

Small steam sterilizers Operation instruction





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Dear End User :

**Welcome to use the high quality sterilizer created by Youjoy!
Please fill in the "User Registration" form before using the machine.
With your record in our files, we will be able to trace the file of the machine you bought and provide you with fast and effective services.**

User Registration

On the inscription plate at back of the machine, you may find the unit's model number, serial and reference number. Please double check the number and fill in the form with them, you should quote the reference number when you are in contact with you distributors.

Product name:

Product model:

Serial number:

date of manufacture:

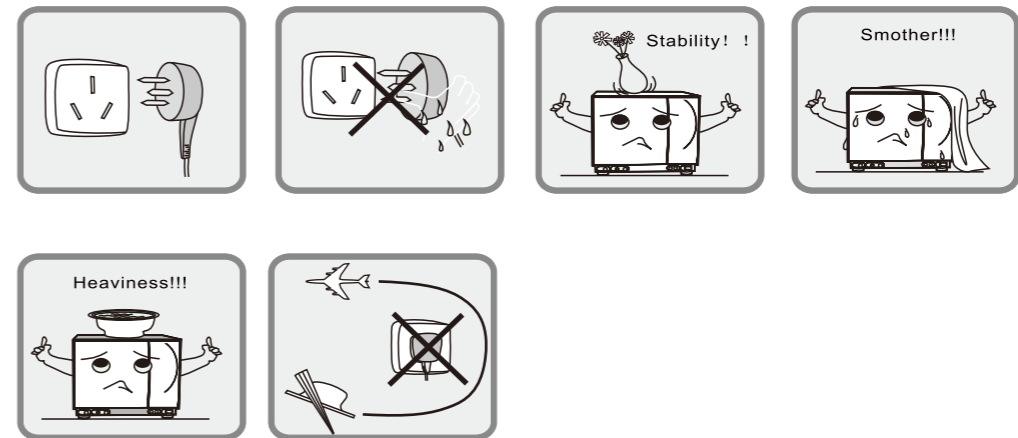
*Before operating the sterilizer, please read carefully all safetycautions and instructions of operation. This operator's manual will help you understand all functions of Autoclaves as far as possible.

*Please follow carefully instructions in this operator's manual While servicing and maintaining the units.

*Please keep this manual safe for your future references.

*When error occurs during operation of the machine, please get in touch with your local distributor or us for our best qualified services and assistance.

Important information on Safety



1. Please plug the power in a correct voltage(according to nameplate) electrical socket. Don't use electrical outlets other than the correct v oltage; otherwise it might cause fire or electric shock.
2. Don't wet your hand before plugging or unplugging the power cord.
3. Don't place your sterilizer on an unstable table top, moving desk, tilted and shaking surface
4. Please don't cover or block the door, ventilation or radiation openings on the sterilizer.
5. Please don't put heavy stuff or liquid containers that might spill on the top of the machine.
6. Please unplug the power cord when the machine isn't used for a long while or when you travel etc.

Contents

1. Description & Usage	1
2. Specifications.....	2
3. Installation.....	3
4. Control panel.....	5
5. Operation.....	7
6. Door Adjustment.....	12
7. Printer installation and use(Optional).....	13
8. Function setup.....	15
9. Maintenance & Maintain.....	16
10. Transport & Storage.....	20
11. Warranty.....	20
12. Accessory.....	21
13. Appendix.....	22
Appendix 1 Working mode chart.....	22
Appendix 2 Error code chart.....	23
OU working chart.....	24
OU schematics	25
OU piping	26
14. Troubleshooting.....	27
15. Important information.....	28

1 Description & Usage

Design and make pressurized steam autoclaves especially to meet the needs for sterilization of instruments and devices in clinics, departments in a hospital and laboratories. Operators include doctors or his/her assistance under doctors supervisions. The autoclave is computerized, user friendly and easy to operate. Its real time display shows all data during the sterilization cycle. The software program provides auto diagnose, protection against over heating or over pressurizing, and thus ensures reliability of the sterilization results. Build- in condenser water collecting system prevents discharge of waste steam and keeps the machine clean and safe.

OU-23L、OU-18L Steam sterilizers

OU uses the advanced technology of 3 times pre -vacuum and vacuum drying. It enables the hot steam to penetrate in thin tube and porous material. This product is suitable for dentistry, ophthalmology, surgical surgical instruments, dressing theatres and laboratories to sterilize dental and and other 135°C autoclavable stuffs.



Fig 1-1

2 Specifications

Product composition:
 Chamber inner dimensions (Diameter X Depth).....23L:247mm x450mm
 18L:247mm X355mm
 Power supply:According to the nameplate
 Sterilizing temperature /pressure..121°C/(90 ~130)Kpa (Under standard atmospheric pressure)
134°C/(200 ~ 230)Kpa (Under standard atmospheric pressure)

⚠ Cautions

Note: Temperature/Pressure here means the chamber temperature and pressure during the phase of sterilization. The value varies under different atmospheric pressure.

Power fuse.....F12AL 250V
 Water tank capacity.....3.5L
 Minimum water level.....1.3L
 Environment temperature.....+5°C ~ +40°C
 Relative Humidity Range.....≤85%

Figures

- | | | |
|----------------|--------------------------|--------------------|
| Last cycle/ Up | Fast / Down | Caution & Warning |
| Menu / Cancel | Start | Grounded correctly |
| Ok | Water leakage connection | |

Tips Standard atmospheric pressure: It the atmospheric pressure at sea level. It refers to 1 Standard atmospheric pressure. The value is 0.1Mpa=100Kpa=1000Hpa Atmospheric pressure decreases by higher altitude. An increase of altitude of 1000 meters will result in a decrease of ATM PR .of approximately BAF. decreases by about

3 Installation

The Autoclave should be installed in a drafty place allowing minimum of 10 cm space at all sides and 50 cm at the top. The ventilation openings at the side of the machine should not be blocked. The Autoclave should be placed on a leveled counter top. The dimension of machine as the following figure:

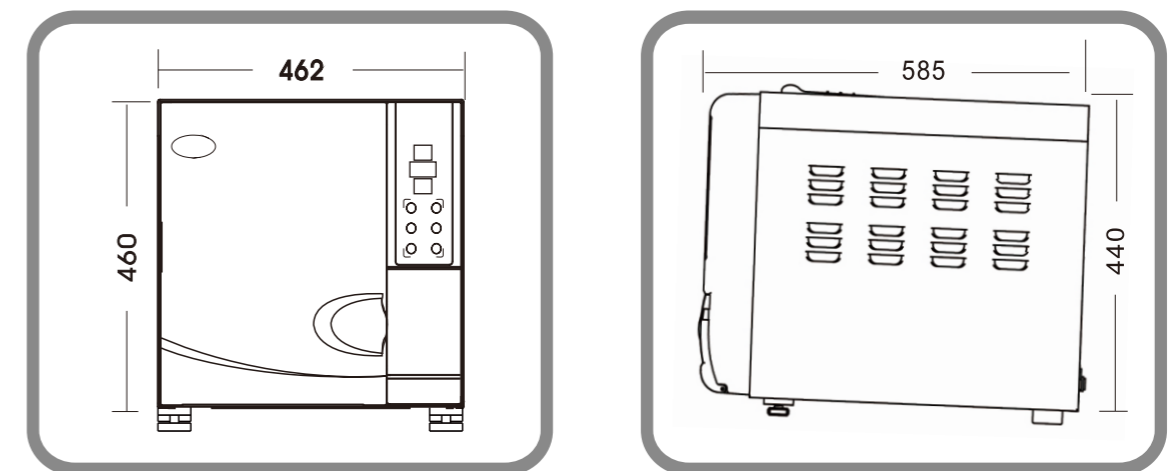


Fig 3-1

⚠ Caution:

If the front of the machine is lower than the back the control will display “E3” (E3 means it does not dry completely)

Preparation before use

We settled the draining filter before the device leaving factory.(See fig 3-3). Water Draining filter needs to be cleaned once per month. For cleaning details, please see page 18:9.3 Water Draining filter cleaning.

