Dentalzone

Class B steam sterilizer

Operation instruction



Autoclave 1 Year warranty

User Registration

You will find a nameplate at the back of machine which including the unit model, Serial number and manufacture date,Please double check the information and fill in the form with them,you will need these information especially the Serial number when you contact with your local distributor for any service.

Model :_____ **Serial number:**_____

MFG Date:_____

*Before operating the sterilizer, please read carefully all safety cautions and instructions of operation. This operator's manual will help you understand all functions of Steam sterilizer as soon 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.

Dentalzone

Operation manual

22L-B steam sterilizer

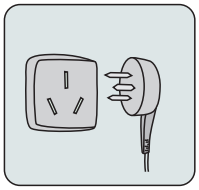
Operation instruction

Dear End User :

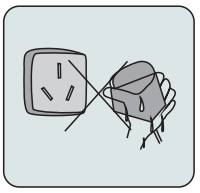
Welcome to use the high quality sterilizer manufactured by us. Please fill in the 《User Registration》 form before using the machine. With your record in our files, we will be able to trace the file of the machine you bought and provide you with fast and effective services.

Important Information on Safety

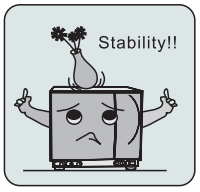
Please connect the unit with the correct power supply according the voltage of nameplate.Don’t use electrical outlets other than the correct voltage; otherwise it might cause fire or electric shock.



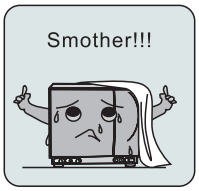
Don't wet your hands before plugging or unplugging the power cord.



Don't place your autoclave on an unstable table top, moving desk, tilted or shaking surface.



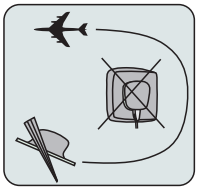
Don't cover or block the door, ventilation or radiation openings on the autoclave.



Don't put heavy stuff or liquid containers that might spill on the top of the machine.



Please unplug the power cord when the machine isn't used for a long while or when you travel, etc.



Operation manual

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1. Description & Usage

We 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.

22L-B Pressurized Steam Autoclave

The 22L-LCD-B 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℃ autoclavable stuffs.

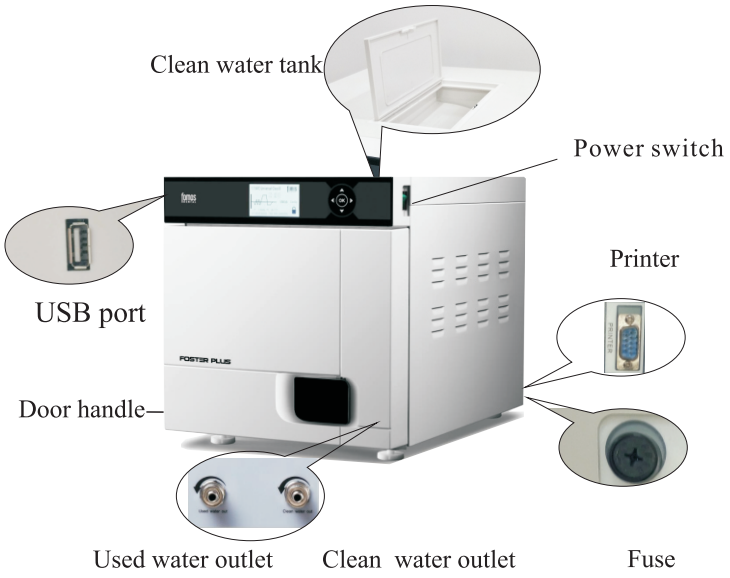


Fig 1-1

2.Specifications

Chamber inner dimensions: (Diameter x Depth) ----------22L 249mmx450mm

Rated voltage: ----------127V/220V AC
Rated frequency----------50/60HZ
Rated power----------1800VA
Sterilizing Temperature/Pressure --121℃/(1.0-1.3) Bar (Under standard atmospheric pressure)
----------134℃/(2.0-2.4) Bar(Under standard Atmospheric pressure)

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

Power Fuse ----------T10A
Water tank capacity.....3.5L
Environment temperature----------+5℃~+40℃
Relative Humidity Range----------30%~ 75%

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


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=1000Hpa=1.0 Bar. Atmospheric pressure decreases by higher altitude.
For instance: at 3000 meters or lower, 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 drafty place allowing minimum 10 cm space at all sides and 20 cm at the top. The radiation openings at the side of the machine should not be blocked. The Autoclave should be placed on a leveled counter top.(Fig 3-1)



Fig 3-1



Fig 3-2

Caution:

If the front of machine is lower than the back， the final drying will be not so good. You need to level up the front to correct this defect.

