OPERATING MANUAL

LABSTAC

GLASSWARE WASHER

GLA11-120

INDEX

Safety Guides

1. Electrical Safety Guides

1.1 A separate power source with circuit breaker must be used.

1.2 The power source must be grounded.

1.3 It is prohibited to extend, stretch, tie or stress the power cord. And the power cord should not be dangerously bended or folded.

1.4 The machine must be powered off before any repair or maintenance. Also, please wait till the pipes have cooled down for any further action.

1.5 The machine must be powered off with the power cord well placed, if the machine will not be used for a long time.

2. Operation Safety Guides

2.1 The machine has electronic lock, and for safety reason, to avoid any human injury by hot water or hot air, DO NOT try to open the door during its running. For emergency, please press the button "Emergency Stop"(if applicable) or cut-off the power supply at first, wait until the water or air temp reaches its safety level for further actions.

2.2 During the machine running, click "Force to Quit" to stop washing.

2.3 During normal operation, if abnormal sound or smell is found, please stop the machine right away for inspection or contact the seller for warranty service.

2.4 During normal operation, if the machine stops working suddenly, please do inspection right away or contact the seller for warranty service.

1. Summary

1. Application

This machine is a fully automatic machine for washing, disinfecting and drying, which is suitable for pharmaceutical companies, research institutions, universities, food factories, testing organizations customers to wash the regular glassware, such as test tubes, flasks, beakers, pipette, petri dishes, wide mouth bottle, etc. It is also called Lab Washer.

2. Technical Specifications

Model	GLA11-120
External Dim. (WxDxHmm)	980*740*870
Internal Dim. (WxDxHmm)	600*629*465

Washing Chamber Dim. (WxDxHmm)	570*600*420
Input Voltage	220/50
Water Heating Power	5kw
Circulating Pump Power	0.75kw
Drying Fan Power	0.25kw
Drying Power	2.1kw
Overall Power Consumption	6kw
Water Inlet Pressure	0.3～0.8Mpa

2. Installation

1. Conditions

Environment	Temperature: 5℃～35℃； Humidity: ≤85%； Barometric pressure: 80 kPa～106 kPa； Note: Do not use the machine in a dusty, dirty, vibrating or outdoor place
Placement	The machine should be placed within the range of 2 meters from power source and water source.
Power Supply	A separate circuit breaker or control switch should be used, and the machine should be well grounded. Power source should be 80cm higher than ground level.
Water Supply	Water inlet pressure: 0.3～0.8Mpa Pure water and tap water Power source should be 80cm higher than ground level.
Draining	The ID of drain outlet should be bigger than 55mm and 5cm at max high than ground level.
Ground	Flat floor and height difference within $1㎡$ areas should be less than 5mm. The floor bearing should be heavier than $1T/㎡$.

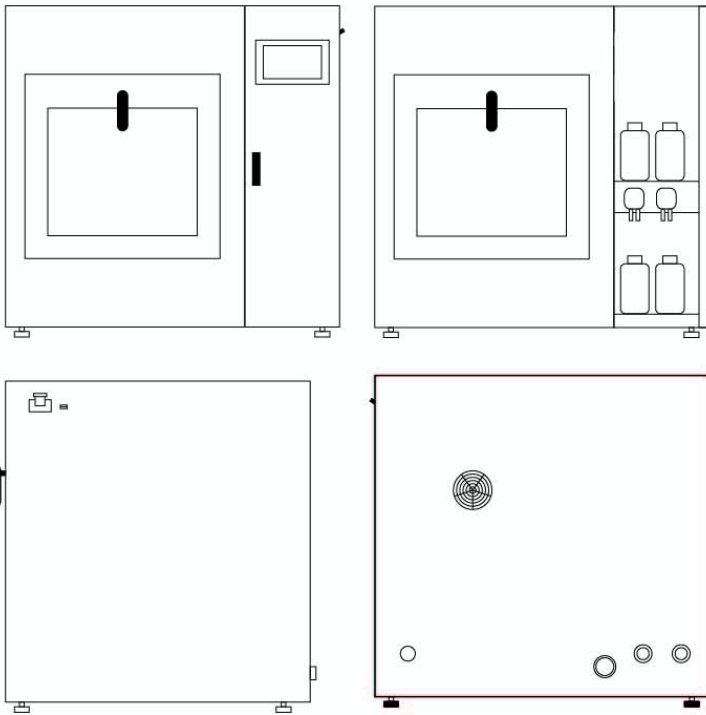## 2. Placement

1) Dismount outer package, according to the packing list, make sure if the accessories are complete and are in good condition.
2) Place the machine to the installing spot, adjust the leveling feet to make sure it is at horizontal position.
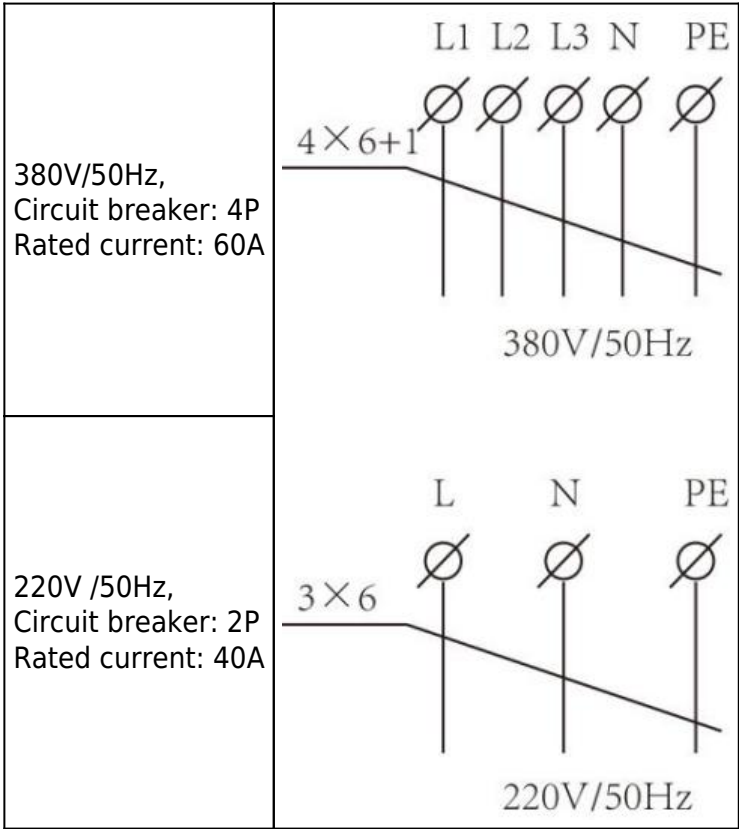
3.1 Structure View

1. Power Cord
2. Draining outlet

GLA11-120

3.2 Power Supply

	The electrical installation must be implemented by professional engineers.
	A separate power source with circuit breaker must be used.
	The power source must be well grounded.
	Please make sure the power cord is tightly connected.

|	
380V/50Hz, Circuit breaker: 4P Rated current: 60A	L1 L2 L3 N PE 4×6+1 380V/50Hz
220V /50Hz, Circuit breaker: 2P Rated current: 40A	L N PE 3×6 220V/50Hz

3.3 Water Supply

Pure Water Inlet Connect the G3/4 screwed conduit to the pure water inlet on the machine and the other end to the pure water faucet.	
Tap Water Inlet Connect the G3/4 screwed conduit to the tap water inlet on the machine and the other end to the tap water faucet.	
Draining Tightly clamp the drain pipe(φ25mm), and connect to the floor drain(the floor drain position must be lower than the machine outfall).	

