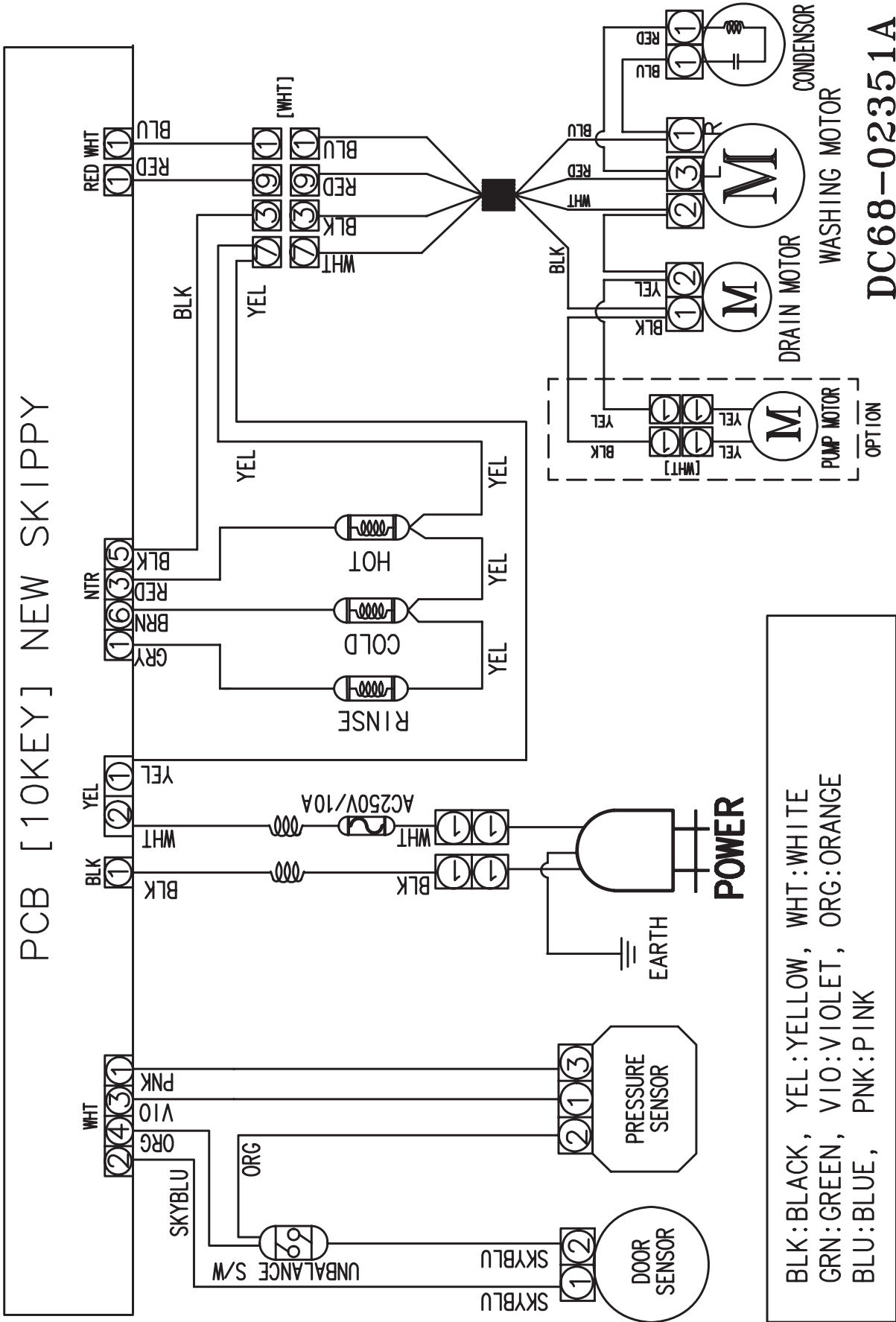
Memo

11. PCB DIAGRAM

11-1. MAIN PCB
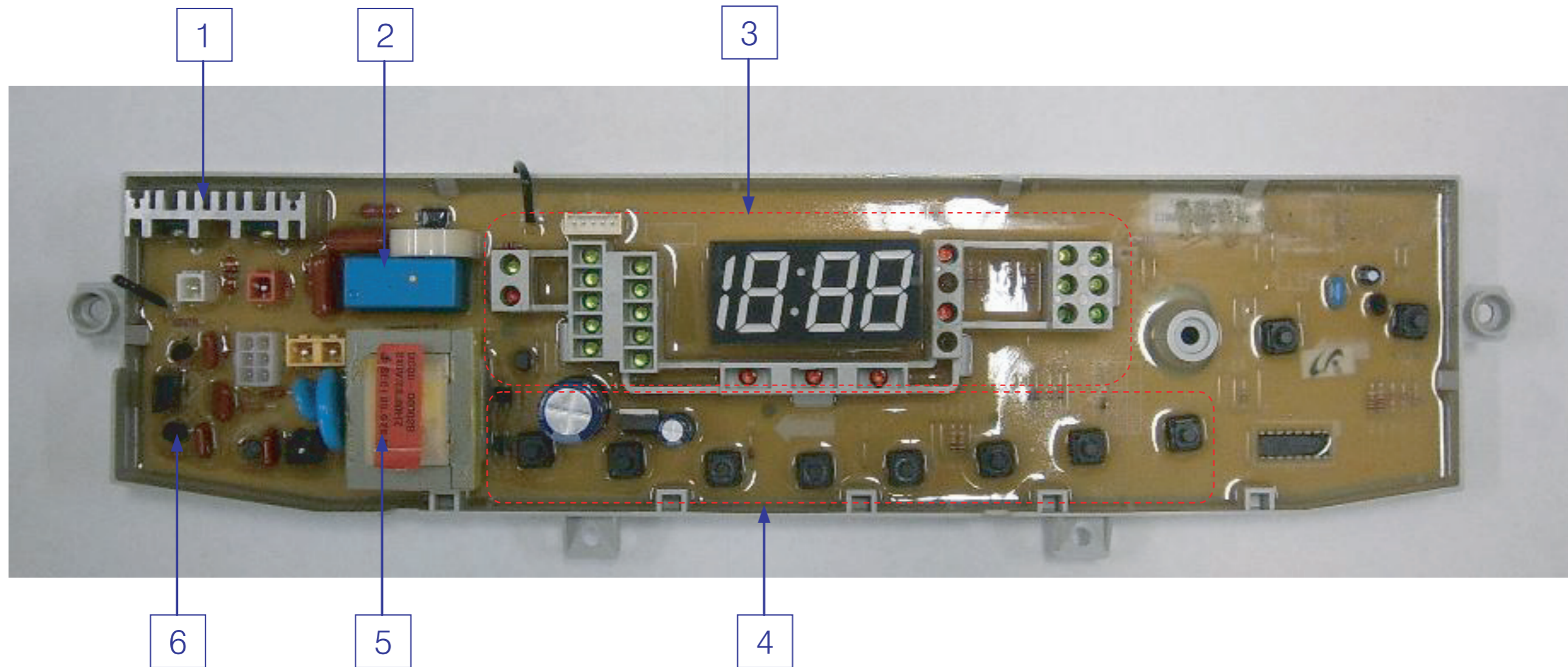
Item	Part Name	Description
1	Motor Driving System	Controls the CW & CCW motor operation.
2	Power Relay	Supplies/disconnects power when the power is turned on/off.
3	Display System	Displays the function of the operation.
4	Key input System	Activates operations depending on the user's keystroke.
5	LVT	Supplies power.
6	Valve Driving System	Controls the operation (On/Off) of the valve.

