

Service Manual

Drum washing machine



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Precautions

I. Precautions

Please note the following safety precautions when performing troubleshooting and parts replacement during maintenance:

1.1 Safety precautions

1.1.1

The use of original parts for the washing machine has safety features such as non-flammability and pressure resistance. Therefore, please always use the same parts recommended by the manufacturer. Especially in the case of marked major safety parts, please be sure to use the specified parts.

1.1.2 Grounding

Connect the ground wire to the enclosure plate and bury the ground wire at least 25 cm from the ground surface or connect the ground wire to the corresponding pin on a properly grounded power outlet. Do not connect wires to telephone lines, lightning rods or gas pipes.

1.2 Maintenance precautions

1.2.1 Observe the warnings

Please be sure to observe the special warnings and cautions described in the part label and the user's manual.

1.2.2 Parts assembly and wiring

Please use insulating materials (e.g., sleeves, tape, etc.) and be sure to return all parts and wires to their original position. Be awful careful to avoid contact with sharp edges.

1.2.3 Performing safety check after maintenance

After maintenance, please check that whether the screws, parts and wiring return to their original position and check the insulation between the external metal and the socket plug. In addition, place the washing machine in a level position (less than 1 degree) to prevent vibration and noise during operation.

1.2.4 Insulation inspection

Remove the plug from the power socket, pour water into the rotating drum, and set the timer.



Check that whether the insulation resistance between the plug terminal and the exposed metal is greater than 1M.

Note: If the insulation check cannot be performed with a 500V insulation resistance meter, please use another meter to perform the check.




1.3 Safety precautions



*Please observe the following safety precautions.


*Symbols are shown below.







Symbol	Meaning
 Warning	indicates that the maintenance technician and nearby persons may die or be seriously injured due to improper work, or that the user may die or be seriously injured due to a product defect caused by the execution process of the work of the technician.
 Warning	indicates the possibility of injury or physical damage to the maintenance technician and nearby persons due to improper work or to the user due to a product defect caused by the execution process of the work of the technician.

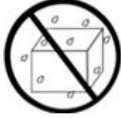







* refers to secondary damage to property, furniture, livestock and pets.

Symbol	Meaning
 Electric shock	Indicates a warning (warning included). Specific instructions are followed by graphics or characters. The left-hand symbol is an “electric shock” warning.
 Do not disassemble	Indicates prohibition (behavior shall not be performed) Specific instructions are followed by graphics or characters. The left-hand symbol is a “do not disassemble” warning.
 Unplug	Indicates compulsion (behavior shall be performed). Specific instructions are followed by graphics or characters. The left-hand symbol is an “unplug power cord” warning.

Symbol	Meaning
 Keep away from children	Customers are advised to keep children away from the workplace. Tools or disassembled parts may cause injury to children.
 Unplug the power cord	Unplug the power cord for work that does not require power on, such as disassembly. Do not hold the plug with wet hand. Failure to unplug may cause electric shock.

 Use service parts	Use the specified service parts when repairing the product. Otherwise, a malfunction or defect may occur. In addition, a short circuit, fire or other danger to the customer may occur.
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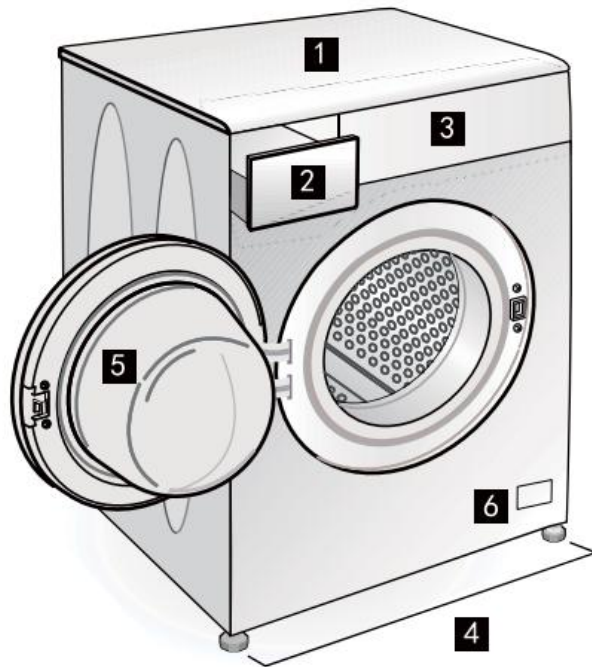
Warning	
 Check insulation resistance	After repairing, measure the insulation resistance between the charging part (power cord plug) and the non-charging metal part (ground) with an insulation resistance meter (500V), and the resistance value shall be larger than 10M. Failure to check the insulation resistance may cause a short circuit, resulting in electric shock or other damage to the customer.
 Do not modify	Do not modify the product. Otherwise, an electric shock or fire may occur.
 Do not modify	Only service technicians are allowed to disassemble and repair. Otherwise, an electric shock, fire or injury may occur.
 Use a separate socket	Use a 230VAC /16A socket dedicated to the washing machine. Otherwise, an electric shock or fire may occur. Sockets that are identical to other instruments may cause branch sockets to heat up, resulting in a fire.
 Connect the earth wire	Connect the grounding wire. Otherwise, an electric shock may occur in the event of a short circuit. Please consult the electrical sales store.
 Do not place near water	Do not install in a bathroom or in a place exposed to wind and rain. Otherwise, an electric shock or a short circuit may occur, resulting in a fire.

 <p>Do not splash water</p>	<p>Do not pour or immerse electrical parts into water or liquid solutions. Otherwise, an electric shock or fire may occur.</p>
 <p>Dust removal</p>	<p>Wipe off the dust that is attached to the power cord plug. Dust may cause a fire.</p>
 <p>Keep away from flammable materials</p>	<p>Do not place flammable materials in the washing drum. Do not place a cloth with kerosene, gasoline, benzene, thinner, alcohol, etc., as this may cause a fire or explosion.</p>
 <p>Do not touch</p>	<p>Do not touch the laundry until the washing drum completely stops working. Even if the washing drum rotates slowly, the laundry may be wrapped around your hands and cause injury. Pay special attention to children.</p>
 <p>Careful installation</p>	<p>Install this product safely and securely in accordance with technical standards and wiring standards for electrical equipments. Incorrect work may cause an electric shock and fire.</p>
 <p>Do not pull</p>	<p>Do not pull the power cord when unplugging. Hold the power plug and unplug it. Otherwise, an electric shock or a short circuit may occur, resulting in a fire.</p>
 <p>Beware of hand hazards</p>	<p>Do not put your hands underneath the washing machine during operation. There is a rotating part underneath the machine that may cause injury.</p>
 <p>Water leakage</p>	<p>Before starting to wash, turn on the faucet and check the inlet hose fitting to ensure that the fitting is not loose and leaking. Loose screws or hose fittings may cause water leakage and thus cause damage.</p>

Appearance and technical parameters of the washing machine

II. Appearance and technical parameters of the washing machine

Product appearance



- 1** Top cover
- 2** Detergent box
- 3** Control panel
- 4** Adjustable bottom foot
- 5** Front door
- 6** Filter cover

Package size (wide x depth x height): 650mmx520mmx870mm

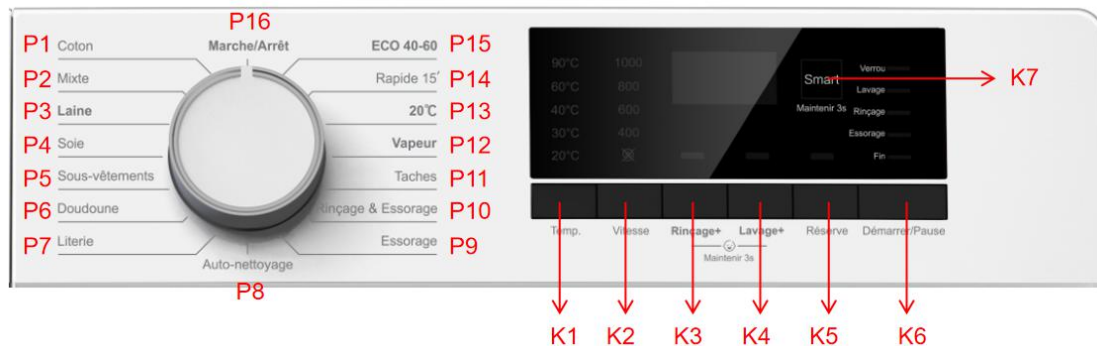
Technical parameter

Model	ELLFS6FW-11
Rated voltage	AC220V~AC240V/50Hz
Water pressure	0.1-1MPa
Clean ratio	/
Rated power	1950W
Rated washing capacity (kg)	6.0
Rated spin capacity (kg)	6.0
Outside dimensions (mm)	600*450*840
Overall dimensions after packaging (mm)	650x520*870
Energy efficiency class	New energy efficiency Class E

Changes to the appearance and specifications for improving the overall performance of the machine are made without prior notice.

Factory detection

III. Factory detection



After connecting the power plug, do not press the **【Power】** key (or press the **【Power】** key to turn on the machine and then turn off the machine), and press the **【Start/Stop】**, **【Reservation】**, **【Speed】**, **【Speed】** keys in order within 10 seconds to hear the buzzer beeping, while all characters of the digital screen are always on and all LEDs are lit, indicating that the machine has enabled the on-line mode.

