

Skyworth Front-loading WM working fundamental and troubleshooting—— 31 serials


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1. Product introduction

(1) Functions and specifications

Model	F70431QB	F80431VB	F90431NB
Color	White/Silver/Brown/Golden/Dim gray		
Product picture			
LED display	√	√	√
Automatic program	√	√	√
Smart memory	√	√	√
Tub-clean program	√	√	√
Variable temp wash	√	√	√
Adjustable spinning speed	√	√	√
Stainless steel tub	√	√	√
Water draining	√	√	√
Up drain	√	√	√
Child lock	√	√	√

Power-off automatically	√	√	√
Rated voltage	220-240V~50Hz	220-240V~50Hz	220-240V~50Hz
Rated washing power(W)	200	350	200
Rated spin power(W)	500	700	600
Rated heating power(W)	1600	1600	2000
Washing temp	cold/20/40/60/90	cold/20/40/60/90	cold/20/40/60/90
Washing ratio	1.03	1.03	1.03

(2) Features

- (1) Various functions and easy operations for use
- (2) Various programe to use expediently
- (3) Washing (heating wash) and spinning are operated automatically.
- (4) High accuracy of cloth measurement and eccentric force check to enhance wash ratio.
- (5) Auto door-lock, Universal motor(lighter vibration, lower noise)
- (6) Various automatic program: Cotton, Mix,Synthetic, Baby Care,Quick15', Rinse+Spin, Spin, Duvet, Wool,Eco,Sports,Eco, There are also different Tub Clean, Pre delay,temp and spin speeds for choose.

(3) Spefications

Items	F70431QB	F80431VB	F90431NB
Product size	595x480x850 mm	595x510x850 mm	595x600x850 mm
Packing size (W×D×H)	657x535x885 mm	657x565x885 mm	660x670x885 mm
tub size (mm)	Φ484*287	Φ484*326	Φ484*372
Net weight	60kg	62kg	63kg
Washing way	Front-loading		
Spin way	Centrifugal		
Vibration way	Friction damper+ hanging spring		
water level check way	Frequency switch		

Water level		Program shifted automatically		
Washing, spin way		BLDC Motor		
Motor quantity		1		
Tub spin speed	washin g	50rpm		
	spin	400/800/1000/1200/1400rpm	400/800/1000/1200/1400rpm	400/800/1000/1200/1400rpm
Rated washing capacity		7.0kg	8.0kg	9.0kg
Rated spin capacity		7.0kg	8.0kg	9.0kg
Heating wash temp		20/40/60/90℃		
Voice	Washin g	60dB		
	Spin	76dB	76dB	76dB
Water pressrure		0.03 ~ 1MPa (0.3 ~ 1.0kgf/cm²)		
Parts: Manual. In-let components, Wrench				

(4) Main parts specification


Parts name	specification	Parts name	specification
body	Material: PCM	outer drum	Material: PP+glass fiber
back cover	SGCC	Bottom feet	Four adjustable feet
Power Switch	Mechanical	Optional switch	program
Start/stop switch	Mechanical	Door Lock	electronic Door
water level sensor	Frequency switch Rated voltage: 5V	inlet valve	Water pressure range: 0.03~1.0Mpa Max flow: A: Main: 14L/min B: Prewash: 14L/min Rated voltage: 220-240V Coil resistance: 4.66KΩ±0.1
Drain pipe	Bellows 1.87m		
Drain pump	Flat		
Water inlet pipe	PVC pipe 1.0m		


Washing, spin motor	1) 470 BLDC motor: 230V AC 50Hz (X2362-001-72L) 2) 550 or 590 BLDC Motor Rated voltage: 230V AC 50Hz (X2362-001-55L)	Washing heating tube	1) 440 or 470 platform Rated voltage: 230V AC Rated power: 1500W 2) 550 or 590 platform Rated voltage: 230V AC Rated power: 2000W
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(5) Notice before washing


- (1) Before washing, please adjust and tight each screw to keep the machine flat and stable for the risk of great vibration when spinning.
- (2) Please use the low bubble detergent and refer to its manufacture suggestions specially to wash the cloths.
- (3) Please check and confirm the suitable temp from clothes label before heating.
- (4) Caution:


WARNING

 ● May cause the risk of electric shock or fire
Please do not place the washing machine in damp places like the bathroom, or in weather-beaten places.
It needs to be safely grounded during being used. After using, please Unplug the power cord and cut off the power.

 ● May cause the risk of being injured
Before WM stopping running, don't put your hands into dewatering cylinder even though the cylinder spin slowly, because it may cause injury due to clothes wrapped in arms. Pay special attention to the danger of children

 ● May cause the risk of fire
Please use special groundable wire socket of 220~240, more than 10A. If share sockets with other electrical appliances, it may cause fire due to heating.

 ● May cause the risk of explosion or fire
Please do not put in items carrying with kerosene, gasoline, thinner, alcohol and other chemicals, or wash clothes which may cause fire due to heating. Please do not place beside the WM with flammable items.

 ● May cause the risk of children going inside and injured
Don't let people like children use WM, who are not familiar with operation of WM. It may cause children go inside and lead to injury, etc.

WARM PROMPT

- Installation, Before using, please read the instructions carefully and remove the transport screws behind the machine.
- To avoid overflow and burns, please confirm the water level in the tub before opening the door when adding items or power cut.
- In the process of running don't put the items on the top cover, the vibration may lead to items damage.

