

Class B Steam Sterilizer

ARUA 17L / AURA 22L

User Manual



CE 1434

Regulatory Requirements

Conformity Standards

The content of this manual is used for the Aura Class B steam sterilizer.

The sterilizer meets the requirements of European Class B: 93/42/EEC

IEC 60601-1: 2010+A1:2016

IEC 60601-2-040: 2020

EN 13060: 2014 A1:2018

IEC 61326-1: 2020

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This product complies with the regulatory requirement of the following:

Council Directive 93/42/EEC concerning medical devices.

The CE label affixed to the product testifies compliance to the Directive.

The location of the CE marking is shown in this manual.

Certifications

Manufacturer has certified to EN ISO 13485:2016.

Original Documentation

The original document was written in English.

User Registration

You will find a nameplate at the back of the machine which includes the model, the serial number and the manufacture date. Please double-check the information and fill in the details below. If you have contact with your local distributor for any service, you will need this information especially the serial number and purchase information.

Model: _____

Serial Number:

MFG Date:

*The User Manual contains safety information and important instructions for operation.

*Please read the user manual carefully and thoroughly in proper sequence before you start operating the steam sterilizer.

*Please follow the instructions in the user manual while maintaining the steam sterilizer.

*Please keep the user manual near to the steam sterilizer for future reference.

*When any error is reported during the use of the steam sterilizer, please contact your local distributor or authorized service provider.

Class B Steam Sterilizer

User Manual

Dear User

**Welcome to your new high quality steam sterilizer.
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 and we can provide you
with fast and effective service & support if required.**

Important Safety Instructions

Caution

Before operating the steam sterilizer follow the safety instructions given below and in the individual chapters of this user manual.

Instruction

- Do not sterilize any bottles of liquids in this steam sterilizer.

Mains power, cable & power plug

- Never damage or change the mains cable or power plug.
- Never operate the steam sterilizer if the mains cable or power plug are damaged.

Setting up, installation, commissioning

- Only have the steam sterilizer set up, installed, and validated by authorized maintenance providers.
- Only operate the autoclave in an area which is not subject to hazards e.g. flammable gases.
- This device is not MRI safe and not to be used within an MRI environment.

Preparation and sterilization of textiles and instruments

- Follow the instructions of textile and instrument manufacturers for preparing and sterilizing textiles and instruments.
- Only use wrapping materials and systems which are suitable for steam sterilization according to the manufacturer's information.

Program termination

- Take note that when opening the door after terminating a running program prior to completion hot water & steam can escape out of the chamber depending on when the program was terminated.
- Depending on the time of the program termination, the load may not be sterile.
- Observe the clear instructions shown on the display of the steam sterilizer. If necessary sterilize the affected objects after rewrapping.

Removal of the items to be sterilized

- Never open the door by force or during a cycle.
- Use a tray handle to remove the trays. Never touch the sterilized items, the tray, the chamber or the door with unprotected hands. The parts will be hot and can cause a burn or injury.

Maintenance

- Professional maintenance is to be completed only by authorized maintenance providers.
- Comply with the predetermined maintenance intervals and prompts on the sterilizer.
- Trained users only to complete any user maintenance.

Lifting and Carrying the autoclave

- Do not lift the door or drag the machine when moving or carrying the equipment.
- Two people are necessary to carry the steam sterilizer.

Errors

- If repeated error messages occur while operating the steam sterilizer, turn the device off and contact your distributor or professional maintenance provider.
- Only have the steam sterilizer repaired by authorized maintenance providers

Contents

- 1) Description & Usage
- 2) Specifications
- 3) Installation
- 4) Control Panel
- 5) Operation
- 6) Door Adjustment
- 7) Printer & USB Function
- 8) Maintenance & Service
- 9) Transportation & Storage
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- 11) Accessories
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1. Description & Usage

The sterilizer is intended for use in every kind of medical field for the sterilization of packaged instruments, medical devices & textiles using steam.

This device can perform cycles of Type S, Type B and test cycles. General users include doctors, nurses, instructed practice employees and trained maintenance providers.

Steam Sterilizer View

See below device view and anatomy of the steam sterilizer.



Fig 1-1


2. Specifications


Chamber inner dimensions (Diameter x Depth)	22L 249mm×450mm 17L 249mm×355mm
Product external dimensions	625mm×440mm×475mm
Product weight	55/52Kgs
Rated voltage	120 V - 230V AC
Rated frequency	50 / 60HZ
Rated power	1800VA
Sterilizing Temperature/Pressure (Under standard atmospheric pressure)	121°C / (100-130) Kpa 134°C / (200-240) Kpa
Water tank capacity	3.5 L
Operating temperature range	+5°C~+40°C
Relative Humidity Range	30%~75%
Overvoltage Category	II
Pollution Degree of the intended environment	2


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


The highest temperature location is at the top of steam injection port and the lowest temperature location is at the bottom near the door.


Figures


 Back/Menu button


 Select button(Down)


 Select button(UP)


 Start button


 Confirm button


 Type B Device


 Water leakage connection

 High temperature

 Using distilled water

 IP31

 Grounding

 Caution & Warning

Tip:
Standard atmospheric pressure:
It is the atmospheric pressure at sea level. It refers to 1 Standard atmospheric pressure.
The value is 0.1MPa =1000 hPa =1.0 Bar. Atmospheric pressure decreases with higher altitude.
For instance: At 3000meters or lower, the increase of altitude of 1000 meters will result in a decrease of Atmospheric pressure by 0.1 Bar approximately.

3. Installation

3.1 Placement

The steam sterilizer should be installed in a place with good air flow allowing a minimum of 10 cm space at all sides and 20 cm at the top of the sterilizer. The openings at the side of the machine should not be blocked. The steam sterilizer should be placed on a level bench top. (Fig 3-1)

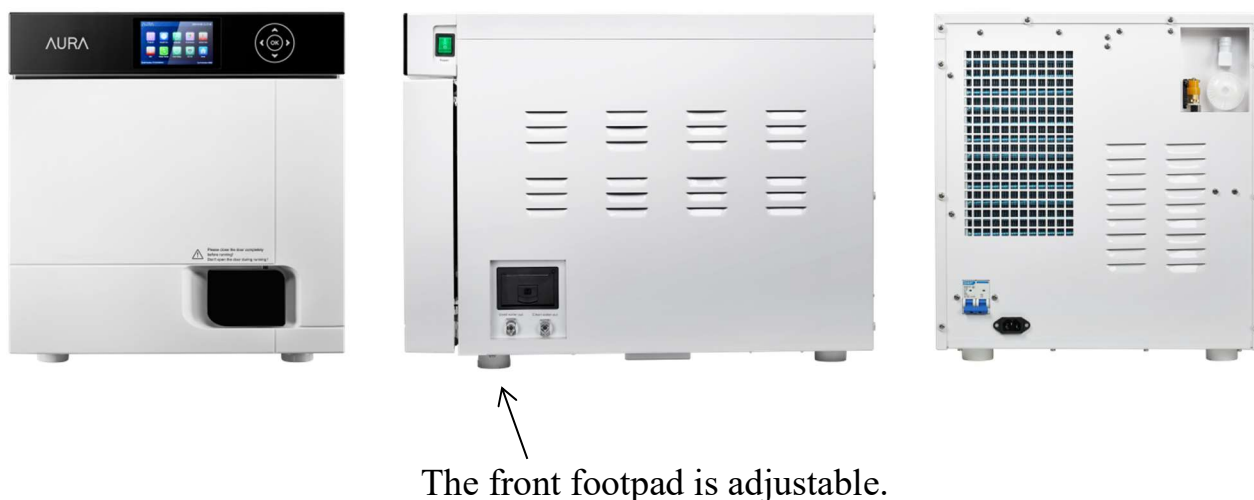


Fig 3-1



3.2 Installation

The sterilizer should be placed stably on a flat surface, and the front must be positioned higher than the rear (the front can be raised by adjusting the two front foot pads);

Do not place anything on the sterilizer to avoid potential danger;

Do not place containers containing flammable, explosive, or corrosive liquids around the sterilizer to avoid potential danger caused by heat dissipation of the sterilizer.

