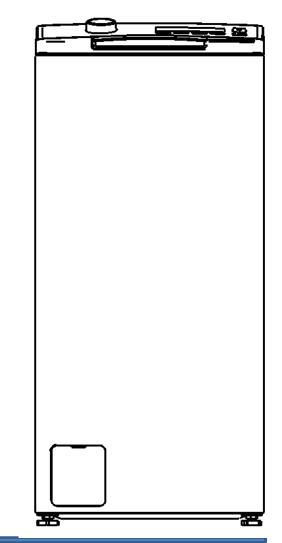


Top Loading Washing Machine Model: MFL80-T1301B/F02E-EU(NA) MFL70-JT1201B/F02E-EU(NA) MFL60-JT1201B/F02E-EU(NA)

Products

Service Manual



Note:

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



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When performing troubleshooting and part replacement during servicing, note the following safety precautions:

1.1 Safety Precautions

1.1.1 Use Genuine Parts

The components of the washing machine have safety features such as non-combustibility and voltage with standing. Therefore, always use the same part as suggested by the maker. In particular be sure

to use only designated parts in case of major safety parts identified by the marker. 1.1.2 Grounding

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

1.2 Servicing Precautions

1.2.10bserve 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. ٠
- •

Symbol	Meaning	
	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.	
	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
	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.
Cumhal	N A

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 produ Otherwise , amalfunction or a defect may occur. Also , a short circuit , ignition or other danger to the customer may occur. 		



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 NUT WODIFY	Only a repair technician can disassemble and repair. An electric shock, ignition or malfunction may cause injury.		
USE EXCLUSIVE SOCKET	Jse an exclusive 110 VAC/15 A socket for the washing machine. Jse 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 pranch 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.		



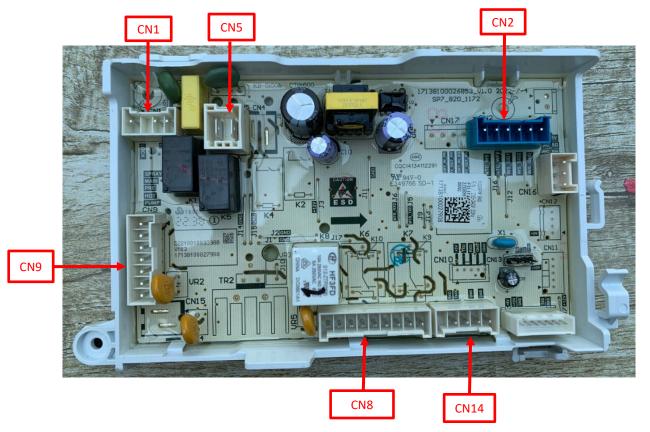
	WARNING			
Do not touch the laundry before the spin basket stops completely. The laundry entangles your hand causing an injury event the basket rotates slowly. Pay special attention to child				
INSTALL CAREFULLY	Ask an electric work shop to install the product. Install the product securely and safely 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 durin operation. There is a rotary part under the machine which may cause an injury.			
Q 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.			

3 WIRING DIAGRAM/PCB LAYOUT

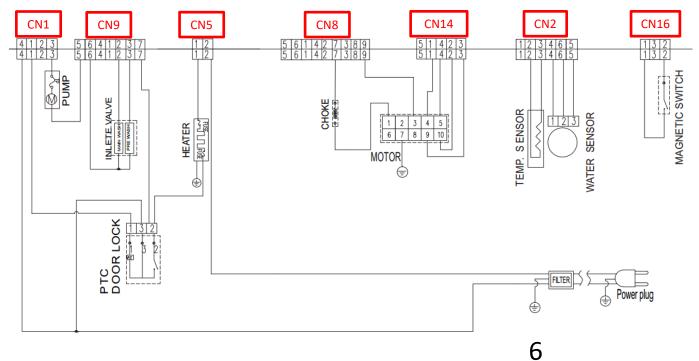


3.1 PCB Layout (Inverter Motor)

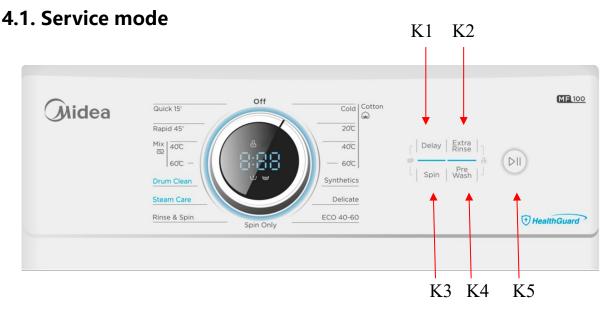
- 1 CN14: Inverter Motor communications
- 2 CN8: Inverter Motor& Choke
- 3 CN9: Inlet Valve & Drain Pump & Door Lock
- 4 CN2: Temp Sensor & Water Sensor
- 5 CN5: Noise Filter & Heater
- 6 CN1: Noise Filter & Drain Pump & Door Lock



3.2 Wiring Diagram (Inverter Motor)







К1	[Delay]	K4	[PreWash]	K1+K3(Press 3sec.)	Mute
К2	[ExtraRinse]	К5	[Start/Pause]		
К3	[Spin]	K2+K4(Press 3sec.)	Child Lock		

Versions information checking

1. Pull out the plug for 2 seconds ,then plug in, turn the procedure knob after 3 seconds (if the machine is running ,need to Turn the procedure knob to [off] before pull out the plug).