Attentions when using mesh laundry bags

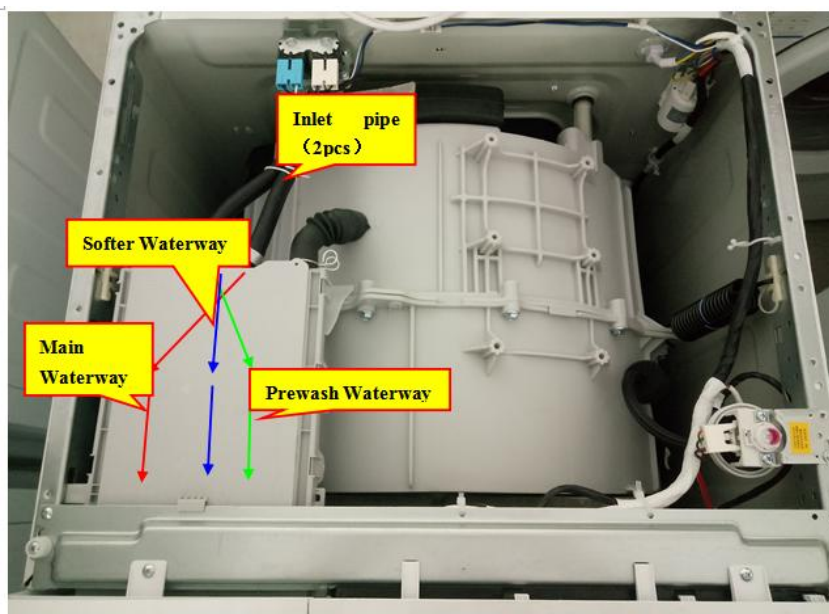
- Do not use mesh laundry bags when washing items such as blankets, cotton quilt (it may cause abnormal vibration).
- Do not put too much clothing into the mesh laundry bags.

2. Structure and functions

(1) System of waterway

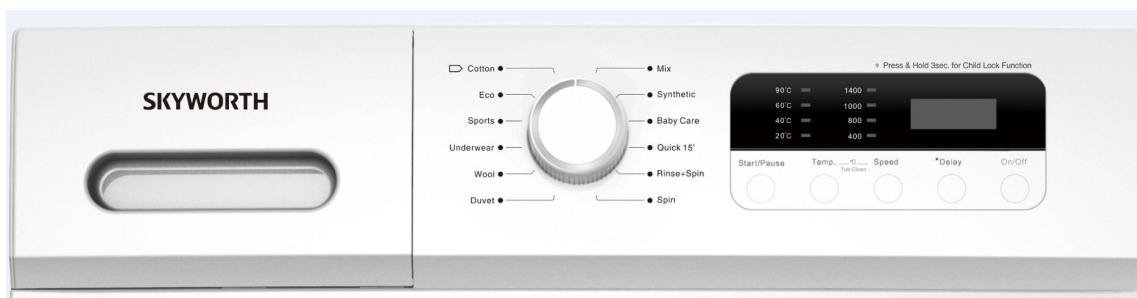
Water inlet: inlet pipe→inlet valve→inlet hose→detergent box→detergent box bellows →outer tub

Dewatering: inner tub→outer tub→pump→bellows→drain pipe



(2) Control panel and its settings

(1) control panel



Control Panel for reference

(2) Setting and display

ON/OFF: Press it to the original program; Procedure finished, power off automatically

Start/Pause: Press Start button to start operation; Press Pause button to stop temporarily

Knob: Rotate it to select additional functions as following:

Model: F70431QB, F80431VB, F90431NB

程序	温度 (°C)	转速 (rpm)	时间 (min)
Cotton	0 (20/40/60/90)	1000 (0/400/800/1400)	94
Eco40-60	40 (0/20/60)	1400 (0/400/800/1000)	146
Sports	20 (0/40)	1000 (0/400/800)	83
Duvet	60 (0/20/40/90)	1400 (0/400/800/1000)	125
Baby Care	60 (40/90)	1000 (0/400/800)	130
Steam	20 (0/40/60/90)	800 (0/400/1000/1400)	83
Mix	0 (20/40)	1000 (0/400/800)	73
Quick 15'	0 (20/40)	800 (0/400/1000)	15
Synthetic	40 (0/20/60)	1000 (0/400/800/1400)	67
Wool	0 (20/40)	800 (0/400/1000)	57
Rinse+Spin	—	1000 (0/400/800/1400)	38
Spin Only	—	1000 (0/400/800/1400)	14

Pre-delay: When use “Pre Delay” function for washing, the delay time is 3-24hours

Pre wash: If the cloths are too dirty, you can choose this program before washing.

Door Lock: When operating, door lock effects automatically and the door lock light is lighting; Press “Start/Pause” , tub stops for 2 mins, door is unlocked; High-temp and high water level working, door is locked;

Child Lock: If you want to start child lock function, you should press Delay button for 3 seconds; To unlock the lock, you can press “Delay ” button for 3 seconds during any programs.

(3) Additional functions

Power-off automatically: Finishing washing program about 10mins, the machine will be powered-off automatically.

Eccentricity check: When spinning, the machine is loaded to check the eccentricity and find the spinning track automatically.

Defoam: When washing and spinning, the machine will check the foam and handle it accordingly.

Smart dewatering: When program is finished, the machine will check the water level whether it exceeds the inner tub or not. If yes, it will open the drain valve and let it comes down to the inner tub and closed the valve automatically.

Smart unlock: After program finished, if the water level is too high, drain pump will start to work until the level reaches the right line and it is unlocked. If the inner temp is too high, it will be unlocked when the temp comes down to the safe and waits for 1mins.

(4) Control check

Abnormal heated pipe check: When the machine doesn't work properly, broken or short circuit of the heated pipe will be checked and set the alarm.

Door lock check: Any abnormal action will cause the alarm when the door is locked or unlocked.

Speed check: When motor both runs and stops, the machine will alarm if the speed is abnormal.

Water temp sensor check: Abnormal sensor will cause an alarm.

Water level check: When the level is higher than overflow level, the machine will alarm

(5) Process of electric units check

Function applications of LQC

- When plug-in, pressing Pre Delay, Prewash and ON/OFF at the same time means LQC effected

- Under this condition, only ON/OFFr, Start/Pause and Pre-delay are available

- Under this condition, press ON/OFF means power-off; press Start/Pause means units test as following steps; Press Pre Delay within 5s means Life Test effects.