⚠ Caution:

If the front of the machine is low and the rear is high, it will affect the drainage and final drying. Please pay attention to properly raise the front foot of the machine.

3.3 Preparation

We have installed a drain filter in the chamber. You should clean the drain filter after using the steam sterilizer for an extended period of time. The below instruction shows you how to clean it.



Fig 3-2



Fig 3-3

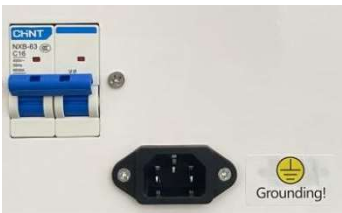


Fig 3-4

Before turn on the power, please make sure using the mains cable that come with the sterilizer. Ensure the socket that the mains cable is connected to is properly grounded.

1. Turn on the power and the self-testing result will be shown (Fig3-5). If the pressure value is more than 10Kpa, you should do the pressure correction. In the maintenance menu enter the password (777777) for the pressure correction

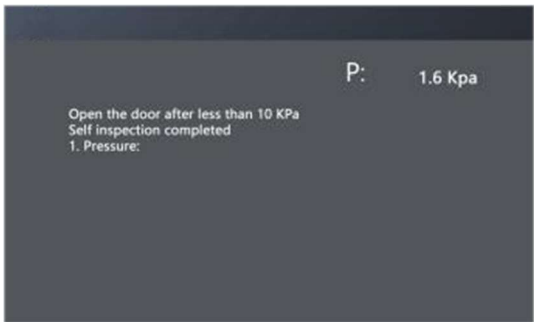


Fig 3-5

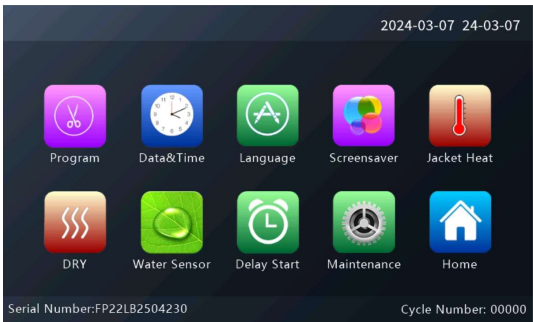


Fig 3-6

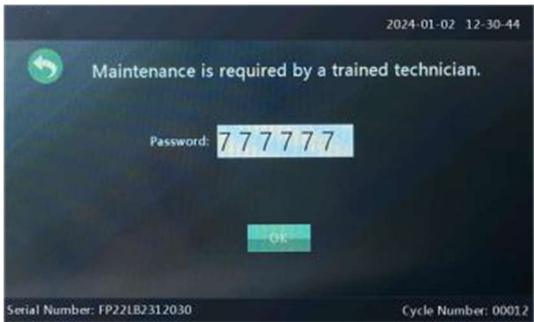
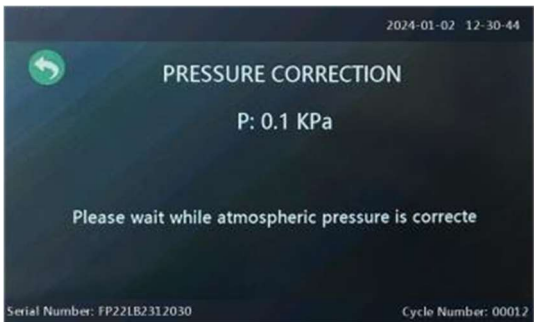


Fig 3-7



Fig 3-8

2. Enter the pressure correction, the Fig 3-8 will be displayed. After the auto-calibration, you can input the local sea level and press the confirm button to start the operation of the sterilizer.



Caution:

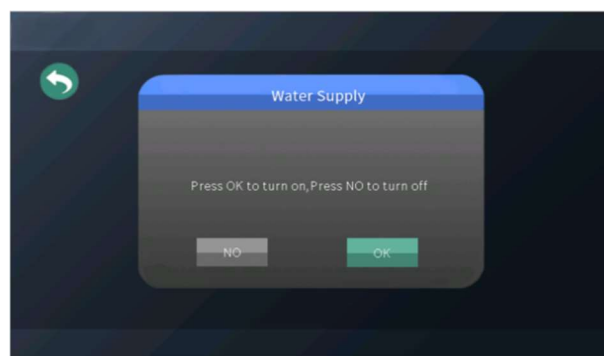
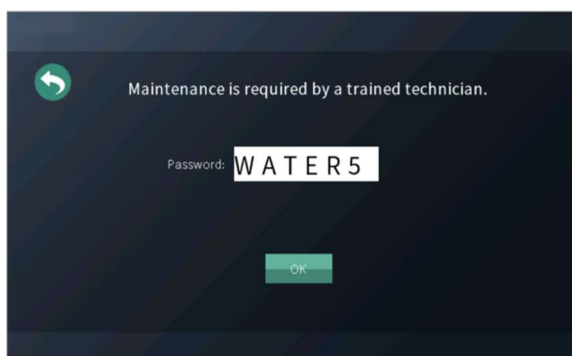
The power supply must be able to afford 1800VA and be grounded correctly.

3.4 Installation of external water supply equipment

1. Please make sure that any external water purification equipment can provide distilled water or purified water under pressure.
2. Please connect the water pipe of the water purification equipment to the reserved water inlet interface on the back of the sterilizer (as shown below)



3. Enter the password "WATER5" in the maintenance menu and click "OK" to confirm as shown below and the automatic water inlet mode will be turned on.



4. If you need to turn off the automatic water inlet, please enter the password "WATER5" on the setting page and click "NO" to cancel the automatic water inlet mode as shown above.

