



INSTRUCTION MANUAL



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User Registration

On the serial number plate at back of the machine, you may find the unit's model number, serial number and reference number. Please double check the numbers and fill in the form, please quote these numbers when you contact your distributors.

Model : _____ **Serial number:** _____
Reference number: _____

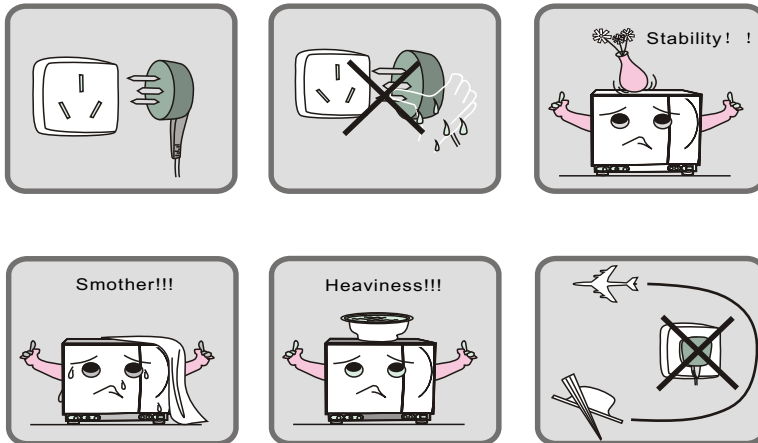
*Before operating the sterilizer, please read carefully all safety cautions and instructions for operation. This operation manual will help you understand all functions of Runyes Autoclaves as far as possible.

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

*Please keep this manual safe for your future references.

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

Important information on Safety



1. Please check the voltage before plugging in the power cord. Don't use electrical outlets that have other than the correct voltage. Otherwise it might cause fire or electric shock.
2. Don't wet your hand before plugging or unplugging the power cord.
3. Never place your autoclave on an unstable, moving, tilted or shaking surface
4. Never cover or block the door or ventilation openings of the autoclave.
5. Never put heavy items or liquid containers that might spill on the top of the autoclave.
6. Please unplug the power cord when the machine will not be used for a long time.

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1. Description & Usage

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 diagnostics, protection against over heating or over pressurizing, and thus ensures reliability of the sterilization results. Built-outside used water collecting system prevents discharge of waste steam and keeps the machine clean and safe.

SEA-22L/17L-B-LCD Three times pre-vacuum pressurized Steam sterilizers

SEA-22L/17L-B-LCD uses advanced technology with 3 times pre -vacuum and vacuum drying to enable hot steam to penetrate in thin tubes and porous material. This product is suitable for dental, ophthalmic, surgical instruments, and for theatre and laboratory use to sterilize 135°C autoclavable equipment.



Fig 1-1

2. Specifications

Chamber inner dimensions (Diameter X Depth).....22L:249mm x 450mm
17L:249mm x 355mm

Power supply:According to the nameplate
Sterilizing temperature /pressure Bar(Under standard atmospheric pressure)..121°C/(1.0~1.3)Bar
.....134°C/(2.1~2.3)Bar

Cautions













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

Power fuse.....T12A
Water tank capacity.....3.5L
Operation temperature.....+5°C ~ +40°C
Relative humidity range.....30% ~ 75%

The maximum wight of instruments which load into the sterilizer chamber during one cycle.

Unwrapped cycle 121°C	Unwrapped cycle 134°C	wrapped cycle 121°C	wrapped cycle 134°C
22L/17L: 6.5kg	22L/17L: 6.5kg	22L/17L: 3.2/2.5kg	22L/17L: 3.2/2.5kg

Figures

- | | | |
|---|--|--|
|  Package select |  Test cycle select |  Program select |
|  Start/stop |  Last cycle select |  Fast sterilizing select |
|  Water outlet |  B type device |  Grounded correctly |
|  Refer to the operation manual |  Note of high temperature |  Distilled water only |

Tip:

Standard atmospheric pressure:

It is the atmospheric pressure at sea level. It refers to 1 Standard atmospheric pressure.

The value is 0.1Mpa=1000Hpa=1.0 Bar. Atmospheric pressure decreases by higher altitude.

For instance: at or lower than 3000 meters , An increase of altitude of 1000 meters will result in a decrease of ATM PR .by 0.1Bar approximately.

3. Installation

The Autoclave should be installed in a ventilated 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 as Fig 3-2. The dimension of the machine are shown in Fig 3-1:

When moving the unit **DO NOT DRAG**. Lift the antoclave to move.

