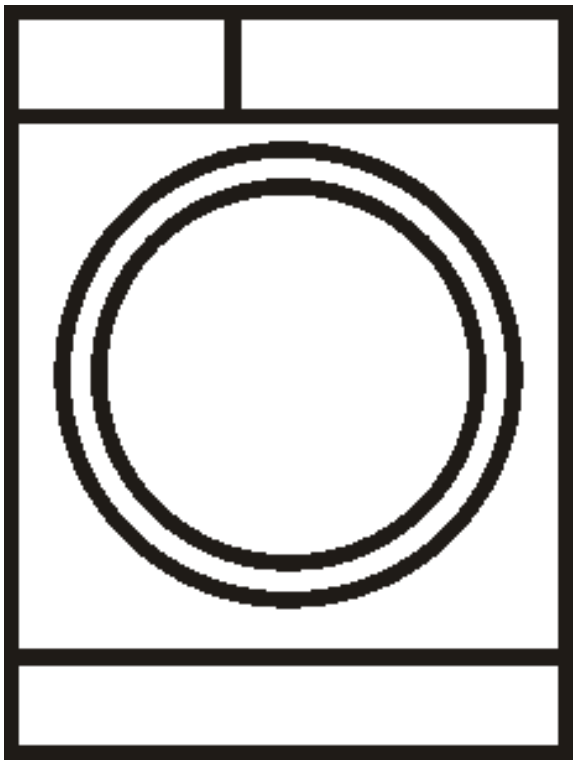
Washing Machine

Model: L11

Service Manual



Note:

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

Contents

1 PRECAUTION

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

1.2.1Observe Warnings

Be sure to follow special warning and precautions that are described on part labels and in the owner'
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 than1 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

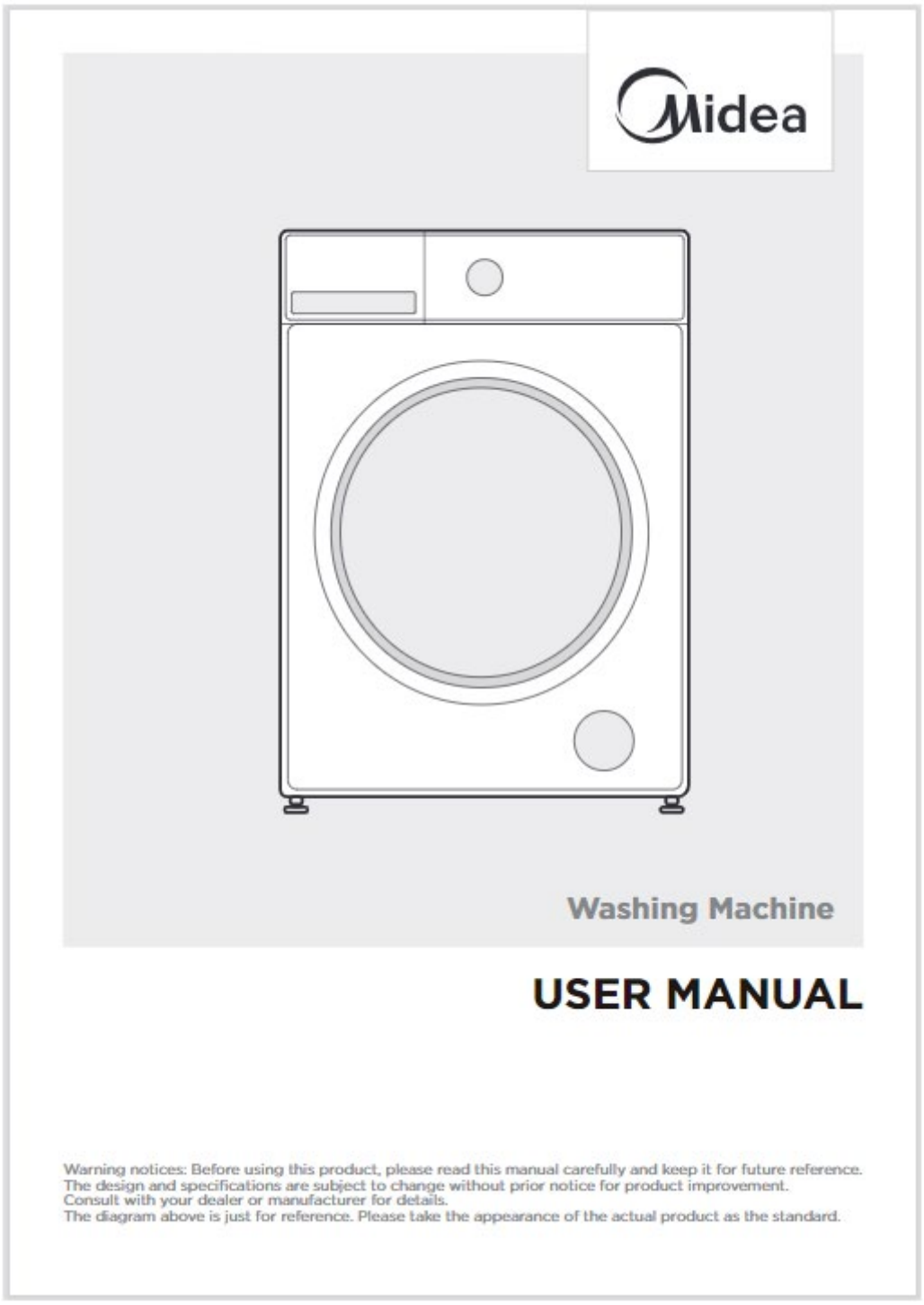
WARNING	
 **CHECK INSULATION RESISTANCE**	After repair, measure insulation resistance between the charging part(power cord plug) and the non-charging metallic part (ground) with an insulation resistance meter (500V).The resistance shall be 10M or more. Failing to check the insulation resistance may cause 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**	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.
 **INSTALL CAREFULLY**	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.
 **DO NOT PULL**	Do not pull the power cord when unplugging. Hold the power plug to unplug. An electric shock or short circuit may cause a fire.
 **DANGER HAND**	Do not insert your hand under the washing machine during operation. There is a rotary part under the machine which may cause an injury.
 **WATER LEAKAGE**	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.

2 USER MANUAL

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



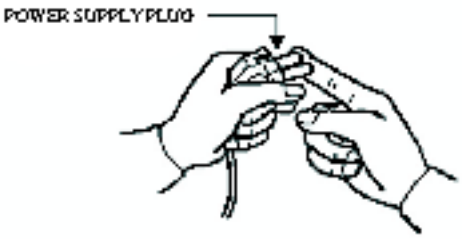
3 WIRING DIAGRAM/PCB LAYOUT

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.

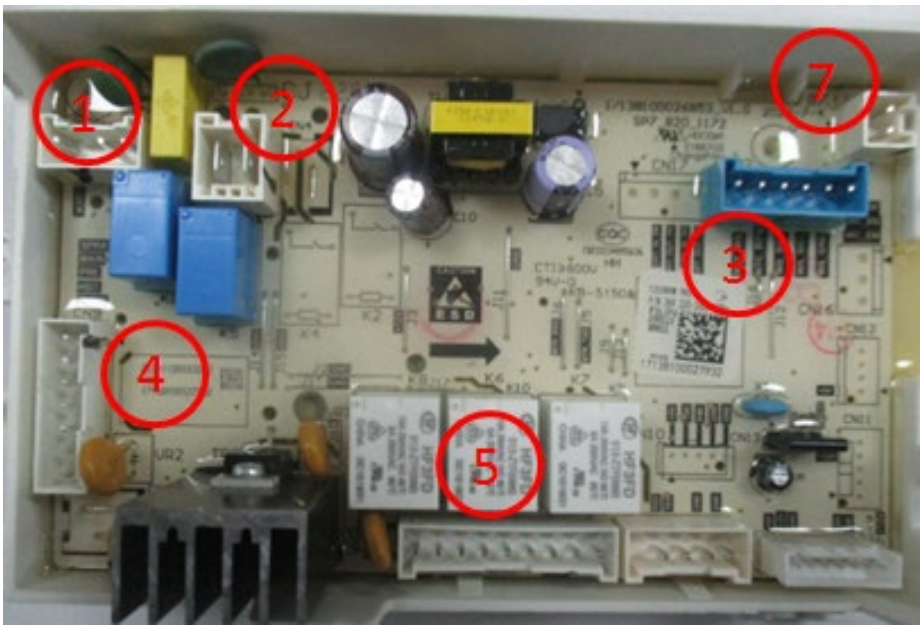
3)The design of PCB is out of failure, so prohibit to change the PCB panel according to its alarm. Please do it according to the failure diagnose program.

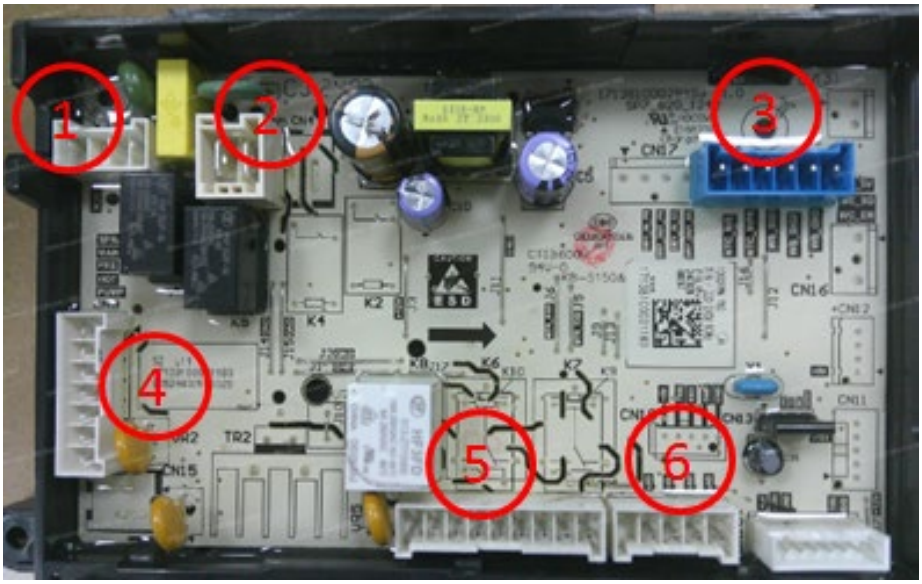


3 WIRING DIAGRAM/PCB LAYOUT

3.2 PCB Layout

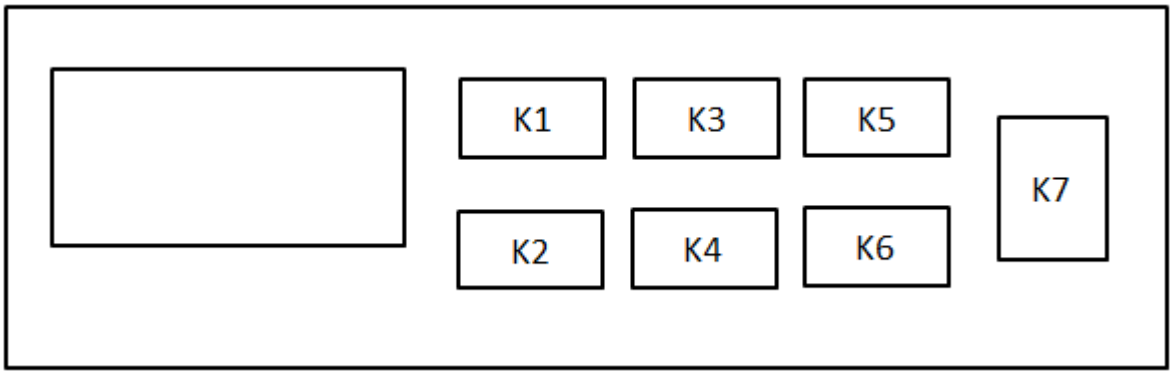
1 Control of door lock
2 Heater
3 Water level sense & NTC
4 Control of drain pump & Valve
5,7 Motor
6 Communication with Inverter board





4 FACTORY PATTEN DETECTION

4.1 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] [K5] [K3] [K5] buttons in 10s.
Press [K1] or [K2] to select test program. Press [K7] to confirm your selection and start the selected test. If you want to go back to test selection interface, press the [K7] to cancel previous selection.

LED Display	Check Target	Check Method	Check Item
t01	Version switchover	Press [K7] button	LED displays "xxx" x means current version
t02	Error code checking	1. Press [K7] 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".	LED displays "Exx" x means error code
t03	Version information checking	Press [K7] button enter into service mode. Press [K7] again, LED displays project number and version number in turn.	LED displays project number and version number
t05	Drain-pump checking	Press [K7] button to drain out all the remaining water.	If all water drained out, LED displays "EP" or "god", After 20s, if there is still water remains in it, LED displays "FP" or "Err"

4 FACTORY PATTEN DETECTION

4.1 Service mode

LED Display	Check Target	Check Method	Check Item
t06	Pressure switch checking	Press [K7] 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 [K7] 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	1. Press [K7] 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 [K7] button to drain out the water.	LED displays the corresponding status.
t09	Rotating checking	Press [K7] 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 [K7] 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

E10

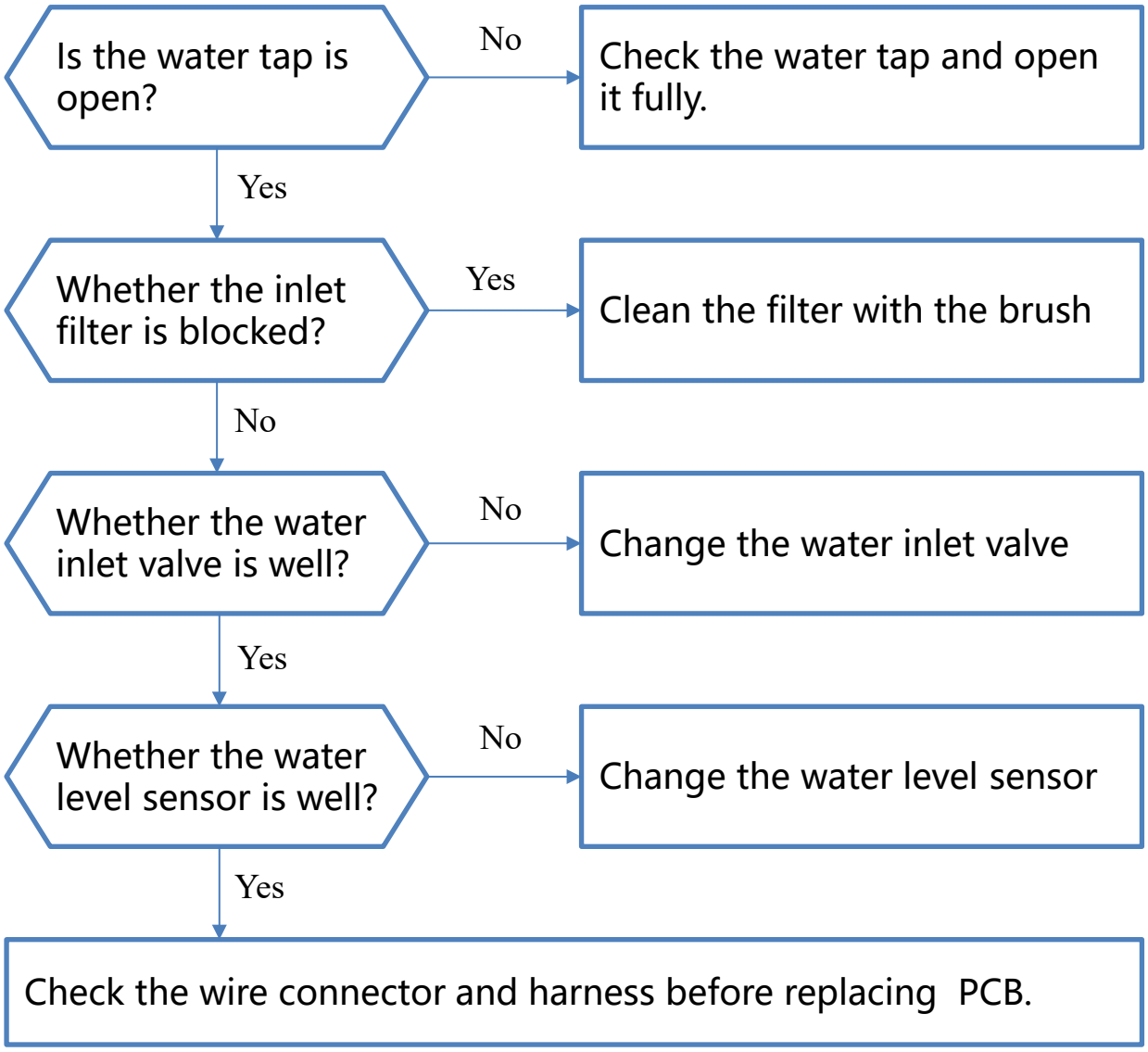
- Define: Water injecting problem during wash cycle.
- Reasons: The root reason is the water level doesn’ t change within 3 minutes.