Before using the device, you should make electrical connections by using the power cord that comes with the unit. Insert the hollowed end of the power cord in to the inlet of the machine and plug the other end on a power outlet.(See fig 3-5).

If you choose the effluent type steam sterilizer, you will need following process before starting up:

- 1.Put steam sterilizer in place, connect drain pipe to drain outlet. Use steel pipe clamp to fix drain pipe and drain outlet.(see fig 3-5)
- 2.Connect the attached external waste water tank to the drain pipe. Use steel pipe clamp to fix drain pipe.(See fig3-6)
- 3.Put external waste water tank on the floor or hang in place,like wall.
- 4.Installation: fig 3-7.



Fig3-3



Fig3-4



Fig3-5

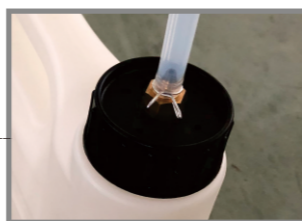


Fig3-6

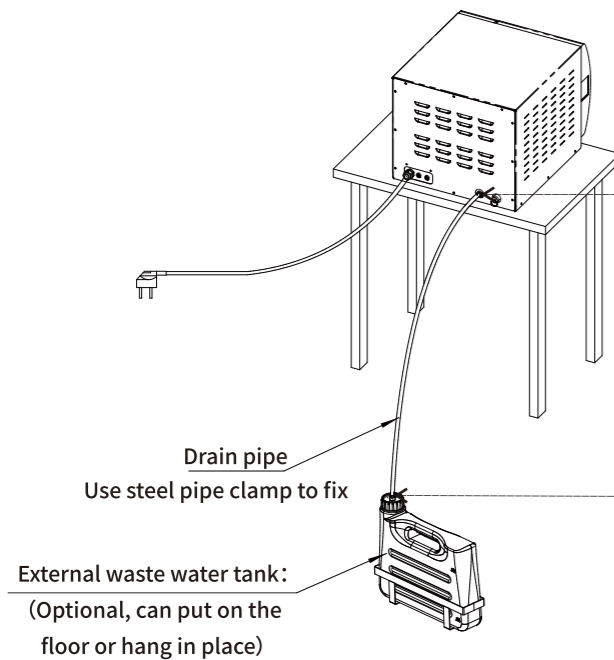


图3-7

⚠ Caution

The power supply must be can afford (23L) 2300VA or (18L) 1800VA.
 Tips: Before starting the Autoclave, please check on the local atmospheric pressure. If the pressure is lower than 0.095 Mpa or the Altitude is higher than 500 meters, you will need to contact your distributor who should reconfigure the controller in the device.

4 Control panel

1. Pressure
 It displays actual pressure of chamber, the unit is Kpa

2. Temperature
 It displays actual temperature of chamber.

3. State displays/ Error code displays
 It displays all the states of cycle (Look at the appendix 1). When it occurs error, it will show the error code, just according to error code mode.
 Caution: If you meet problems, please contact with dealer or manufacture for more details.

4. Select key
 Cycle select. According to different things to be sterilized choose different temperature you need.

5. PACKAGE key
 Package select. You can choose package or non package according to the instrument. Non package adopt 3 times pre vacuum, package adopt B class pre vacuum.

6. TEST key
 Test key. It used for select the testing cycle. Press one time,B&D light goes on, means will run B&D cycle, press again,LEAK light goes one, means will run LEAK cycle. Press this key for 3s, two lights goes on at mean time, means to run cleaning cycle, for cleaning the steam generator.

7. DRY key
 This key selects the Fast sterilization cycle. With unwrapped instruments, you may use the fast cycle by pressing the DRY key once, the indication light goes on and it indicates that machine is in fast cycle mode. Using autoclave made by us, you may still use this selection to shorten the cycle time.

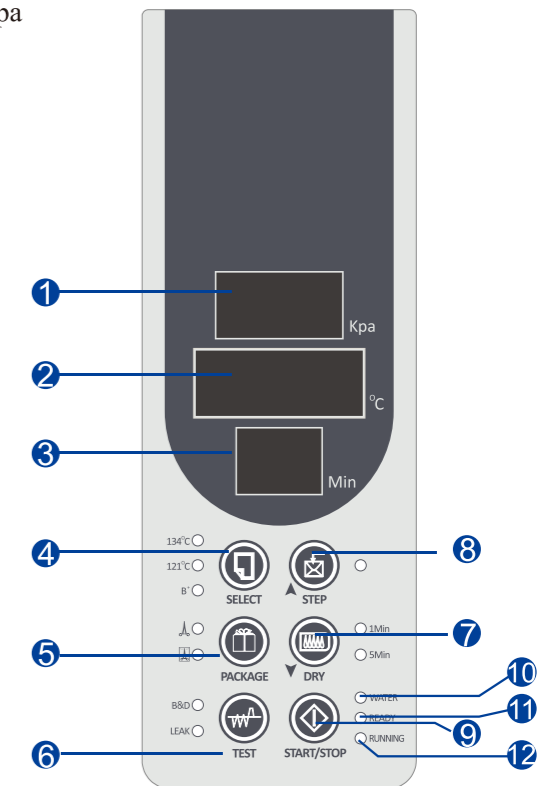


Fig4-1

8、 “STEP” key

This is a post cycle selection key. When a sterilize cycle completes, you may press this key to keep on working or stop working. The indication light goes on, and it means that when the cycle is complete, the heating element will stop before the chamber door is opened. When the indication light is off, it means that the chamber will be kept warm after completing a cycle and heating up time is shorter during next cycle. If the user does not start any operation after completing the cycle, the system will enter into last cycle automatically an hour later.

9、 “START/STOP” key

When you choose the right program, push this button then it starts a cycle. Keeping pressing the key 3 seconds before desiccation phase, the cycle of sterilization will be quitted. Then it will enter into 3 minutes dryness. In this program if you press the key again, the program of dryness will be over at any moment. If you press the key at end of dryness, the cycle will be quitted directly.

10、 “WATER” indication light

When the water volume is low, the light is glinting.

11、 “READY” indication light

When the light goes on, the machine gets ready for sterilization, and the operator can press “start” key to start a cycle.

12、 “RUNNING” indication light

Working light. It means sterilize program is working.