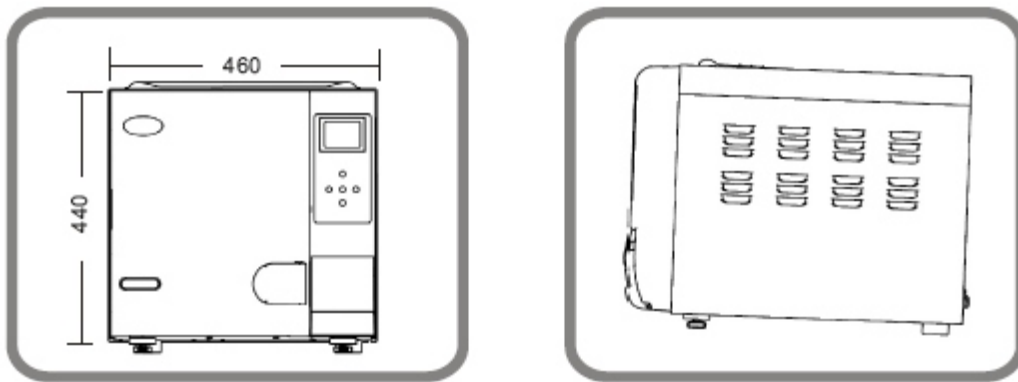


Fig 3-1

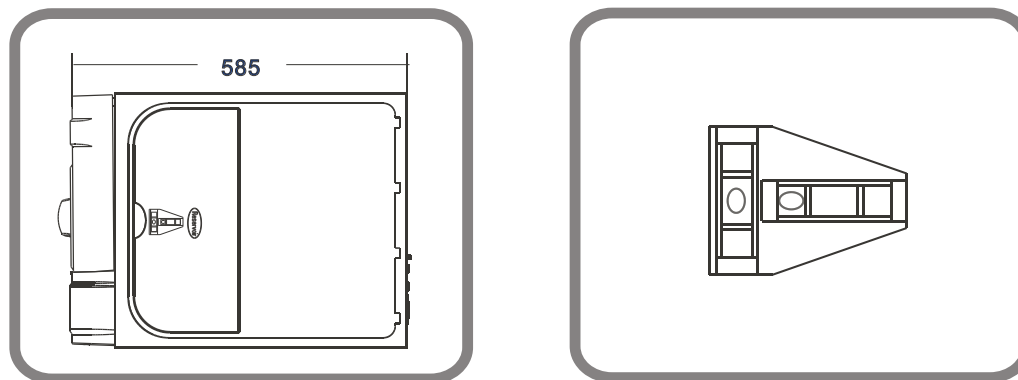


Fig 3-2

****The front of the autoclave must be higher than the rear.**

****Side to side the autoclave must be level.**

****Use level supplied to achieve correct alignment see (FIG 3-2)**

Caution

If the front of the machine is lower than the back the control will display “E3” (E3 means it will not dry completely). Adjust the height by adjusting foot pad of the front of Autoclave.

Prepare the machine before use

We have installed the draining filter in the chamber(Fig3-3). You should clean the draining filter regularly when use the autoclave for a long while. The instruction shows you how to clean it. Please refer to P16.



Fig 3-3

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 inlet of the machine and plug the other end on a power outlet. Caution: The power supply can afford 1800VA load.



Fig 3-4

Ok, you can turn on the autoclave now.

Caution

The power supply must be able to afford 1800VA, and grounded correctly.

Tips: Before starting the Autoclave, please check 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 for the device.

4. Control panel

1. LCD Screen (Figure 4-1)

Letter row 1: Working state: show temperature and pressure data
Menu state: show menu row or page layout name
Ready to work state: show sterilizer cycle name

Letter row 2: Working state: show pressure curve
Menu state: show menu row
Ready to work state: show selected cycle parameter

Letter row 3: Working state: show pressure curve
Menu state: show menu row
Ready to work state: show selected cycle parameter

Letter row 4: Show help information

2. Menu/ C key

Press the MENU / Cancel key to display the main menu.

3. OK key

After choosing the correct cycle on Menu state, the key means confirm, the other key means invalidation.

4. DRY ▼ key

Fast/Down key. When the "MENU" is displayed this key operates as a "Down" key. It means quick sterilization cycle when the device ready to work. The fast key is used to choose the dry time (1 min or 5 min). This can reduce the whole time of the sterilization cycle.

5. STEP ▲ Key

Last cycle/ Up key. When the "MENU" is displayed this key operates as an "Up" key. When selecting a cycle, pressing this key will switch between "Keeping Warm" and "Last Cycle". If the display reads "Keeping Warm" the chamber will keep warm after the cycle completes. This will reduce the heating time for the next cycle. If the display reads "Last Cycle" then the chamber will cool automatically when the cycle completes. (If no entry is made the autoclave will enter "Last Cycle" automatically after one hour.)

6. START / STOP Key

START / STOP key will start sterilization cycle after selecting the sterilization program. When the Menu is displayed, or the autoclave is operating, it acts as a 'Cancel' key.

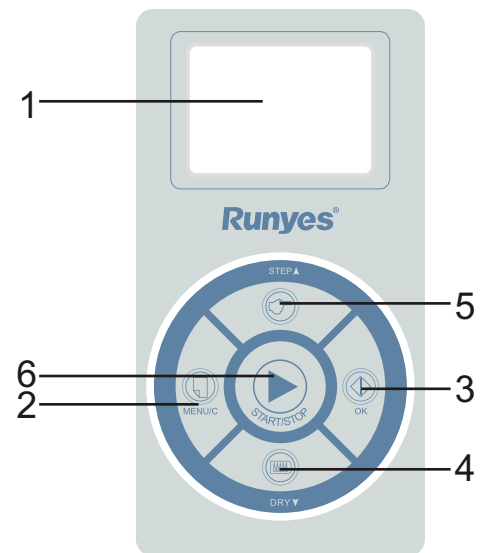


Fig4-1

Caution

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

5.Operation

5.1 Turn on the autoclave

Please connect the power cord before you start the operation. Turn on the autoclave via the ON / OFF switch located behind the small door at the bottom right of the front of the machine. The power switch light turns on indicating that electric power is connected.

1 s later, enter to ready to work state after automatically examine. The screen will display as (Fig 5-1) show.

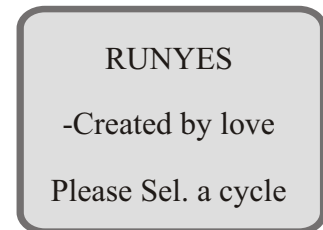


Fig5-1

5.2 Filling Water / Refilling

Turn on the power switch, select cycle and press OK key. If the water level is lower than the minimum required, the display will show the refilling page layout (See Fig 5-2) with alarm sounding.

You should add water. Open the tank cover at the top of autoclave and remove the filler filter. Fill tank with **distilled water** to cover the GREEN rod.

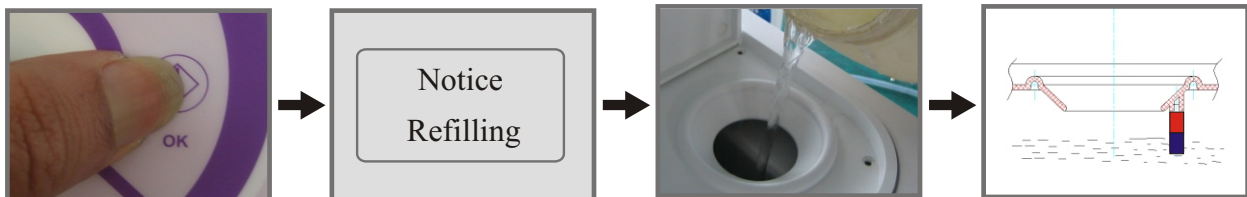


Fig5-2

- Caution:**
1. Distilled water will prolong the life of the autoclave.
 2. Do not tilt the autoclave when there is water in the water reservoir.

The used water tank should be emptied frequently. You should empty the used water reservoir when the clean water reservoir is refilled via the used water outlet located below the ON/OFF switch

5.3 Select cycle

Press MENU/C key to display cycle options. There are 7 cycles displayed in three page layouts (Fig 5-2).