⚠	After finishing the connections of water supply, please turn on the water faucets to make sure no water leakage at each joint.

3. Operation Guides

1. Structure View
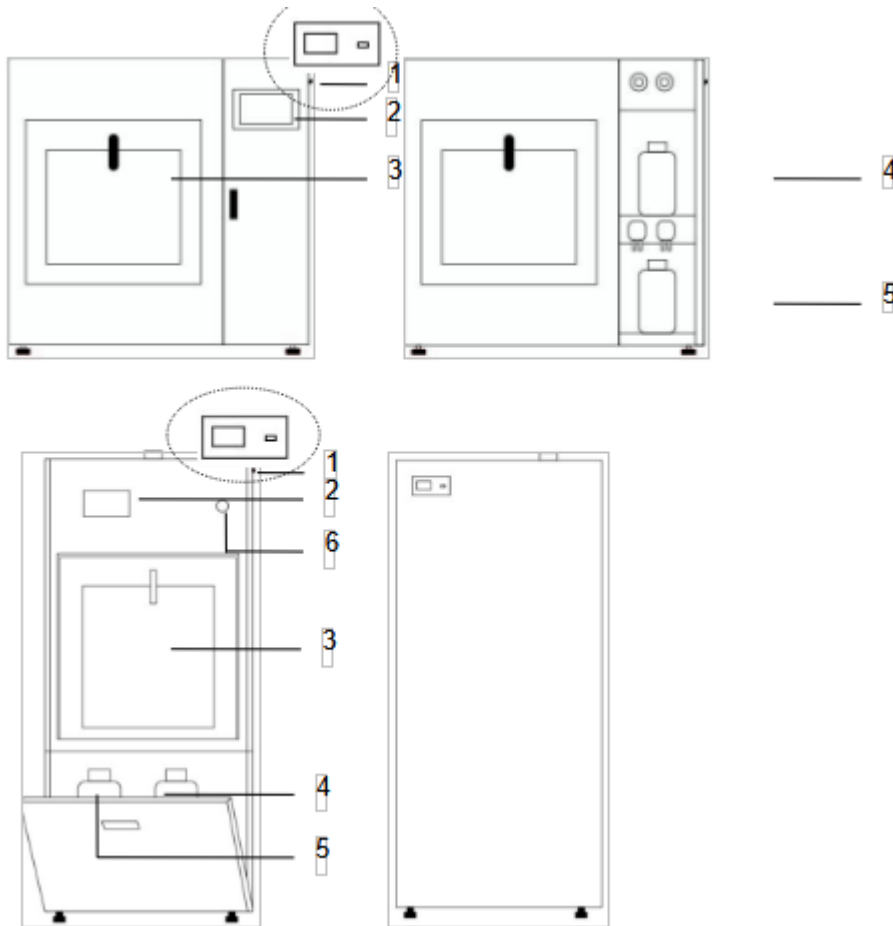
1. Power Switch, USB Interface; 2. LCD Touch Screen Controller; 3.Watch Window;
4. Detergent Container; 5. Neutralizer Container; 6. Emergency Stop Button

2. Load the washing rack

3.2.1 Washing rack installation

| Step1
Pull out the slide rails on maximum position
Step2
Place the washing rack on the slid rails and contact the port in below picture | |
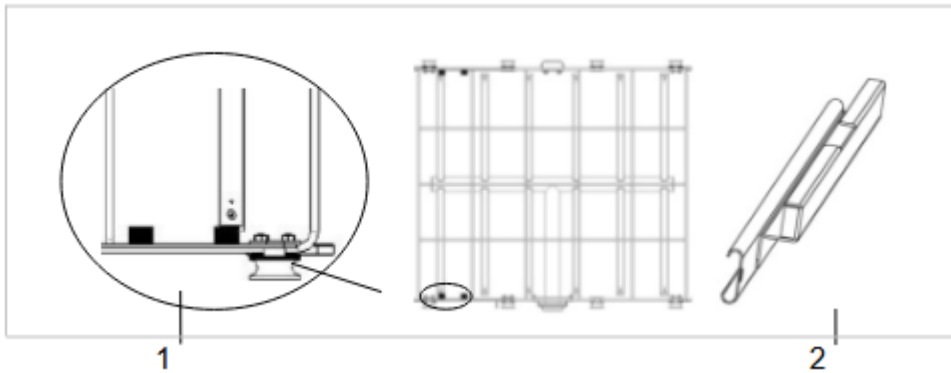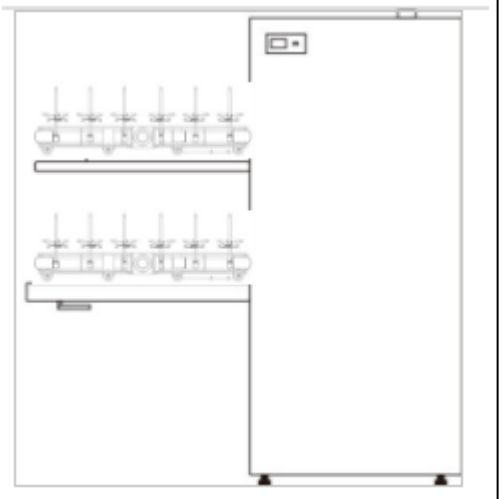
3.2.2 Ware washing loading height
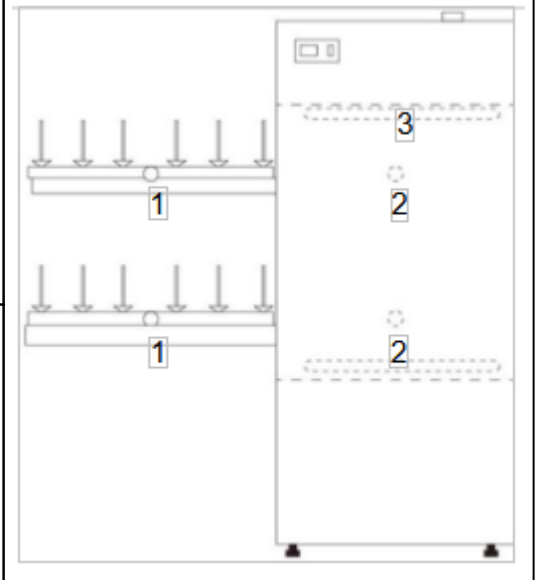
Max. height of flask or bottle reference table:

Model	GLA11-120
Washing rack（Layer）	1
Up layer height（mm）	/
Middle layer height（mm）	/
Bottom layer height（mm）	345

3. Operation

3.1 Preparation

1) Turn on the water supply faucet and power supply 2) Turn on the power switch, and the start-up menu will be entered.	
3) Load the items onto the washing rack, and close the door clockwise in 90 degrees.	