⚠ Caution

In case of faults, please contact your distributor or the manufacturer immediately.

5 Operation

Please connect the power cord before you start the operation. Press the main power switch at right lower corner of the front panel. The power switch light turns on indicating that electric power is connected. The screen no display, automatically examine. If it is ok, the screen will show Ld.

5.1 Fill water

Turn on the power switch, select cycle, press OK key, if the water level is lower than the lowest level, it will enter to this page layout (see fig5-1) with alarming sounds. You should add water now. Open the tank cover at the top of sterilizer, fill water when you hear alarming sounds, it means water tank full. Please stop to fill water.



Fig5-1

Caution:

1. Be sure to use distilled water;
2. Do not slant the sterilizer when the water tank has water;
3. Always drain the used water tank.

5.2 Start a cycle

When water indication light is off, the machine can be started.

5.2.1 Press “SELECT” to choose one of the programmes.

The key toggles between the cycles at 121°C, 134°C and B+ mode. One of the indication lights turns on to show the programme you selected. (Fig 5-2)

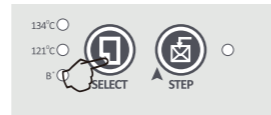


Fig5-2

5.2.2 You may need to select instruments package mode. According to the instrument you put into the chamber whether it is bareness or sop up, press “package” to select package mode.

5.2.3 You may select “DRY” key whether starts the fast sterilization cycle. Press “DRY” key, it will reduce the sterilization time. If you press the button “DRY” on the panel, there are three selections, 1min (with 1min LED on), 5min (with 5min LED on), and 10min (with two LEDs off).

5.2.4 After selecting above setup, put the instruments into the Steam Sterilizer which need sterilize.

Caution: Instruments that are ready to sterilize should be placed in the tray to touching one another allowed space for steam to pass through. It is suggest that the tray holder be used to put the tray with instruments inside the chamber to avoid burning injuries.

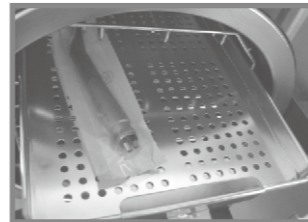


Fig5-3

5.2.5 After the instruments are loaded, you may close and lock the chamber door by turning the door knob clockwise to it is locking position. The “ready” indication light goes on. (Fig 5-4 5-5 5-6)



Fig5-4



Fig5-5



Fig5-6

Caution: The door knob must be turned to its lock position, otherwise, there might be steam leak during a cycle and the alarm goes on and displays error code “E6”. If the chamber is in keep warm mode, it is sometimes difficult to close the chamber door because there is still steam inside. You can keep the door open for a while until steam and moisture is vaporized, and the door is easy to close. You may also push the door inwards with some force while turning the door knob to its locking position. If there is still steam leak after you did the above, you may try to readjust the door mechanism by a spanner as per item 6. Door adjustments.

5.2.6 Press “START/STOP” key, the “ready” light goes off and display “HE” the machine starts a sterilization cycle. It takes about 30-60 minutes to complete an automatic cycle that includes heating up, sterilizing and drying. The cycle time depends on the volume of the instruments loaded, the chamber temperature at the beginning of the cycle and the cycle program you selected.

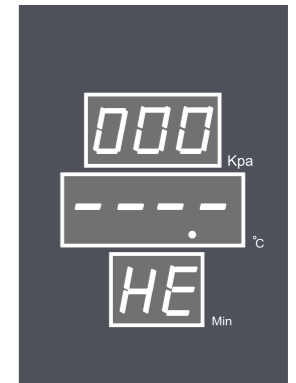


Fig5-7

5.2.7 When a cycle completes, the display “Ed” the indication light “RUNNING” Turns off and the indication light “READY” turns on with sounds. At this time you may then open the chamber door and unload the instruments which are sterilized. (Fig 5-6) At mean time, temperature indicate “prt”, it means that it is performing print, whether you have install printer, the process can not be omitted. But you needn't care about it. It will not effect the process of opening the door and unloading the instruments. The indication will disappear when printing is over.

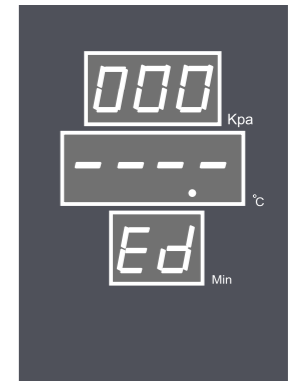


Fig5-8

Attention: To ensure autoclave's on the safe side, When water level low alarm sounds, Please be advised add some water first. When you add the water, please don't forget to let condenser water out.

Caution: Always use the tray holder to load or unload the tray with instruments in it, in order to avoid burning injuries.

5.2.8 If you decide to stop using the autoclave for a while, please turn the main power switch off, or unplug the power cord should you not want to use the machine for a long time.

Caution: Never try to open the chamber door if and when the pressure display doesn't show "0.0" . It is suggested that chemical indicator or bio-indicator be used for each and every cycle to ensure the reliability of each sterilization cycle run.

5.4 the instrument rack should be put inside the boiler as the following diagrammatic sketch shows

The first way: (fig1,fig2)



Fig1

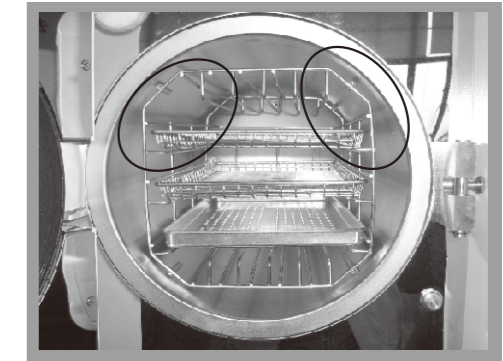


Fig2

The second way: clockwise rotate the instrument rack by 90°, based on the first way (fig3,fig4)

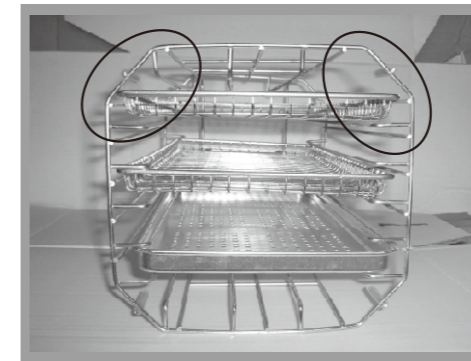


Fig3

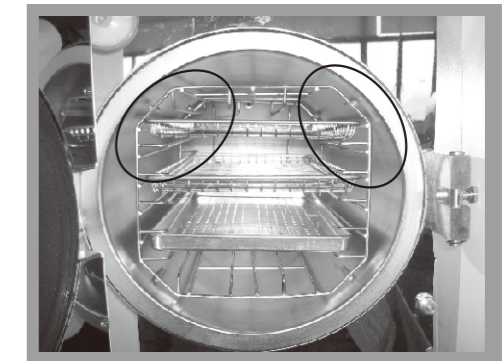


Fig4

notes: the circle stamped angle is up along

6. Door Adjustment

- 1、 Through adjusting tie rod, located inside door cover, could be seen from bottom window of door cover. (Fig 6-1、 Fig 6-2)
- 2、 Pull down the tie rod, meantime,turn the sealing cover to some angle,not too much. (Fig 6-3)
- 3、 Loose tie rod, then continue to turn sealing cover slightly till tie rod automatically back to lock sealing cover,then adjustment is done.