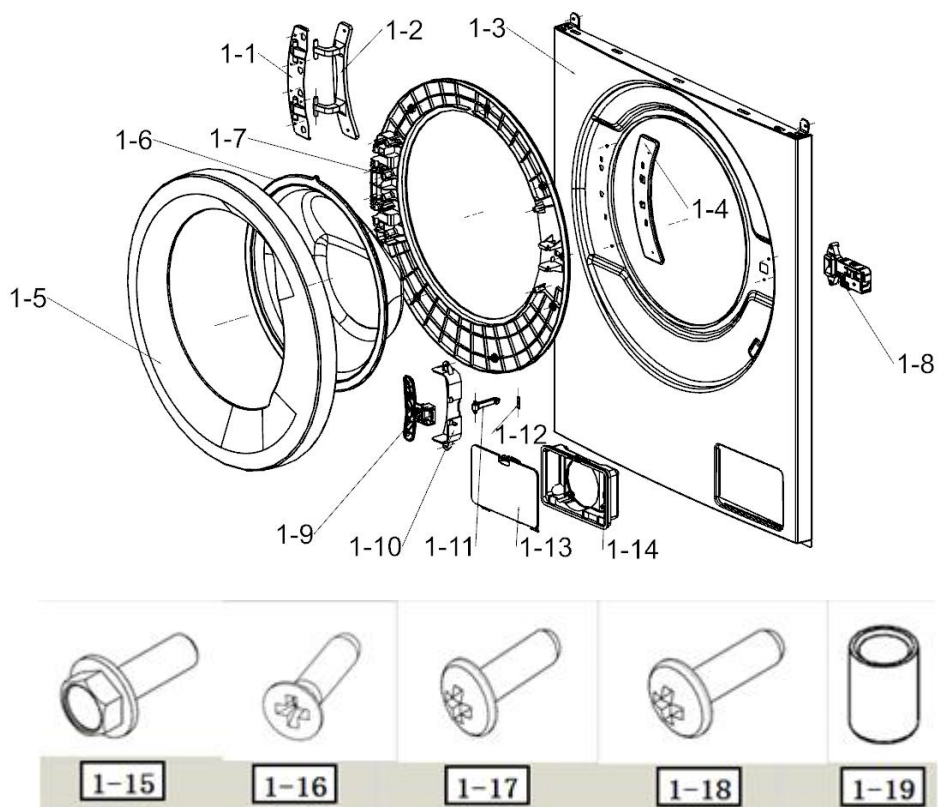
Test each units function by following steps:

★Function applications of LQC:			
Steps	Function	Display	Note
1	Inject water, worker check the structure	/	The machine hasn't power-on yet
2	Enter LQC	All lights shine 2s continuously	Press the program, rinse and ON/OFF together, then power on to move the next step.
3	Check the programs changes and versions	it shows program changes-2S, and 2S of versions next	Move to the next step-Whether all LED lights are OK?
4	Check whether all LED lights are OK; check all using programs whether is ok(No need of draining)	Door lock light is on	Press the Start button to continue
5	Inlet test of prewash valve	Door lock light is on	press "Start" to next step
6	Inlet test of wash valve	Door lock light is on	press "Start" to next step
7	Inlet test of heated water valve,	Door lock light is on (except for the alarm light)	press "Start" to next step
8	Inlet confirm of Rinse (two valves)	Door lock light is on	press "Start" to next step
9	Heater test (power-on 5s)	Door lock light is on	press "Start" to next step
10	Motor spinning with water test	Door lock light is on	Firstly rotate in 50 speed in clockwise for 5s, then stop for 3s, later change automatically in anticlockwise in 400 speed for 40s,

			afterwards move to the next step , the motor stopped, and pump started to drain. All situation over could start the next step
11	Drain pump test	Door lock light is on	press "Start" to next step(The water should be drained totally, otherwise when the level is over 2mm, it will alarm.
12	Motor test with no water and high speed	Door lock light is on	Drain totally, then move to the next step.
13	Motor test with no water and high speed	Door lock light is on	press "Start" to next step
14	LQC test finished	All lights are off	power-off