4. Control Panel

4.1 Display

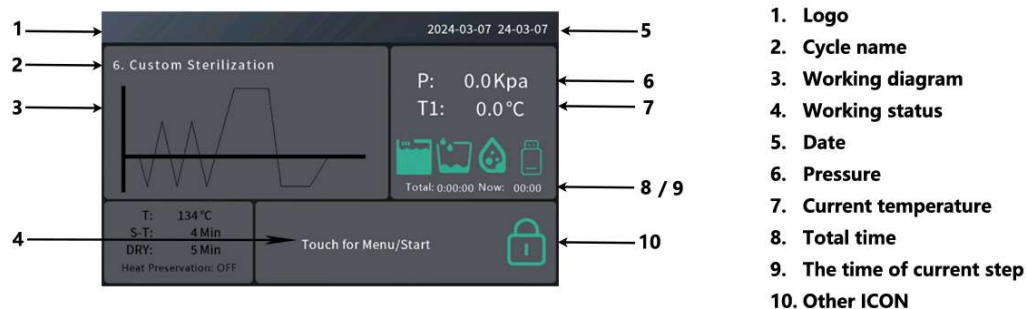
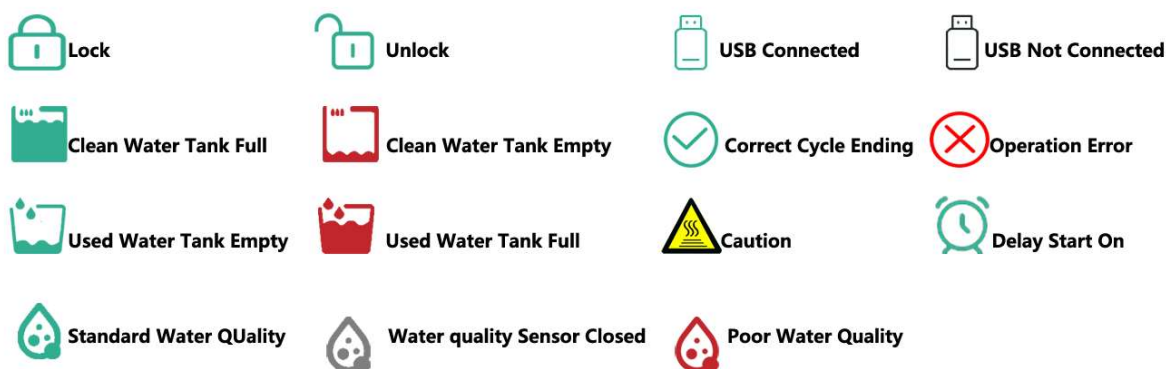


Fig 4-1



4.2 Buttons



1.

Left / Back / Menu / Select button

When you press the left button, it will enter into the main menu. You can press the select button to choose the program. You can press this left button to go back into last menu interface.

2.



Up button

When the Menu of programs is displayed, the select button operates as an 'Up' button.

3.

Down button

When the Menu of programs is displayed, the select button operates as an 'Down' button.

4.
Right button 
Press the right button to confirm the sterilization program you choose or set up. If you have to stop a running cycle immediately, you should hold this button for 5 seconds. When you see 'cancel', please press Confirm / OK button again and the cycle will be canceled.
5.
Confirm / OK button 
Press the OK button to start the program selected.
6.
The color touch screen can be utilized to operate the user interface.

5. Operation

Please connect the power supply correctly first then turn on the power switch on the right side of the steam sterilizer. When the switch is illuminated, it means the power for the machine is connected. The display will be initially blank and the system will be in Self-test. The self-test will take 10 Seconds, and then the steam sterilizer will be in standby mode.

5.1 Filling water

If the water level is lower than the lowest level the system will remind you to fill the water with an alarm sound. Then you can open the tank lid at the top of the sterilizer (right hand tank) to fill with demineralized water. The minimum water level is set to 750ml when the water tank displays empty. Minimum water level to run a program is 450ml.

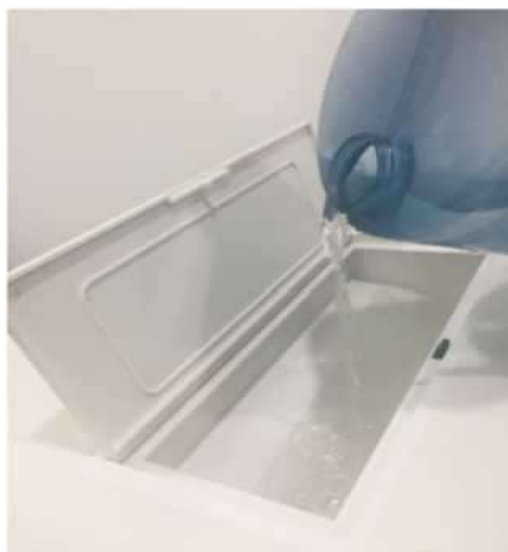


Fig 5-1



Caution:

1. Be sure to use distilled or demineralized water.
2. Do not move the sterilizer when there is clean water in the tank.
3. Always drain the used water tank after daily operation or as requested on the home screen.

5.2 Menu

Touch the screen and press the MENU icon to enter the main menu, or you can press the left button to enter. In the main menu, there are 10 different function icons : Program, Date & Time, Language, Screensaver, Jacket Heat, Dry, Water Sensor, Delay Start, Maintenance and Home.



Fig 5-2



Fig 5-3

5.2.1 Program

Press the program icon and there is 8 different sterilization cycles inside as follows.

1. 134°C Universal Class B
2. 134°C Fast Class B
3. 134°C Strengthen Class B
4. 121°C Universal Class B
5. 121°C Fast Class B
6. Custom
7. BD & Heliex
8. Leak & Vacuum Test



Fig 5-3



Fig 5-4

Press the icon for the desired cycle and the detail will be shown on the screen bottom as Fig 5-5, you can confirm the cycle using the ✓ icon on the bottom right hand corner of the screen.



Fig 5-5

To configure the custom cycle, please select it and press “Press here to configure”. The user can set the sterilization temperature (121°C or 134°C), the Pre-vacuum times (1 or 3 times), the sterilization time (4 ~ 60 min, at least 10 mins is required for 121°C) and the Drying time (1~60 mins).



Fig 5-6



Fig 5-7

5.2.2 Date & Time

The user should set the local time in date & time by pressing on the icon as Fig 5-8 and changing the date & time in the menu as Fig 5-9.



Fig 5-8



Fig 5-9

5.2.3 Language

In the Language, there is 5 languages available: English, Chinese, Turkish, Spanish & Portuguese. The user should set the appropriate language by pressing on the icon as Fig 5-10 and changing language in the menu as Fig 5-11.



Fig 5-10



Fig 5-11

5.2.4 Screensaver

The user can choose the screensaver to be on after a certain time : 30 seconds, 60 seconds, 90 seconds or never. The user can change the screensaver by pressing on the icon as Fig 5-12 and changing the option as Fig 5-13.



Fig 5-12

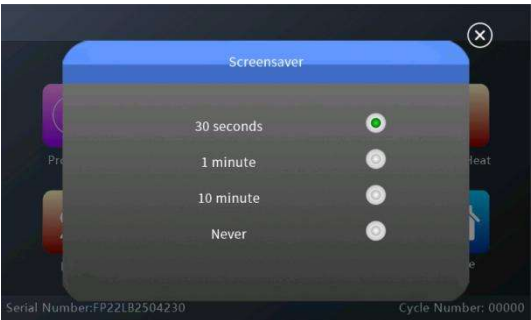


Fig 5-13

5.2.5 Jacket Heat

The user can choose to keep the chamber temperature maintained at 60°C after each cycle is finished. The user can change the jacket heater options by pressing on the icon as Fig 5-14 and selecting the option as Fig 5-15. There are five different options as listed below.

- Keep warm after cycle
- Heat Holding 30 minutes
- Heat Holding 60 minutes
- Heat Holding 90 minutes
- Heat Holding 120 minutes
- No Heat Holding



Fig 5-14



Fig 5-15

5.2.6 DRY

The user can choose extra drying time in the DRY menu with a password (please contact your distributor or maintenance provider) There are 3 different choices as below. To change press on the icon as Fig 5-16 and select the option as Fig 5-17.

Normal

X Dry 5 min

X Dry 10 min.

NOTE - It will add extra drying time to all the cycles in the program menu.