CN6 Component
1. Connected to water level senser (WL_1)
2. Connected to door checker (DOOR UNB)
3. Connected to water level senser (WL)
4. Connected to the ground (GND)
5. Connected to 5V (5V)

CN1 Component
Connected to Motor MR

CN3 Component
Connected to Motor ML

CN2 Component
1. Connected to hot valve (H/W)
3. Connected to rinse valve (RINSE)
4/5. Connected to drain motor (DRAIN)
6. Connected to cold valve (COLD)

CN5 Component
1. Connected to AC power
2. Connected to AC common

CN4 Component
Connected to AC power

12. SCHEMATIC DIAGRAMS

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

Memo
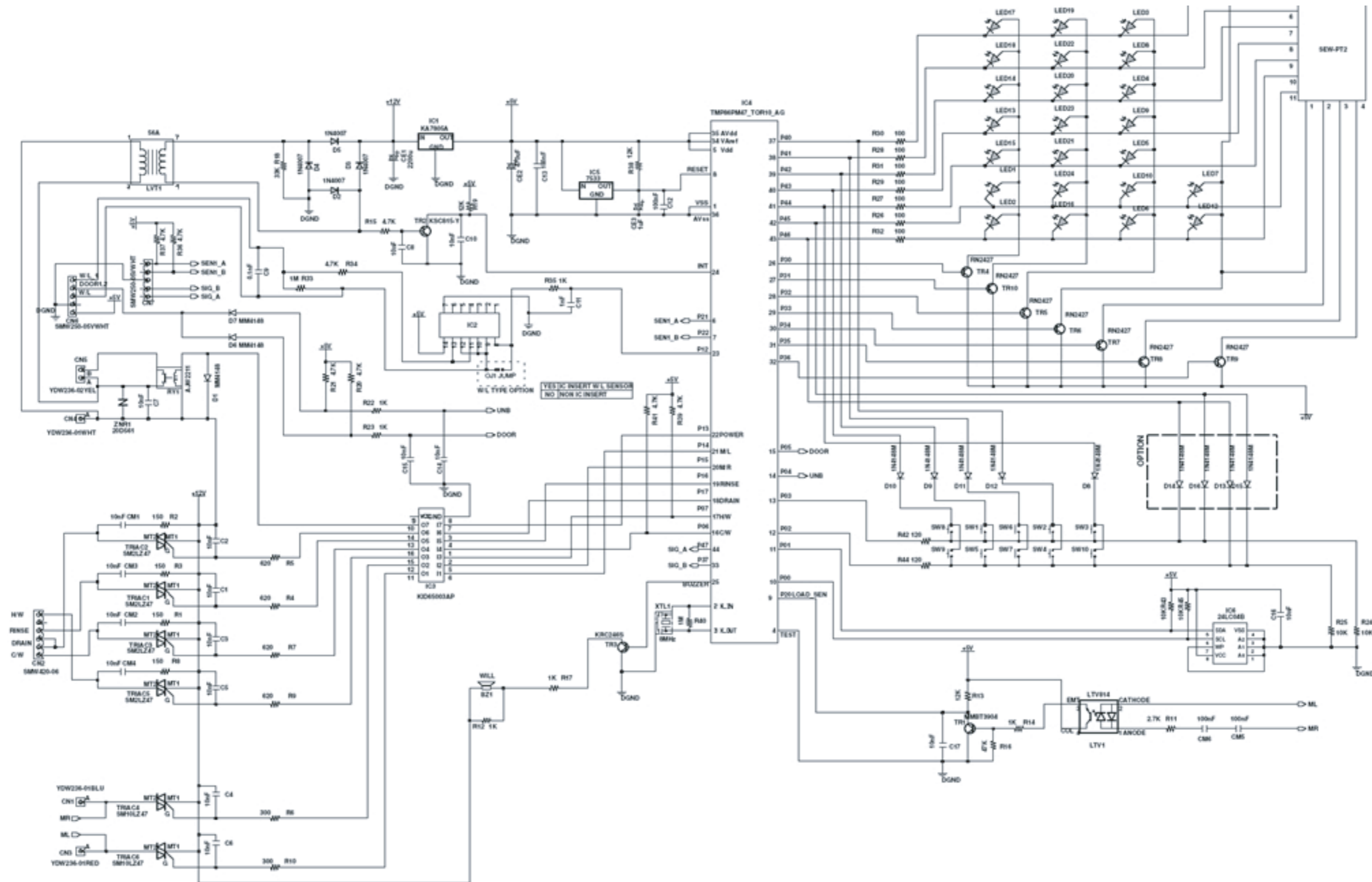
13. CIRCUIT DESCRIPTIONS

13-1. OVERALL SYSTEM DIAGRAM

PCB [10KEY] NEW SKIPPY

DC68-02351A

BLK:BLACK, YEL:YELLOW, WHT:WHITE
GRN:GREEN, VIO:VIOLET, ORG:ORANGE
BLU:BLUE, PNK:PINK
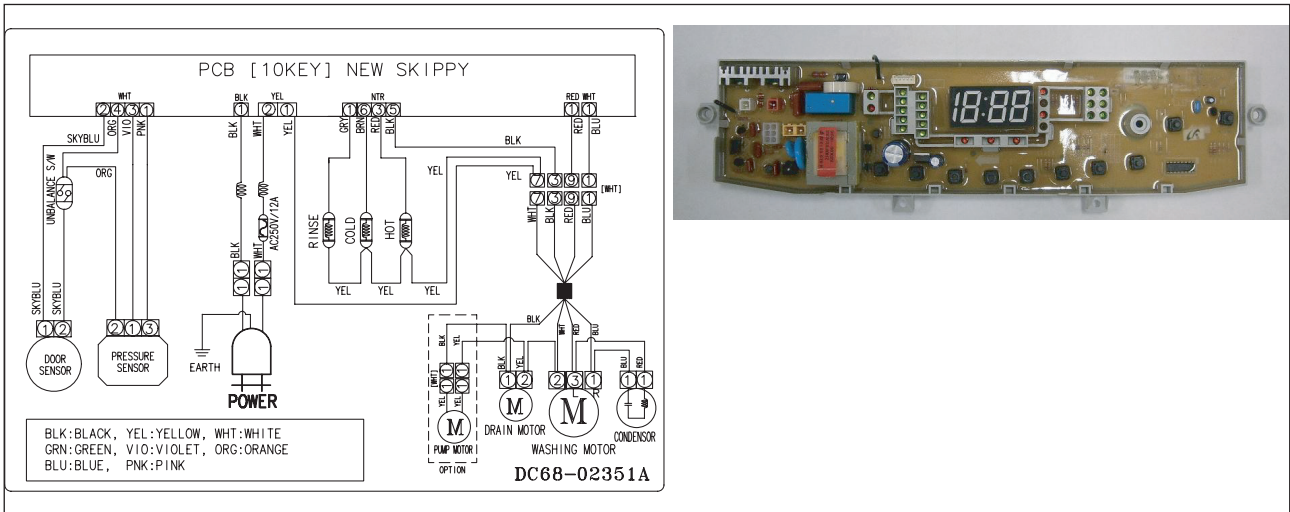
13-2. AC INPUT & POWER CIRCUIT
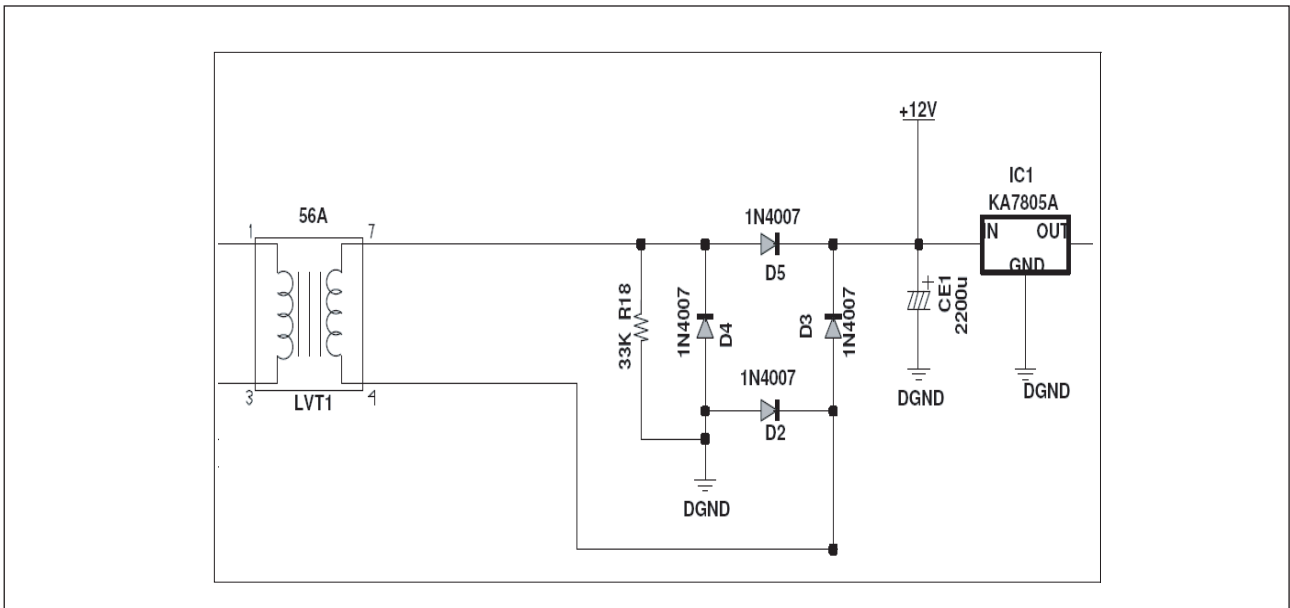
Description