Malfunction code	Root Reason	Possible cause
E10	The water level doesn’ t change within 3 minutes.	If the washer is filling very slowly, the water pressure from the house might be too low. The water pressure must be greater than 0.1 MPa.
		Water faucet is not turned on or the screens on the hoses are blocked.
		The screens inside the water inlet valve are blocked or the water inlet valve is damaged.
		Something is wrong with water level sensor.

5. MALFUNCTION CODES AND EXPLANATIONS

E10

➢ Check Procedure:



5. MALFUNCTION CODES AND EXPLANATIONS

E10

➢ Check Procedure:

Step 1 Check the water tap

① Check the water tap and open it fully if it is not. (Fig.1)

Fig.1

Step 2 Check the inlet filter

① Close the tap and remove the water supply hose. (Fig.2)
② Clean the filter with a brush if it is blocked. (Fig.3)
③ Unscrew the water supply hose from the backside of the machine. Pull out the filter with long nose pliers. (Fig.4)
④ Clean the filter with a brush if it is blocked. (Fig.5)

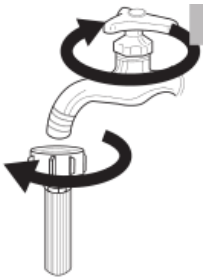


Fig.2

Fig.3

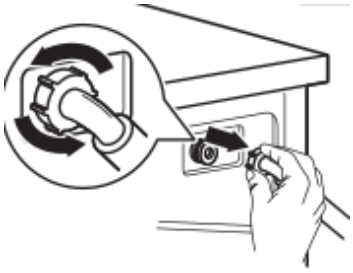


Fig.4

Fig.5

Step 3 Check the water inlet valve

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.6)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.7)
③ Measure the resistance value of the water inlet valve, 3-6kΩ is OK. (Fig.8)
④ If the resistance value of the water inlet valve is not well, change the water inlet valve. (Fig.9)

Fig.6

Fig.7

Fig.8

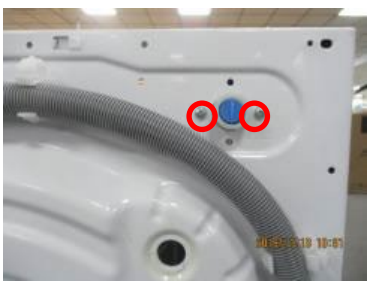


Fig.9

E10

➢ Check Procedure:

Step 4 Check the water level sensor

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.10)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.11)
③ Measure the resistance value of the water level sensor, 10-50Ω is OK. (Fig.12)
④ If the resistance value of the water level sensor is not well, change the water level sensor. (Fig.13)


Fig.10


Fig.11


Fig.12

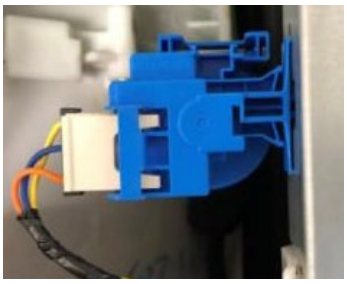


Fig.13

5. MALFUNCTION CODES AND EXPLANATIONS

E12

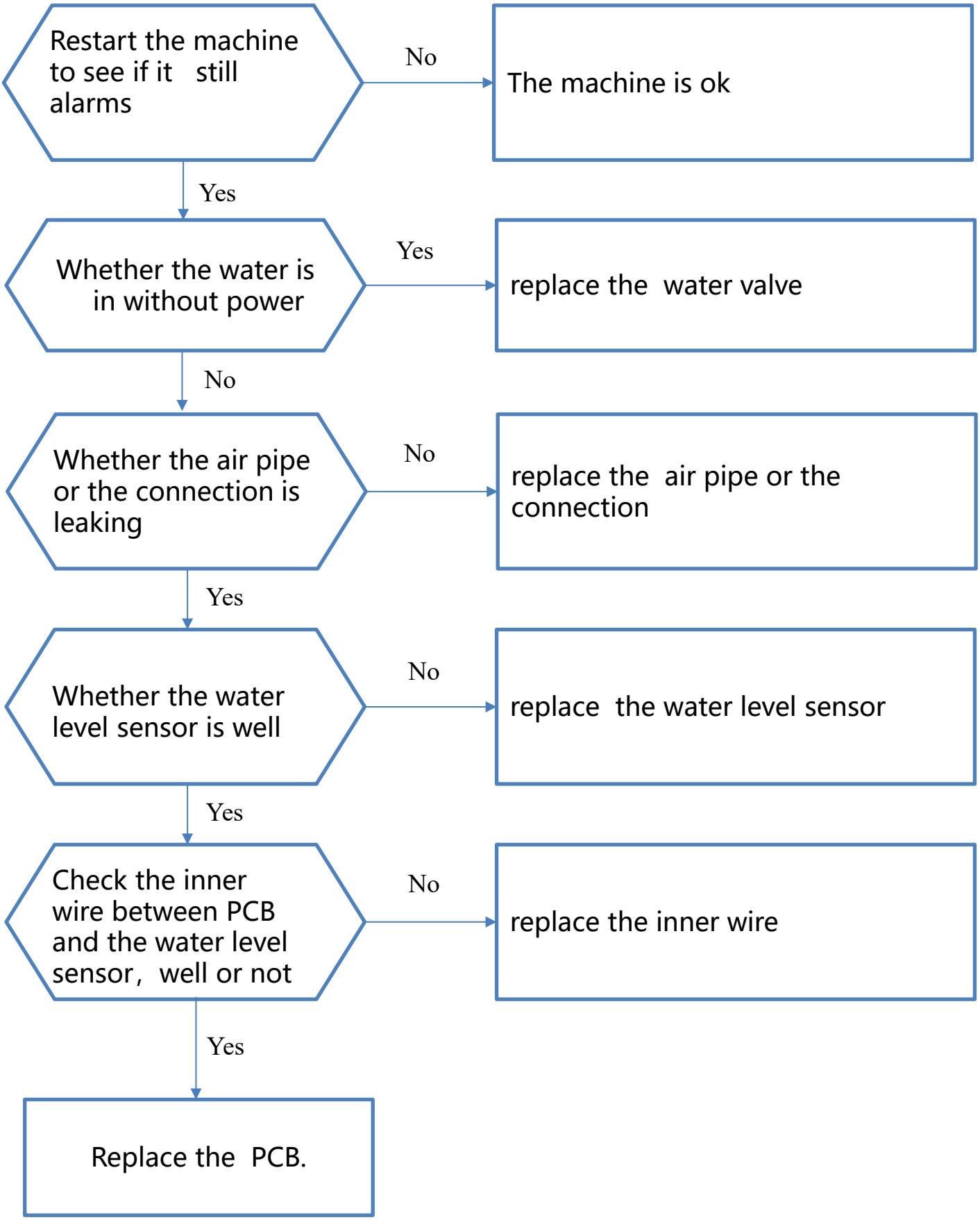
- Define: The water level in drum exceed a certain level for alarm.
- Reasons: When the program is in the state of suspension, operation or recoverable alarm, if the water level is detected to be higher than the overflow water level within 16 consecutive seconds, the water level will be emptied. After the empty, the E12 alarm will be given.

Malfunction code	Root Reason	Possible cause
E12	When the program is in the state of suspension, operation or recoverable alarm, if the water level is detected to be higher than the overflow water level within 16 consecutive seconds, the water level will be emptied. After the empty, the E12 alarm will be given.	Sometimes just restart the machine, can solve the problem.
		Something is wrong with the water valve.
		Something is wrong with water level sensor.
		The air pipe may be damaged.
		Inner wire may be damaged.
		Something is wrong with PCB.

5. MALFUNCTION CODES AND EXPLANATIONS

E12

➢ Check Procedure:



E12

➢ Check Procedure:

Step 1 Restart the machine to see if it still alarms

Step 2 Whether the water is in without power

① Turn off the washing machine and open the door of the washing machine.
② Connect the water supply hose to the water inlet valve, then open the water switch.
③ Keep watching the washing machine, to see if there is some water run in.
④ If the water is in without power , we need replace the water valve following the below Fig.1-Fig.3.

Fig.1 Remove the water valve screws

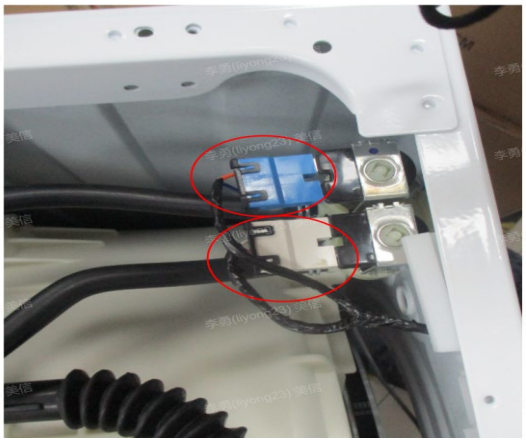


Fig.2 Remove the water valve terminal

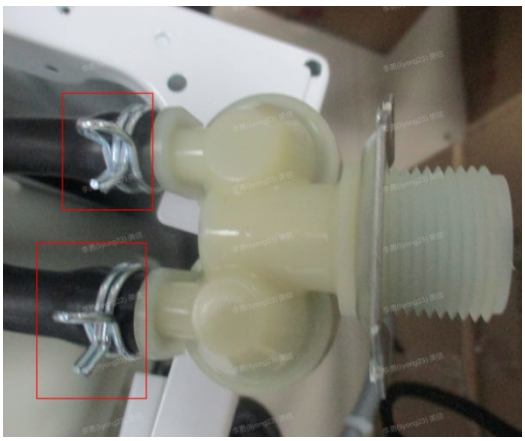


Fig.3 Remove the water valve connection, and change the water valve

E12

➢ Check Procedure:

Step 3 Whether the air pipe or the connection is leaking

① Undo the top cover to make sure the air pipe connection is well, following the below Fig.4-Fig.5.
② Following the below Fig.6-Fig.7, to make sure whether the air pipe is damaged or not.
③ If the air pipe or the connection is leaking, we need change it following the below Fig.8-Fig.9.

Fig.4 Undo the top cover

Fig.5 Make sure the connection is ok

Fig.6 The machine is inverted forward

Fig.7 Whether the air pipe is damaged

Fig.8 Remove the connection between the black pipe and the tub, remove the connection between the black pipe and the pump

Fig.9 Remove the connection between the black pipe and the water level sensor

E12

➢ Check Procedure:

Step 4 Whether the water level sensor is well

① Measuring two vertical terminals, Capacitance value range 40-50nF-PASS.(Fig.10)
② If not pass, we need to replace the water level sensor following the below steps Fig.11-Fig.13.

Fig.10

Fig.11 Remove the terminal of the water level sensor

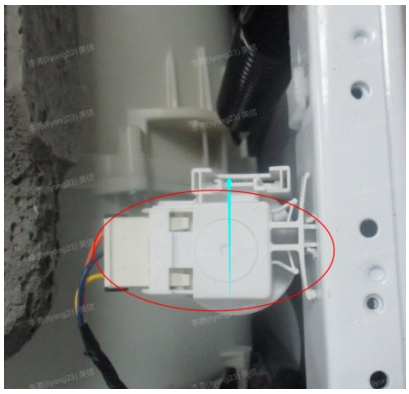


Fig.12 Rotating the sensor to remove the water level sensor from the box

Fig.13 Remove the connection between the black pipe and the water level sensor

E12

➢ Check Procedure:

Step 5 Check the inner wire between PCB and the water level sensor， well or not

① Finding terminals between PCB and the water level sensor .(Fig.14-Fig.15)
② Measuring two vertical terminals that have same color, the resistance value indicates that the circuit is well.(Fig.16)
③ If the resistance has no value, we need to replace the inner wire.

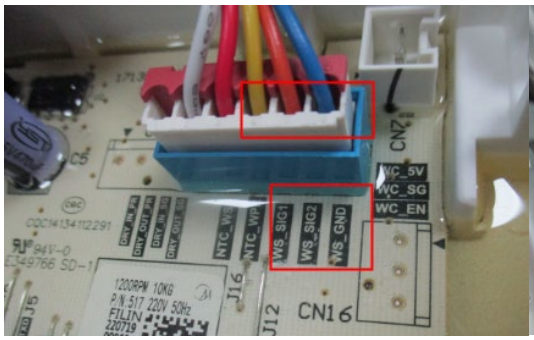


Fig.14

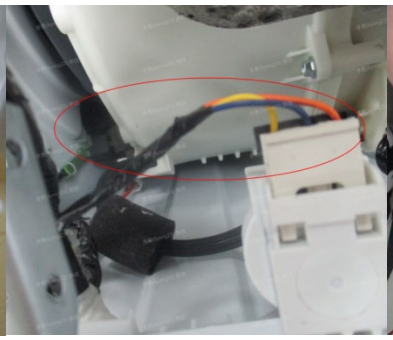


Fig.15

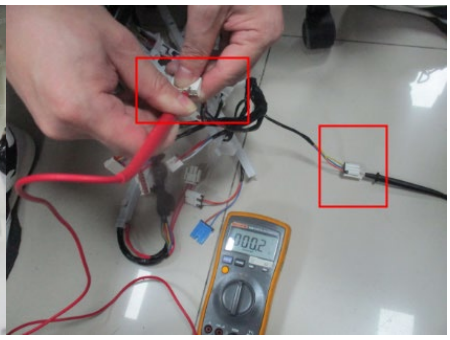


Fig.16

Step 6 Replace the PCB

① If all the above checks are normal, please change the PCB. (Fig.17)

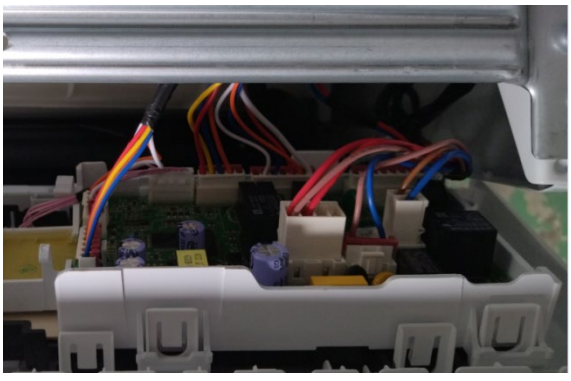


Fig.17

5. MALFUNCTION CODES AND EXPLANATIONS

E21

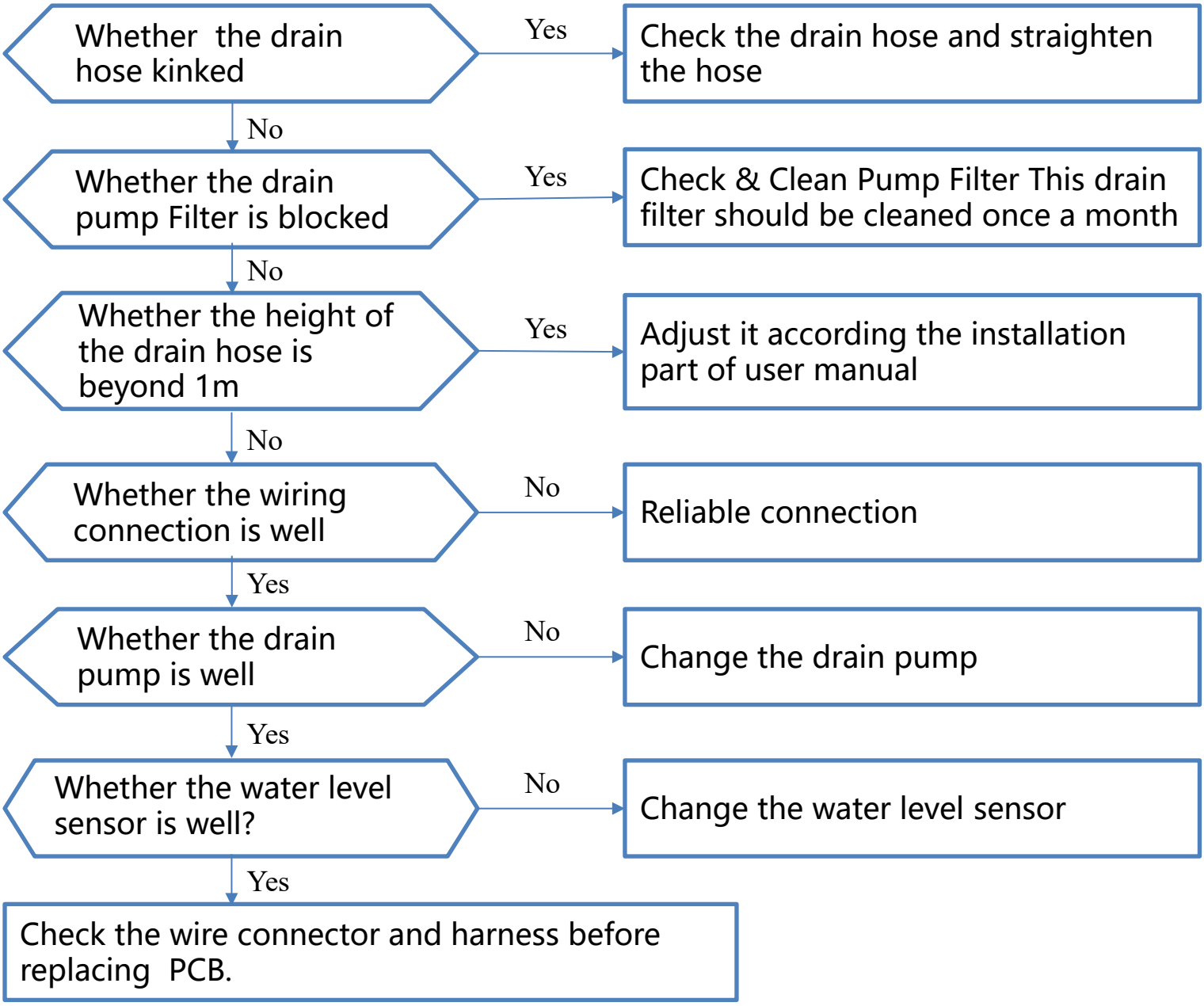
- Define: Over time water draining.
- Reasons: The root reason is the water level doesn’ t change within 6 minutes.