Caution:

- 1.Do not make sealing cover too loose, it may cause steam leakage when sterilization.
- 2.Do not adjust until the sealing door get gooling.

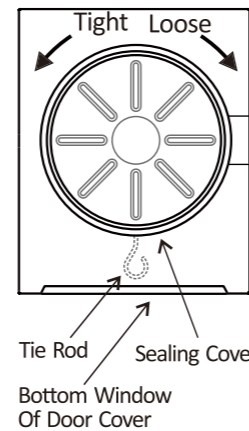


Fig 6-1



Bottom Window
Of Door Cover

Fig 6-2



Tie Rod Sealing Cover
Bottom Window
Of Door Cover

Fig 6-3

7 Printer installation and use(Optional)

Youjoy sterilizer can be equipped with an external printer or built-in printer according to customer needs.

Connect the external printer to the lower left side of the sterilizer with the matching printer cable, as shown in Figure 7-1. Turn on the power switch and the two lights on the front panel of the printer are on, indicating that the printer has been installed.

The built-in printing is integrated into the sterilizer operator panel, no need to connect the printer cable, as shown in Figure 7-2.

Whether it needs print after the sterilization cycle is completed, it can be set in setting. For details, see page 14: 8. Function setting. The built-in printer and the external printer operate in the same way.

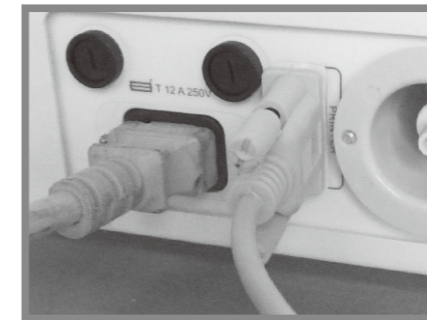


Fig7-1



Fig7-2

Sterilization Records	
Date:	Y11M05D11
Cycle:	00001
C.N.:	134 2.10
-B-SP=	6mDP=10m

C.S.T.:	13:05:30
Vp1:	13:11:27
	0.00 048.9
Pp1:	13:12:57
	-0.81 050.2
Vp2:	13:16:33
	0.29 107.5
Pp2:	13:18:01
	-0.81 072.1
Vp3:	13:20:36
	0.30 112.4
Pp3:	13:22:14
	-0.81 081.4
H.S.T.:	13:27:55
Max:	2.14 134.6
Min:	2.02 134.5
Ave:	2.08 134.5
H.E.T.:	13:34:06
D.S.T.:	13:34:43
	0.30 115.5
C.E.T.:	13:45:32

Result:	Passed
Operator:	

Thanks	

Fig7-3

7.1 Print information explaining

Date:Date
 C.N: Cycle name
 C.S.T: Cycle start time
 Vp1、 Vp2、 Vp31: Pressure strengthen
 Pp1、 Pp2、 Pp31: Vacuum
 H.S.T: Sterilization start time
 Max、 Min、 Ave: Max. Min and average pressure or temperature of chamber
 H.E.T: Sterilization end time
 D.S.T: Drying cycle start time
 C.E.T: Cycle end time
 Result: Result
 Operator: Operator, you can sign your name if it needed.

⚠ Caution

Youjoy sterilizer can only be selected with external or built-in printers provided by our company.
 External printers can only use thermal paper with a width of 57mm and a maximum diameter of 50mm.
 The built-in printer can only use thermal paper with a width of 57mm and a maximum diameter of 40mm.

7.2 USB module function

7.2.1 Main function:

- Storage of printed data of sterilization
- Built-in FLASH memorizer
- U-disk. Download

7.2.2 Basic parameters:

- Storage Capacity: 2M bytes
- Quantity of printed data could be stored: 2048
- Support FAT files

7.2.3 Operation instruction:

1. Turn on the power, the mode of USB will start automatically. After self-test, it goes into alert with the indicator flickering-1 time.
2. After the sterilization cycle ends, the data of sterilizer is sent to the USB mode(The printer program should be turned on). Indicator will flicker-1 time after the data-transfer finish.
3. During the alert, insert U-disk. The mode indicator will be on, with the U-disk indicator flickering. And now, it is in the process of data-download. Don't turn the power off or draw out the USB-disk, which will cause the data lose.
4. After the download finish, USB mode indicator will flicker twice, reminding the user to draw out the U-disk.
5. During the sterilization cycle, avoid data download, or else, the data will lose.
6. Connect U-disk to computer. You will see files like _2000_, where the downloaded data is kept, following turns of Year, Month and Day. Easy to print it out.
7. USB mode terror(According to the flickering times of USB mode indicator) and solution:

Times	Definition	Solution
1	Self-test passed	Normal
2	Operation finish	Normal
3	No definition now.	No definition now.
4	U-disk needs formation	Format U-disk in FAT files
5	Not enough capacity	Delete the files in U-disk
6	U-disk needs formation	Format U-disk in FAT files
7	USB mode error	Contact us

Caution: This function is optional to the demand of customer.

8 Function setup:

8.1 Enter function setup mode: Press “STEP” key for 20s when on non-work state (time display “Ld”) pressure display “1” , enter function setup mode.

8.2 Function mode setup: With 7 options, press SELECT key, you can select 1-7-1 cycle display. The definition and display of 7 options as following:

- Option 1: year, display “yer” , press “STEP” or “↑” key increase, press “DRY” or “↓” Key decrease, setup numerical value.
- Option 2: month, display “nth” , press “STEP” or “↑” key increase, press “DRY” or “↓” Key decrease, setup numerical value.
- Option 3: day , display “day” , press “STEP” or “↑” key increase, press “DRY” or “↓” Key decrease, setup numerical value.
- option 4: hour, display “hor” , press “STEP” or “↑” key increase, press “DRY” or “↓” Key decrease, setup numerical value.
- Option 5: minute, display “nin” , press “STEP” or “↑” key increase, press “DRY” or “↓” Key decrease, setup numerical value.

Option 6: Printing, it display “Pvt” ,press “STEP” key then you can choose the cycle between “on” and “of” . “on” stand for “print” , “of” stand for “no printing” .

Option 7: Exit, when “Eit” displays, please press “START/STOP” to save and exit setup mode.

Option 8: sterilization time adjust, display “S-T” when you setup this option, the sterilization time(SP) will increase at former value. The adjustable range are following 3 kinds. One is increased by 1 minute, Second is increased by 2 minutes. Third is increased by 3 minutes.

Option 9: temperature data adjust automatically option, display D-P , When you setup this option, you can adjust the temperature more or less than 2C-3C in order to meet your request. But we suggest user should setup under guidance of technician or not setup.

Press “ SELECT” key after setup, you will come back to option 1. At this time, you must press STEP key 3 seconds in option 7. Then you can start the setup of option 8 and option 9. Otherwise it only can start cycle between option 1 and option 7.