Generates and supplies 12V or 5V, required respectively for the AC power supply or disconnection.

Operation

- The AC Power 120V (or 220-240V used at any country) applied to the primary transistor will be transformed into AC12V for the secondary transistor.
- The AC 12V is converted into DC 12V by D2~ D5.
- DC 12V is transformed into DC 5V on 7805.

13-3. DRILLING SYSTEM CIRCUIT
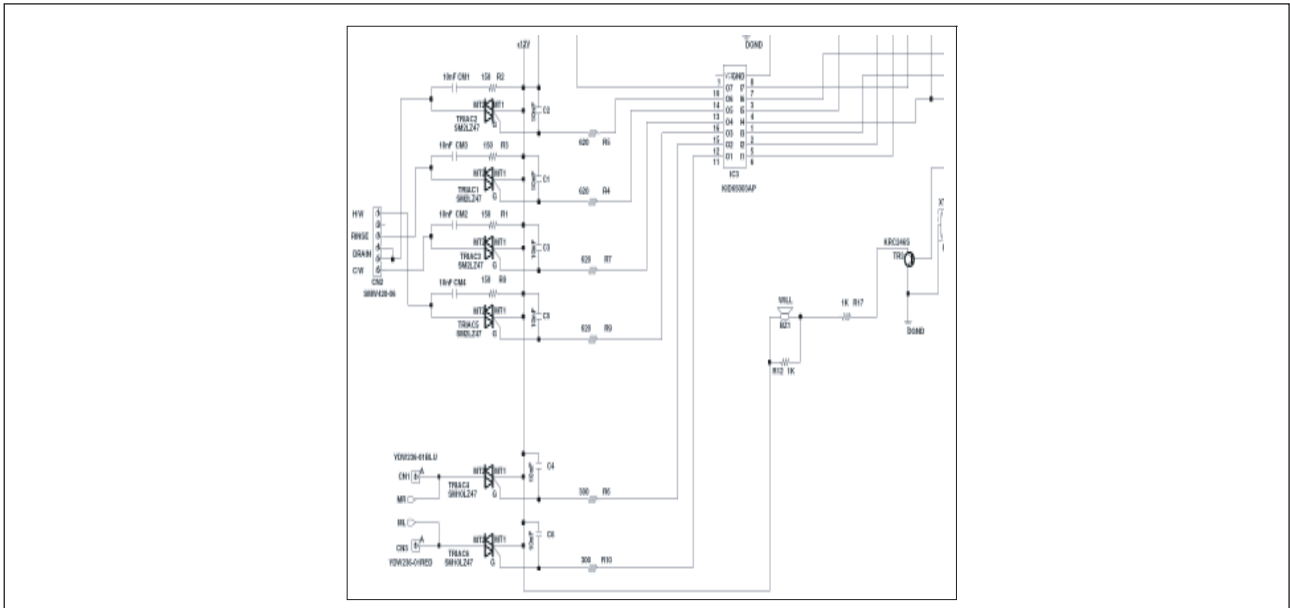
Description