5.1 Manual detection

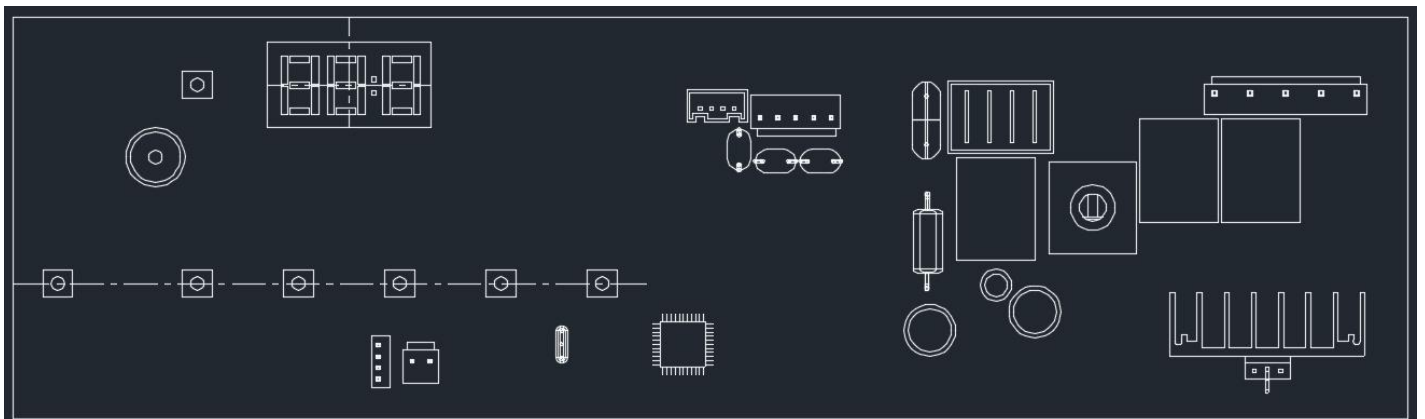
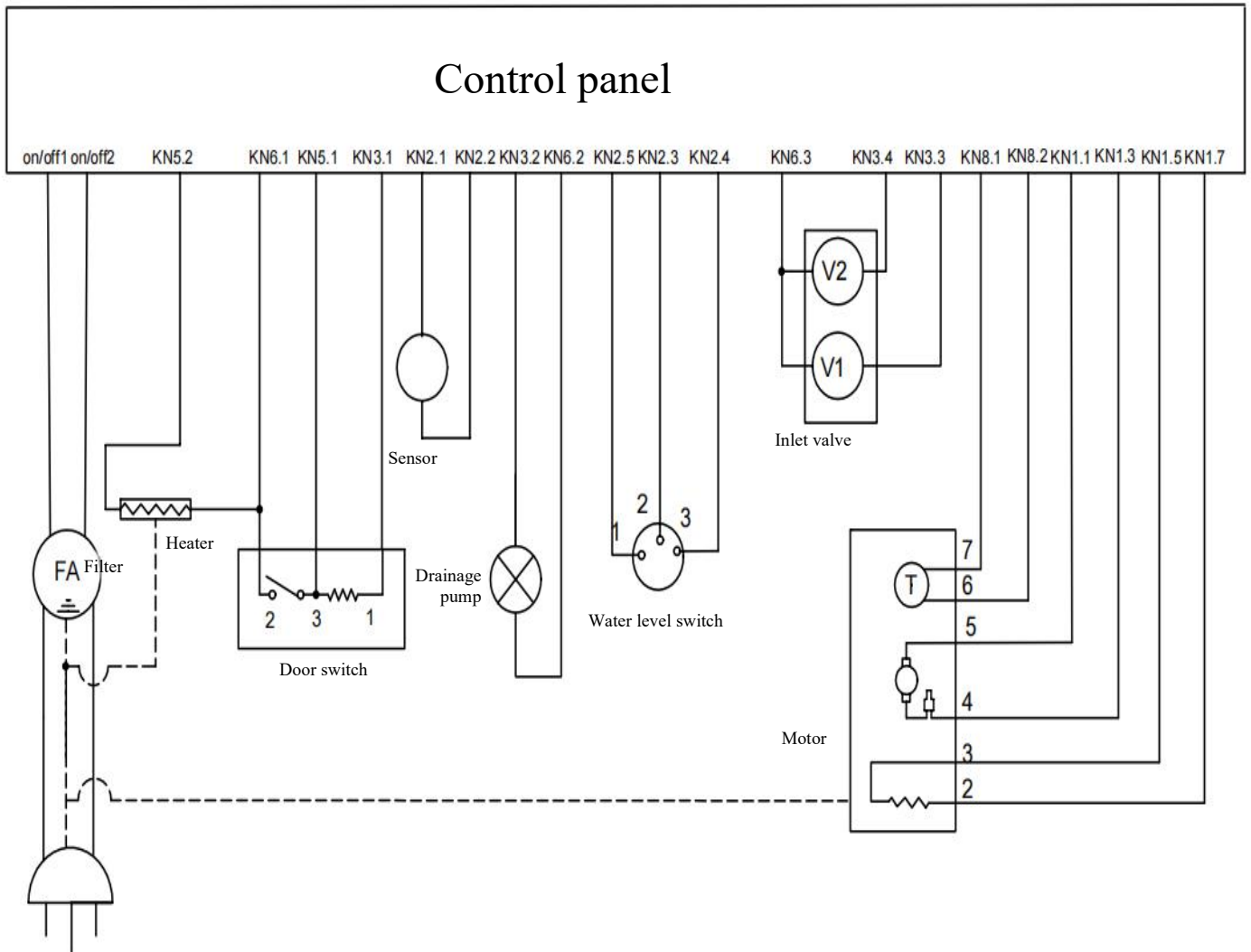
Hold the program knob in the **P16** (shutdown) position, press the **【Start/Stop】** key, and the program enables on-line mode for single-step manual detection, at this time, the digital screen displays the software version number. Then start turning the knob to perform the detection corresponding to the current position in a single-step manner:

- 1) **Key test (P15 position):** the digital screen initially shows “C01”, and the key test is performed, when a series of keys from temperature key to [start/stop] key are pressed, the nixie tube shows 111, 222, and all the way to 666 respectively, the “Smart” shows 777, and the corresponding number is displayed when each corresponding key is pressed.
 - 2) **Motor rotation direction test (P14 position):** rotate speed 50 rpm, clockwise rotation for 5 seconds, then counterclockwise rotation for 5 seconds; and the digital screen initially shows “C02”.
 - 3) **Spin test (P13 position):** spin at the highest speed (without unbalance detection), acceleration and high speed process for a maximum of 2 minutes, after 2 minutes, turn off the motor output (the digital screen shows the current speed in real time); the digital screen initially shows “C03”.
 - 4) **Pre-washing valve test (P12 position):** water feed may be performed without motor stop, the water-filling time of the pre-washing valve is 5 seconds, with a delay of 1 second; the digital screen initially shows “C04”.
 - 5) **Main washing valve test (P11 position):** the water-filling time of the main washing valve is 5 seconds, with a delay of 1 second; the digital screen initially shows “C05”.
 - 6) **Softening valve test (P10 position):** the water-filling time of the softening valve is 5 seconds, with a delay of 1 second; the digital screen shows “C06”.
 - 7) **Heating test (P9 position):** determine whether the water level is above the heating water level, if not, you shall first add water to make the water amount reach the heating level, then start heating, turn on the heating tube and hold for 60 seconds (power meter is used for reading the heating power, and the computer board digital screen shows the current temperature value); the digital screen initially shows “C07”.
 - 8) **Drainage test (P8 position):** empty the water inside the cylinder (keep below 0 water level for 10 seconds); the digital screen initially shows “C08”.
- ◆During the test, detect the fault alarm, if the fault occurs in the current stage, the alarm will start immediately and the execution of the program is stopped.
 - ◆The door lock icon is always on after the door lock is closed during the operation.
 - ◆Exit the current mode after the control board is powered off or the **【Power】** is turned off.

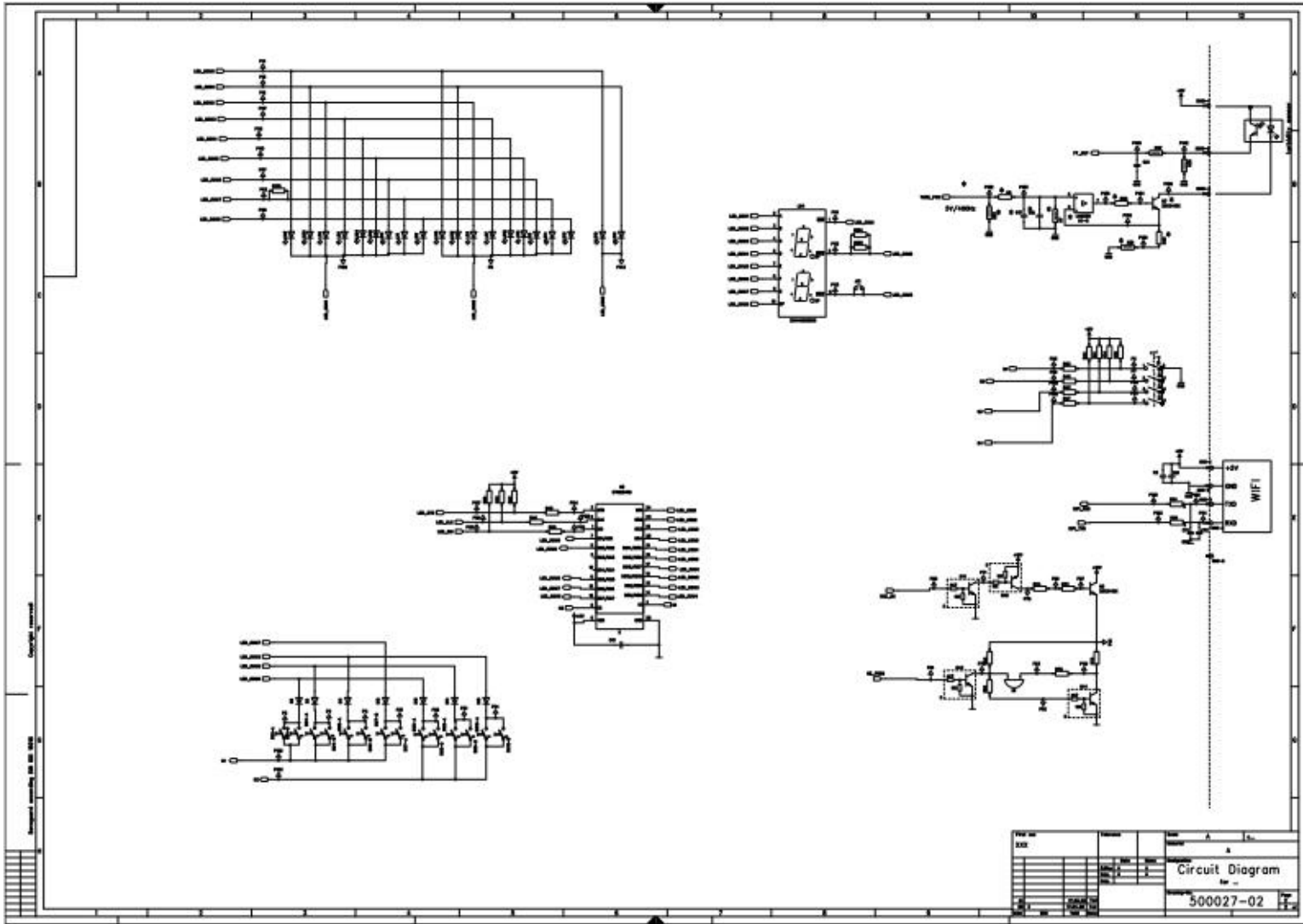
Wiring diagram, electric circuit schematic diagram and water circuit diagram

