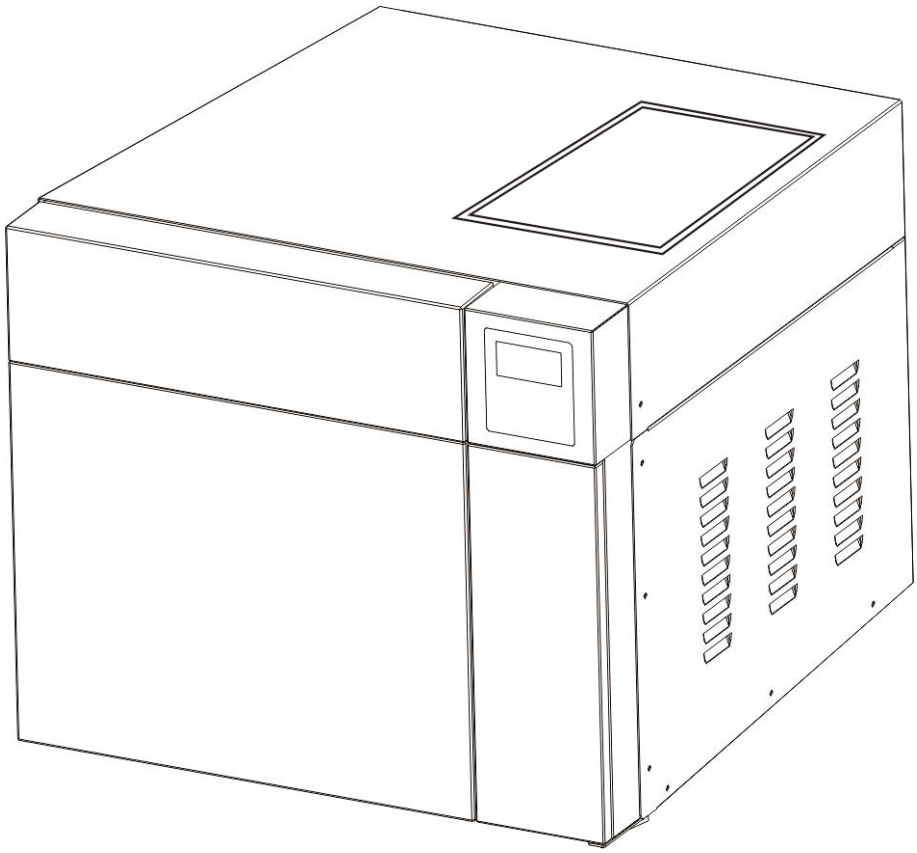
FLIGHT DENTAL SYSTEMS

STEAM STERILIZERS



Instruction Manual

For Model: Clave45+

Thank you for choosing our steam sterilizer.

Prior to operating this device, please read the instruction manual carefully and follow all installation instructions.

Regular maintenance:

If this symbol  appears on the screen when the device is powered on or if it shows E88 on the sterilization report, please contact your dealer or local service company for a maintenance service. This device requires regular maintenance. A  symbol or error code E88 will be displayed after 1 year of use or after a 1000 cycles, whichever comes first. This is programmed into the maintenance screen.

****USE ONLY DISTILLED WATER IN THIS DEVICE****

Do not re-use the used water from this machine.

Power on the unit with the door open.
This will allow the unit to get an initial zero pressure reading. The machine will not start a cycle and only beep (3 times) when the start button is pressed if it has a non-zero pressure reading on powering up.

General Safety Instructions:
-Make sure that all the installation conditions are fully complied with.
-Ensure that the supply voltage agrees with the supply voltage specified on the rating plate of the sterilizer.
-This appliance must be grounded. Connect only to a properly grounded outlet.
-Do not cover or block any openings on this appliance.
-Use this appliance only for its intended use a described in this manual.
-Do not exceed the maximum weight limit of the loads specified in this manual.
-Do not operate this appliance if it has a damaged power cord or plug or if it is not working properly or if it has been damaged or dropped.
-Never put flammables or explosives products into the sterilizer.
-The sterilizer may not be operated in areas in which gas or any other explosive volatile substance is present.
-Installation and repair work should only be performed by an authorized service technician. Work by unqualified persons could be dangerous and will void any warranty.

Clearing Error Code
Clear Error Code by Pressing and holding the ↖ button. This must be done before running a new cycle.

Canadian Representative
HR Dental Products Inc. o/a Flight Dental Systems
21 Kenview Blvd, Unit 11
Brampton, ON, L6T5G7
CANADA
Document: Version 00K20000 v2.9.1

Subjects to technical changes

Table of Contents

1 General

1.1 Scope of Manual

This manual contains information concerning the installation, operation and maintenance of the CLAVE45+ steam sterilizer. To ensure proper performance of the sterilizer, the instructions given in this manual should be thoroughly understood and followed.
Keep the manual in an accessible location for future reference.

1.2 Intended Use

The steam sterilizer described in this manual is intended for the sterilization of materials in medical, dental, beauty, veterinary, laboratory and tattoo fields for the following loads: solid, porous, hollow loads type A and hollow loads type B, un-wrapped, single wrapped and double wrapped, and liquid, that are compatible with steam sterilization.

1.3 General Safety Instructions

- Read and understand this manual before attempting to install or operate the sterilizer.
- Make sure that all the installation conditions are fully complied with.
- Ensure that the voltage is the correct voltage specified on the rating plate of the sterilizer.
- This appliance must be grounded. Connect only to a properly grounded outlet.
- Do not cover or block any openings on this device.
- Use this device only for its intended use as described in this manual.
- Do not exceed the maximum weight limit of the loads specified in this manual.
- Do not operate this device if it has a damaged cord or plug or if it is not working properly or if it has been damaged or dropped.
- Never put flammables or explosive products into the sterilizer.
- The sterilizer may not be operated in areas in which gas or any other explosive or volatile substance is present.
- Installation and repair work should only be performed by authorized service technicians. Work by unqualified persons could be dangerous and may void the warranty.

1.4 Standards and directives

The steam sterilizers were designed and produced in conformity with the following directives and standards:

Directives:

97/23/CE Pressure equipment.

93/42/EEC Medical devices (class II b).

Standards:

EN 13060 Relative to small steam sterilizers.

EN 61010-1 Safety regulations for laboratory devices - Part 1: General regulations.

EN 61010-2-040 Safety regulations specific to sterilizers used in the processing of medical material.

EN 61326-1 Electromagnetic compatibility regulations for laboratory devices.

1.5 Symbols

For safe operation, please pay close attention to the alert symbols below which can be found in the sterilizer or throughout this manual.