2、Press Power key for 3sec., then press[K2][K4][K2][K4] in 10 seconds, the door will be locked and enter service testing mode; Press [K1] or [K2] shift the test option.

- 3、Select the T03;
- 4、Press [Start/Pause] enter PCB test;
- 5、Press [Start/Pause] again will show the project number.
- 6、Press [K1] will show the software Version number.

6、 Press [Start/Pause]will return to "T03" and exit the testing; turn off and then end testing.

- 7、Press the K1+K3 button for 3sec. The buzzer is mute.
- 8、Press the K2+K4 button 3s. to set My Cycle.



4.1. Service mode

LED	Check Target	Check Method	Check Item
Display t01	Version switchover	 Press [K2] to change version Press [K1] button continuously for 	LED displays "0xx" x means current version
	Error code checking	 Press [K5] button Press [K1] to show the last code and press [K2] to show the next code Press [K2] and [K3] button at the same time continuously for 3s, after hearing the beep, all the error codes records deleted, LED displays E00. 	LED displays "Err"
t03	Version information checking	 Press [K5] button Enter into service mode, LED displays "cod". Press [K5], LED displays project number. Press [K1] button, LED displays version number 	LED displays version number
t04	UI Checking	Urace 1K 51 button	The whole LED display flashes
t05	Drain-pump checking	Press [K5] button to drain out all the remaining water. If all water drained out, LED displays "EP", and 6 minutes later ,if there is still water remains in it, LED displays "FP"	LED displays "PPt"
1 T()6	Pressure switch checking	 Press [K5] button to activate inlet valve. LED displays level frequency once water lever get the main wash level. 	LED displays LL



4.1. Service mode

LED Display	Check Target	Check Method	Check Item
t07	sensor and		LED displays the current temperature
	Inlet valve checking	 Press [K5] button, LED displays "uu" and switch on the main wash inlet valve for 10 min. Press [K1] button, LED displays "u1" and switch on prewash valve for 5s. Press [K1] button, LED displays "u2" and switch on the main wash inlet valve for 5s. Press [K1] button to switch on main wash and prewash valve and get the water lever to setting level, then drain out the water. 	LED displays "UU"
TIM	checking	Press [K5] button, inner drum rotates in 45r/m clockwise for 15s and stop for 10s then rotates counterclockwise for 15s, over and over again.	LED displays "tUB"
		Press [K5] button , the number on the display goes up in the same pace with the real speed and when it reach 400rpm, you need to press [K1] button to get the machine to reach its target speed	LED displays "spn"



4.2 Self-check

- Turn on the machine, to take turns [K2] [K4] [K2] [K4], the door locked, enter the test mode, display the T01, press the [K1] or [K2] to show "T15". - Press [K5] button, put into the function test mode, display TST, then press again, display version number and project number;

- Press [K1] or 3 seconds later again, display the temperature of NTC;

- Press [K1] or 3 seconds later again, display water level frequency;

 Press [K1] or 3 seconds later again, display "U2", main wash valve is open;
 Press [K1] or 3 seconds later again, display "U1", main wash valve is close, prewash valve is open;

- Press [K1] or 3 seconds later again, display "PuP", pre-wash valve is close, drain pump is open;

- Press [K1] or 3 seconds later again, display "HEA", drain pump is close, HTC is open;

- Press [K1] or 3 seconds later again, the heater is close, the motor rotates forward 3 seconds, stop 2 seconds, display the motor speed, accelerate to 1000 rpm;

- Press [K6], display the "T15", back to the function test mode. Exit need to close the power.