Prepare the machine before use

We have installed the draining filter in the chamber.You should clean the draining filter when use the autoclave for a long time.The instruction shows you how to clean it. Please refer to P11.

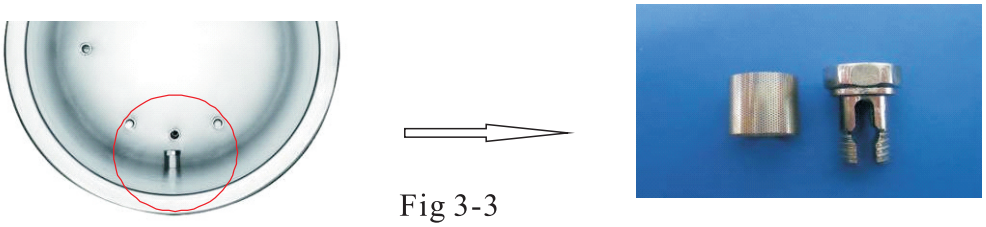


Fig 3-3

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.

Ok, you can turn on the autocalve now.



Fig 3-4

When you switch on the autoclave first time it may have a reminder of Altitude setting as Fig 3-5.

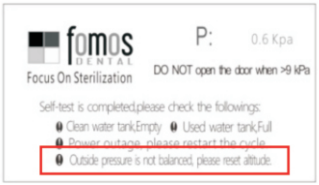


Fig 3-5

Now you need to find the menu of Setup and input the Password(ABCDEG) to enter into User SETUP as Fig 3-6.

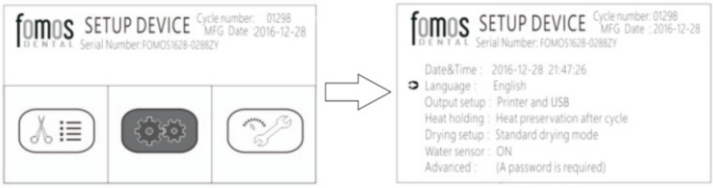


Fig 3-6

Then you will see the menu of SET ALTITUDE as below. Please do the operation to run the automatic-setting. If the automatic-setting is failed please contact with your local distributor or technician to set it manually.



Caution:

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

4. Control Panel of 22L-LCD-B



Fig 4-1

1.LCD display

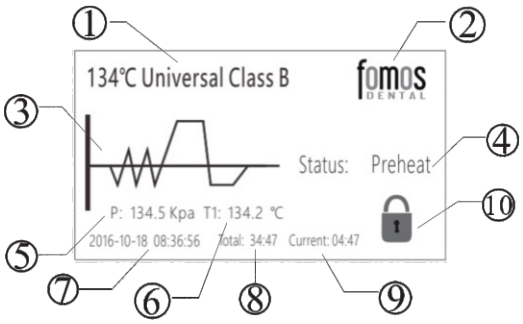


Fig 4-2

① Temperature of the cycle
② Logo
③ Working diagram
④ Program
⑤ Pressure
⑥ Current temperature
⑦ Date
⑧ Total time
⑨ The time of current step

⑩ Door is locked

Used water tank is full

Please use distilled water

Printing

Door is unlocked

Clean water tank is empty

2. Back/Menu button

When you push this button it will enter into the Program option menu directly. Then you can push the select button to choose the cycle program as you need. If you'd like to back in last Interface you also can push this button to go back.

3. Select button(Up)

When the Menu of program is displayed this key operates as an "Up" key.

4. Select button(Down)

When the Menu of program is displayed this key operates as an "Down" key.

5. Confirm button

Confirm button, Press this button to confirm the sterilization program you choose or setup. If you need to stop the running cycle immediately you should keep pushing this button for 5sec, when you see the word "cancel" please push Confirm button again then the cycle cancelling will be done.

6. Start button

Push this button to start program after you choose and confirm the program.

5. Operation of 22L-LCD-B

Please connect power supply well before using the sterilizer, then turn on the power switch at the right side of keyboard on the machine. When the switch is light on it means the machine is with enough power for working. The display will be blank and the system is in Self-test. The self-test will be end after 10Sec.Then the machine will be in standby mode.

5.1Filling water

If the water level is lower than the lowest level the system will remind you filling water with alarming sounds. Then you can open the tank lid at the top of the sterilizer to fill the water.