This is an electrical caution symbol - ground protection.

Hot Surface

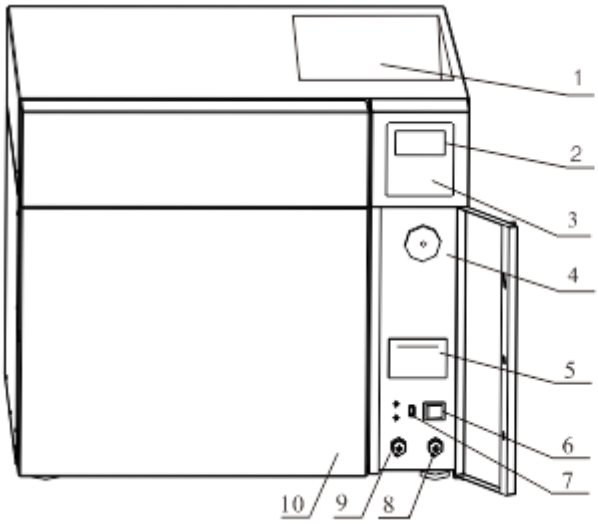
This symbol represents a warning of a potential hot surface.

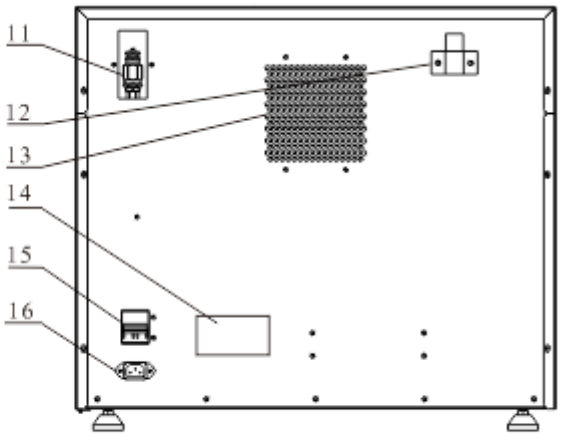
Important safety information.

This symbol represents a warning for extra caution.

2. Description of the sterilizer

2.1 Sterilizer View



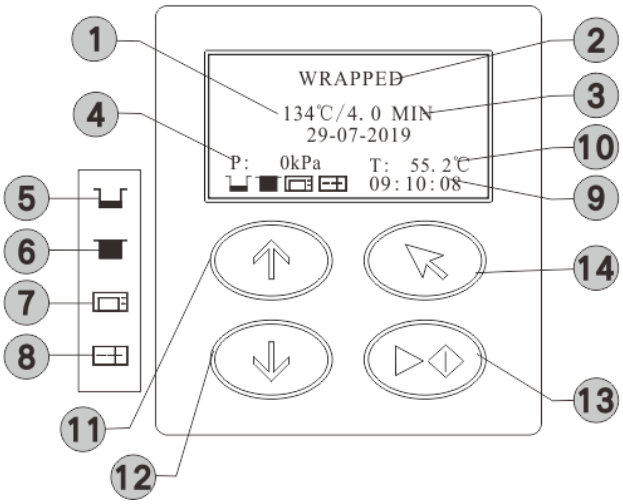


1.Distilled water tank
2.LCD
3. Control Panel
4. Bacteriological filter
5. Printer (Optional)
6. Main power switch
7. USB port
8. Drain connector (Distilled water tank)
9. Drain connector (Used water tank)
10. Door
11. Safety valve
12. Used water tank vent
13. Condenser ventilation
14. Rating plate
15.Circuit breaker
16. Power socket

	Date of manufacture
SN	Manufacture number
	Manufacturer Name
	Manufacturer Address
EC REP	EC-Representative Name
	EC-Representative Address

2.2 Control panel

.



1	Temperature of the cycle
2	Program
3	Holding time
4	Pressure
5	Fill distilled water tank
6	Drain used water tank
7	Printer is connected
8	Door is opened
	Door is closed
	Door is locked
9	Time
10	Current temperature
11	Up button
12	Down button
13	Enter button
14	Menu button

2.3 Technical specifications

Item	Clave45+
Chamber	Φ 319mm x 617 mm Φ12.5"X24.3" (45L)
Rated Voltage	208-230VAC; 60 Hz
Circuit breaker	F15A/220V
Nominal power	2600VA
Sterilization temperature	121°C /134°C
Capacity of the distilled water tank	Approx 12.0 L (Water at level Max)
	Approx2.0 L (Water at level Min)
Operation temperature	5°C-40°C
Operation relative Humidity	Max. 80%, non condensing
Overall dimensions(mm)	640 (W)*560 (H)*840 (D) 25.2"(W) x 22.0"(H) x 33.1"(D) (45L)
Net weight	120 kg
Max. Noise level	<70 dB
Atmospheric pressure	76 kPa - 106 kPa

2.4 Packing content

No.	Accessory	Quantity
1	Instrument tray rack	1
2	Draining hose	2
3	Instructions manual	1
4	Door seal	1

3. Installation

3.1 General conditions

Position the device on a flat surface with a minimum capacity of 120 kgs.

The sterilizer should be placed on a level worktable.

Improper water level in the chamber could cause a sterilizer malfunction.

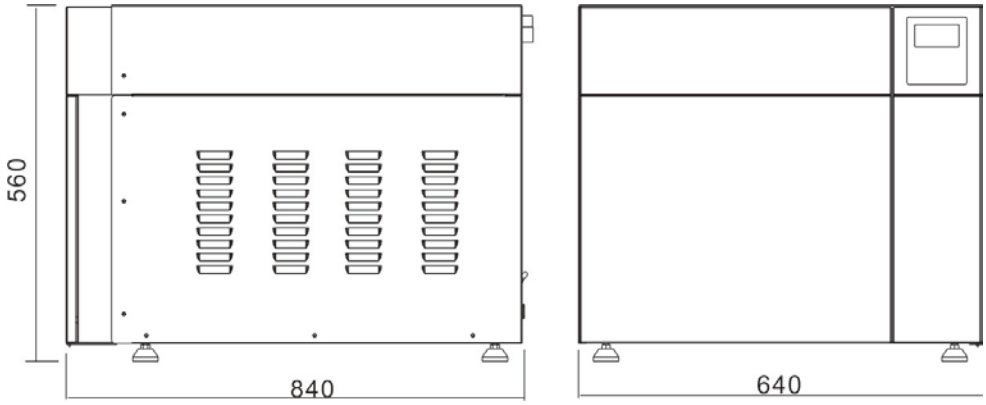
Leave at least 10cm between the back of the device and the wall. The clearance required to open the door is 40cm.