Caution: If some function setup was changed by pressing the key without intention, please switch off the power, then restart it. It will exit from the wrong setup. In this case, the function won't be affected by this.

9. Maintenance & Maintain

9.1 How to clean the water tank.

9.1.1 Please clean the sterilizer water tank and waste water tank regularly. The process is following:

- 1) Empty the tanks water, please refer to item 9.2 draining the water.
- 2) Open the tank cover board, you can use screw driver to loosen the five screws just as fig9-1 indication.
- 3) Pull up the water tank cover board by one hand, just, as fig9-2 indication.
- 4) Pull up the tank cover completely and you can disassemble the tank cover. As fig9-3 indication.
- 5) Now you can start to clean the tank, use cotton to dip in some alcohol or medical disinfectant to scour the tank wall, wash it by distilled water, then empty the tank and dry the tank. After it you should take out the filter net to clean.
- 6) After cleaning the tank, assemble the tank cover and tighten the screws.



Fig9-1



Fig9-2



Fig9-3

9.2 Draining of water from the machine Drain the condenser water collector and water reservoir. Connect the water outlet using the one end of the tube without a connector and the other end of the tube to a drainage sink. Then turn the draining knob anti-clockwise to drain the water from the machine. (Fig 9-4)

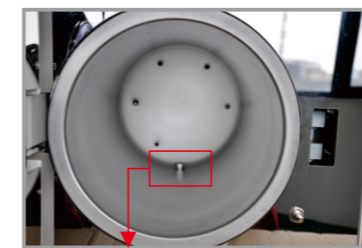


Fig 9-4

Caution: Below each kind of maintenance must be operated after cut off the power and cool down the autoclave. Using the qualified distilled water. The instrument putting into the chamber must be cleaned. Regarding some instruments with oil or impurities, please pack it with sterilization bag.

9.3 Cleaning chamber water filter

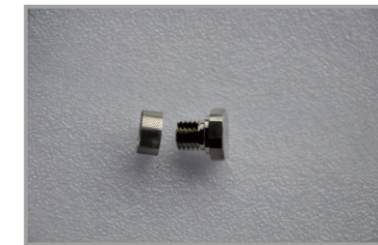
After the machine used for a while, there may be some tiny impurity block the chamber water filter, it will affect sterilizer performance. To prolong the lifetime of chamber water filter, back-out the water filter, take out the filter net, clean it by soft brush every month.



1. Chamber water filter



2. Back-out the water filter



3. Take out the filter net, clean it by soft brush or replace a new one.

9.4 Change fuse (Fig 9-6)



Fig9-6

- 1). Switch off the power.
- 2). Unscrew the fuse holder with a screw driver counter anti-clockwise.
- 3). Pull the fuse holder out with your fingers.
- 4). Make sure to replace the cooked fuse with a correct fuse.
- 5). Put back the fuse holder and screw it on clockwise with a screw driver.
- 6). You may use your hand to change the fuse.

9.5. Clean the seal plate periodically.

After using some time, the seal plate might have some scale build-up that might cause leaking. You should clean the seal plate periodically, using a soft cloth soaked with distilled water to wipe the rubber seal and the seal plate clean (Fig 9-7 & 9-8). If there is still leaking, you may need to take the rubber seal out for cleaning. Should the seal be broken, you need to change with a new one.



Fig 9-7



Fig 9-8

Remark: providing with seal packing collar for life.

9.5.1 Change of the seal

You will need a flat screw driver without a sharp tip. Pay attention about head of the flat screw driver. The install step according to Fig 9-9.



Fig 9-9

- 1). Hold the edge of the seal with one hand and insert the screw driver beneath the seal with your other hand and then pull out the seal slowly.
- 2). Once a section of the seal is out, you may pull the whole seal out slowly with both of your hands. You can now clean the seal groove and the seal. If the seal is broken or damaged, you must replace it with a new one.
- 3). After the groove and the seal are cleaned, you may remount the seal back in place
Caution: The seal should be mounted evenly inside the groove with first 4 positioning points in place. You may use your hand to press the seal in place evenly.
- 4). Attention: When inserting the seal, the inner edge might evaginate. You may use a screw driver to press the edge down in the groove.



Caution: Power the machine off and let it cool down before you change the seal and avoid any burning injuries.

9.6 Cleaning Steam generator

9.6.1 Aim: Clean the steam generator and steam pipe, to avoid the furring block the pipe.

9.6.2 Description: 20 min cleaning + 10 min drying

9.6.3 Purpose: to clean the steam generator furring, take it out of the machine through pre vacuum.

9.6.4 Operation: when the machine is inactivity, press SELECT for 5 second, the B&D light and LEAK light will go on at mean time, it means you chose the cleaning cycle. Close the door and press START, it will start to clean.

9.6.5 Cleaning remind: after cleaning, every 100 cycle, B&D light and LEAK light will going on at the mean time and glitter. Remind you to clean the steam generator.

Friendly remind: Cleaning function will not affect the autoclave cycle, only remind message.

9.7 If the machine need to be maintained or the electric spare parts need to be changed, please cut off the power first. And ask your dealer or manufacturer to change it.

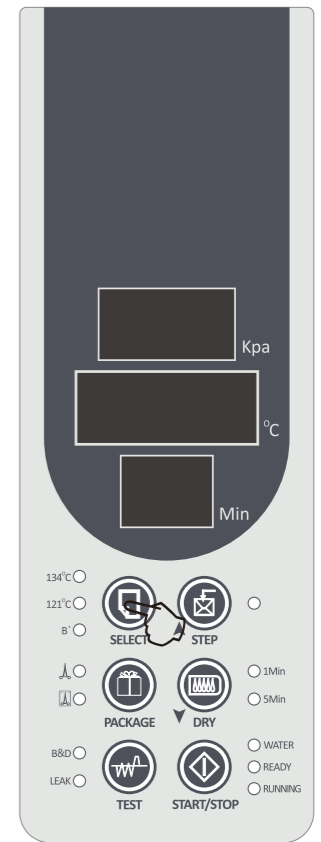


Fig9-8

10 Transport & Storage

10.1 Preparation for transportation and storage. Power the machine off, unplug the power cord and let the chamber cool down.

10.2 The autoclave should be transported and stored in the follow conditions:

Temperature: -40 ~ +55 °C

Humidity: ≤ 85%

Atmospheric pressure: 500Hpa ~ 1060 Hpa

Caution: Don't drag the machine while moving.