Malfunction code	Root Reason	Possible cause
E21	The water level doesn’ t change within 6 minutes	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.
		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.
		Check the PCB

5. MALFUNCTION CODES AND EXPLANATIONS

E21

➢ Check Procedure:



5. MALFUNCTION CODES AND EXPLANATIONS

E21

➢ Check Procedure:

Step 1 Check the drain hose

① Check the drain hose, if the drain hose is kinked, straighten it.

Step 2 Check the drain pump filter

① Open the server board box. (Fig.1)
② Open the filter by turning to the counter clockwise. (Fig.2)
③ Remove extraneous matter. (Fig.3)
④ Reassemble the drain pump and server board box. (Fig.4)

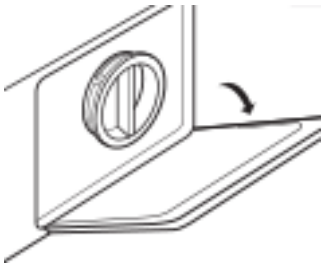


Fig.1

Fig.2

Fig.3

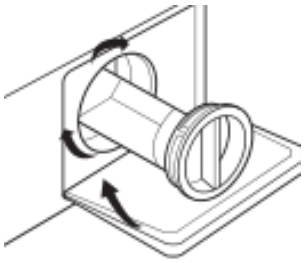


Fig.4

Step 3 Check the height of the drain hose

① There are two ways to place the end of drain hose. (Fig.5 & Fig.6)
② Don’ t remove the drain hose screw. (Fig.7)

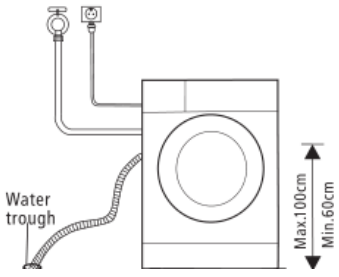


Fig.5

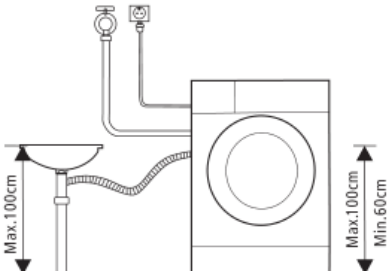


Fig.6

Fig.7

E21

➢ Check Procedure:

Step 4 Check the drain pump

① Lean the wash machine and remove the connector. (Fig.8)
② Measure the resistance value of the drain pump, 150-250Ω is OK. (Fig.9)
③ If the resistance value of the drain pump is not well, change the drain pump.

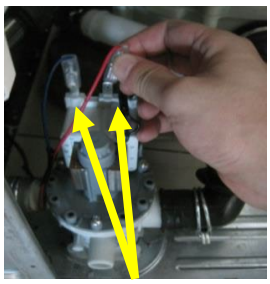


Fig.8

Fig.9

Step 5 Check the water level sensor

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.10)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.11)
③ Measure the resistance value of the water level sensor, 10-50Ω is OK. (Fig.12)
④ If the resistance value of the water level sensor is not well, change the water level sensor. (Fig.13)

Fig.10

Fig.11

Fig.12

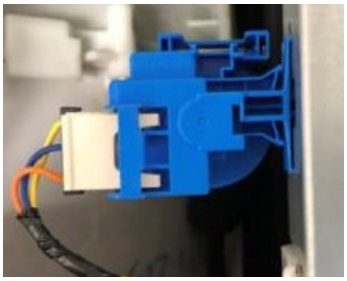


Fig.13

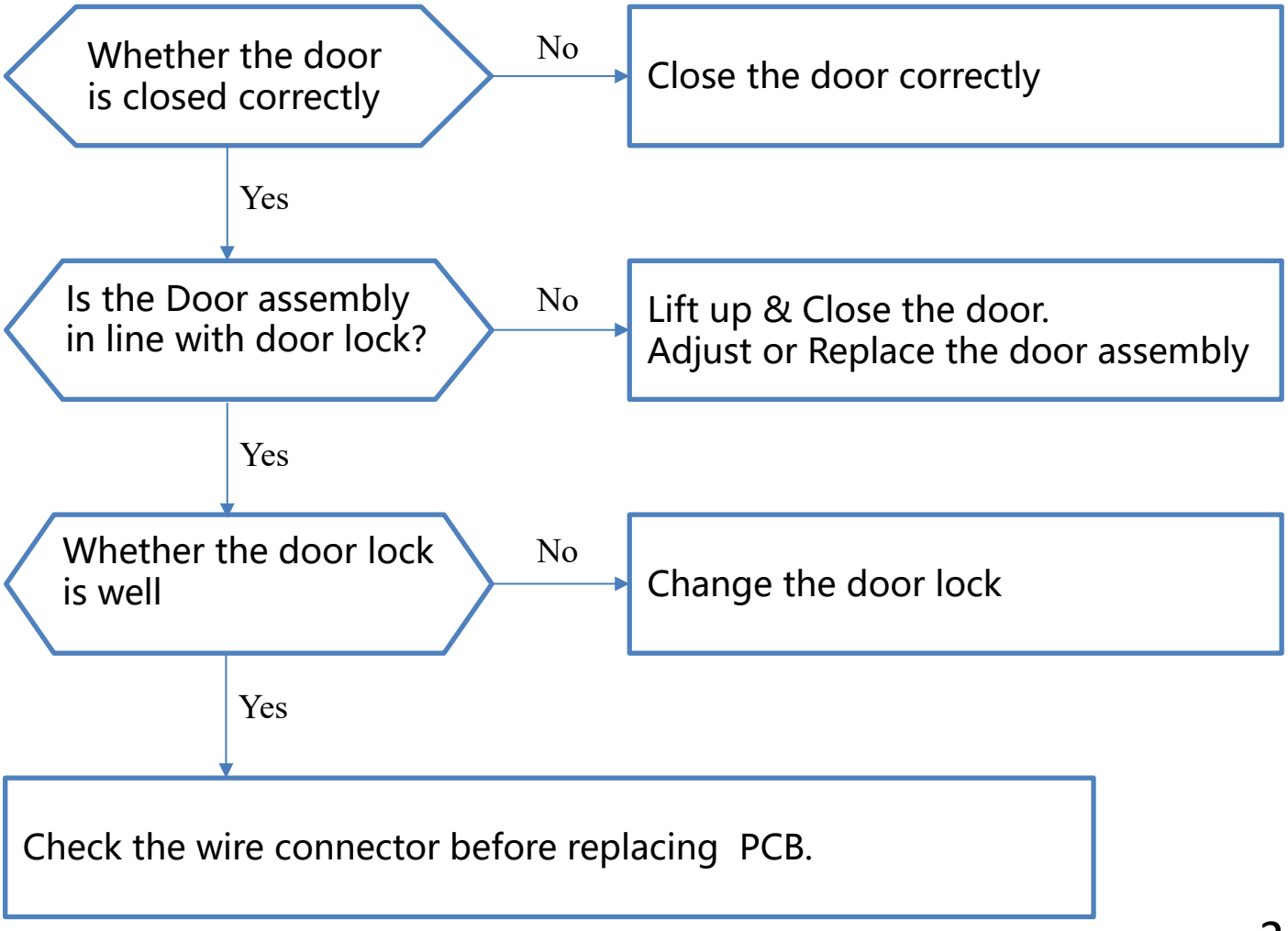
5. MALFUNCTION CODES AND EXPLANATIONS

E30

- Define: Door is not closed properly.
- Reasons: Door can’ t be locked with over 3 time’ s fail.

Malfunction code	Root Reason	Possible cause
E30	Door can’ t be locked with over 3 time’ s fail.	The Door is not closed or is not closed in correct location.
		The inner wire connector is not installed well.
		Check the PCB

- Check Procedure:



E30

➢ Check Procedure:

Step 1 Check the door

① Check the door and close it correctly.

Step 2 Check the door assembly

① Check the hook if it is in line with door lock. (Fig.1)
② Adjust or replace the door assembly.

Fig.1

Step 3 Check the door lock

① Open the door of the washing machine, pull out the door gasket and remove 2 screws on the door lock. (Fig.2)
② Take out the door lock and draw out the plug. (Fig.3)
③ Measure the resistance value of the door lock,100-300Ω is OK. (Fig.4)
④ If the resistance value of the door lock is not well, change the door lock.

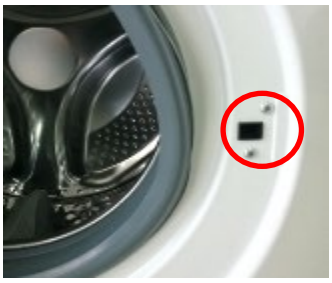


Fig.2

Fig.3

Fig.4

Step 4 Check the wire connector and PCB

① Check whether the wire and PCB connect well. (Fig.5)
② Reconnect the wire connector or replace the PCB.

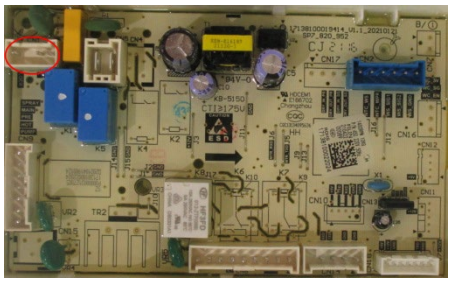


Fig.5

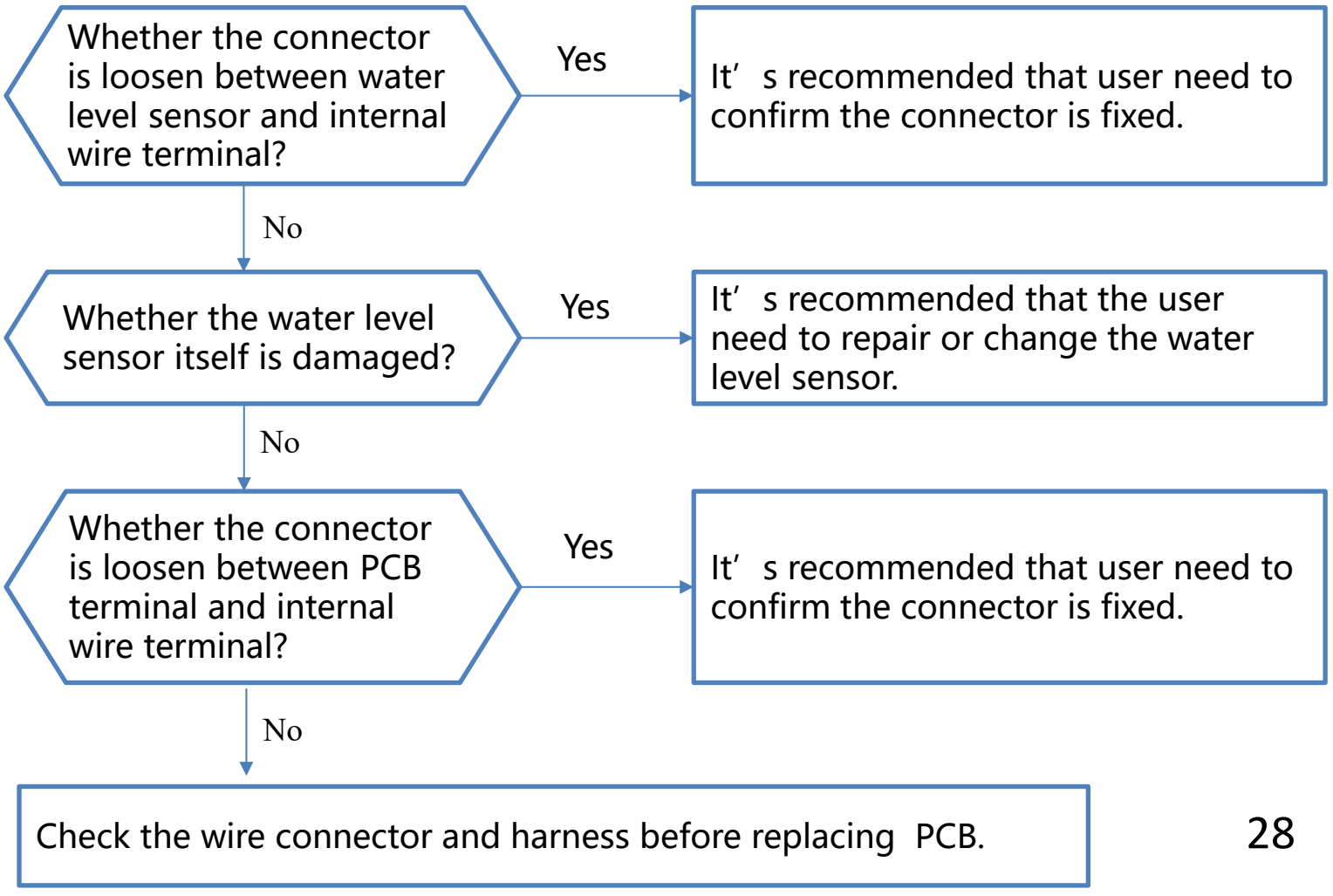
5. MALFUNCTION CODES AND EXPLANATIONS

E33

- Define: Water level sensor problem during wash cycle.
- Reasons: If the washing machine detects that the frequency of the water level sensor is not within the normal range for 10 seconds, it will give an alarm.

Malfunction code	Root Reason	Possible cause
E33	If the washing machine detects that the frequency of the water level sensor is not within the normal range for 10 seconds, it will give an alarm.	The wire connector loose between water level sensor and internal wire terminal
		Water level sensor failure
		The wire connector loose between PCB terminal and internal wire terminal

- Check Procedure:



E33

➢ Check Procedure:

Step 1 Check the connector between water level sensor and internal wire terminal

① If the connector is loosen between water level sensor and internal wire terminal the E33 warning will occur on the power. It' s recommended that user need to confirm the connector is fixed. (Fig.1)

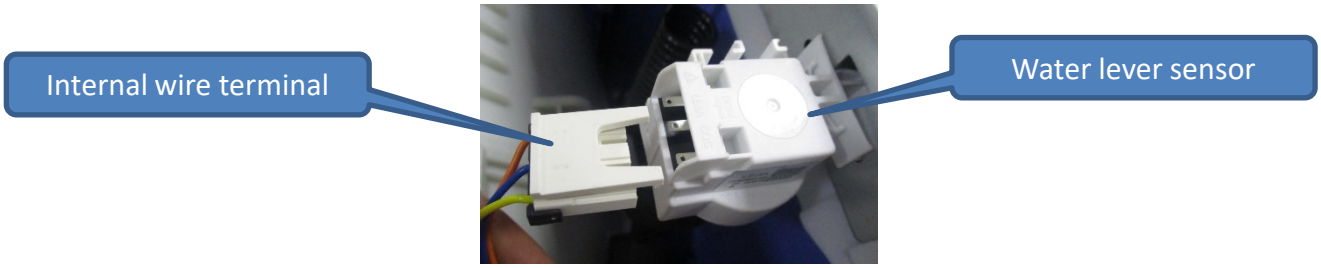


Fig.1

Step 2 Check the water level sensor

① Check whether the water level sensor itself is damaged, if it' s damaged the E33 warning will occur . It' s recommended that the user need to repair or change the water level sensor. (Fig.2)

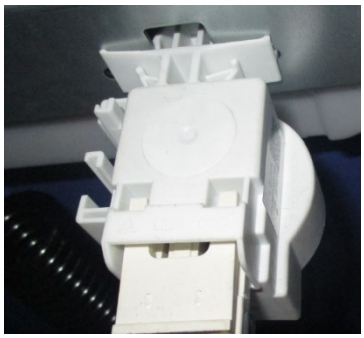


Fig.2

Step 3 The wire connector loose between PCB terminal and internal wire terminal

① If the connector is loosen between PCB terminal and internal wire terminal the E33 warning will occur on the power. It' s recommended that user need to confirm the connector is fixed.(Fig.3)

② If all inspections are completed, it is suspected that the computer board is damaged. It' s recommended that the user need to repair or change the water level sensor.