⚠	Make sure when put the rack back into the machine, the water inlet on the rack should be at your right side as shown in above No.1.
	Make sure the inlet No.1 on the rack to match up with the inlet No.2 shown above inside the chamber, when putting the rack back into the machine.
	The loaded items cannot be contacted with the spray arm No.3 as shown above at the top inside the chamber.
	The diameter of the loaded items must be less than the distance between two spray columns, in order to avoid any broken during washing.

3.2 Washing Program Selection
Users can select the washing program, which is pre-set or user-defined, according to their specific requirements. Some of the parameters setting are listed below,
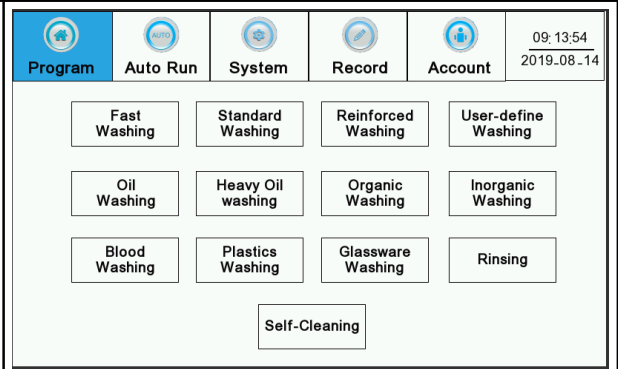1) Pre-set Program
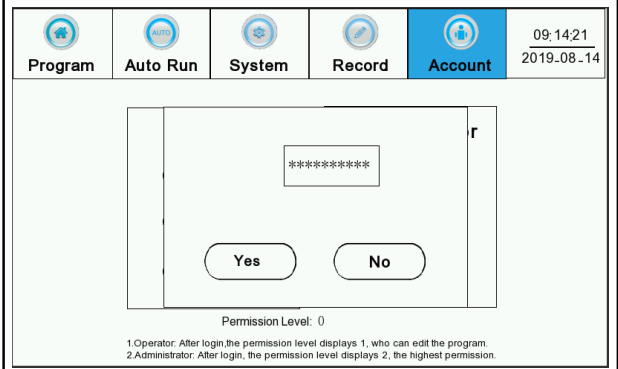Take the Default washing program as an example,

• Step 1 Click "Glassware Washer" at the start-up screen to enter the main menu	SW-Ver 1.00 HW-Ver 1.00 Glassware Washer

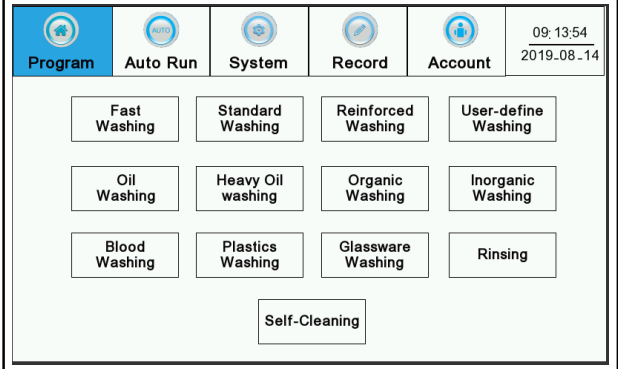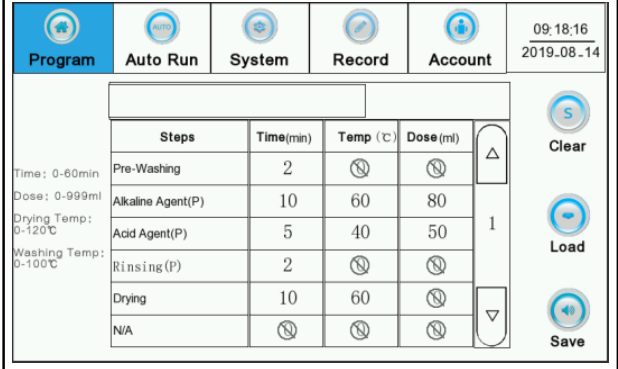|	
• Step2: Click "Account"，select Operator "Password Login" （Note: This Equipments has the authorized management, user must input the correct password to access ）	 09:13:54 2019-08-14 Program Auto Run System Record Account Fast Washing Standard Washing Reinforced Washing User-define Washing Oil Washing Heavy Oil washing Organic Washing Inorganic Washing Blood Washing Plastics Washing Glassware Washing Rinsing Self-Cleaning
• Step3: Enter initial password "111" or "222",click "Yes", then click "Program"	09:14:21 2019-08-14 Program Auto Run System Record Account r ********** Yes No Permission Level: 0 1.Operator: After login,the permission level displays 1, who can edit the program. 2.Administrator: After login, the permission level displays 2, the highest permission.
• Step4: Click "Standard Washing".	09:13:54 2019-08-14 Program Auto Run System Record Account Fast Washing Standard Washing Reinforced Washing User-define Washing Oil Washing Heavy Oil washing Organic Washing Inorganic Washing Blood Washing Plastics Washing Glassware Washing Rinsing Self-Cleaning
• Step5: Set the parameters as per above sheet. click"Save"，then click"Auto Run".	09:18:16 2019-08-14 Program Auto Run System Record Account Clear Steps / Time(min) / Temp(℃) / Dose(ml) Time: 0-60min Pre-Washing 2 — — Dose: 0-999ml Alkaline Agent(P) 10 60 80 Drying Temp: 0-120℃ Acid Agent(P) 5 40 50 Washing Temp: 0-100℃ Rinsing(P) 2 — — Drying 10 60 — N/A — — — Load Save