Controls all driving components (Valve, Drain motor, etc) by turning on/off the TRIAC of each system.

Operation
- MICOM outputs a high signal of 5V on pins #1~7 of IC3.
- Then pins #10~16 of IC3 will be grounded (0V).
- Once pins #10~16 of IC3 are grounded, TRIAC 1, 2, 3, 4, 5 and 6 turn on due to the electric potential difference to the 12V.
- Power is applied to the electric components (MOTOR, VALVE, and DRAIN MOTOR) connected to CN9 and the operation starts.
- If PWM signal is applied to the BASE of TR3, BZ1 starts to operate due to the electric potential difference between the 12V and DGND. The operating sound of BZ1 changes according as the DUTY of PWM changes.

13-4. SENSOR CIRCUIT
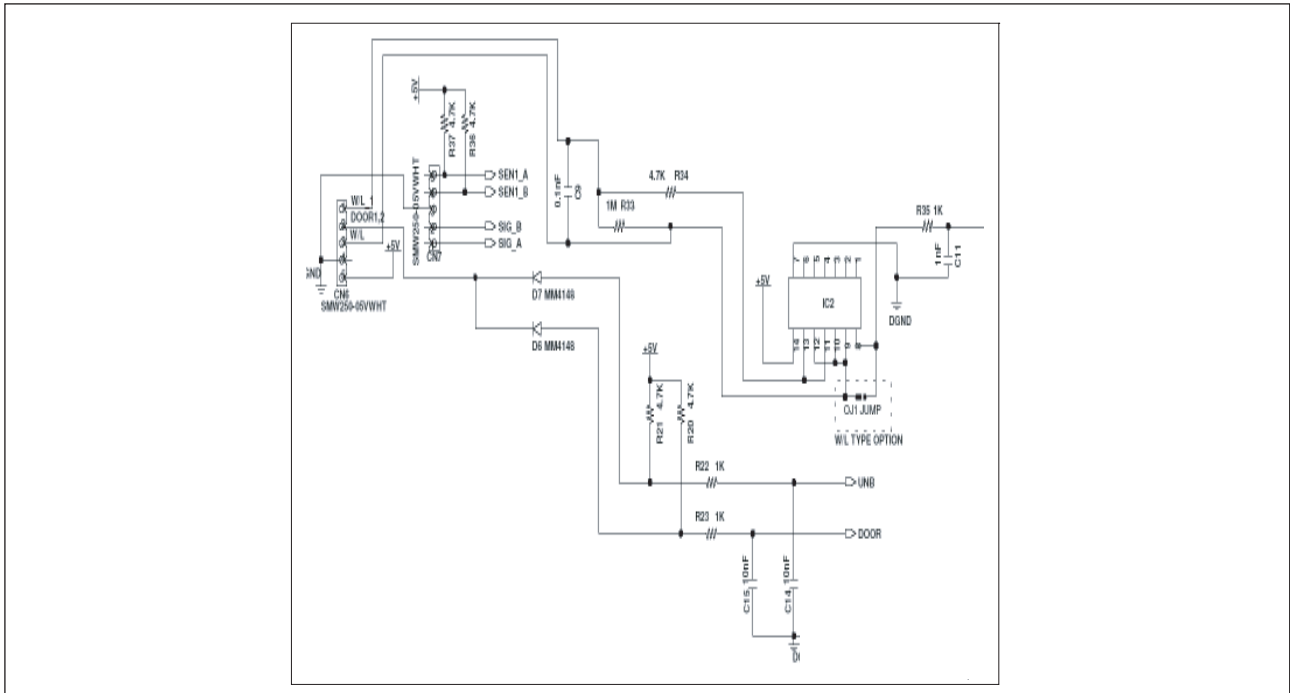
Description

Receives signals from each electric components and controls the operation.