Press STEP key and QUICK key to select cycle.

Press OK key to confirm selection. You need to confirm cycle choice by pressing OK otherwise "Invalidation" will be displayed.

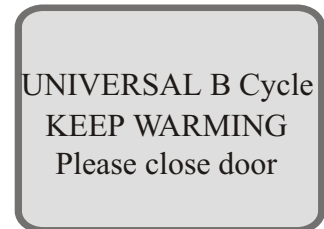


Fig5-2

CYCLES

Universal B cycle:

134°C Three times pre-vacuum, 4 min sterilization time

18 min B cycle:

134°C Three times pre-vacuum, 18 min sterilization time. Suitable for instruments that need a long sterilization time. It can achieve the best sterilization effect.

Unwrapped cycle:

134°C one time pre-vacuum, 4 min sterilization time.

Rubber & Plastic cycle:

121°C Three times pre-vacuum, 16 min sterilization time.

B & D Testing cycle:

BOWIE & DICK, Leak Test.

Vacuum test cycle:

It is used to test the chamber's sealing property during the vacuum test cycle.

Cleaning steam generator:

Clean the steam generator and steam pipe. Refer to Page 19 for specific operation.

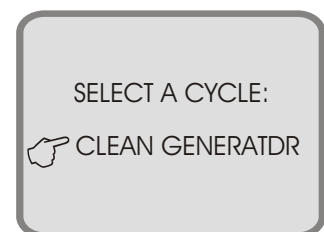
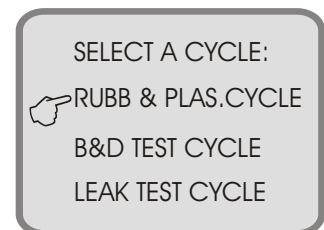
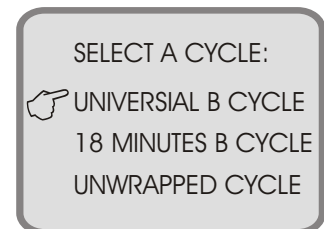


Fig5-2

5.4 Start Selected Cycle

Close the door after loading the autoclave and press START key to begin the cycle. After 0.5 seconds the electrical lock will engage. If the electrical lock did not close correctly the autoclave will display a door fault. The sterilization cycle will only start after the door is locked successfully (See fig 5-4).



Fig5-4

5.5 Stopping a Cycle

To abort a cycle during sterilization press the Start/Stop key for 3 seconds.

There are two different exit modes:

- 1.If you press the button for 3 seconds during Pre-heating Phase, Pre-vacuum Phase or Sterilization Phase it will enter into an Exhaust Phase. After 3 minutes drying the whole cycle will end. If you need to end the cycle immediately press the Start/Stop button for 3 seconds again.
- 2.Press the Start/Stop button for 3 seconds during drying Phase to end the cycle immediately.

5.6 Cycle end

After sterilization the display will show as per fig 5-5 and an alarm will sound. The door can now be opened and the sterilized instruments unloaded.

Caution: 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.

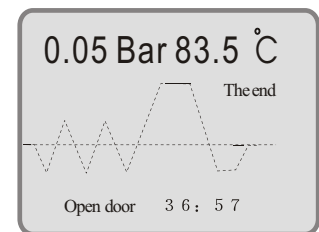


Fig5-5

Caution

To ensure correct operation of the autoclave:

- 1.When the Water Level Low alarm sounds refill the unit with distilled water.
- 2.When the autoclave is refilled the waste water tank should be emptied via the outlet below the On/Off switch (See section 9.2, fig-9.4).
- 3.**Always use the tray holder to load or unload the tray with instruments in it in order to avoid burning injuries.**
- 4.**Never try to open the chamber door if and when the pressure display doesn't show 0.0 .**
- 5.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.

5.7 The Instrument Rack

The instrument rack should be put into the chamber as the following diagrams show. The rack can hold 3 trays or be rotated clockwise by 90° to hold five trays

(Three Tray Configuration)

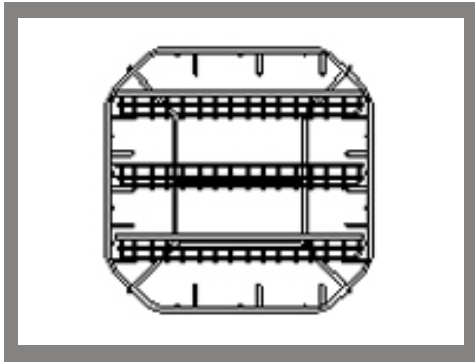


Fig1

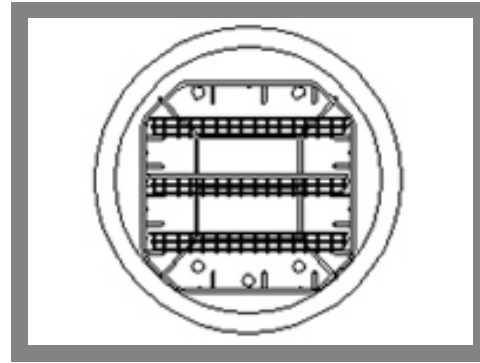


Fig2

The second way (Five Tray Configuration)

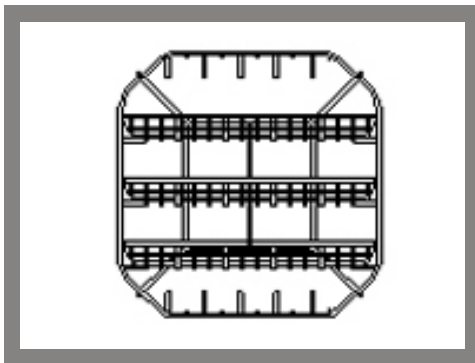


Fig3

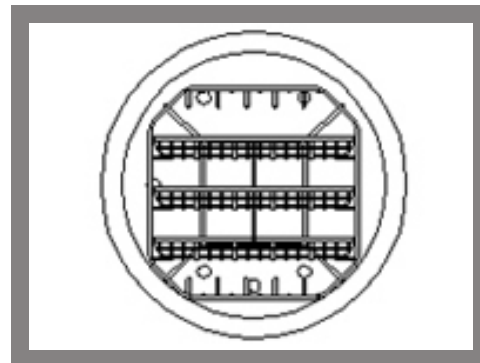


Fig4

⚠ Notes:

The above picture are only for reference, due to the different type or equipment renewal, instrument plate and tray will a little different, please taken the accessories as authentic without prior notice.