Fig 5-16

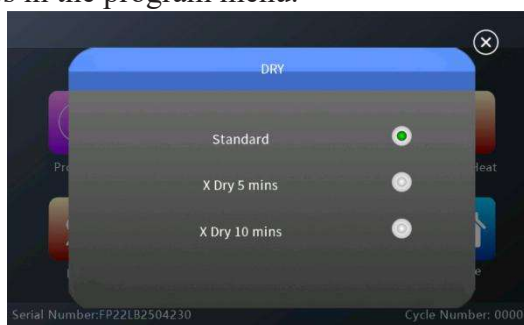


Fig 5-17

5.2.7 Water Sensor

The user should keep the water sensor switched on at all times to ensure correct quality water is going into the sterilizer.



Fig 5-18

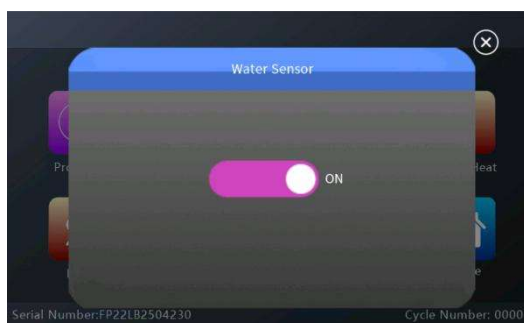


Fig 5-19

5.2.8 Delay Start

The user can turn on the delayed start function to run the machine automatically at a set date & time. When the function is on, there will be shown as Fig 5-22. To turn on the delayed start press on the icon as Fig 5-20 and select the desired date & time as per Fig 5-21.



Fig 5-20



Fig 5-21



Fig 5-22

5.2.9 Maintenance

The user should only access the maintenance menu as Fig 5-23 under distributor or engineer guidance. Please contact your local distributor or engineer when in need or for any questions.



Fig 5-23

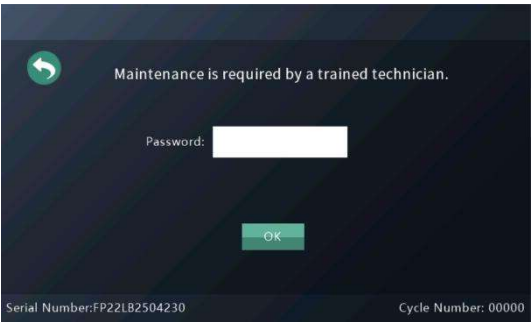


Fig 5-24

5.2.9 Home

The user can press the home icon as per Fig 5-25 to back to the home page as Fig 5-26



Fig 5-25

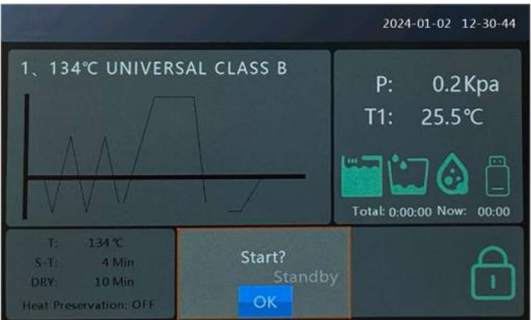


Fig 5-26

5.3

Turn on the power, the system will enter into self-test mode automatically, and the test result will be shown as Fig 5-27.

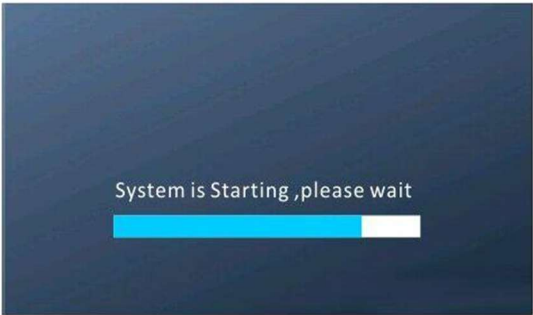



Fig 5-27



Fig 5-28

Press the Left button , you will see the display as Fig 5-29.

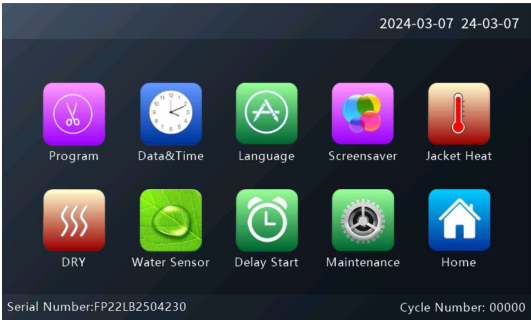





Fig 5-29

Then press the confirm / ok button  and different cycles will be shown as Fig 5-30. Press the up or down button to select the cycle, and the confirm button to into the cycle as right Fig 5-30 shows. Pressing the right button  for 3 seconds, you will see the indication ‘Start ?’ as per Fig 5-32. Then you can press confirm button  to start the cycle.

Note – The sterilizer is also equipped with a touch screen so you are able to touch the desired icons to operate and select the correct cycle. The home screen can be pressed anywhere to expand the menu bar and allow viewing of the cycle history, to enter the main menu and starting a cycle.



Fig 5-30



Fig 5-31

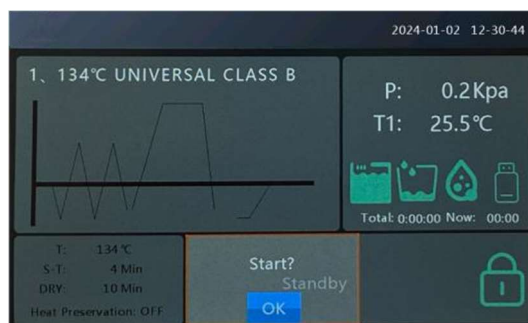


Fig 5-32

⚠Caution:

When running a cycle the instruments to be sterilized should be placed in the trays without touching each other, allowing room for steam to pass through. Instruments should always use the tray rack to put the tray with the instruments inside the chamber to avoid scalding or chamber damage.

5.4 End of sterilization

At the end of the sterilization, the display will show 'Open the door' and signal the end with alarm sound. Then you can open the door and unload the instruments from chamber using the tray handle.

If you are not using the steam sterilizer for a long while, please remember to turn the main power switch off or unplug the power cord.

⚠Caution:

Do not open the door till the pressure is less than 9 kPa.

The instrument rack should be put inside the chamber as the following Fig 5-41.

To mount 3 trays into the rack see Fig 5-33 & Fig 5-34.



Fig 5-33

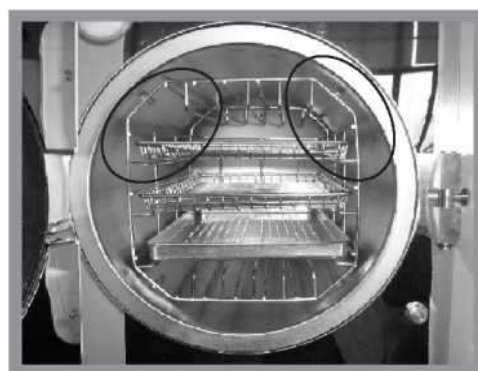


Fig 5-34

To mount 5 trays into the rack rotate the instrument rack clockwise by 90°. See Fig 5-35, Fig 5-36.