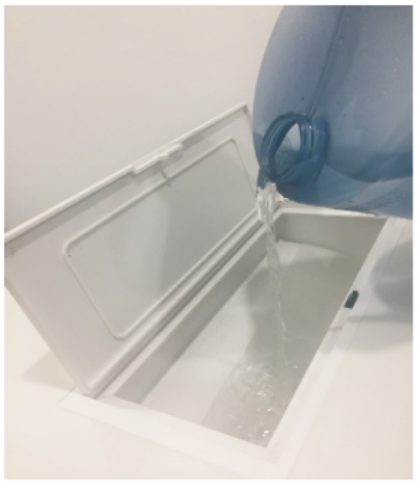


Fig 5-1

Caution:

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

5. 2、Working cycle

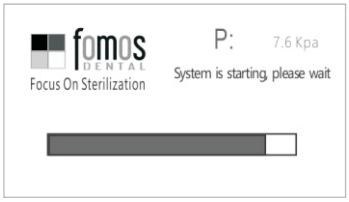


Fig 5-2



Fig 5-3

When you switch on the unit it will enter into self-test mode directly then show you the testing result.

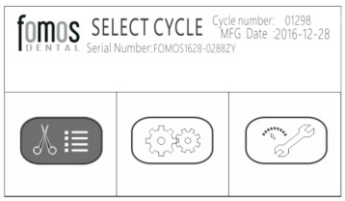


Fig 5-4

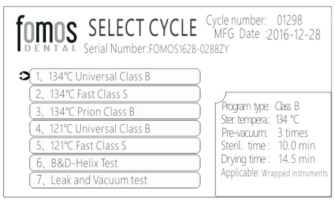


Fig 5-5

When you push the Back/Menu button the interface will show you the Fig5-4. Then you can push Confirm button to enter into the interface of SELECT CYCLE as Fig5-5.When you press the button Up or Down you will see the cycle speficiation at the right part.You can choose the cycle freely which you will need.Then push Confirm/Start button to run it.

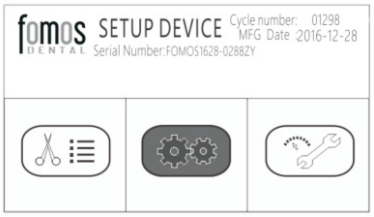


Fig 5-6



Fig 5-7

When you are at the interface of Fig 5-6 you can push the Confirm button to enter into the interface of Setup Device as Fig 5-7. Pushing the button Up or Down to choose the data you're going to set.Then push Confirm button to save the setup.

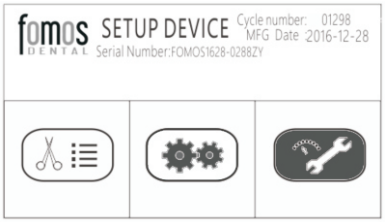


Fig 5-8

The interface of Technical setup as Fig 5-8 is forbidden for the end user.It's only available for the professional technician who authorized by your supplier.

Caution:
The instruments which are ready to be sterilized should be placed in the tray not touching one another allowing space for steam to pass through. It is suggested that the tray holder be used to put the tray with instruments inside the chamber to avoid scald.

5. 3、End of the sterilization

At the end of the sterilization, the display will show "Open the door" to remind you with alarm sound. Then you can open the door and unload the instruments from chamber by tray holder.

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:

Please don't open the door when the pressure is more than 9kPa.

The instrument rack should be put inside the Chamber as the following diagrammatic sketch shows

The first way:（Fig 5-9,Fig 5-10）



Fig 5-9

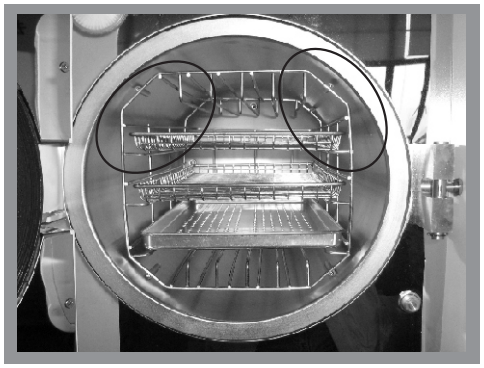


Fig 5-10

The second way:clockwise rotate the instrument rack by 90° ， based on the first way（Fig 5-11,Fig 5-12）