IV. Wiring diagram, electric circuit schematic diagram and water circuit diagram

1. Wiring diagram

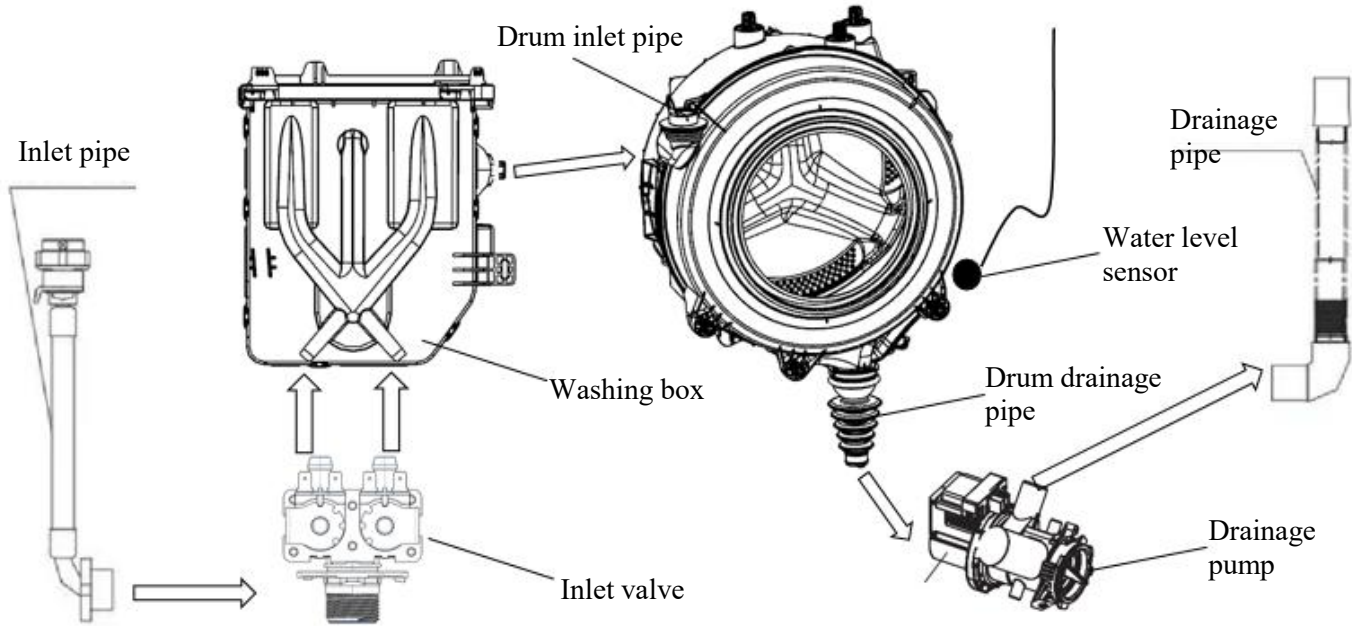


Wiring diagram, electric circuit schematic diagram and water circuit diagram



Wiring diagram, electric circuit schematic diagram and water circuit diagram

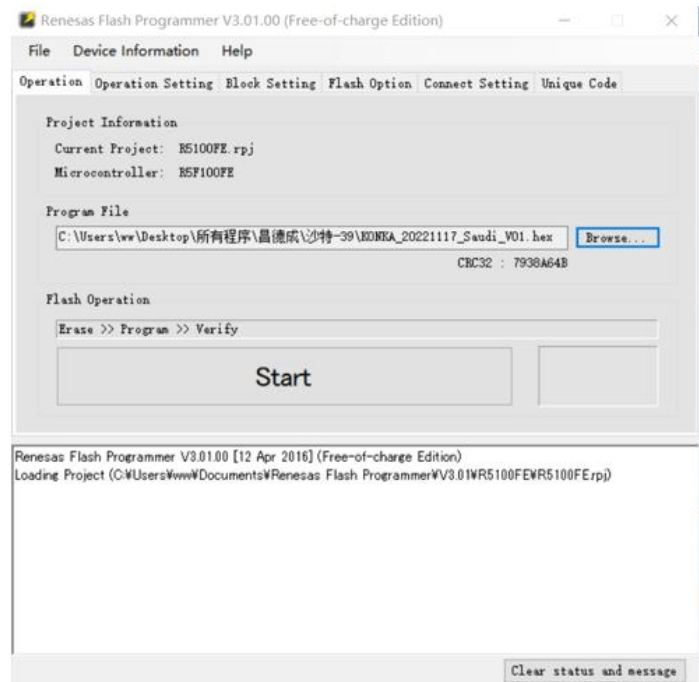
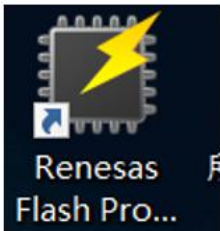
3. Water circuit diagram



Programming steps

V. Programming steps

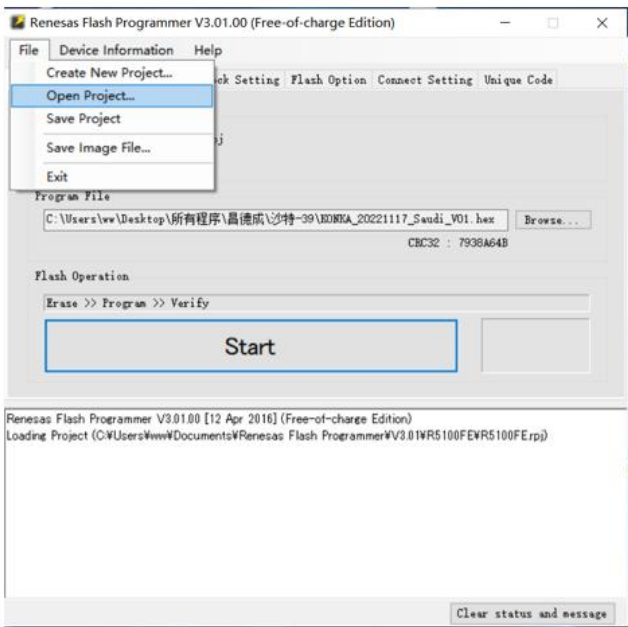
1. Click the icon shown below to display the following interface, and the programming of the computer board is enabled



2. Select this programmer, the red mark in the figure corresponds to the computer board 5V

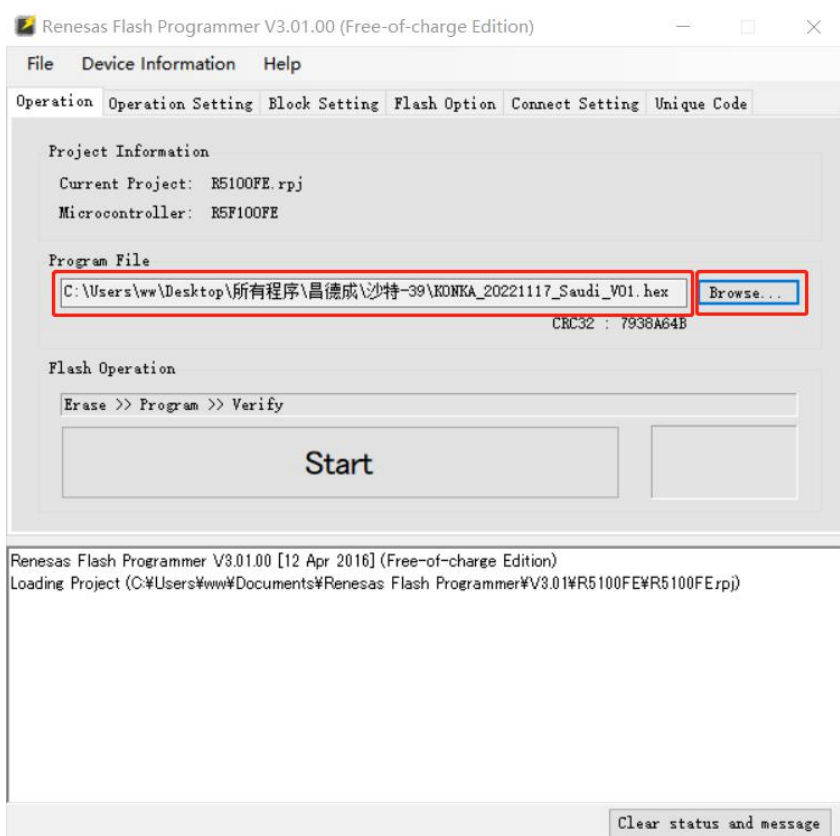


3. Click “File”, select “open project”, and select “R5F100FE”

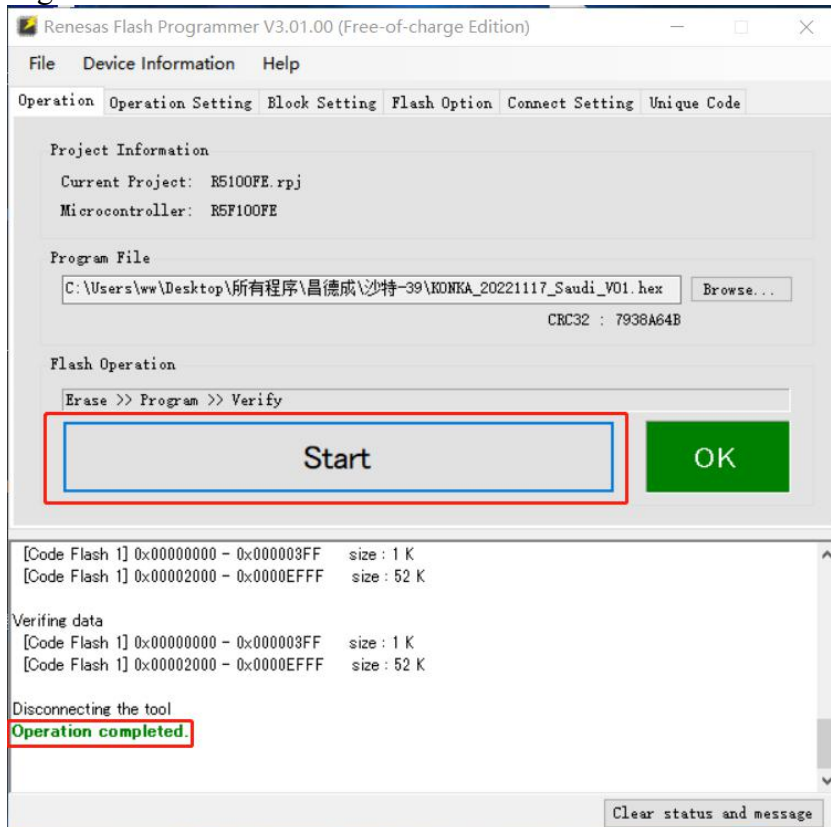


名称	修改日期	类型	大小
R5100FE.rpj	2022/11/18 13:28	RPJ 文件	4 KB

4. Click “Browse”, select the program to be programmed and display the selected program



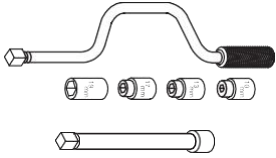
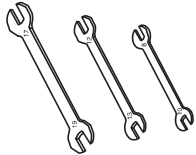