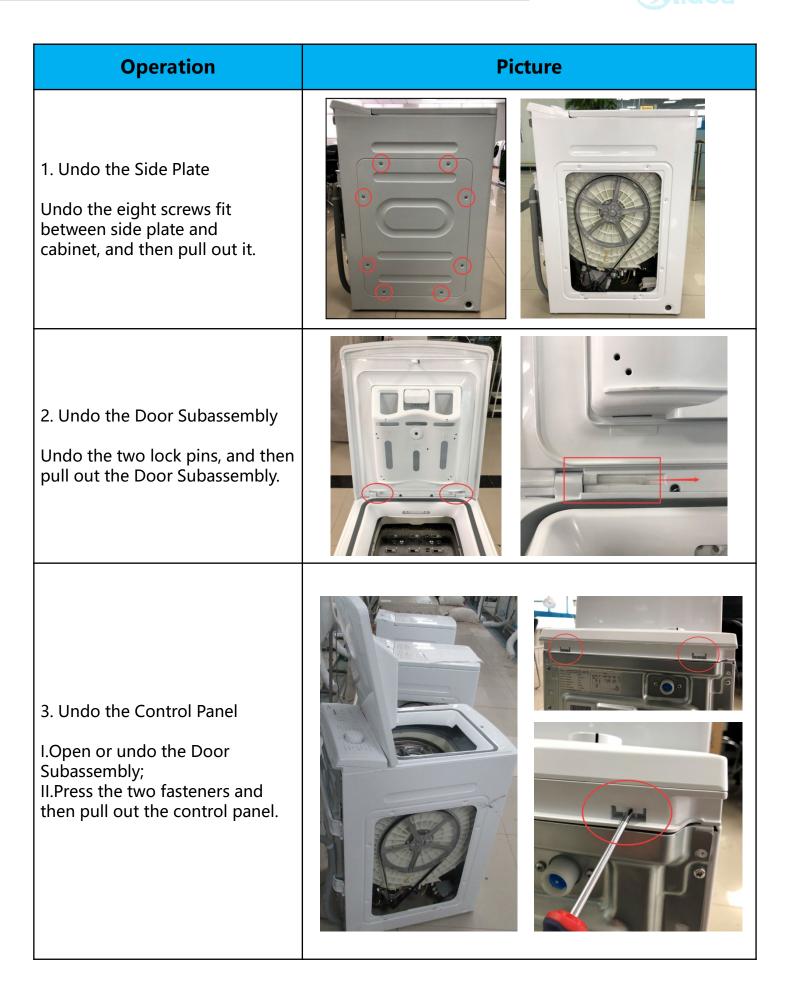
4.3 Marketing-show (no-water testing)

The sales display mode can not be used in this PCB.



5. UNPACKING WAYS OF MAIN PARTS

- 1. Undo the Side Plate
- 2. Undo the Door Subassembly
- 3. Undo the Control Panel
- 4. Undo the Inner Ring
- 5. Undo the Door Lock
- 6. Undo the Water Level Sensor
- 7. Undo the Top Cover
- 8. Undo the Door Gasket
- 9. Undo the Inlet Valve
- 10.Undo the Back Cover
- 11.Undo the Pulley
- 12.Undo the Drain Pump
- 13.Undo the Motor
- 14.Undo the Heater
- 15.Undo the NTC
- 16.Undo the Tub Assembly
- 17.Undo the Magnetic Cover Switch
- 18.Undo the absorber
- 19.Undo the Filter
- 20.Undo the Counterweights
- 21.Undo the Drum





4. Undo the Inner Ring

Undo the eight screws fit between inner ring and top cover, and then pull out it.

In order to avoid the screws falling in the Drum, please place a cover cloth on the drum.





5. Undo the Door Lock

I. Undo the Inner Ring;
II. Undo the screw fit
between door lock and top cover;
III. Pull out the plug on the door lock;
IV. Press the fastener on the door lock and pull out it.