6. Door Adjustment

Under normal circumstance the chamber door lock needs no readjustment. If steam starts leaking (the seal fails), you may use the spanner to turn the door seal tightener.

6.1 Open the door first.

6.2 Insert the spanner in the gap beneath the plastic cover. Use the spanner to lock on the adjusting nut (Fig 6-2). Turn the nut counter clockwise as the figure below (Fig 6-1). This will tighten the sealing plate.

6.3 Turn the nut until the sealing plate is tight. If the door knob is too tight, you may also turn the nut clockwise to loosen it as long as the seal does not leak.

Caution

Never try to readjust the chamber door while the door is locked. when you adjust the door DO NOT touch the black sealing cover.

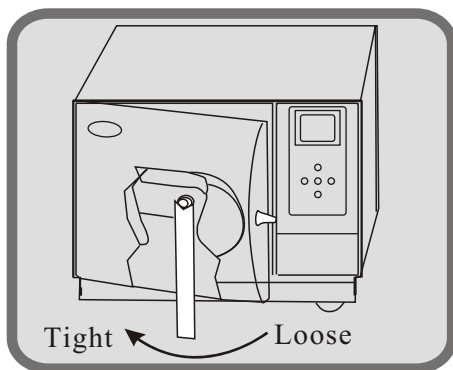


Fig 6-1

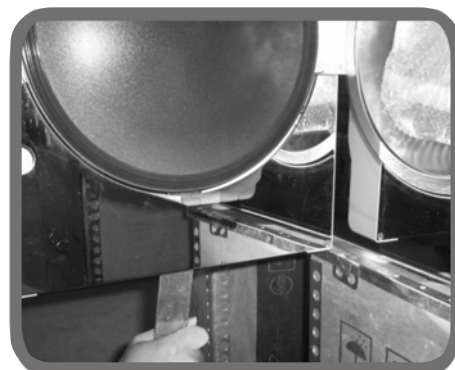
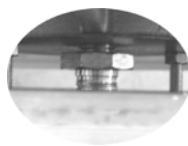


Fig 6-2

7.Printer installation and USB(optional)

If required a printer can be connected to the Runyes autoclave. Connect the printer to the autoclave with cables according to fig 7-1. Switch on the power and two lights on the printer panel will glow indicating the printer has been installed correctly. See section 8.1 for printer set up.



Fig7-1

7.1Print information

Date:	Date
Cycle:	Cycle Times
C.N:	Cycle name
C.S.T:	Cycle start time
Vp1、 Vp2、 Vp31:	Vacuum
Pp1、 Pp2、 Pp31:	Pressure strengthen
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.

Sterilization Records	
Date:	06.04.20
C.N.:	134 Wrap
-B-:	18m 10m
C.S.T:	23:15:16
Vp1:	23:21:55
	0.0 035.7
Pp1:	23:23:57
	- .6 033.4
Pp2:	23:23:57
	0.1 098.4
Pp2:	23:34:09
	- .5 081.7
Pp3:	23:34:09
	0.1 104.4
Pp3:	23:41:51
	- .6 079.9
H.S.T.:	23:50:24
Min:	2.1 135.5
Min:	2.0 134.6
Ave:	2.0 135.0
H.E.T.:	00:08:27
D.S.T.:	00:10:44
	0.2 109.2
C.E.T.:	00:10:45
Result:	Passed
Operator:	
Thanks	

Fig 7-2

Caution

Runyes sterilizer only can select printer offered by Runyes at present.

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. System setup

Press MENU/C key for 3 seconds on ready state and the autoclave will enter into system setup (See Fig 8 -1).

Press STEP ▲ key and DRY ▼ key to select and press OK key to enter sub-menu for setup system. Press MENU/C key to cancel and return to main menu.



☞ DATE
TIME
PRINTER
LANGUAGE

Fig8-1

8.1 Date setup

With 3 sub-menus (Fig 8 - 2).

Press STEP ▲ and DRY ▼ key to select.

Press OK key enter this sub-menu.

Press STEP ▲ and DRY ▼ key to setup the valve.

Press OK key to save the setup and return to upper level of the menu.

Press MENU/C key to return to upper level of menu without saving setup.



DATE SETUP
☞ YEAR
MONTH
DAY

Fig8-2

8.2 Time setup

With 2 sub-menus (Fig 8 -3).


Press STEP ▲ and DRY ▼ to select sub-menu.

Press OK key to enter this sub-menu.

Press STEP and dry key to insert value.

Press OK key to save the setup and return to upper level of the menu.

Press MENU/C key to return to upper level of menu without saving setup.



TIME SETUP
☞ HOUR
MINUTE

Fig8-3

8.3 Printer setup

Press STEP ▲ and DRY ▼ key to select ON or OFF (See Fig 8-4)

Press OK key to save the setup and return to upper level of the menu.

Press MENU/C key to return to upper level of menu without saving setup.



PRINTER SETUP
☞ ON
OFF

Fig8-4

8.4 Language setup

With 2 sub-menus (fig 8-5).

Press STEP and DRY key to select language.

Press OK key to save the setup and return to upper level of the menu.

Press MENU/C key to return to upper level of menu without saving setup.

At present, we have the below language:

Chinese, English, French, German, Spanish, Turkish, Malaysian, Italian, Swedish, Romanian, Polish, latvian(the others is on developing).



Fig8-5

8.5 Time Setup

To setup or extend the sterilization time ranging from 0~3 minutes.



Fig8-6

8.6 Temperature Setup

To correct the disparity between displayed temperature and real one, ranging from -2 ~ +3.

Advise to setup this value under technician's instruction.

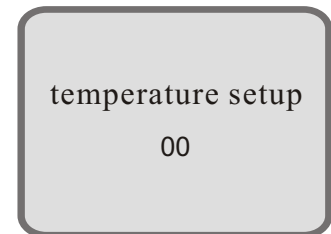


Fig8-7

⚠ Note

1. At the end of the cycle the autoclave displays Fig 8 - 8 and the alarm sounds. Open the door and unload the sterilized instruments

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

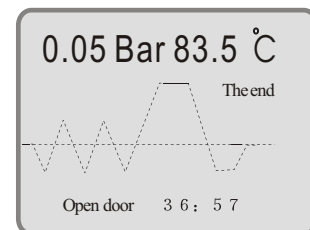


Fig8-8

Other Functions
(Not available yet)

9. Service and Maintenance

Caution: *Before any kind of maintenance turn off the power to the autoclave and allow it to cool down.