3. EXPLOSIVE VIEW

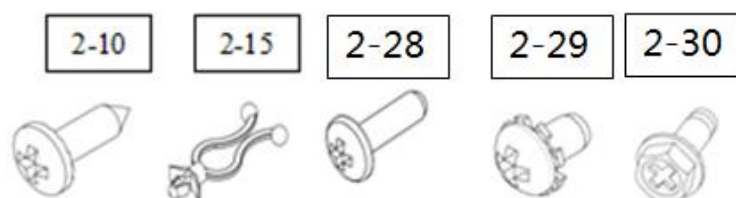
(1) Cabinet cover asm

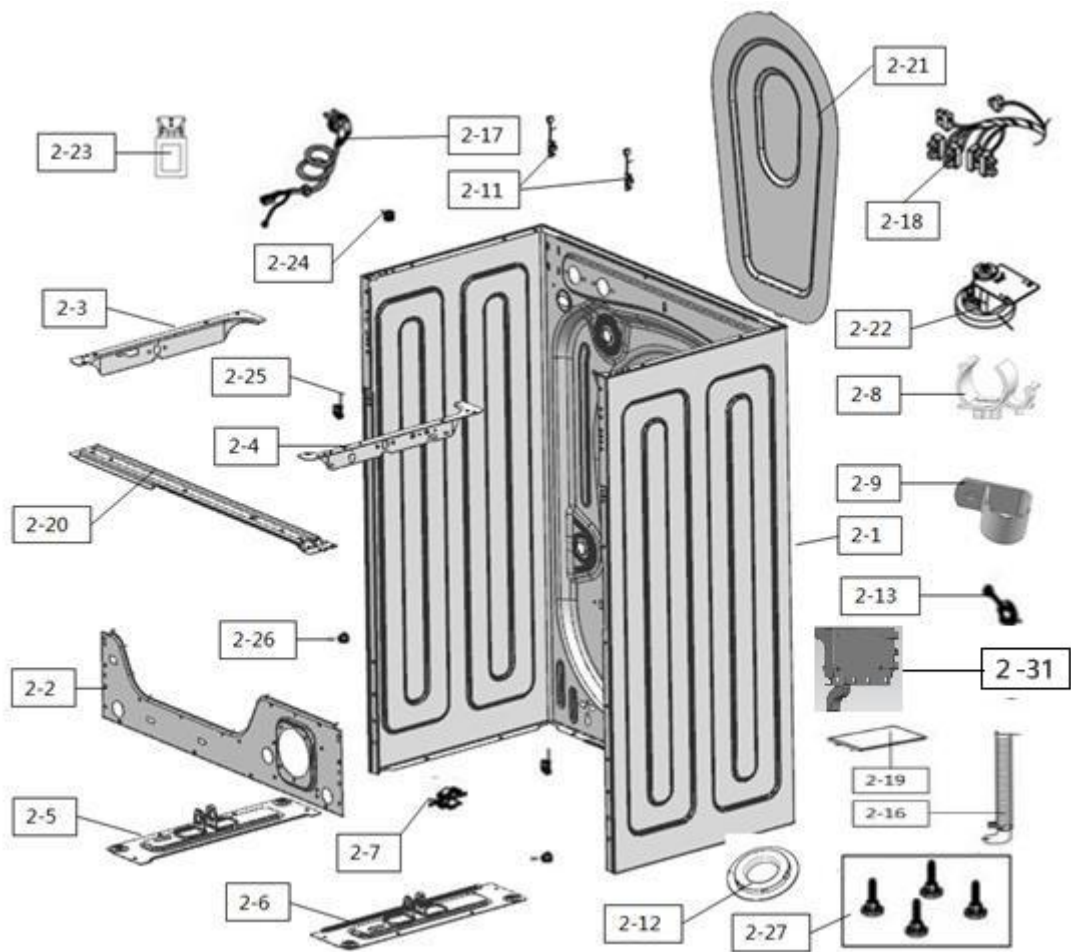


NO.	Chinese Name	English Name	Quantity	Unit	Note
1-1	门铰链固定板	Door hinge holder	1	PC	
1-2	门铰链	Door hinge	1	PC	
1-3	前门板-自动门锁	Cabinet Cover	1	PC	
1-4	门加强板	Door holder	1	PC	
1-5	外门	Outer door	1	PC	
1-6	门玻璃	Door glass	1	PC	
1-7	内门	Inner Door-09	1	PC	
1-8	门锁	Door switch	1	PC	

1-9	门把手	Door handle-09	1	PC	
1-10	门把手支架	Door handle holder	1	PC	
1-11	门卡勾	Latch hook	1	PC	
1-12	门销	Pin	1	PC	
1-13	排水盖板-欧系	Cap cover	1	PC	
1-14	排水盖板盒子-欧系	Case	1	PC	
1-15	门铰链螺栓	Bolt	2	PC	
1-16	螺钉	Screw	12	PC	
1-17	螺钉	Screw	6	PC	
1-31	螺钉	Screw	2	PC	
1-19	门铰链帽子	Holder	4	PC	