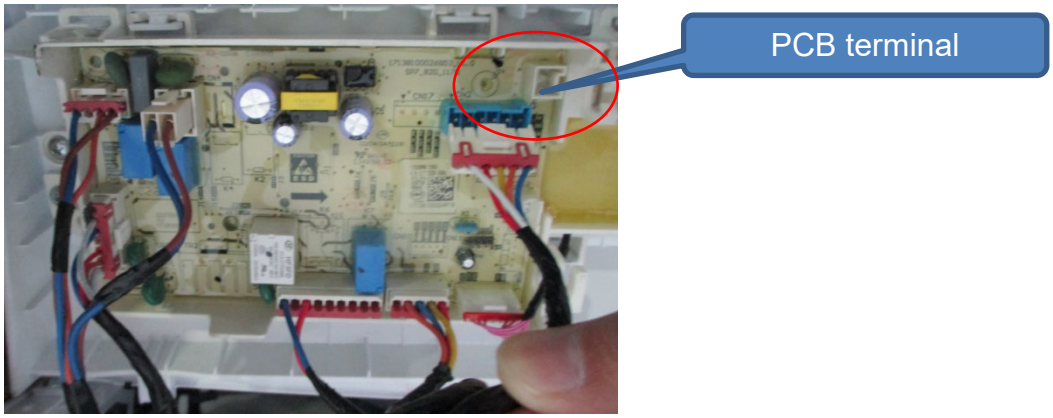


Fig.3

5. MALFUNCTION CODES AND EXPLANATIONS

E50

- Define: Motor inverter PCB detects abnormal signals and show the error

- Reasons: Motor inverter PCB detects abnormal signals and show the error. It is mainly divided into the following four categories, each of which has detailed adverse causes.

(a) : The external voltage is abnormal, which causes the motor inverter PCB to judge that the voltage is too high or too low
(b) : The motor inverter PCB is overloaded ->It may be that the motor rotation is blocked, causing the motor inverter PCB to overload
(c) : The motor inverter PCB is damaged, causing the motor inverter PCB to detect excessive current or abnormal IPM temperature sampling.
(d) : The motor inverter PCB is abnormal due to the main PCB issue. There are the following situations: 1) The motor speed signal cannot be detected; 2) Due to the abnormality of the main PCB, the temperature of the motor inverter PCB is abnormal, and the motor temperature is misjudged to be too high; 3) The motor inverter read the information (Flash) incorrectly due to the defective motor inverter PCB.

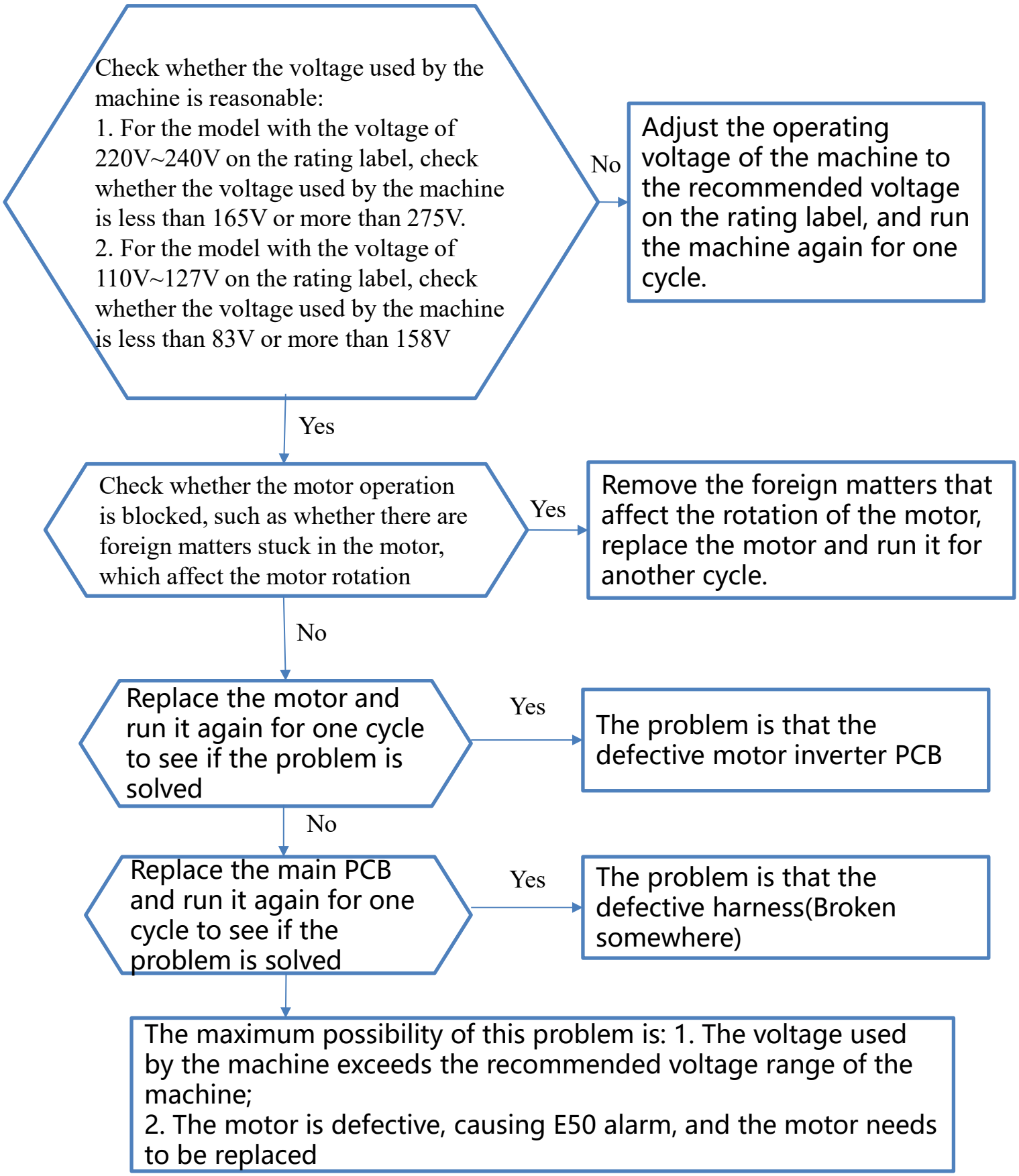
5. MALFUNCTION CODES AND EXPLANATIONS

E50

Malfunction code	Root Reason	Possible cause
E50	Motor inverter PCB detects abnormal signals and show the error	The external voltage is abnormal, which causes the motor inverter PCB to judge that the voltage is too high or too low
		The motor inverter PCB is overloaded ->It may be that the motor rotation is blocked, causing the motor inverter PCB to overload
		The motor inverter PCB is damaged, causing the motor inverter PCB to detect excessive current or abnormal IPM temperature sampling.
		The motor inverter PCB is abnormal due to the main PCB issue. There are the following situations: 1) The motor speed signal cannot be detected; 2) Due to the abnormality of the main PCB, the temperature of the motor inverter PCB is abnormal, and the motor temperature is misjudged to be too high; 3) The motor inverter read the information (Flash) incorrectly due to the defective motor inverter PCB.

E50

➢ Check Procedure:



E50

➢ Check Procedure:

Step 1 Check whether the voltage used by the machine is reasonable:

1. For the model with the voltage of 220V~240V on the rating label, check whether the voltage used by the machine is less than 165V or more than 275V.
2. For the model with the voltage of 110V~127V on the rating label, check whether the voltage used by the machine is less than 83V or more than 158V

① Use a multimeter to measure the voltage of the socket (Fig.1)
② 1) For the model with the voltage of 220V~240V on the rating label, check whether the voltage used by the machine is less than 165V or more than 275V.
2) For the model with the voltage of 110V~127V on the rating label, check whether the voltage used by the machine is less than 83V or more than 158V

Fig.1

Step 2 Check whether the motor operation is blocked, such as whether there are foreign matters stuck in the motor, which affect the motor rotation

① Check whether the motor operation is blocked, such as whether there are foreign matters stuck in the motor, which affect the motor rotation.

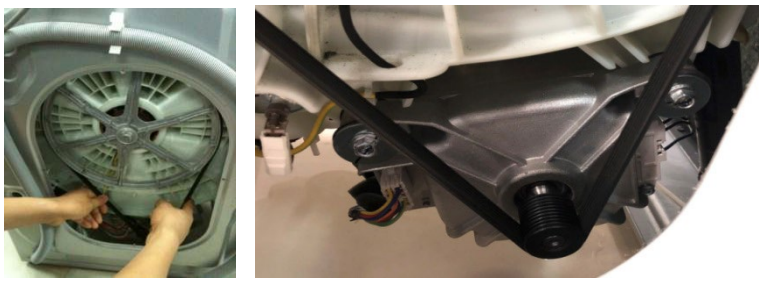


Fig.2

E50

➢ Check Procedure:

Step 3 Replace the motor and run it again for one cycle to see if the problem is solved

① Remove the Belt. (Fig.3)
② Disassemble the bolt of pulley and pull out the pulley. Disassemble the connector of motor. Disassemble 2 screws on the motor. (Fig.4)
③ Replace the motor.

Fig.3

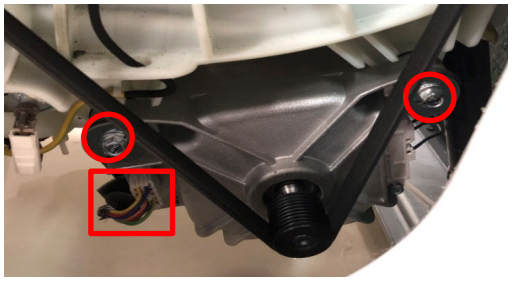


Fig.4

Step 4 Replace the main PCB and check whether the problem can be solved

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.5)
② Remove the 4 screws of control panel. (Fig.6)
③ Replace the main PCB. (Fig.7)

Fig.5

Fig.6

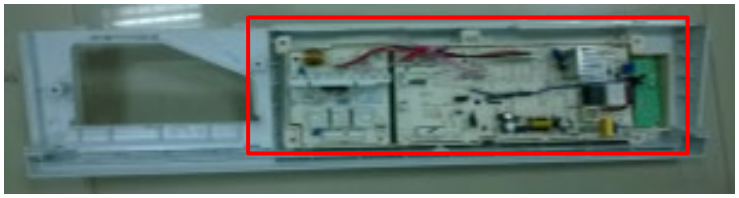


Fig.7

5. MALFUNCTION CODES AND EXPLANATIONS

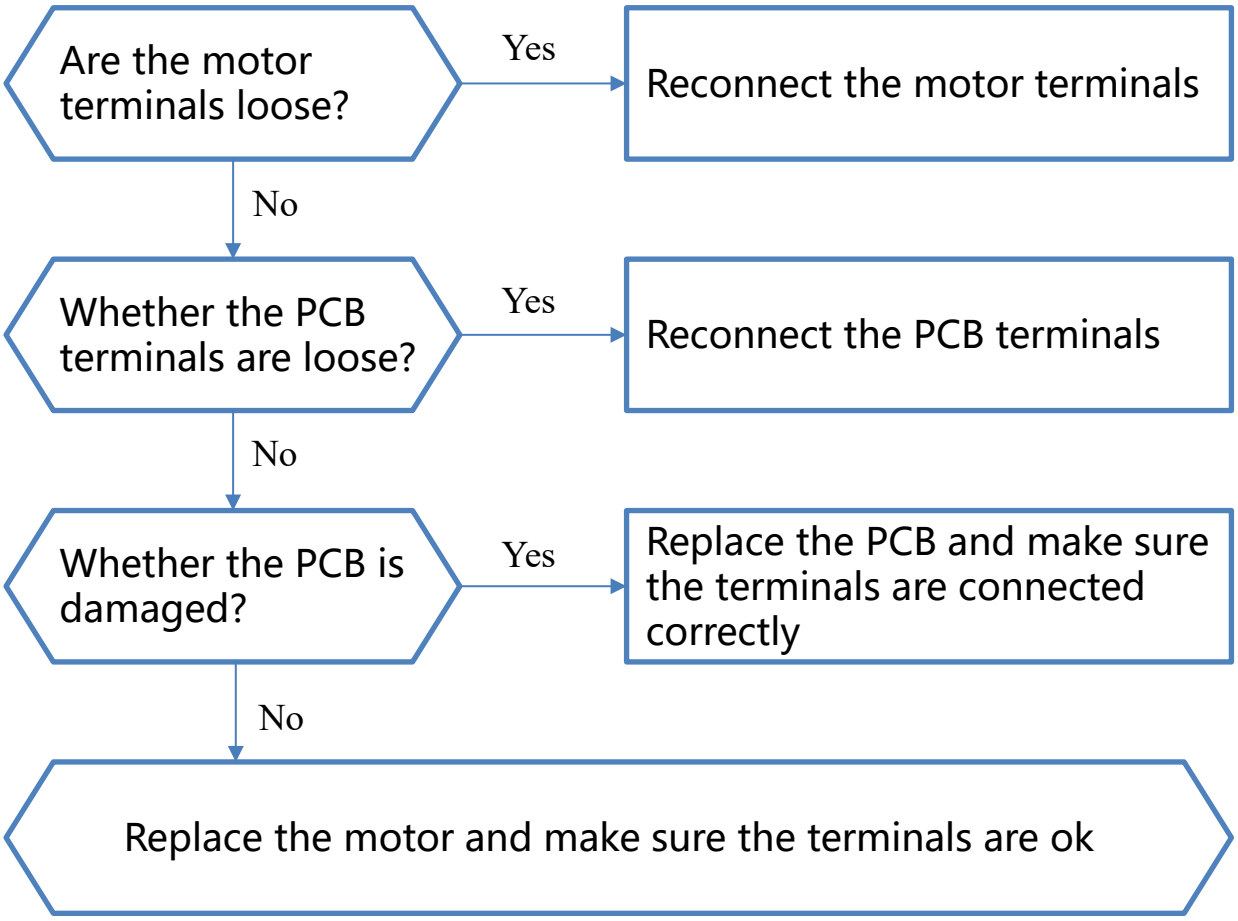
E60

- Define: The motor does not rotate
- Reasons: The root reason is the motor failed to start 5 times

Malfunction code	Root Reason	Possible cause
E60	The root reason is the motor failed to start 5 times	The PCB terminals is loose
		The PCB is damaged
		The motor terminals is loose
		The motor is damaged

E60

➢ Check Procedure:



E60

➢ Check Procedure:

Step 1 Check the motor terminals

① Disassemble the 4 screws of the rear cover. (Fig.1)
② Remove the rear cover and then dump the washing machine. (Fig.2)
③ Check the motor terminals and reconnect them if they are loose. (Fig.3)

Fig.1

Fig.2

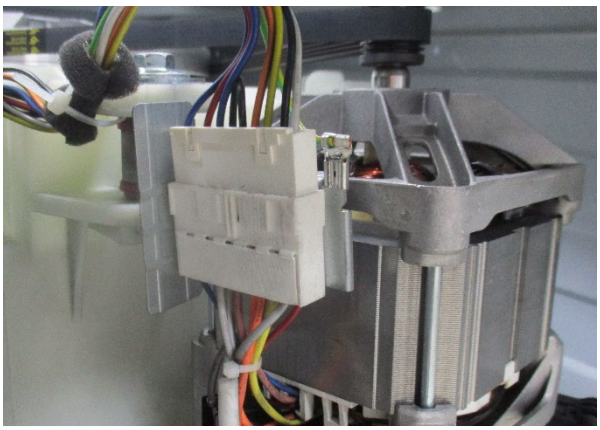


Fig.3

Step 2 Check the PCB terminals

① Disassemble the 2 screws of the top cover plate. (Fig.4)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.5)
③ Check the PCB terminals and reconnect them if they are loose. (Fig.6)

Fig.4

Fig.5

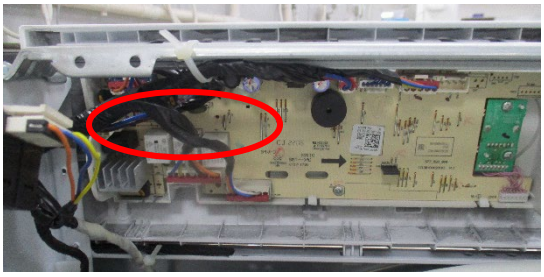


Fig.6

Step 3 Check the PCB

① Disassemble the 2 screws of the top cover plate. (Fig.4)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.5)
③ Check the PCB and replace it if it is damaged . (Fig.6)

5. MALFUNCTION CODES AND EXPLANATIONS

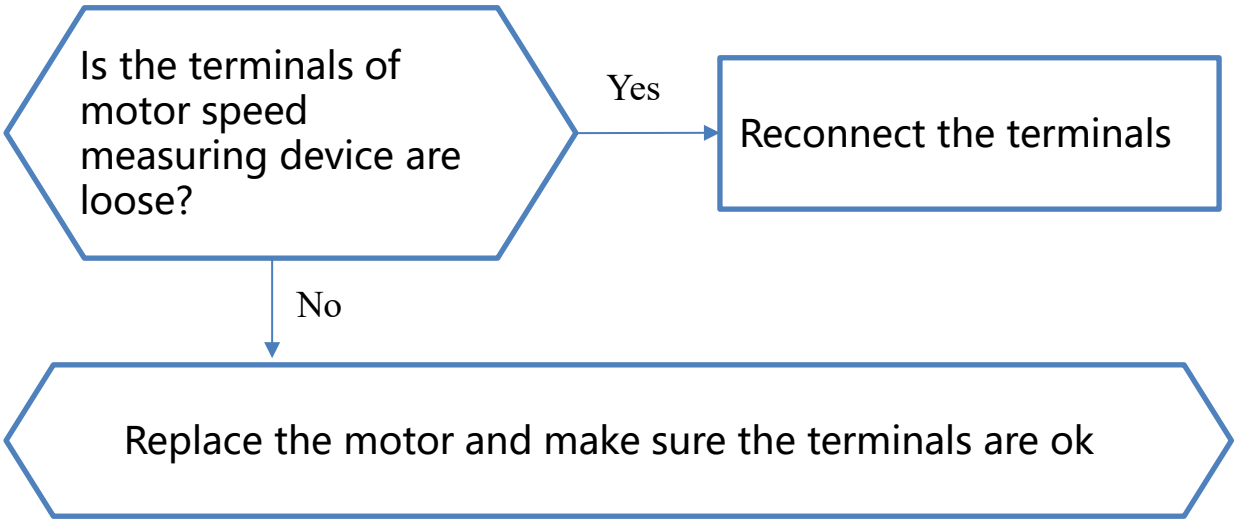
E61

- Define: The PCB cannot detect the speed feedback signal for 5 times
- Reasons: When the motor continues to rotate, the speed measured by the PCB is less than 15prm for 3 seconds.