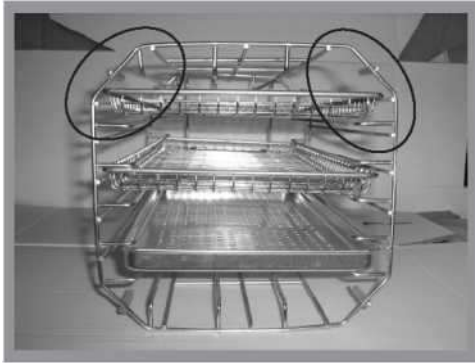


Fig 5-35



Fig 5-36

Note - The circle stamped angle is up top.

6. Door Adjustment

Under normal circumstances, the door does not need to be adjusted separately. If you find that the door is leaking from around the seal or causing a sterilizer cycle error, you must contact your distributor or maintenance provider.

Caution:

The door is not to be adjusted or modified by the user. Do not touch the door plate or seal when hot to avoid burns.

7. Printer and USB function

7.1 Printer

Steam sterilizer has a built-in printer see Fig 6-1. The printed results are shown as Fig 6-2 and generated automatically at the end of each cycle.



Fig 6-1

```
SN:FM08LB1901001
COUNTER: 00009
ST. Type: B
UNIVERSAL CLASS B
STRE.TEMP: 134 ° C
STRE.PRES: 204 kPa
ST. TIME: 4 MIN
DRY TIME: 10 MIN
START DATE: 2022-11-24
START TIME: 15:04:22
STAGE PRESS TEMP TIME
      KPa ° C M:S
START 0 20.8 00:00
VAC.1 - 82 30.2 05:59
PRE.1 49 107.0 09:46
VAC.2 - 82 68.9 11:58
PRE.2 49 110.0 13:25
VAC.3 - 82 80.6 15:25
HEAT. 209 135.0 19:33
ST.BE 209 135.0 19:33
ST.NE 208 135.3 23:35
DRYBE 9 117.0 24:25
DRYEN - 81 96.7 34:25
END 0 102.8 35:00
==PROGAM COMPLETED==
END TIME: 15:39:24
PRES.MAX: 213 kPa
PRES.MIN: 197 kPa
TEMP.MAX: 135.9 ° C
TEMP.MIN: 135.0 ° C
OPERATOR:
```

Fig 6-2

7.2 USB function

7.2.1 Main functions:

- Storage of sterilization cycle data
- Built-in FLASH memory
- USB Disk Download

7.2.2 USB module operating instructions:

The internal cycle recording and printer are set as operational when the sterilizer is manufactured. Please insert the USB disk into the side of the sterilizer control panel before use.

To download cycle data electronically please ensure the USB disk is inserted into the USB port on the side of the control panel (The gray USB icon on the screen will turn green).

Press the touch screen and open the history menu, you can then copy the internally stored sterilization cycle results to the USB

Caution:

Our steam sterilizer only can be compatible with the printer provided by us. And the printer function is optional.

8. Maintenance and Service

8.1 How to clean the water tank

8.1.1 Please clean the clean water tank and the waste water tank monthly.

The process is as follows.

- 1) Empty the clean water tank & waste water tank of all water, please refer to Fig 8-1 for draining the tank water.
- 2) Lift both of the tank lids from the top of the sterilizer (clean water on right & waste water on left). The lid will be open as Fig 8-2
- 3) You can now start to clean the tank. Use a clean cloth and dip in demineralized water or use a suitable disinfectant wipe. Please ensure the water quality sensor is inspected and any debris wiped clean also.

Note – Suitable wipes for this purpose are Clinell Universal Wipes (ARTG 299351) or Whiteley V-Wipes (ARTG 354053)

Once clean wipe it out with distilled or demineralized water and dry the tank with a dry cloth or strong paper towel.

- 4) After cleaning you should take out the filter net from the clean water tank for cleaning as Fig 8-3. Simply grab the filter and pull it upwards from the bottom of the tank to remove and clean free of any visible debris inside and out with a soft brush or by hand. Once clean push back into place in the clean water tank. Please be careful not to damage or dent the filter as it may require replacement.
- 5) After cleaning the tanks inspect for completion.
- 6) After inspection you can add distilled water to the clean water tank to begin operation.
- 7) Please also pay attention to the water quality after filling the machine indicated by the water droplet on the main screen.



Fig 8-1



Fig 8-2



Fig 8-3

8.2 Drainage method

How to drain the clean and waste water tanks:

Insert the supplied drain tube with connector into the drain port as shown in Figure 8-1 to drain.

Note – As soon as hose is connected any water in the tank will immediately begin to flow out of the hose. Please ensure the hose is directed to a sink or appropriate reservoir to avoid any water spillage.

Caution:

All the above maintenance must be conducted when the sterilizer is disconnected from the power supply and cooled sufficiently.

Use only high quality distilled or demineralized water for cleaning. Any items placed in the tray, the trays and rack should also be checked and cleaned as required.

Always keep the sterilizer clean.

8.3 Drainage filter cleaning

After a long period of usage, some small debris may deposit on the drain filter, which can affect vacuum and drying. In order to prolong the life of the drain filter, clean the water tank filter monthly with a soft brush or by hand.

Screw out the bolt by hand before you remove off the drain filter mesh. After cleaning the filter mesh with a soft brush or by hand, then place the filter mesh back on the bolt and gently screw it back into the chamber base

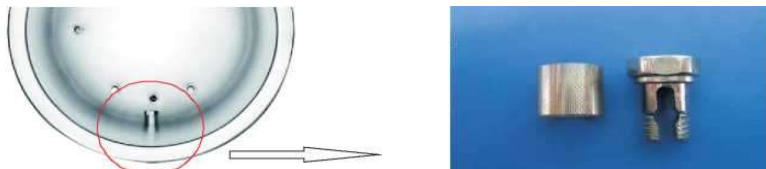


Fig 8-4

8.4 Cleaning the door plate & door gasket

After a period of use, the door gasket may accumulate some scale or debris, which can cause leakage. You should clean the door gasket and plate regularly. You can use a soft cloth soaked with distilled water to wipe the rubber gasket and door plate as Fig 8-6 & Fig 8-7. If it is still leaking, you may need to take the rubber seal out for cleaning and if the door gasket is degraded it may require replacement.



Fig 8-6

Fig 8-7

8.5 Replacing the door gasket

You will need a flat head screwdriver without a sharp tip. The install steps are below according to Fig 8-8.



Fig 8-8

Steps for removing the door gasket.

1) Hold the edge of the door gasket with one hand and insert the screw driver beneath the seal with your other hand and then gently pull out the seal slowly. Be cautious not to damage the gasket or door plate when using the screw driver.

2) Once a section of the gasket is out, you may pull the whole gasket out slowly with both of your hands. Once removed entirely you can now clean the gasket groove and the gasket entirely. If the gasket is degraded or damaged, you must replace it with a new one.

3) After the groove and the gasket are cleaned, you may reinstall the gasket back in place.

Caution: The door gasket should be mounted evenly inside the groove first in four positioning points to keep it in place. You may then use your hands to press the gasket in place evenly and gently in place.

4) **Attention:** When inserting the gasket, the inner edge might slip out of the gasket groove. You may gently use a screw driver to press the edge down in the groove if required. Be cautious not to damage the gasket or door plate when using the screw driver.

Note – The door gasket must be replaced every 1000 cycles.

Caution:

Turn off the power and let the sterilizer cool down before you replace the door gasket to avoid any burns or injuries.

