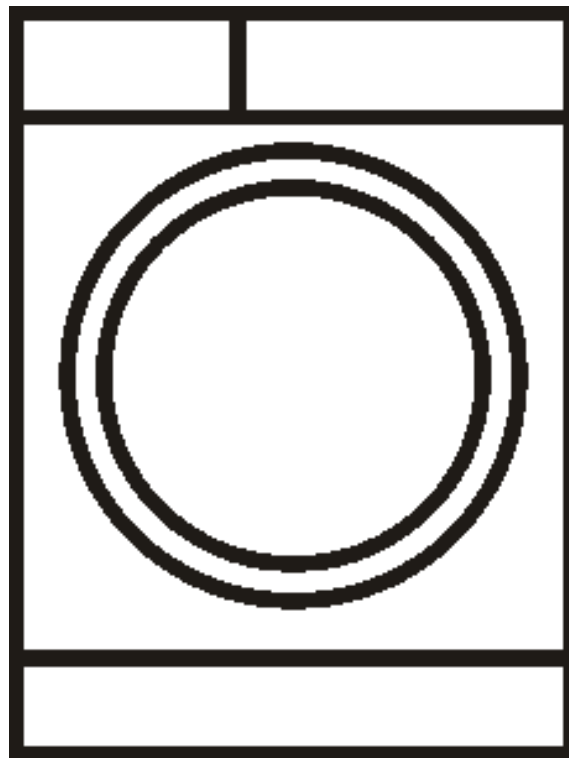


Washing Machine
Model:N09

Service Manual



Note:

**Before service the unit, please read this manual first.
Contact with your service center if meet problem**

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1 PRECAUTION	-----3
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When performing troubleshooting and part replacement during servicing, note the following safety precautions:

1.1 Safety Precautions

1.1.1 Use Genuine Parts

The components of the washing machine have safety features such as non-combustibility and voltage with standing. Therefore, always use the same part as suggested by the maker. In particular be sure to use only designated parts in case of major safety parts identified by the marker.

1.1.2 Grounding

Connect the grounding wire to the shell plate, and bury it under at least 25cm of earth: alternatively, connect the ground wire to the appropriate pin on a properly grounded power receptacle. Never connect the wire to a telephone line, lightning rod, or gas pipe.

1.2 Servicing Precautions

1.2.1 Observe Warnings

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

1.2.2 Parts Assembly and Wiring

Be sure to use insulation material (such as tube and tape). And be sure to restore all parts and wires to their original position. Take special care to avoid contact with sharp edges.

1.2.3 Perform Safety Checks after Servicing

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

1.2.4 Insulation Checks



Pull out the plug from the power receptacle, pour water into the spin tub, and then set the timer.

Check to see that the resistance insulation between the terminals of the plug and the externally exposed metal is greater than 1M.




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




1.3 CAUTIONS FOR SAFETY

- Please observe the following notes for safety.
- The symbols indicate as follows.










Symbol	Meaning
 WARNING	Indicates possibility of death or serious injury of a repair technician and a person nearby through the misconducted work , or of a user by a defect of the product after the work performed by the technician.
 CAUTION	Indicates possibility of injury or physical damages* of a repair technician and a person nearby through the misconducted work , or of a user by a defect of the product after the work performed by the technician.

* Means secondary damages of property, furniture , domestic animal and pet.






Symbol	Meaning
 ELECTRIC SHOCK	Indicates a caution (including a warning). Specific instruction is followed by a graphic or characters in or near. Symbol left warns an electric shock.
 DO NOT DISASSEMBLE	Indicates prohibition (act must not be conducted). Specific instruction is followed by a graphic or characters in or near. DO NOT Symbol left warns not to disassemble.
 UNPLUG	Indicates forcing (act must be conducted). Specific instruction is followed by a graphic or characters in or near . Symbol left warns to unplug the power cord.

Symbol	Meaning
 OUT OF CHILD	Advise the customer to keep children out of the work place. Children may be injured with a tool or a disassembled part.
 UNPLUG POWER	Unplug power cord for the work such as disassembling which is not unnecessary to power on . Do not hold the plug by a wet hand. Failing to unplug may cause an electric shock.
 USE REPAIR PARTS	Use the specified repair parts when repairing the product. Otherwise , amalfunction or a defect may occur. Also , a short circuit , ignition or other danger to the customer may occur.

1 PRECAUTION

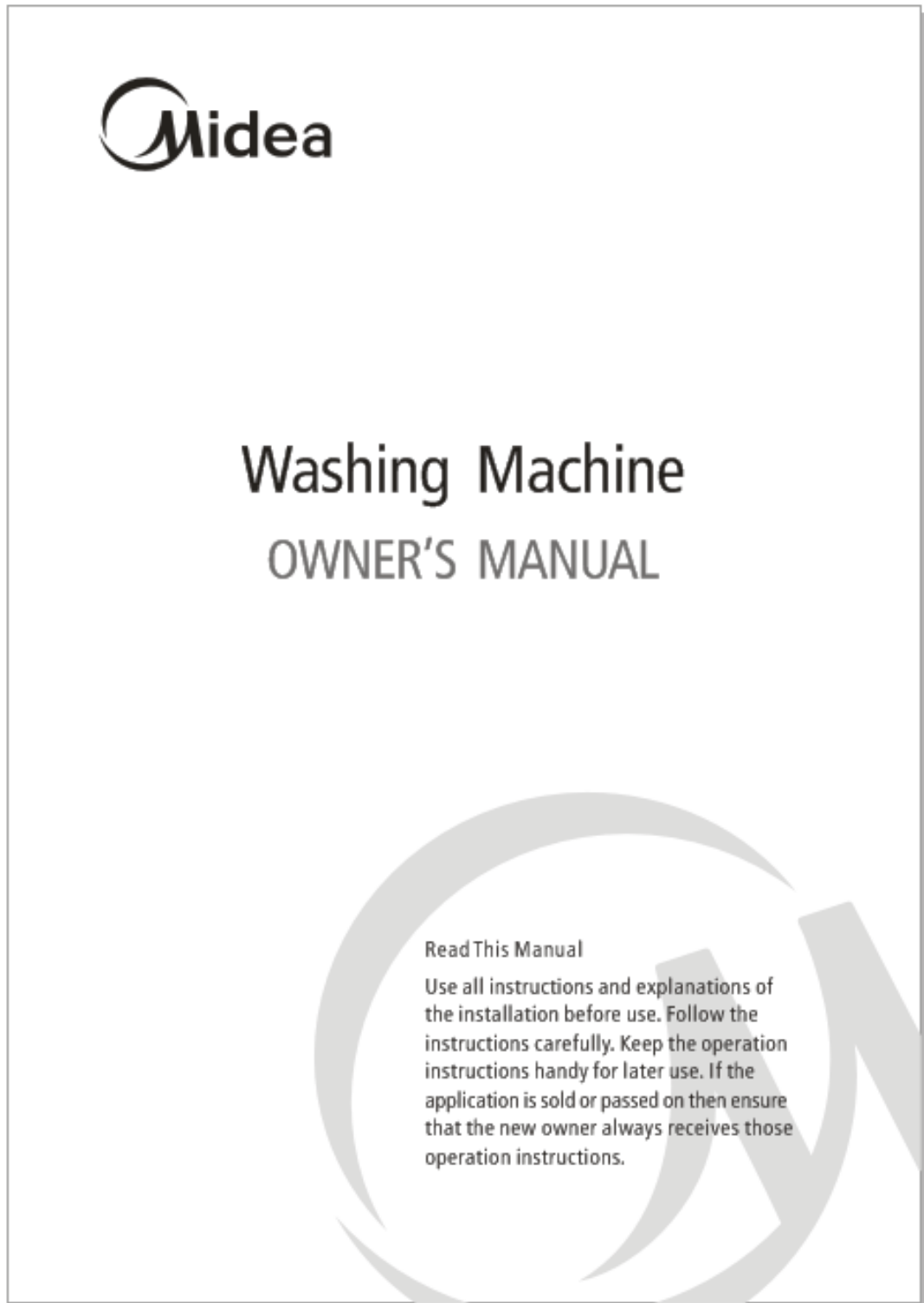
WARNING	
 CHECK INSULATION RESISTANCE	After repair, measure insulation resistance between the charging part(power cord plug) and the non-charging metallic part (ground) with an insulation resistance meter (500V).The resistance shall be 10M or more. Failing to check the insulation resistance may cause a short circuit, electric shock or other diseases to the customer.
 DO NOT MODIF	Do not modify the product. An electric shock or ignition may occur.
 DO NOT MODIFY	Only a repair technician can disassemble and repair. An electric shock, ignition or malfunction may cause injury.
 USE EXCLUSIVE SOCKET	Use an exclusive 110 VAC/15 A socket for the washing machine. Use an exclusive 220VAC/17A socket for the washing machine. Otherwise , an electric shock or ignition may cause. Sharing the same socket with other instrument causes heating of a branch socket and result in a fire.
 CONNECT GROUNDING WIRE	Connect the grounding wire. Failing to do so may cause an electric shock when a short circuit occurs. Consult an electric work shop or a sales shop.
 DO NOT USE WET PLACE	Do not install in a bath room or a place exposed to wind or rain. An electric shock or a short circuit may cause a fire.
 DO NOT SPLASH WATER	Do not pour or immerse electrical parts into water or liquid solution. An electric shock or ignition may occur.
 REMOVE DUST	Wipe off dust adhered to the plug of power cord. Dust may cause a fire.
 AVOID INFLAMMABLE	Do not put inflammable into the washing tub. Do not put cloths stained with kerosene, gasoline, benzene, thinner, alcohol, etc. It may cause a fire or explosion.