Position the autoclave at such a height as to make it possible for the operator to check the whole sterilization chamber and carry out the normal cleaning operations.

The room where the device is installed must be properly ventilated.

Do not lean on the door when it is open.

Do not place trays, papers, fluid containers, etc. on top of the sterilizer.



3.2 Power supply connection

Check the label on back panel of the sterilizer to verify voltage rating for the unit. Failure to connect the autoclave to an appropriate power supply could result in damage to the unit, and electrical shock to personnel.

Plug power cord into a properly polarized and grounded rated receptacle. A dedicated circuit is recommended to be used for the sterilizer.

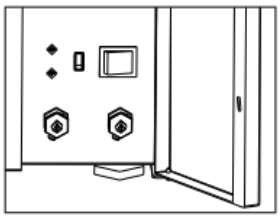
4 Setup

Open the door and remove all of the contents in the chamber

Connect the power cord to an outlet of the appropriate voltage and amerage.

Turn on the main power switch on the right side of the unit.

The unit will turn on and the LCD screen will be displayed showing the door position, water level, working program, date, time and etc.



Holding the ⇧ button for about 3 seconds will unlock the door.

Note: The control panel will be locked for 10 seconds after powering up the unit to undergo system initialization.

Notice: If the low water level icon is blinking, fill the distilled water tank with distilled water before using.

4.1 Basic Set

The “Basic Set” Menu permits the following options to be set:

*Date *Time *Language

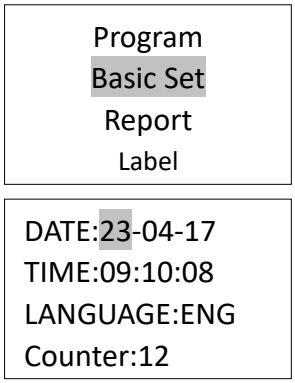
Select the “Basic Set” from the main menu and press button.

Select the item by pressing the button. The item you have selected will be highlighted

Adjust the value by pressing the button. Press the button to go to the next item.

Press the button to save and exit after the data is set.

Note: The Counter (cycle No) cannot be set by the operator.



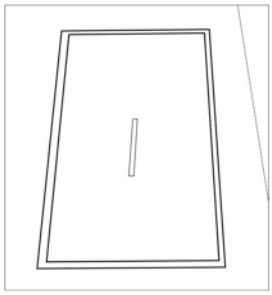
Abbreviation of language options

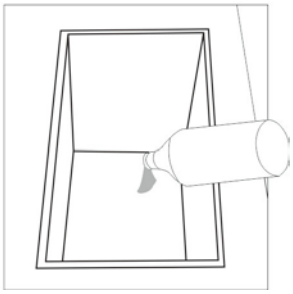
CHN	Chinese	ENG	English	DEU	German	ESP	Spanish
PL	Polish	FR	French	HUN	Hungary	ROM	Romanian
NL	Dutch	LTU	Lithuanian	LAT	Latvian	CZE	Czech
ITA	Italian	RUS	Russian	PT	Portuguese	HR	Croatian

4.2 Fill the distilled water tank

Ensure that the distilled water drain valve is closed.

Press the button and open the water tank cover.





Use only high quality distilled water. (See Appendix 1)

4.3 Preparation of Sterilization Materials

For the most effective sterilization please follow below:

*Clean instruments immediately after use.

*Clean instruments with a ultrasonic cleaner.

* Rinse off all residual chemical left over after cleaning and disinfecting process as it may damage and corrode parts of the autoclave.

*Follow instrument manufacturer’s guidelines and recommendations for handing and cleaning instruments prior to sterilization.

*Check the manufacturer’s instructions as to proper procedure for sterilizing of each item.

*Arrange the samples of different materials on different trays and ensure the pouches or instruments are not overlapping

*Clean and dry instruments thoroughly before placing them into tray.

*Arrange the containers (glasses, cups, test-tubes, etc) on one side or inverted position, avoiding possible water stagnation.

*Don’t stack the trays one above the other or put them in direct contact with the walls of the sterilization chamber.

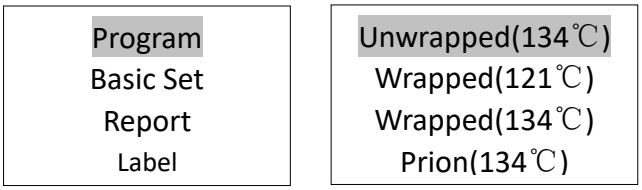
*Always use the instrument tray handle.

*Don’t overload the trays over the stated limit (see appendix 2).

5. Operation

5.1 Select the program

Press the button to get to the main menu, select “Program”. You will see the available sterilization programs. See Appendix 2.



Highlight the program by pressing the buttons and select the desired program by pressing the button. If you don’t want to select a program you may press the button to exit.

5.2 Running a Sterilization Cycle

After selecting a program, place the instruments to be sterilized on the trays or racks inside the chamber.

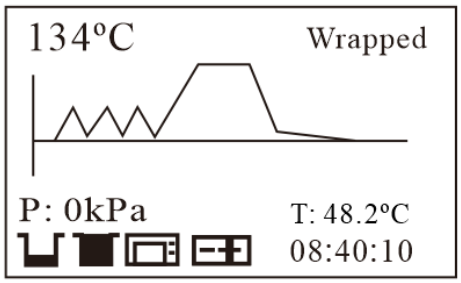
5.2.1 After the instruments are loaded, you may close the door.

Push the door to be closed; holding for about three seconds, it will automatically lock.

Caution: The door cannot be lock if the pressure is higher than 0 kPa. Please wait for the chamber to cool down before running the next cycle.

5.3 Start the Sterilization Cycle

After the button is pressed, the cycle will start and the status of the cycle will appear on the display. The sterilizer will perform the program automatically. (See appendix 2).

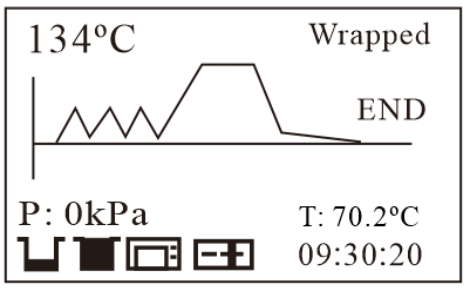


Total time or countdown until completion

5.4 End of cycle

After the cycle is complete, the printer will print out a report of the cycle and also save it on the USB drive.

Caution: Always use the tray handle to load or unload the tray into the autoclave.



Failure to do so can result in burning.

Note: If the power is shut off during the cycle, the screen will show the following when powering on again.

