

SHINVA 新华医疗

**MOST Steam Sterilizer
(MOST-L)
Operation Manual**

山东新华医疗器械股份有限公司
SHINVA MEDICAL INSTRUMENT CO., LTD.

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You are welcome to use the vertical sterilizer produced by our company. In order to maximize the performance, please read this manual carefully before installation, use, operation and maintenance to ensure that the equipment serves you safely and reliably! Fail to use the equipment in accordance with the methods specified by the factory may damage the protection provided by the equipment.

This manual applies to the installation, operation and maintenance of the SHINVA MOST-L MOST steam sterilizer.

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Preface

In the manual, the following symbols are used to indicate what should be noted or paid high attention to:



Caution:

It should be paid highly attention.

Please read and fully understand the contents of each chapter of this manual before performing any operation and maintenance on the equipment, especially those with the above-mentioned signs.

Instructions must be kept carefully to prevent loss or damage, even minor damage.

The operator is obliged to repair and complete part of the contents, catalogue and related sections that are lost, damaged or not applicable in the manual.



Caution:

No one can tear off or remove anything from the manual under any circumstances. In the process of learning and using the equipment, if you encounter any problems that are not in accordance with the instructions in the manual or are not covered in the manual, please contact us in time, we will promptly answer your questions, if necessary, the manual will be upgraded or updated for free.

Keep this manual in clean and dry area, avoiding moisture and high temperature.

1 Review

1.1 Company Information

- Registrant/Manufacturer: Shandong Xinhua Medical Instrument Co., Ltd.
- Medical Device Manufacturing Enterprise License No.: Lu Food and Drug Administration
Production No. 20100024
- Disinfection product manufacturer sanitary license number: Lu Sanitation and Disinfectant
(2014) No. 0001
- Registrant/Production Enterprise Residence: Xinhua Medical Science and Technology Park,
High-tech Industrial Development Zone, Zibo
- Production address: No. 2009 Xinhua Avenue, Zhoucun District, Zibo City
- Contact information:

Address: No. 2009, Xinhua Avenue, Zhoucun District, Zibo City

Technical Service Address: No. 2009, Xinhua Avenue, Zhoucun District, Zibo City

Sales Tel: 0533-3584911 3591209

Sales Fax: 0533-3584409

Customer Service Center Tel: 0533-3591216 3588962

Customer Service Center Fax: 0533-3591217

Customer Service Hotline: 8008601627

Zip code: 255300

E-Mail: xinhua0101@shinva.com

Website: www.shinva.net

1.2 Product information

- Medical Device Registration Certificate No.: Lu Device Registration Standard: 20162570226
- Technical requirements for medical device products No.: Device Registration Standard
2072570226
- Product (Execution) Standard: Q/0303SXH193
- Product performance: Saturated hot and humid steam is used as a sterilization factor. Under
high temperature, high pressure and high humidity environment, according to a combination of

pressure and time, it can be penetrated by steam to sterilize item.

- Main structure: The product consists of a sterilizer body, a sealed door, a piping system, and a control system.
- Scope of product use: for medical and health research, scientific research, etc. for the sterilization of medical devices, laboratory utensils, culture media and non-blocking liquids or preparations, materials that may come into contact with blood or body fluids.
- Use period: 8 years or 16000 sterilization cycles, whichever comes first.

Note: This period of use is the estimated period of failure according to the standard usage environment agreed by the equipment. It is not related to the failure rate that occurs during the actual use of the equipment. Inappropriate use will also accelerate the damage of the equipment.

- Product contraindications: None.
- Special storage, transportation conditions, methods: None.
- Product design life: The design life of the main body of the equipment is 8 years. For details, please refer to the relevant information of the pressure vessel of the main body of the equipment. (This design life is the estimated expiration date according to the standard environment of the equipment, and the failure rate occurred during the actual use of the equipment. Irrelevant, improper use will also accelerate the damage of the device).
- Product packaging and transportation requirements: It should meet the requirements of GB/T 191.
- Supplementary description of the product: All the contents mentioned in this manual are the general equipment information produced by our company. If you specially put forward some customization requirements when ordering the equipment, please follow the special ordering information of the contract and our special system for you. Based on the written documentation of the contract response, the information in this manual is selectively read. The special equipment is subject to the related document of the special equipment.
- The parameters such as the date of manufacture are detailed in the instructions.

1.3 Sterilization factor and characteristics description

This equipment uses moist hot steam as a bactericidal factor.

The equipment is designed to remove the cold air from the chamber according to the specified sterilization process, and the saturated hot and humid steam is used as the sterilization factor.

Under the high temperature, high pressure and high humidity environment, according to the combination of certain pressure and time, it can be penetrated by steam to sterilize item. All the default process parameters of this equipment are as representative of sterilizable microorganisms under the load conditions described in the program, with the specific resistance of the heat-resistant fatty liver spores or the same performance microorganisms (see GB18281 and other relevant national standards) including bacterial spores.

Note 1: When the microbial resistance that may be infected by the load to be sterilized is greater than the standard agreed resistance (for example, pathogens carrying microorganisms such as mad cow disease), it is necessary to adjust the relevant process parameters such as sterilization pressure and sterilization time according to the characteristics of the specific microorganism, and pass correspondingly process can be confirmed before use.

Note 2: The bactericidal factor's ability to kill the agreed microorganisms should be effective in ensuring the killing effect when the equipment and related facilities are in normal working conditions, such as equipment failure, failure of the external connection system, loading and pendulum of the sterilized load and so on may interfere with the killing effect of the bactericidal factor.

Note 3: Due to the continuous updating and upgrading of the sterilized load, the operator should verify that the load to be sterilized is suitable for sterilizing in the equipment before performing relevant operations, otherwise it may cause unpredictable damage to the equipment or load!

1.4 Equipment parameters

Equipment model	Volume	Chamber size / mm (available)	Power supply	Input power / KVA
MOST-L	65L	Φ400mm×540mm	AC 220V 60 Hz	4.4kVA
MOST-L	85L	Φ400mm×700mm	AC 220V 60 Hz	4.4kVA
MOST-L	110L	Φ400mm×900mm	AC 220V 60 Hz	6.6kVA

- Design pressure: -0.1MPa-0.34MPa
- Design temperature: 147℃
- Temperature selection range: 105-138 ℃ (dissolution temperature: 60-100℃)

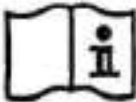
- Temperature display accuracy: 0.1 °C
- Pressure display accuracy: 1kPa (if the device is equipped with pressure detection function)

1.5 Safety device description

The sterilizer has the following safety devices:

- Over-temperature automatic protection device: Double over-temperature automatic protection in the heating tube.
- Door safety interlock: The pressure can be reduced to a certain range to open the door, otherwise the door cannot be opened.
- Safety valve with automatic pressure relief: When the set pressure is exceeded, the safety valve opens to release the pressure.
- Electronic circuit safety device: DC control circuit overvoltage overload protection, AC main circuit short circuit protection.

1.6 Logo description

			
On (power supply) IEC417, No.5007	Off (power supply) IEC417, No.5008	Ground (ground) IEC417, No.5017	Protective ground(ground) IEC417, No.5019
			
DC IEC417, No.5031	AC IEC417, No.5032	Refer to the attached files ISO3864, No.B.3.1	Pay attention to electric shock ISO3864, No.B.3.6
			
Pay attention to the surface	Reference instructions	Keep dry YY0466, No. 3.8	Temperature limit YY0466, No. 3.11

overheating IEC417, No.5041	YY0466, No. 3.3		
			
Avoid sun exposure YY0466, No. 3.6	Take care to prevent high voltage IEC417, No.5036	Fuse IEC417, No.5016	
Safety symbol			
			
Fragile GB/T191 No. 1	Place up GB/T191 No.3	Lifting from it GB/T191 No. 16	
Packaging symbol			

Instructions for use



Danger

1. The user of the product should carry out regular routine maintenance during the use process and check it regularly.

2. The user of the product shall conduct a self-inspection at least once a month for the in-use product and make a record. If the use unit finds an abnormal condition during the self-inspection and daily maintenance of the in-use product, it shall promptly handle it.

3. The user of the product shall periodically check, repair and record the safety accessories (safety valves, pressure gauges, etc.), safety protection devices, measurement and control devices and related auxiliary instruments and meters of the products in use.

4. The operator of the product and its related management personnel shall be specially designed in accordance with relevant state regulations.

All safety supervision and management departments shall pass the examination and obtain the certificate of special operation personnel in the national unified format before they can engage in the corresponding operation or management work.

The user should carry out special equipment safety, energy conservation education and training for the operators, and ensure that all operators have the necessary special equipment safety and energy saving knowledge. The operator of the product shall strictly implement the operating procedures and related safety rules and regulations of special equipment in the operation.



Caution:Keep the instruction manual completely during the life of the equipment; ensure that all updates received are stored in the manual; when the equipment is used or the unit is changed, the instruction manual must be guaranteed to be transferred or handed over as part of the equipment;



Caution:Please use the equipment according to the operation methods and precautions specified in this manual. If the equipment is not used in accordance with the prescribed methods, the protection provided by the equipment may be damaged, causing human unsafe factors and hidden dangers.



Caution:This equipment belongs to Class I pressure vessel and is designed, manufactured, inspected and accepted according to "Pressure Vessel" and complies with the "Safety Technical Supervision Regulations for Fixed Pressure Vessels".