8.6 Automatic Cleaning Procedure

When the steam sterilizer has processed 300 cycles, the system will remind you to do the cleaning cycle automatically as Fig 8-9



Fig 8-9

Please make sure the clean water tank is full and the door is closed fully before running the cleaning procedure. The cleaning cycle can be completed in 15-20 minutes.

Note - You should turn off the power and restart the unit after the cleaning cycle is completed.

8.7 Maintenance Reminders

1) Air Filter - Replacement Reminder

When more than 400 sterilization cycles have completed a prompt will appear on the screen after the machine is turned on to ask for the replacement of the air filter as Fig 8-10. Please inspect the air filter at the rear of the sterilizer and if clean click "NO" to not replace it for the time being however the prompt will continue the next time the machine is turned on. Click "OK" to replace or continue for another 400 cycles for the next reminder.

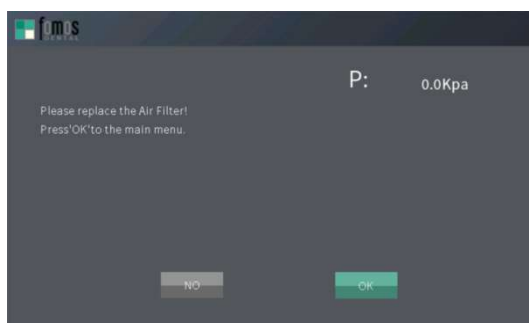


Fig 8-10

2) Door Gasket - Replacement Reminder

When more than 1000 cycles have been completed, a prompt will appear on the screen after the machine is turned on to ask for the replacement of the door gasket as Fig 8-11. Click "NO" to not replace it for the time being however the prompt will continue the next time the machine is turned on. Please replace the door gasket and click "OK" continue for another 1000 cycles for the next reminder.

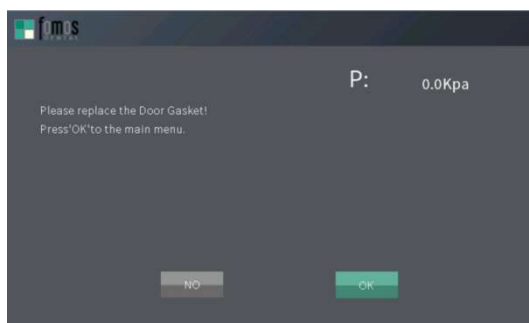


Fig 8-11

3) Professional Maintenance Reminder

When more than 2000 cycles have been completed a prompt will appear on the screen after the machine is turned on to ask for professional maintenance as Fig 8-12. Click "OK" to enter the home screen. Please contact the local distributor or approved maintenance provider as soon as possible to arrange on site maintenance. After the professional maintenance is completed the maintenance provider will remove the reminder and there will be no prompt for the next time the machine is turned on.

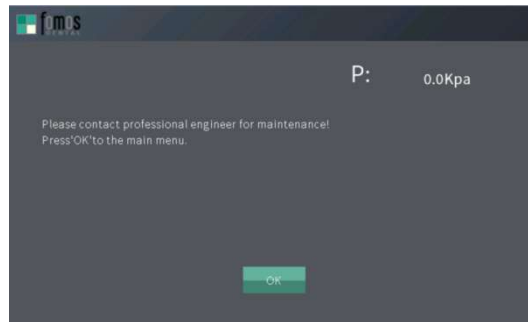


Fig 8-12

9. Transportation and Storage

9.1 Preparation for transportation and storage

Power the machine off, unplug the power cord and cool down the chamber.

9.2 The steam sterilizer should be transported and stored in the following conditions:

Temperature: $-40 \sim +55^{\circ}\text{C}$

Humidity: $< 85\%$

Atmospheric pressure: $500\text{Hpa} \sim 1060\text{Hpa}$

9.3 Package

The package used in transportation is for protecting the sterilizer and convenient delivery. If the genuine package is not available the packaging requirements are below.

- 1) Sterilizer can not exceed 3/4 volume of the package.
- 2) Sterilizer should be fixed inside the package with soft foam.
- 3) Package should be higher than product by at least 10mm for top foam.

Caution:

Do not drag the sterilizer while moving it. Retain the straps included with the original packaging to easily lift the sterilizer into the package and for removal. Always use two people to move the sterilizer as it is heavy and to prevent damage due to improper handling. If possible retain the genuine package to ensure

safe transport of the sterilizer.

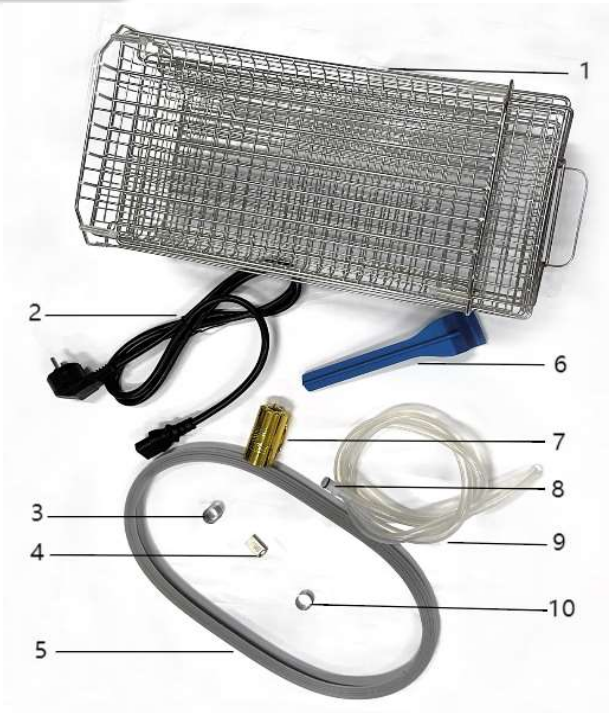
10. Warranty

The manufacturer provides a warranty of two years after the date of product invoice.

Note - The following conditions can void your warranty

- 10.1 - Damage due to improper moving, installing and operating the machine.
- 10.2 - Damage due to dismantling the machine by unauthorized personnel.
- 10.3 - Inappropriate operation on the machine without following the user’s manual.
- 10.5 - Damage caused by power surge, fire, transport or other external sources.

11. Accessories



No.	Description	Qty.	No.	Description	Qty
1	Tray rack and trays	1/3	6	Tray holder	1
2	Power cord	1	7	Printer paper	1
3	Water filter mesh	1	8	Drain connector	2
4	USB disk	1	9	Drain tube	1
5	Door gasket	1	10	Draining filter mesh	1

12. Recycling and Disposal



This steam sterilizer is mainly built from fiber-reinforced polymers, metals and electronic components.

In case of disposal:

- Separate the various components according to the materials they are made of.
- Drop the sterilizer with a company that specializes in the recycling of related products.
- Do not abandon the sterilizer in an unsecured place.
- Always refer to current & applicable laws / rules in the country of use.

The same instructions apply to disposal of all used consumable parts.