1 PRECAUTION

WARNING	
 DO NOT TOUCH	<p>Do not touch the laundry before the spin basket stops completely. The laundry entangles your hand causing an injury even if the basket rotates slowly. Pay special attention to children.</p>
 INSTALL CAREFULLY	<p>Ask an electric work shop to install the product. Install the product securely and safely according to the electrical equipment technical standard and the wiring standard. Incorrect work causes an electric shock and a fire.</p>
 DO NOT PULL	<p>Do not pull the power cord when unplugging. Hold the power plug to unplug. An electric shock or short circuit may cause a fire.</p>
 DANGER HAND	<p>Do not insert your hand under the washing machine during operation. There is a rotary part under the machine which may cause an injury.</p>
 WATER LEAKAGE	<p>Before starting washing, open the faucet and check water supply hose joint which shall not be loosened for no water leaks. The loose screw or hose joint may cause water leakage resulting in an unexpected damage.</p>

NOTE :

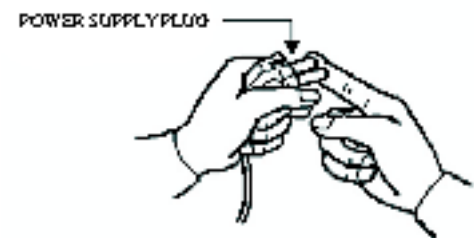
Please check the user manual about the installation , operation , and spec etc.



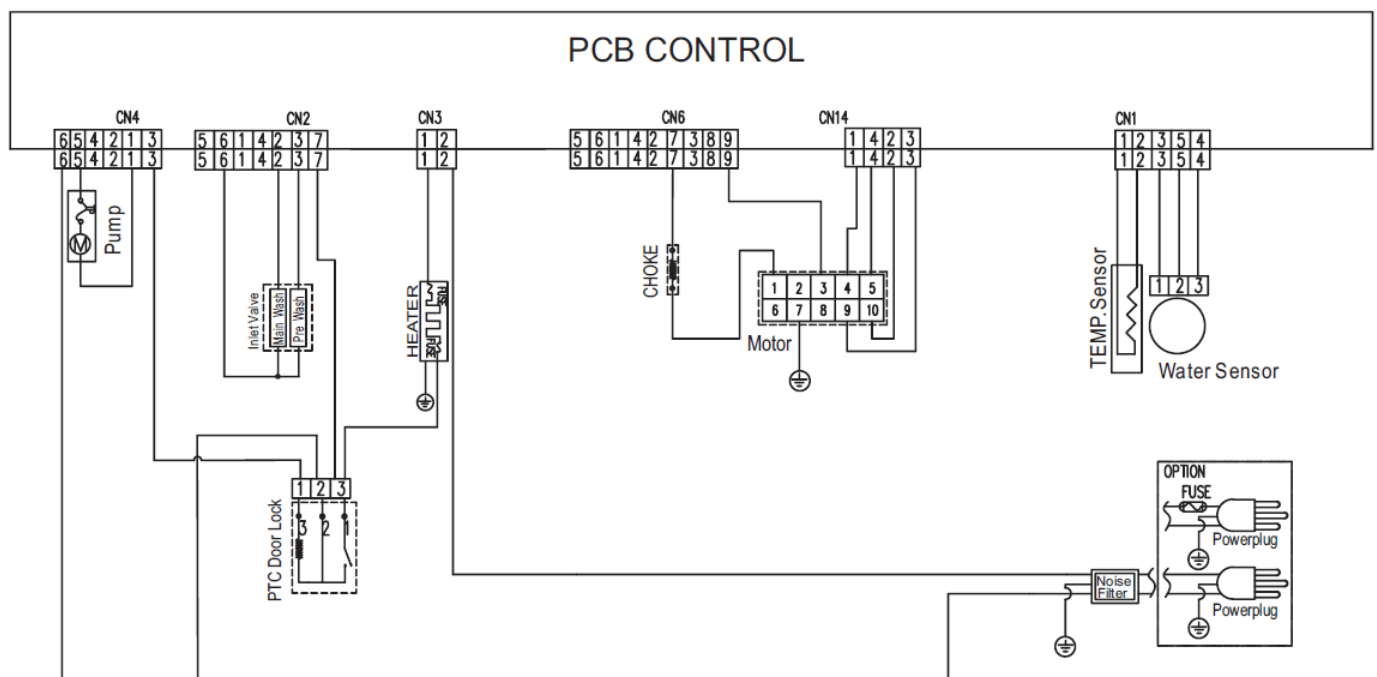
3 WIRING DIAGRAM/PCB LAYOUT

3.1 During the failure diagnosing and changing components, please do it as following:

- 1) There is some static harm to the electrical parts from colophony in the washing machine or humans. So it is better to eliminate the potential static by grounding the humans or touching the plugs.
- 2) The rated voltage of the SCR in PCB is 220-240V, So it's possible to be electrical shock. Please take care while strong and weak electricity is alternative.
- 3) The design of PCB is out of failure, so prohibit to change the PCB panel according to its alarm. Please do it according to the failure diagnose program.