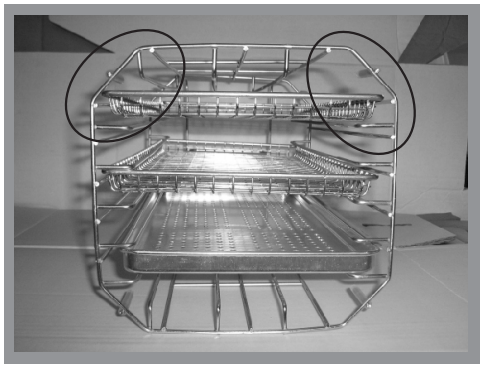


Fig 5-11

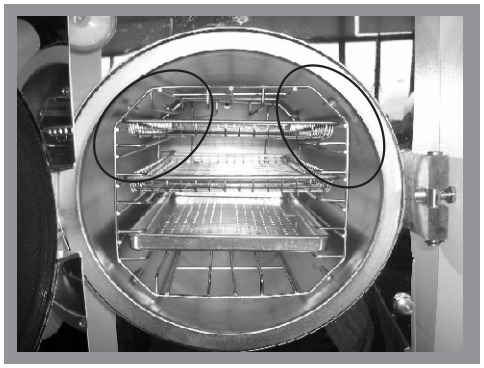


Fig 5-12

Notes: the circle stamped angle is upalong

6.Door Adjustment

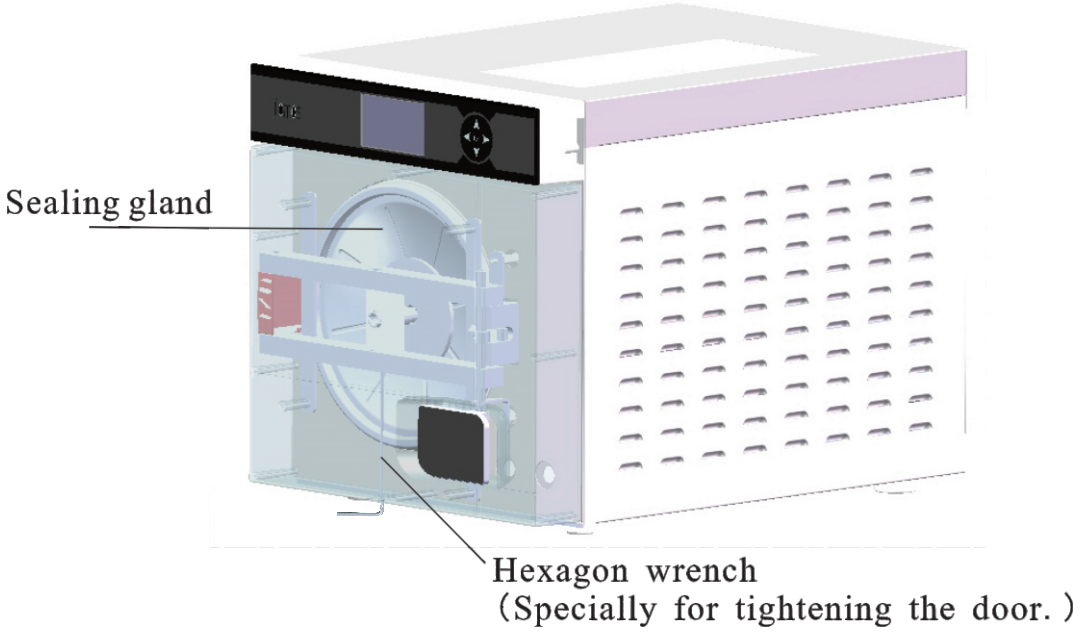
Under normal circumstance the chamber door lock needs no readjustment. Once steam leaking occurs (the seal fails), you may use the hexagon wrench to turn the door seal tightener.

6.1 Open the door first.

6.2 Insert the hexagon wrench in the gap beneath the plastic cover; use the hexagon wrench to lock on the adjusting nut . Turn the nut clockwise as the figure below . Thiswill tighten the Sealing gland.

6.3 Turn the nut until the Sealing gland is tight. If the door knob is too tight, you may also turn the nut counter 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.



7.1Printer and USB function

7.1Printer installation and use

Due to the requirement of customer, the sterilizer can adopt prescriptive printer. Connect the printer to the sterilizer with cables see fig 7-1. Switch on the power, two lights on the printer panel will goes on, means printer has been installed correctly. According to system setup you can setup whether you need print the process or not.



Fig7-1

```
TYPE:
COUNTER:00003
PROGRAM:2. Packed 134℃
STER. TEMP:134℃
STER. PRES:204 kPa
ST. TIME: 04MIN
DRY TIME: 09MIN
START DATE:16-05-19
START TIME:10:10:00
STAGE PRESS TEMP TIME
      kPa    ℃    M:S
START -002  90.0 00:00
VAC. 1 -085  85.8 03:28
PRE. 1 +040 106.9 05:00
VAC. 2 -084  80.2 06:36
PRE. 2 +040 110.0 08:14
VAC. 3 -084  89.1 09:52
HEAT.  +209 134.6 15:28
ST. BE +210 134.7 15:29
ST. EN +211 134.9 19:28
DRYBE -004 114.1 20:22
DRYEN -054  90.4 29:22
END   -009  91.3 29:43
==PROGRAM COMPLETED==
 END TIME: 10:39:49
 PRES. MAX:+212kPa
 PRES. MIN:+207kPa
 TEMP. MAX:135.0℃
 TEMP. MIN:134.5℃
 OPERATOR:
```

Fig 7-2

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 Operation instruction:

1. Enter into the Private setup menu and find the Output device item.
   You will see the output mode and make sure the USB output is on.
2. Insert the USB flash into the USB port before starting the cycle.
   After the sterilization cycle ends, the data of sterilization will be sent to the USB flash directly.
   and you will see the U-disk indicator is flickering.
3. After the download finish, you can insert the USB flash in your computer to print it out or save in your management software..