Power failure restoring…

5.5 Manually Abort Cycle

It is possible to stop a cycle after it has been started. If you need to stop a cycle and remove the items urgently, you may hold the ▷◁ button for 3 seconds at any time to stop the cycle.

If you interrupt a cycle before it reaches the “Drying” stage, then the items inside the autoclave must be considered not sterile.

If you need to interrupt a cycle after the holding time of the sterilization cycle and during the drying stage then the items inside the autoclave can be considered sterilized.

Caution: Depending on the status of the Cycle, steam can escape from the sterilization chamber when you open the door.

5.6 Record of the Cycle

USB Flash memory

A USB drive can be used as a method of storing the reports of the cycle. To do so, insert the USB drive before the end of the cycle and the information will automatically output to the USB drive after the cycle has completed. The name of the file is determined by the serial number of the machine and the cycle number.

For example:

The serial number is A12345. The cycle number is 00012.

The file name in the USB stick is A12345_00012E00.txt.

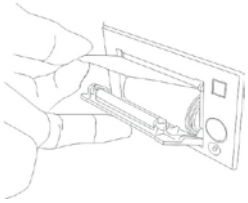
The last three numbers represent error code.

For example, E00 means no error. E01 means error E01.

5.7 Printer

If a printer is installed the icon on the display will be solid.

The printer will print a report of the cycle after the cycle has ended.



5.8 Report

Internal Memory

This menu will provide you with the latest information of the last 10,000 cycles stored in the internal memory of the sterilizer.

5.8.1 Select “Report” from the main menu and press the button, you will see the list of records.

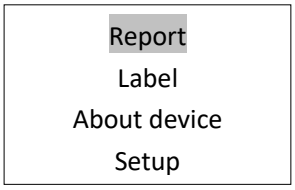
5.8.2 Highlight the records by pressing the ⇧⇩ button.

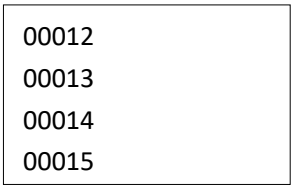
5.8.3 Press the button. The record will be printed and the file will be sent to the USB Drive if it’s been inserted.

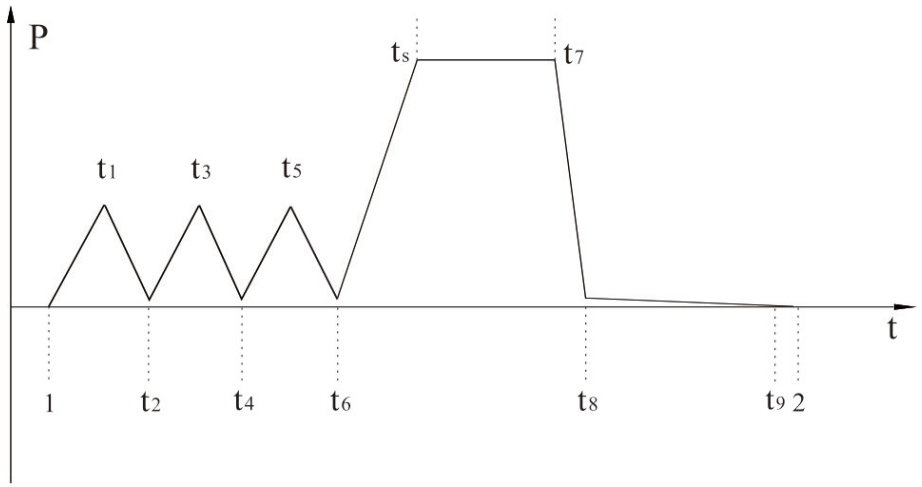
Note: It can save in the internal memory only the reports of the last 10,000 cycles.

Note: The storage system is based on the principle of “first In-first-\out”.

Press the ▷◁ button to exit.







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Program: Wrapped

Temperature: 134 C

Pressure: 204 kPa

Drying Time: 2.0 MIN

Holding Time: 04.0 MIN

	Time	Temp.	Pressure
	HH:MM:SS	C	kPa
Start	11:38:02	028.2	002.5
T1:	11:50:46	115.9	081.0
T2:	11:51:17	107.2	020.6
T3:	11:51:29	111.0	058.8
T4:	11:51:52	107.3	020.1
T5:	11:52:26	112.8	069.3
T6:	11:52:52	107.5	020.1
TS:	11:57:47	134.5	211.9

Max Temperature: 135.4

Min Temperature: 134.2

Max Pressure: 221.1

Min Pressure: 210.7

T7:	12:01:48	135.2	218.8
T8:	12:08:01	100.6	-72.1
T9:	12:17:45	098.7	-29.5
End	12:17:47	098.7	001.6

Cycle No.: 00022

Ster. Value: Success

Water quality: OFF, 000

Date: 20-05-2019

SN:A00001

Operator:

3BN23D 11100010V2.9.1.3

0000

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5.9 Label(Optional)

5.9.1Connect the label printer and switch on.

5.9.2 Select the “Label” and press button, you will see the list of the records.

5.9.3 Highlight the cycle by pressing the button.

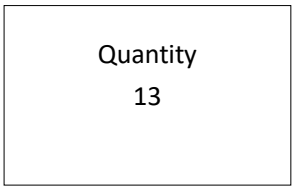
5.9.4 Press the button to select the quantity.

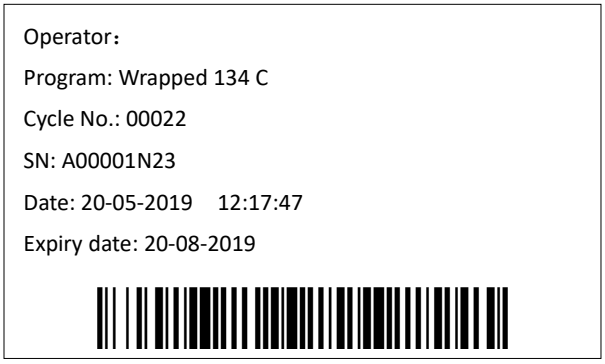
5.9.5 Change the quantity of the label that you want to print by pressing the button.

The range is 1-99.

5.9.6 Press the button to print the label.

5.9.7 Press the button to exit.





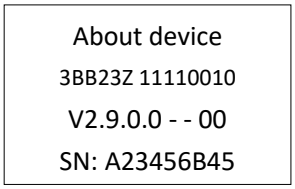
5.10 About device

5.10.1 Select “About device “.

5.10.2 Press the button to enter this menu.

5.10.3 The firmware version and serial number are displayed.

5.10.4 Press the button to exit.



6. Advance setting

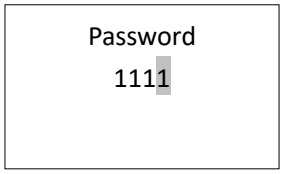
The advance setting interface allows you to set the following options:

***Parameter:** Allows the change of the holding time and drying time.

***Unit:** Allows the change of the unit of measure temperature and pressure.

***Preheat:** The Preheat will maintain the temperature of the chamber heater and steam generator to allow for the cycle to start when needed.