Caution:This type of equipment is not suitable for the sterilization of confined liquids. If you need to sterilize special items such as closed liquid, please contact the manufacturer for your special equipment.



Caution: It is strictly forbidden to sterilize liquid materials contained in closed glass bottles or closed glassware with the conventional configuration of this equipment, because changes in temperature and pressure during operation may cause the liquid bottle to burst, which may endanger the safety of people and equipment.



Caution: Chloride ions are an important factor in causing corrosion damage to stainless steel. If the sterilizer is used to sterilize articles containing chloride ions, the inner wall of the chamber must be rinsed with clean water every day to avoid corrosion of the internal stainless steel by the deposited chloride ions.



Caution: This sterilizer is only suitable for sterilization of medical instruments and articles that are resistant to high temperature and humidity. It cannot be used for sterilization of petroleum and powders such as petroleum jelly!



Caution: When you see the symbol anywhere on the device, you will need to consult the documentation such as the instructions to understand the nature of the potential hazard and any countermeasures you must take.



Caution: When the symbol  is seen anywhere on the device, it indicates that the surrounding temperature is high, please note.



Caution:

1. This equipment complies with the emission and immunity requirements of GB/T 18268.
2. This equipment is designed and tested according to Class A equipment in GB 4824. In a home environment, this equipment may cause radio interference and require protective measures.
3. It is recommended to evaluate the electromagnetic environment before the equipment is used.
4. Do not use the device near strong radiation sources (such as unshielded RF sources), as this may interfere with normal operation of the device.

2 Equipment installation

2.1 Packaging removal

- Packaging removal
- Equipment inspection
 - After the equipment is unpacked, first check whether the model and name on the product nameplate match the order form. (The product nameplate is on the cover of the device)
 - Whether the equipment has obvious collision marks and is in good condition. If there is any problem, please make a record and contact the transportation company or our company.

2.2 Equipment normal working conditions

- Ambient temperature 5 ° C - 40 ° C
- Relative humidity is not more than 85%
- Atmospheric pressure 70kPa---- 106kPa

Note: When the ambient temperature of the equipment is lower than the normal working conditions, it is necessary to pay attention to all the water in the water tank after the operation of the equipment program is finished, and the equipment preheating mode is turned on, and the electricity is preheated before use.

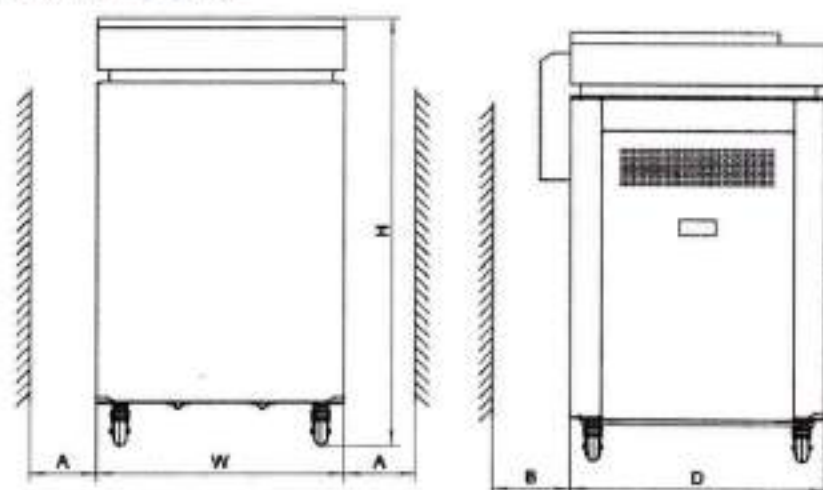
2.3 Equipment installation

2.3.1 Equipment size

Before the installation of the equipment and during the installation process, the professional construction personnel should be responsible for recording the equipment name and model for technical consultation with our company under the guidance of professionals. Installation space requirements and device size:



Caution: *Do not install the device in a location where it is difficult to operate the disconnect device while the device is being installed.*



Volume	65L/85L/110L		
Order number:	L65	L85	L110
D(mm)	660	660	660
W(mm)	640	640	640
H(mm)	940	1100	1290
A (mm)	≥250		
B(mm)	≥250		

2.3.2 Power supply, water source requirements

- Power supply: After the equipment is placed, check whether the power supply meets the requirements: AC 220V 60Hz power supply, fluctuation range $\pm 10\%$, power supply power $\geq 4.4\text{kVA}$. It is recommended that the user add a disconnect protection device such as a circuit breaker to the power supply of the device, and place the circuit breaker near the device. In order to ensure the safety of people and equipment, a ground wire must be laid, and the ground wire in the equipment shell and control cable must be reliably connected with the external ground wire.



Caution: The circuit breaker, "ON" is turned on, and "OFF" is turned off.

- Water source: MOST-L-CG series equipment comes with its own water tank, no need to connect water source, only need to manually add water to the equipment water tank. MOST-L series equipment needs to manually add water to the cavity.

The water used in the equipment must be pure water, and the water quality

meets the following requirements:

- a) Conductivity: $\leq 15\mu\text{S}/\text{cm}$ (room temperature)
- b) Bleach content: $\leq 2\text{mg} / \text{L}$
- c) PH value: 5-7
- d) Hardness: $\leq 0.02\text{mmol}/\text{L}$

The water tank is at least higher than the low water line and lower than the high water line.

If the equipment requires an external water source due to functions such as rapid cooling, the external water source requires:

- The external water source is controlled by two ball joints, a water inlet and a drain port, and is controlled respectively by two ball valves, and is to be in an on state;
- The external water source can be tap water, water pressure is required, and there is no requirement for water quality;
- The external water pressure cannot exceed 0.25 MPa;
- The external water source requirement is always on during the operation of the equipment (liquid program), and the program automatically controls the cooling process.



Caution: *If the equipment is equipped with a water quality test probe, if there is a water quality difference after the water is added to the water tank, it indicates that the water quality is not qualified. Please replace the water source that meets the required water quality.*

In order to ensure the safety of people and equipment, a ground wire must be laid. The ground wire in the equipment casing and control cable must be reliably connected to the external ground wire.



Caution: *The device must be reliably grounded!*

2.4 Check attachments

- According to the packing list of the equipment, carefully check whether the parts of the equipment are in good condition, whether they are damaged or lost. If necessary, make a record and contact our company in time.

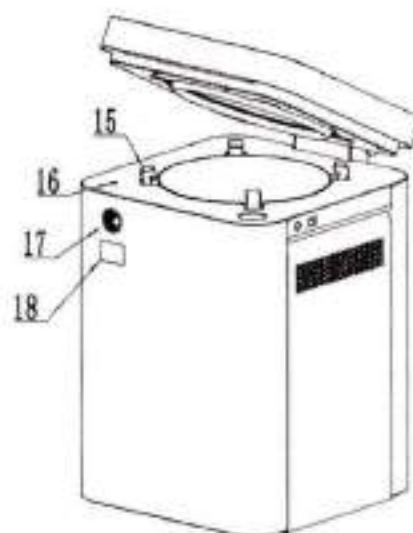
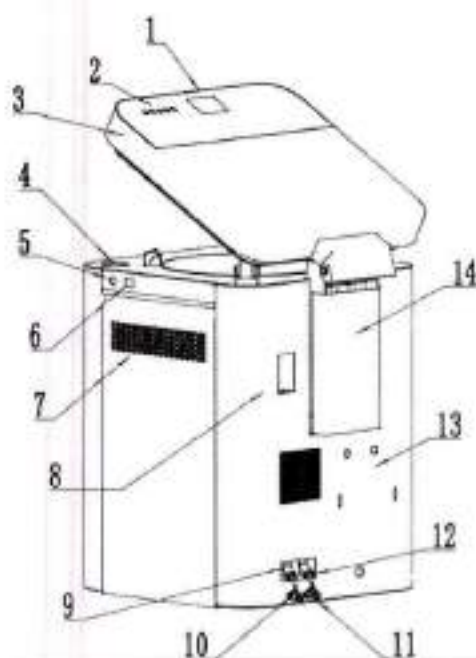
- Carefully check that the connections or fixtures are loose due to long-distance transport . If loose, please tighten.
- Inventory and record the attachments that are carried with your device.



Caution: Please turn on the power before the device is opened! For the specific operation of the switch door, see 3.4 Switch Door Operation.

3 Equipment commissioning

3.1 Device refers to Component Introduction



SN	Component Name	SN	Component Name
1	Display screen	2	button
3	Door cover	4	Water tank water inlet
5	Close button	6	switch
7	Vents	8	Safety valve
9	Inlet filter	10	Water tank drainage
11	Main body drainage	12	Drainage filter
13	Bracket mounting	14	Lifting device
15	Door lock hook	16	Door limit switch
17	Chamber pressure gauge	18	Printer

Note: You can see the device parts outside the device, it may differ from the actual

product due to product updates.