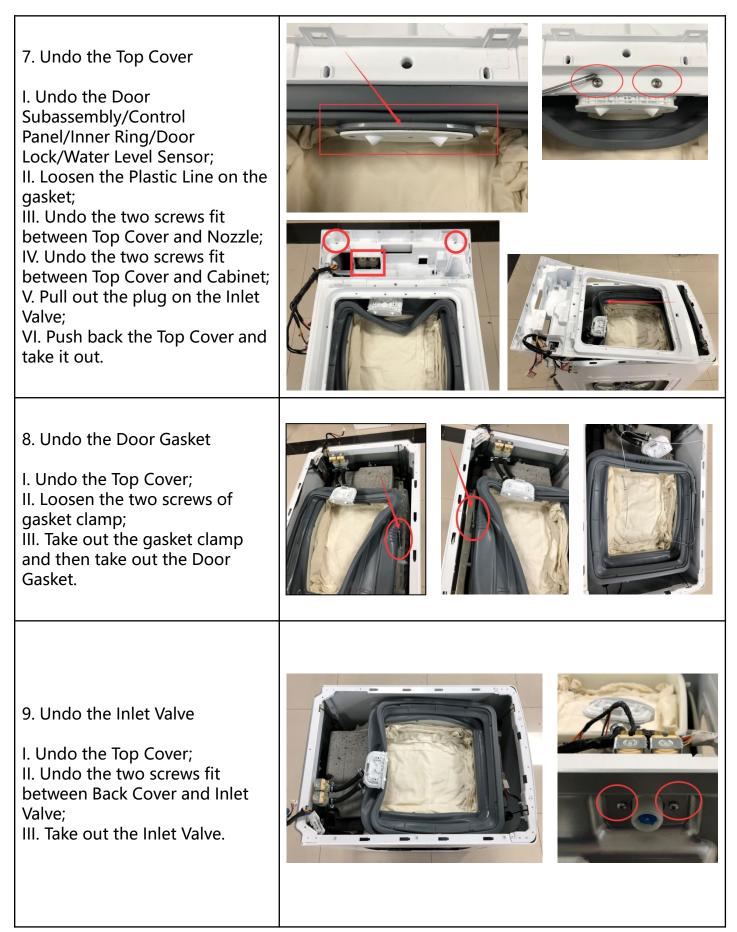
6. Undo the Water Level Sensor

I. Undo the control panel;II. Loosen the fastener of the sensor and pull out the plug on the sensor;III. Loosen the clamp and pull out the sensor.

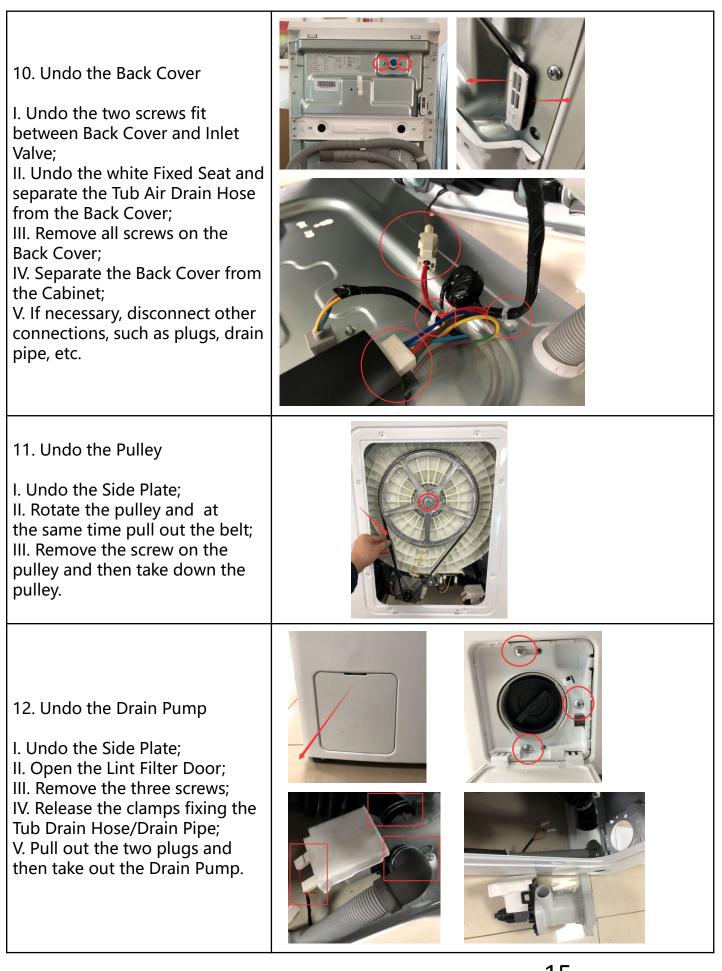














13. Undo the Motor

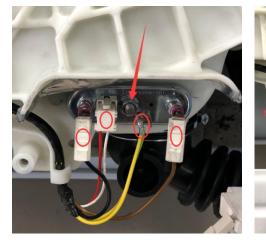
I. Undo the Side Plate, For easy disassembly of the Motor, we can tilt the machine as shown in the picture;
II. Remove the two screws on Motor and Tub;
III. Pull out the plugs on Motor and then take out the Motor.





14. Undo the Heater

I. Undo the Side Plate;II. Pull out the Heater plugs;III. Loosen the nut on Heater and pull out the Heater.

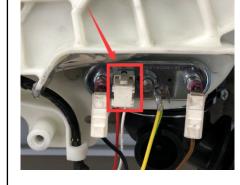






15. Undo the NTC

I. Undo the Side Plate; II. Undo the Heater; III. Undo the NTC with special tools.





16. Undo the Tub Assembly

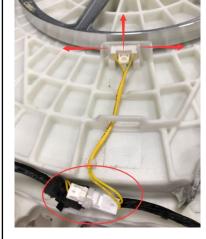
I. Undo the Top Cover/Side Plate/Back Cover/Inlet Valve; II. Undo the Pulley/Drain Pump/Motor; III. Separate the Internal Wire Assembly from the Tub Assembly; IV. Remove the three Damper Pins; V. Lift the Tub Assembly out of the Cabinet.