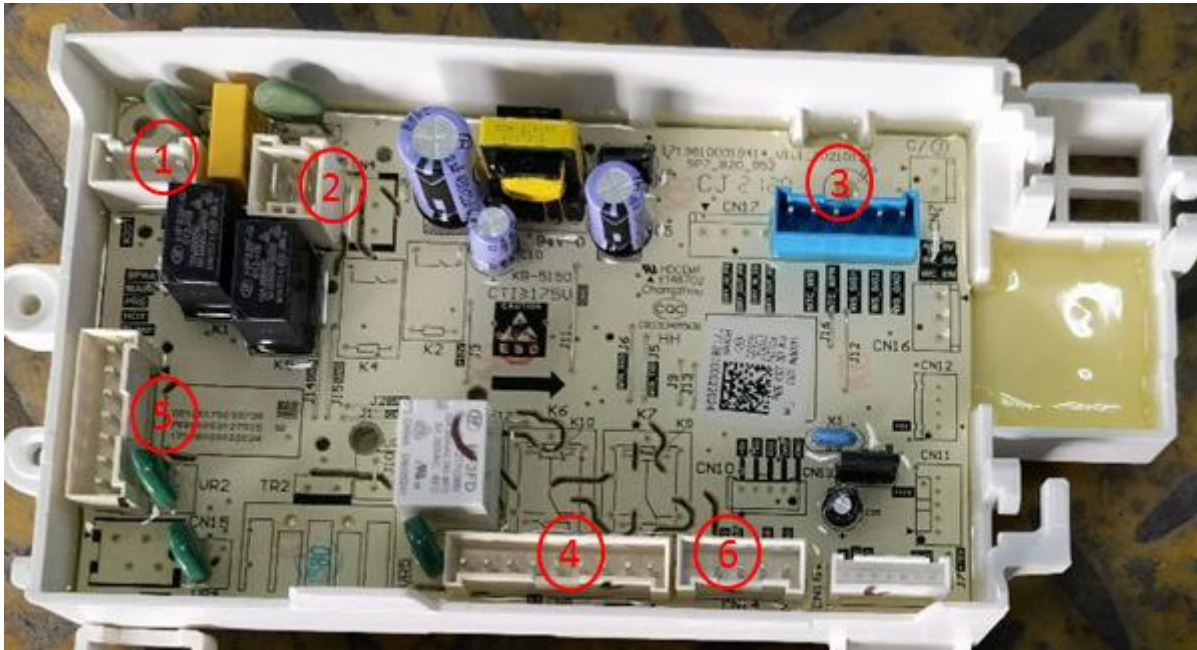
3.2 The circuit program



3 WIRING DIAGRAM/PCB LAYOUT

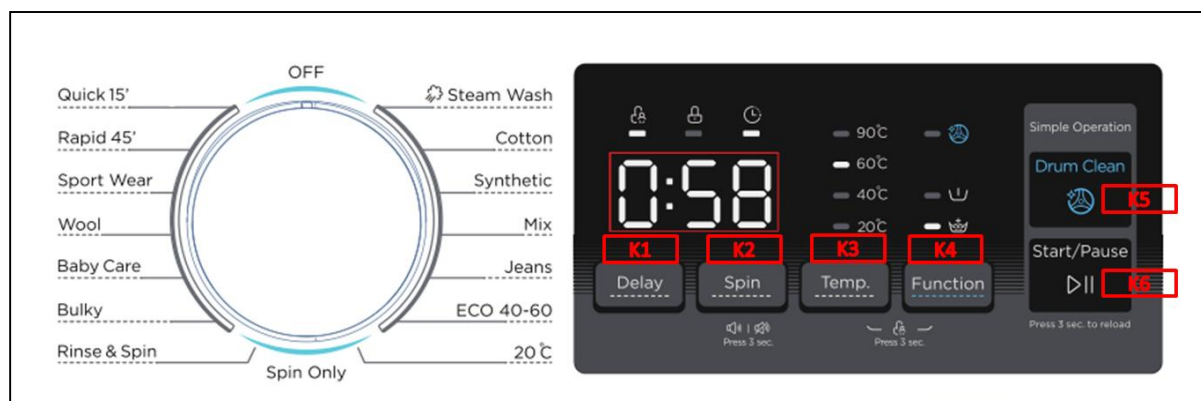
3.3 PCB Layout

- 1 Control of doorlock
- 2 Heater
- 3 Water level sense & NTC
- 4 Motor
- 5 Control of drain pump & Valve
- 6 Communication with Inverter board



4 FACTORY PATTEN DETECTION

5.1 Service mode



Before entering into service mode, make sure no water remains in the inner drum, if not, select spin only program to drain them out.

Turn on the machine and take turns [K3] [K6] [K3] [K6] buttons in 10s.

Press [K1] or [K2] to select test program. Press [K5] to confirm your selection and start the selected test. If you want to go back to test selection interface, press the [K5] to cancel previous selection.

LED Display	Check Target	Check Method	Check Item
t01	Version switchover	<ol style="list-style-type: none"> 1. Press [K5] button; 2. Press [K2] or [K3] to change version; 3. Press [K2] button continuously for 3s to confirm your change. 	<p>LED displays "xxx"</p> <p>x means current version</p>
t02	Error code checking	<ol style="list-style-type: none"> 1. Press [K5] button; 2. Press [K1] to show the next code and press [K2] to show the last code ; 3. Press [K3] and [K4] button at the same time continuously for 3s, all the error code records deleted, LED displays "E00" . 	<p>LED displays "Exx"</p> <p>x means error code</p>
t03	Version information checking	<p>Press [K5] button enter into service mode. Press [K5] again, LED displays project number and version number in turn.</p>	<p>LED displays project number and version number</p>

5.1 Service mode

LED Display	Check Target	Check Method	Check Item
t04	UI Checking	Press [K5] button to show the version number. Press [K1] button, enter the display test, the whole LED displays flashes, then enter the button test, press all the buttons, LED displays corresponding number.	The whole LED displays flashes.
t05	Drain-pump checking	Press [K5] button to drain out all the remaining water.	If all water drained out, LED displays "god" , After 20s, if there is still water remains in it, LED displays "FP" ,
t06	Pressure switch checking	Press [K5] button to activate inlet valve. The inlet valve enters the overflow water level to display the current water level frequency in real time.	LED displays the current water level.
t07	Water temperature sensor and heater checking	Press [K5] button to activate the main inlet valve and get the water lever to heating level then turn on the heater and 5 mins later turned off automatically.	LED displays the current temperature
t08	Inlet valve checking	<ol style="list-style-type: none"> 1. Press [K5] button; 2. Press [K1] button, switch off the main wash inlet valve , switch on prewash valve for 5s; 3. Press [K1] button to switch on main wash and prewash valve and get the water lever to setting level; 4. Press [K5] button to drain out the water. 	LED displays the corresponding status.

5.1 Service mode

LED Display	Check Target	Check Method	Check Item
t09	Rotating checking	Press [K5] button, inner drum rotates in 45r/m clockwise for 15s and stop for 10s then rotates counterclockwise for 15s, over and over again.	LED displays the rotation speed.
t10	Spin speed checking	Press [K5] button , the number on the display goes up in the same pace with the real speed and when it reach 400rpm, you need to press [K1] then [K2] button to get the machine to reach its target speed.	LED displays the rotation speed.

5. MALFUNCTION CODES AND EXPLANATIONS

Malfunction code	Reason	Possible cause	Solution
E10	In 3 minutes, the water level doesn't change with valves open	The water level doesn't change in 3 minutes during filling the water.	If the washer fills very slowly, the water pressure from the house might be too low. If the water inlet valve isn't leaking and there are no other symptoms this problem does not need to be corrected.
		Water inlet hose	Make sure that water faucet is turned on and that the screens on the hoses are not restricted.
		Water inlet valve (The voltage on the water inlet valve is normal)	If the water pressure is good, try cleaning the screens inside the water inlet valve hose connection ports. If those are clean replace the water inlet valve.
		Water level sensor or control switch (No voltage on the water inlet valve)	A water level control switch controls how much water enters the washing machine by PCB. If the water level control switch is defective, or more commonly, if the small air pipe attached to the air bell restricted, The switch will not be able to close the electrical contacts to the washer fill valve. CHECK THE AIR PIPE CHECK THE WATER LEVEL SENSOR CHECK THE PCB and the inner wire between PCB and the sensor
E12	The water level in drum exceed a certain level for alarm	Restart	Sometimes just restart the unit can solve the problem.
		Water inlet valve (The voltage on the water inlet valve is normal)	If the washer is overflowing, the water inlet valve has failed. Replace it.
		Water level sensor or control switch (No voltage on the water inlet valve)	A water level control switch controls how much water enters the washing machine by PCB. If the water level control switch is defective, or more commonly, if the small air pipe attached to the air bell restricted, The switch will not be able to close the electrical contacts to the washer fill valve. CHECK THE AIR PIPE CHECK THE WATER LEVEL SENSOR CHECK THE PCB and the inner wire between PCB and the sensor