11 Warranty

The manufacturer provides a warranty for repair at not change to the customer for two years after the invoice date with presentation of the invoice. Following are the disclaimers:

11.1 Damage due to improper moving, installing and operating the machine;

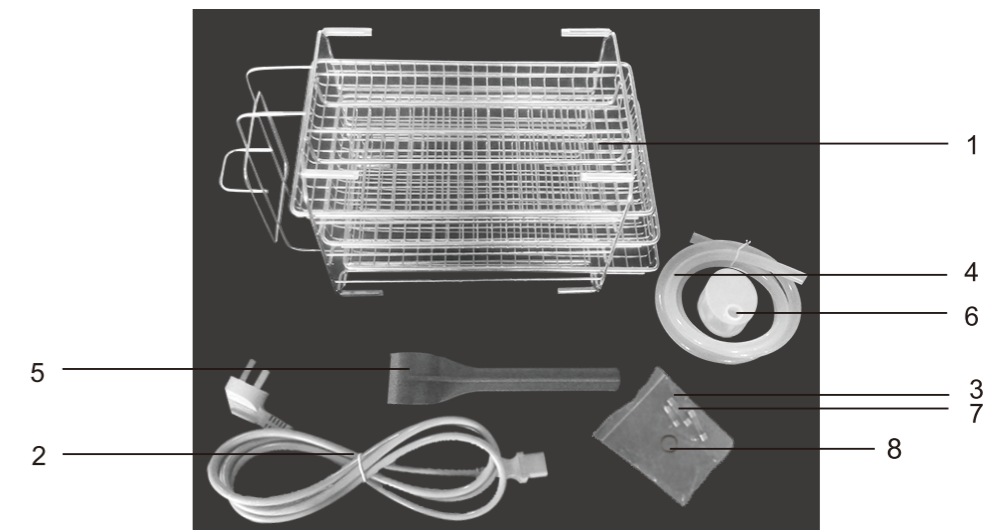
11.2 Damage due to dismantling the machine by unauthorized personal;

11.3 Don't have guarantee of end user.

11.4 Inappropriate operation on the machine without following the operator's manual

11.5 Damage caused by power surge, fire or other external matters.

12 Accessories



- | | |
|--|---|
| 1). Tray rack, trays(3piece) 1set | 6). Water filter in water tank 1piece |
| 2). Power cord 1piece | 7). Fuse ((F12AL 250V) 2pieces |
| 3). Fuse for main board(F3AL 250V)1piece | 8). Chamber water filter 1piece |
| 4). Draining pipe 1piece | 9).Output waste water tank (Option for draining waste water outside type)-----One set |
| 5). Tray holder 1piece | 10).Steel wire hoop (Option for draining waste water outside type)-----Two sets |

Caution:The picture of spare parts in the attach ment may be a little different. Please check according to the spare parts we equipped with autoclave.

13 Appendix.

Form 1 Work mode chart

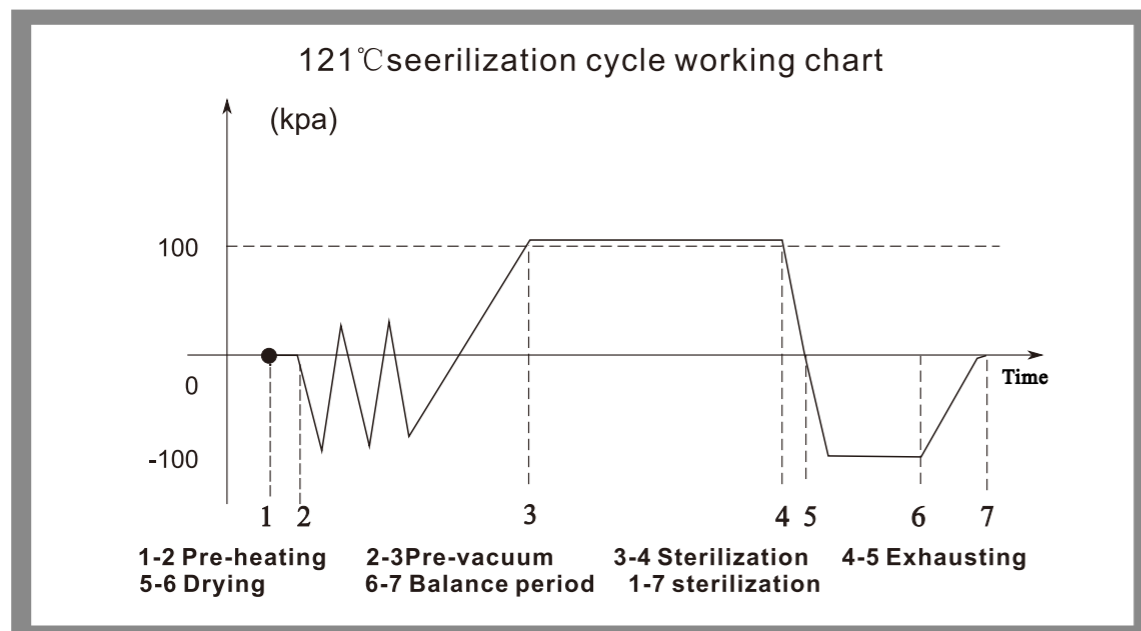
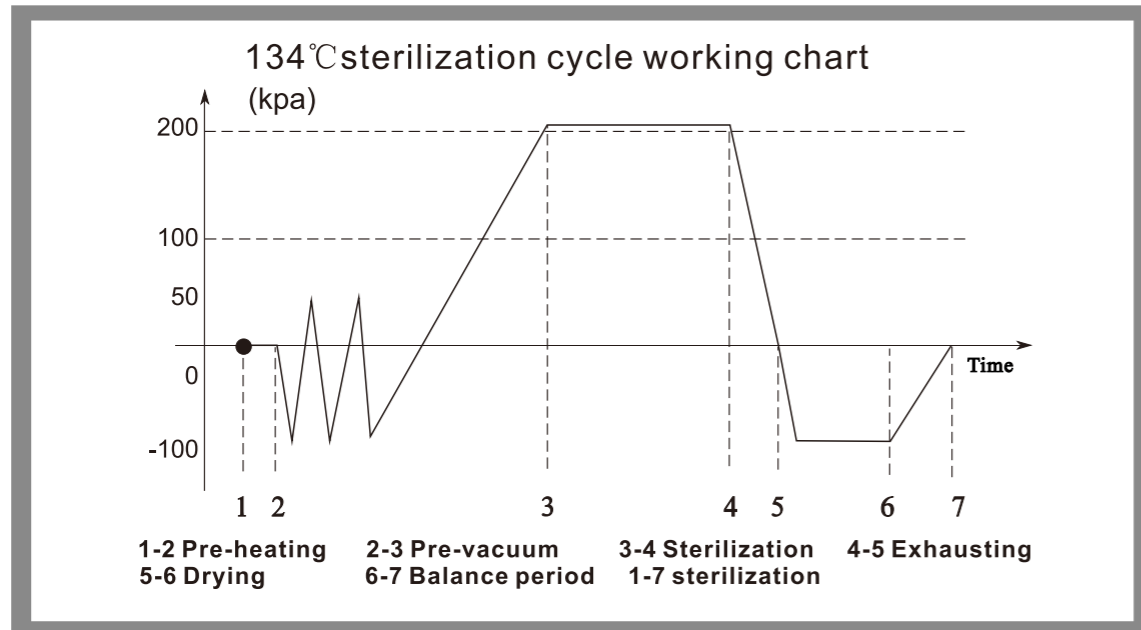
	134 S	134 B	121 S	121 B	134B+	Bdtest	Vacuum test cycle	CLEAN test
Sterilizing temperature	134	134	121	121	134	134	---	---
Sterilizing pressure	2.10	2.10	1.10	1.10	2.10	2.10	---	---
Classes	S	B	S	B	B	B	---	---
Pre-heating	0-7min	0-7min	0-7min	0-7min	0-7min	0-7min	---	
Vacuumize time	4min	10min	4min	10min	10min	10min	4min	Clean20min
Admission time	5min	5min	5min	5min	5min	5min	---	---
Sterilizing time	4min	6min	16min	20min	18min	3.5min	Keep pressure 10min	---
Drying time	10min	15min	10min	15min	15min	1min	---	Drying 10min
Quick drying time	5min	5min	5min	5min	5min	---	---	---
Total time	35(30)min	47(42)min	42(37)min	51(56)min	59(52)min	19.5min	15min	31min