Operation
- The water level sensor is connected to W/L, W/L-1 of CN6.
- Certain bands of the frquency from the water level sensor is input to IC2, depending on the water level.
- The water level frequency, through IC2, is transformed into a square wave before being input to MICOM 23.
- Door magnetic senser is installed at the top cover to check if the door is open : If the door is closed, 0V is applied to pins # 14 and 15 on MICOM and 5V to a open door.

Memo

14. REFERENCE INFORMATION

14-1. TERMINOLOGY

1) ASSY-MAIN PCB (Imbalance Sensor)
  → To prevent the laundry from gathering on one side of the tube causing noise and vibration, the washing machine uses an imbalance detection device that evenly disentangles the laundry before the hydrating cycle starts.

2) DOOR-LOCK S/W
  → Prevents the door from being opened while a cycle is in progress. For safety purposes, it keeps the door locked even in pause mode or after the washing cycle unless the water level frequency is greater than 24.8Khz (anti-overflow level) or the inside-tube temperature is less than 65℃ in the hydrating cycle, and 55℃ in the washing cycle.

3) SENSOR-PRESSURE (Anti Over-Flow)
  → When the water supplied is more than 2/3 of the tube capacity due to a malfunction of the water supply valve, this device automatically starts water-draining and displays "OVER-FLOW ERROR(E3)" on the LED.

4) THERMISTOR
  → Keeps sensoring and controlling the temperature inside the tube to keep it below your settings.

5) ASSY-THERMAL FUSE (Anti Over-Heat)
  → When the washing heater is overheated due to an error in the thermistor or any other malfunction, the assy-thermal fuse (built in the heater) is automatically activated to discon nect the power for your and the product's safety.

6) ASSY-MAIN PCB (Sensitive Laundry Protection)
  → To avoid any damage to sensitive laundry, the tube temperature is detected and "ERROR(E8)" is displayed on the LED for Wool or Lingerie courses when the temperature is over 50℃.

7) THERMOSTAT (Anti Over-Heat)
  → When the heater (drier) overheats from an error in the thermistor or any other malfunction, the thermostat (installed on the drying duct) is automatically activated to disconnect the power for your or product's safety

8) CHILD LOCK
  → Prevents children from playing with the washing machine.

9) PRE-WASH
  → The machine does a preliminary wash of about 10 minutes prior to the main wash. This is particularly effective for cleaning badly stained laundry.

10) WEIGHT SENSOR
  → The tube automatically rotates when no water is supplied to detect the laundry weight so that the proper wash time can be determined. (Standard, Boiling, Economy Boil and Dirt courses and Toweling and Drying cycles)

14-2. FABRIC CARE CHART

Resistant material	
Delicate fabric	
Item may be washed at 95°C	
Item may be washed at 60°C	
Item may be washed at 40°C	
Item may be washed at 30°C	
Item may be hand washed	
Dry clean only	
Can be bleached in cold water	
Do not bleach	
Can be ironed at 200°C max	
Can be ironed at 150°C max	

Can be ironed at 100°C max

Do not iron

Can be dry cleaned using any solvent

Dry clean with perchloride, lighter fuel, pure alcohol or R113 only

Dry clean with aviation fuel, pure alcohol or R113 only

Do not dry clean

Dry flat

Can be hung to dry

Dry on clothes hanger

Tumble dry, normal heat

Tumble dry, reduced heat

Do not tumble dry

14-3. ELECTRICAL WARNINGS

To reduce the risk of fire, electrical shock, and other injuries, keep these safety precautions in mind:

- Operate the appliance only from the type of power source indicated on the marking label.
  If you are not sure of the type of power supplied to your home, consult your appliance dealer or local power company.