Malfunction code	Root Reason	Possible cause
E61	When the motor continues to rotate, the speed measured by the PCB is less than 15prm for 3 seconds.	The terminals of motor speed measuring device are loose
		The motor is damaged

E61

- Check Procedure:



E61

➢ Check Procedure:

Step 1 Check the motor terminals

① Disassemble the 4 screws of the rear cover. (Fig.1)
② Remove the rear cover and then dump the washing machine. (Fig.2)
③ Check the terminals of motor speed measuring device s and reconnect them if they are loose. (Fig.3)

Fig.1

Fig.2

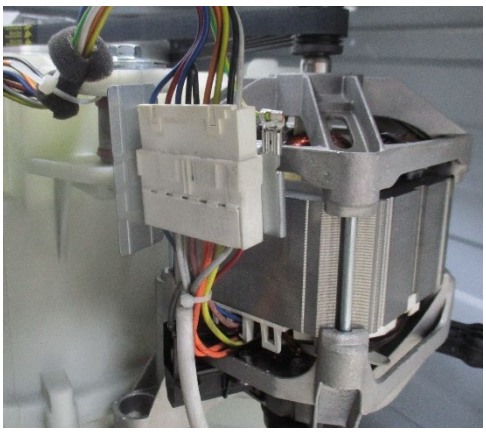


Fig.3

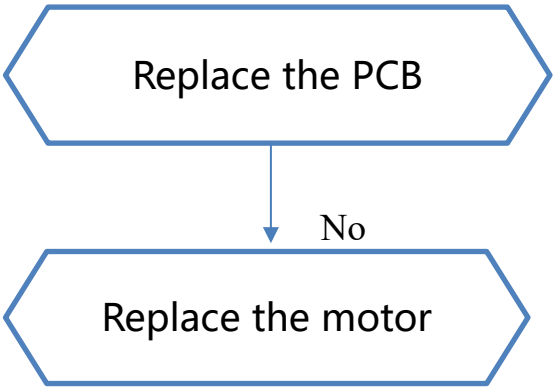
E62

- Define: The actual motor speed is 300prm higher than the target speed
- Reasons: The root reason is the SCR on the PCB is damaged

Malfunction code	Root Reason	Possible cause
E62	The SCR on the PCB is damaged	The SCR on the PCB is damaged
		The motor speed measuring device is damaged

E62

➢ Check Procedure:



E62

➢ Check Procedure:

Step 1 Replace the PCB

① Disassemble the 2 screws of the top cover plate. (Fig.1)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.2)
③ Disassemble the 2 screws on the control panel. (Fig.2)
④ After opening the drawer, press the blue siphon cap according to the text prompts, and take out the drawer at the same time. (Fig.3)
⑤ Disassemble the 2 screws on the control panel. (Fig.4)
⑥ Remove the terminals on the PCB.
⑦ Disassemble the 2 screws on the PCB and take out it.
⑧ Replace a new PCB and reassemble the washing machine.

Fig.1

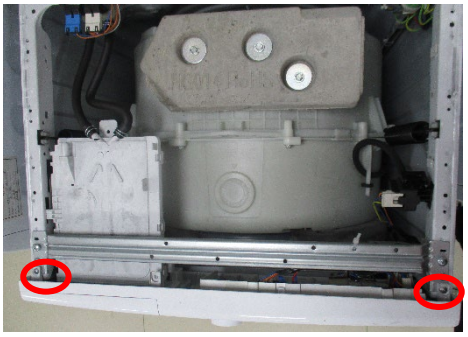


Fig.2

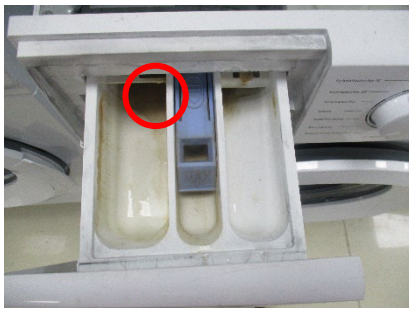


Fig.3

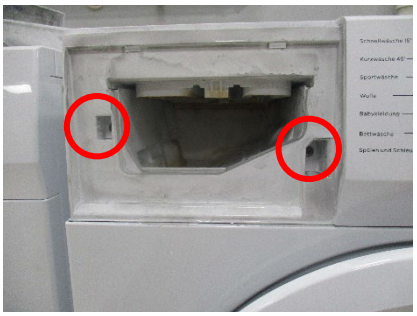


Fig.4

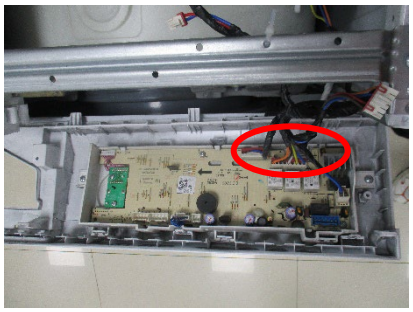


Fig.5

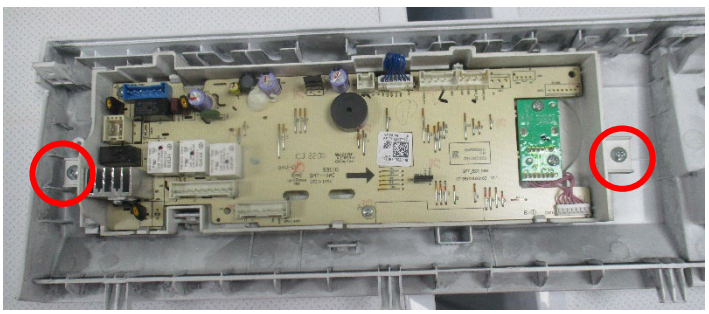


Fig.6

E62

➢ Check Procedure:

Step 2 Replace the motor

① Disassemble the 4 screws of the rear cover. (Fig.1)
② Remove the rear cover and then remove the belt. (Fig.2)
③ After the soft things are on the floor mat, the washing machine is dumped forward and downward.
④ Disassemble the screw on the rear tub and remove the terminal connecting the motor. (Fig.2)
⑤ Take out the motor upwards and replace it with a new one.

Fig.1

Fig.2

Fig.3

E64

- Define: Motor inverter PCB error (Only BLDC model have this error code)

- Reasons: Poor communication between main PCB board and motor inverter PCB (abnormal signal transmission) 。

(a) : Press the start button, and the main PCB board sends a command to communicate with the motor inverter PCB. If there is no reply from the motor inverter PCB within 20 seconds, it is considered as communication failure. After disconnecting the power supply of the motor inverter PCB for 2 minutes (resetting the motor inverter), power on again and try to send a command to connect the motor inverter. If communication is successful, start the operation. If it fails, give a direct alarm. A total of 7 attempts are made.

(b) : During operation, the main PCB board sends a command to communicate with the motor inverter PCB. If there is no reply from the motor inverter within 20 seconds, it is considered as communication failure. After disconnecting the power supply of the motor inverter for 2 minutes (resetting the motor inverter), power on again and try to send a command to communicate with the motor inverter. If the communication is successful, the operation will resume. Otherwise, after trying the above methods for 7 times, the communication fails and gives an alarm. Totally try 15 times.

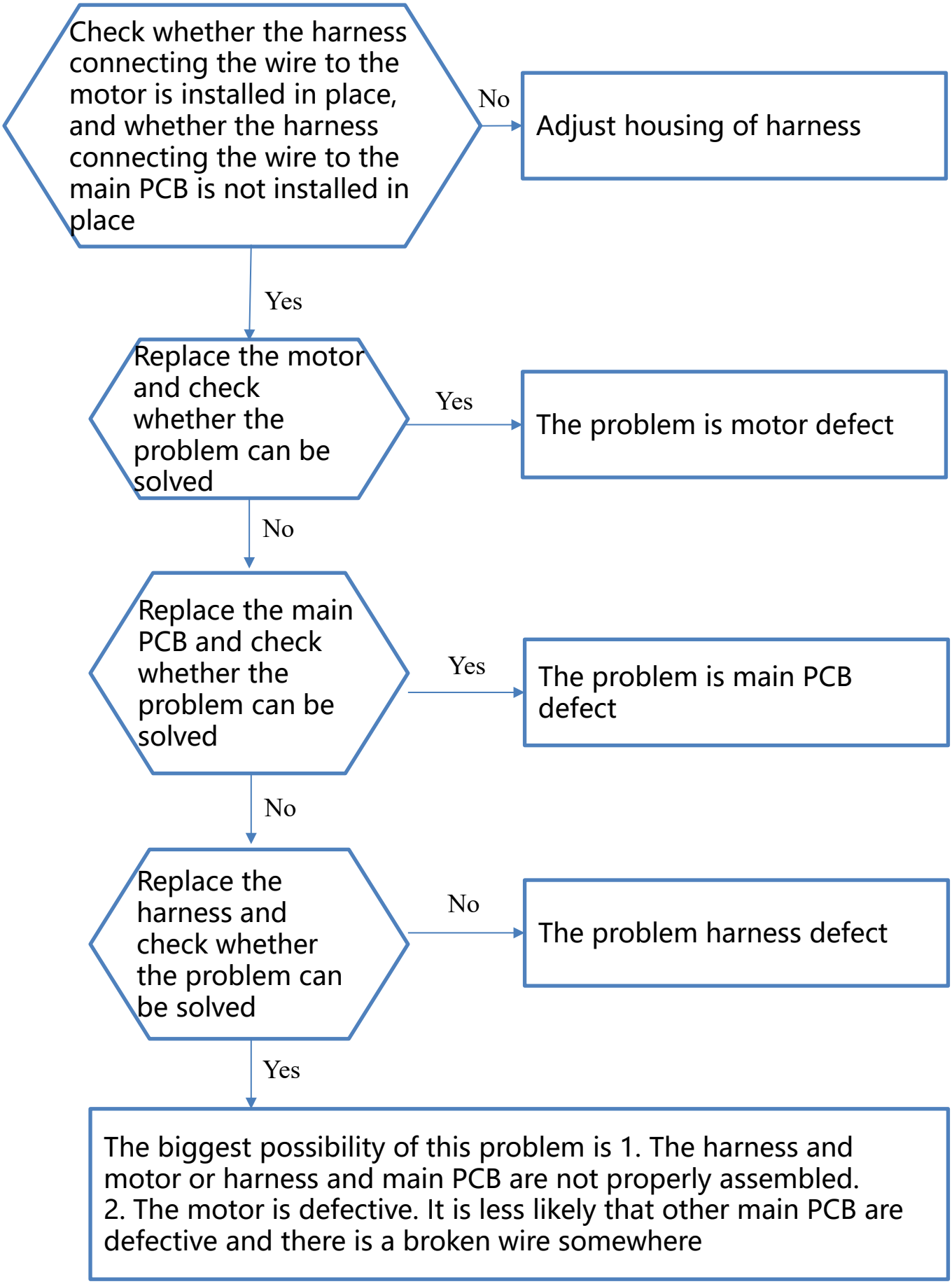
E64

Malfunction code	Root Reason	Possible cause
E64 (Only BLDC model have this error code)	Poor communication between main PCB board and motor inverter PCB (abnormal signal transmission)	Harness in connecting wire and motor is not installed in place, or harness in connecting wire and main PCB is not installed in place
		The motor inverter PCB is damaged (the components are damaged)
		Defective main PCB
		Broken harness (wires connecting main PCB and motor inverter)

5. MALFUNCTION CODES AND EXPLANATIONS

E64

➢ Check Procedure:



E64

➢ Check Procedure:

Step 1 Check whether the harness connecting the wire to the motor is installed in place, and whether the harness connecting the wire to the main PCB is not installed in place

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.1)
② Push back the top cover plate 15mm until it leave away from the control panel and then take it down. (Fig.2)
③ Check whether the harness connecting the wire to the main PCB is installed in place.(Fig.3)
④ Remove the 4 screws of the rear cover, and show the motor. (Fig.4 & Fig.5)
⑤ Check whether the harness connecting the wire to the motor is installed in place.(Fig.6)

Fig.1

Fig.2

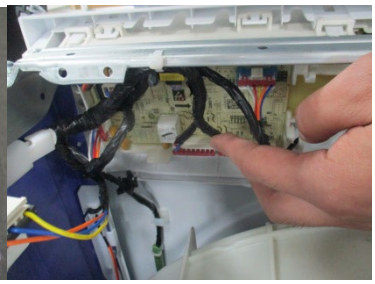


Fig.3

Fig.4

Fig.5

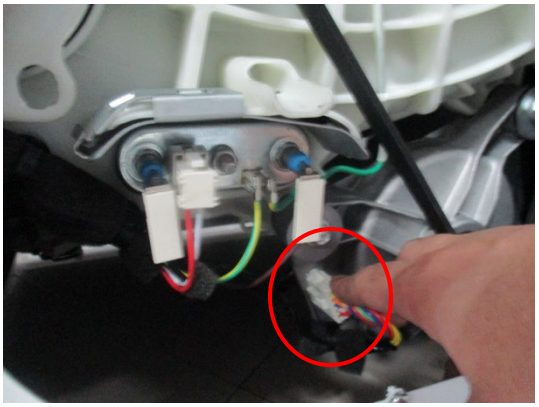


Fig.6

Step 2 Replace the motor and check whether the problem can be solved

① Remove the Belt. (Fig.7)
② Disassemble the bolt of pulley and pull out the pulley. Disassemble the connector of motor. Disassemble 2 screws on the motor. (Fig.8)
③ Replace the motor.

Fig.7

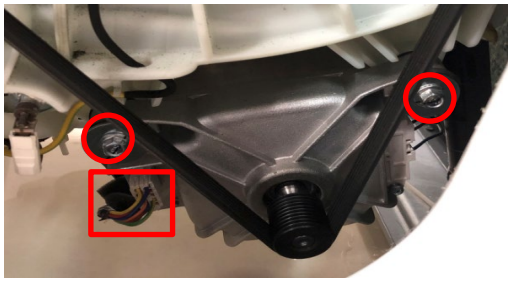


Fig.8

E64

➢ Check Procedure:

Step 3 Replace the main PCB and check whether the problem can be solved

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.1)
② Remove the 4 screws of control panel. (Fig.9)
③ Replace the main PCB. (Fig.10)

Fig.1

Fig.9

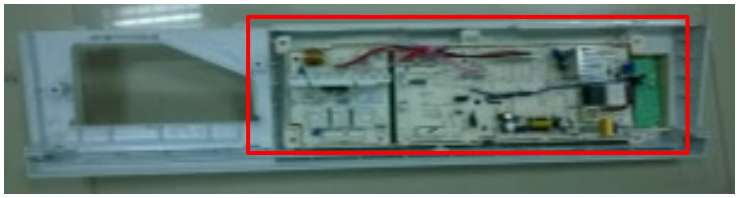


Fig.10

Step 4 Replace the harness and check whether the problem can be solved

① Close the tap and disassemble the 2 screws of the top cover plate. (Fig.1)
② To replace the main harness, remove all housing of the main harness. And replace the main harness with a new one.