5. MALFUNCTION CODES AND EXPLANATIONS

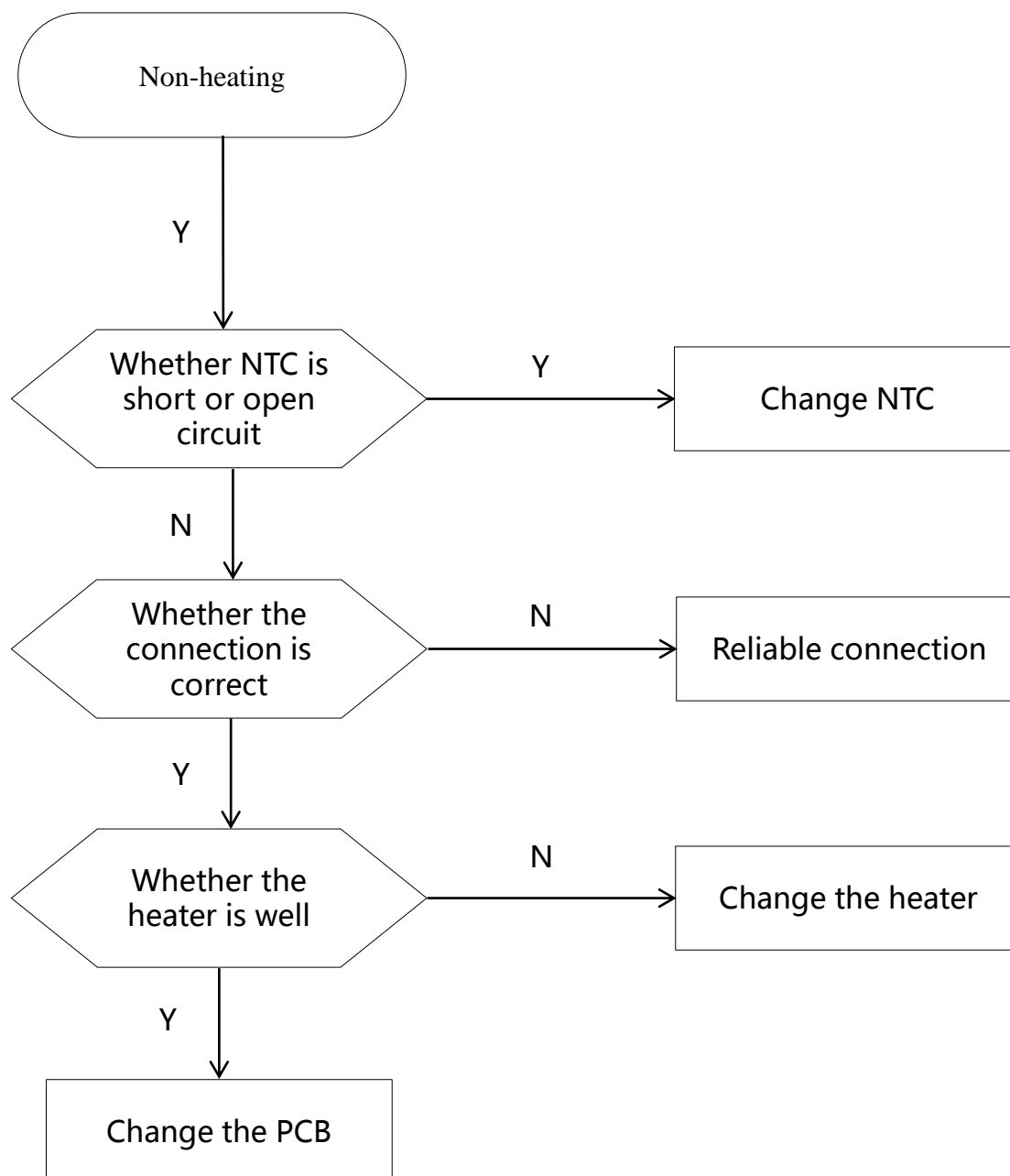
E21	In 3 minutes, the water level doesn't change with pump started	Drain hose	If the washer won't drain water check the drain hose. Be sure the hose did not get kinked behind the washer. Also, remove the hose from the pump and check it for obstructions.
		pump	If the washer won't drain water the drain pump might be defective. It's also common for a small sock or other article of clothing to get caught in the drain pump or in the drain hose. Check both for an obstruction before replacing the pump.
		PCB	Check the PCB
E30	Door can't be unlocked with over 3 time's fail.	Door lock	Check the door hook and the door lock to get correct location.
		PCB	If the washer door won't unlock the problem might be the main The PCB. This is not common. Check the inner wire between the PCB and the door lock.
E33	The PCB can not detect the signal of the water level sensor.	Water level sensor	Check the water level sensor Check the PCB the inner wire between PCB and the sensor
E34	Temperature sensor fail	The temperature sensor(NTC) get broken	Check the NTC
E60	The motor don't drive	The motor don't drive for 5 times	1.Check the PCB and the motor 2.Check the motor communicate wire

5. MALFUNCTION CODES AND EXPLANATIONS

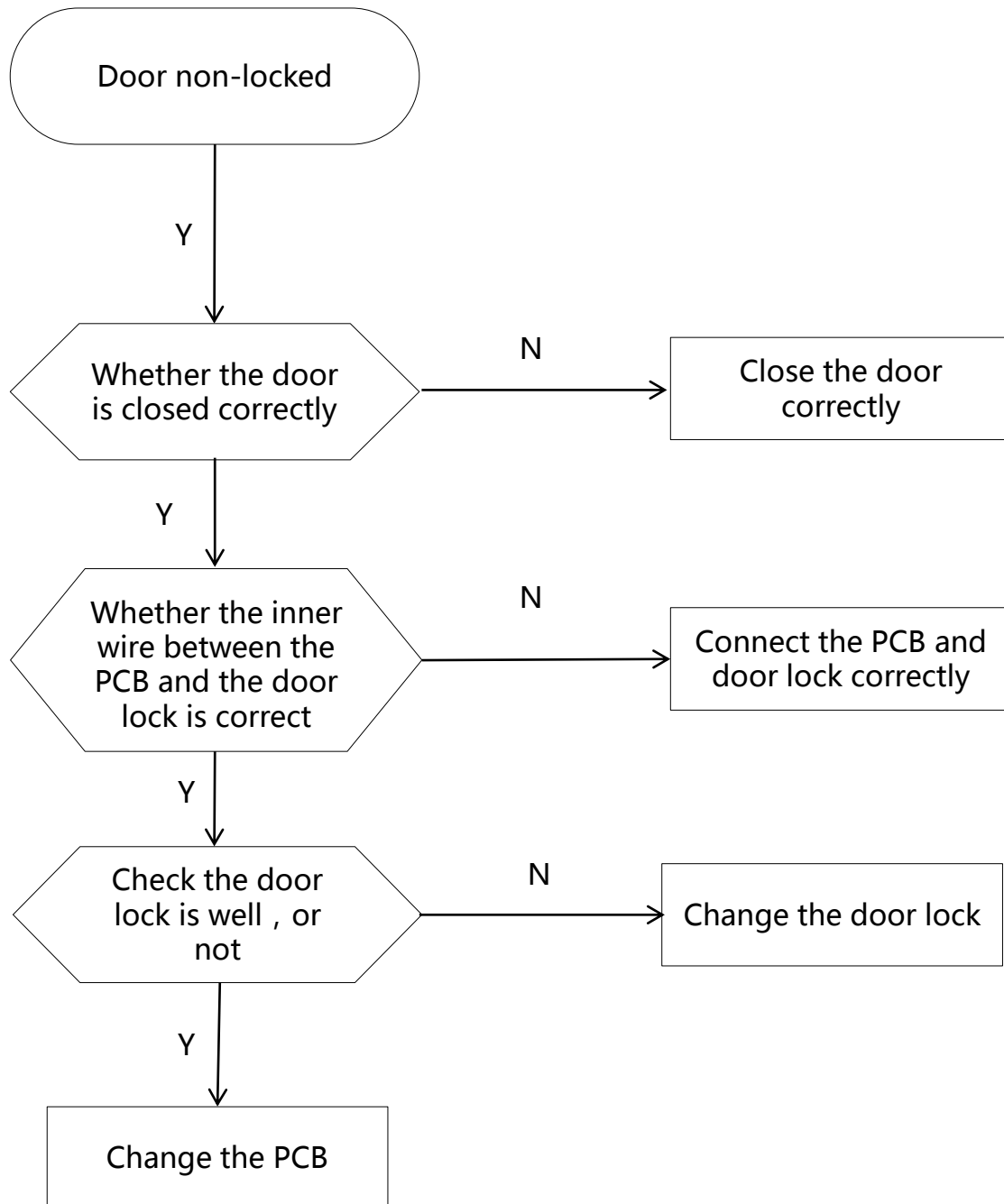
E61	The speed don' t transmit signal	The PCB can' t get speed transmit signal when the motor drive	1.Check the speed transmit line of the motor to prevent fall of 2.Check the PCB and the motor 3.Check the motor communicate wire
E62	The speed don' t transmit signal abnormality	Triac get broken	1.Check the speed transmit line of the motor to prevent fall of 2.Check the PCB and the motor 3.Check the motor communicate wire

