

Operation Manual



BAVT 3000 series

Vertical Autoclave

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Warning: to ensure safe and correct use of the equipment, please read this manual carefully before use and follow the instructions. If not used in the way specified by the manufacturer, the protection provided by the equipment may be damaged.

01 Introduction

Welcome to use our vertical steam sterilizer (hereinafter referred to as sterilizer or machine or equipment).

This manual describes the operation steps of the equipment. In order to ensure the correct use of the equipment, please read this manual carefully before use.

Our company guarantees the quality of the products. According to the relevant regulations of the state and the industry, we will carry out "three guarantees" for the products for one year (except wearing parts), and assume the responsibility directly related to the quality of the products.

If you encounter any problems in the use of the company, you can contact us, we will provide you with warm service.

The company undertakes that if necessary, we may have our company or our authorized maintenance personnel to provide users with the information required for the maintenance of sterilizer.

02 Safety Instructions

(1) Please read this manual carefully before use and understand all warnings and attention requirements. The user must check the safety performance of the sterilizer to ensure that the sterilizer is in good working condition before use.

(2) The sterilizer should be used according to the applicable scope, use method and matters needing attention stipulated in this manual. Otherwise, it may damage the protection provided by the sterilizer or cause sterilization failure.

(3) The equipment in the supply with some safety protection device to prevent operator injury and equipment damage, the operator should understand the rules before starting up before the operation.

(4) requirements for the operator: the operator must go through the equipment performance characteristics, working principles and field operation (use) and other knowledge training, and have a certain knowledge of sterilization process, before the operation has carefully read and understand the contents of this manual, with the ability to operate before the operation.

(5) It belongs to A class of pressure vessels, in the process of use, should comply with the relevant provisions of the national pressure vessel regulations; In order to ensure the safe and correct use of the equipment, the responsible person shall be determined.

(6) In the design and manufacturing process, we have fully considered the use safety of products, but the operator still can not be ignored, in the process of use should often check and observe the working state of the equipment.

- (7)The e network power supply and power connection used by the user shall meet the relevant requirements of the national electrical safety standards. When the voltage fluctuation of the grid exceeds 10%, the equipment may not work properly.
- (8)Being this equipment in line with the requirements of GB/T 18268.1 2010. It is recommended that the user evaluate the electromagnetic environment before use to ensure the normal operation of the sterilizer.
- (9)levies the equipment in line with the GB 4793.1 2007, the related safety requirements of GB 4793.4 2007.
- (10)pressure gauge, safety valve, the instrument should be in accordance with the relevant provisions of the state on a regular basis.
- (11)before installation fuse or electrical maintenance, be sure to first power equipment, cut off the total power.
- (12)in order to ensure the safety of using, avoid shock damage, shall ensure that equipment grounding is good. Please do not change the internal or external grounding protection wire of the equipment or remove the wiring of the grounding protection section. Otherwise, the protection function of the device will be disabled and electric shock will occur.
- (13)use the device should pay attention to and be away from the anti-scald area, exhaust port, drain port, so as to avoid scalding.
- (14)when a device fails, shall be immediately disconnected equipment total power, after waiting for troubleshooting and through to the total power.
- (15)equipment and various attachments should be used in the life of the term, overdue use may lead to some security risks. Therefore, its safety should be checked before each use, and should be replaced in time if necessary.

Brief

The vertical steam sterilizer uses saturated steam to sterilize medical instruments, dressings, liquid medicines and glassware. It has the advantages of novel and beautiful shape, reasonable structure, complete function, rapid heating and thorough sterilization.

Intended use: for clinical institutions to sterilize medical instruments, dressings, glassware and solution medium with steam.

Product taboos: none

Expected places of use: medical and health institutions, operating rooms, laboratories, etc.

Applicable population: medical health and other units staff.

03 Features

1. Vertical steam sterilizer is mainly composed of shell, sterilizing room, steam generator, pipeline system and control system. According to the sterilization chamber volume integral 35L, 30L, 40L, 50L, 60L,75L, 80L and 100L several models.
2. The shape is square and vertical structure. The shell, sterilizing room and sterilizing net basket are made of stainless steel. Sterilizing room (pressure vessel) and its safety accessories shall comply with GB 150, special equipment safety supervision regulations and national statutory pressure vessel regulations, and shall have a legal pressure vessel safety supervision organization registered product nameplate and product quality certificate.
3. Install safety valve. When the pressure in the container exceeds 0.24mpa, the relief valve can automatically release excessive pressure, which is safe and reliable.