⚠ Caution

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

8. Maintenance & Service

8.1 How to clean the water tank.



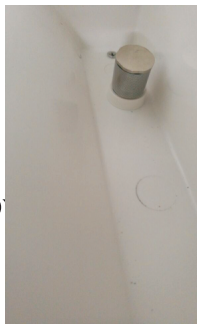
8.1.1 Please clean the sterilizer water tank and waste water tank regularly.The process is following:

1）Empty the tanks water, please refer to item 8.2 draining the water.

2）Click the "PRESS" area on the top tank lid then the switch of tank lid will be open directly as fig8-1 indication。

Fig8-1

3）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.As fig8-2 indication.



4) After cleaning the tank, assemble water filter and close the tank co

Fig8-2

8.2 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- clock wise to drain the water from the machine.(Fig 8-3)



Fig 8-3

Caution: Below each kind of maintenance must be operated after cut off the power and cool down the auto clave. 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.

8.3After a long time usage, maybe some small impurity will deposit on the drain filter, it will affect vacuum and drying. All the impurity is comes from the oil or dirt or dust of the instrument which need sterilization, also maybe comes from the water. In order to prolong the life of the drain filter,clean the water filter monthly with a soft brush.

Screw off the nut before you take off the draining filter. After cleaning the filter, then install it back in chamber with its top nut.

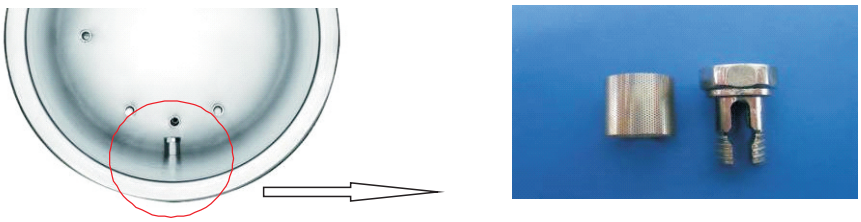


Fig 8-4

8.4 Change fuse (Fig 9-2)



Fig8-5

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.

8.5. Clean the seal plate periodically.
After using some time , the Sealing gland might have some scale build-up that might cause leaking. You should clean the Sealing gland periodically, using a soft cloth soaked with distilled water to wipe the rubber seal and the Sealing gland clean (Fig 8-6 & 8-7). 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 8-6



Fig 8-7

8.6 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 Fig8-8.



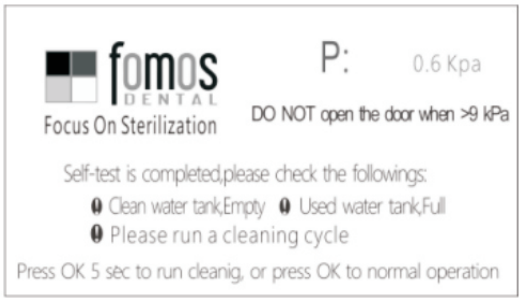
Fig 8-8

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.

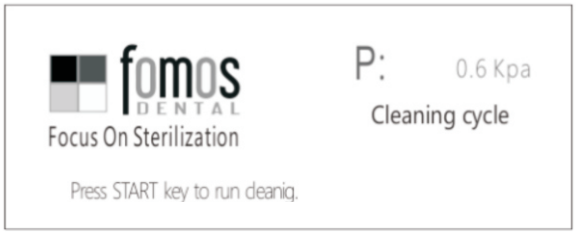


Caution: Switch the machine off and let it cool down before you change the seal and avoid any burning injuries.

8.7. How to run a cleaning cycle ?.
When you switch on the unit after 300 times cycle you will see a display as below:



That means the system is reminding you to clean the steam generator and piping.
Now you can push “OK” button for 5 sec to enter into cleaning cycle as below:



Then push START/OK key to run the cleaning cycle.



The cleaning cycle can be completed in 15-20minutes.
You should switch off and restart the unit after cycle is completed.



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

9. Transportation & 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℃
Humidity: ≤ 85%
Atmospheric pressure: 500Hpa ~ 1060 Hpa

Caution: Don't drag the machine while moving.