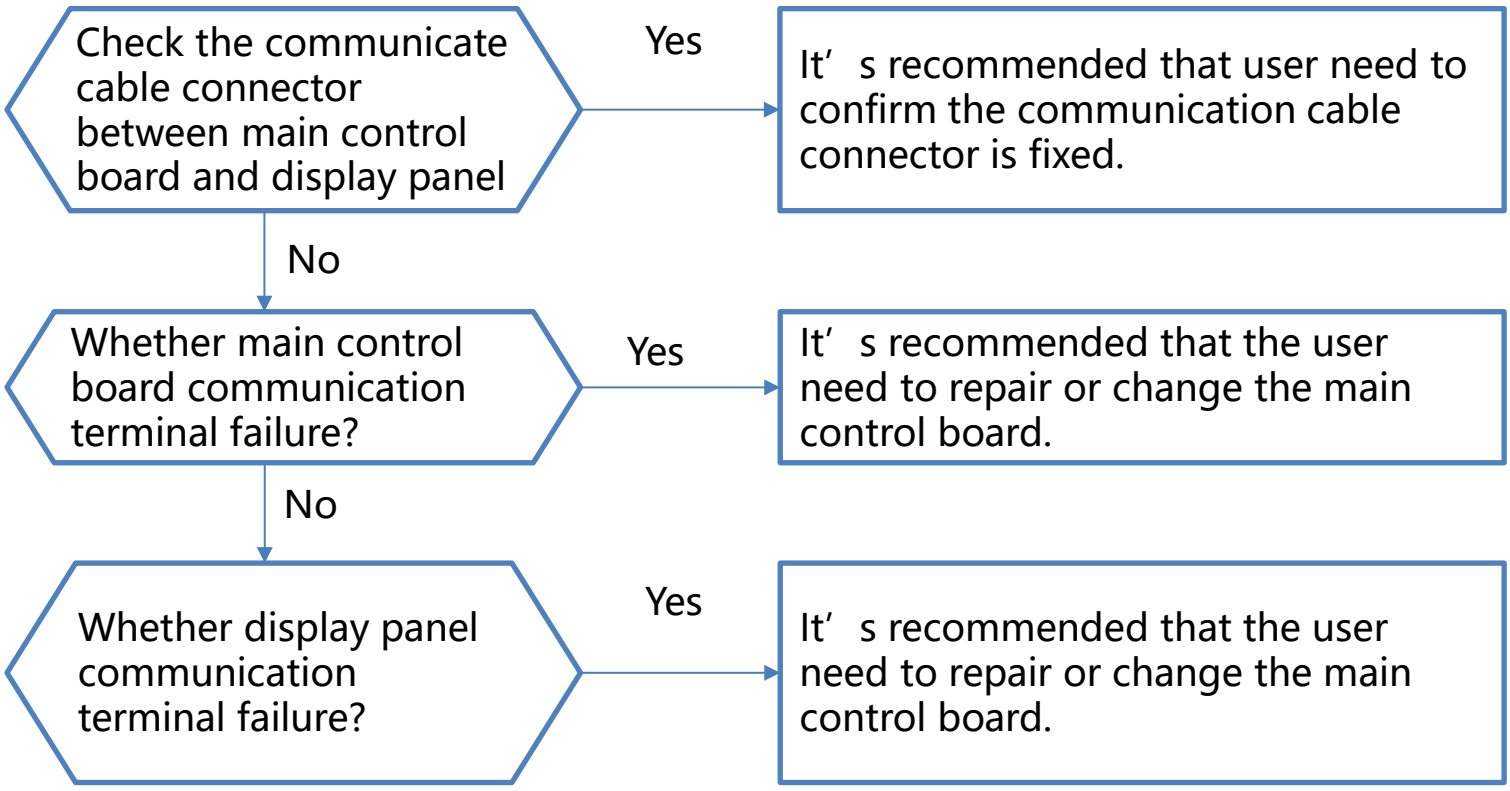
5. MALFUNCTION CODES AND EXPLANATIONS

E80

- Define: Communication error alarm.
- Reasons: There is no communication between main control board and display panel.

Malfunction code	Root Reason	Possible cause
E80	There is no communication between main control board and display panel	Check the communicate cable connector between main control board and display panel
		Main control board communication terminal failure
		Display panel communication terminal failure

- Check Procedure:



5. MALFUNCTION CODES AND EXPLANATIONS

E80

➢ Check Procedure:

Step 1 Check the connector between main control board and display panel

① If the communication cable connector is loosen the E80 warning will occur when the washing machine is running. It' s recommended that user need to confirm the communication cable connector is fixed. (Fig.1)

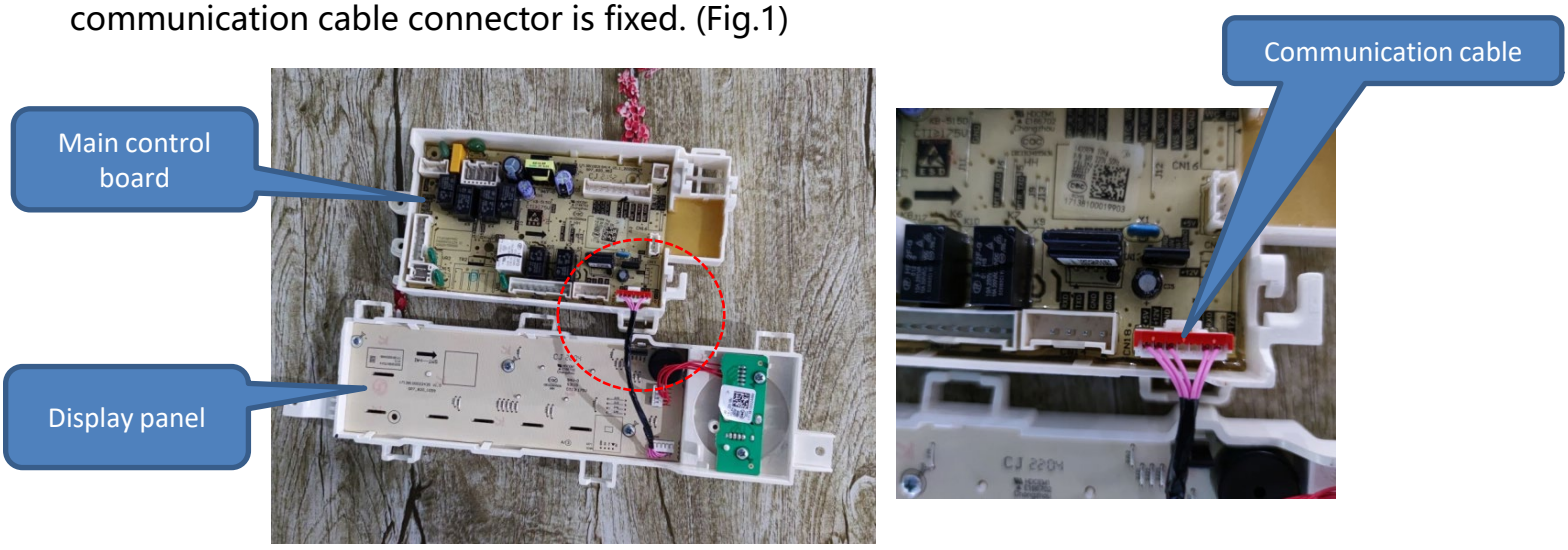


Fig.1

Step 2 Main control board communication terminal failure

① Check whether the communication terminal is damaged, if it' s damaged the E80 warning will occur . It' s recommended that the user need to repair or change the main control board. (Fig.2)

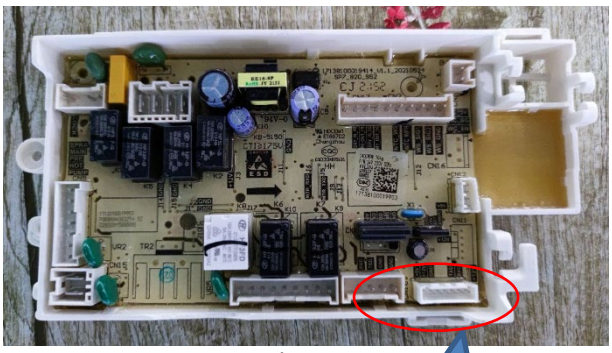


Fig.2

Step 3 Display panel communication terminal failure

① Check whether the communication terminal is damaged, if it' s damaged the E80 warning will occur . It' s recommended that the user need to repair or change the main control board. (Fig.3)

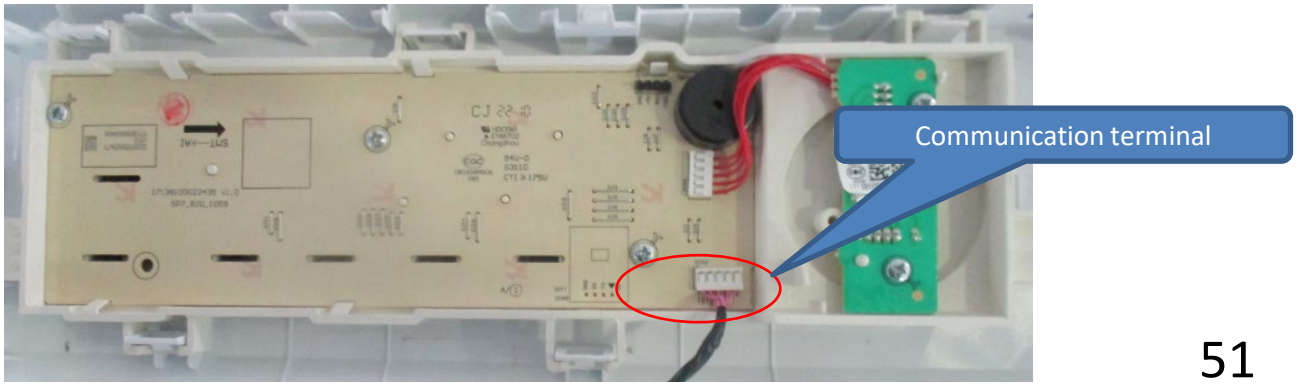
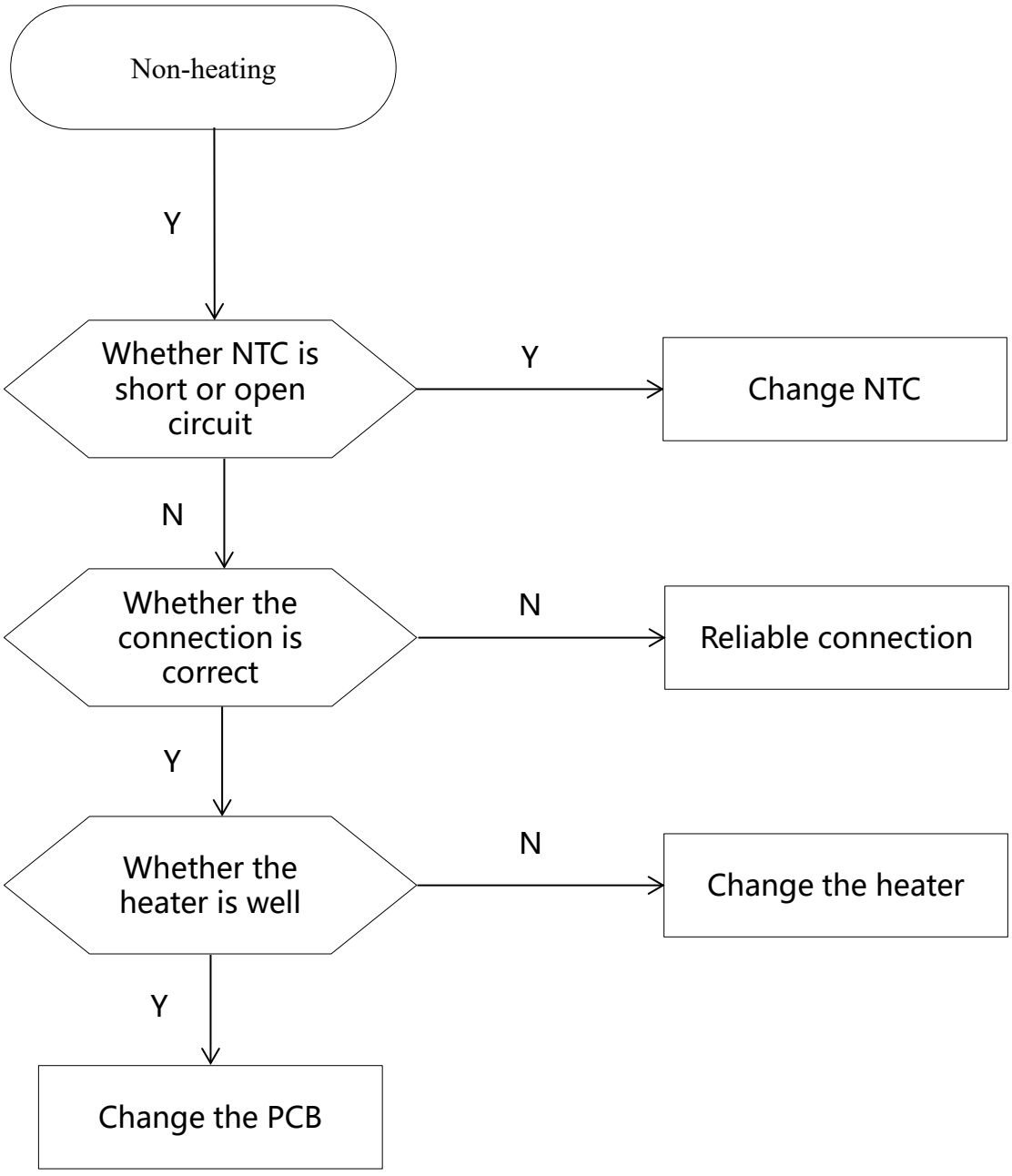