• Step6: Click"Start"	
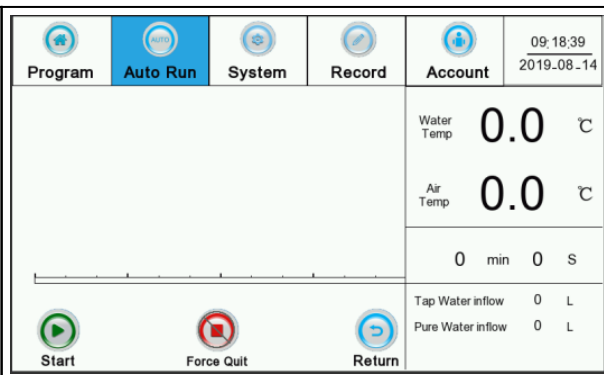
2) User-define Washing
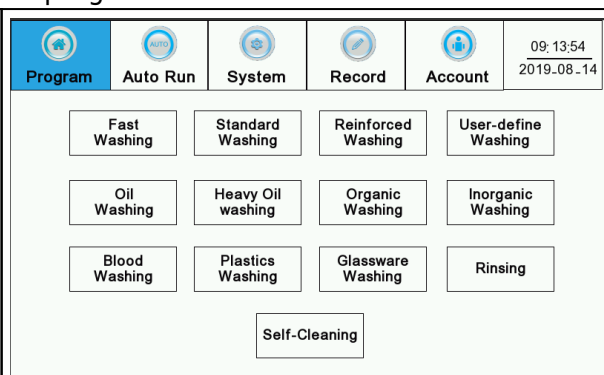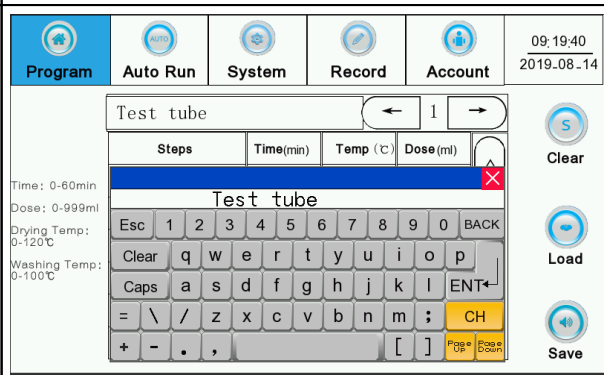User-define Washing can set the program name, store Max.99 programs

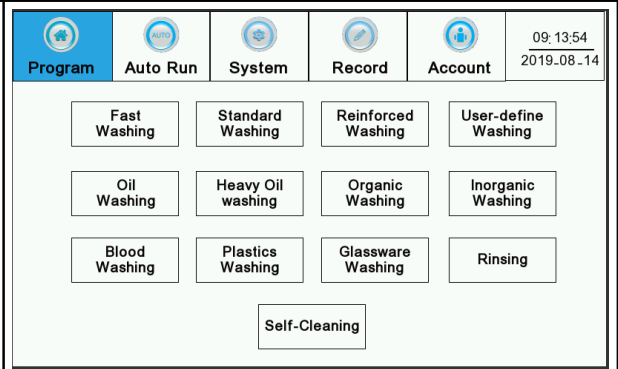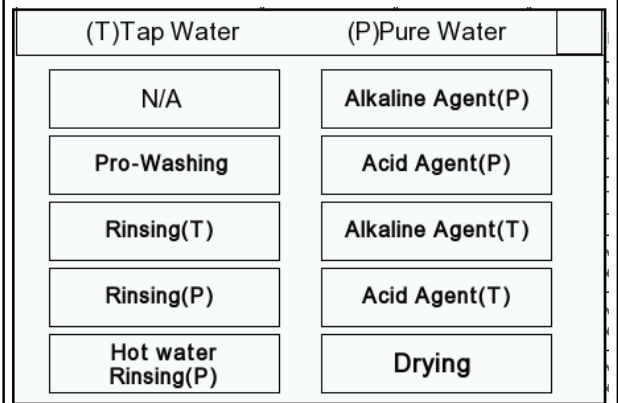|	
• Step1: After login the system, click "Program" then click "User-define Washing"	
• Step2: Click name box, popup the input window, input "Test tube",then click "Save". (Program name Max. 12 characters)	

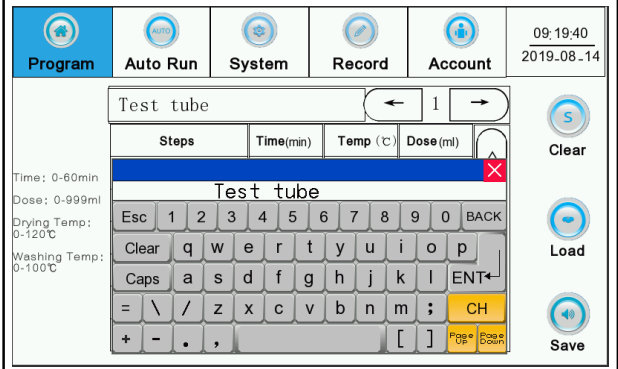# 4. Operation system

4.1 Programs

• Number of Program 12 washing programs Fast Washing, Standard Washing, Reinforced Washing, Heavy Oil Washing, Organic Washing, Plastic Washing, Blood Washing, Oil Washing, Inorganic Washing, Glassware Washing, Rising, User-Define Washing.	**Program** Auto Run System Record Account 09:13:54 2019_08_14 Fast Washing / Standard Washing / Reinforced Washing / User-define Washing Oil Washing / Heavy Oil washing / Organic Washing / Inorganic Washing Blood Washing / Plastics Washing / Glassware Washing / Rinsing Self-Cleaning
• Program's Steps Washing steps and its parameters are adjustable in each program. Each washing program can set Max. 12 steps, select the steps by clicking page up/down	(T)Tap Water (P)Pure Water N/A / Alkaline Agent(P) Pro-Washing / Acid Agent(P) Rinsing(T) / Alkaline Agent(T) Rinsing(P) / Acid Agent(T) Hot water Rinsing(P) / Drying
• User-define program User-define program can set and modify program name, Store Max. 99 programs.	**Program** Auto Run System Record Account 09:19:40 2019_08_14 Test tube ← 1 → Steps Time(min) Temp(℃) Dose(ml) Time: 0-60min Dose: 0-999ml Drying Temp: 0-120℃ Washing Temp: 0-100℃ Test tube Esc 1 2 3 4 5 6 7 8 9 0 BACK Clear q w e r t y u i o p Caps a s d f g h j k l ENT = \ / z x c v b n m ; CH + − . , [ ] Page Up Page Down Clear Load Save

• Steps Description

No.	Name	Notes
1	N/A	Not applicable
2	Pre-washing	Washing by tap water (as default)
3	Rinsing (P)	Select to rinse by pure water
4	Rinsing (T)	Select to rinse by tap water
5	Hot Water Rinsing (P)	Select to disinfect by hot pure water
6	Alkaline Agent (P)	Select to wash by pure water with detergent added
7	Acid Agent (P)	Select to wash by pure water with neutralizer added
8	Alkaline Agent (T)	Select to wash by tap water with detergent added
9	Acid Agent (T)	Select to wash by tap water with neutralizer added
10	Drying	Select to dry by the hot air through HEPA filter

Notes: P means Pure water, T means Tap water. Pre-washing is default by Tap water.