4. During the heating process, the air valve will open to discharge cold air automatically. When the temperature exceeds 102°C, the exhaust valve will automatically close, and then switch to automatic intermittent exhaust function, in order to improve the vapor saturation in the container, the sterilization effect is better.
5. The operation panel is equipped with pressure gauge with pressure reading indication for clear observation.
6. This container has the automatic protection function. When the water shortage occurs in the container, the circuit will be cut off automatically and the heater will stop working.

04 Technical Parameters

NO	MODEL	VOLUME	Max. working pressure	The Max. sterilization Working temperature	Sterilization time adjustment range	power kW
4	BAVT-3002	50L	0.22 MPa	134 °C	4 ~120min	3.5
6	BAVT-3003	75L				4.5
8	BAVT-3004	100L				4.5

1. Power supply: a.c.220V±22V, 50Hz±1Hz.
2. Working pressure: 0.22mpa; Operating temperature: 105°C ~ 134°C.
3. During normal operation within the normal sterilization cycle, the noise should not be greater than 65dB(a-weighted)
4. Set sterilization time range: 4 ~ 120 minutes; Set drying time range: 5 ~ 240 minutes.
5. Equipment safety category: category I.
6. Ambient temperature: +5°C ~ +40°C; Relative humidity: no more than 85%; Atmospheric pressure 70kPa ~ 106kPa.
7. The water source used by the sterilizer should not affect the sterilization process or damage the sterilizer or sterilizer.

05 Installation Requirements

- (1) Please read this manual carefully before use.
- (2). This equipment according to the electric shock protection for I class, installation area should not be flammable anesthetic gases and item exists.
- (3). The sterilizer power supply is permanently connected to the network power supply, and the user must install a circuit breaker (in accordance with GB 14048.1 and GB 14048.3 standard requirements) as the disconnecting device of the sterilizer power supply at a position where the sterilizer is 60 cm away from the building and the height is greater than 1.2 meters

and is easy to operate, and make clear on and off signs (such as the sterilizer). The power cord should be fixed on the building before access to the circuit breaker to avoid falling off. The connecting wire diameter with the network power supply is 2.5mm squared ×3, L is the live wire, N is the zero wire, and yellow and green G is the protective grounding. Close the circuit breaker when the job is finished.

(4). The equipment must be placed on a flat and firm ground. User according to the product nameplate and manual regulation parameters, the equipment as stipulated in the circuit wiring diagram connect to power supply, and equipment should be reliable grounding protection (grounding resistance shall not exceed 2 Ω).

(5). Do not drain the end of the drain pipe into the water to prevent the water from being sucked into the sterilizer barrel.

Use method

Before the sterilizer is used, the random documents of the pressure vessel should be submitted to the local supervision and inspection authority for registration and filing.

The sterilizer operator must have professional training, be familiar with the pressure vessel operation essentials and operate strictly in accordance with the instructions.

In the process of sterilizer work, professional staff should take care of the sterilizer and make a good record of sterilizer operation to prevent accidents or accidents.

The safety valve of sterilizer should be sent to the inspection institution for testing at least once a year.

Dangerous:

Do not put combustibles: do not put or approach the following substances specified in item 1 of the schedule of the labor safety and health act: (explosive substances, inflammable substances, oxidizing substances, inflammable substances, inflammable substances); otherwise, it will cause injury, fire or malfunction due to explosion.

Note:





Do not put corrosive stainless steel material: do not put corrosive stainless steel medium into this product. Otherwise, an explosion could result in injury, fire or malfunction.

Do not touch the power switch and circuit breaker with wet hands to avoid electric shock and accident.

The cover part of the sterilizer container is at high temperature in the working state, do not touch it.

"Do not open until the air is exhausted" : after the sterilization of the sterilizer, do not open the cover of the container before the pressure gauge is restored to the zero position, otherwise it is easy to cause high-temperature steam burns.