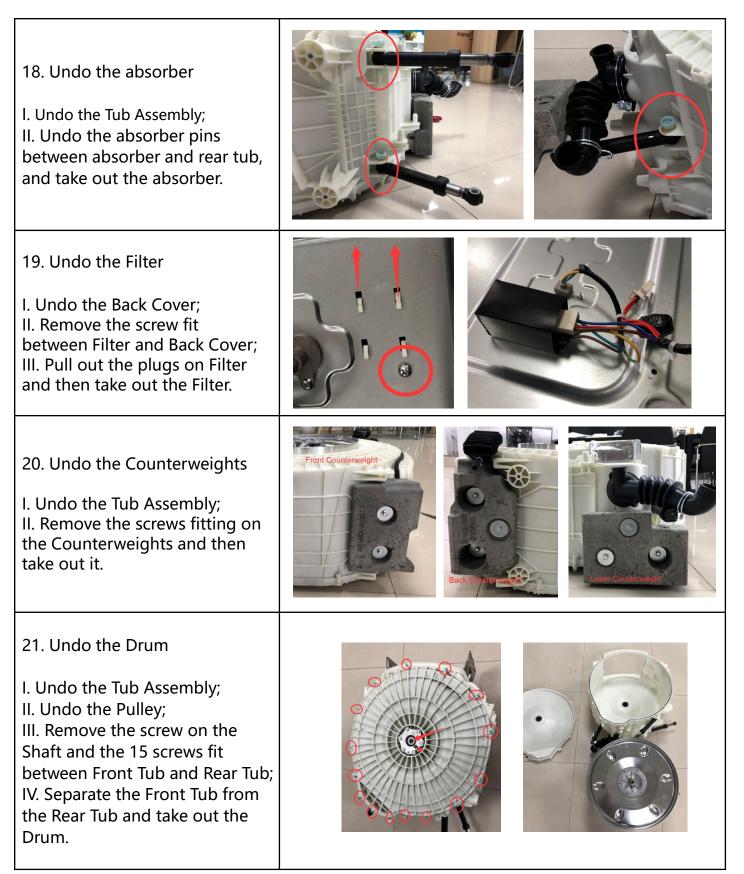


17. Undo the Magnetic Cover Switch

I. Undo the Side Plate;II. Loosen the Plastic Line on the Magnetic Cover Switch;III. Pull out the plug and take out the Magnetic Cover Switch.







Error Code	Unit Action	Causes	Explanation
water level doesn't change with	Unit will close valve and stop with Error code display	Low Water Pressure from House Supply	If the washer fills very slowly, the water pressure from the house might be too low. If the water inlet valve isn't leaking and there are no other symptoms this problem does not need to be corrected.
		Water inlet hose	Make sure that water faucet is turned on and that the screens on the hoses are not restricted.
		Water inlet valve (The voltage on the water inlet valve is normal)	If the water pressure is good, try cleaning the screens inside the water inlet valve hose connection ports. If those are clean replace the water inlet valve.
		Water level sensor or control switch (No voltage on the water inlet valve)	A water lever control switch controls how much water enters the washing machine by PCB. If the water level control switch is defective, or more commonly, if the small air pipe attached to the air bell restricted, The switch will not be able to close the electrical contacts to the washer fill valve. CHECK THE AIR PIPE CHECK THE WATER LEVERL SENSOR CHECK THE PCB and the inner wire between PCB and the sensor

	Unit		
Error Code	Unit Action	Causes	Explanation
	Unit will close	Restart	Some time just restart the unit can solve the problem.
		Water inlet valve (The voltage on the water inlet valve is normal)	If the washer is overflowing, the water inlet valve has failed. Replace it.
E12 Overflowing.	valve and stop with Error code display	Water level sensor or control switch (No voltage on the water inlet valve)	A water lever control switch controls how much water enters the washing machine by PCB. If the water level control switch is defective, or more commonly, if the small air pipe attached to the air bell restricted, The switch will not be able to close the electrical contacts to the washer fill valve. CHECK THE AIR PIPE CHECK THE WATER LEVERL SENSOR CHECK THE PCB and the inner wire between PCB and the sensor

Error Code	Unit Action	Causes	Explanation
E20 Pump open circuit	Unit will close valve and stop with Error code display	Pump	Check the pump or the and the inner wire of the pump
Washer Won 't	Unit will close Pump and stop with Error code display	Drain Hose	If the washer won't drain water check the drain hose. Be sure the hose did not get kinked behind the washer. Also, remove the hose from the pump and check it for obstructions.
		Pump	If the washer won't drain water the drain pump might be defective. It's also common for a small sock or other article of clothing to get caught in the drain pump or in the drain hose. Check both for an obstruction before replacing the pump.
		РСВ	Check PCB