If the option is disabled (OFF), then once the sterilization cycle is complete, the chamber heater and steam generator will turn off. So when you start a new cycle you should expect a preheating time between 3 to 5 minutes upon start.



Note: To maintain the temperature longer it is recommended that after each cycle that you keep the door closed.

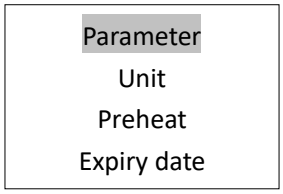
Enter the setting

Select "Setup", press the button to get to the password interface.

Input the password "1111" by pressing the button, press the button to select the number and move to the next section

Press the button to enter the setting interface after inputting the passwords.

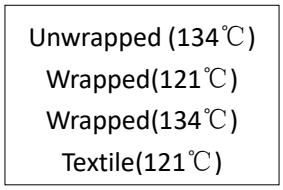
6.1 Parameter



Press button to select Parameter. Press button to enter the menu.

Select the program that you need to change by pressing button. Press button to enter the setting.

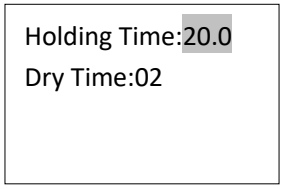
Adjust the parameter by pressing the button.



Drying time:0-30 minutes

121℃ holding time: 20-60 minutes

134℃ holding Time: 4-20 minutes



After you finish adjusting the param Tap button to save and return to the above menu.

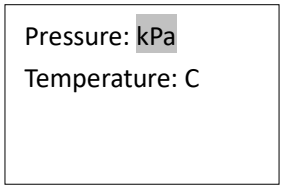
6.2 Unit

Select the "Unit" to adjust the unit of temperature and pressure.

Press button to enter the menu.

Select the item by pressing button.

Change the unit by pressing button.



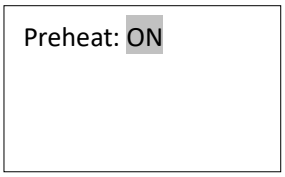
Pressure: kPa/bar/psi

Temperature: ℃/F

Press the button to save and exit.

6.3 Preheat

Select the "Preheat" to adjust the preheat setting.



Press the button to enter the menu.

To turn off the preheat feature after the unit turns on, set the value to OFF by

Pressing the button.

Press the button to save.

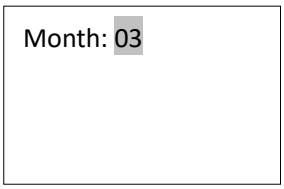
6.4 Expiry date

Select the “Expiry date” to adjust the expiry date to be printed on the label.

Press the button to enter the menu.

Adjust the value by pressing the button. The range is 1-12.

Press button to save and exit.



6.5 Water Quality(Optional)

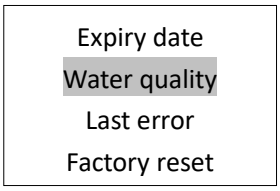
Select the “Water quality” to change the function.

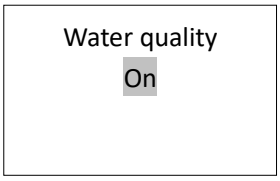
Tap button to enter the menu.

If you don’t want to have an alarm if the quality of water is bad, set the value to Off by

Pressing button.

Press button to save and exit.





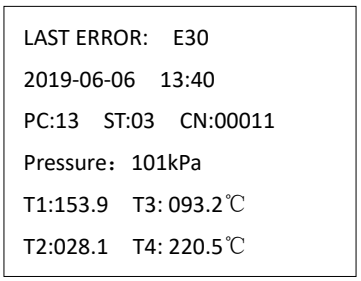
6.6 Last Error

Select the “Last error” to see the last error recorded.

Press the button to enter the interface.

It will record the parameters of the sensors when the alarm appears.

Press the button to save and exit.



6.7 Factory reset

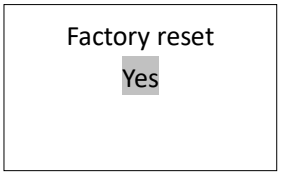
Select the “Factory reset” to reset the parameters of all the programs.

Press the button to enter the interface.

Change Yes/No by pressing the button.

Press the button to confirm and exit.

The value of holding time and drying time will be restored to the default value if you confirm “Yes”..



7.0 Maintenance

To assure proper operation and maximum autoclave life, carefully follow all recommendations for periodic maintenance.

One of the MOST important steps you can take to prevent problems with your sterilizer is to use ONLY distilled water.

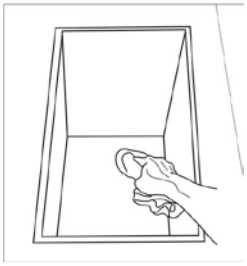
Frequency	Number of cycles	Maintenance operation
Daily		Clean the external surface
		Drain used water tank
		Clean the door seal
Weekly	25	Clean the chamber, trays and rack
		Clean distilled water tank (drain tank)
Monthly	100	Clean the filter inside the chamber and in the distilled water tank
Every 6 months	500	Replace the bacteria filter
Every year	1000	Replace door seal, tubing, filters, check valves

7.1 Clean the Distilled Water Tank

Drain the tank completely using the drain tube and leave it connected into the connector in a open position.

Clean the internal surface with a soft sponge and a small soft brush for the areas that are difficult to reach using and a mild soap.

Remove the filter and clean it with a small soft brush and mild soap, rinse it with distilled water and put it back in to the position.



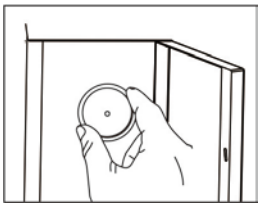
7.2 Replacement of the Bacteria Filter.

The bacteriological filter is in the front of the sterilizer. Unscrew the filter by hand by turning it anti-clockwise.

Install the new bacteriological filter.

Screw the new filter by hand clockwise.

Note: Do not operate sterilizer without filters in place.



7.3 Clean Chamber, Door Seal, Trays and Tray Rack.

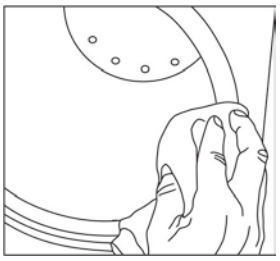
Remove the trays and tray rack from the chamber.