- Use only a grounded or polarized outlet. For your safety, this appliance is equipped with a polarized alternating current line plug having one blade wider than the other.
  This plug will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still doesn't fit, contact your electrician to replace your outlet.

- Protect the power cord. Power supply cords should be routed so that they are unlikely to be walked on or pinched by items placed on or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

- Do not overload the wall outlet or extension cords. Overloading can result in fire or electric shock.

14-4. Q & A

Q1. What are the main features of this product?
  - RUST-PROOF FIBER BODY
    Made of durable material with rust-proof fiber body, it can endure humidity for an extended time.
  -TRANSPARENT WINDOW
    This Transparent Window is the new concept to solve the curiosity of users to see inside of
    washing machine while operation. While operation, the laundry progress inside of washing machine
    can be checked by looking through the transparent window.
  -TORNADO PULSATOR
    The Pulsator helps water and detergent to go through fabrics efficiently   while providing both the
    powerful water action to clean larger and heavier clothes and   the gentle water action to clean
    all delicates with less wear and tear on clothes.
  -MAGIC FILTER
    This unique magic Filter ensures that all the lint inside the tub is captured for top quality filtering
    results to deliver consistently effective cleaning results.
  - CAS SYSTEM (i control system)
  - Child Lock Function
    This is a device to protect children from being accidentally hurt while playing with the washer.
  - Auto Restart
    The power is turned on automatically after power failure.
  - Saving Energy
    The Eco+ course, it is a wash course to saving the energy reduces laundry time for frequent and
    soiled clothes.
  - SUPER CLEAN
    Use for clean washing.¥ Water is supplied to moderate level and then five times more while
     washing.

Q2. What is the function of the "Wash+" button?
    It is available when the option "Wash+Rinse+Spin" is selected. It will add another five minutes to
    the original washing time.

Q3. What is the maximum number of rinses allowed?
    Maximum of 5.

Q4. What is the function of the cas system?
  -CAS SYSTEM (i control system)
  - Child Lock Function
  - Auto Restart
    The power is turned on automatically after power failure.
  - Saving Energy
    The Eco+ course, it is a wash course to saving the energy reduces laundry time for frequent and
    soiled clothes.
Q5. What is the function of the super clean?
  - SUPER CLEAN
  - Use for clean washing.
  - Water is supplied to moderate level and then five times more while washing.

Q6. What is the child lock?

Child-Lock function

This is a device to protect children from being accidentally hurt while playing with the washer.

- How to start the Child-Lock function:
- Press the "Power" button to go to an initial washing mode.
- By pressing "Start/Hold" button, you start washing and in case Child Lock function is needed during the laundry
- Press both the "Water level" and "Function" buttons at the same times.

(Note: You cannot perform the function without the "Power" button on.)

- In the event that you would like to modify the Child-Lock function, "L" signal flashes in the "signal window showing the rest of the set time" every two seconds, which means it is locked and indicates how much time is left until the function is released.
- To release the function of Child-Lock:
- In case the "Child-Lock" is programmed, press both the "Function" and "Water level" buttons at the same time.

Q7. Is spinning duration selectable?

Spinning duration is set in minutes. From one to seven minutes, customers are free to select the duration most suited for the washing according to type and weight.

Q8. What is the limit for setting delay start time for the "Delay Start" duration?

Delay start time is set in hours. The choice is in the range of 3 to 18 hours.

Q9. Is there an inlet for bleaching agent and rinsing agent?

Yes.

- The Softener Dispenser releases the fabric softener at the appropriate time when the last rinsing proceeds.

Q10. What kind of filter is used in this product?

This product uses the Magic filter.

- This unique magic Filter ensures that all the lint inside the tub is captured for top quality filtering results to deliver consistently effective cleaning results.