Unit Action	Causes	Explanation
Try 6 times, not lock	Door Lock	If the door won 't latch, the door lock assembly might be defective. If the door won' t latch ,check the door to see if the door is closed before replace it.
	PCB	If the washer door won 't unlock the problem might be the main control board. This is not common. Check the inner wire between the PCB and the door lock.
r Door unlock	Door Lock	If the door won ' unlock, the door lock assembly might be defective. If the door won' t latch ,check the door to see if the door is closed before replace it.
	PCB	If the washer door won't unlock the problem might be the main control board. This is not common. Check the inner wire between the PCB and the door lock.
	Action Try 6 times,	ActionCausesActionDoor LockTry 6 times, not lockPCBPCBDoor Lock

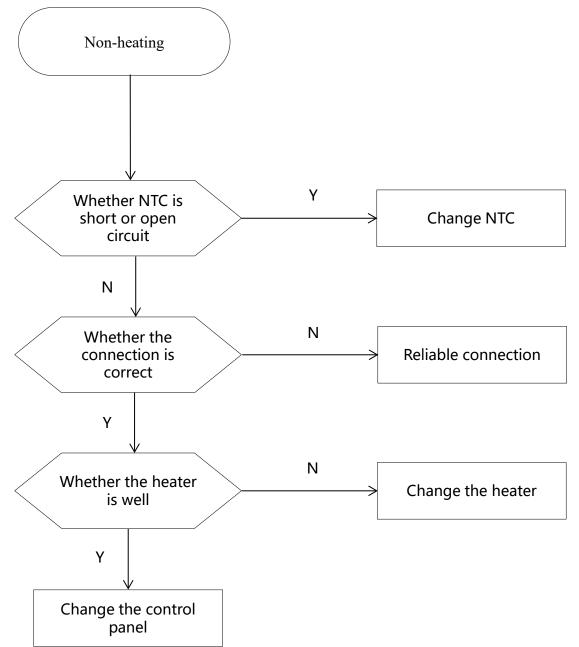
Error Code	Unit Action	Causes	Explanation
E33 Water level	Unit will close valve and stop with Error code display	Water level sensor or control switch (No voltage on the water inlet valve)	E33 means the unit can't detect the Signal of Water level sensor. CHECK THE WATER LEVERL SENSOR CHECK THE PCB and the inner wire between PCB and the sensor
		Motor Inverter PCB board doesn't work	1.Check the Inverter PCB The the main PCB 2.Check the motor rotate resisted 3.Check the power voltage and frequency
E64 Inverter PCB	Unit will close Pump and stop with Error code display	Motor Inverter and Main PCB communication fault	1.Check the Motor Inverter PCB board or main PCB board 2.Check the connect wire
E80 Display PCB	Unit will close Pump and stop with Error code display	Display PCB and Main PCB communication fault	1.The Connect wire is broken 2.Check the Main PCB board