4.2 Auto-Run Screen
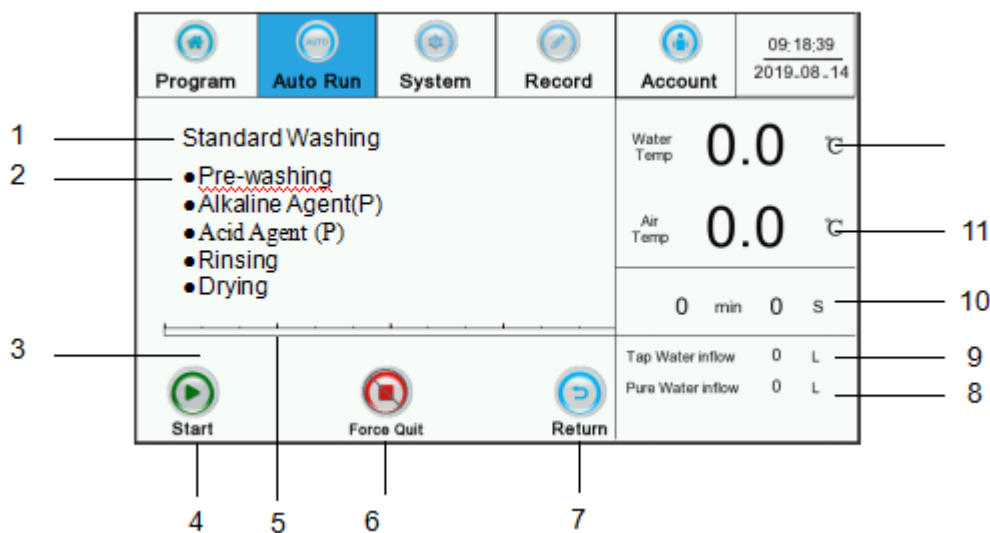
No.	Item	Introduction
1	Program name	Display the program name
2	Program step	Display all washing steps
3	Equipment status	Display equipment status, alarm information is displayed here
4	Start	Program start button. When the program starts, this button is locked and can not click again.
5	Time progress bar	Real-time display the program runs time schedule
6	Force Quit	Stop the running program

7	Return	Return to the program selection interface
8	Pure water inflow	Real-time display pure water inflow volume in current program step.
9	Tap water Inflow	Real-time display pure water inflow volume in current program step
10	Time	Cumulative run time
11	Air Temperature	Real-time display drying temperature
12	Water temperature	Real-time display washing temperature

4.3 System

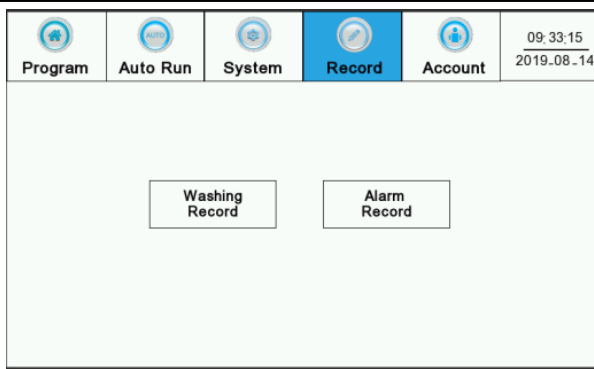|	
System parameters includes parameters setting, manual test and adjust (date, Dos, temperature. (note: System function is mainly for service engineer to debugging and maintenance.)	

4.4 Record

1）Washing Record
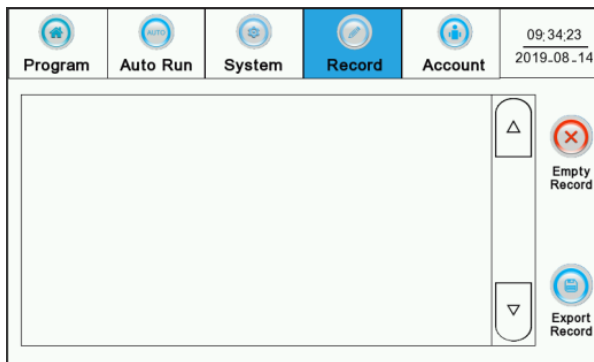
• Step1: Click "Record",then click "Washing Record"	
• Step2: 1) View record, select the record " click the "check chosen" 2) Record output" Insert the U disk, click "export chosen" 3) record print: Choose the one record, click "Print" (Note: Only insert the U disk, it can display the export record.)	

2）Alarm record

• Step1: Click "Record", then click "Alarm Record"	
• Step2: All alarm records are displayed. All alarm records are exported.	

4.5 Account
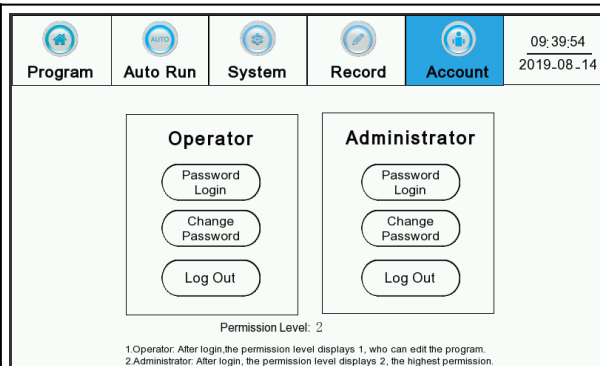
1) Code Management

Code Level	Initial Passwords	Limits of Authority
Level 1	N/A	Select and start program, can not change parameters Check, export and print the washing records, can not delete the records check alarm record, can not delete the record
Level 2	111	can do level 1 change washing program parameters
Level 3	222	All can do.

Note: Logging by the high priority password can change the other two levels passwords.

2) Password Logging

To access different levels of control, the passwords with different levels of priority should be used to login at first.

• Step1 Click "Enter" at the start-up screen to enter the main menu.	