Form 2 Error code chart

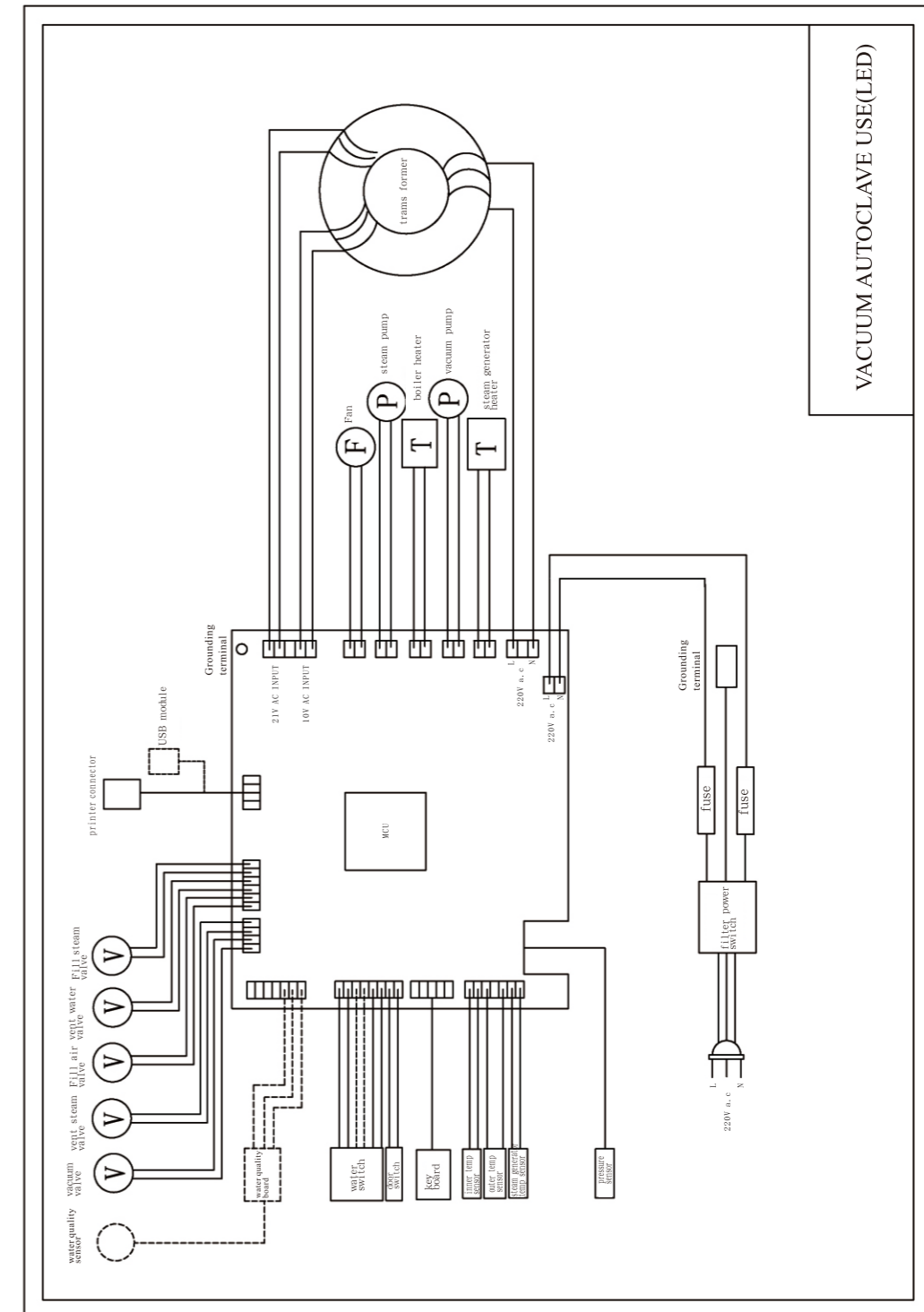
Autoclave error code list (when you encounter these error codes, please contact the distributor or manufacturer)

Error Code	Malfunction	Cause	Troubleshooting
E00	Program Exit	Manually exit during the operation	Restart the Program
E10	Pressure Sensor Malfunction	Pressure over detected, $\geq 300\text{KPA}$	Check the pressure sensor or main board
E11	Internal Temp. Sensor Malfunction	Internal Chamber temp. over detected, $\geq 200^\circ\text{C}$	Check the temperature sensor of the sterilization room or main board
E12	Steam Generator Sensor Malfunction	Steam generator temp. over detected, $\geq 250^\circ\text{C}$	Check the temperature sensor of the steam generator or main board
E13	External Temp. Sensor Malfunction	External chamber temp. over detected, $\geq 200^\circ\text{C}$	Check the temperature sensor of the chamber or main board
E41	St.Failure	Actual temp.exceeds sterilization temp. $+4^\circ\text{C}$	Check the temperature sensor or main board, Whether or not the pipe is blocked
E42	St.Failure	Actual temp.is lower than sterilization temp.	Check the temperature sensor or main board, door sealing ring, solenoid valve and related pipes to see if they are leaking
E02	Pressure Over	Actual pressure.exceeds sterilization temp.	Check the pressure sensor, main board, exhaust valve, drain valve and related pipes to see if they are blocked
E03	Chamber Temp. Over	Chamber temperature exceeding set value	Check the temperature sensor of the chamber or main board
E05	Steam Exhaust Failure	Pressure discharge rate in chamber is lower than preset value	Check whether exhaust valve, drain valve and related pipes are blocked
E06	Door Malufunction	Door switch loosened	Check whether the door switch, door switch wire and door body are adjusted in right place
E07	Steam generator Temp. Over	The temperature of the steam generator is over 210 degrees	Check the temperature sensor or main board, inlet valve, water pump
E08	Heating Time Over	Sterilization preheating time exceeds preset value	Check the temperature sensor, main board, temperature protector, connecting wires to see if they are falling off
E91	The First Time Vacuum Failure	During the first vacuuming, the vacuum degree in the chamber cannot reach the preset value within the prescribed time	Check the vacuum pump, main board, two positions three ways valve, drain valve, exhaust valve and the filter in the chamber to see if it's blocked
E92	The Second Time Vacuum Failure	During the second vacuuming, the vacuum degree in the chamber cannot reach the preset value within the prescribed time	Check the vacuum pump, main board, two positions three ways valve, drain valve, exhaust valve and the filter in the chamber to see if it's blocked
E93	The Third Time Vacuum Failure	During the third vacuuming, the vacuum degree in the chamber cannot reach the preset value within the prescribed time	Check the vacuum pump, main board, two positions three ways valve, drain valve, exhaust valve and the filter in the chamber to see if it's blocked
E94	LEAK Program Vacuum Failure	The vacuum degree in the chamber cannot reach the preset value within the prescribed time	Check the vacuum pump, main board, two positions three ways valve, drain valve, exhaust valve and the filter in the chamber to see if it's blocked
E95	The First Time Pressurization Over	For the first time pressure boost, the pressure is less than 100KPA in 30 minutes	Check water pump, inlet valve, steam generator, intake pipe or water tank to see if it's short of water
E96	The Second Time Pressurization Over	For the second time pressure boost, the pressure is less than 100KPA in 30 minutes	Check water pump, inlet valve, steam generator, intake pipe or water tank to see if it's short of water
E97	The Third Time Pressurization Over	For the third time pressure boost, the pressure is less than 100KPA in 30 minutes	Check water pump, inlet valve, steam generator, intake pipe or water tank to see if it's short of water
A01	Water Quality Alert	Water quality in water tank is unqualified	Please use distilled water and still check the main board
A02	Water Refill Alert	Water shortage in water tank	Please add water, still check water level switch, main board
A03	Wasted Water Tank Full Alert	Water full in used water tank	Discharge used water, still check water level switch, main board