*Use only distilled water for sterilizing and cleaning.

*The instruments being sterilized must be cleaned. Instruments with oil or impurities must be packed in a sterilization bag.

9.1 Clean sterilizer water tank and used water tank

Please clean both tanks regularly using the following process:

1. Empty the tanks (please refer to item 9.2).
2. Open the tank cover board. Use a screw driver to loosen the five screws as per Fig 9-1
3. Pull up the water tank cover board as per Fig 9-2
4. Lift up the tank cover completely, you can then disassemble the tank cover as per Fig 9-3
5. Clean the tank. Use cotton dipped in alcohol or medical disinfectant to scour the tank wall. Wash it with distilled water then empty and dry the tank.
6. Take out and clean the filter (see next page for procedure).
7. After you clean the tank and filter, reassemble the tank cover and tighten the screws.

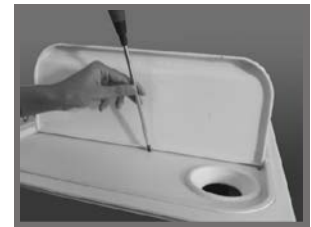


Fig9-1



Fig9-2



Fig9-3

9.2 Draining of water from the machine

Drain the condenser water collector and water reservoir. Connect the end of the tube without a connector to the water outlet and the other end of the tube to a drainage sink.

Turn the draining knob anti-clockwise to drain the water from the machine (See Fig 9-4).



Fig 9-4

9.3 Clean the drain filter

Over time small impurities will deposit on the drain filter, and this may affect vacuum and drying. In order to prolong the life of the drain filter please use the following cleaning procedure (see fig 9-5):

1. Locate the water filter.
2. Rotate off the filter screw
3. Pull off the rubber filter from the connection
4. Take off the filter from the blue rubber.
5. Clean the filter or replace with a new one.
6. After you clean or change a new filter shim, plug in the water filter back on the chamber connection.

Note: please turn the blue rubber to face down hard to touch the chamber and tighten the screw nut.

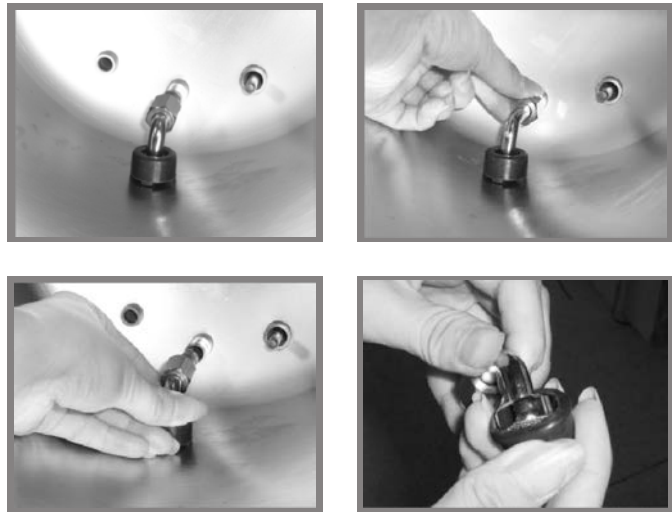


Fig9-5

Note

Please check the O ring of Draining Filter during cleaning. If this part is broken please replace it with O ring in the accessories supplied.

9.4 Change fuse (Fig 9-6)



Fig9-6

Caution

Unplug the autoclave before changing the fuse

1. Unscrew the fuse holder with a screw driver counter clockwise.
2. Make sure to replace the faulty fuse with a correct fuse.
3. Put back the fuse holder and screw it on clockwise with a screw driver.

9.5. Clean the seal plate

Over time the seal plate will have some scale build-up that may cause leaking.

You should clean the seal plate regularly 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.

If the seal is broken you will need to replace it with a new one.

Every 2000 cycles, we suggest to clean the seal plate



Fig 9-7



Fig 9-8

9.6 Change the seal

You will need a flat screw driver without a sharp tip.

1. Hold the edge of the seal with one hand and insert the screw driver beneath the seal with your other hand and then slowly pull out the seal.
2. Once a section of the seal is out, you may pull the whole seal out slowly with both hands. You can now clean the seal groove and the seal. If the seal is broken or damaged replace it with a new one.
3. After the groove and the seal are cleaned remount the seal.

Caution: The seal should be mounted evenly inside the groove with first 4 positioning points in place. Press the seal in place evenly.

Attention: When inserting the seal the inner edge might protrude. You may use a screw driver to press the edge down in the groove.



Fig 9-9

Caution

Switch off machine and let it cool down before you change the seal to avoid any burning injuries.

9.7 Cleaning the Steam Generator

1. Purpose:

To clean the steam generator and steam pipes, to prevent furring blocking the pipe.

2. Cycle:

20 min cleaning + 10 min drying

3. Turn on the autoclave via the ON / OFF switch. The screen will display the welcome state.


4. Cleaning Cycle Operation:

Press the DRY key 6 times until CLEAN GENERATOR is displayed. Press OK.

5. Close the door and press START. The autoclave will now start the cleaning cycle.

6. Cleaning Reminder:

Every 100 cycles the B&D light and LEAK light will go on to remind you to clean the steam generator.

 **Note:** Cleaning function will not affect the autoclave cycle, only a remind message.

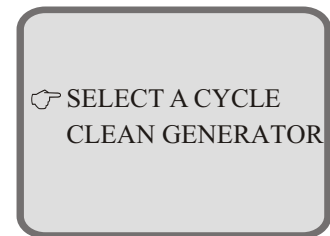


Fig 9-10

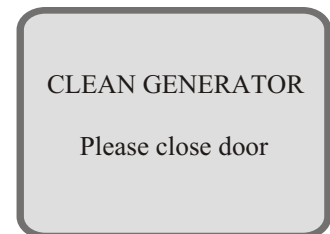


Fig9-11



Fig9-12

9.8 Repair and change of parts must be done by qualified service engineer from the manufacturer or an authorized contractor.