13. Appendix

Table 1: Cycles

	134 B	134 S	134 B	121 B	121 S	Customized	BD-Helix	Leak Test
Sterilizing temperature	134	134	134	121	121	121/134	134	—
Sterilizing pressure	2.10	2.10	2.10	1.10	1.10	1.10/2.10	2.10	—
Class	B	S	B	B	S	S / B	B	—
Pre-heating	0-7 min	0-7 min	0-7 min	0-7 min	0-7 min	0-7 min	0-7 min	—
Vacuum times	3 times	1 time	3 times	3 times	1 time	1/3 times	3 times	4min
Sterilizing time	4min	4min	20min	20min	20min	4-60min	3.5min	Keep pressure 10min
Drying time	10min	10min	10min	20min	9min	4-60min	2min	—
Total approx.time	35min	25min	45min	55min	40min	/	20min	18min

Table 2: Error codes

Item	Error code	Description	Solution
1	E01	Steam injection error	Contact your distributor
2	E02	Pressure out of set range during sterilization	Contact your distributor
3	E03	Door loose in cycle	Contact your distributor
4	E04	Pressure leakage/ Overload	Contact your distributor
5	E05	V1/ V2 solenoid valve blocked	Contact your distributor
6	E06	Failed to vacuum	Contact your distributor
7	E09	Steam generator damaged	Contact your distributor
8	E10	Heating ring preheat speed slow	Contact your distributor
9	E11	Temperature out of set range during sterilization	Contact your distributor
10	E12	Temperature do not reach set range during sterilization	Contact your distributor
11	E27	Excessive leakage	Contact your distributor
12	E31	Inner chamber temperature out of set range	Contact your distributor

13	E32	Steam generator temperature out of set range	Contact your distributor
14	E33	Chamber temperature out of set range	Contact your distributor
15	E41	Inner chamber temperature sensor damaged	Contact your distributor
16	E42	Steam generator temperature sensor damaged	Contact your distributor
17	E43	Chamber temperature sensor damaged	Contact your distributor
18	E51	Poor contact inner chamber temperature sensor	Contact your distributor
19	E52	Poor contact steam generator temperature sensor	Contact your distributor
20	E53	Poor contact chamber temperature sensor	Contact your distributor

Table 3: Working diagrams

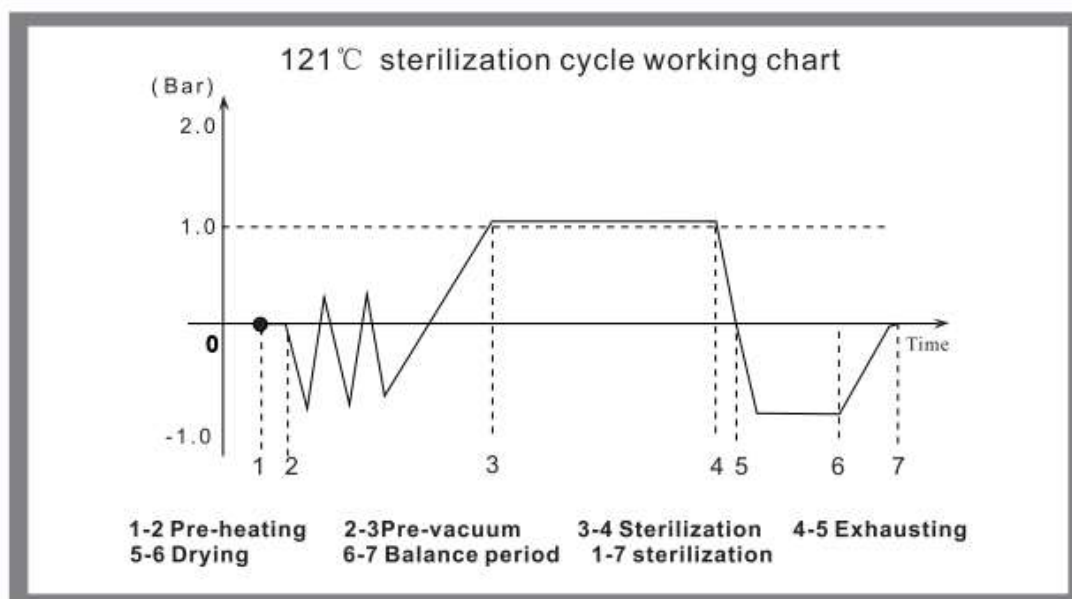
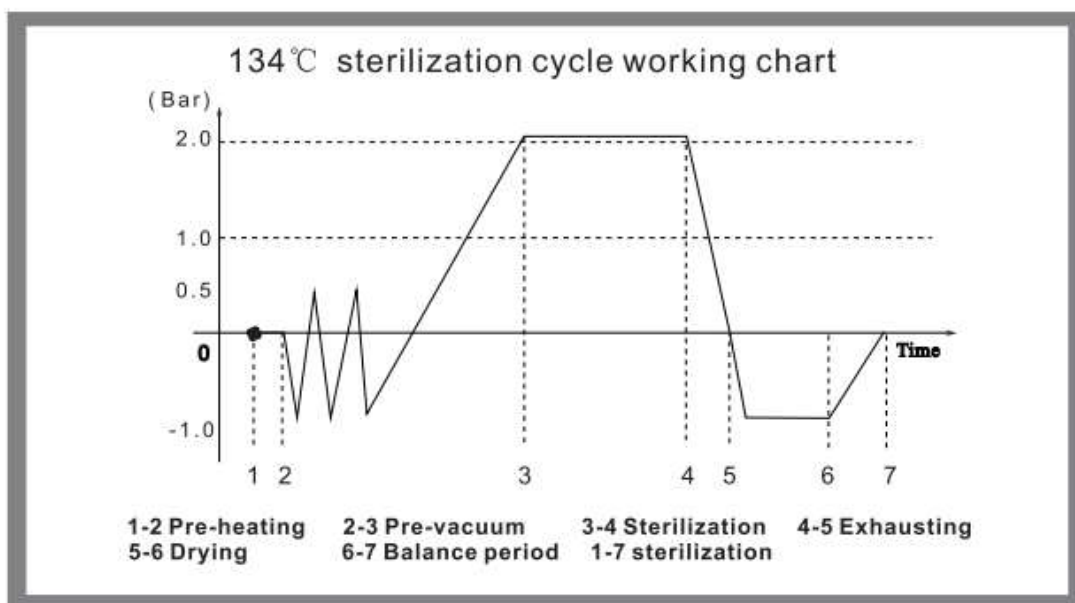