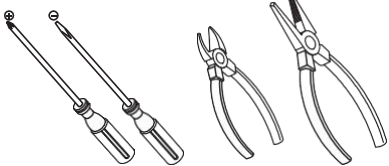
5. Click “Start” to start programming, if the following green font is shown as the last line, it indicates that the programming is successful



Disassembly method for the main components

VI. Disassembly method for the main components

1. Tools required




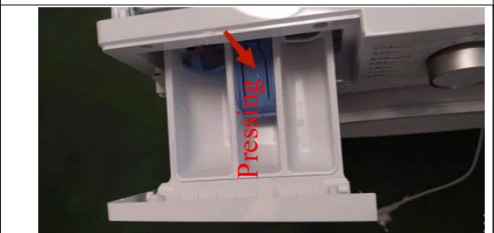
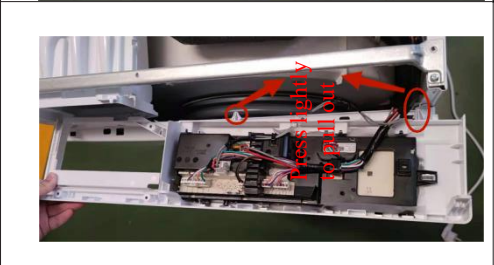
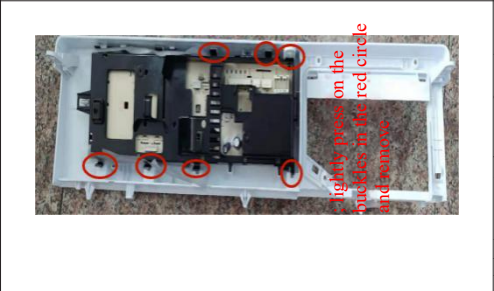
Tool	Model	Notes
	Sleeve tools	8 mm, 10mm, 13mm, 17mm, 19mm, TX40 Heater (1), outer cylinder (12), transport bolts (5), motor (2), balance block (9) Damper (2-holes left/right), belt pulley (2), belt pulley
	Double-ended wrench	10mm, 13mm, 19mm May be used to replace sleeve wrenches, as screws tend to slip when using sleeve wrenches
	Locking pliers	Tool for preventing idling and screw slippage caused by sleeve screwdrivers
	Others (screwdrivers, tweezers, needle-nose pliers)	Commonly used tools for service







Disassembly method for the main components

2. Disassembly diagram

This is a standard disassembly diagram, which may slightly differ from the actual product. Disassembly and assembly may be used for reference.

Note: Unplug the power cord of the product before disassembling and assembling the product.

Component	Diagram	Description	Tool
Top cover removal		<p>1. Remove the two set screws at the back of the top cover component. Pay attention to the occurrence of screw loose during removal. If the screws are too tight, tap the screws a few times to loosen them.</p>	Phillips screwdriver
		<p>2. Push back the top cover for 15MM and remove it. After removal, you should pay attention to place the top cover on a flat surface to prevent the occurrence of surface scratches.</p>	Hand
Remove control board and detergent box		<p>Remove the 3 fixing bolts between the control panel and the upper connection plate. Note: pay attention to the occurrence of screw loose during removal.</p>	Phillips screwdriver
		<p>Lightly press the release lever with your left index finger and hold the detergent box handle with your right hand to pull the detergent box out. Note: During the process of taking out the detergent box, keep your index finger pressing the release lever</p>	Hand
		<p>1. Remove the screws at the connection between the computer board and the box; 2. Insert a screwdriver between the terminals at the connection between the computer board and the box, and push backward lightly to remove the terminals.</p>	A Phillips screwdriver and a flat screwdriver
		<p>3. Remove the screws at the connection between the computer board and the control panel; 4 Remove the computer board from the buckles on the control panel. Note: The computer board shall be placed on a flat surface with a soft bottom pad underneath to prevent scratching of the surface and to help protect the components.</p>	Hand






Component	Diagram	Description	Tool
Remove the front sealing door		<p>Open the door to find the location of the door seal clamp spring and pick up the spring with a flat screwdriver.</p>	<p>A flat screwdriver</p>
		<p>Pull the door seal clamp from the bottom to the top by hand and remove the door seal clamp. Do not deform the clamp in the process of disassembly. Pull the door seal out after removing the clamp.</p>	<p>Hand</p>
		<ol style="list-style-type: none"> 1. Remove the screws on the door lock; 2. Use a Phillips screwdriver to push against the buckle protruding above the door lock and remove the door lock; 3. Pull the terminal at the front sealing door lock downwards to separate the door lock connection wire. 	<p>A Phillips screwdriver and hands</p>
		<p>Open the service plate, grasp the buckle of the service plate and remove the service plate.</p>	<p>Hand</p>
		<p>Use a Phillips screwdriver to remove the 2 screws at the top of the front sealing door.</p>	<p>Phillips screwdriver</p>
		<p>Remove the 3 screws at the bottom of the front sealing door and the 1 screw in the service plate.</p>	<p>Phillips screwdriver</p>


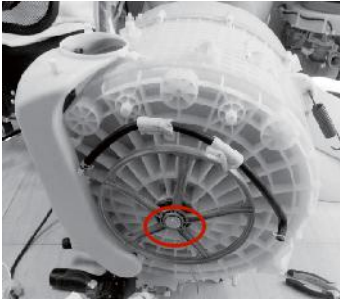

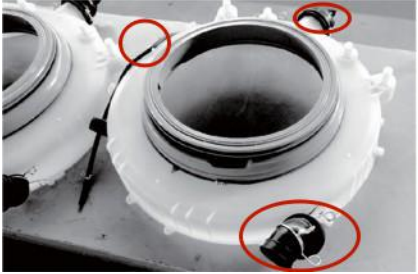
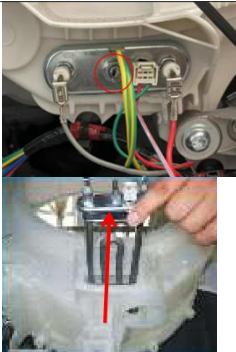


Press down with one hand and pinch the buckle with another hand to separate it from the box;

Hand

Component	Diagram	Description	Tool
Remove the rear sealing door		Remove the 4 transport bolts from the rear sealing door. And remove the 7 screws from the rear sealing door	Sleeve and a Phillips screwdriver
Remove the door components		Remove the 2 screws on the door hinge bracket.	Phillips screwdriver
		Remove the door outer ring, door inner ring, door glass, door lock, etc. simply by removing the screws on the door components	A Phillips screwdriver and hands
Remove the detergent box		Remove the detergent box and the inlet hose.	Needle-nose pliers and hands















Component	Diagram	Description	Tool
Remove the front balance block		Remove the three bolts from the front balance block with the sleeve	Sleeve
Remove the door seal		<ol style="list-style-type: none"> 1. Use a Phillips screwdriver to loosen the screws on the door seal clamp in the counterclockwise direction; 2. Remove the door seal clamp; 	A Phillips screwdriver and hands
Remove the drainage pipe		<ol style="list-style-type: none"> 1. Use a Phillips screwdriver to loosen the screws on the clamp in the counterclockwise direction; 2. Remove the clamp at the place where the drainage pump is connected to the drainage pipe; 	A Phillips screwdriver and hands
Remove the motor		<ol style="list-style-type: none"> 1、 Remove the belt and pull it out by hand while rotating the belt pulley; 2、 Unplug the wire harness from the motor terminals, press the buckles on the terminals by hand and pull the terminals out; 3、 Remove the screws on the motor with an hexagonal screwdriver; 4、 Hold the motor by hand and pull it out with force. 	A screwdriver and hands
Lift out the inner cylinder components		Hold the 2 suspension spring brackets with both hands and lift them up to remove the inner cylinder.	Hand

Component	Diagram	Description	Tool
Remove the drainage pump		Remove the parts simply by removing the 4 screws on the drainage pump.	A Phillips screwdriver, needle-nose pliers and hand
Remove the door seal		Remove the belt pulley simply by removing the bolts with the sleeve.	Sleeve and hand
How to remove the inner cylinder		Remove the buckle at the connection of the front outer cylinder and the rear outer cylinder as shown in the figure.	Hand
		Remove other parts from the front outer cylinder.	Needle-nose pliers and hands
Remove the electric heating		<ol style="list-style-type: none"> 1、 Loosen the nuts on the electric heating with the sleeve; 2、 Remove the electrical heating by pulling it outwards 	Sleeve and hand

Inspection of electronic components

VII. Inspection of electronic components

Inspection of electronic components

Serial number	Part	Picture (The pictures shown here is indicative only, the actual product may differ)	Test description	Range	Reference
1	Water level sensor		Frequency test for the complete machine	42.5 kHz ---36 kHz	
2	Door lock		Power-on test	Automatic locking after 2 to 5 seconds of power-on, and automatic unlocking after 1 to 2 minutes of power-off	
3	Inlet valve		Resistance measurement	2 k Ω -6k Ω at room temperature of 20 degrees	
4	Drainage pump		Resistance measurement	Approximately 200 Ω at room temperature of 20 degrees	
5	Electric heating		Resistance measurement	25 Ω -30 Ω at room temperature of 20 degrees	
6	Water temperature sensitive package		Resistance measurement	5.5 k Ω -6.5k Ω at room temperature of 20 degrees	
7	Motor		Resistance measurement	1.5 k Ω -2k Ω for stator and rotor at room temperature of 20 degrees	