9.9 If the machine needs 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.

10. Transportation & Storage

Power the machine off, unplug the power cord and allow the chamber to cool. The autoclave should be transported and stored in the following conditions:

Temperature: -40°C ~ +55°C

Humidity: 75%

Atmospheric pressure: 500Hpa ~ 1060 Hpa

Caution

When moving the unit **DO NOT DRAG**. Lift the machine to move.

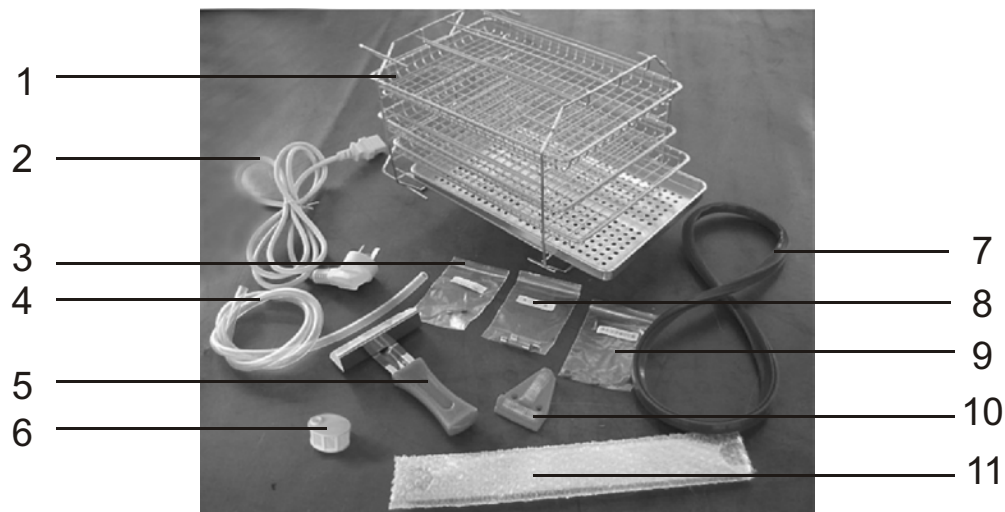
11. Warranty

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.

Followings are the disclaimers:

1. Damage due to improper moving, installing and operating the machine;
2. Damage due to dismantling the machine by unauthorized personal;
3. Inappropriate operation on the machine without following the operator's manual
4. Damage caused by power surge, fire or other external matters.

12. Accessories



- | | |
|--|------------------------------------|
| 1). Instrument tray rack 1 pc and
Instrument tray 3 pcs . | 6). Filtrable net 1 pc. |
| 2). Power cord. 1 pc. | 7). Sealing ring 1 pc. |
| 3). Mainboard Fuse 1 pc. | 8). Fuse 2 pcs . |
| 4). Water outlet tube 1 pc. | 9). Draining O ring 2 pcs . |
| 5). Tray holder 1 pc. | 10). Level instrument 1 pc. |
| | 11). Door adjustment spanner 1 pc. |

Note

1. The picture of spare parts in the attachment may be a little different to the parts supplied. Runyes keep the right of change the accessories. Please check the spare parts supplied with autoclave.
2. During disposing the obsolete device , please contact with professional recycle company Don't throw them away.

13. Appendix.

Form 1 Work mode chart

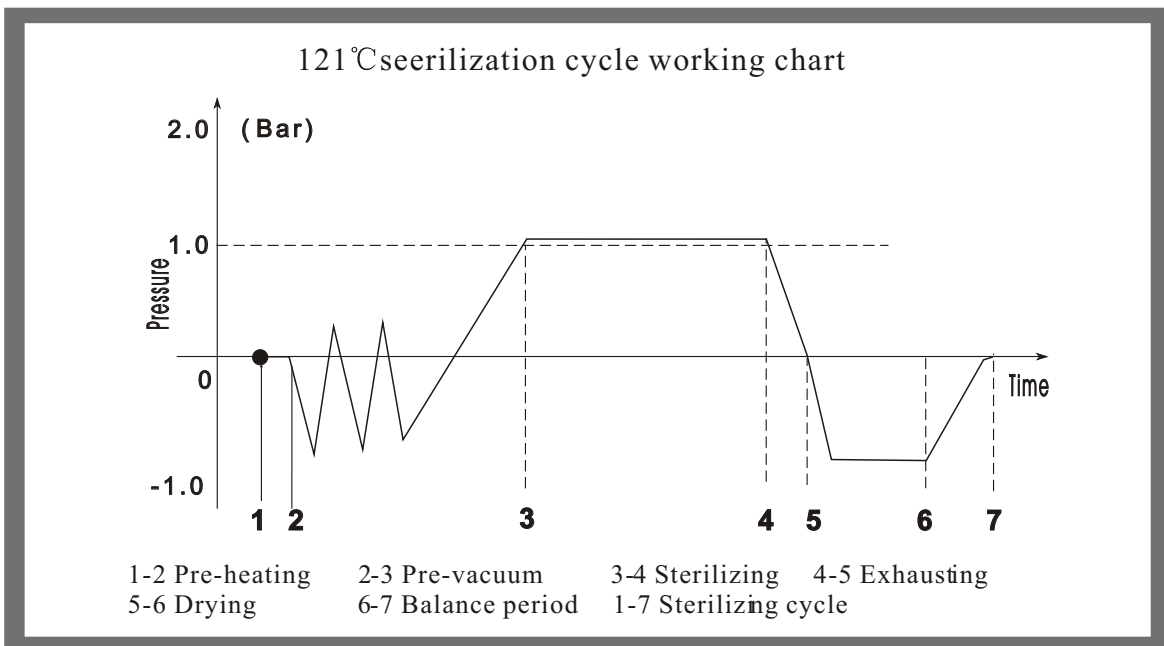
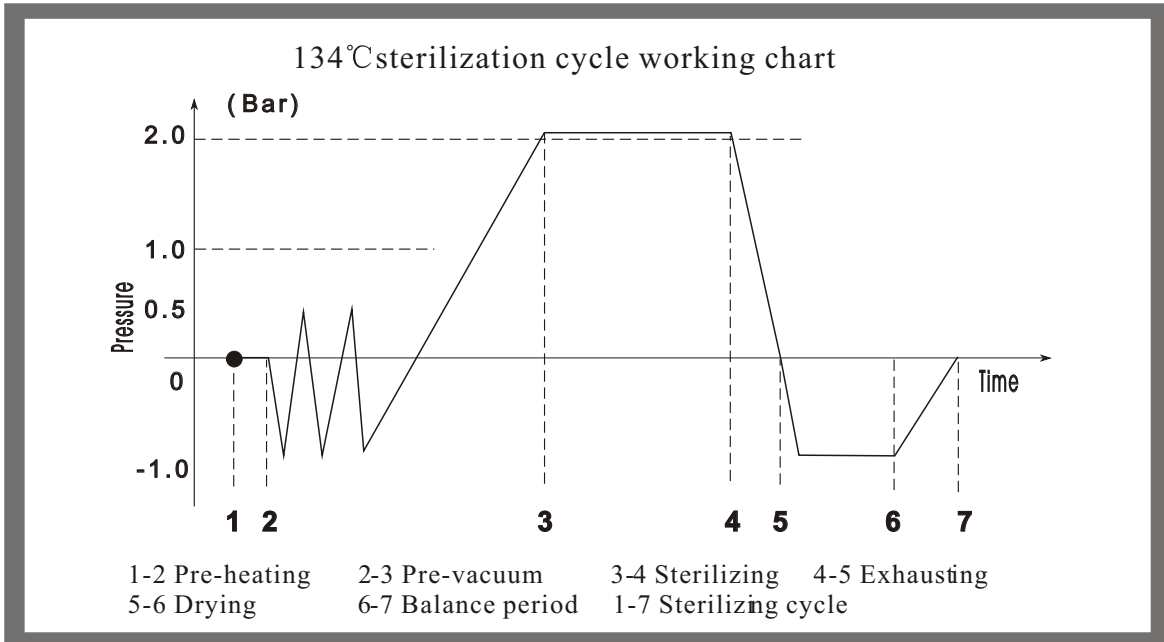
	B cycle	18min Bcycle	Unwrappd cycle	RUB & PLAS cycle	B&Dtest	Vacuum test	Clean test
Sterilizing temperature	134	134	134	121	134	---	---
Sterilizing pressure	2.10	2.10	2.10	1.10	2.10	---	---
Class	B	B	S	B	B	---	---
Pre-heating	0-7min	0-7min	0-7min	0-7min	0-7min	---	---
Vaeuuning time	10min	10min	4min	10min	10min	4min	Clean 20 min
Admission time	5min	5min	5min	5min	5min	---	---
Sterilizing time	4min	18min	4min	16min	3.5min	Keep pressure 10min	---
Drying time	10min	10min	10min	10min	1min	---	Drying 10 min
Quick drying time	5min	5min	5min	5min	---	---	---
Total time	36(31)min	50(45)min	30(25)min	48(43)min	19.5min	15min	30min