Table 4: Schematics

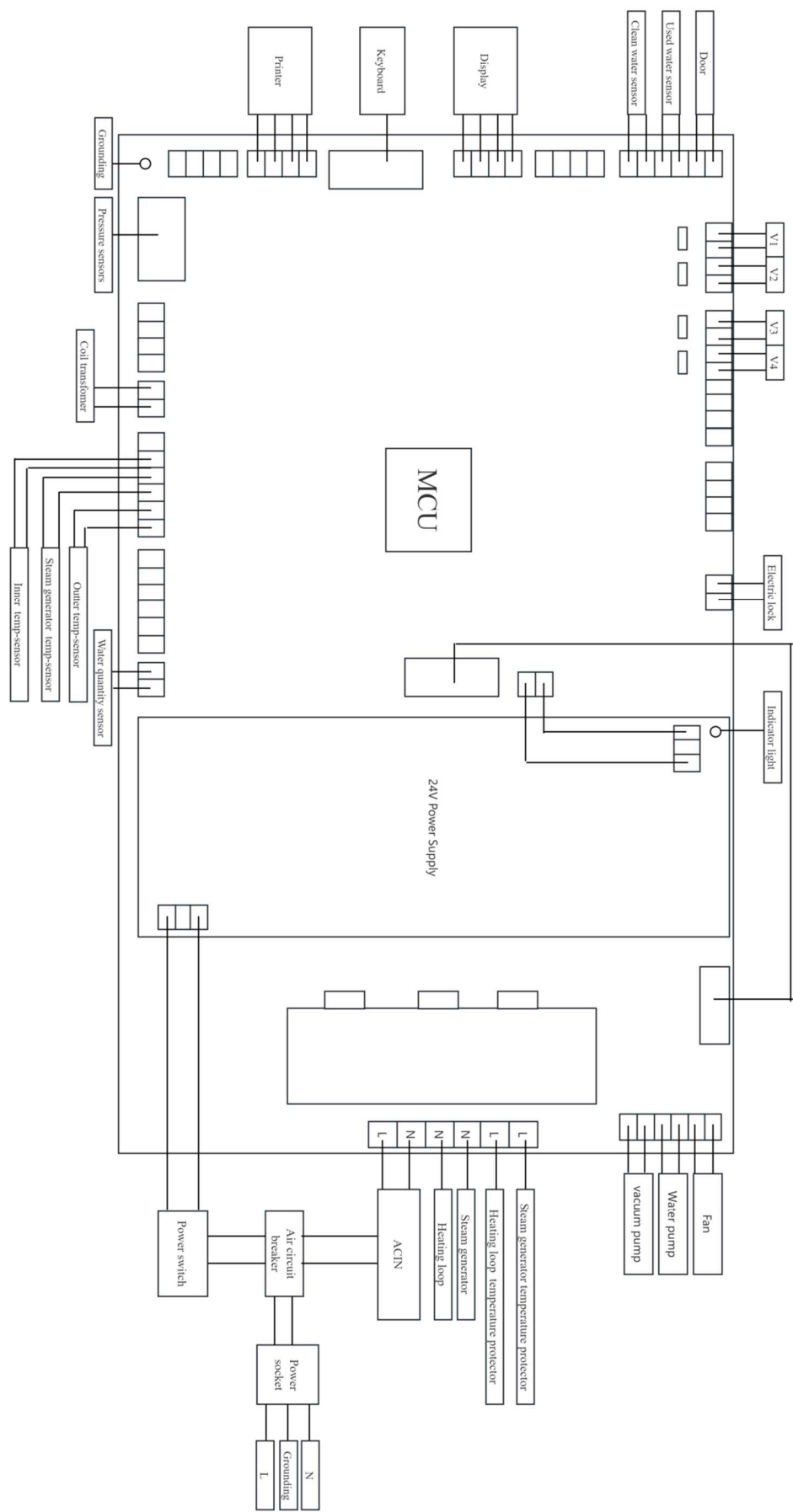
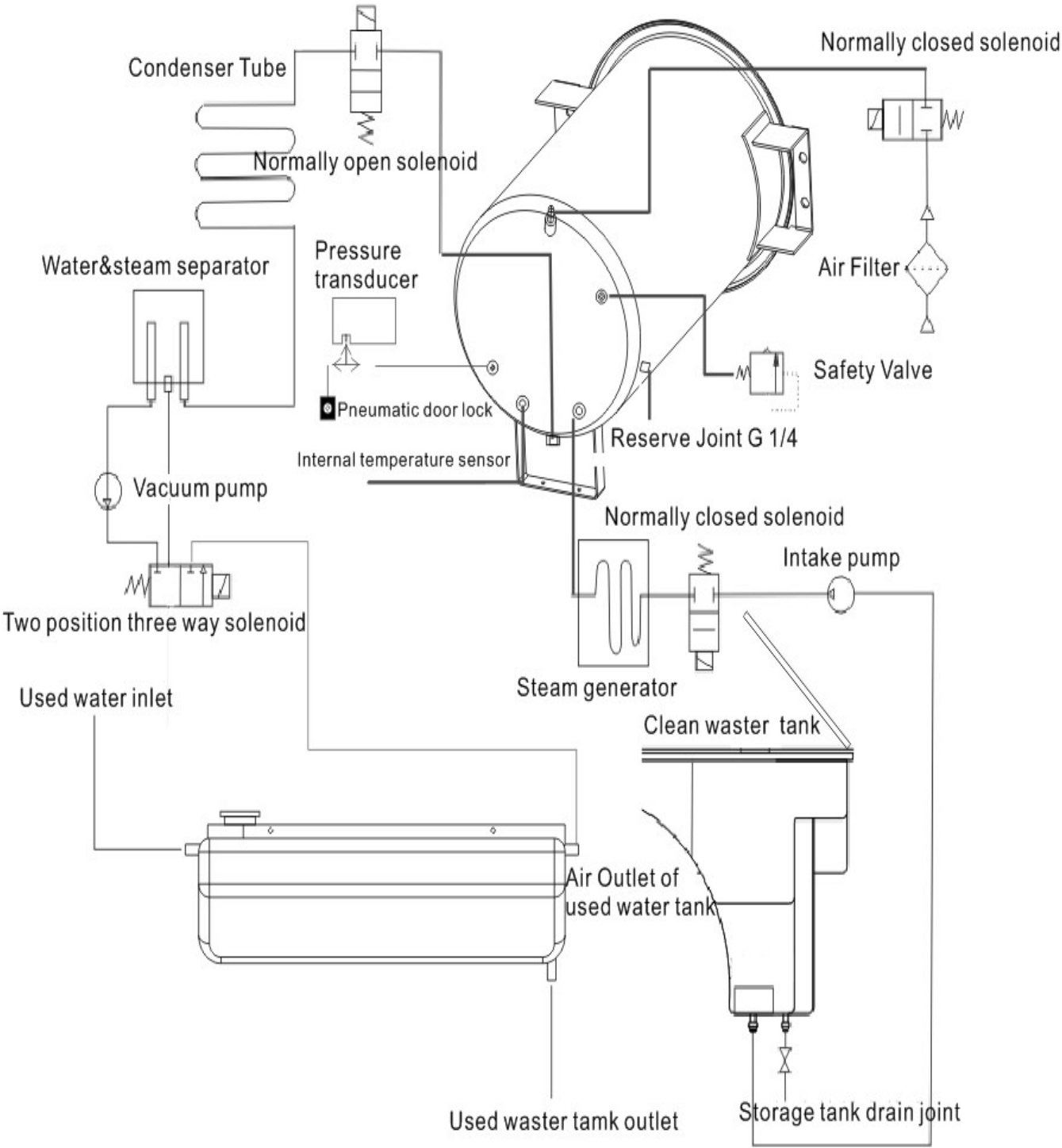


Table 5: Plumbing Diagram



14. Important Information

1. The autoclave must be installed on a leveled bench top.
2. If the altitude at operating location exceeds 500 meters, please run the automatic altitude calibration program before use, or contact your supplier for altitude calibration guidance.
3. Distilled or demineralized water must be used to prolong the life of the machine.
4. The 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. Chamber door handle must be pushed to its locking position.
7. Never try to open the chamber door before pressure displays '0.0'.
8. To avoid burning injuries, power off the machine and let it cool down before any user maintenance
9. No dragging when moving the machine. Two people must always move the machine.
10. The power connection must be grounded properly and provide enough power (1800VA).
11. This device is not MRI safe and not to be used within an MRI environment.
12. If any abnormal situation or sudden accident, please switch off the power immediately and stay away from the equipment.
13. This machine is not recommended for use above 3000m altitude. Please contact us if you use this machine in this situation.

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