7 TROUBLESHOOTING



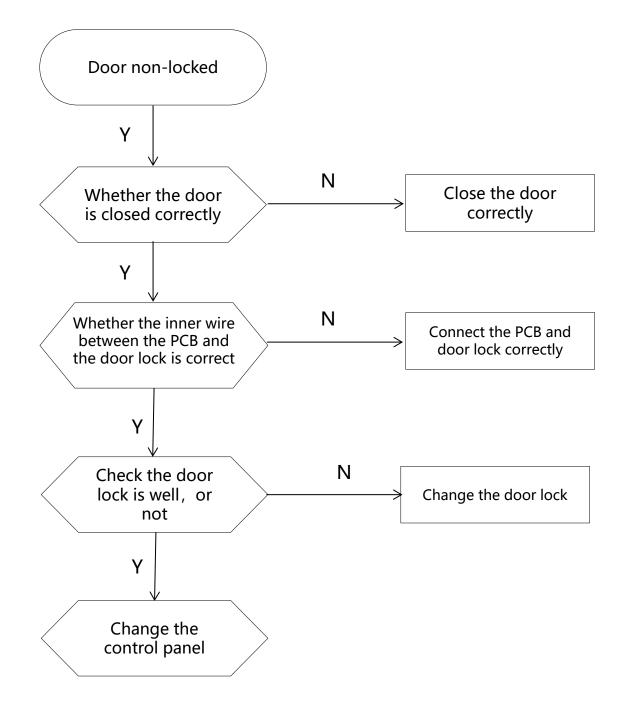
Fault tree

1. Maintenance non-heating malfunction



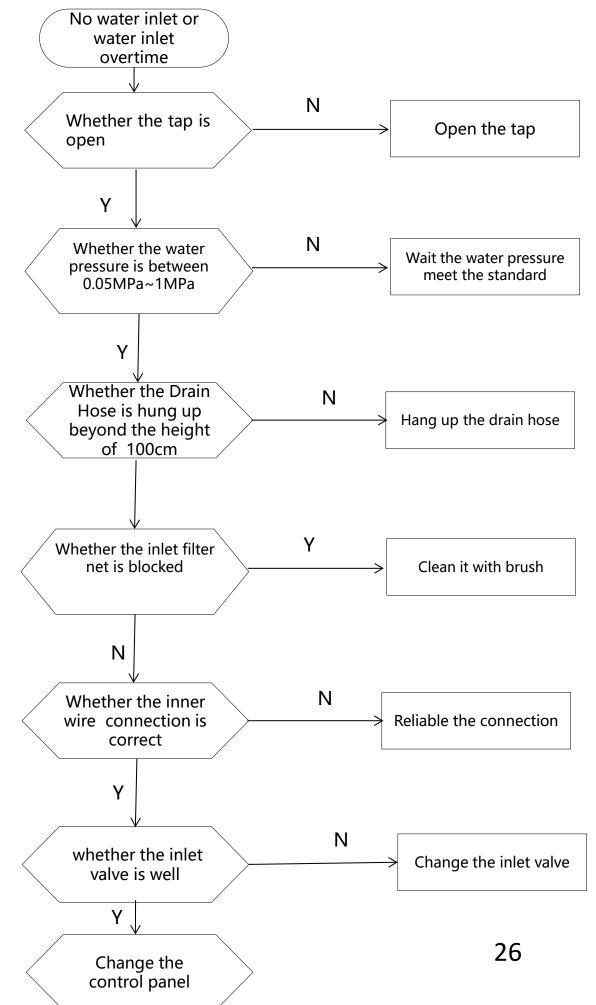


2. Door non-locked & its maintenance





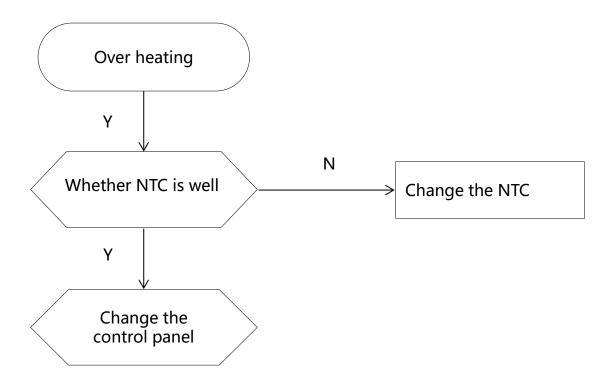
3. No water inlet or water inlet overtime