Fault tree

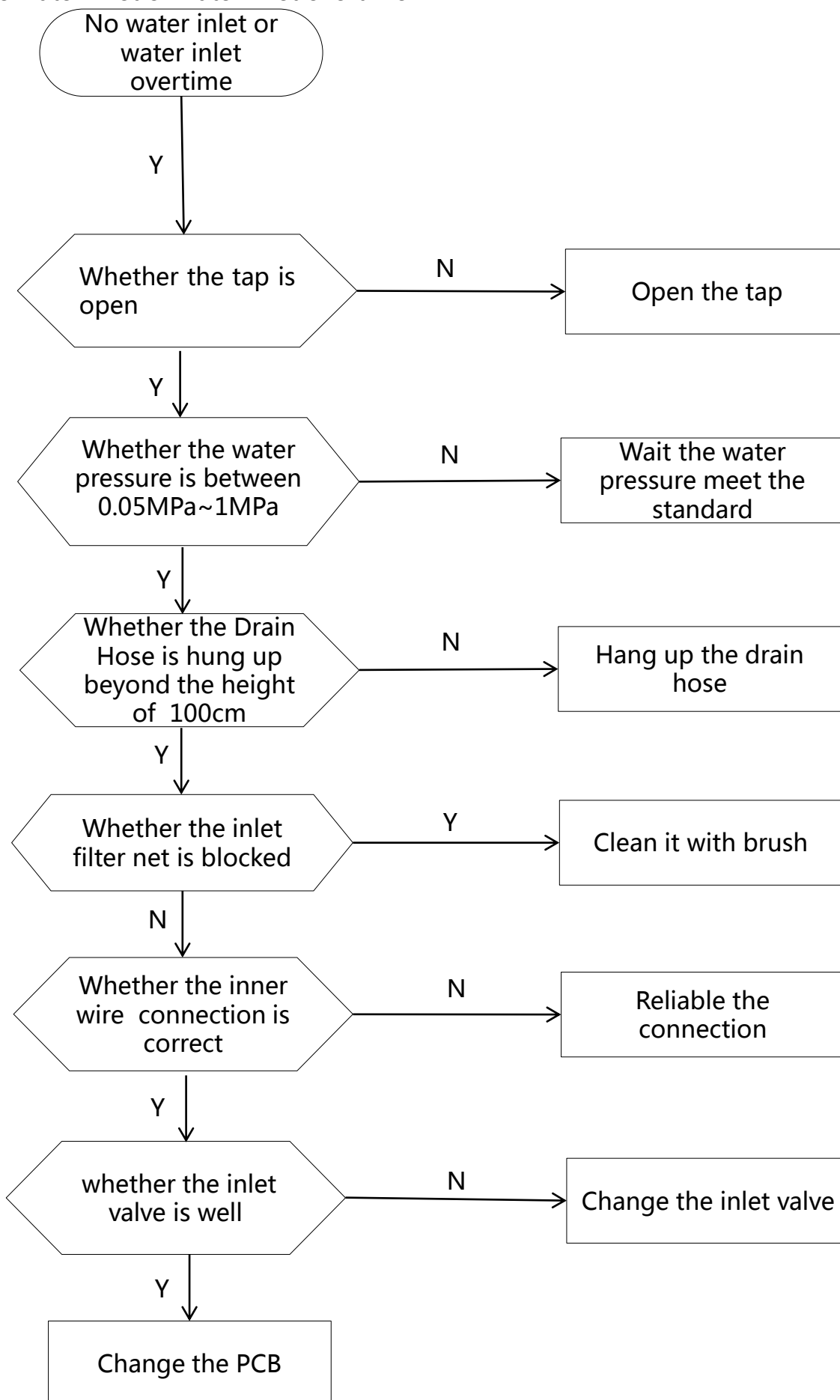
1. Maintenance non-heating malfunction



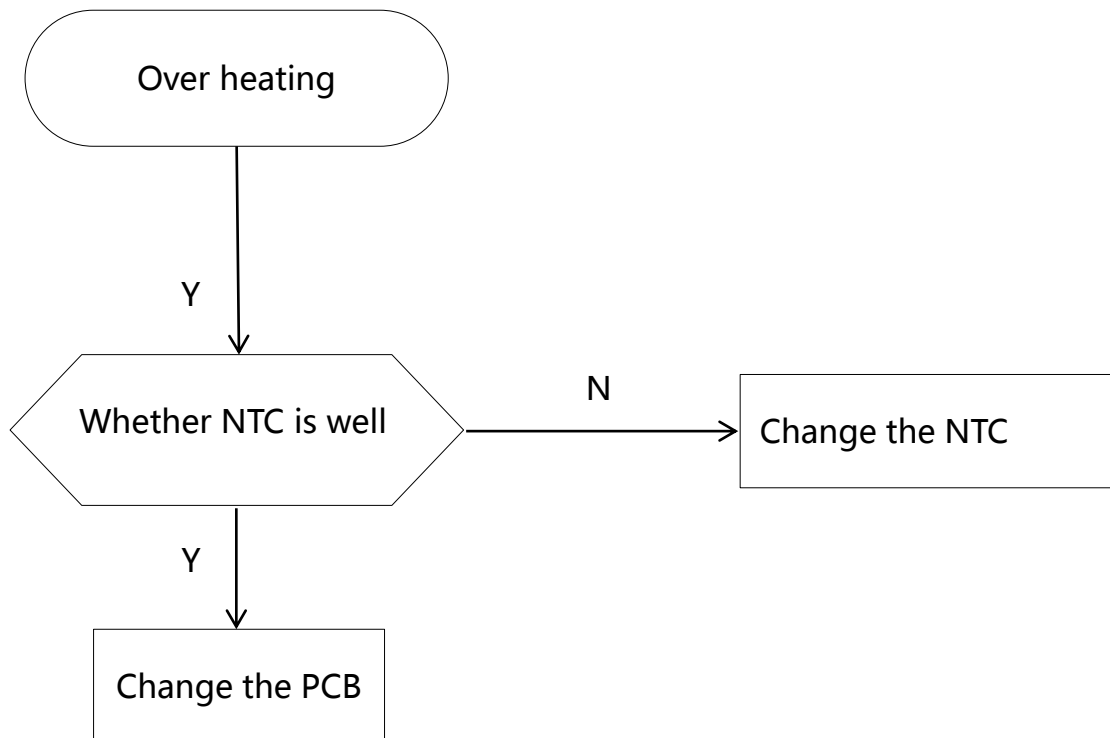
2. Door non-locked & its maintenance



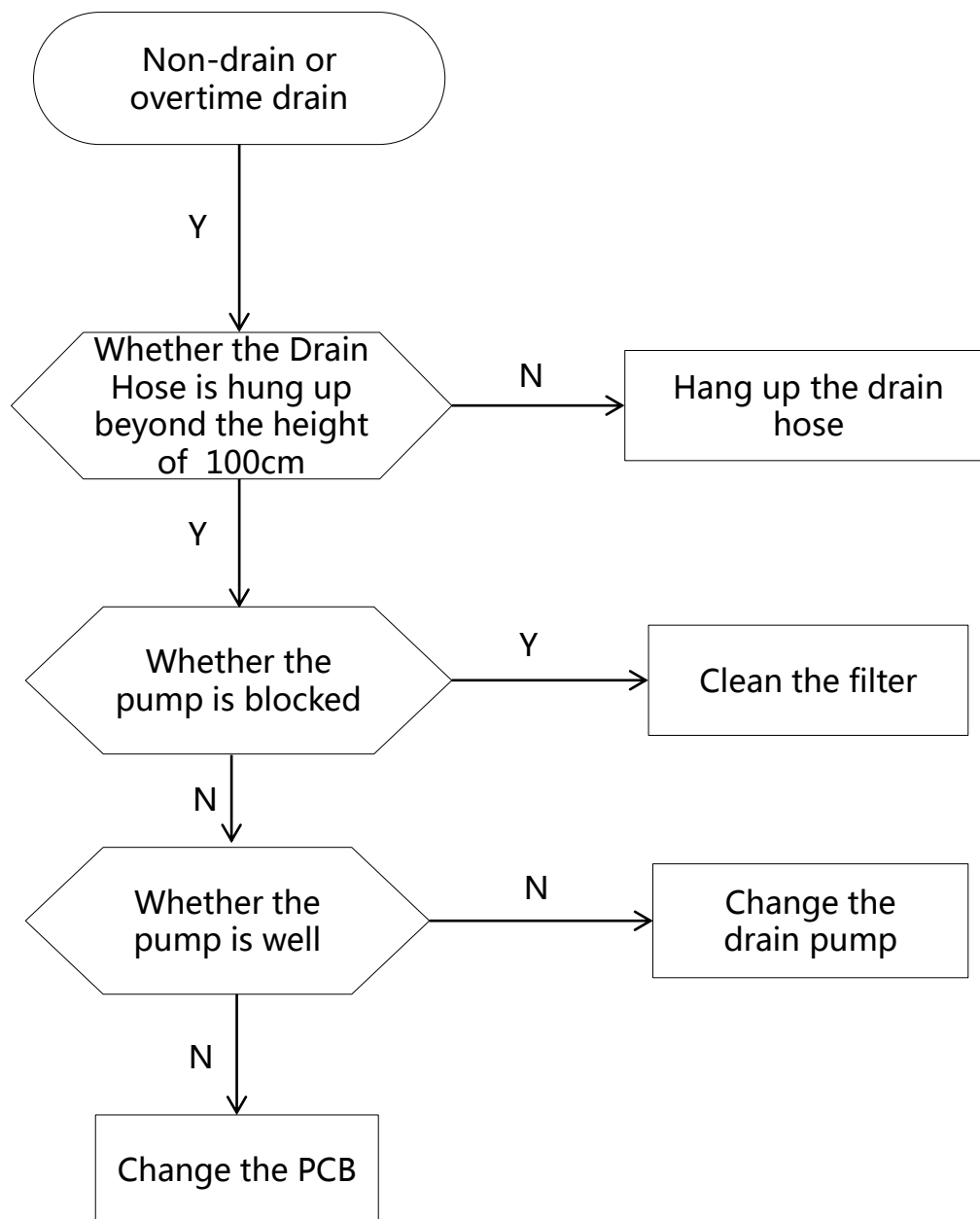
3. No water inlet or water inlet overtime