3.2 Button and display operation

3.2.1 When the button is pressed, the buzzer sounds. When the operation manual is pressed, the screen can jump normally according to the instructions. Key operation:

SN	icon	effect	Remarks
1		Return, exit key, return to the previous screen or exit the editing state.	
2		Confirm, set the button, press this button to confirm.	
3		Down button, minus button, press this button and modify the water.	
4		Up button, minus button, press this button and modify the water.	
5		Open the door and press this button to open the door (for automatic door equipment)	

3.2.2 The display shows normal, no flicker, garbled, no display, etc. It can be operated normally according to the operation manual. When the cursor moves to the selected icon or parameter name, the color of this part will change in reverse: for example, when the cursor is not on the icon:



When the cursor is over the icon:



Table 1 Meaning of each icon on the display

SN	icon	effect	Remarks
1		The cursor moves to this icon, and after pressing the OK button, the screen jumps to the program type selection screen;	
2		The cursor moves to this icon, and after pressing the OK button, the screen jumps to the parameter setting screen;	
3		Move the cursor to this icon, press the OK button and the screen will jump to the system maintenance parameter setting screen;	
4		The cursor moves to this icon, and after pressing the OK button, the screen jumps to the alarm information screen;	

5		Move the cursor to this icon, press the OK button, the program starts, and the screen jumps to the program running screen;
6		Move the cursor to this icon, press the OK button and the screen will jump to the program parameter view screen;
7		Move the cursor to this icon, press the OK button and the screen will jump to the parameter view screen of the running program settings;
8		The cursor moves to this icon, and after pressing the OK button, the screen jumps to the output information screen of each output point;
9		Move the cursor to this icon, press the OK button and the screen will jump to the process data view screen (running time of each stage);
10		Move the cursor to this icon, press the OK button and the screen will jump to the program exit prompt confirmation screen;

3.3 Parameter settings

After the power supply is ready, turn the power switch on the side of the device to the on state to power the device. Check whether the preheating mode of the device is turned on, and the preheating mode is in the ON state (refer to the parameter setting section for the preheating mode setting method). After the power is turned on, the heating film and the evaporator are separately warmed up. If equipped with a printer, check if the print settings are turned ON.

3.3.1 Atmospheric parameter setting

according to the atmospheric pressure value at the installation location of the equipment. The boiling point temperature automatically calculates the corresponding value according to the change of the atmospheric pressure value, and there is no need to adjust it separately!

Standard atmospheric pressure: the atmospheric pressure at sea level, which is what we usually call 1 atmosphere (101 kPa). Its value is about 0.1 MPa = 101 kPa. Atmospheric pressure decreases with increasing altitude. Below 3 km, the atmospheric pressure decreases by about 10 kPa for every 1 km of height increase.

If you do not know the local accurate atmospheric pressure value can be set by the following method: When the atmospheric pressure is 101kPa, the internal chamber pressure P1 is about 0kPa when the door is opened, and the door can be operated when the pressure is within $\pm 5\text{kPa}$; when the atmospheric pressure is unknown, The local atmospheric pressure is judged according to the pressure value in the state of opening the

door. For example, when the pressure in the door opening state is -6 kPa, the atmospheric pressure is about 95 kPa (101 kPa minus 6 kPa).

3.3.2 Other system parameters

In the power-on initial screen, select the system parameter setting icon , enter the system parameter screen

System parameters:
Atmospheric
pressure
Pre-heat mode
Printing settings
Time setting
Language selection
USB status
F0 value printing

- Atmospheric pressure: According to the atmospheric pressure adjustment in the actual use area, the boiling point temperature value is automatically adjusted according to the corresponding relationship between the boiling point and pressure of water, the default is 101 kPa.
- Preheat mode: The preheat mode is on. In the standby state, the evaporator and the wall automatically warm up, and the default is off.
- Printer Settings: If you have a printer with or without printing, it is turned on by default.
- Time setting: Set the current time of the device.
- Language selection: Select the display language type.
- USB status: Check the U disk connection status (U disk / SD card option).
- F0 value printing: Select whether to print the F0 value, the default is not to print.

3.4 Switch door operation

For the distinguishing of the door structure, refer to the description section of the visible part of the device and the description of the door structure. The equipment belongs to the automatic door opening and closing device. To close the door, you need to press and hold the door closing button. To open the door, you need to press the door opening button.



Caution:When observing the chamber pressure value (the display shows

pressure or the pressure gauge shows pressure) is greater than zero, it is forbidden to open the door!

When you need to close the door, press the red button on the right side of the device by hand. When you observe that the device door has fallen, release the button, the device automatically performs the door closing action. The screen prompts "closing the door". When the door closing action is completed, the screen prompts "The door is closed, and the startup program can be performed as needed."

When operating door opening and observing the temperature and pressure of the device, the program is not running, just press the door open button, the device will automatically perform the door opening action, and the screen prompts "Opening the door".



Caution:*When the atmospheric pressure of the equipment installation is 1 atmosphere (ie, the chamber pressure is 0 when the door is open), the door pressure condition can be set to ± 5 kPa. When the equipment is located in an altitude, the door opening pressure will decrease accordingly.*

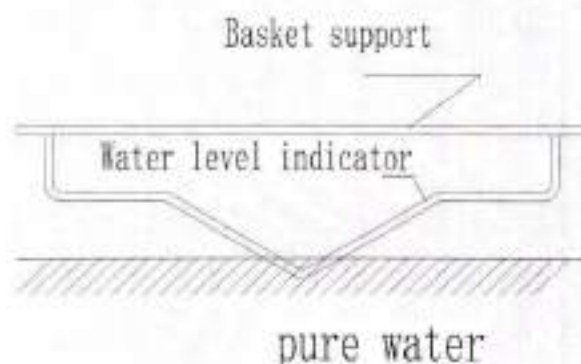


Caution:*When the detection of the internal chamber pressure is not within the range, press the door open button, there will be a prompt that the door cannot be opened. "The door opening condition is not met, and the door cannot be opened." At this time, it is necessary to check the internal pressure of the equipment, the atmospheric pressure, and the operating state.*

3.5 Add water operation

(1) MOST-L series products:

- Prepare pure water and prepare a water container to facilitate the equipment to add water.
- Before placing the basket in the cavity, the operator should observe whether the water level in the cavity is between the basket support and the water level indicator.



- When the water level in the cavity is lower than the water level indicator, inject pure water into the cavity until the water flows into the water level indicator in the middle of the basket support, and the buzzer will sound to remind. Please note that the water level should not exceed the basket support surface.

(2) MOST-L-CG series products:

- Prepare pure water and a water-filled container to add water to the tank.
- Remove the lid of the tank. Note that if the program is already running, there will be condensate flowing down when the lid of the tank is opened, taking care not to allow water to splash out of the tank.
- Add pure water to the water tank, add water to the position between the lowest water level line and the high water level line, and cover the water tank cap (the cover must be placed on the water tank mouth when running the program) to prevent some debris from falling into the water tank.



Caution: *The water used in the equipment must be pure water. The water should be added at least higher than the low water mark, and the water level should be >8L when the water level is high.*

3.6 Gas cylinder treatment

- Before the normal operation procedure, the silicone tube on the back of the equipment needs to be inserted into the pagoda connector on the gas cylinder;
- Visually check whether the water level reaches the high water mark of the gas cylinder. When the water level reaches the high water mark, please drain the water in the gas cylinder. For some MOST-L series devices with a cooling water tank (identification method: there are a water tank drain ball valve and a water tank drain valve label on the back of the equipment), you need to open the water tank drain ball valve at the rear of the equipment to drain the water in

the cooling water tank.



3.7 Running program

- Prepare the work according to the operation manual. When the first time you run the commissioning, you do not need to load.
- Choose a sterilization program, such as the instrument program, observe whether the program is running normally, whether there are water leakage or air leakage in the equipment pipeline, water tank and other equipment parts. If there is any air leakage, refer to the maintenance manual for troubleshooting the pipeline system for processing. Program selection is as follows: Select the program type  icon in the initial screen, press OK  Enter the selection program type screen selection program type (sterilization program or test class, auxiliary class program), press OK key  to enter the program start-up screen, select the program start-up icon  press ok.  The program starts running and the screen is in the run phase interface.



Caution: If the "Water tank water quality is bad" screen prompts when the equipment is running for the first time, it indicates that the water quality of the water tank does not meet the requirements, and the water tank water needs to be replaced.



Caution: If there is no water in the equipment tank but there is no warning of water shortage alarm, please contact our engineering and technical personnel for problem handling.



Caution: When the power switch is turned on and the display parameters are normal and there is no alarm, the sterilizer can be used normally.

3.8 Running sterilization program

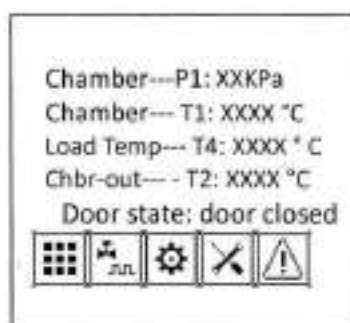
There is no significant water and steam leakage during the operation of a sterilization process. If there is a leak, dispose of it according to the relevant part of the service manual.

3.9 End of installation and commissioning

4 Display Operation Introduction

4.1 Initial screen

If there is no alarm after the device is powered up, the device will stay on the initial screen.



Chamber pressure - P1: indicates the pressure inside the chamber of the sterilizer and is indicated by P1;

Chamber temperature - T1: indicates the temperature of the chamber inside the sterilizer, and is represented by T1;

Load temperature -T4: indicates the temperature of the moving probe detection, generally used to detect the load temperature, and is represented by T4;

Pot wall temperature - T2: indicates the temperature of the sterilizer pot wall cavity, and is represented by T2;

Note: When the device is not equipped with a temperature or pressure detection probe, it will not display the content and perform the hidden operation.