10. Warranty

The manufacturer provides a warranty for repair at not change to the customer for one year after the date of Bill of Lading. Following are the disclaimers:

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

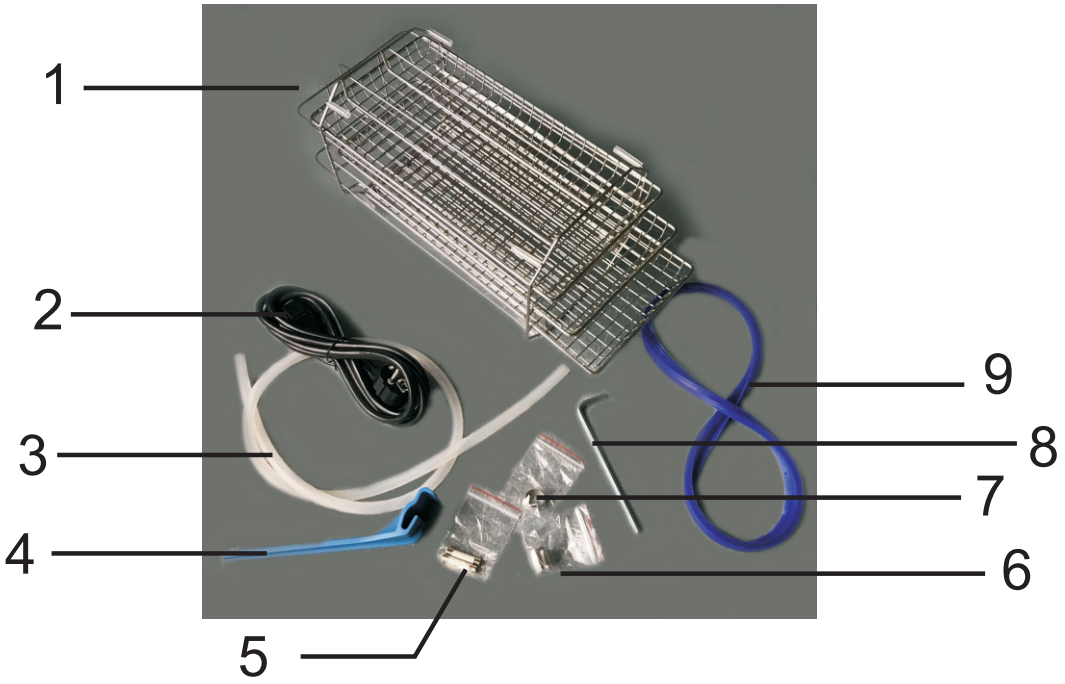
11.2 Damage due to dismantling the machine by unauthorized personal;

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.

11. Accessories



1). Instrument tray rack 1 pc and Instrument tray 3 pcs .

2). Power cord. 1 pc.

3). Water outlet tube 1 pc.

4). Tray holder 1 pc.

5). Power fuse 2 pcs.

6). Water filter net 1 pc .

7). Draining filter net 1 pc .

8). Hexagon wrench(Specially for tightening the door.)

9). Door gasket 1 pc.

12 Appendix.

Form 1 Working mode chart

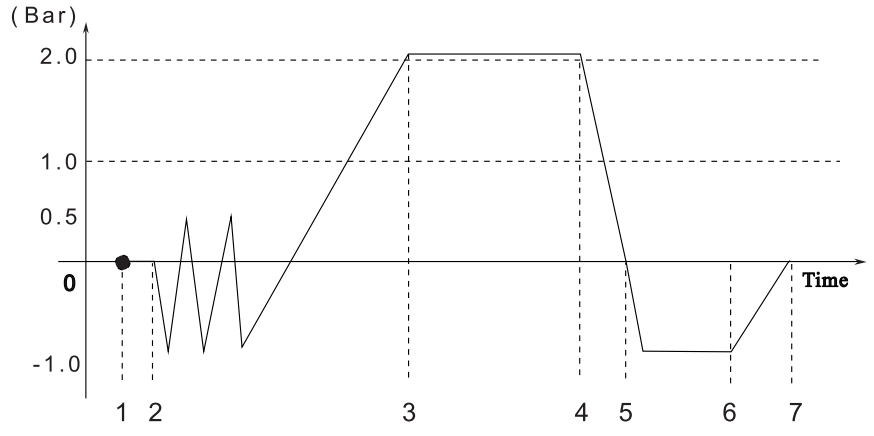
	134 S	134 B	121 S	121 B	134B+	BD-Helix	Leak&Vacuum	CLEAN test
Sterilizing temperature	134	134	121	121	134	134	——	——
Sterilizing pressure	2.10	2.10	1.10	1.10	2.10	2.10	——	——
Class	S	B	S	B	B	B	——	——
Pre-heating	0-7min	0-7min	0-7min	0-7min	0-7min	0-7min	——	
Vacuum times	1 time	3 times	1 time	3 times	3 times	3 times	4min	Clean20min
Sterilizing time	4min	4min	20min	20min	20min	3.5min	Keep pressure 10min	——
Drying time	5min	10min	9min	20min	10min	2min	——	Drying10min