Fault diagnosis and treatment

VIII. Fault diagnosis and treatment methods

Note: Please confirm the above items before maintenance

Phenomenon	Items to be confirmed
The washing machine does not start	◆ Does the power plug come off
	◆ Is the regional line out of power
	◆ Is the machine door closed properly
	◆ Is the power button pressed, and is the start/pause button pressed after setting the program
The washing machine does not feed water	◆ Is the faucet turned on
	◆ Is the water pressure less than 0.05 MPa
	◆ Is the inlet pipe bent?
	◆ Is the water supply stopped
	◆ Is the machine door closed properly
	◆ Is the water inlet filter of the washing machine clogged
The washing machine drains while feeding water	◆ Has the program been started
	◆ Is the height of the drainage pipe opening between 60cm and 90cm as specified, such phenomenon will occur if the height is lower than 80cm
	◆ Is the drainage pipe bent, folded or clogged
Violent vibration during the spin process	◆ Is the height of the drainage pipe opening 90cm above the ground
	◆ Are all the fixing bolts for packaging removed
	◆ Is the working surface flat or is the bottom foot leveled
The program stops running before it finishes	◆ Does the washing load exceed the rated value
	◆ Is there a sudden power off or water outage
	◆ Is it in a pause state
Sudden stop during washing	◆ Is it in a fault alarm state
	◆ Is there a power off or water outage
There is a lot of foam in the drum, and the foam overflows from the detergent box	◆ Is high foam detergent powder or hand washing detergent powder used
	◆ Is the detergent excessive
The time for spin process is prolonged due to the low spin speed	◆ Uneven laundry distribution increases the number of redistributions (up to 6 times) and the rotation speed is automatically adjusted according to the final unbalance condition, which is a normal phenomenon
The washing machine does not spin	◆ Is the washed laundry too little, thus causing the washing machine eccentricity too large
	◆ Is the washed laundry knotted, tangled and unevenly distributed
	◆ Is the washed laundry sweater or laundry that absorbs more water

Fault diagnosis and treatment

Common fault diagnosis and analysis

Error code	Fault description	Treatment methods
E1	Water feeding time-out	1. Check if the faucet is open and the water flow size
		2. Hang up the drainage pipe
		3. Check the assembly of the water level
		4. Replace the inlet valve
		5. Replace the computer board
		6. Replace the water level sensor
E2	Door lock fault	1. Check if the door is closed
		2. Replace the door lock
		3. Check if the wire harness terminal is firmly plugged or replace the wire harness
		4. Replace the computer board
E3	Washing motor fault	1. Check if the wire harness terminal is firmly plugged or replace the wire harness
		2. Check if the laundry is too much or stuck, and you can restart power-on operation after power-off and a period of cooling
		3. Replace the motor
		4. Replace the computer board
		5. Check whether the plugging of the wire harness terminal is short circuited or replace the motor (variable frequency motor)
		6. Check whether the wire harness terminal is firmly plugged or replace the wire harness (variable frequency motor)
		7. Waiting for the cooling (variable frequency motor)
E4	Drainage timeout	1. Clean the dirt in the pump filter
		2. Unclog the drainage pipe to prevent dirt from clogging
		3. Replace the drainage pump
		4. Check whether the wire harness terminal is firmly plugged or replace the wire harness
		5. Replace the computer board
		6. Replace the water level sensor
E5	Water overflow alarm / water level sensor fault	1. Replace the inlet valve
		2. Replace the computer board
		3. Replace the water level sensor
		4. Check whether the wire harness terminal is firmly plugged or replace the wire harness

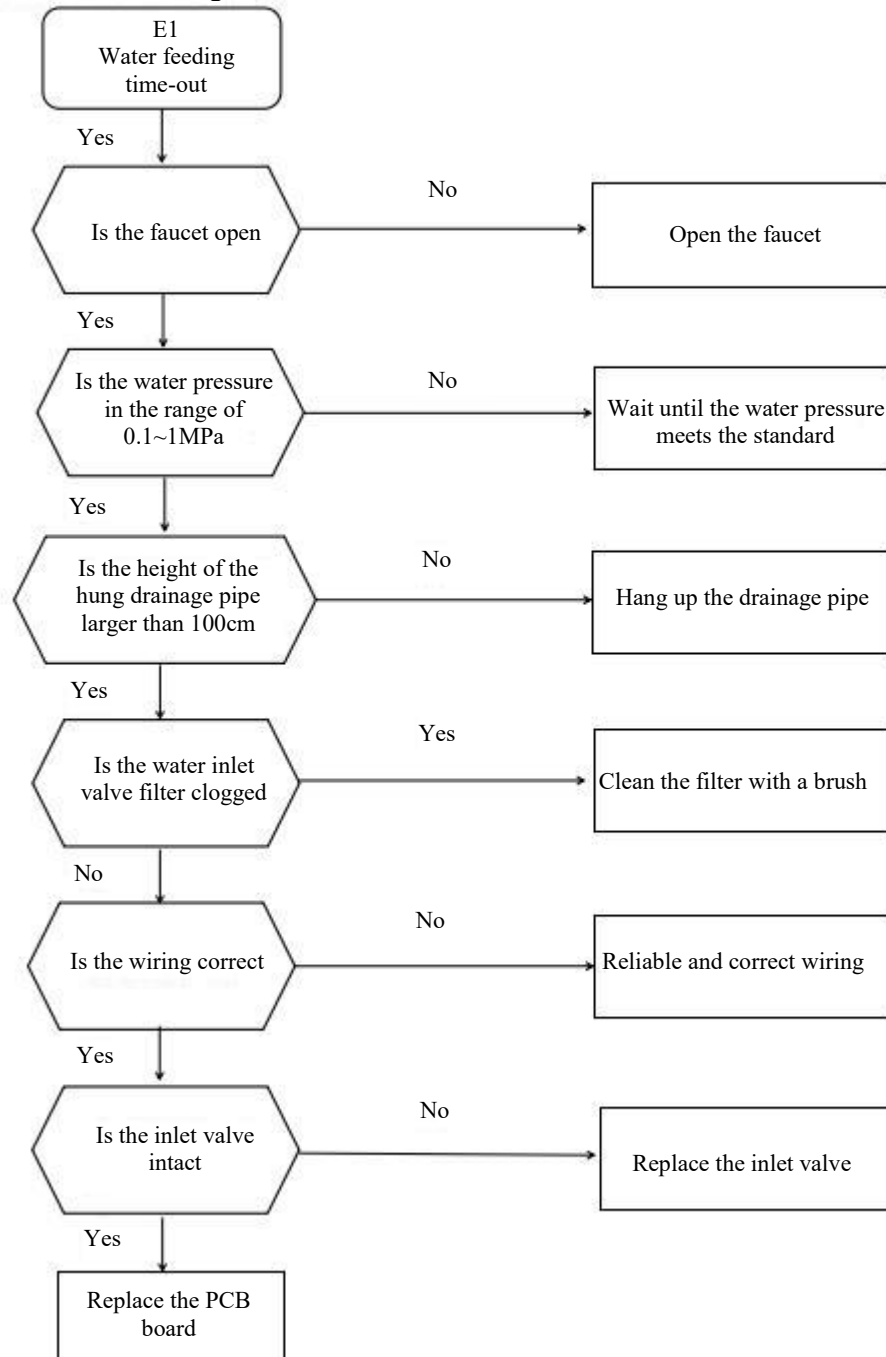
Fault diagnosis and treatment

E6	Water heating pipe fault	1. Check if the wire harness terminal is firmly plugged or replace the wire harness
		2. Replace the heating pipe
		3. Replace the computer board (or dry the computer board)
E7	Water heating temperature sensor fault	1. Check if the wire harness terminal is firmly plugged or replace the wire harness
		2. Replace the temperature sensor
		3. Replace the computer board