4.2 Program selection and start-up interface

4.2.1 Program selection

Select "Program Selection" on the initial screen.  Press the key to enter

the program type selection screen and select the sterilization program. Then transfer to the sterilization program selection screen

T1: XXX.X° C P1: XXXXkPa
T2: XXX.X° C T4: XXX.X° C
Cycle number: XXXX
Device ID: XXXXXX
Fast-start: XXXX
Sterilize Program
Lab. Program
Auxiliary Program

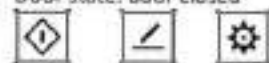
Operation method: Press the up and down buttons to move the cursor to the item to be selected, then press the OK button to confirm the entry into the corresponding program type screen, and select the desired program.

Note: "One-button operation" is used to memorize the last selected program. Click here to quickly start the memory of the last selected program.

4.2.2 Program start-up interface

In the program selection, press the enter button after selecting the program to enter the program start-up.

T1: XXX.X° C P1: XXXXkPa
T2: XXX.X° C T4: XXX.X° C
Program number: XX
Type: XX
Parameter: XXX.X°C/XXXX S
Door state: door closed



4.3 Program running interface

Select the program start-up icon  in the program start-up interface, the program starts and enters the program flow interface

4.3.1 Main flow interface

After the program starts, it first enters the preparation phase, the main flow interface, and the interface is at the end stage after the program ends, and prompts to "open" interface.

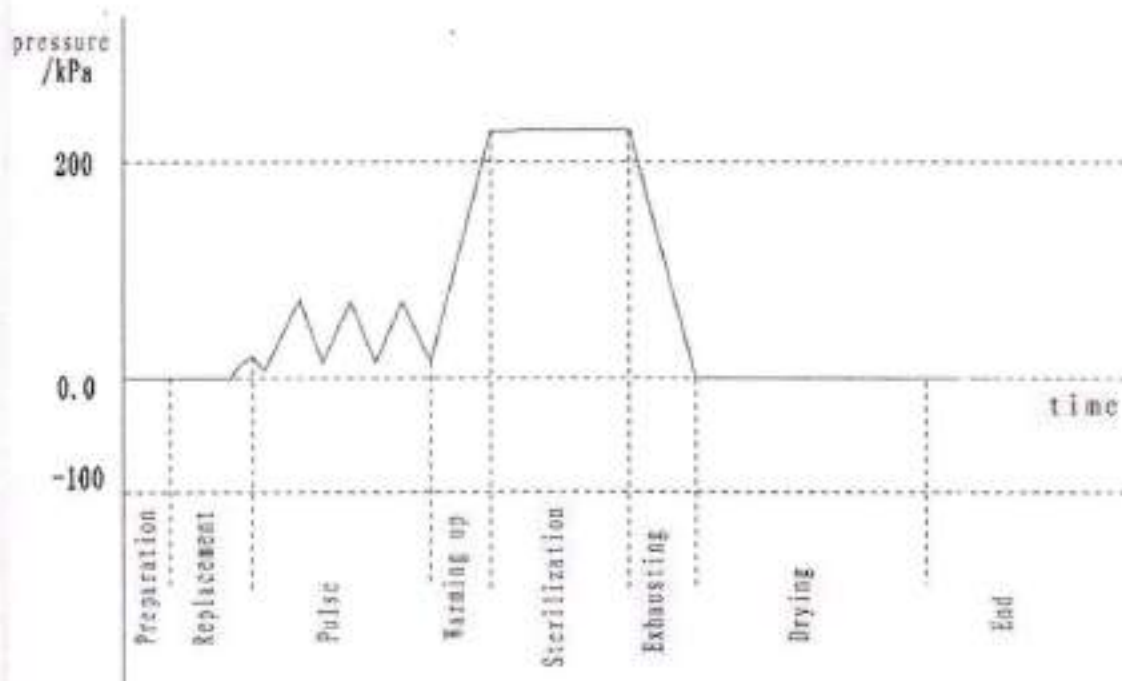


Status data such as the name of each program stage and the temperature of the chamber are displayed on the screen. A sterilization cycle of a device mainly includes the following stages:

- Standby phase: If the preheat mode is on, the device automatically preheats the wall and simultaneously or manually fills the water.
- Preparation stage: In the preparation stage, the water injection process and the wall preheating process are completed. If the printing function is turned on, the printing of the meter head is completed in the preparation stage, the heating tube starts to work, the exhaust valve opens, and when the chamber temperature reaches the boiling point then transfer to the replacement phase.
- Displacement stage: the heating pipe continues to work, the exhaust valve opens, and the cold air in the chamber is removed, and the replacement time is turned into the positive pressure pulsation phase (the number of pulsations is not zero).
- Pulsation phase: Perform positive pressure pulsation to remove cold air, first exhaust to the set pulsation lower limit, then start the intake boost to the pulsation upper limit, and then continue to exhaust the cycle until the number of pulsations is reached. It plays the role of eliminating cold air as much as possible, and the pulsation frequency arrives and enters the heating stage.
- Heating stage: The chamber is heated and boosted, and the temperature is balanced before the transfer to the sterilization temperature. The load and the chamber temperature are balanced. When the sterilization temperature is reached, the delay is transferred to the sterilization stage.
- Sterilization phase: Control the temperature and pressure of the chamber during the sterilization phase to a certain extent until the end of sterilization.
- Exhaust stage: Eliminate chamber steam and reduce chamber pressure.
- Drying stage: After the chamber pressure is removed, the contents in the sterilization chamber are dried.

- Balance phase: If the chamber pressure is not within the opening and closing pressure range, the pressure will be automatically balanced until the door opening condition is reached.
- End phase: The buzzer sounds and the display prompts to end.

The correspondence between pressure and time in the work cycle, for example, there is a positive pressure pulsation flow program, as shown in the following diagram:



Note: When the device is not equipped with vacuum function, the pulsation process is positive pressure pulsation;

4.3.2 Data view

Select the data view icon in the sterilization stage , and enter the process information screen to view the data.

PARA: xx # xx xx xx Ster.time: xxx min Ster.tem: xxx °C Dry.time: xxmin Plus.time: x H.Pluse: xxxkPa L.Pluse: xxx kPa Purg.time: xxx s

PARA: Xx # xx xx xx Hold time: xxx min Exha.inter.: xxxS Exha.temp.: xxx °C
--

In the data view, the number, name, and main parameters of the selected program are

displayed.

4.4 Output information

In the main flow screen, select the output information icon  to enter the output information screen. The working status of the major equipment components is listed. The following table contains explanation of the symbol names contained on all displays.

T1: XXX.X° C	P1: XXXXkPa
T2: XXX.X° C	T4: XXX.X° C
F3 OFF	LK OFF
F4 OFF	I0 OFF
F6 OFF	I1 OFF
F9 OFF	I2 OFF
F11 OFF	I3 OFF
M1 OFF	I4 OFF
H1 OFF	I5 OFF
H2 OFF	I6 OFF

The following table shows the description of the display screen code (some codes are not used and are reserved as reserved items)

Code	name	Code	name	Code	name
F3	Exhaust valve	H2	Heating film	I4	High water level
F4	Ventilation valve	LK	Electromagnetic lock	I5	Low water level
F6	Water injection valve	I0	Door closing detection	I6	Door lock position
F9	Drain valve	I1	Motor close position detection		
F11	Compressed gas intake valve	I2	Motor open position detection		
H1	Heating pipe	I3	Anti-dry signal detection		

4.5 Process data

In the main flow screen, select the process data icon  to enter the process data screen.

Stage information	
Pur:0:00	Ste:0:00
Pv1:0:00	Max:0:00
Pp1:0:00	Min:0:00
Pv2: 0:00	
Pp2: 0:00	
Pv3: 0:00	
Pp3: 0:00	

Pur: actual running time of the replacement phase

Pv1: Actual running time of the first pulsation upper limit to the lower limit

Pp1: Actual running time from the first pulsation lower limit to the upper limit

Pv2: Actual running time of the second pulsation upper limit to the lower limit

Pp2: Actual running time of the second pulsation lower limit to the upper limit

Pv3: Actual running time of the 3rd pulsation upper limit to the lower limit

Pp3: heating actual running time

Ste: Sterilization time running value

Max: Maximum sterilization temperature (The highest temperature that can occur during the sterilization cycle is the set sterilization temperature +3℃, normal condition will not appear below)

Min: Minimum temperature during sterilization

4.6 Alarm information

In the main flow screen, select the alarm information icon  to enter the alarm information screen. If there is a corresponding alarm, the display will pop up the corresponding alarm dialog: for example, the E16 water shortage alarm message prompts.

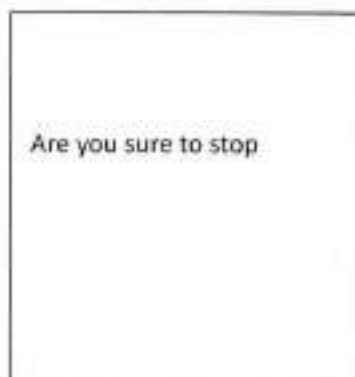
T1: XXX.X° C P1: XXXXkPa
 T2: XXX.X° C T4: XXX.X° C
 Program No.: XX Stage: XX
 Alarm code: XX
 XXXXXX
 Trigger: XX-XX-XX XX:XX:XX
 Clear: XX-XX-XX XX:XX:XX


 E00! Interrupted

The alarm information comparison table refers specifically to the equipment problem and fault maintenance section, which includes the cause analysis of the alarm and a simple treatment method.