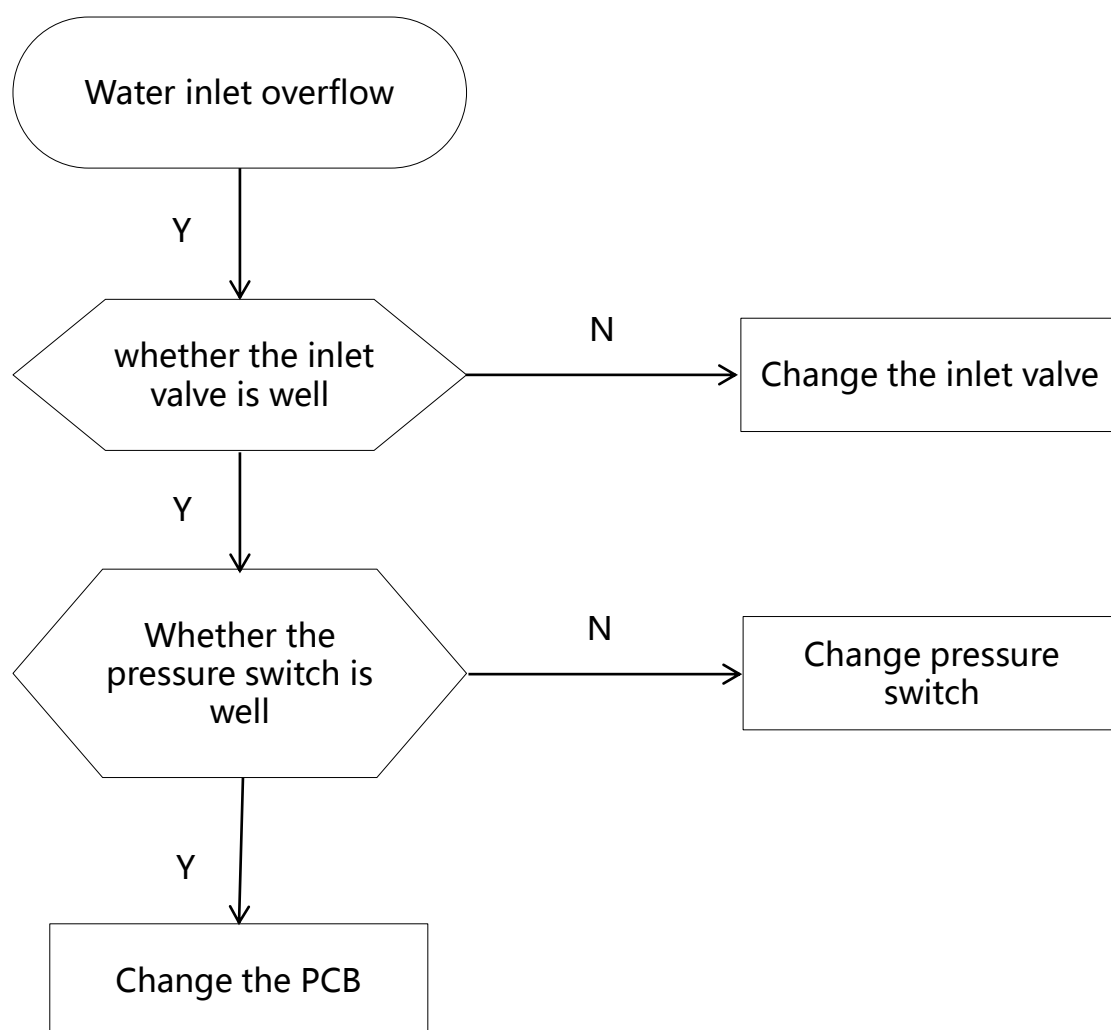
4. Over heating



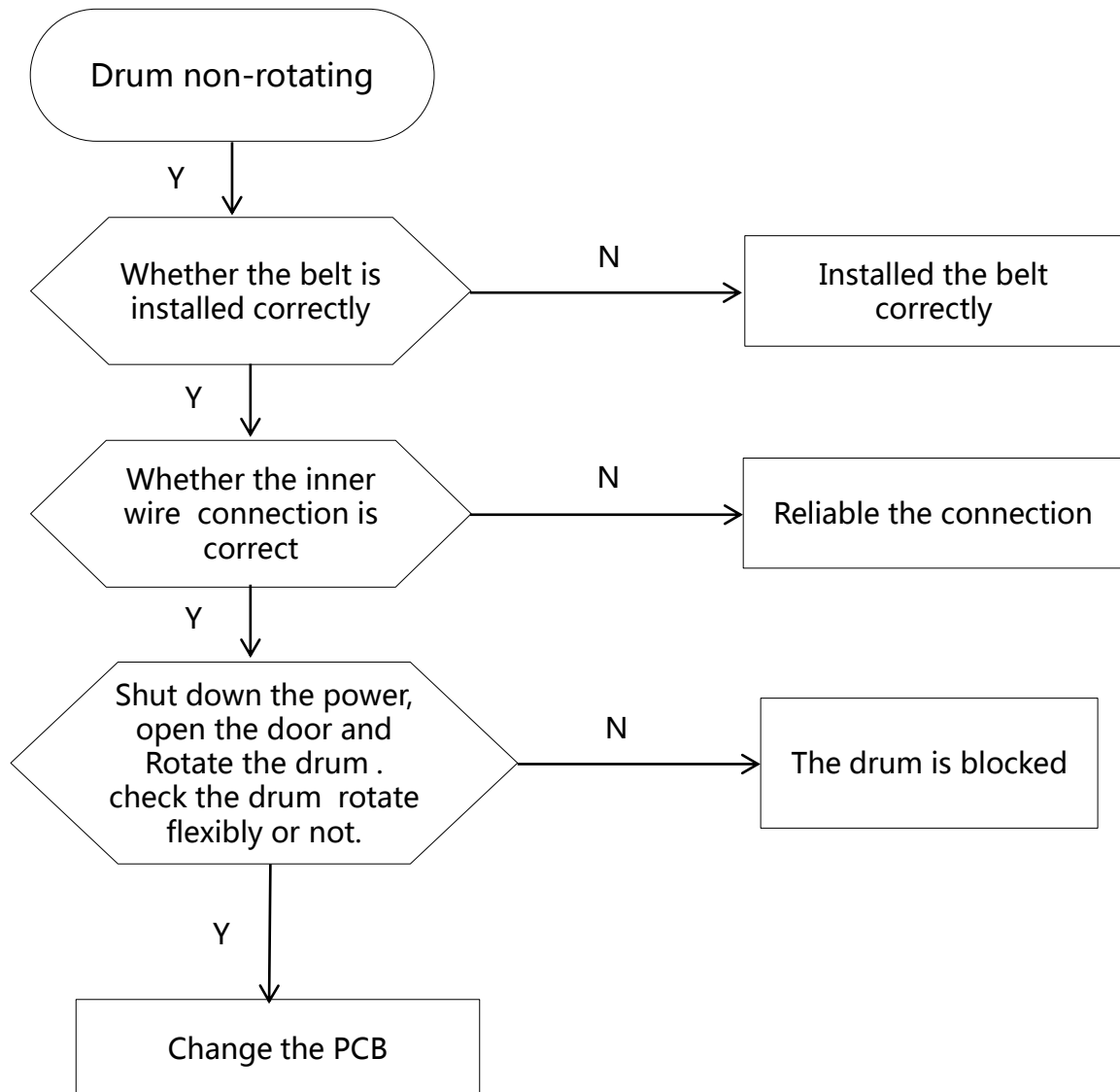
5. Maintenance of non-drain or drain exceed the setting time