(2) Cabinet asm/Back Cover

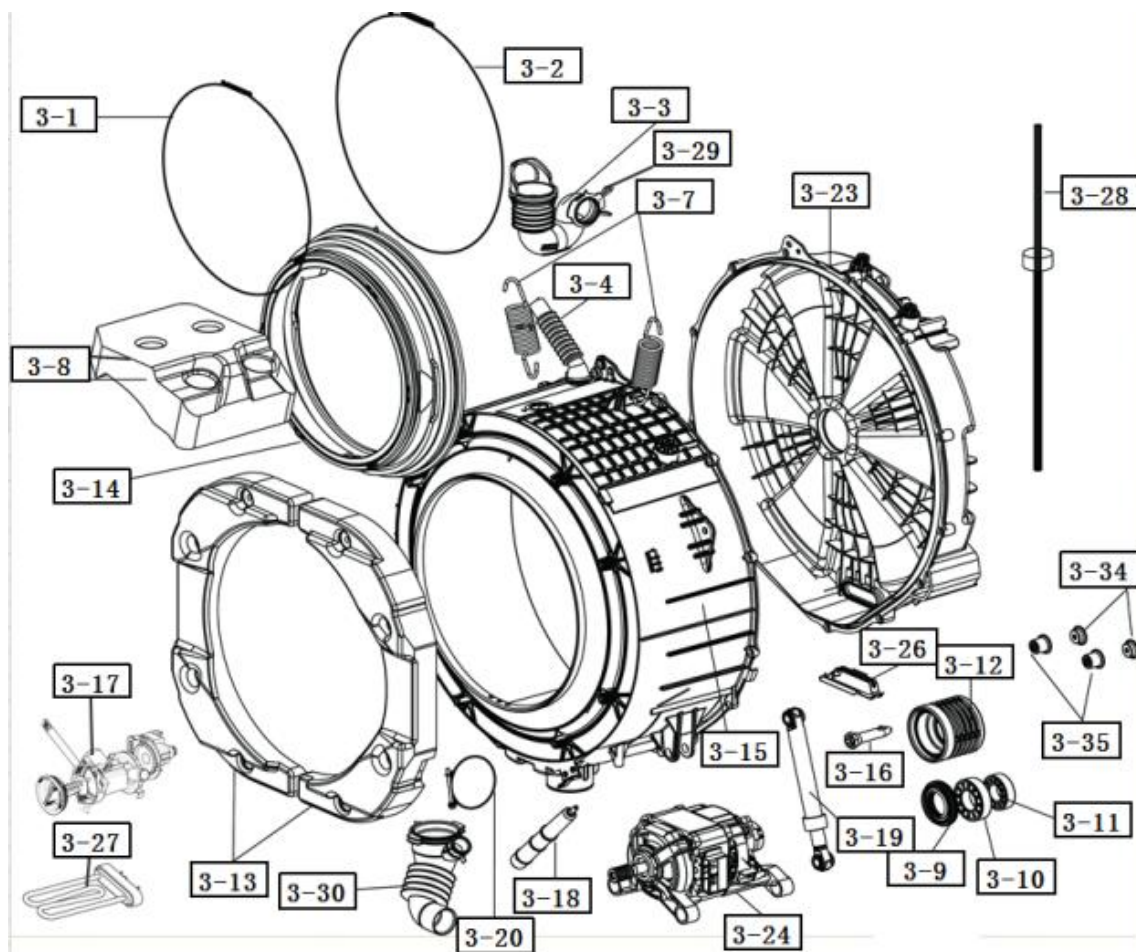




NO.	Chinese Name	English Name	Quantity	Unit	Note
2-1	箱体 PCM 钢板-覆膜	Cabinet	1	PC	
2-2	下支架	Low Frame	1	PC	
2-3	上撑板-左	Top bracket-Left	1	PC	
2-4	上撑板-右	Top bracket-Right	1	PC	
2-5	下撑板-左	Base bracket-Left	1	PC	
2-6	下撑板-右	Base bracket-Right	1		
2-7	排水管卡	Holder	1	PC	
2-8	排水管卡	Holder	1	PC	
2-9	排水管卡	Holder	1	PC	
2-10	螺钉	Screw	1	PC	
2-11	吊簧卡座	Holder	2	PC	
2-12	排水管卡套	Holder	1	PC	
2-13	运输螺栓帽	Holder	4	PC	

2-14	铁线扎	Tread	1	PC	
2-15	八字线卡	Holder	4	PC	
2-16	排水管	Pump hose	1	PC	
2-17	电源线	Power Cord	1	PC	
2-18	主线束	Main harness	1	PC	
2-19	箱体海绵(侧)	Damper	1	PC	
2-20	上支架	Panel Frame	1	PC	
2-21	后盖板	Back Cover	1	PC	
2-22	水位传感器	Pressure switch	1	PC	
2-23	滤波器	Noise filter	1	PC	
2-24	上盖板卡	Holder	1	PC	
2-25	前门板销子	Holder	2	PC	
2-26	前门板销子	Holder	2	PC	
2-27	调整脚	Transport Bolt	4	PC	
2-28	螺钉	Screw	6	PC	
2-29	地线螺钉	Screw	2	PC	
2-30	螺钉	Screw	10	PC	
2-31	主变一体板	main PCB	1	PC	

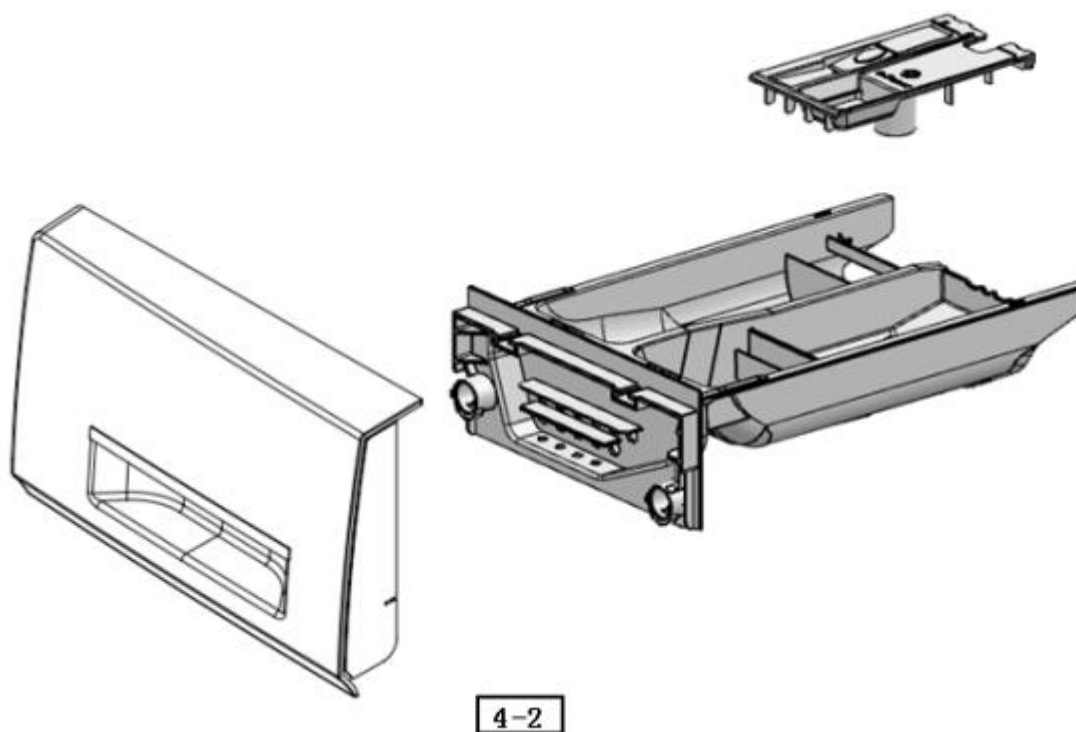
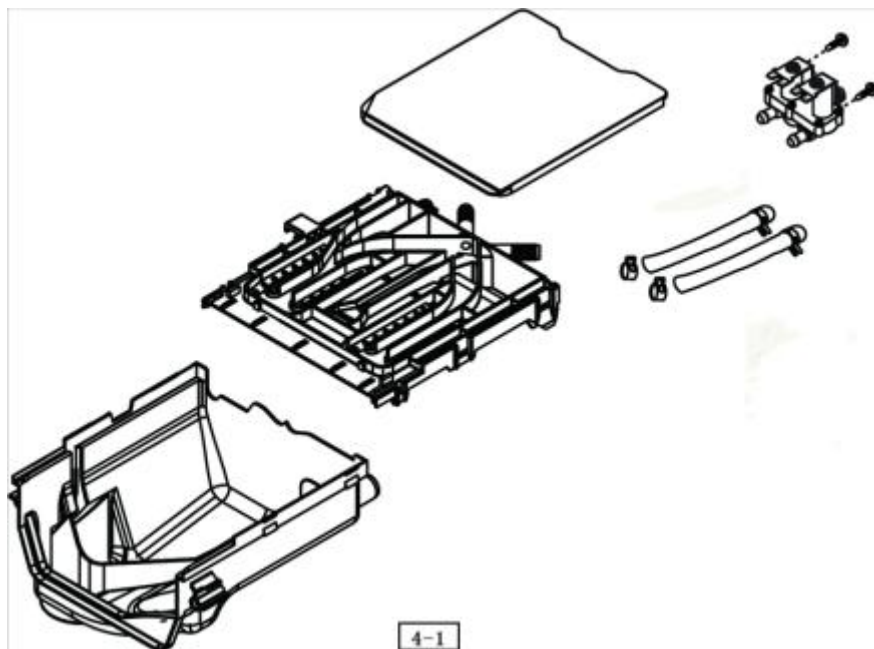
(3) Tub asm