4.7 Exit halfway

On the main flow screen, select the exit icon  to enter the exit confirmation screen.



After exiting, please wait for the display screen to prompt you to return, press the back button; then you can open the door or run the program again.

5 Device program introduction

In the program start-up screen, select the parameter setting icon  and enter parameter settings.

- After selecting the parameter setting icon to confirm, enter the password input interface, then input the password and enter the parameter setting.



Caution: *This must be performed by a professionally trained operator with appropriate administrative authority.*

- In the parameter setting screen, move the cursor with the confirm button to select the parameter to be modified.
- The cursor stays on the name of the parameter you want to modify, and the value is modified by pressing the plus or minus button.
- Press the Back button to return after the setting is completed.

Parameter settings:
 Xx # xx xx xx
 Ster.time: xxx min
 Ster.temp: xxx °C
 Dry.time : xxmin
 Plus.time: x
 H.Plus : xxxx °C
 L.Plus : xxx °C
 Hold temp.: xxx °C

Parameter settings:
 Xx # xx xx xx
 Hold time: xxx min
 EExha.inter.:xxx S
 Exha.temp: xxx °C

NO.	Name	Sterilization Temperature	Sterilization Time	Dry Time	Pulsation Frequency	Pulsation Upper limit	Pulsation Lower limit	Insulation Temperature	Insulation Time	Exhaust interval	Exhaust steam Temperature
1.	Bare procedure	134 °C	4min	0	0	120℃	105℃	80℃	0	0	134℃
2.	Packing program	134℃	6min	0	4	120℃	105℃	80℃	0	0	134℃
3.	Rubber program	121℃	20min	0	4	115℃	105℃	80℃	0	0	121℃
4.	Solid class	134℃	4min	0	0	120℃	105℃	80℃	0	0	134℃
5.	Solid Waste	134℃	12min	0	4	120℃	105℃	80℃	0	0	80℃
6.	Medium	121℃	20min	0	0	115℃	105℃	80℃	20min	30s	80℃
7.	Liquid program	121℃	20min	0	0	115℃	105℃	80℃	0	30s	80℃
8.	Agar	100℃	10min	0	0	80℃	50℃	80℃	20min	30s	80℃
9-108	User-defined	121℃	20min	0	0	115℃	105℃	80℃	0	30s	80℃

Sterilization time: the running time of the sterilization phase, the range is [0,9999]min;

Sterilization temperature: the temperature is maintained during the sterilization phase, and the setting range is [105, 138] °C;

Dissolution temperature: the temperature is maintained during the dissolution phase, and the setting range is [60, 100] °C;

Drying time: running time of drying phase, setting range is [0,9999]min;

Number of pulsation: number of pulsations, setting range is [0, 6];

Pulsation upper limit: upper limit of pressure in pulsation phase, setting range is [0, 150]

kPa;

Lower pulsation limit: lower limit of pressure in pulsation phase, setting range is [-99, 50]

kPa;

Insulation temperature: keep the temperature during the heat preservation period, the setting range is [40, 134] °C;

Program name	Sterilization time	Drying time	Exhaust steam temperature	Operation time	Applicable loading type or function
Bare program	4min	5min	134℃	30min	High temperature resistant, unpackaged solid goods
Packing program	6min	20min	134℃	50min	High temperature resistant packaging, unpackaged solid goods, fabrics, etc.
Rubber program	20min	10min	121℃	50min	Items that are not resistant to high temperatures
Solid	4min	0min	134℃	20min	High temperature resistant, unpackaged solid goods
Solid Waste	12min	5min	134℃	40min	Suitable for items containing microorganisms that are difficult to kill
Medium	20min	0	80℃	120min	Mainly suitable for sterilization of culture medium
Liquid program	20min	0	80℃	120min	Conventional equipment for sterilization of non-closed liquids

Insulation temperature: keep the temperature during the insulation period, the setting range is [0,9999]min;

Exhaust interval: the interval between intermittent exhausts in the exhaust phase, setting range is [0, 120] min;

Note: If set to zero then the exhaust valve opens to exhaust directly.

Exhaust temperature: no exhaust steam is discharged during the exhaust stage, and the temperature value of the exhaust valve is completely opened;

Agar	10min	0	80℃	30min	Suitable for agar or items that require lower temperature to dissolve
User-defined	20min	0	80℃	120min	Applies to items that are run by user-defined parameters.

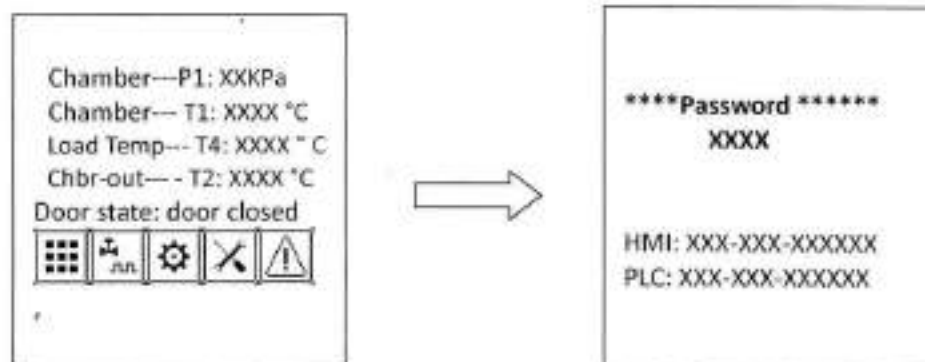


Caution: If the program parameters need to be adjusted, the administrator needs to have the authority to modify it. The modified parameters need to be verified for sterilization effect. At the same time, in the daily use of the equipment, monitoring corresponding sterilization effect is required according to the national or regional standards.

Program Description: This device is equipped with 108 sets of programs by default, including three medical programs: bare program, packaging program, rubber program. Five laboratory program: solid, solid waste, medium, liquid program, Agar; 100 user-defined programs;

6 System maintenance parameters

The system maintenance parameters require a privilege password to be set. In the initial interface, select the system maintenance icon , then enter the password input interface and input the corresponding authority password to enter the system maintenance screen. The password must be operated by a special engineer or a manager with corresponding authority.



Enter the system maintenance interface:

System maintenance
Device Information
Deviation calibration
Manual operation
Password setting
Mode setting
Process parameter
Factory Reset

- Device information: You can set the display brightness LCD, and select the confirmation button to save;
- Deviation calibration: Calibrate the deviation value of the temperature and pressure within the allowable range;
- Manual operation: manual operation of each output point of the device;
- Password setting: set the device permission password and modify the current password;
- Mode setting:
 - USB settings:
 - USB connection status: select whether to connect;
 - USB alarm status: alarm message prompt after USB data flash is full;
 - USB record clear: Select whether to clear the record stored in the display;
 - Vacuum mode: reserved parameters;
 - Water tank mode: reserved parameters;
 - Temperature mode:
 - Dual temperature: dual temperature control using a moving temperature probe and a chamber fixed temperature probe;
 - Single temperature: single temperature control using a chamber fixed probe;
 - Pressure detection: Whether the device has a pressure detection device, set according to the actual hardware configuration of the device (optional).
 - Closed liquid: pressure coefficient 0-5.0, do chamber compressed air operation (optional) according to the coefficient requirements.



Caution: If the equipment is subjected to a rapid cooling process, only the liquid program can be selected, and the mobile probe must be used to detect

the internal temperature of the reference load to ensure the safe operation of the equipment and the safety of the sterilization load.

- Sealed door: it can be divided into automatic top opening door, manual top opening door and manual sliding door, set according to the actual door structure of the equipment.
- Water level detection: Whether the equipment has a low water level detection device, set according to the actual hardware configuration of the equipment.
- Drying function: Whether the device is equipped with a drying system, set according to the actual hardware configuration of the device.

➤ Process parameter

- Water quality testing: used to set water quality testing parameters, please contact the manufacturer's service engineer;
- Print interval: set the printing interval of the sterilization phase;
- P2 upper limit: reserved parameters;
- Heating interval: the internal and external balancing time of the load when the temperature rises close to the sterilization temperature;
- Evacuation delay: Reserved parameters;
- Delayed start: reservation function, after the program starts, the program will run automatically after the delay time arrives;
- Exhaust differential pressure: the differential pressure value of the exhaust steam release pressure during one phase of exhaust steam discharge;

Remark: If there is no pressure detecting device, the exhaust pressure difference is used as the opening time of the exhaust solenoid valve (unit is 0.1s).

- Factory Reset: After the selection, the parameters are restored to the factory settings. After the power is turned off, the parameters are restored to the factory settings. After restoring the factory settings, reset some mode parameters of the device according to the actual hardware configuration of the device.

7 Sterilization procedure

7.1 Washing of sterilized items

- 7.1.1 After using of surgical instruments, laboratory instruments (glassware, etc.), the instrument should be thoroughly cleaned as soon as possible.