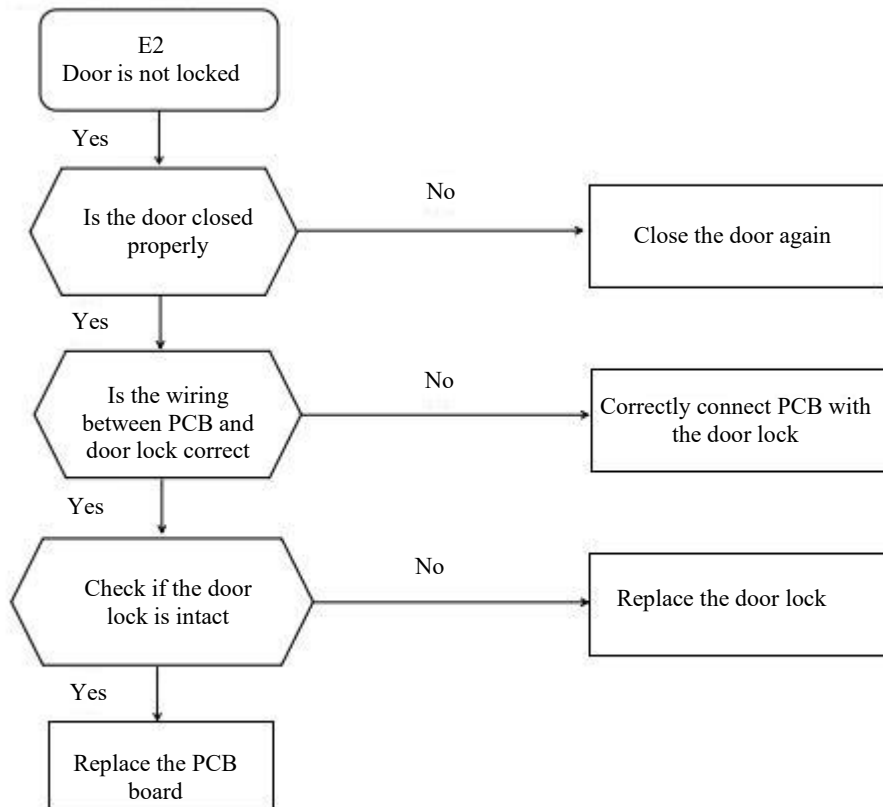
Troubleshooting

IX. Troubleshooting

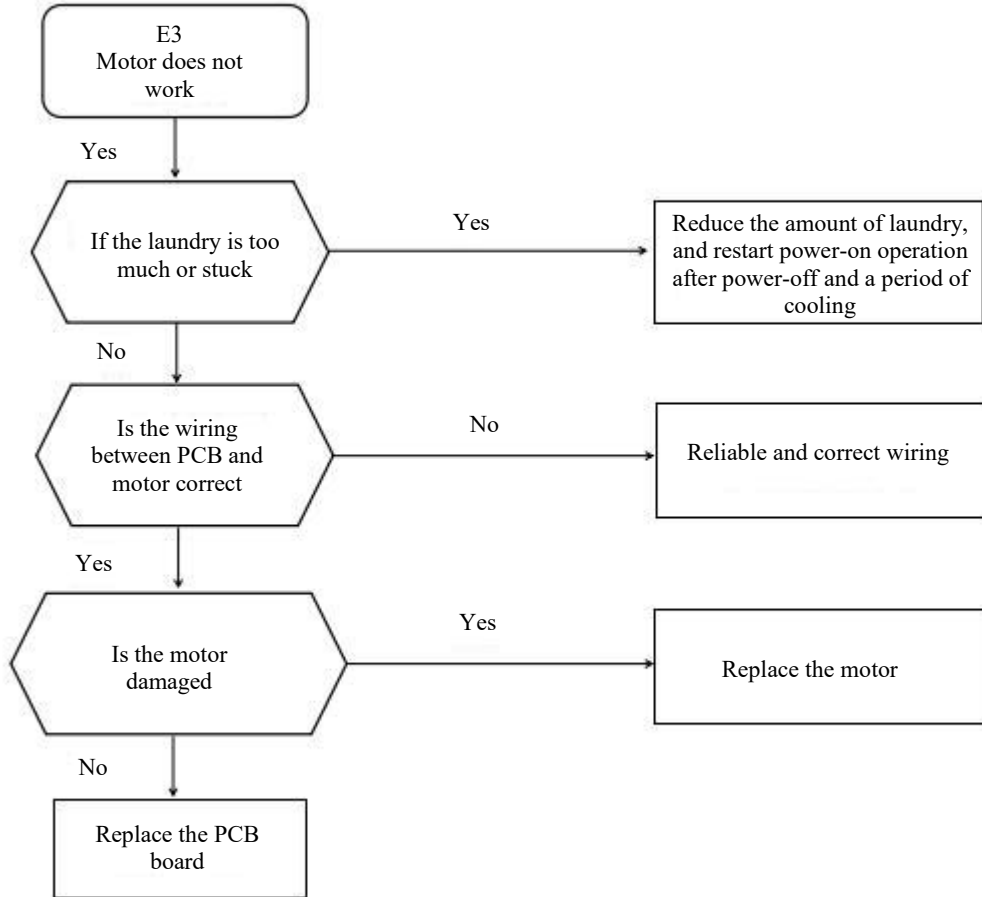
E1. Water feeding timeout fault



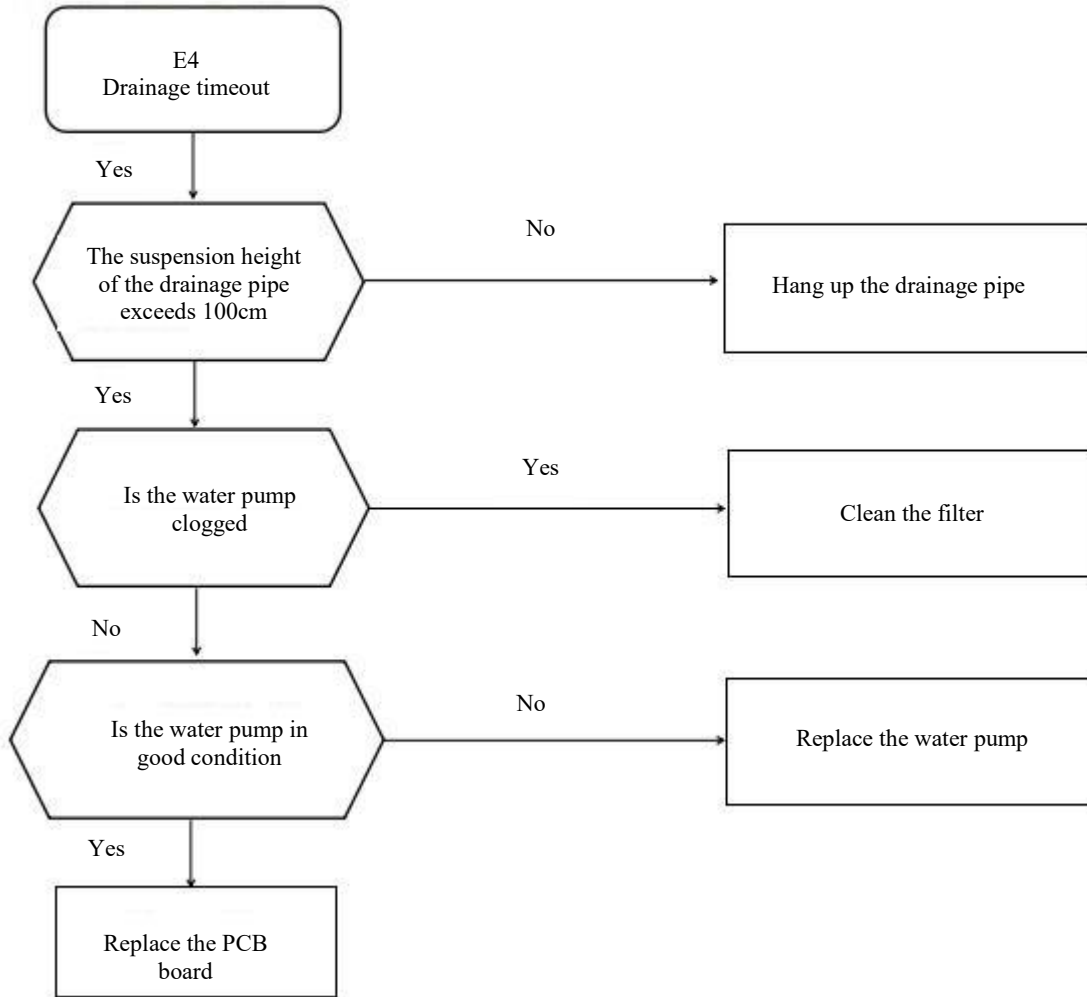
E2. Door lock fault



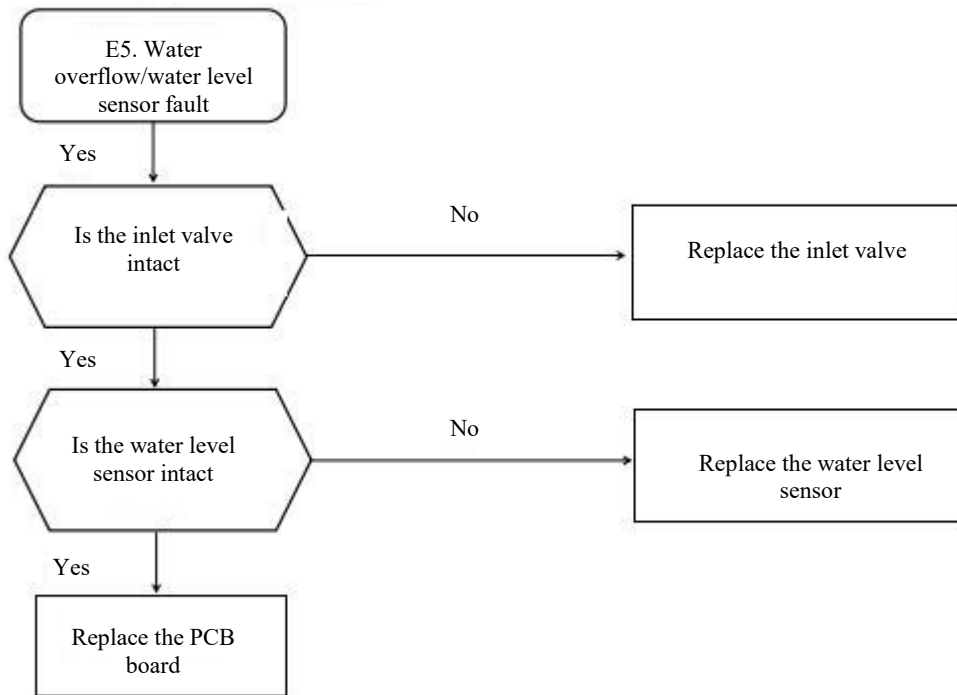
E3. Motor fault