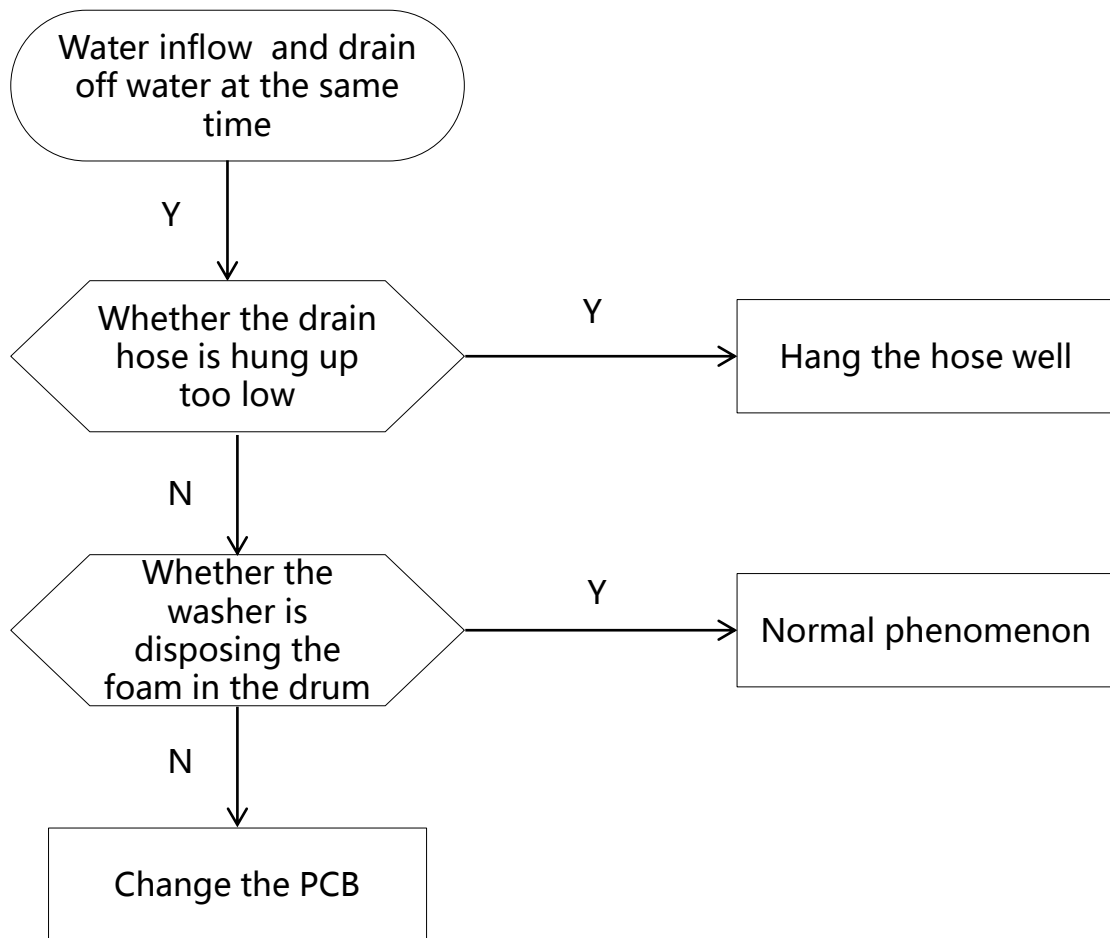
6. Water inlet overflow malfunction maintenance



7. Drum non-rotating malfunction maintenance



8. Maintenance water inflow and drain off water at the same time



Malfunction and solution

Description	Solution
The washing machine does not work	Close the washing machine's door.
Water leakage	Correctly connect the inlet water pipe.
The speed of the clothes is abnormal	Reload and distribute the laundry evenly in the drum.
There is the peculiar smell in the washing machine	Run a Self clean(Drum clean) cycle without any clothes.
No water is visible in the drum	No fault-water is under the visible area.
There is the remaining water in the softener's box	No fault- the effect of the softener will not be affected.
The remaining detergent is left on the clothes	The water-fast component of the non-phosphorus. detergent will be left on the clothes to form the line scale. Please select 【rinse】 or 【 spin 】 programme or brush away the fleck with the brush when the clothes is dried.
The washing machine does not fill	Open the water tap. Check the selection of the procedure. Check the water. Pressure to see if the water pressure is insufficient. Put through the feed-water. Close the washing machine's door. To check it the inlet water pipe is bent or blocked.
The washing machine fills and empties at the same time.	Make sure the end of the drainage pipe to be higher. Check if the drainage pipe and sewage have been sealed, if they have been, there will be the poor ventilation to cause the sip hon age effect.
No drainage of the washing machine	Check if the drainage pump is blocked. Check if the drainage pipe is bent or blocked. Check the height of the drainage nozzle, make sure it is 0.6-1 meter from the bottom of the washing machine.

Vibration of the washing machine	<p>Level the washing machine.</p> <p>Level the washing machine.</p> <p>Fasten the footing.</p> <p>To check if the internal packing for the transportation have all been removed.</p>
The bubble spills from the detergent	<p>Check if the detergent is excessive, if it is the specialized detergent for the cylinder washing machine.</p> <p>Dip one scoop of the softener mixed with 1/2 liter of water to the detergent box II.</p> <p>Reduce the usage amount of the detergent in the next time's wash.</p>
The machine stops when the procedure has not been finished	<p>Power failure or water cut.</p>
The drainage pump has noise during the operation when the water has just been drained	<p>The inner barrel water of the washing machine has been drained but there is still a small amount of water in the drainage pump and pipe. The drainage pump continuously operates and takes in the air, and at this time there is the noise, which is normal situation.</p>
To stop for some time during the wash procedure	<p>The washing machine adds water automatically.</p> <p>Because there is too much bubble in the tube, the washing machine is cleaning the bubble.</p>
<p>If you cannot solve the above abnormal situations, would you please:</p> <ol style="list-style-type: none"> 1. To turn the procedure knob to 【OFF】 , pull out the attachment plug; 2. To close the water tap, and contact the nearest service center. 	

7 CHECK POINT OF CIRCUIT

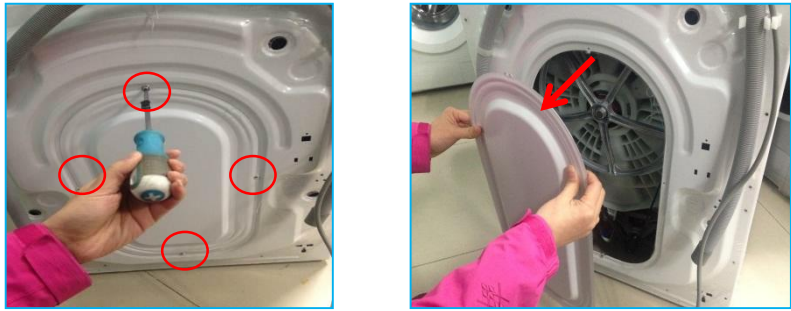
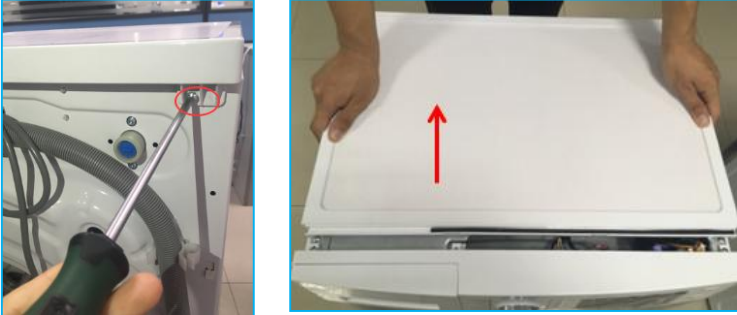
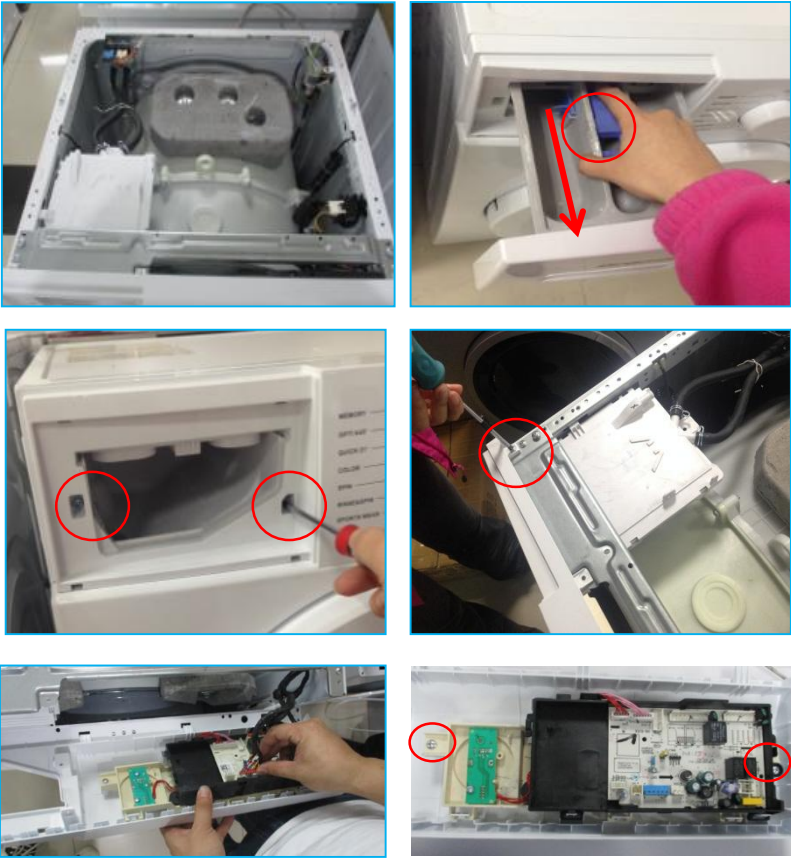
Before repairing, use multimeter to judge circuit stand of fail