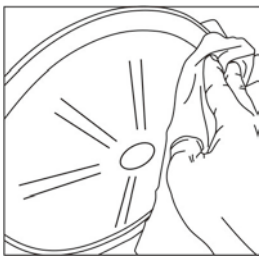
Clean trays, rack and the inside of chamber with mild soap.

Rinse the trays, rack and inside of chamber with a smooth cloth and distilled water.

Examine door seal for possible damage.

Clean door seal and opposing surfaces with a damp cloth.





Note: Do not use bleaching agents or any abrasive materials / substances in chamber. Failure to comply may result in damage to the chamber and/or other components.

Caution: To prevent burns, let unit to cool before cleaning gaskets and touch the surface.

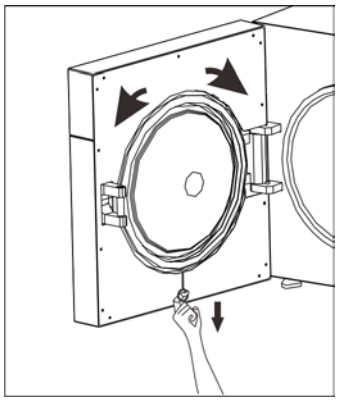
7.4 Door adjustment

Under normal circumstances the chamber door does not require adjustments. However, it may become loose overtime and adjustments may be required.

7.4.1 Open the door.

7.4.2 Pull the lever at the bottom of the door to unlock the mechanism.

Tighten the door by rotate the door counter-clockwise. Loosen the door by rotate the door clockwise as in the figure. Test the tensions on the door with each rotation of the nut.



7.4.3 Release the lever after finishing adjusting.

Caution: Never adjust the chamber door while the door is closed.

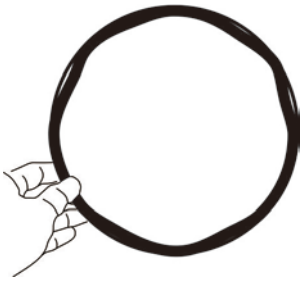
7.5 Replacement of the Door seal

Open the chamber door. Remove the door seal carefully by hand.

Clean the door seal carefully with a smooth cloth with distilled water.

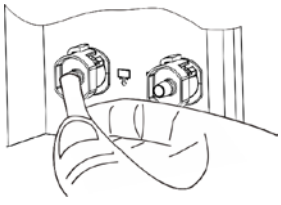
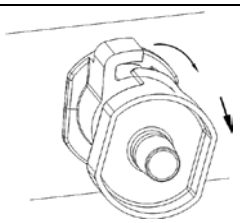
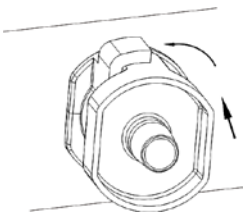
Moisten the new seal with distilled water.

Insert the new seal and press the seal in following the sequence below.

		
1) Press in the top and bottom of the door seal.	2) Press in the left and right sides of the door seal.	3)Press the remaining sections of the seal.

Caution: Please ensure the chamber and the door is cooled prior to replacing the seal ring.

7.6 The Drain Valve

		
1.Press the hose on To the drain valve firmly.	2. Turn the drain valve clockwise to drain the tank.	3. Push and turn the drain valve anticlockwise after draining the tank.

8.0 Error codes

Code	Description	Proposed solution
E1	Steam generator tempreture sensor error	Power off & run a new cycle Contact your supplier if error persists
E2	Inner temperature sensor error	Power off & run a new cycle Contact your supplier if error persists.
E3	Temperature sensor of the chamber wall error	Carefully ensure that the chamber wall is heated and cotact your supplier
E5	Fail to release the pressure	Power off & run a new cycle Contact your supplier if error persists.
E6	Door lock problem during the cycle	Check the door close switch.
E7	The pressure is too low during holding time.	Contact your supplier if error persists.
E8	The pressure is too high during holding time.	Contact your supplier if error persists.
E9	Failure to hold temperature	Ensure the distilled tank isn't empty. Check the inner temperature sensor. Check somewhere for leaking.
E11	Failure to perheat the steam generator	Power off & run a new cycle Contact your supplier if error persists.
E12	Faulure to preheat the chamber	Power off & run a new cycle Contact your supplier if error persists.
E16	The pressure doesn’t reach 0 in 5 minutes after drying period.	Contact your supplier if error persist
E18	The filling water pump working time is overime	Check the water pump or Contact your supplier if error persist
N20	Program manually interrupted	holding theb n for 3 seconds after the pressure is lower than 10kPa.
E24	It takes too long time toenter the next status.	Check somewhere leaking. Or contact your supplier if error persists.
E25	There is a problem of locking the door.	The door is too tighten. Or Check the door locking switch. Check the door motor. Contact your supplier if error persists.
E26	There is a problem of unlocking the door.	Check the door unlocking switch. Check the door motor. Contact your supplier if error persists.
E28	The pressure is over 240kPa	Power off and contact your supplier if error persists
N29	Power failure during working.	A notification message.
E34	The pressure is higher than 50kPa during drying.	The solenoid valves are blocked.

Caution: You may turn off the alarm by pressing any button. And to cancel the error code, hold the button for 3 seconds and the error code will disappear.

9. Transportation and storage

9.1 Switch off the sterilizer before transportation or storage.
9.2 Pull out the plug. Let the machine cool down.
9.3 Drain the distilled water tank and the used water tank.
Condition for transport and storage
Temperature: -20°C ~ +50°C
Relative humidity: ≤ 85%
Atmospheric pressure: 50kPa~ 106kPa.

10. Safety devices

1. Main fuses: Protection the instrument against possible failures of the heating resistor.
Action: Interruption of the electric power supply.

2. Thermal cutouts on the main transformer windings: protection against possible short circuit and main transformer primary winding overheating
Action: Temporary interruption of winding.

3. Safety valve: Protection against possible sterilization chamber over-pressure.
Action: Release of the steam and restoration of the safety pressure.

4. Safety micro-switch for the door status: Comparison for the correct closing position of the door.
Action: Signal of the wrong position of the door

5. Thermostat on chamber heating resistors: Protection for possible over heating of the chamber heating resistors.
Action: Interruption of the power supply of the chamber resistors.

6. Thermostat on steam generator heating resistors: Protection for possible overheating of the steam generator heating resistors.
Action: Interruption of the power supply of the steam generator resistors.

7. Door safety lock: Protection against accidental opening of the door.
Action: Impediment of the accidental opening if the door during the program.