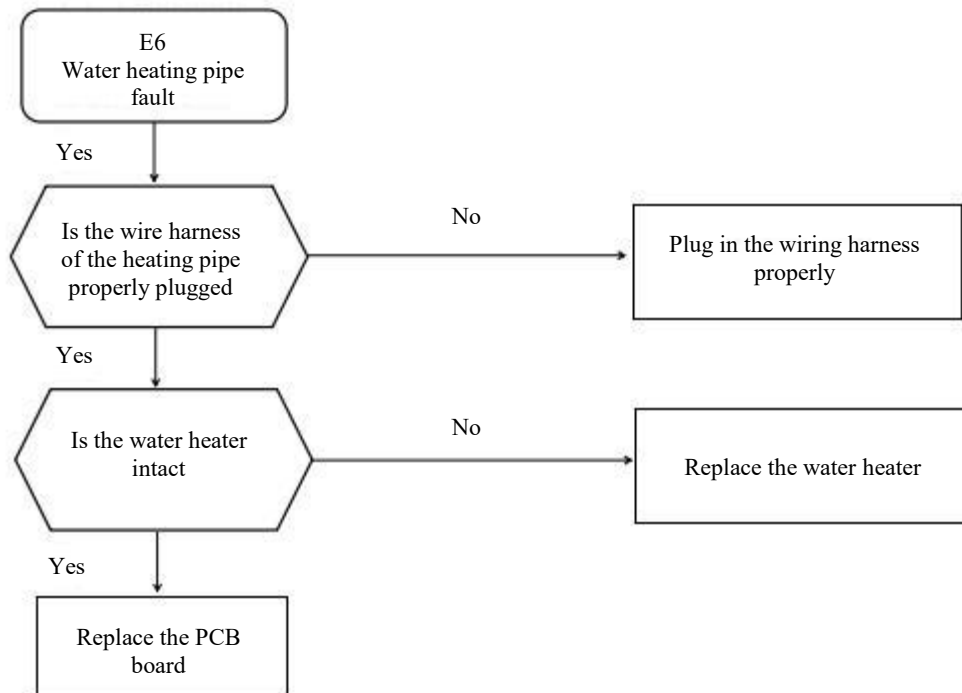
E4. Drainage timeout fault



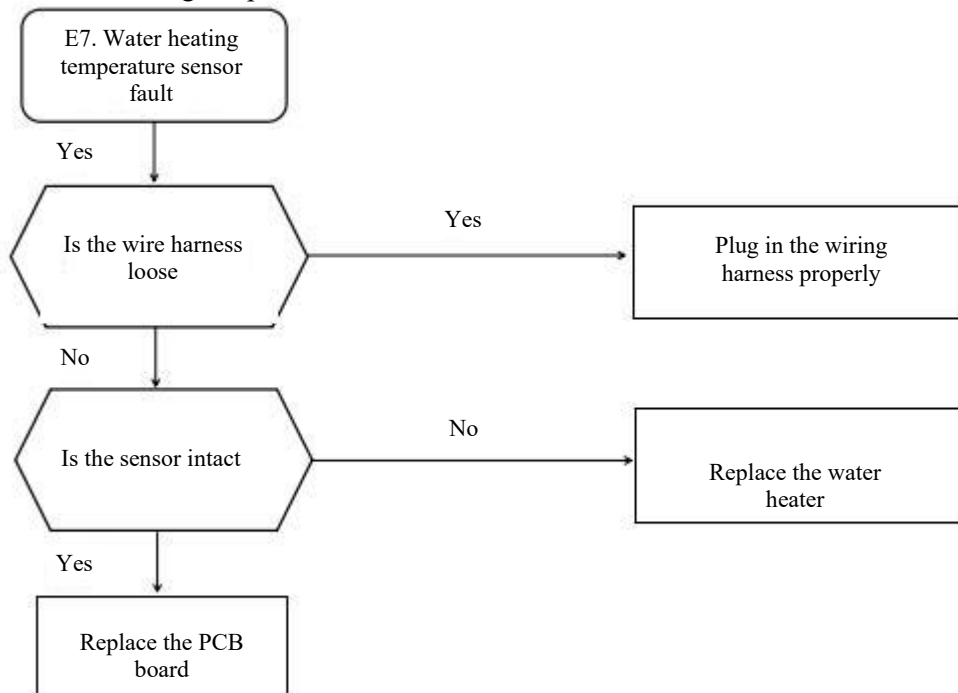
E5. Water overflow/water level sensor fault



E6. Water heating pipe fault



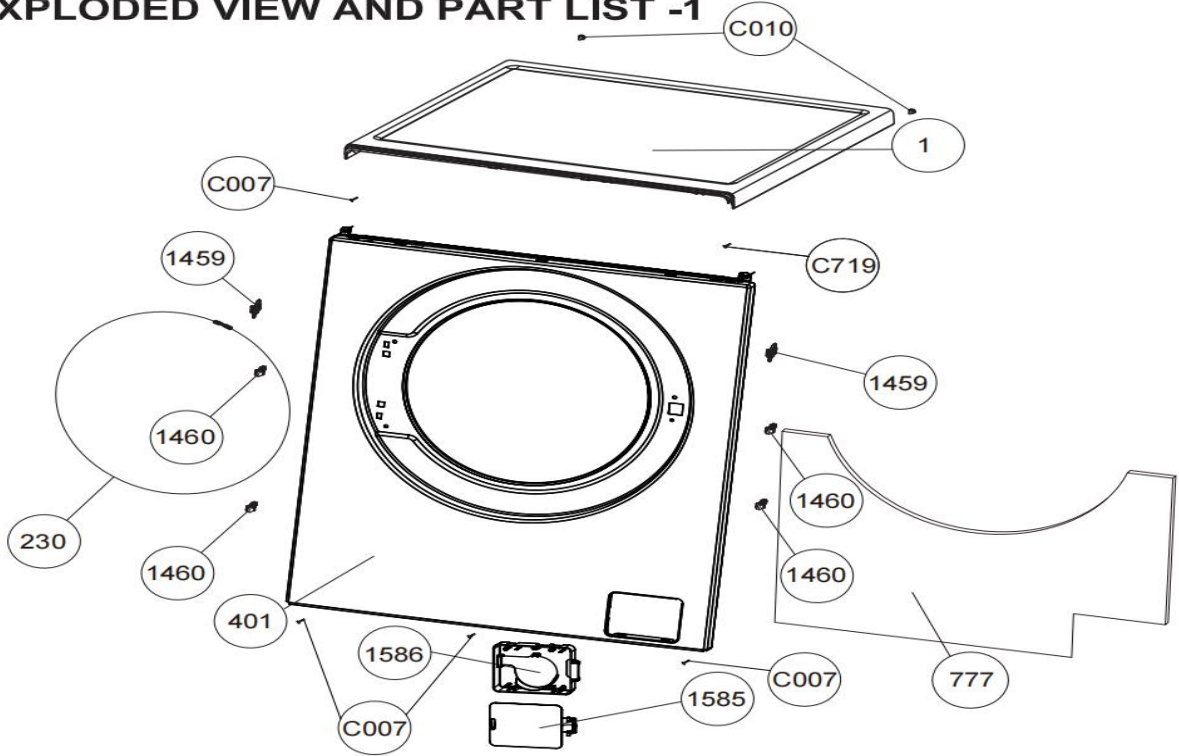
E7. Water heating temperature sensor fault