Form 2 Error code chart

Item	Error Code	Description	Solution
1	E01	Error of injecting steam	Contact with your supplier.
2	E02	Over pressure	Contact with your supplier.
3	E03	Door loose during working	Contact with your supplier.
4	E04	Pressure is too low	Contact with your supplier.
5	E05	Steam exhausting error	Contact with your supplier.
6	E06	Vacuuming error	Contact with your supplier.
7	E07	Environment pressure is less than 0.8bar	Contact with your supplier.
8	E08	Pressure doesn't reach to standard in time.	Contact with your supplier.
9	E09/10	Preheating overtime.	Contact with your supplier.
10	E11/12	Temperature is too high/low.	Contact with your supplier.
11	E13	Low water level alarm after filling enough water.	Contact with your supplier.
12	E15/16/17	Door error	Contact with your supplier.
13	E19	Water quality is low.	Contact with your supplier.
14	E21	The cycle was terminated manually.	Contact with your supplier.
15	E27	Leak test failed.	Contact with your supplier.
16	E31/32/33/34	Temperature Sensor error (Short circuit)	Contact with your supplier.
17	E41/42/43/44	Over-temperature from Temp. Sensor	Contact with your supplier.
18	E51/52/53/54	Temperature sensor open circuit.	Contact with your supplier.
19	E71/72	Pressure is too low from pressure sensor.	Contact with your supplier.
20	E99	Other errors.	Contact with your supplier.

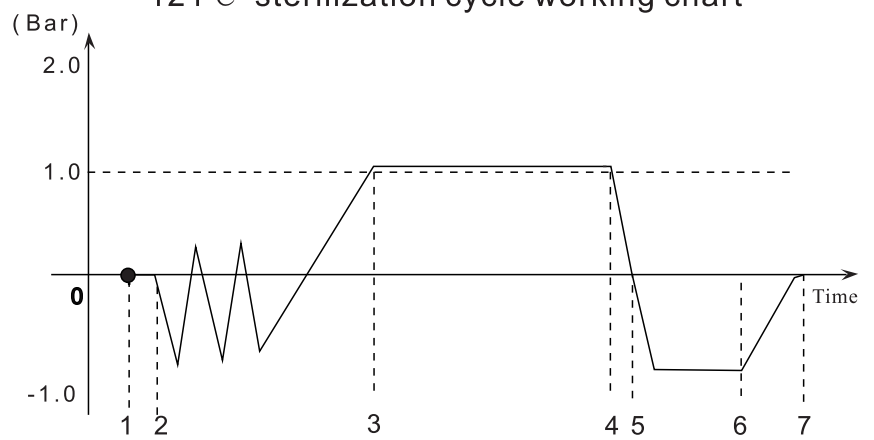
Form3 Working diagram

134℃ sterilization cycle working chart



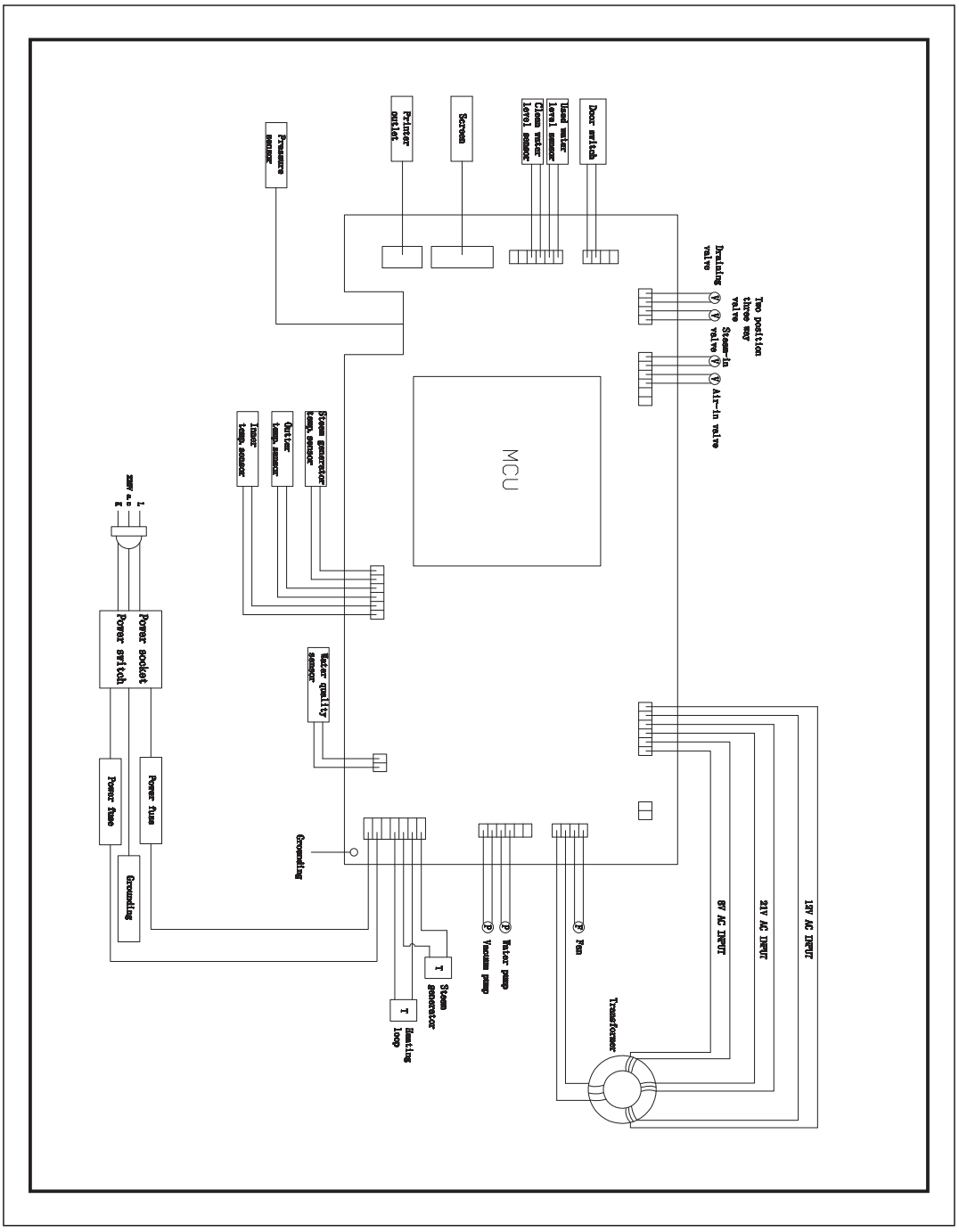
1-2 Pre-heating 2-3 Pre-vacuum 3-4 Sterilization 4-5 Exhausting
5-6 Drying 6-7 Balance period 1-7 sterilization