7.1.2 It is recommended to wash the items with an ultrasonic washer, detergent or mineral-free water.

7.1.3 After washing, rinse the instruments. Finally, prepare to pack or put it directly into the tray or shelf.

7.2 Packing of items

7.2.1 According to the load and the storage time of the articles after sterilization, different packaging materials are selected to package the device.



Caution: *Packaging materials including rigid containers, disposable medical crepe paper, paper-plastic bags, paper bags, textiles, non-woven fabrics, etc. should meet the requirements of GB/T 19633. Textiles should also meet the following requirements: non-bleaching fabrics; there should be no stitches except for the four sides of the cloth, and should not be sewn; high temperature washing, degreasing, de-slurry and decolorization should be carried out before initial use;*

7.2.2 When packing, the dressings and instruments should be packaged separately. Some dishes and other items should be buckled to prevent water storage. If they are tied together, add absorbent paper gauze in the middle to separate them. For other packaging considerations, please refer to the relevant national standards.

7.2.3 Make sure that all the holes in the package are oriented in the same direction and that the items in the package cannot move.

Maximum load of the equipment:

Equipment volume	Load maximum load	Single load maximum weight
65L	14kg	3kg
85L	18kg	4kg
110L	22kg	5kg

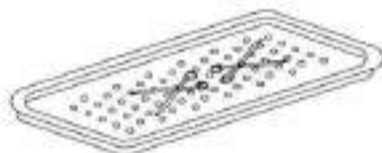
7.3 Loading of items

7.3.1 The loaded items are prohibited from contacting the sterilizer chamber wall.

7.3.2 The both ends of catheter are open and there are no sharp bends or distortions.

7.3.3 The instrument should be placed down or sideways to prevent water retention.

7.3.4 The instruments should be placed evenly, spaced apart, and not allowed to overlap, as this may result in inadequate sterilization and drying.



7.3.5 Different types of instruments are placed in different trays, such as stainless steel, carbon steel, etc.

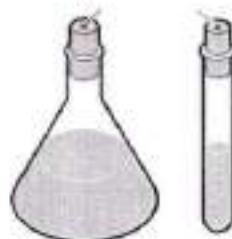
7.3.6 It is forbidden to place the packaged goods tray and the instrument tray on textiles or softer items to avoid the formation of condensed water to wet the underlying items.

7.3.7 When sterilizing the container itself such as beakers, flasks, and test tubes, place the opening portion face down or in the horizontal direction. If the opening portion is placed face up, it is difficult for the steam to sufficiently penetrate into the inside of these containers because it is difficult to discharge the air, thus resulting in insufficient sterilization.



7.3.8 Note the following points for liquid loads:

- When liquid sterilization is performed for conventional equipment, when a closed liquid cannot be sterilized, a ventilating stopper is used.



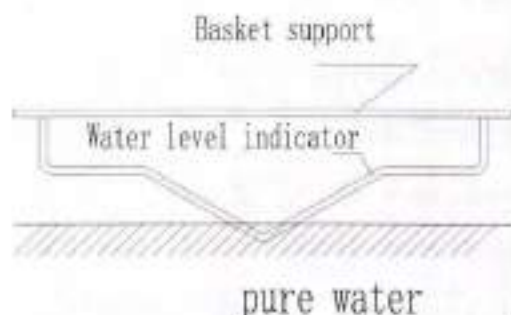
- When sterilizing a liquid held in an open container, the liquid content of the container should not exceed 75% of the volume of the container.

7.4 Program selection and startup

- 7.4.1 Check the equipment power supply and water source (if there is a water tank, check if the required water level is reached).



MOST-L-CG series equipment has automatic water injection function. Before starting the program, when the water level is lower than the low water level (Min), you need to manually add pure water. When the water level is higher than the low water level, there will be a buzzer Prompt tone, add water level is at least higher than low water level. Before running the program, make sure that the water tank filling port is covered with the water tank cover! MOST-L series equipment does not have automatic water injection function, and pure water needs to be manually injected into the cavity. When the water level in the cavity is lower than the water level indicator, inject pure water into the cavity until the water flows into the water level indicator in the middle of the basket support, and the buzzer will sound to remind. Please note that the water level should not exceed the basket support surface.



- 7.4.2 Turn on the power of the device, turn the device power switch to the "1" side, and close the sealed door (refer to the "Door Operation" section);
- 7.4.3 Select the appropriate program according to the type and load of the sterilized items (for details, please refer to the program introduction section);
- 7.4.4 Refer to the "Display Operation" operation.
- 7.5 Equipment operation

During the running of the program, the operator should not leave the device and exit the program or power off when the device is abnormal.



Caution: Before the program is run, confirm that the biological or chemical monitoring indicators have been placed in the equipment in accordance with national and regional regulations to monitor the sterilization effect.

7.6 Take out of sterilized items

- 7.6.1 After the sterilization is finished, according to the equipment prompt, refer to the "Door Operation" section to open the door. Wait 5 minutes to dissipate most of the heat in the inner chamber.



Caution: If the sterilized item is removed immediately after the end of the procedure, a small amount of condensed water may be found on the sterilized item! At this point, the door can be opened and the item removed after 5-10 minutes.

- 7.6.2 Operators should wear gloves or other protective tools to remove sterilized items to prevent burns.



Caution: After opening the door, the inner cavity of the device, the inside of the door, the sterilized items and the tray shelf are all in a high temperature state. To prevent burns, necessary protective measures must be taken to protect the safety of the operator!

7.7 Storage of sterile items

- 7.7.1 Choose a storage environment that is dust-tight, dry, and has little fluctuation in ambient temperature.
- 7.7.2 Storage expiration date: The storage time of sterile items is related to the packaging materials and the type of packaging. If no-packaging item is sterilized, it should be used immediately.

Packaging material	Validity of sterile items	Remarks
Textile material packaging	14 days	Only 7 days when the storage conditions are not met (storage conditions: ambient temperature <24 ° C, ambient humidity < 70%)
Medical disposable paper bag	1 month	
Medical disposable	6 months	

crepe paper		
Medical nonwoven	6 months	
Medical disposable paper-plastic packaging	6 months	
Hard container packaging	6 months	

8 Maintenance

Frequency and content of equipment washing and maintenance:

SN	Component Name	Maintenance cycle	Maintenance requirements	Remarks
1	chamber	Once a month	Keep clean and free of sewage	
2	Chamber filtration device	Once a month	Keep clean and free of sewage	Located at the exhaust port of the device
3	Basket	Once a day	Keep the tray (shelf) clean and free of dirt	
4	Water tank	Once a month	No dirt on the wall of the tank	
5	Door seal	once a week	Keep the surface of the door strip free of dirt	
7	Brass filter	Once a month	The filter is clean and free of debris	

Note: The above maintenance period table should be flexibly adjusted according to the using of the equipment to ensure that the equipment can play better performance and better meet your needs.



Caution: Maintenance can be done with common general tools, no special tools required.

8.1 Equipment washing

8.1.1 Water tank washing

After draining the water in the tank first, use a clean rag to wipe the inner wall of the tank and the water quality probe, and remove the dirt from the tank.

8.1.2 Door seal ring washing

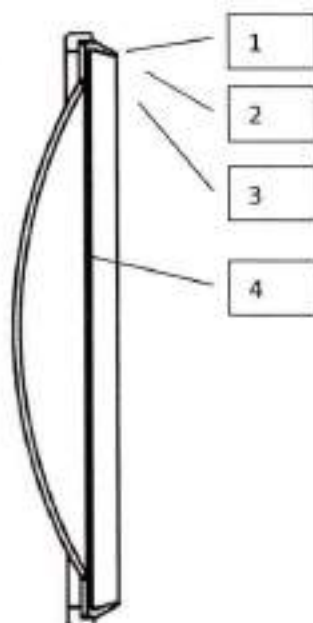
After removing the door seal ring, wipe it with a clean and damp cloth. If it cannot be wiped thoroughly, use a cleaning agent and rinse with clean water and wipe the seal groove with a clean, damp cloth. The removal of the ring refers to the

section of replacing the ring.

8.1.3 Basket washing

Wipe the basket with a clean, damp cloth and rinse with clean water

8.2 Replace the seal ring



Serial number	Component Name
1	Door seal ring mounting groove
2	Door rubber ring (cross-sectional view)
3	Apron pressure plate
4	Sealing door

When installing the seal ring, install ring into the seal groove as shown, and install it according to the installation diagram during installation:

First, press the four points of the door seal ring (four points that can be divided equally) into the sealing groove, fix the apron pressure plate, and finally install the entire door seal ring flat. (Note that the door seal ring installation slot 1 does not

stay air, press the door seal to the end).

8.3 Filter washing and replacement

8.3.1 Filter and washing

The chamber filter (Y type filter) is located between the exhaust port of the main body of the device and the exhaust solenoid valve F3. After the device is used for a period of time, it needs to be cleaned. The filter is as follows:



After removing the nut, remove the filter net and wash the impurities on the filter with water. Reinstall after cleaning.

8.4 Solenoid valve cleaning

Solenoid valve cleaning is as follows:



1. Remove the four Philip's head screws



2. Lift the electromagnetic head vertically and pay attention to the spr



3. Take the movable iron core assembly and seal ring out of the visible valve body sealing surface



4. Remove the deposits and scale on the sealing surface and reinstall the valve.

After removing the components of the solenoid valve, clean it. After cleaning, reassemble the solenoid valve according to the previous removal procedure.