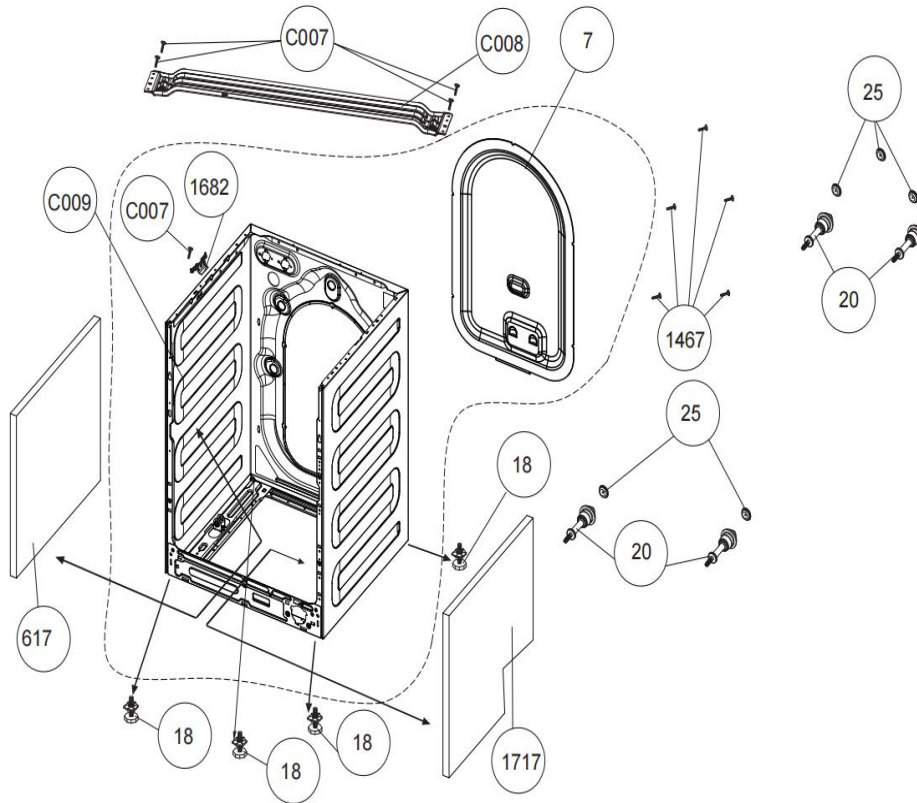
Exploded diagram and details

X. Exploded diagram and details

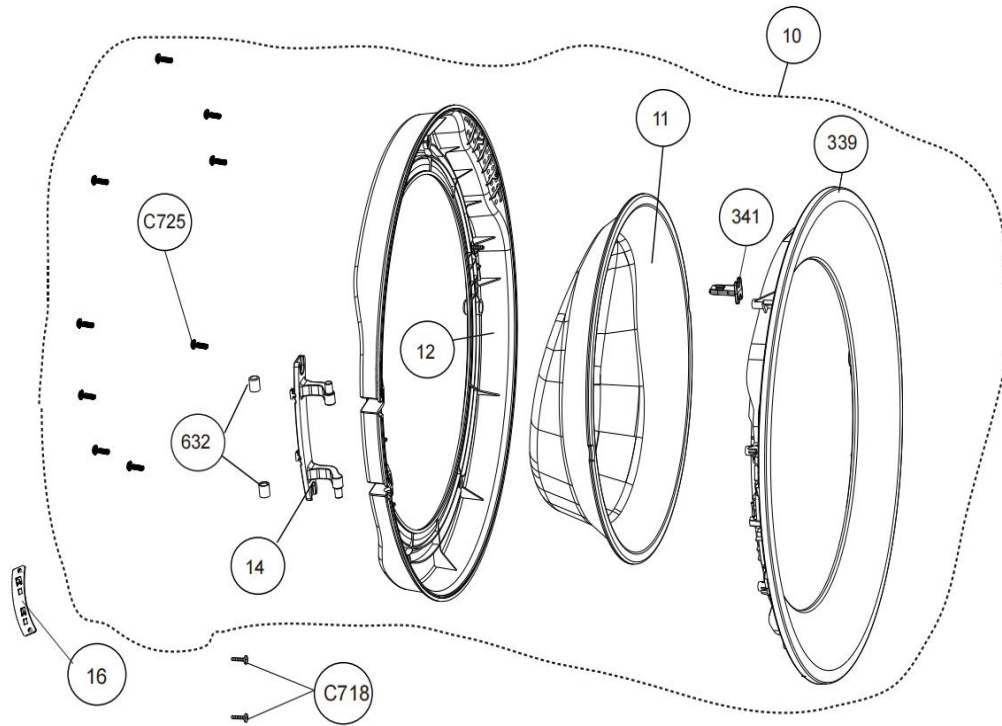
EXPLODED VIEW AND PART LIST -1



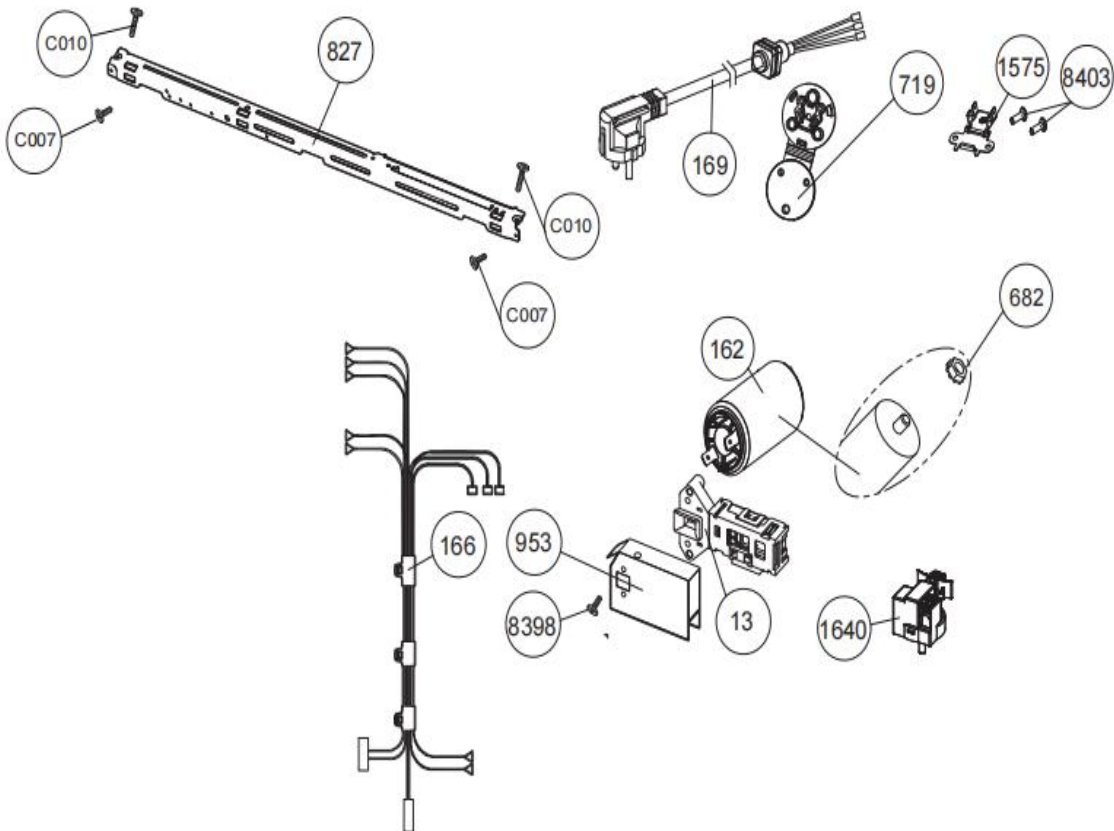
EXPLODED VIEW AND PART LIST -2



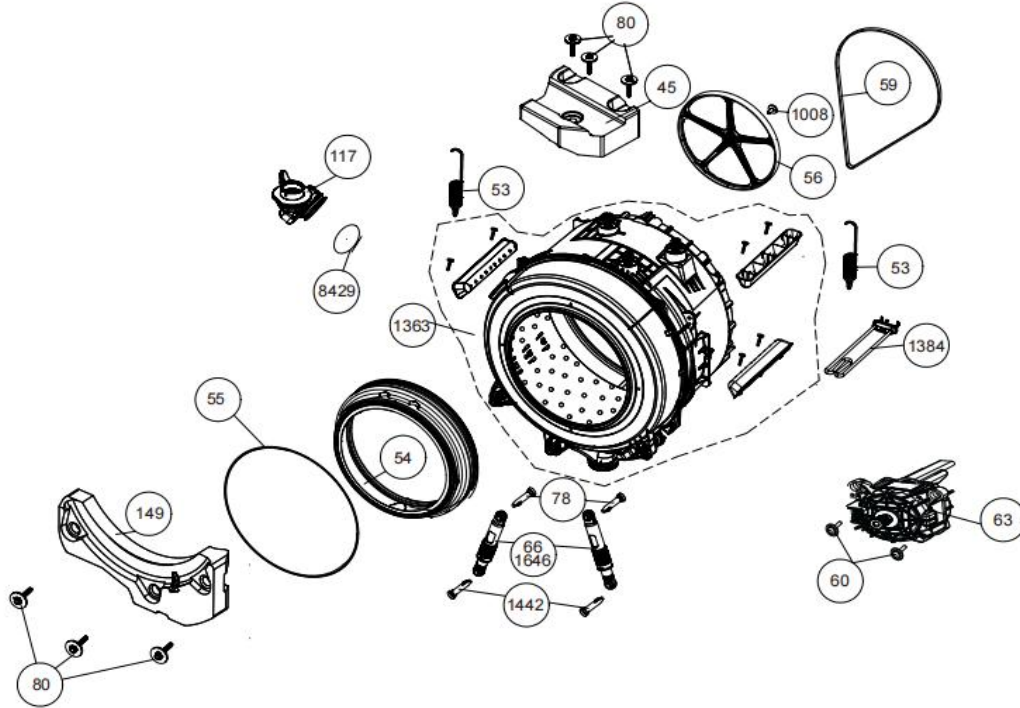
EXPLODED VIEW AND PART LIST -3



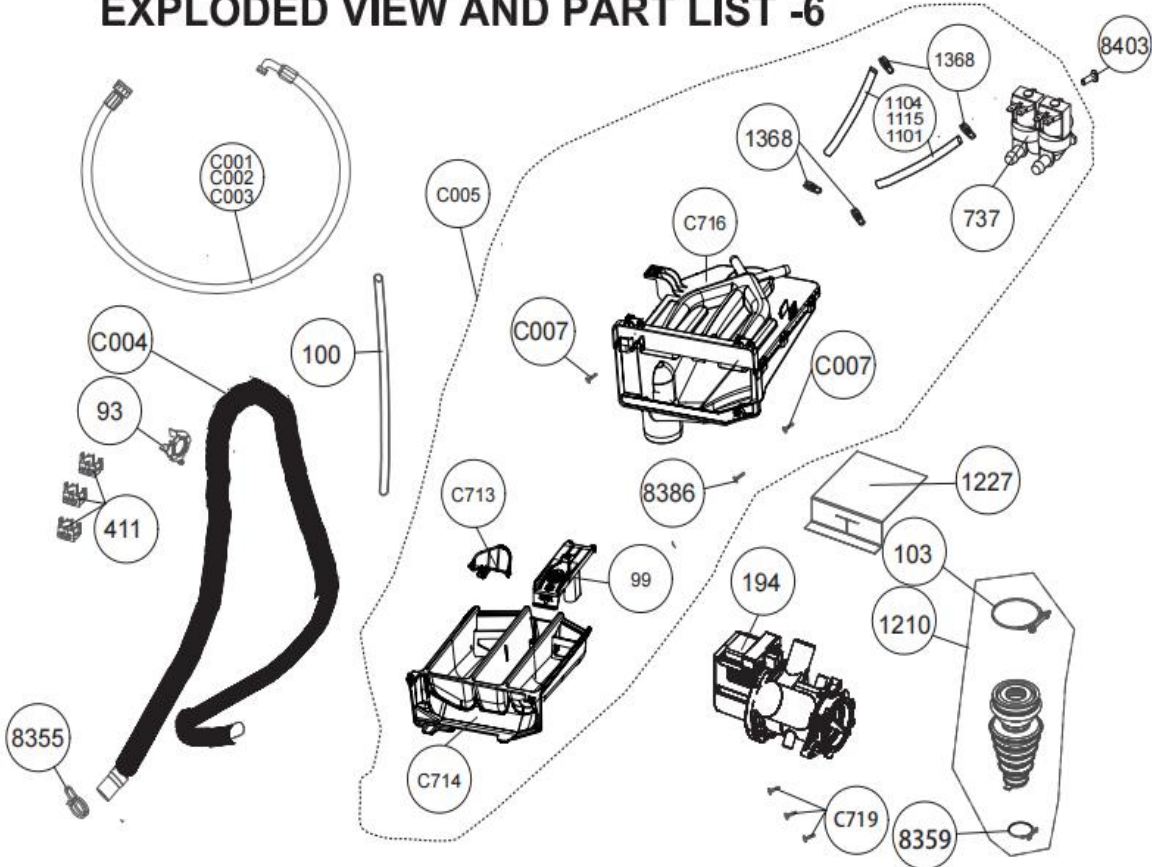
EXPLODED VIEW AND PART LIST -4



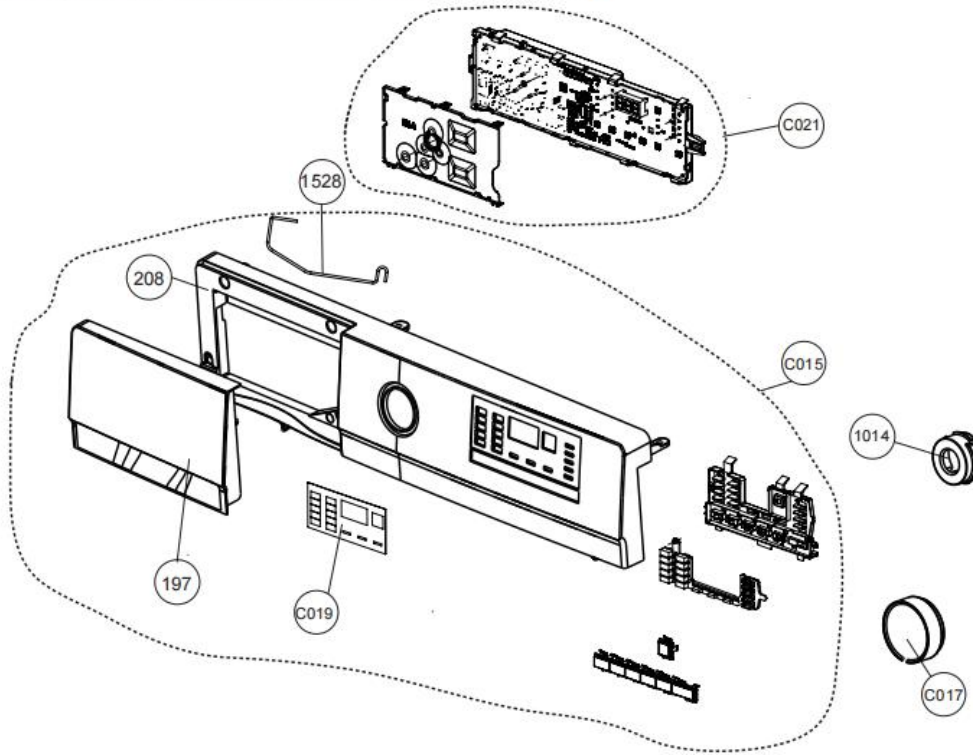
EXPLODED VIEW AND PART LIST -5



EXPLODED VIEW AND PART LIST -6



EXPLODED VIEW AND PART LIST -7



End