7 TROUBLESHOOTING

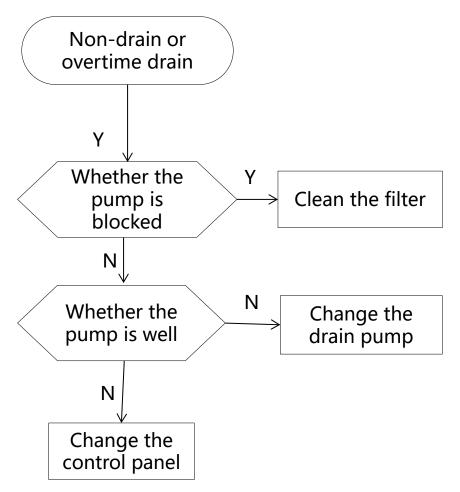


4. Over heating



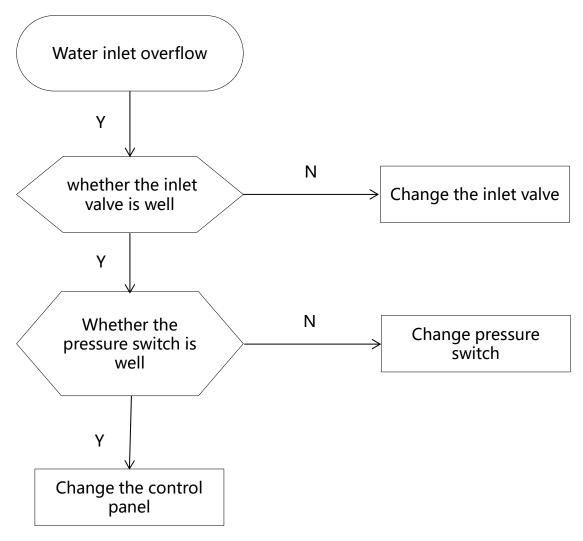


5. Maintenance of non-drain or drain exceed the setting time



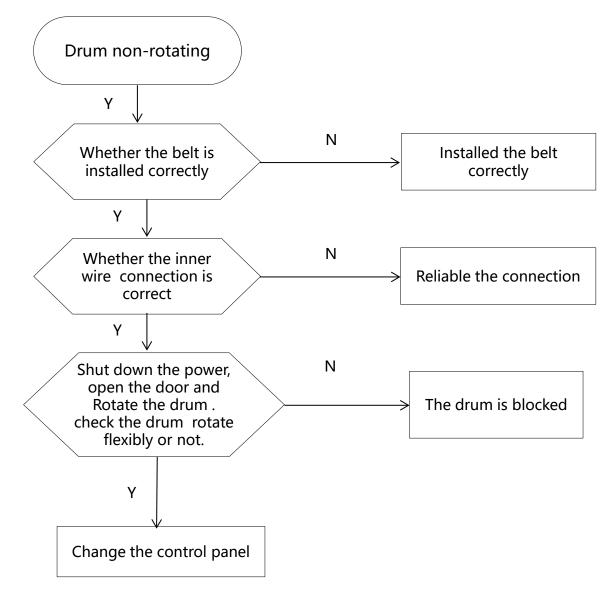


6. Water inlet overflow malfunction maintenance



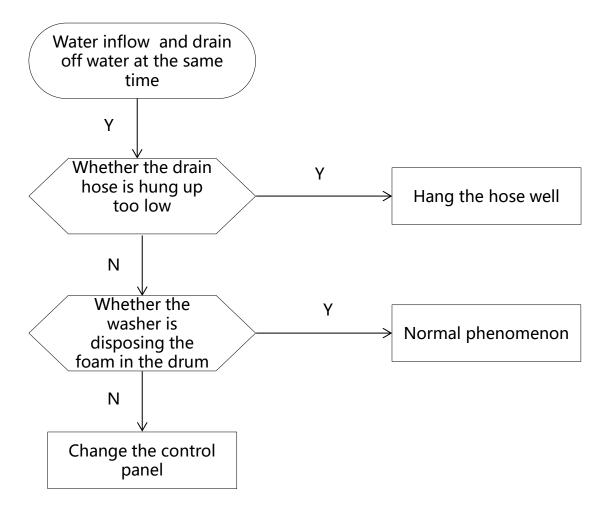


7. Drum non-rotating malfunction maintenance





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



7 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.	nd empties at the same	
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.	



Level the	washing machine.
Vibration of the washing machine Level the Fasten the To check	washing machine.
detergentThe bubble spills from the detergentDip one s water to t	he detergent is excessive, if it is the specialized for the cylinder washing machine. coop of the softener mixed with 1/2 liter of he detergent box II. he usage amount of the detergent in the next sh.
The machine stops when the procedure has not Power fail been finished	ure or water cut.
noise during the operation when the water bas just been drained	barrel water of the washing machine has been ut there is still a small amount of water in the pump and pipe. The drainage pump usly operates and takes in the air, and at this time he noise, which is normal situation.
during the wash Because t	ing machine adds water automatically. here is too much bubble in the tube, the nachine is cleaning the bubble.

If you cannot solve the above abnormal situations, would you please:

1. To Turn off the machine, pull out the attachment plug;

2. To close the water tap, and contact the nearest service center.

8 CHECK POINT OF CIRCUIT

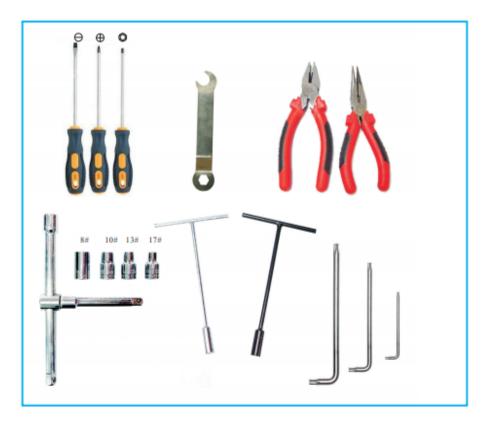


Before repairing, use multimeter to judge circuit stand of fail.

No	Parts	Picture	Test Description	Parameter	Remarks
1	Water Level Switch		1.Measuring two straight line terminals 2.Measuring two vertical terminals	Break over after blow- PASS	
2	Door lock		Electrify the resistance	2 seconds after the power supply can automatically locked 1-2 mins after the power off can automatically locked-PASS	
3	Water valve	T	measuring resistance	Resistance value range 3- 6KΩ- <mark>PASS</mark>	
4	Pump		Measure the resistance of the toroids	Resistance value range 150-250Ω- <mark>PASS</mark>	T
5	Heater		measuring resistance	Resistance value range 20-35Ω- <mark>PASS</mark>	
6	NTC	3	measuring resistance	Resistance value range 4.8kΩ±8%@25°C0- <mark>PASS</mark>	
7	Motor(U niversal)		Measure the resistance of the toroids	Resistance value range PIN5~PIN10 1.3±10%Ω- <mark>PASS</mark>	<u>A</u>
8	Motor(l nverter)		Measure the resistance of the toroids	Resistance value range 1~10Ω <mark>-PASS</mark> (Pin1~Pin2~Pin3)	

9 SERVICE TOOLS





Number	Tools	Suitable kit	
	1 Sleeve spanner	Heater 1	
1		Motor 1 counterweight 5	
1		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!