Note: The figures in the chart are only for reference, the sterilization effect verified by user, and the user can choose the sterilization time according to the verification results. Which cycle should be adopted is according to the type of the instruments.

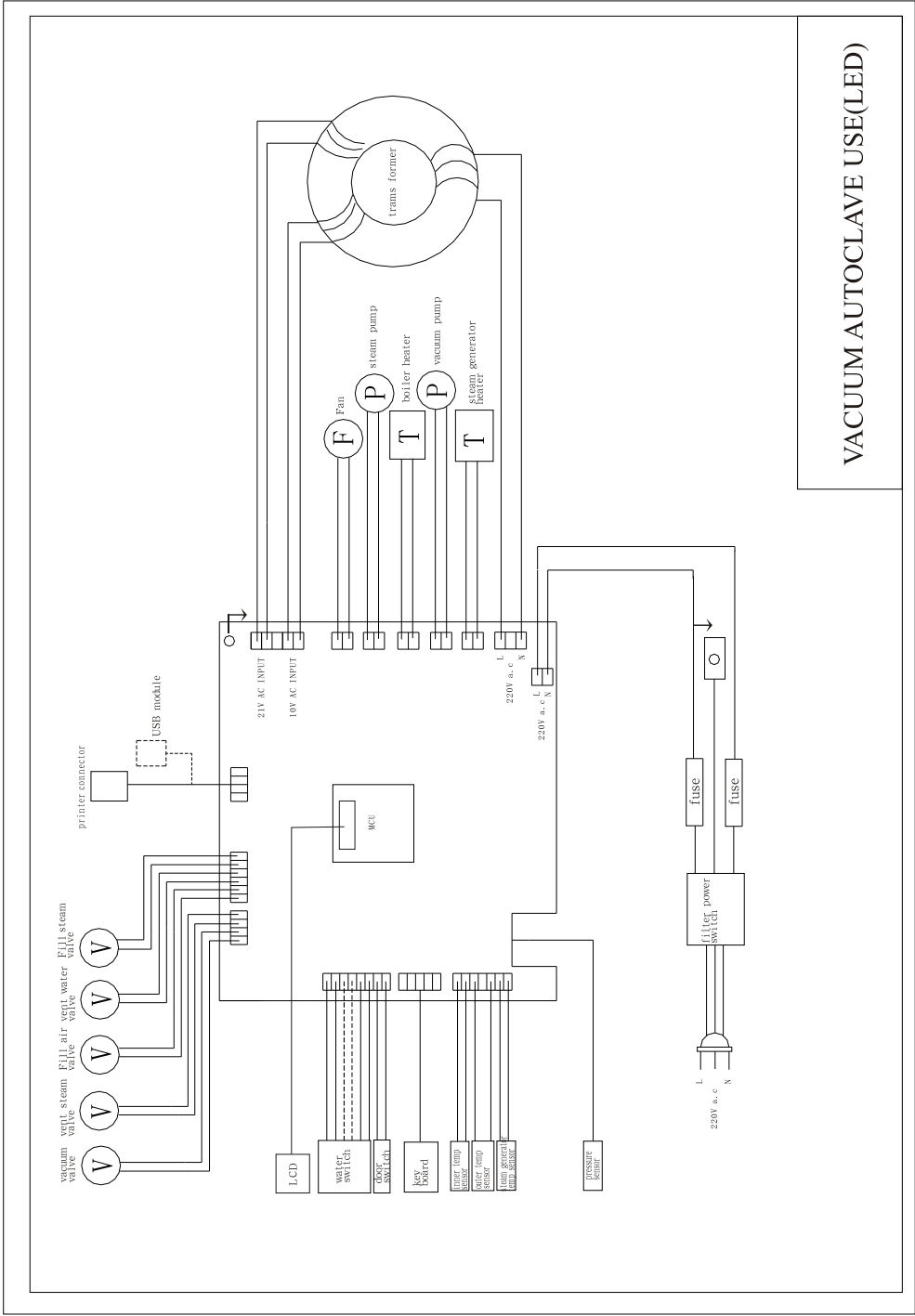
Form 2 Error code chart(In case of faults, please contact your distributor or the immediately)