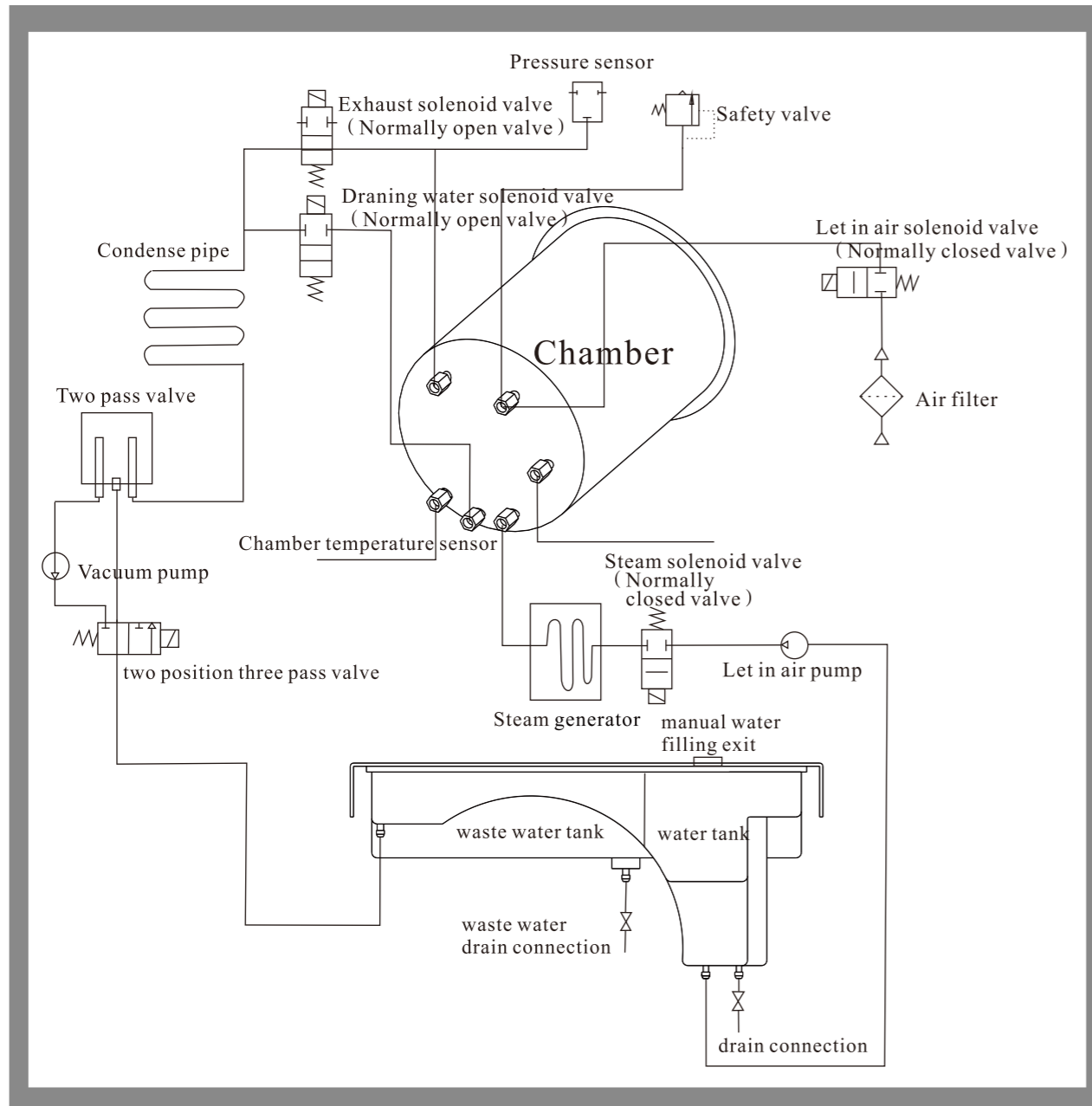
Our working chart



Our schematics



Our piping



14 Troubleshooting

1. During venting or drying, the thump sounds. It means that the condensed water collector is full. You must drain the water from The collector.
 2. Hissing from the chamber door. (Solving this problem according to item 6 Door Adjustment)
 3. During a cycle, a banging sounds and large steam leaks from the chamber door and displays “E6” code. Please verify whether the door knob is properly turned and locked. If the steam leaks at the beginning of a cycle, you need to change the seal according to instructions at page 18.
 4. When a cycle completes, there are water drops on the instruments.
- You may correct the problem by:
- 1). Please check the drain filter.
 - 2). Reduce the load of the instrument in the chamber, especially the porous and dressing and other water absorbent materials.
 - 3). You may also wait for a while at the end of a cycle “Ed” for better drying result. The autoclave will continue heating the chamber until you open the door.

15 Important information

- 1.The autoclave must be installed on a leveled counter top.
- 2.When operated at a higher elevation of more than 500 meters,The machine must be reprogrammed. Please get in touch with your distributor for instructions.
- 3.Distilled water must be used to prolong the life of the machine.
- 4.The radiation openings in the machine must not be blocked or covered.
- 5.Instruments should be placed on the tray allowing space between one another and thus allowing steam to pass through.
- 6.Condensed water collector must be emptied from time to time.It should be emptied when refilling the water reservoir.(Draining of the collector can be followed as per item 9.2)
- 7.Chamber door knob must be turned to its locking position.
- 8.Never try to open the chamber door before pressure displays “ 0 ” .
- 9.To avoid burning injuries, power off the machine and let it cool down before replacing the seal.
- 10.No dragging when the machine is moving.
- 11.Power connection must be grounded properly.
- 12.Must be provided enough power.(1800VA)
- 13.While the temperature of outside is lower, please pre-heating the machine without instruments for 30minutes before sterilize.
14. It is normal if the machine alarms when it starts for the first time. If it alarms again , please contact us.