No	Parts	Picture	Test Description	Parameter	Remarks
1	Water sensor		Measuring two vertical terminals	Capacitance value range 40-50nF-PASS	
2	Door lock		Electrify the resistance with Door Plunger in it.	1 seconds after the power supply can automatically locked, after the power off can automatically unlocked immediately-PASS	
3	Water valve		measuring resistance	Resistance value range 3-6KΩ-PASS	
4	Pump		Measure the resistance	Resistance value range 150-250Ω-PASS	
5	Heater		measuring resistance	Resistance value range 20-35Ω-PASS	
6	NTC		measuring resistance	Resistance value range 4.8kΩ±8%@25°C0-PASS	
7	Motor		Measure the resistance of black pin ~ brown pin and black pin ~ blue pin	Resistance value range 3.65-4.05Ω-PASS	

UNPACKING WAYS OF MAIN PARTS

1. Undo the back cover
2. Undo top cover
3. Undo the control panel and PCB
4. Undo the door assembly
5. Undo the front plate
6. Undo the detergent box
7. Undo the inlet valve
8. Undo the pressure switch
9. Undo the drain pump
10. Undo the pulley and motor
11. Undo the absorber pin from the cabinet
12. Undo the drum tub assembly
13. Undo the absorber pin from the drum
14. Undo the heater and NTC

8 UNPACKING WAYS OF MAIN PARTS

Operation	Picture
<p>1. Undo the back cover Undo four screws fit between back plate and cabinet, and then pull out.</p>	
<p>2. Undo the top cover I. Undo 2 screws fit back Cabinet. II. Push back the top cover 15mm until it leaves away from the control panel, and then take it down.</p>	
<p>3. Undo the control panel and PCB I. Departing the top cover II. Draw out the detergent drawer. III. Loosen two screws fit on the control panel . IV. Loosen two screws fit on the control panel. V. Take out the control Panel inclined from the panel . VI. Extract the cycle select knob VII. Pull out the wire and press the buckle to take out the PCB.</p>	

8 UNPACKING WAYS OF MAIN PARTS

4. Undo the door assembly

Undo the door

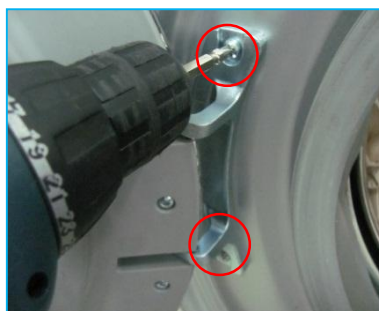
- I. Open the door of washing machine.
- II. Take the outer gasket
- III. Remove two screws on the door and take down the door .

Undo the door gasket

- I. Remove the outer gasket clamp between the door seal and the front plate. Loosen the inner gasket clamp between the door seal and the front of the outer tub.

Undo the door lock

- I. Remove two screws on the door lock, and take down the door lock.
- II. Take out the door lock and draw out the plug.



5. Undo the front plate

I. Remove the lower cover.

II. Undo five screws in front plate

III. Put the front plate up to the clasp of the front plate away from the loading holder, and then take off the front plate.



6. Undo the detergent box

- I. Release the hose clamp and pull out the inlet hose.
- II. Release the hose clamp and pull out the detergent box hose, and then take out the detergent box. 1.



7. Undo the inlet valve

- I. Remove the top cover
- II. Undo 2 screws between cabinet and inlet valve.
- III. Release the clamp fixing the inlet valve and the inlet hose, and then pull out the inlet hose.



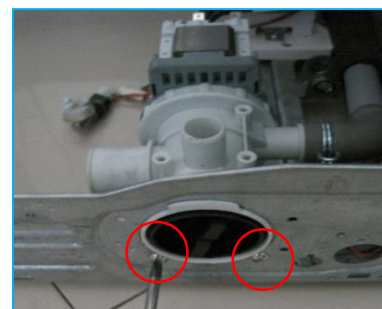
8. Undo the water sensor

- I. Pry the raised point out with straight screwdriver.
- II. Rotate the water sensor by 90 degrees counterclockwise.
- III. Pull the water sensor out.



9. Undo the drain pump

- I. Pull out the terminal behind the drain pump.
- II. Nip out clamp between drain hose and the drain pump, and then pull out the drain hose.
- III. Loosen the screws fitted on the drain pump, and then pull out the drain pump.



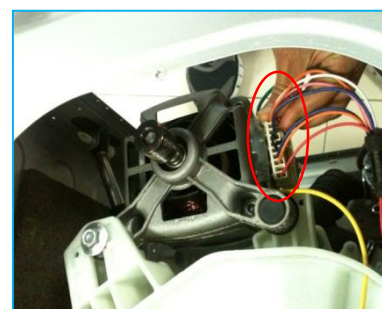
10. Undo the pulley and motor

Undo the pulley

- Rotate the pulley and at the same time pull out the belt.

Undo the motor

- I. Let the machine lie down on the back and then pull out the motor wire and grounding wire.
- II. Use spanner to remove the motor screw, and lift up the motor with the other hand in case of falling to the drain pump



11. Undo the absorber pin from the cabinet

Use pliers to pinch the absorber pin's protuberance, and knock the absorber pin out from back lightly; in the same way, remove the other one



12. Undo the drum tub assembly

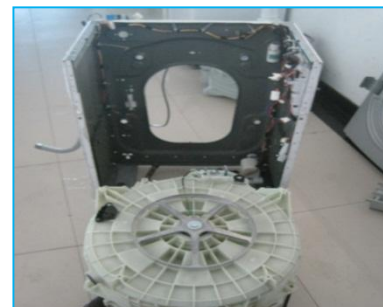
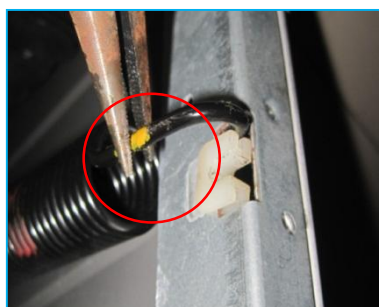
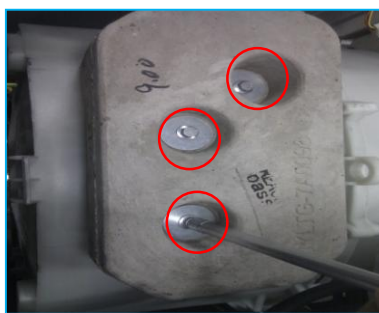
Undo the upper and façade counterweight

I. Remove 3 screws fit on the upper counterweight and then pull out it.

II. Remove 6 screws pull out the façade counterweight.

Undo the panel support

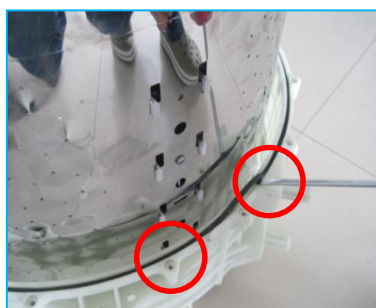
Remove two screws fixing the panel support, and then remove it.



8 UNPACKING WAYS OF MAIN PARTS

Undo the drum tub

- I. Remove the screws fixing the pulley.
- II. Remove the screws fixing the front and rear tub, and then remove the tub.
- III. Remove the inner drum kit.



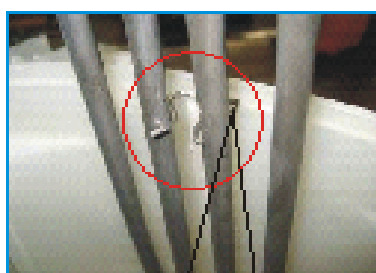
13. Undo the absorber from the drum

- I. Lift out the outer tub kit.
- II. Undo the absorber pin between absorber and rear tub, remove the absorber.



14. Undo the heater and NTC

- I. Pull out the heater plug.
- II. Pull out the NTC.



In the red circle it is the heater support, clamping the heater.



Heater

NTC

9 SERVICE TOOLS



Number	Tools	Suitable kit
1	Sleeve spanner	Heater 1
		Motor 1 counterweight 5
		Drum tub assembly
		Strap screw
2	Spanner	Adjust pulley screw leg and undo transport bolts
3	Pliers and pinchers	Assembling or auxiliary function
4	Other tools(screwdriver, pliers and so on)	Common service tools

The end!