8.5 Check and replace safety valve

➤ Check safety valve

In order to prevent the safety valve from being blocked, under normal use, the steam pressure is released once a month.

- 1) Run a sterilization program (bare or packaged, etc.).
- 2) When the pressure P1 in the sterilization container reaches 100 kPa, pull the safety valve pull-up ring to open it, about 2 seconds, steam is ejected, indicating that the evaporator safety valve is working properly, otherwise the safety valve needs to be calibrated or replaced.



Caution: When the ring on the safety valve is pulled, steam will be ejected. When pulling the ring, it is best to use a screwdriver or other tools. Do not use your fingers to pull it. The operator should try to stay away from it and prevent burns.

➤ Replace the safety valve

This operation is limited to professionals only.

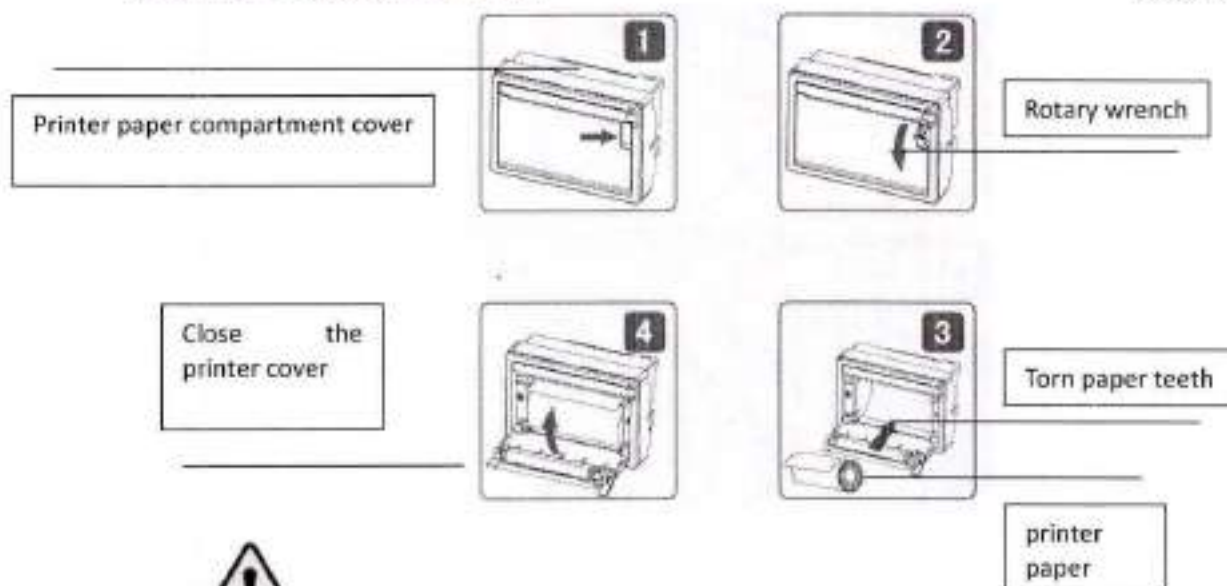
1) Remove the safety valve retaining screw and remove the safety valve from the safety valve base.

2) Replace it with a qualified safety valve. (Qualification criteria: ensure that the safety valve opens when the pressure is between 0.25 MPa and 0.26 MPa).

3) Test a sterilization process.

8.6 Replace the printing paper





Caution: When the added paper in the printer is about to be used up, a red mark will appear on the paper to remind the user to replace the paper (the printer is optional).

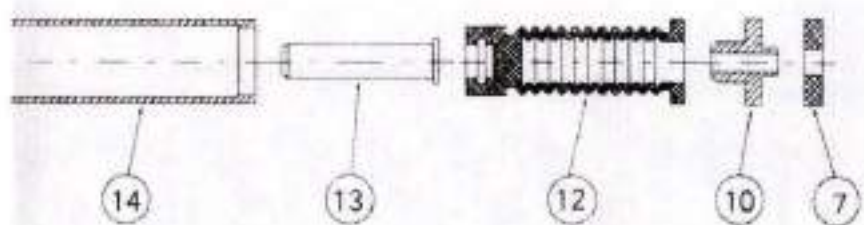
- As shown in Figure 1, the arrow position is gently pulled out of the rotary wrench, as shown in Figure 2.
- Continue to rotate the wrench, at which point the printhead feed shaft is separated from the printhead and the paper compartment cover is opened.
- Put the printing paper in and pull out a piece (beyond a little tearing paper teeth), pay attention to put the paper neatly, the direction of the paper is the side of the liquid (smooth side) upwards (if reversed, it will not finish printing), as shown 4.
- Close the paper compartment cover, press the paper feed shaft of the print head and press the paper feed shaft back to the print head with a little force, and push the rotary wrench into the reset.
- Turn on the power of the printer to make the machine head rotate. At this time, look at whether the paper is crooked. If crooked, adjust the paper until it is perpendicular to the paper exit.

8.7 Door fuse bellows replacement

The door safety interlock device is a safety protection device for preventing the door from automatically opening when the sterilization container is under pressure. The installation position is located at the top of the electric box, and the working principle is: the pressure generated by the chamber of the sterilizer stretches the silicone rubber bellows. Push the insurance pin to lock the door to prevent the operator from accidentally opening the door. When the pressure is released, the safety interlock is

restored and the door pin is loose, and the sterilizer door can be opened.

The replacement method is as follows:

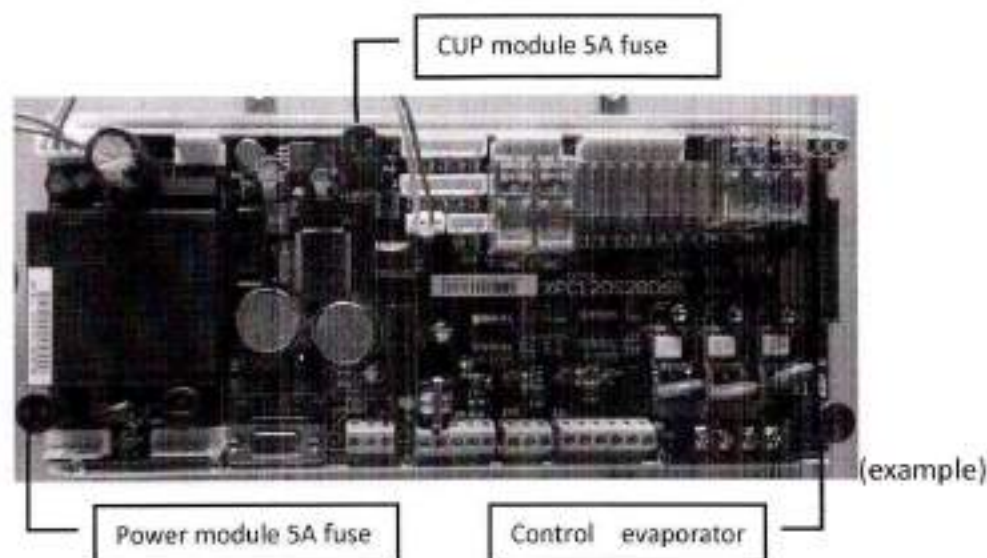


- Remove and open the insurance seat;
- Slowly pull out the door safety pin (13) from the fuse seat and insert it into the new bellows (12);
- Put the bellows and the safety pin back into the guide sleeve (14) and install the gasket (7) (10);
- Put the above parts back into the safety seat, retighten the safety seat and fix it on the door;
- Test all sterilization processes.

Remarks: The bellows is generally replaced once every two years, which is subject to the actual use of the equipment.

8.8 Fuse replacement

8.8.1 Motherboard fuse



There is a corresponding fuse in the equipment accessory. If the fuse is burnt out, find the fuse of the corresponding specification in the spare part.

Use a flat-blade screwdriver to rotate the cover of the fuse counterclockwise, remove the cover by hand, remove the broken glass fuse, and replace the new glass fuse.



Fuse, where the specifications of the fuse are marked



Caution: This fuse must be replaced by a professional electrician or company after-sales personnel.

9 Problem and troubleshooting

9.1 common problem

9.1.1 Water tank bad water quality tips

If the equipment is equipped with a water tank, when the water quality is lower than the standard, a bad water quality will appear. When the user is eager to use the device, you can press the ok button to ignore this prompt and continue to start the program normally. If the water quality has met the requirements but it still indicates that bad quality, in this case, you need to contact the equipment supplier for problem handling.

Note: This function determines whether there is water quality detection function according to the hardware configuration of the device.



Caution: *Prolonged use of unqualified water quality can cause blockage of pipes and evaporators! Please change the water regularly!*

9.1.2 Can't open the door

For automatic door equipment, when the equipment installation location is at a high altitude, the equipment opening pressure is $\pm 5\text{kPa}$ (at atmospheric pressure 101kPa). When the pressure deviates from one atmosphere, the atmospheric pressure value of the equipment needs to be adjusted. Otherwise, the door will not open. Adjust as described in this manual for atmospheric pressure adjustment.