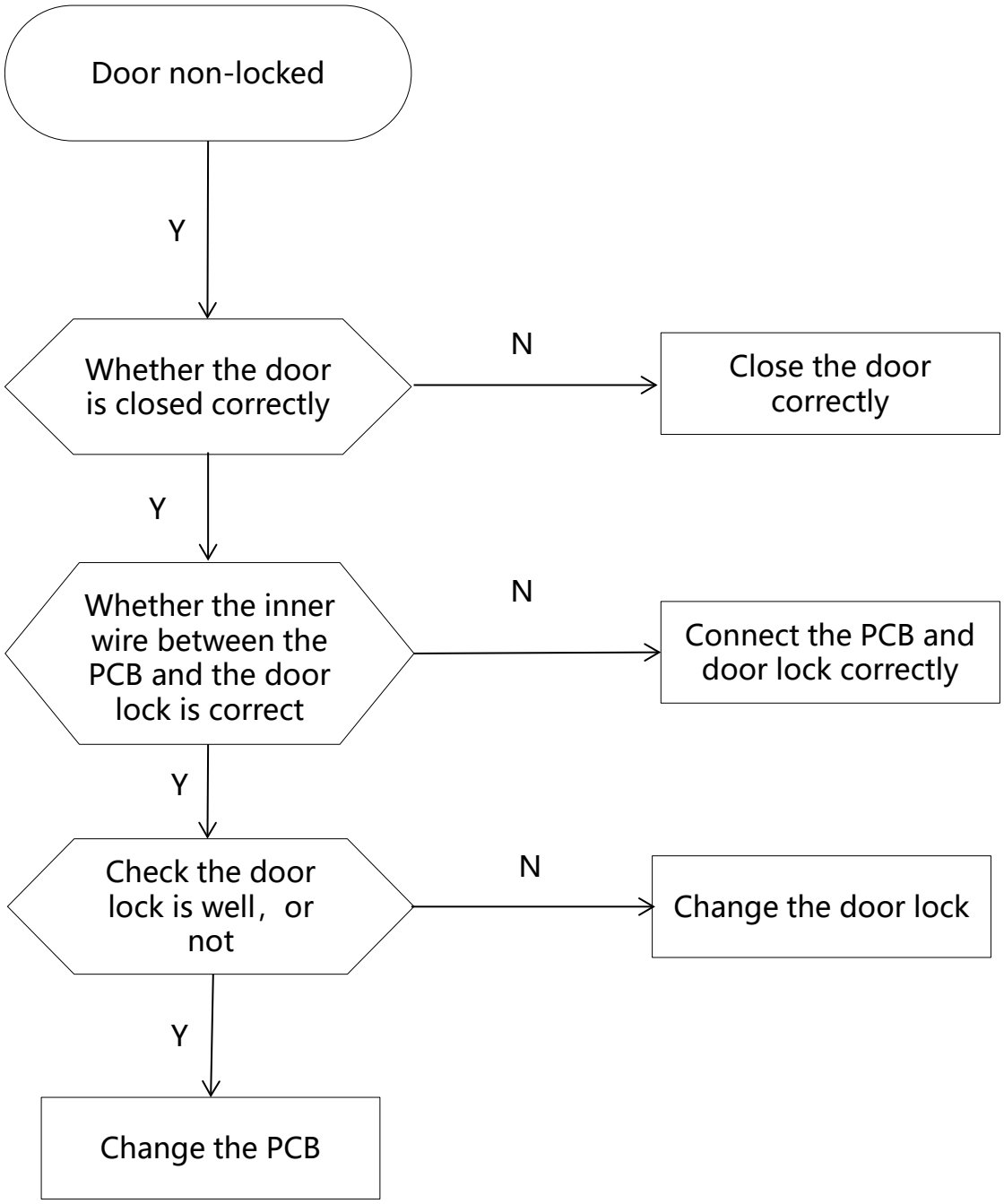
Fig.3

Fault tree

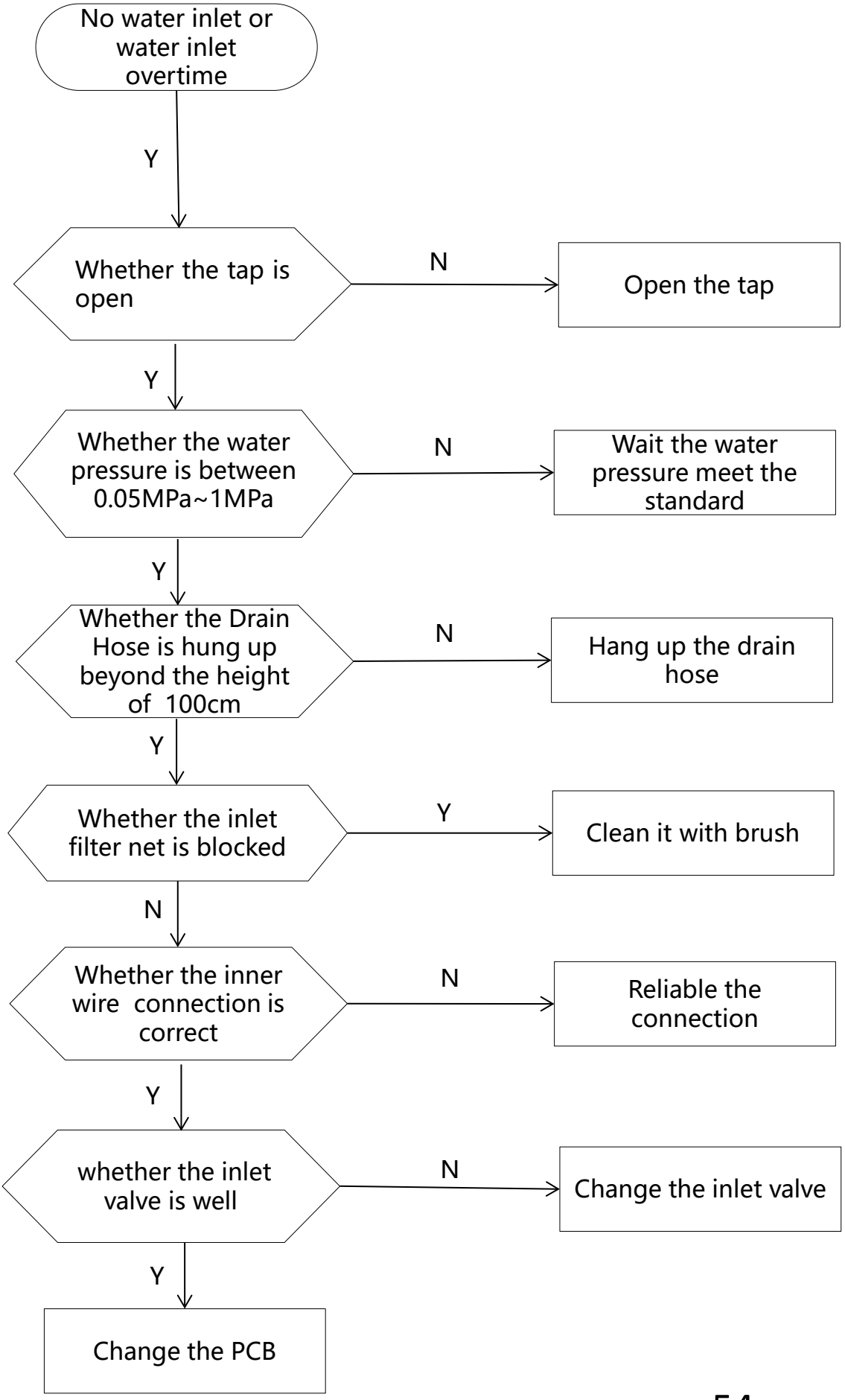
1. Maintenance non-heating malfunction



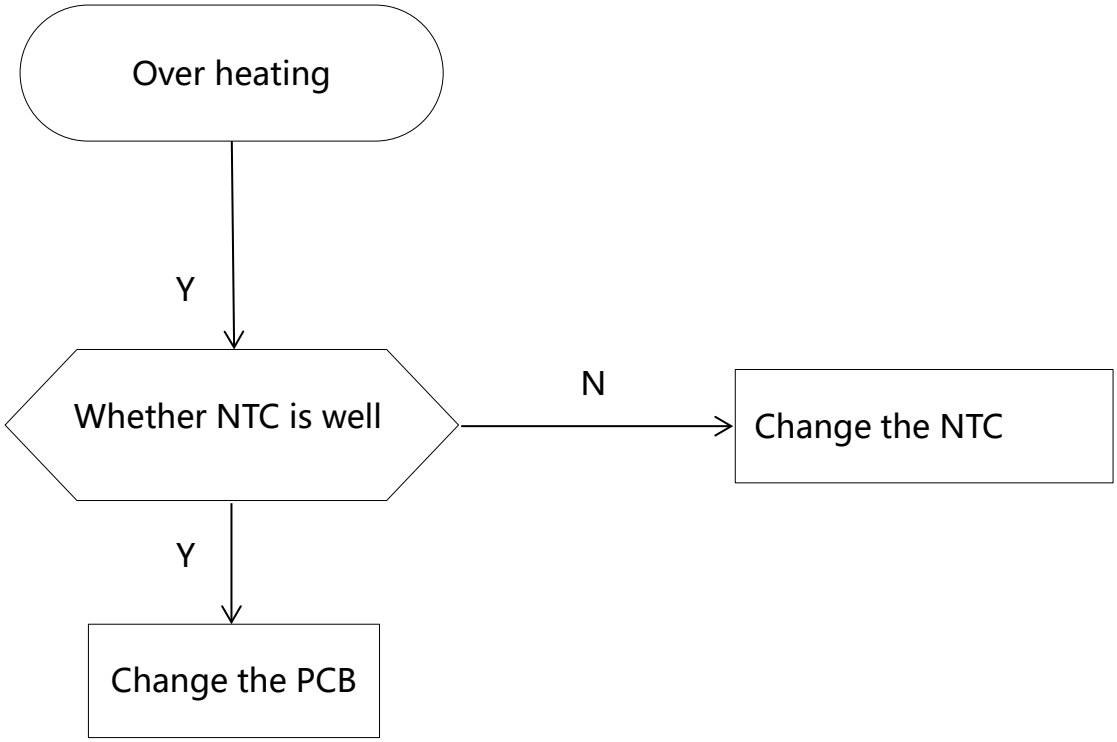
2. Door non-locked & its maintenance



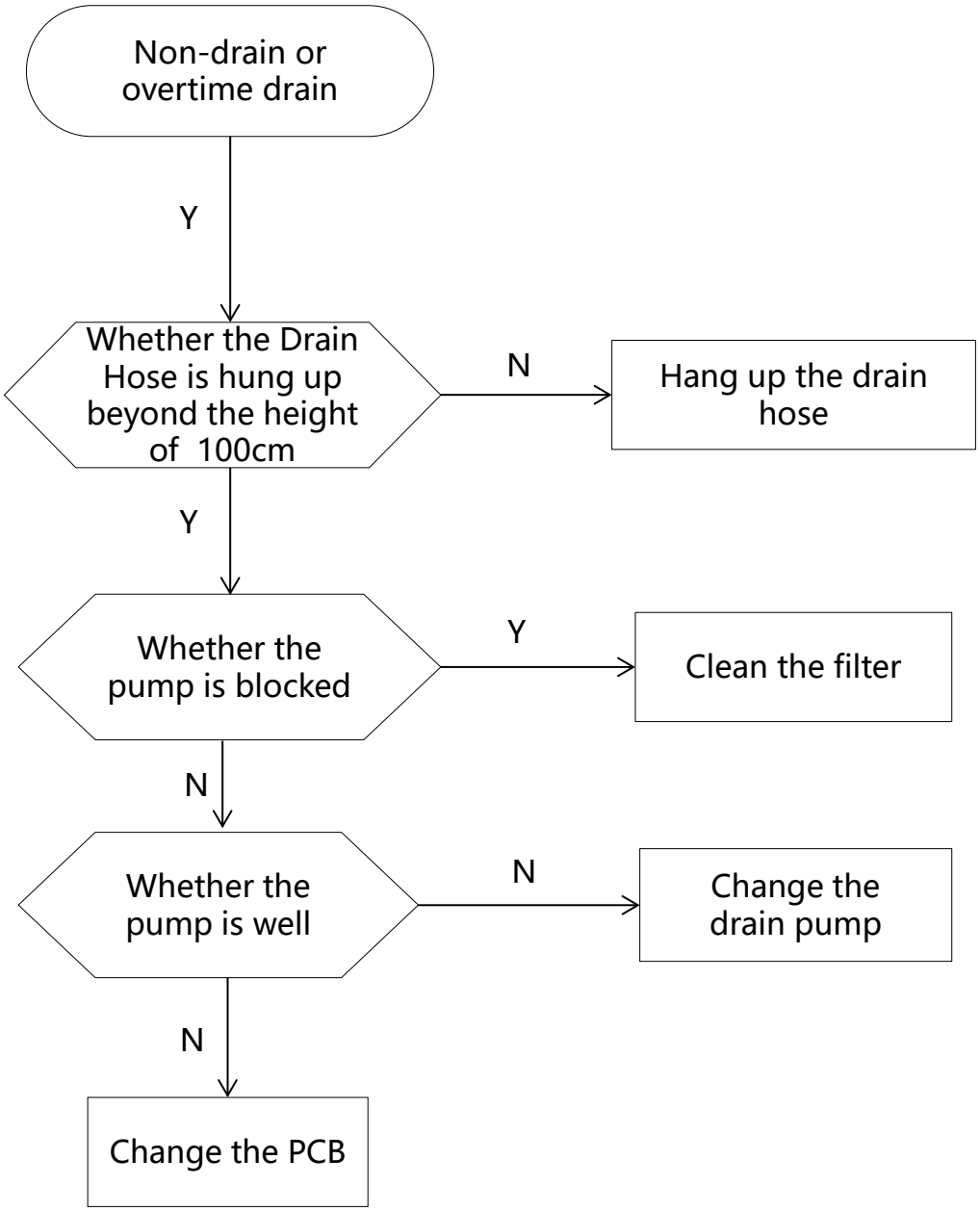
3. No water inlet or water inlet overtime



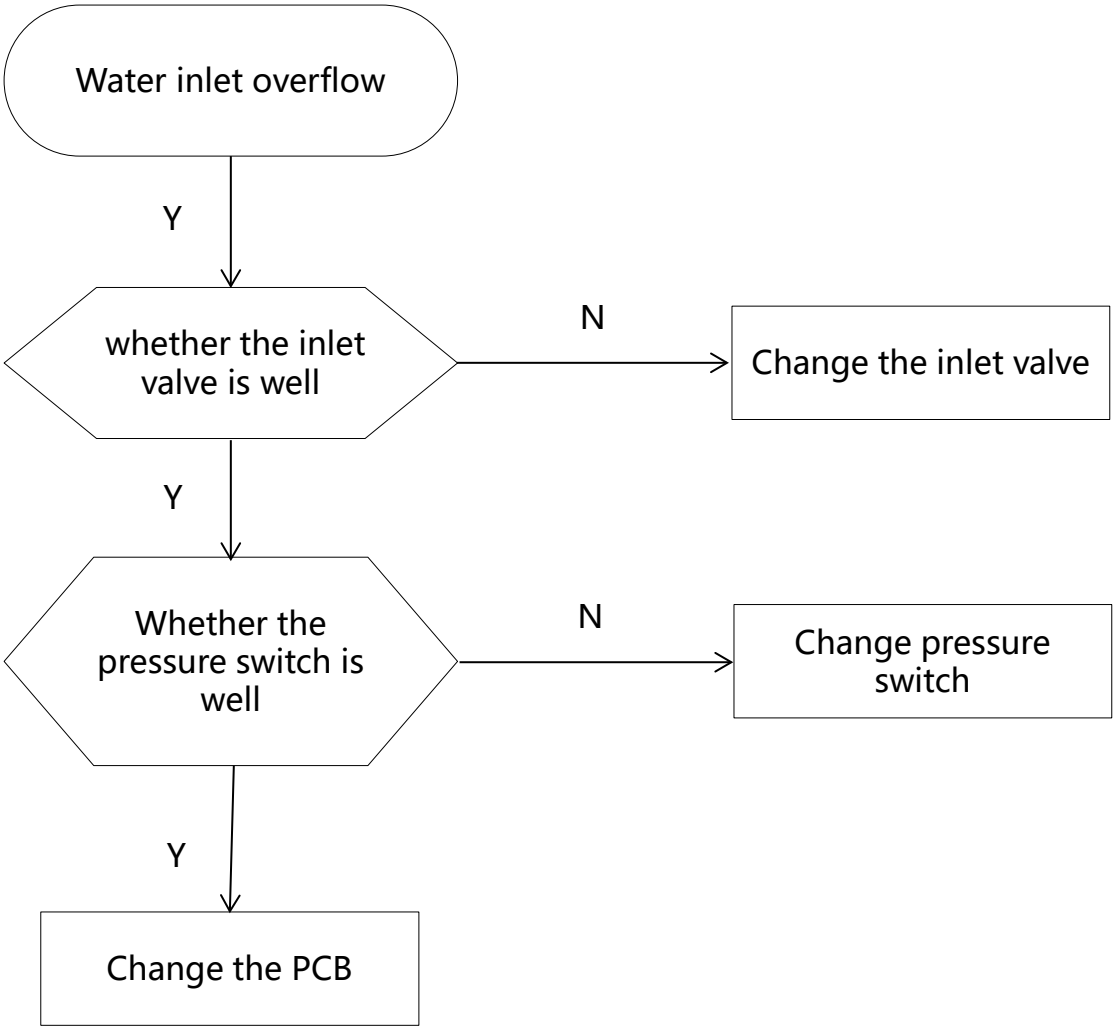
4. Over heating



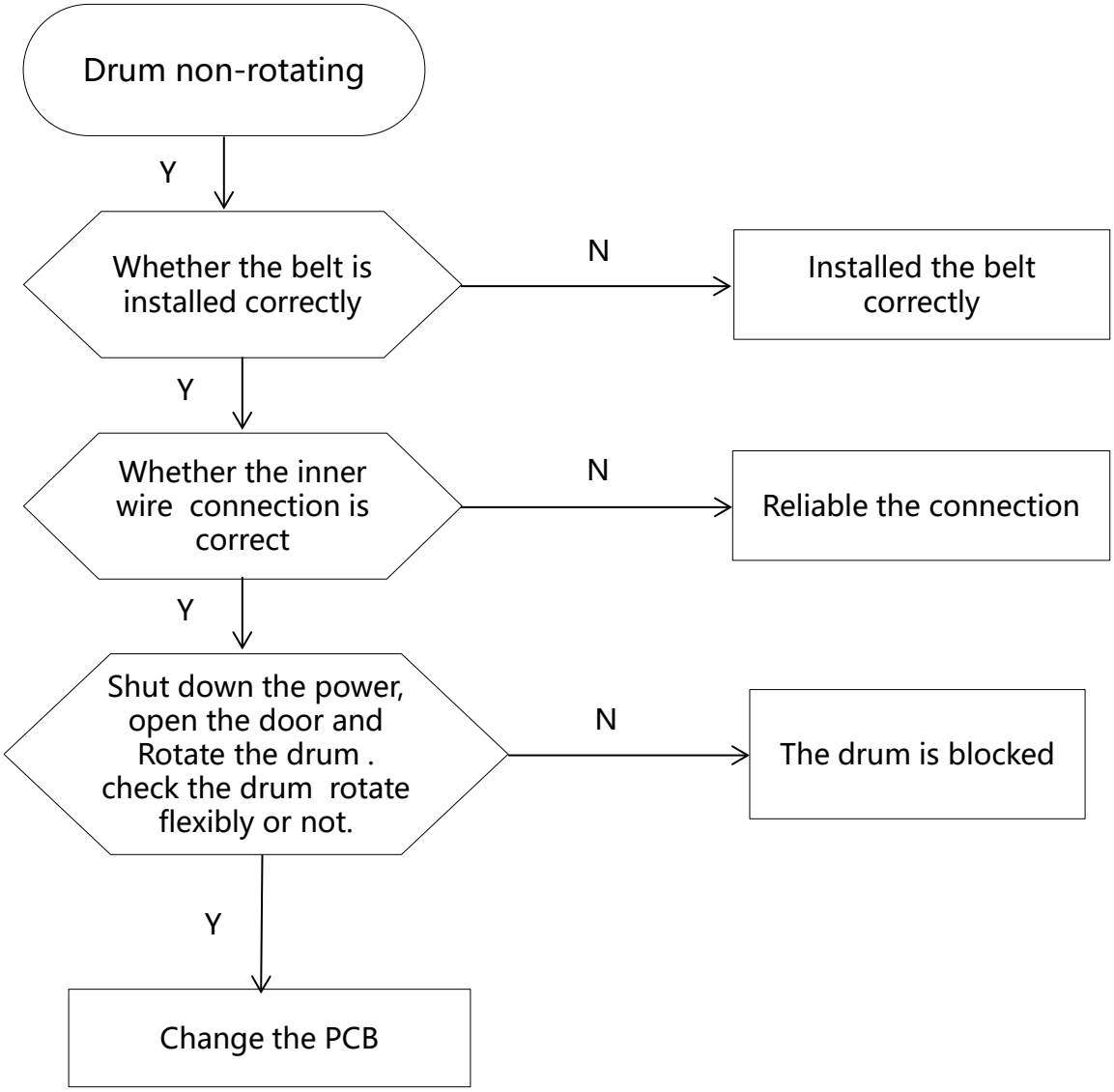
5. Maintenance of non-drain or drain exceed the setting time