121℃ sterilization cycle working chart

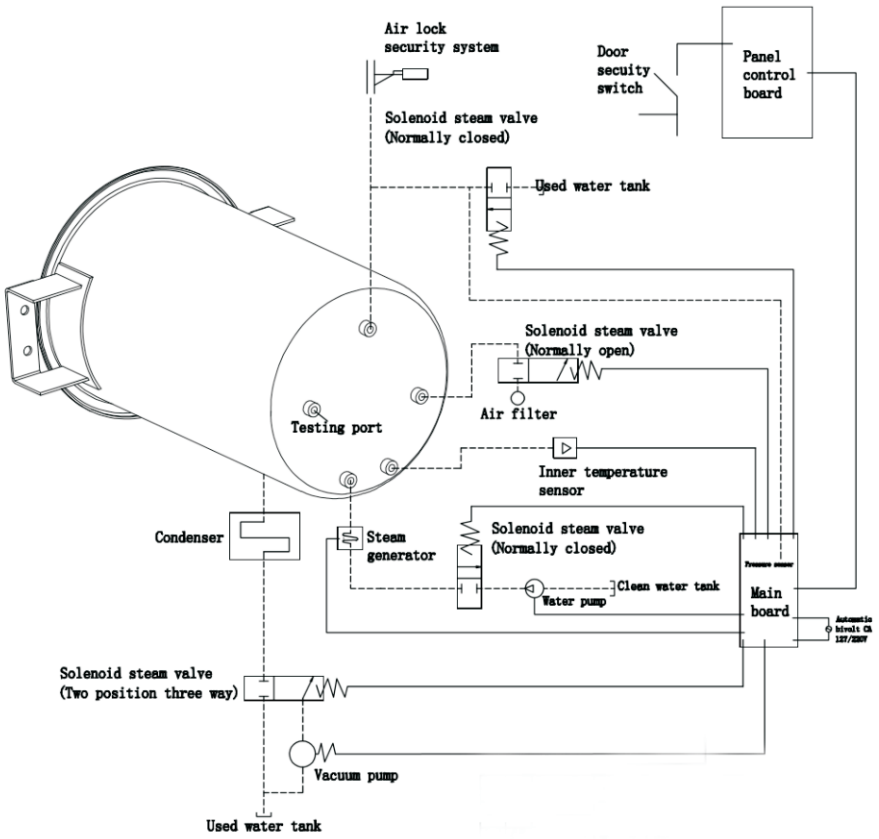


1-2 Pre-heating 2-3Pre-vacuum 3-4 Sterilization 4-5 Exhausting
5-6 Drying 6-7 Balance period 1-7 sterilization

Form4 Schematics of 22L-LCD-B



Form5 Piping diagram of 22L-LCD-B



13.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.Chamber door knob must be turned 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 replacing the seal.

9.No dragging when the machine is moving.

10.Power connection must be grounded properly.

11.Must be provided enough power.(1800VA)