9.2 Alarm code and handling measures

SN	Alarm code and content	Reason	Treatment
1.	E00 exit halfway	Choose to stop and exit the program while the program is running.	Wait for the prompt of return and exit the program
2.	E01 door closed position disconnected	The door closing position is not detected during the running of the program.	Reclose the door or check the micro switch
3.	E02 cavity over-temperature	Detect that the chamber temperature exceeded the sterilization temperature $+4^{\circ}\text{C}$	Check if the temperature detection is normal
4.	E03 cavity wall over-temperature	Detect wall temperature exceeded 160°C	Check motherboard temperature detection Check the cavity wall heating output point
5.	E04 low temperature sterilization	The chamber temperature is lower than the sterilization temperature during the sterilization process for more than preset time 10 minutes	Check the operation of the heating element Check solenoid valve tightness
6.	E06 Heating timeout	Heating phase time exceeds preset time 60min	Check the operation of the heating element Check solenoid valve tightness
7.	E08 Closing timeout	After the door closing operation, the door is not closed in place within 20s	Check whether the electric push rod is faulty
8.	E09 motor work	During the process of opening and	Check the door position micro

SN	Alarm code and content	Reason	Treatment
	timeout	closing the door, the motor working time exceeds the predetermined time by 20s.	switch Check the status of the sealing door
9.	E10 chamber overpressure	The chamber pressure exceeds the preset pressure of 280kpa	Check the operation of the heating element Check the motherboard heating output point
10.	E12 cavity sensor failure	Detecting the chamber temperature 0 ° C or 200 ° C	Check the cavity sensor
11.	E13 cavity wall sensor failure	Detect chamber wall temperature 0 ° C or 200 ° C	Check cavity wall sensor
12.	E15 pressure sensor failure	Detecting chamber pressure -100kPa or 300kPa	Check pressure sensor
13.	E16 water shortage of water tank	Water tank does not detect water level	Check the water level of the tank
14.	E20 door is not locked	The door lock switch does not detect the signal during the running of the program.	Check the working status of the electromagnetic lock Check the door lock position
15.	E23 electric station disconnected	The signal of the power station switch is not detected during the running of the program.	Check the electrical position signal
16.	E26 door is locked	Door lock signal detected when opening and closing the door	Check the working status of the electromagnetic lock Check the door lock position
17.	E27 dry burning alarm	The motherboard does not detect the normally closed signal of the anti-drying thermostat	Check the status of the anti-dry thermostat
18.	E28 load sensor failure	Load temperature detection 0 ° C or 200 ° C	Check load temperature sensor
19.	E29 compressed gas pressure is low	The chamber pressure is less than the pressure value calculated based on the pressure coefficient -50kpa	Check the status of the pressure pump and intake valve

SN	Alarm code and content	Reason	Treatment
20.	E30 water shortage alarm	Water level detected below low water level	Check the water level detection Check the solenoid valve for leakage
21.	E31 full water of water tank	The water tank is full in standby state	Discharge some water from the clean water tank
22.	E50 communication failure alarm	Display and control board communication error	Check the display and motherboard communication
23.	bad water quality	Water quality test value exceeds the upper limit of water quality test	Clean the tank and replace the qualified water
24.	It does not meet the conditions for opening the door, can not open the door	When the chamber pressure is no longer in the range, press the open button to display this prompt.	Check the working status of the device
25.	Door not unlocked	When the door lock is in the closed state, it will prompt when press the door open button on the automatic door device.	Check the status of the electromagnetic lock and the door lock micro switch
26.	Whether the power is restored	When the device is running the program, the device is powered off, and a prompt appears.	You can choose to continue or stop and press OK button to confirm
27.	Water tank full of water	The water tank is full when the equipment is running the program.	After you have removed some water, you can choose to continue running the program.

Remark: When abnormal conditions occur during the correct use of the equipment, immediately power off and repair according to this part or contact the manufacturer.

10 Attachment

List of accessories that come with the conventional equipment (due to the special equipment and the product update, the actual accessories attached to the equipment may not be exactly the same as the list, please refer to the actual accessories). "(xxL)" marked in the table of specifications in the table below indicates that the accessory is only available in this volume model.

Note: Models of other accessories (including batteries, control systems, etc.) can be viewed directly on the component's label.



Caution: The components or spare parts used in this equipment can only be inspected or provided by our company or our company's regular agency.

Serial number	Component Name	Specification	Quantity	Remarks
1.	Basket	13900-008.87.83.01	2	Containing sterilized items
2.	Gas cylinder		1	Containing excess steam from equipment
3.	Bellows	13002-003.01	1	Door safety interlock accessories
4.	Fuse	976210915 (250V 5A ϕ 5 $\times$ 20mm)	2	Controller power insurance accessories are for automatic control equipment
5.	Drain pipe (with joint)	964070918 (10*15)	1	Water tank draining pipe
6.	Instruction Manual		1 piece	Attached file
7.	Packing List		1 piece	Attached file
8.	Operating procedure		1 piece	Attached file
9.	Pressure gauge certificate		1 piece	Attached file
10.	Product certification		1 piece	Attached file
11.	Safety valve certificate		1 piece	Attached file
12.	Special equipment installation and renovation maintenance notice		1 piece	Attached file
13.	Pressure vessel product quality certificate		1 piece	Attached file
14.	Completion map		1 piece	Attached file
15.	Special equipment design license		1 piece	Attached file
16.	Special equipment manufacturing license		1 piece	Attached file
17.	Printing paper (optional)	901990159 (R57*30)	2 rolls	Printer matched for automatic control equipment

Appendix 1 Operating Procedures**1. Preparation:**

- ✓ The water tank is filled with pure water as required or the equipment is connected to the water source as required.
- ✓ Turn on the power supply and put the sterilizer power on, prepare for program operation.
- ✓ Select the corresponding program according to the specified requirements or load type;

2. Sterilization operation:

- ✓ Put the items to be sterilized into the sterilization room, there should be a gap between the packages, do not close to the wall and door panel, and other loads such as liquid are loaded according to the loading specifications.
- ✓ Close the sterilizer door, select the sterilization procedure according to the sterilized items, check whether the sterilization parameters are correct, and start the program.
- ✓ During the sterilization process, the operator should not be away from the equipment. The operation status of the equipment should be closely observed. If there is any abnormality, it should be handled in time to prevent accidents.
- ✓ Monitor the sterilization effect and record the records for easy tracking.
- ✓ After the sterilization is finished, the door can be opened to take out the items after the pressure in the room returns to zero.
- ✓ After the sterilized items are taken out of the sterilizer, they should be carefully checked to prevent secondary pollution.

3. After work:

- ✓ Open the door, set the power switch to the off state, and then cut off the total power supply to the device.
- ✓ When the equipment indicates that the water quality is poor, the water exchange operation must be carried out.
- ✓ After daily work, the inside and outside of the sterilizer should be kept clean. Clean the chamber dirt with a clean rag and water, once a week for small maintenance, and once a month for overall maintenance.

4. Precautions:

- ✓ Sterilized items must not be mixed with unsterilized items.
- ✓ For qualified sterilized articles, the date of sterilization and the conformity mark shall be indicated.

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SHINVA 山东新华医疗器械股份有限公司
SHINVA MEDICAL INSTRUMENT CO., LTD.

地 址：淄博市周村区新华大道 2009 号

电 话：(86) 0533-3584911 (销售) 3591216 (客服)

传 真：(86) 0533-3584409 (销售) 3591217 (客服)

邮 编：255300

网 址：www.shinva.net

Packing List

Order number **L65**

Product number **2020L36**

Inspector **JYTD**

SN	Component name	Specification	Qty	Remarks
1.	Sterilization basket	13900-013112400A (L65)	2	Store sterilized items
2.	Gas bottle		1	Store excess steam from equipment
3.	Water bottle		1	Inject water into water tank
4.	Bellows	13002-003.01	1	Door safety interlock accessory
5.	Fuse protector	976210915 (250V 5A ϕ 5×20mm)	2	Controller power supply insurance accessories are suitable for automatic control equipment
6.	Silicone drain	Φ 10×15	1	Water tank drainpipe
7.	Door apron		2	To seal the door and the main body
8.	Introduction Manual		1	Attached file
9.	Filler piece		5	Backup
10.	Certificate		1	Attached file
11.	List of vulnerable parts		1	Random vulnerable parts list
12.	Filler piece	13900-013110465A5	5	Backup
13.	Packing List		1	Attached file
14.	Printing paper(optional)	901990159 (R57*30)	2 rolls	The printer is suitable for automatic control equipment

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MOST-L65/85/110 易损部件列表			
零件名称	编码	规格	备注
门胶圈	13900-005310102B	13900-005310102B	适用 65L/85L/110L
波纹管	13002-00301	13002-00301	适用 65L/85L/110L
波纹管垫	13200-0500304	13200-0500304	适用 65L/85L/110L
电热管	13900-01311018300B	13900-01311018300B	适用 65L/85L
	13900-01311015600C	13900-01311015600C	适用 110L

MOST-L65/85/110 Fast Moving Part List			
Part name	Code	Specification	Remark
Door gasket	13900-005310102B	13900-005310102B	Suitable for 65L/85L/110L
Bellow	13002-00301	13002-00301	Suitable for 65L/85L/110L
Bellows gasket	13200-0500304	13200-0500304	Suitable for 65L/85L/110L
Heater	13900-01311018300B	13900-01311018300B	Suitable for 65L/85L
	13900-01311015600C	13900-01311015600C	Suitable for 110L