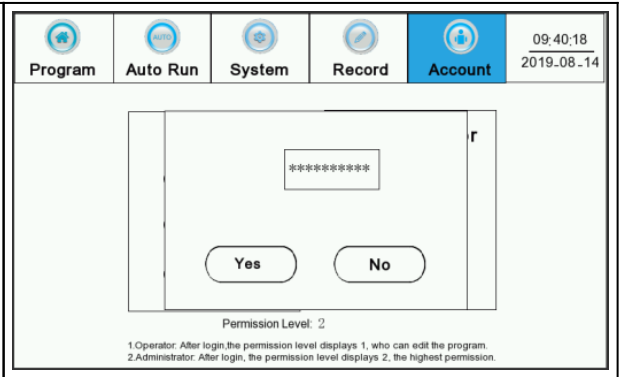|	
• Step2 Click "Code Login" to input the relevant password. Click "enter" to confirm and "x" to quit the input box.	

3) Password Change

• Step1 Click "Change Password"	
• Step2 Click "Code Login" to input the high priority password. Click "enter" to confirm and "x" to quit the input box.	
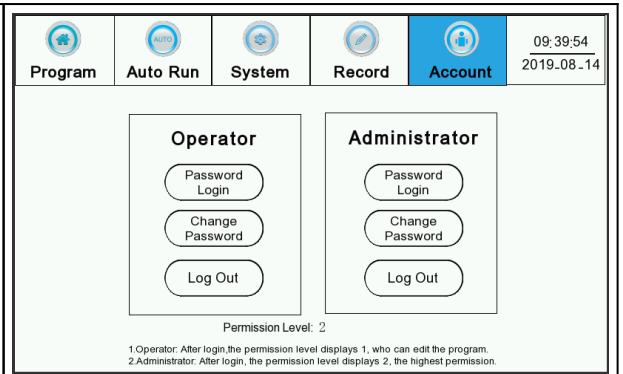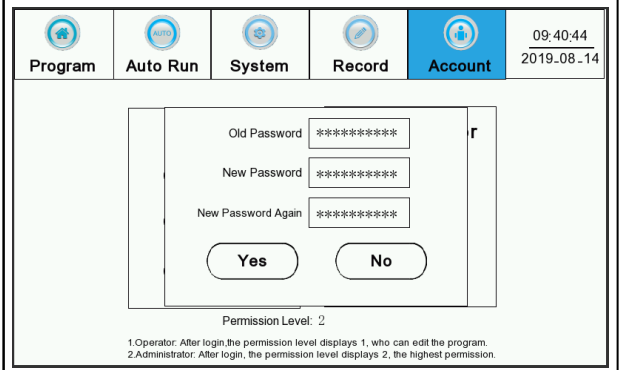
• Memory Function

The machine has a memory function if its power supply is cut off but gets recovered within 15 minutes. The machine will enter its Auto-Run screen, and click "Start" to start washing according to the step as it was running before the power was cut off.

5. Loading Instruction

Model		GLA11-120	
Effective Height	Single Level (mm)	345	
	Upper Level (mm)	*	
	Middle Level (mm)	*	
	Lower Level (mm)	*	
Effective Capacity (L)		120	

Washing Level	1	

6. Liquid Agent Adding
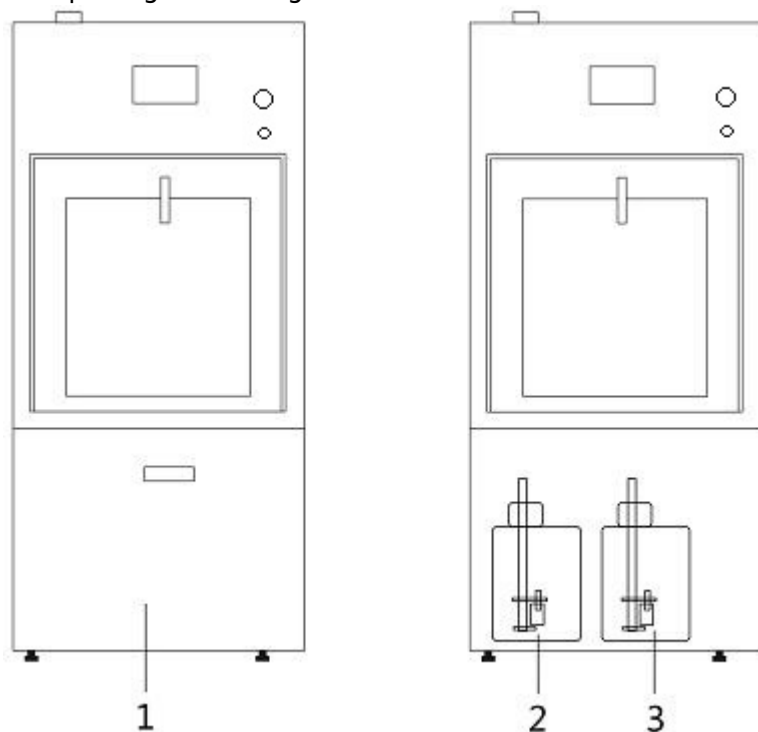
No.	Description	Notes
1	Area to place liquid agents	Open the lower secondary door to access
2	Detergent container	DO NOT place the two barrels in a wrong position.
3	Neutralizer container	DO NOT place the two barrels in a wrong position.

There will be indication message shown on the screen when the liquid agents are in short supply. So, please add the agents accordingly as per the following steps,

1) Open the secondary door, screw off the cap of the agent barrel, and take out the barrel.

2) Add the liquid agent into the relevant barrel and put the barrel back into its original position with its cap tightly screwed on.

3) After adding the agents, indication message on the screen will be disappeared.

5. Maintenance

1. Regular Maintenance

The maintenance period depends on the using frequency and components physical lifespan. The maintenance periods of the components are as following.

Parts	Annual Check	Replaced if needed	Annual Replace	Replaced every two years	Checked if needed
Filter net inside the washing chamber					●
Water over-heated protective switch	●				
Drying-box protective switch	●				
HEPA filter	●				
Emergency stop button					●
Filter net of water inlet valve					●
Plastics of spray arm	●				
Additives hoses	●			●	
All water pipes	●				
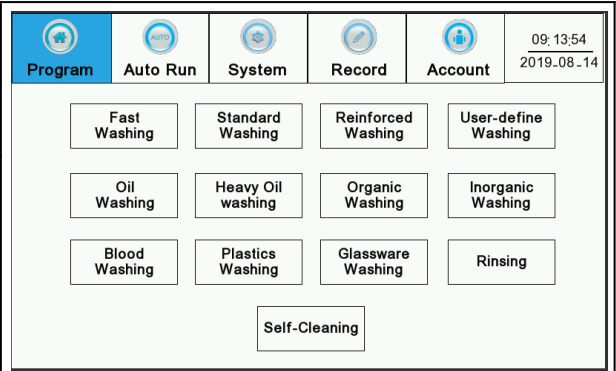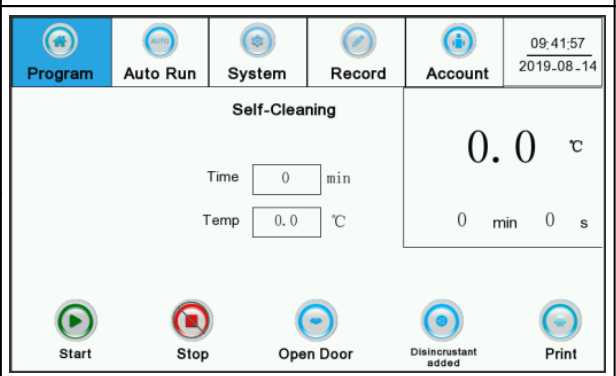
2. Functions Inspection