(I) Symbols related to safety requirements in this machine and their meanings

Symbol	Meaning	Symbol	Meaning
~	Alternating current (AC)		notice ! check and review equipment's documents carefully
	Caution Hot		Protective grounding
	The test inter face		

(II) Operating procedures

(1)function: press this key to select the function to run, and press once to display mode "a"(sterilization function); According to mode "b" again (sterilization, air release function);

Press "c" mode again (sterilization, air release, drying function);

Press mode "a" again, and so on.

(2)△key: temperature display press this key to increase the setting temperature (setting range: 50.0 ~ 134.0°C), and increase the setting time within the sterilizing time (setting range: 4 ~ 120 minutes) and drying time (setting range: 0 ~ 240 minutes).

(3)▽key: temperature display press this key to lower the setting temperature (setting range: 50.0 ~ 134.0°C), and reduce the setting time within the sterilization time (setting range: 4 ~ 120 minutes)

and drying time (setting range: 4 ~ 240 minutes)

(4) start: press this key to start the operation function;

(5) indicator light of water level: when there is no water in the sterilizer or the water level is too low, the indicator light will be red; when the water level reaches the normal level, the indicator light will be green;

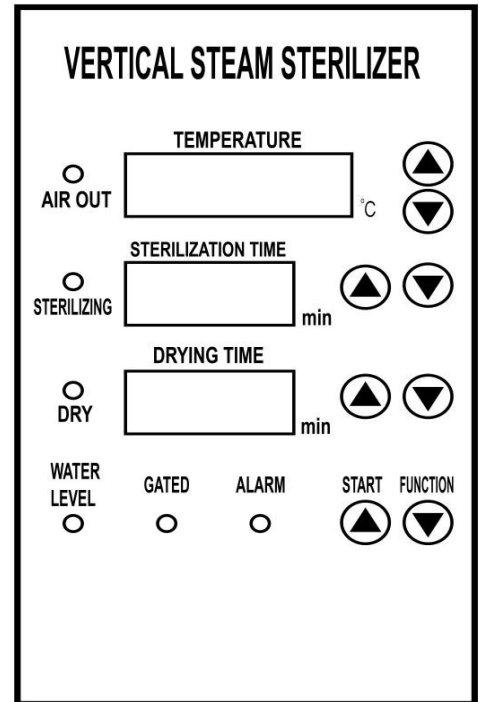
(6) door control indicator light: when the sterilizer cover is opened, the light will not turn on;

(7) alarm indicator light: when there is an over temperature alarm or an error in the work, the alarm light will be long on; When the waste water tank is full, the alarm light flashes.

(8) temperature display window: the set temperature is displayed in the set state, and the current measured temperature in the sterilizer is displayed in the working state;

(9) sterilization time display window: the set sterilization time is displayed in the set state, and the current remaining sterilization time is displayed in the working state;

(10) drying time display window: the set drying time is displayed in the set state, and the current remaining drying time is displayed in the working state;



◆ Function setting method:

After switching on the power supply and opening the power switch, the control panel will display the current temperature in the container and the last running program after self-inspection. Press the "function" button to select the running mode of the program, and then the corresponding \triangle , ∇ keys can be used to set the temperature, sterilization time and drying time respectively. Press the start button after completion, and the sterilization indicator light on the control panel will flash (indicating that the temperature is rising). When the temperature rises to the set value, the sterilization indicator light is long and bright, and begins the countdown (indicating sterilization); After the sterilization is finished, the air is released automatically and the indicator light is on at the same time. After the end of air venting, the drying indicator light will be on, and the drying time will be counted down at the window (indicating that it is drying). Display window shows END, sound sound indicates the END of the program, can take out items.

a. set sterilization function:

- (1) press "function" to display the currently selected working procedure a, sterilization temperature and sterilization time;
- (2) set the temperature by the key \triangle , ∇ below the temperature display window;
- (3) set the sterilization time according to the button \triangle , ∇ below the sterilization time display window;
- (4) press the start button after setting.

b. set sterilization and air release function:

- (1) press "function" to display the currently selected working procedure b, sterilization temperature and sterilization time;
- (2) set the temperature by the key \triangle , ∇ below the temperature display window;
- (3) set the sterilization time according to the button \triangle , ∇ below the sterilization time display window;
- (4) press the start button after setting.

c. set sterilization, air venting and drying functions:

- (1) press the "function" button to display the currently selected working procedure c, sterilization temperature, sterilization time and drying time;
- (2) set the temperature by the key \triangle , ∇ below the temperature display window;
- (3) set the sterilization time according to the button \triangle , ∇ below the sterilization time display window;
- (4) press the key \triangle , ∇ below the display window to set the drying time;
- (5) press the start button after setting.