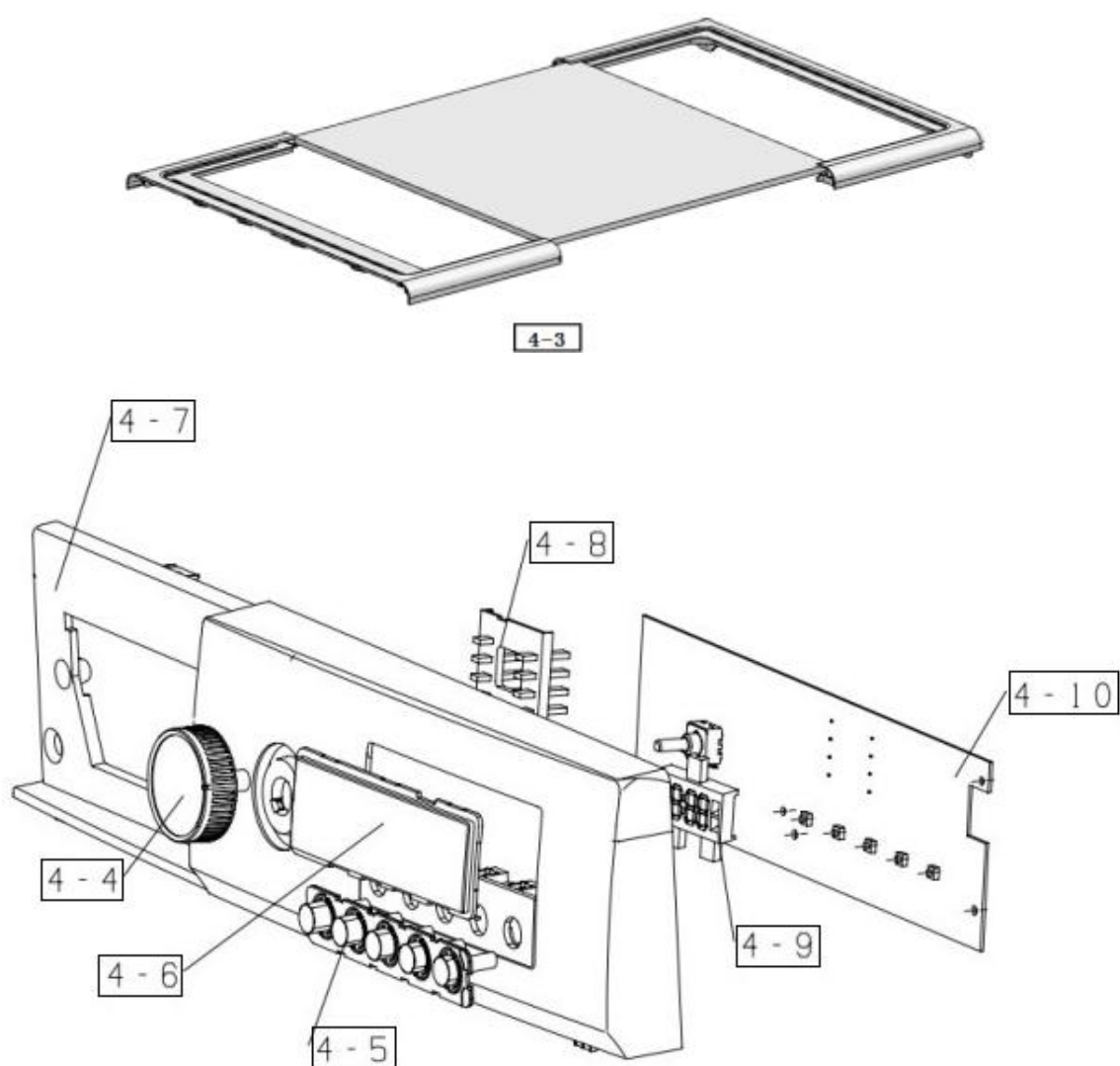


3-10	轴承 6206	Bearing	1	PC	
3-11	轴承 6205	Bearing	1	PC	
3-12	轴盘	Bearing housing	1	PC	
3-13	前平衡块	Balance weight	2	PC	
3-14	门密封圈	Seal	1	PC	
3-15	外桶桶盖	Tub cover	1	PC	
3-16	减震销	Damper pin	2	PC	
3-17	排水泵	Pump	1	PC	
3-31	气室	Air chamber	1	PC	
3-19	减震器	Damper	2	PC	
3-20	排水波纹管卡簧	Clamp	1	PC	
3-21	内桶桶底	Inner Tub,back	1	PC	
3-22	三脚架	Spider	1	PC	
3-23	外桶桶底	Tub outer	1	PC	
3-24	BLDC 电机	Universal Motor	1	PC	
3-25	皮带轮	Belt pulley	1	PC	
3-26	加热器支架	Heater bracket	1	PC	
3-27	加热器	Heater	1	PC	
3-28	水位传感器管子	Hose	1	PC	
3-29	洗涤剂盒波纹管管夹	Clamp	1	PC	
3-30	排水波纹管	Hose	1	PC	