Item	Error	Solution
1	sensor error	examine sensor
2	super pressure >2.6Bar	Examine inner temperature sensor or pressure sensor
3	super temperature >145°C	examine outer temperature sensor
4	Constant temperature fails	Return parameter autoadju programm
5	block of steam pipe (20S<0.3Mba)	Examine the steam output valve or vacuum valve
6	failure of the door	examine the door switch
7	Steam generator over temperature (>230 C)	Check steam generator temperature sensor
8	heating overtime (>25 min)	examine the electronic connection of heating and heat stick
9	pressurization overtime (>60 min)	examine the steam input pipe

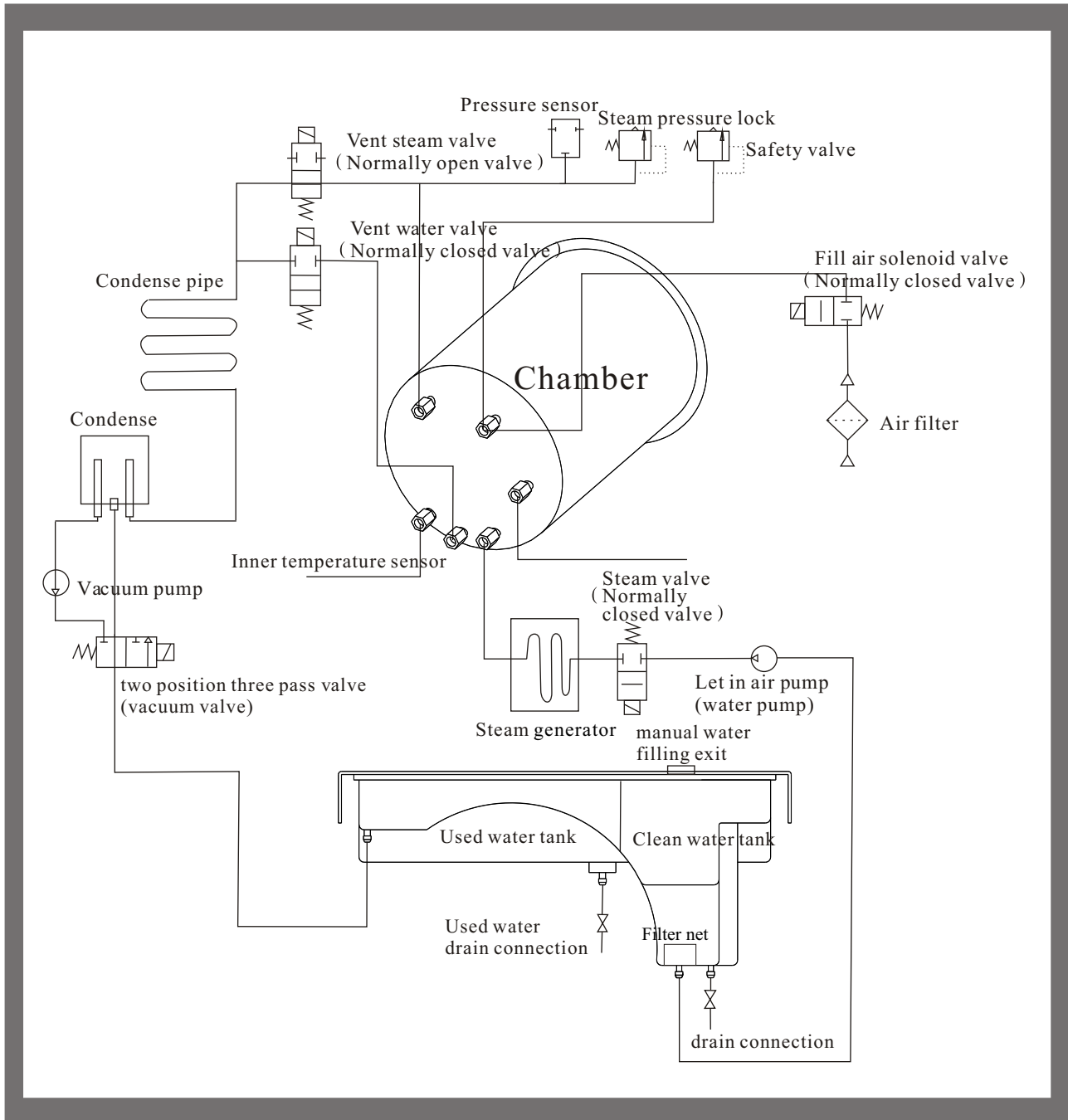
Working chart



Circuit connection chart



Piping



14. Trouble shooting

1. During venting or drying if a thump sounds it means that the Condensed water collector is full. You must drain the water from the tank (see section 9.2 , Fig 9-4).

2. During a cycle if a banging sounds, steam leaks from the chamber door and the displays show an “E6” code. Please verify whether the door knob is properly turned and locked. If the steam leaks at the beginning of a cycle, you will need to change the seal according to instructions at section 9.6.

3. At the end of a cycle if, there are water drops on the instruments.
You can correct the problems by:
 - 1). Checking the drain filter is not blocked (see section 9.2).
 - 2). Reducing the load of the instrument in the chamber. (especially the porous and dressing and other water absorbent materials.)
 - 3). Waiting 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 surface.
2. When operated at an 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 for prolonging the life of the machine.
4. The ventilation openings in the machine must not be blocked or covered.
5. Instruments should be placed on tray with space between one another 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. Pls closing the door well while you use it.
8. Never try to open the chamber door if and when the pressure display doesn't show 0.0 .
9. Before any kind of maintenance turn off the power to the autoclave and allow it to cool down.
10. DO NOT drag the autoclave when it is being moved.
11. Power connection must be grounded properly.
12. Must be provided enough power (22L:2300W; 17L:1800W).
13. If the ambient temperature is low please pre-heat the autoclave without instruments for 30 minutes before sterilizing.
14. DO NOT power off the unit during sterilization,.
To abort a cycle during sterilization press the Start/Stop key for 3 seconds.
15. The chart in the operation manual only for reference, which keep the actual product for real.