8. Self-leveling hydraulic system: Hydraulic system for the natural pressure leveling in case of manual cycle interruption, alarm or black-out.
Action: Automatic restoration of the atmospheric pressure inside chamber.

Appendix 1

Water properties / Characteristics

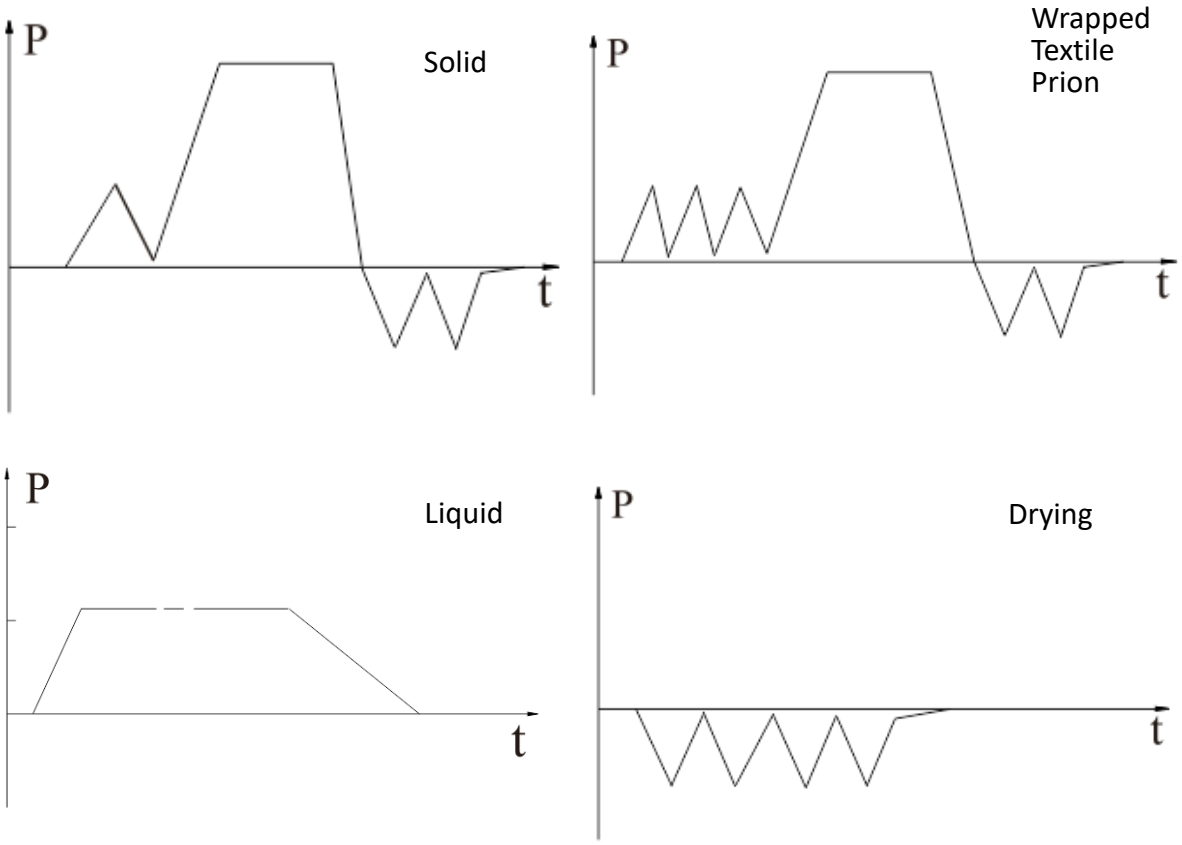
Description	Feed water	Condensate
Evaporate residue	≤ 10mg/ l	≤ 1.0mg/kg
Silicium oxide sio2	≤ 1mg/ l	≤ 1.0mg/kg
Iron	≤ 0.2mg/ l	≤ 0.1mg/kg
Cadmiun	≤ 0.005mg/ l	≤ 0.05mg/kg
Lead	≤ 0.05mg/ l	≤ 0.1mg/kg
Rest of heavy metals	≤ 0.1mg/ l	≤ 0.1mg/kg
Chloride	≤ 2mg/ l	≤ 0.1mg/kg
Phosphates	≤ 0.5 mg/ l	≤ 0.1mg/kg
Conductivity	≤ 15µs /cm	≤ 3 µs /cm
PH Value	5 – 7.5	5-7
Appearance	Colorless, clean	Colorless, clean
Hardness	0.02 mmol/ l	0.02 mmol/ l