Verification Contents	Annual Check	Replaced if needed
Check if power switch runs in order, make sure the power cord is in good condition.	●	
Check if water heating pipe, fan, dry heating pipe, circulation pump, drainage pump, metering pump, liquid leveling sensor, position switch and water inlet valve runs in order.	●	
Check if all the electric elements in the control box are working properly in good condition.	●	

3. System Clean-up

3.1 Circulating System Cleaning
To clean the circulating system, the self-clean program can be used.

Step1 Click "Self-clean" at the main menu.	
• **Step2** Set the time as 30min. Click "Start" and the water will be filled automatically into the washer (the machine will not be started to run at this moment).	
• **Step3** Click "Door Open" to open the door manually and add disincrustant into the washing cabinet, and then close the door.	
• **Step4** Click "Finish Adding Disincrustant". At this point, the washer will start to run for cleaning and water drainage will be done automatically once the process is completed.	

3.2 Rack Cleaning
Take the washing rack#CWIR222 as an example,
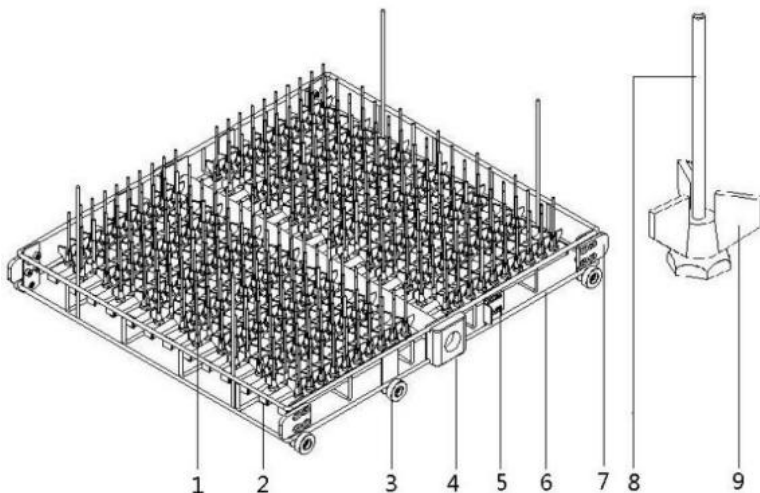
1) Parts on the rack

No.	Parts	No.	Parts
1	Distributive Pipe	2	End Cap
3	Nylon Wheel	4	Water Inlet Joint
5	Side Board	6	Frame

7	Stop Block	8	Spray Column
9	Bracket	*	*

2) How to clean

Issues	Cleaning Methods
Distributive Pipe Block	1) Use screwdriver to unscrew the screws in the position#2 and take off the end cap. Clean the distributive pipes by hairbrush. 2) Get the taken-off parts assembled back.
Spray Column Block	Take off the spray column by wrench and clean it by wire rod from top to bottom.

4. Worn Parts Replacement

4.1 Additives Hose Replacement
1) Take off the clips at the No.8, and replace the suction hose between the additives barrels and metering pump.
2) Take off the clips at the No.5, and replace the injection hose between the metering pump and washing chamber.
3) Assemble the clips back after replacing the hoses.
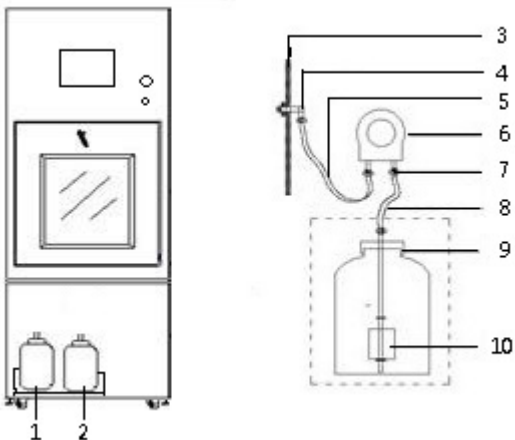
No.	Parts	No.	Parts
1	Detergent Barrel	2	Neutralizer Barrel
3	Side Wall of Washing Chamber	4	Stainless Steel Fixer
5	Injection Hose	6	Peristaltic Pump
7	Plastic Clip	8	Suction Hose
9	Seal Cap	10	Liquid Level Switch

4.2 HEPA Filter Replacement
1) Open the left side panel of the machine to find out the location of HEPA filter.
2) Separate the filter carrying box with the intake air pipe as shown below, take out the filter inside the box and change a new one.
3) Get the filter carrying box back to its original location, connecting to the blast pipe.
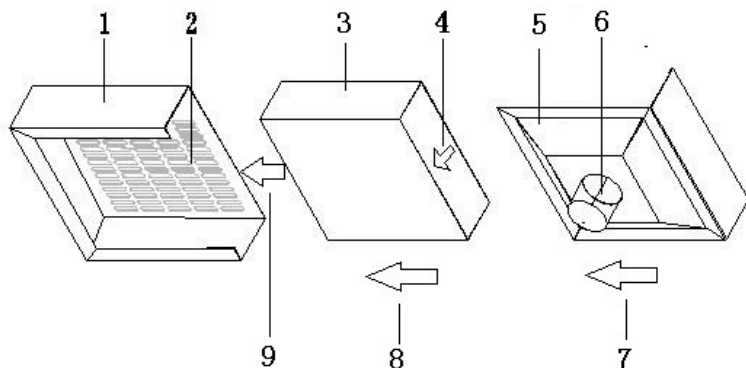
No.	Parts	Notes
1	Carrying Box	To carry the HEPA filter inside
2	Vent Hole	Where the air go through
3	HEPA Filter	Filtering efficiency 99.99%(assembled as show above)
4	Direction Sign	Assembling must be complied with this sign of intake air.
5	Guard Board	To protect the filter inside
6	Air Outlet	Connect to the fan (φ50mm)
7	Direction Sign	Assembling directions (8/9)

5. Trouble Shooting

5.1 General Failures

In case of failure, the warning will be shown on the display and explained as below,