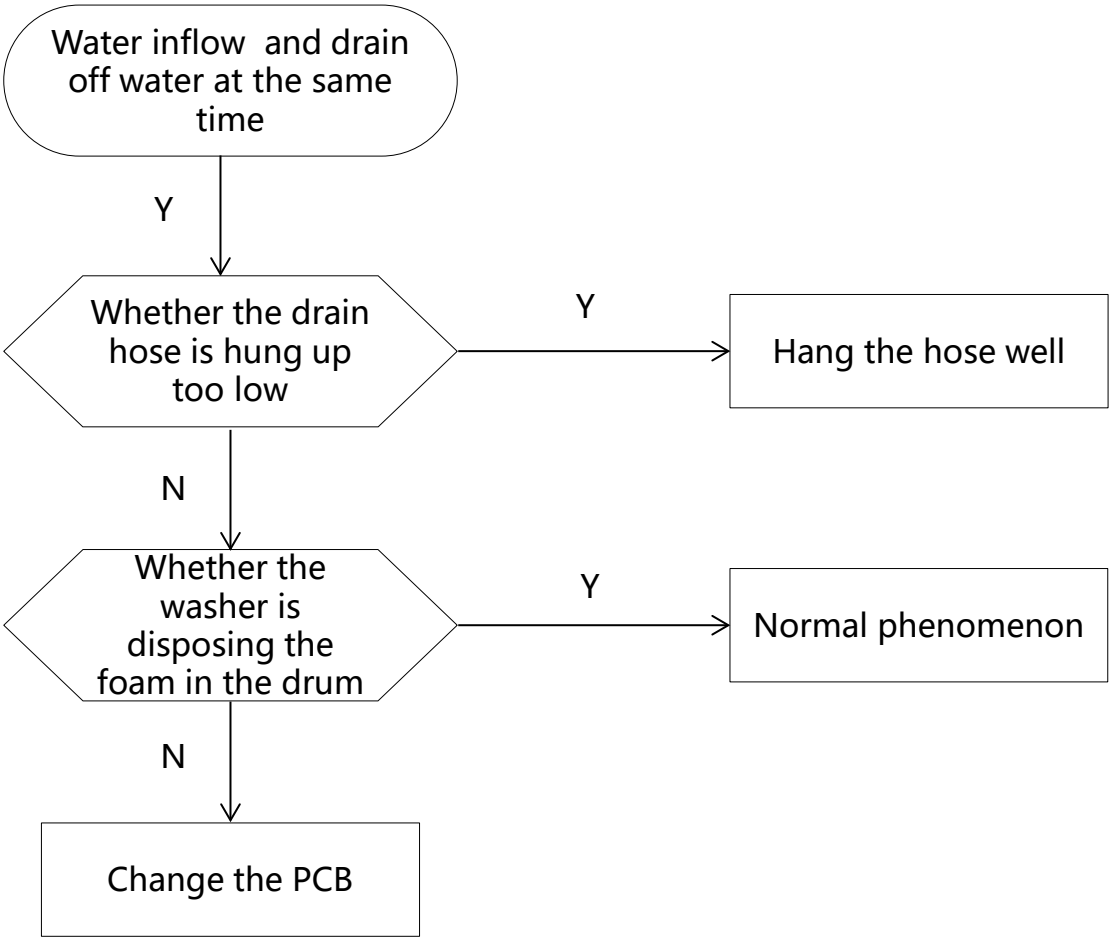
6. Water inlet overflow malfunction maintenance



7. Drum non-rotating malfunction maintenance



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



6 TROUBLESHOOTING

Malfunction and solution

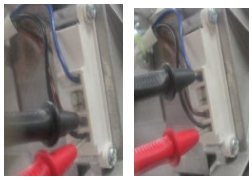
Description	Solution
The washing machine does not work	Close the washing machine's door.
Water leakage	Correctly connect the inlet water pipe.
The speed of the clothes is abnormal	Reload and distribute the laundry evenly in the drum.
There is the peculiar smell in the washing machine	Run a Self clean(Drum 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 is0.6-1 meter from the bottom of the washing machine.

6 TROUBLESHOOTING

Vibration of the washing machine	Level the washing machine. Level the washing machine. Fasten the footing. To check if the internal packing for the transportation have all been removed.
The bubble spills from the detergent	Check if the detergent is excessive, if it is the specialized detergent for the cylinder washing machine. Dip one scoop of the softener mixed with 1/2 liter of water to the detergent box II. Reduce the usage amount of the detergent in the next time's wash.
The machine stops when the procedure has not been finished	Power failure or water cut.
The drainage pump has noise during the operation when the water has just been drained	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.
To stop for some time during the wash procedure	The washing machine adds water automatically. Because there is too much bubble in the tube, the washing machine is cleaning the bubble.
If you cannot solve the above abnormal situations, would you please: **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

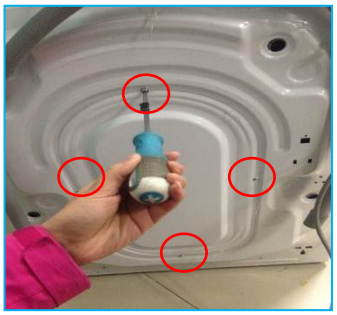
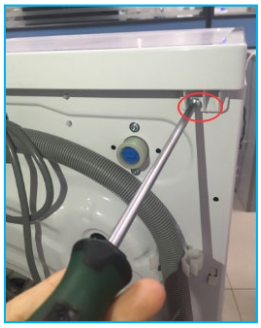
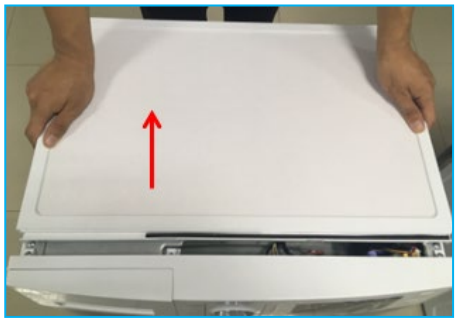
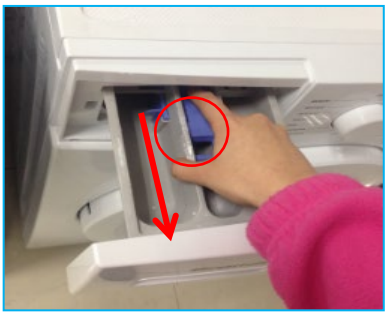
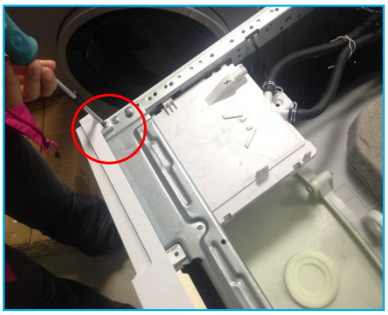
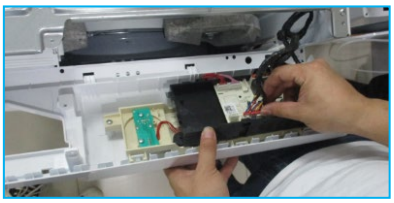
Before repairing, use multimeter to judge circuit stand of fail.

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℃0-PASS	
7	BLDC Motor		Measure the resistance of black pin ~ brown pin and black pin ~ blue pin	Resistance value range 3.65-4.05Ω-PASS	
8	Universal Motor		Measure the resistance of the toroids	Resistance value range PIN5~PIN10 1.3±10%Ω-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
1. Undo the back cover Undo four screws fit between back plate and cabinet, and then pull out.	 
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.	 
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.	     

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 .

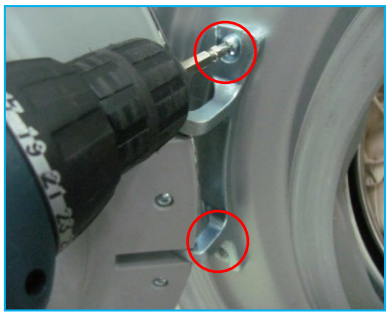
Undo the door gasket

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.

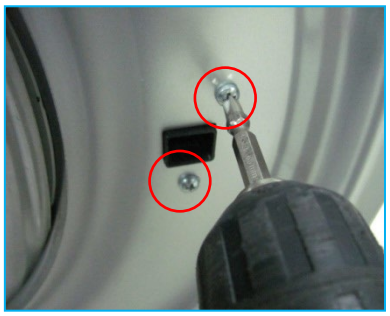
Undo the door lock

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.





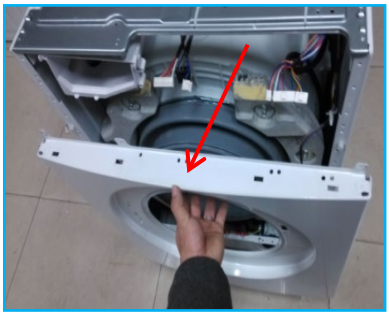



5. Undo the front plate

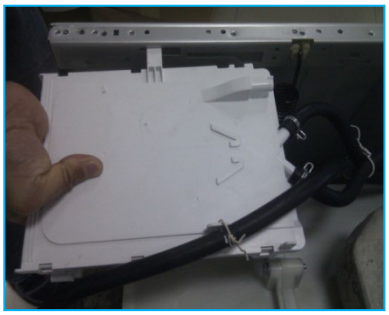
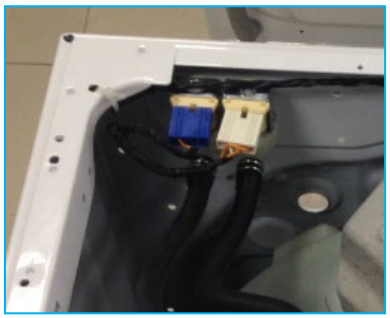
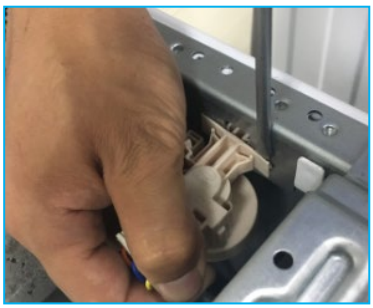
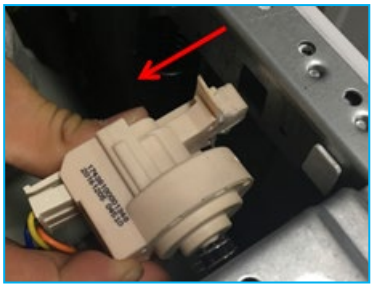
I. Remove the lower cover.

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.

8 UNPACKING WAYS OF MAIN PARTS

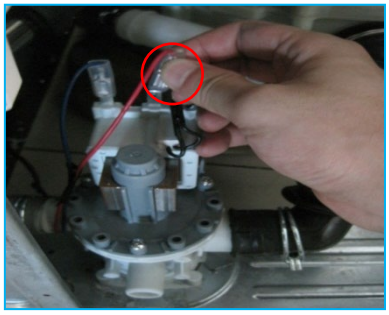
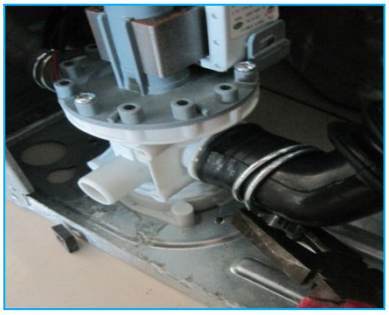
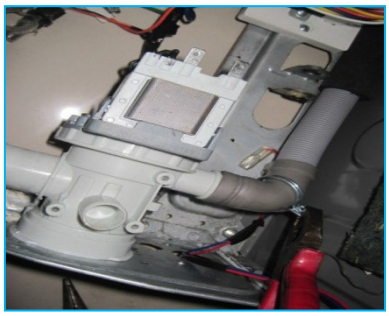
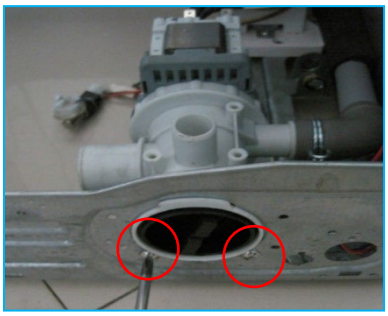
6. Undo the detergent box I. Release the hose clamp and pull out the inlet hose. II. Release the hose clamp and pull out the detergent box hose, and then take out the detergent box. 1.	   
7. Undo the inlet valve I. Remove the top cover II. Undo 2 screws between cabinet and inlet valve. III. Release 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

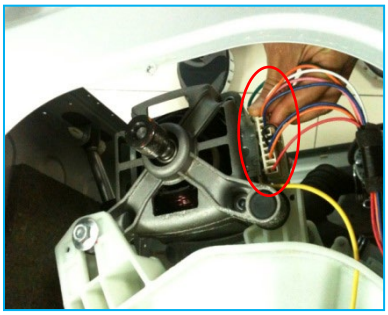
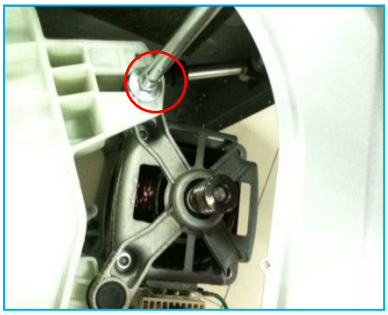
Undo the pulley

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

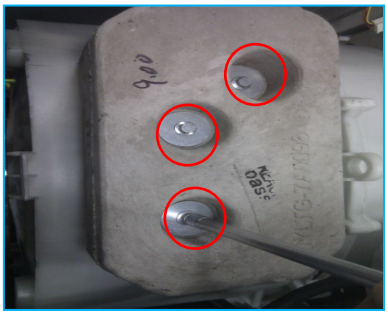
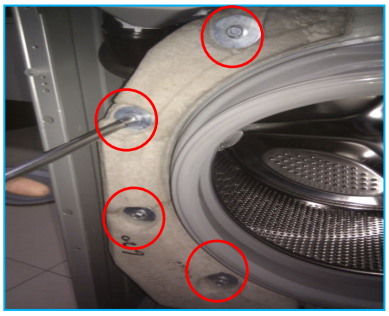
Undo the upper and façade counterweight

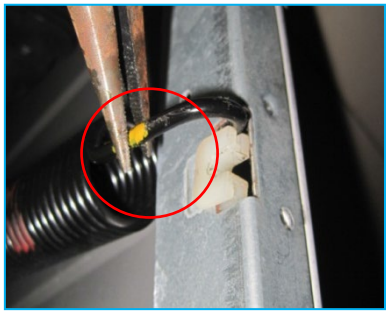
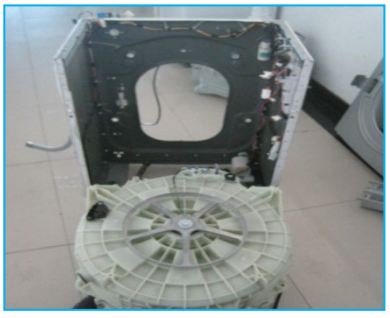
I. Remove 3 screws fit on the upper counterweight and then pull out it.

II. Remove 6 screws pull out the facade counterweight.

Undo the panel support

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

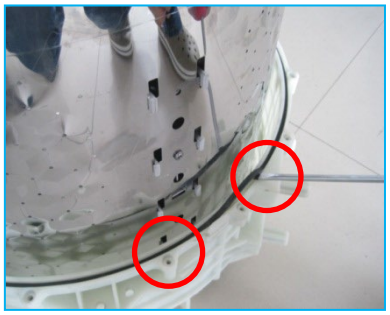
Undo the drum tub

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

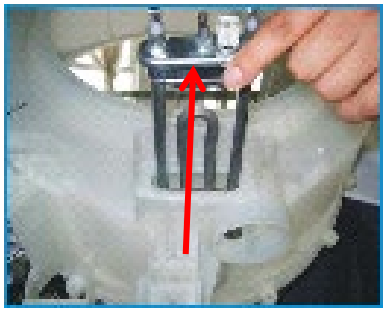
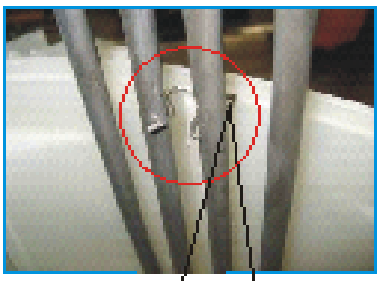
I. Lift out the outer tub kit.

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.

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!