Appendix 2

Diagrams of the sterilization programs

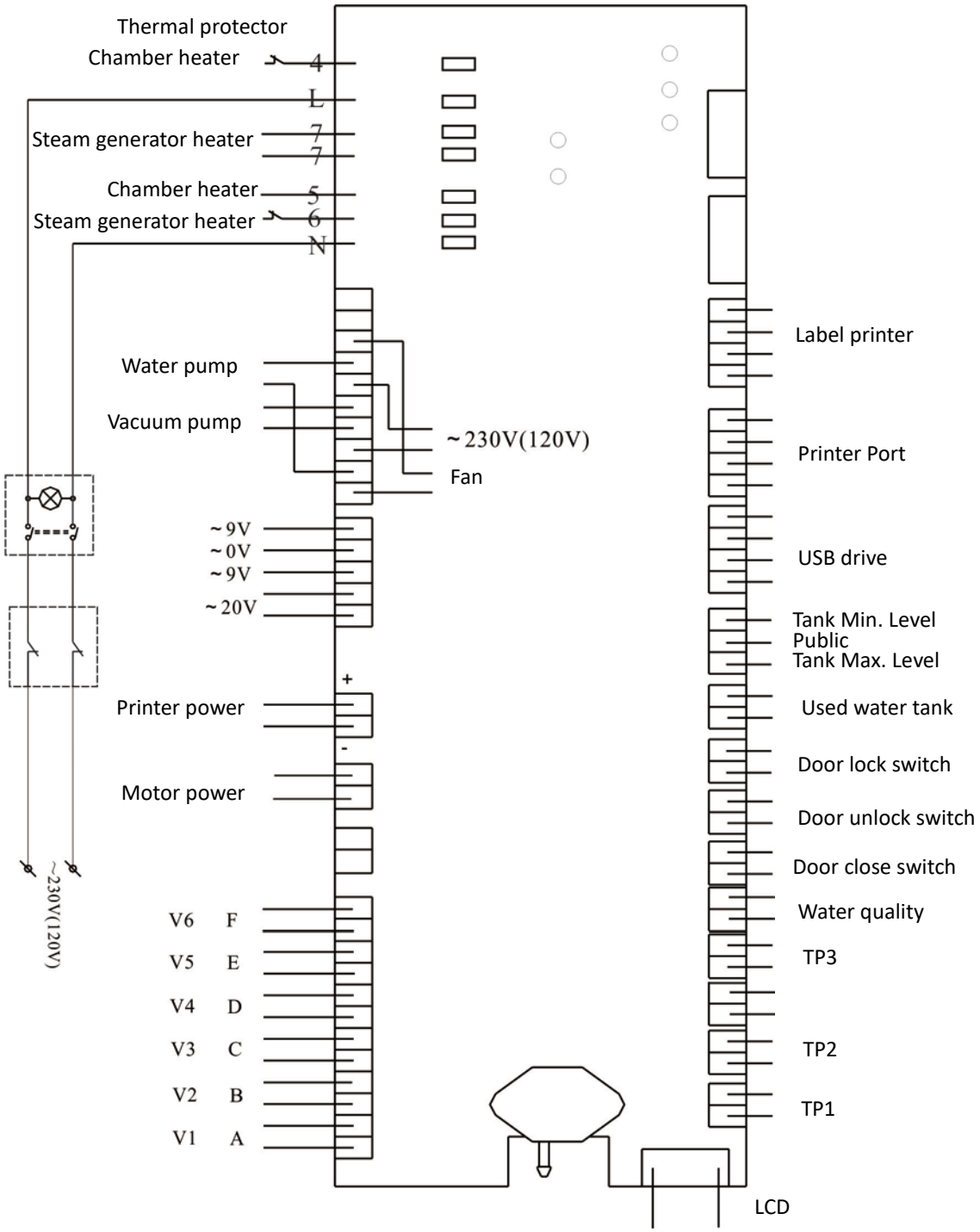
STE-45-T

Programs	Temperature (°C)	Pressure (Kpa)	Holding time (min)	Total time (min)	Type	Max load (kg)	Max load per tray (kg)
Unwrapped	134	210	4	40-50	Unwrapped solid material	10.0	3.0
WRAPPED	134	210	8	55-75	Unwrapped porous material	6.0	3.0
					Single-wrapped porous material	5.5	3.0
	121	110	30	60-80	Dual-wrapped porous material	5.0	3.0
					Single-wrapped hollow material	7.0	3.0
					Dual-wrapped solid and hollow material	6.0	3.0
PRION	134	210	18	65-85	Unwrapped porous material	6.0	3.0
					Single-wrapped porous material	5.5	3.0
					Dual-wrapped porous material	5.0	3.0
					Single-wrapped hollow material	7.0	3.0
					Dual-wrapped solid and hollow material	6.0	3.0
Liquid	121	110	30	80-90	Liquid	4.0	3.0
Drying (optional)	—	—	—	1-20	—	—	—


P
t
Solid
P
t
Wrapped
Textile
Prion
P
t
Liquid
P
t
Drying

Appendix 3

Wiring diagram



TP1: Steam generator temperature sensor

TP2: Inner temperature sensor 1

TP3: Temperature sensor of chamber wall

V1: Vacuum pump valve

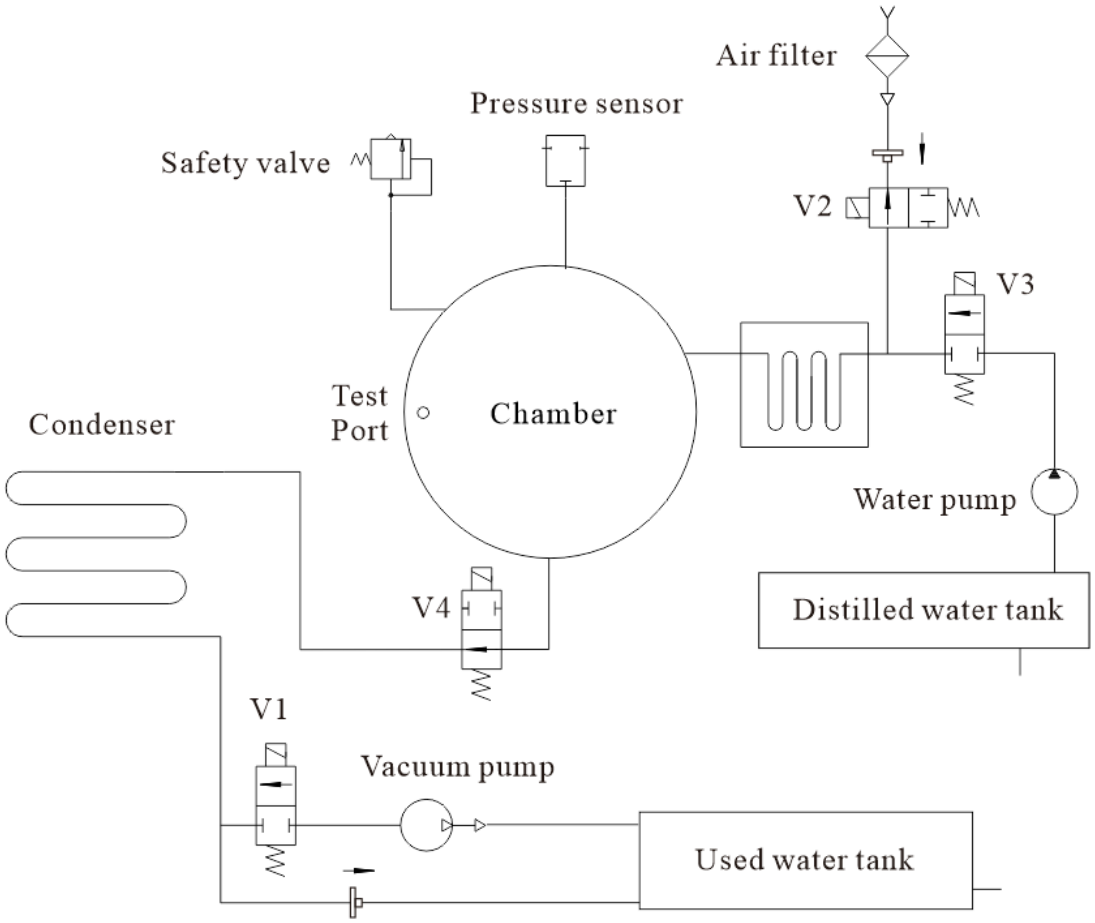
V2: Air filter valve

V3: Water pump valve

V4: Water release valve

Appendix 4

Hydraulic diagram



V1: Vacuum pump valve

V2: Air filter valve

V3: Water pump valve

V4: Water release valve