3-31	密封圈	Seal	1	PC	
3-32	提升筋	Lifter	3	PC	
3-33	皮带	Belt	1	PC	
3-34	BLDC 电机脚套	Cover	2	PC	
3-35	BLDC 电机脚套	Cover	2	PC	
3-36	螺钉	Screw	7	PC	
3-37	螺钉	Screw	3	PC	
3-38	定子螺栓	Screw	6	PC	
3-39	皮带轮螺栓	Bolt	1	PC	
3-40	平衡块螺栓	Bolt	12	PC	
3-41	外桶螺栓	Bolt	15	PC	
3-42	气室片簧	Clamp	1	PC	
3-43	排水泵片簧	Clamp	1	PC	
3-44	洗涤剂盒管夹	Clamp	4	PC	
3-45	三脚架螺栓	Bolt	3	PC	
3-46	BLDC 电机螺栓	Screw	2	PC	
3-47	BLDC 电机螺栓垫片	Gasket	2	PC	


(4) Dispenser asm/Drawer panel asm/Top plate asm/Control panel asm




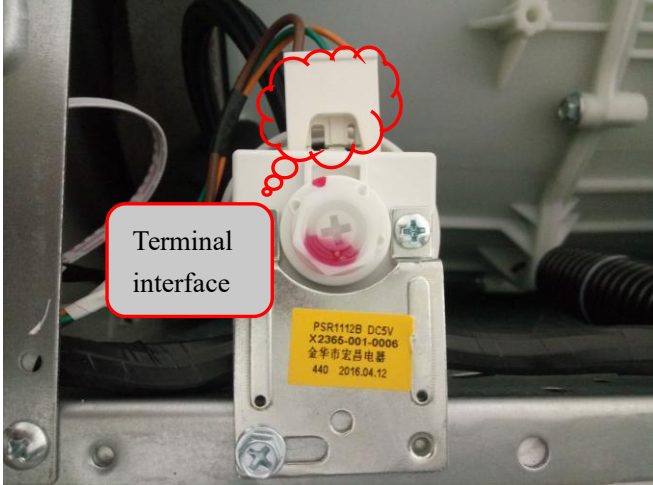




NO.	Chinese Name	English Name	Quantity	Unit	Note
4-1	洗涤剂盒组件	Dispenser assembly	1	PC	
4-2	抽屉面板组件	Drawer panel assembly	1	PC	
4-4	旋钮	Knob	1	PC	
4-5	按键	Button	1	PC	
4-6	控制面板	Control panel	1	PC	
4-7	导光柱	Guide light column	1	PC	
4-8	电脑板	PWB assembly	1	PC	

4. Disassemble steps





Related pictures	Disassemble steps
	Remove 2 screws from the fixed upper cover.

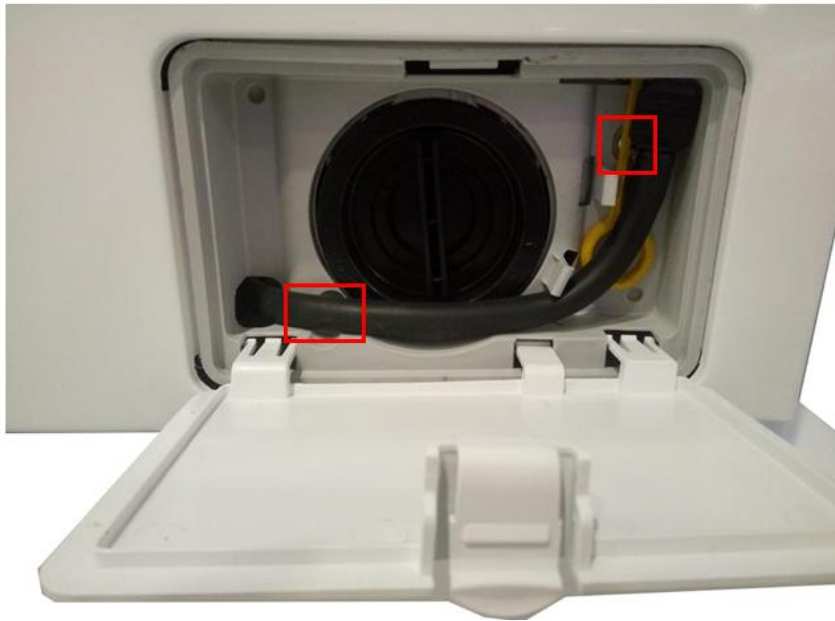
	<p>Push the cover and take it away as the arrow direction shows</p>
	<p>Remove 2 screws fixed from the control panel</p>
	<p>1.Pull out the detergent parts</p> <p>2.Remove 2 screws fixed from the detergent parts</p>
	<p>1.Pull out the terminal of PWB and take it away.</p> <p>2.Split the control panel:remove screws fixed from the PWB panel.</p> <p>3.pry the knob parts.</p> <p>4.Take out the display panel, button parts and the frame parts</p>



The replaced units as follows

1. detergent box parts;
- 2.water inlet pipe;
- 3.double inlet valve;
- 4.single inlet valve;
- 5 air pipe
- 6.water level sensor
- 7.balancing weight(up)
- 8.balancing spring and the base

		<p>Remove 2 screws fixed from the door and take the parts away.</p>
		<p>1.Remove the spring coil from the door seal.</p> <p>2.Remove 2 screws from the latch hook</p>



Open the cap cover, remove 2 screws fixed from it, take the cover and case away.