No.	Warning on Display	Possible Reasons	Actions to Take
1	Door open	Door opened or signal switch broken	Close the door or ask for warranty service
2	Detergent shortage	Detergent used out or leveling switch broken	Add detergent or ask for warranty service
3	Neutralizer shortage	Neutralizer used out or leveling switch broken	Add neutralizer or ask for warranty service
4	Malfunction on water heating	Water heating pipe or temp controller broken	Ask for warranty service
5	Malfunction on air heating	Air heating pipe or temp controller broken	Ask for warranty service
6	Malfunction on pure water inlet	Pure water inlet valve blocked or broken	Clean the valve or replace the parts
7	Malfunction on tap water inlet	Tap water inlet valve blocked or broken	Clean the valve or replace the parts

8	Malfunction on draining	Draining delay: draining pipe or floor drain is blocked; Draining pump or draining solenoid blocked or broken	Clean the pipe or floor drain; Replace the parts;

5.2 Others

Malfunctions	Possible Reasons	Actions to take
The washer does not work	1) No power supply 2) Main power switch is not turned on. 3) Emergency stop button is not got re-set.	1) Check out the power cord and power source 2) Turn on the power switch 3) Re-set the emergency stop button
Bad washing effects	1) Washing pipes are blocked 2) Improper placement of washed items 3) No detergent or neutralizer added 4) Filter net in the chamber is blocked.	1) Clean spray arm, spray column and water pipelines on the rack 2) Load the items as per the instruction 3) Use the suggested washing detergent/neutralizer 4) Clean the filter net before use.

Appendix

1. Washing Parameters of Pre-set Programs

1) Setting Range

Name	Unit	Set Range	Remark
Dispensing	ml	0～999	Add 100ml every 60 seconds
Time	min	0～60	*
Washing Temp	℃	0～100	*
Drying Temp	℃	0～120	*

2) Program

Program name	Step	Step Description	Temp (℃)	Time (min)	Water Supply	Dispensing Vol.(ml)
Fast Washing	1	Alkaline Agent(P)	60	10	Tap Water	80
	2	Acid Agent(P)	50	5	Pure Water	50
	3	Rinsing	RT	2	Pure Water	RT
	4	Drying	60	10	RT	RT

User-defined Washing	1	Pre-washing	RT	2	Tap Water	RT
	2	Pre-washing	RT	2	Tap Water	RT
	3	Alkaline Agent(P)	60	10	Pure Water	80
	4	Alkaline Agent(P)	50	5	Pure Water	50
	5	Acid Agent(P)	60	10	Pure Water	80
	6	Acid Agent(P)	50	5	Pure Water	50
	7	Rinsing	RT	2	Pure Water	RT
	8	Rinsing	RT	2	Pure Water	RT
	9	Rinsing	RT	2	Pure Water	RT
	10	Drying	60	10	RT	RT
Oil Washing	1	Pre-washing	RT	2	Tap Water	RT
	2	Alkaline Agent(P)	60	10	Tap Water	80
	3	Acid Agent(P)	50	5	Pure Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Rinsing	RT	2	Pure Water	RT
	6	Drying	60	10	RT	RT
Reinforced Washing	1	Pre-washing	RT	2	Tap Water	RT
	2	Alkaline Agent(P)	70	10	Pure Water	100
	3	Alkaline Agent(P)	60	5	Pure Water	80
	4	Acid Agent(P)	70	10	Pure Water	80
	5	Acid Agent(P)	50	5	Pure Water	50
	6	Rinsing	RT	2	Pure Water	RT
	7	Drying	60	10	RT	RT
Organic Washing	1	Hot Rinsing	60	2	Pure Water	RT
	2	Alkaline Agent(P)	70	10	Tap Water	80
	3	Acid Agent(P)	50	5	Tap Water	50
	4	Hot Rinsing	60	2	Pure Water	RT
	5	Hot Rinsing	60	2	Pure Water	RT
	6	Rinsing	RT	2	Pure Water	RT
	7	Drying	60	10	RT	RT

Inorganic Washing	1	Acid Agent(P)	50	5	Tap Water	50
	2	Alkaline Agent(P)	60	10	Tap Water	80
	3	Acid Agent(P)	50	5	Tap Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Rinsing	RT	2	Pure Water	RT
	6	Rinsing	RT	2	Pure Water	RT
	7	Drying	60	30	RT	RT
Standard Washing	1	Pre-washing	RT	2	Tap Water	RT
	2	Alkaline Agent(P)	60	10	Pure Water	80
	3	Acid Agent(P)	50	5	Pure Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Drying	60	10	RT	RT
Plastic Washing	1	Pre-washing	RT	2	Tap Water	RT
	2	Alkaline Agent(P)	60	10	Pure Water	80
	3	Acid Agent(P)	50	5	Pure Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Rinsing	RT	2	Pure Water	RT
	6	Rinsing	RT	2	Pure Water	RT
	7	Drying	60	10	RT	RT
Glass Washing	1	Alkaline Agent(P)	60	10	Pure Water	80
	2	Alkaline Agent(P)	60	10	Pure Water	80
	3	Acid Agent(P)	50	5	Pure Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Rinsing	RT	2	Pure Water	RT
	6	Rinsing	RT	2	Pure Water	RT
	7	Drying	60	10	RT	RT
Heavy-oil Washing	1	Alkaline Agent(P)	70	10	Pure Water	80
	2	Alkaline Agent(P)	70	10	Pure Water	80
	3	Acid Agent(P)	50	5	Pure Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Rinsing	RT	2	Pure Water	RT
	6	Rinsing	RT	2	Pure Water	RT
	7	Drying	60	10	RT	RT

	1	Pre-washing	RT	2	Tap Water	RT
Blood Washing	2	Alkaline Agent(P)	60	10	Pure Water	80
	3	Acid Agent(P)	50	5	Pure Water	50
	4	Rinsing	RT	2	Pure Water	RT
	5	Hot Rinsing	60	2	Pure Water	RT
	6	Drying	60	10	RT	RT
Rinsing	1	Rinsing	RT	3	Pure Water	RT
	2	Drying	60	10	RT	RT

Note: if re-set the programs to be factory default, please click "Default"

2. Packing List

No.	Items	Unit	Qty	Notes
1	The Washer	Unit	1	
2	Washing Rack	Unit	*	
3	Water Inlet Pipe	Pc	2	
4	Draining Pipe	Pc	1	
5	Liquid Paraffin	Bottle	1	
6	Detergent	Barrel	1	
7	Neutralizer	Barrel	1	
9	User Manual	Ea	1	
10	Draining Pipe Clip	Pc	1	

3. Service Information

1) The User and Product Information

Product		Model		
S/N		Buying Date		
User Name		Phone		
Address		Post Code		

2) Service Records

Date	Service Contents	Parts Replacement	Qty	Serviced By	The User Signature

Note: the above contents should be filled by the service technician and signed for confirmation by the

user. Please keep this service record card carefully for a future use.