1. Remove 6 screws from the door cover,
2. Take the front door cover as the arrow direction

	<p>replaceable:</p> <ol style="list-style-type: none"> 1.door seal 2.spring coil 3.balance weight(front left) 4.balance weight(front right) 5.drain pump; 6.drain pipe parts; 7.door switch
	<p>Remove 4 screws from the back cover and take the cover away.</p>



Replacable:
1.Universal Motor
(or Belt pulley) ;
2.Heater parts;

5. Faults code

No.	Faults Name	Reasons	Alarm Code	Solutions	Remark
1	Door trouble	6 door control signals of door closed or open	dE	Check if the door is blocked or not, check the door lock connector	
2	Water inflow	1.Inflow 4mins, water level value>248 and its increase<2or it is less than the start; 2.Inflow 8mins, water level>248; 3. inflow 20min, target value is failed	IE	check if turn the tap off, filters blocked, water sensor or pressure are abnormal	If water sensor is broken, drain water to prevent it overflow
3	Water outflow	1. Drain water 10mins, water level <=252; 2. Foam sense times >=5	OE	Check drain pump	Resulted from blocked pump
4	Overflow	Water level<=216 and continue more than 3s	FE	Check inlet valve, water sensor and air pipr	Resulted from valve problems
5	Water level	Water level<100 or <300 and continues more than 3s	PE	Check water sensor connector	
6	Temp	Temp<=0℃ or >=98℃ means temp is abnormal	tE	Check water sensor connector	
7	Dynamic balance NG	High speed spinning is unavailable after 60times try	UE	Adjust the cloths by hands; place the machine on a steady ground	
8	Motor constraints	The difference between the command and real speed >10 and the current is larger than normal after 3s	LE	Check motor and connector	
9	Memorizer	outer access to flash memorizer failed	EE	customer mode will not cause the alarm	
10	Power failure	Power fails when washing, then repower on and press Power	PF	It's normal to inform customer power failed before	
11	Off line	Power cord of motor is off	CE	Check motor and connector	

12	Motor sensor	Sensor terminal is unconnected and loses the sensor signal	H E	Check motor sensor and connector	
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Notes:

1. When faults occur, only Power and Start/Pause button are available; If Child lock was set, it is available also.

Power button: power-off

Start/Pause: first press stops alarming, second press continues the operation.

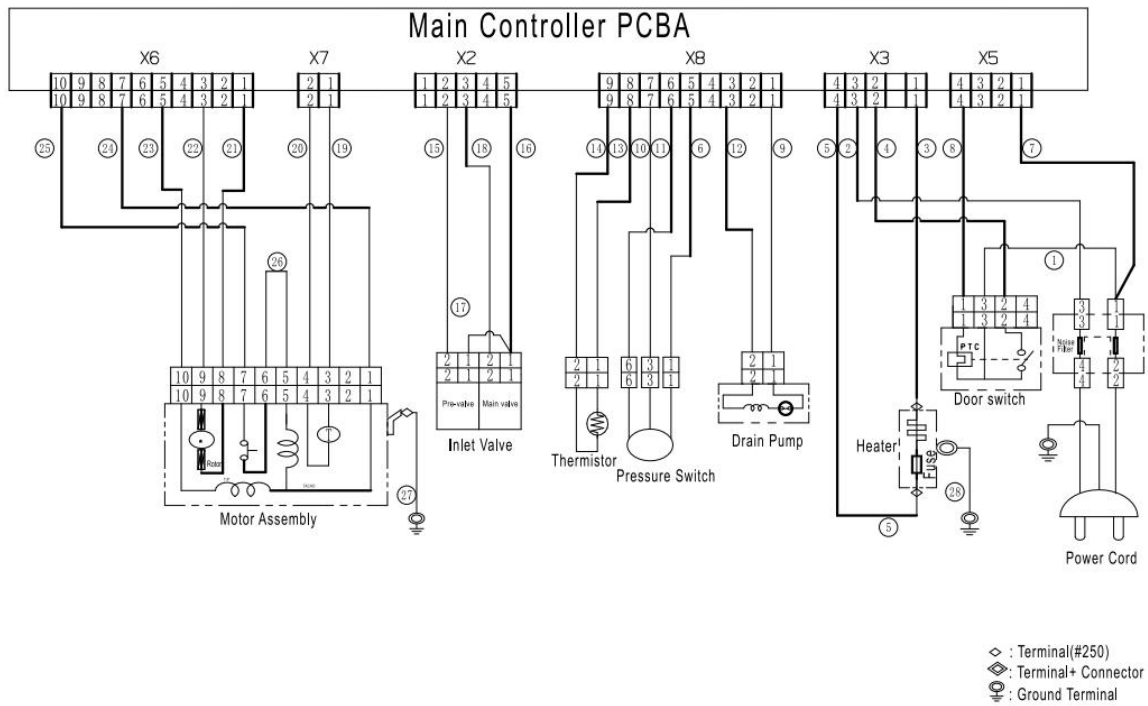
2. Dynamic balance NG alarms when the machine moves to spinning. When spinning from prewash or rinse program, if high speed spinning failed 28 times, please stop and move to next step.

3. Additional notes of door lock alarm: The lock alarming under unusual shut (with too strong or light power) is not quality problem. It needs reset by another push to effect closing. Suggest customer to close the door as the picture shows.



6. Common troubleshootings

(1) Circuit diagram



(2) Troubleshooting procedure