A. Stacked

- (1) turn the hand wheel counterclockwise for several times (pay attention to pinch the hand and cause injury) until it reaches the top, make the sterilizer cover fully lifted, and push the beam to the right to remove the sterilizer cover. Remove sterilizing net basket. Manually add water to the foot edge.
- (2) the articles to be sterilized shall be properly wrapped and put into the sterilizing net basket in sequence with gaps left between them. This is beneficial to steam penetration and improve sterilization effect. When stacking the sterilizing package, it should pay attention to leave open the vent space of the safety valve, otherwise, the hole of the safety valve is blocked and the pressure is not relieved, resulting in the burst of the pot body.

B. Electricity

Switch on the power source consistent with the sterilizer label, press the switch on the control panel to the "open" place, the control panel will be fully lit up, and the self-check state will be displayed in 3 seconds.

C. Sealing

Push the beam to the left column, rotate the hand wheel clockwise, press the sterilizer cover and the lower flange tightly, and apply force to make it fully close. (when the door-to-door indicator light on the control panel is on, the self-locking device should be rotated to fit the concave of the gear when the contract is completely closed. The following operations can be performed at this time.)

D. Function setting

The user selects the required button according to different sterilization items to set the required sterilization temperature and time. (see operation panel description)
[sterilization temperature and sterilization time for different articles shall be subject to the technical specification of disinfection issued by the ministry of health.]

E. Temperature

Press the start button and the device starts to work (automatic water filling). The heating indicator light on the operation panel flashes and starts to heat up. Close the valve when the temperature rises to 102°C.

F. Recycle and discharge cool air

After closing the solenoid valve, the temperature rises to 115 ° c, open the valve, exhaust to 105 ° c, discharge air conditioning, cycle 3 times

G. Sterilization

When the temperature rises to the set temperature, the sterilization indicator of the operation panel stops flashing (long light) and starts sterilization.

H. Exhaust (this method is strictly prohibited when sterilizing liquid)

After sterilization, automatic exhaust is started (only program a in the setting mode has no exhaust function, so it will not be automatic exhaust).

I. Dry

C program is selected. After sterilization, exhaust is automatically discharged to 102 ° C and an alarm is given for 10 seconds. Later, the drying program is automatically entered and started to dry. In order to get better drying effect, it is suggested that when the pressure gauge indicates 0 after sterilization is finished and steam is discharged, the hand wheel should be rotated counterclockwise to raise the upper cover by about 10mm. It is also possible to open the drain valve of the container below the side of the equipment to drain water from the pot.

J. End

The panel display window shows END and a prompt sound indicates the END. Remove the cover (please wear protective gloves to remove. As the temperature will drop for some time, please be careful when taking out. At the end of operation, direct touch by hand may cause scald.

Special note:

1. END is displayed at the END of the working process, and when the pressure indicates zero, open the cover to take out the goods.
2. With the drying function, in the abnormal operation, will occur in the barrel negative pressure phenomenon. If the inner bucket is under negative pressure, it may be inconvenient to open the lid. At this time, manually lift the relief valve bonnet up to open the lid later.

Note

In the process of running the program, if the alarm sound and the alarm light are on, the digital tube shall display the warning symbol, (The removal method is shown in 7 in this manual) indicates that an error occurred, and the error is as follows :

ERR--1 means the door is not closed

ERR--2 indicates that the water level is lower than the low water level

ERR--3 indicates that the sterilization temperature is too high

ERR--7 indicates accidental power failure during sterilization

ERR--8 indicates human interruption in sterilization process

ERR -- 9 indicates the fault of the indoor temperature sensor

ERR -- 10 indicates the fault of the boiler wall sensor

2、 If you find that the selection Settings are wrong after running, you can press any key except "function" key and "start" key to interrupt the program.(except sensor fault, other alarms can be manually relieved by pressing the function key)

Parameter adjustment:

Hold down the start button, turn on the switch at the same time, after entering the parameter adjustment interface, press the start key, adjust the parameters of the selected in the order, temperature compensation, clearance exhaust time, maximum exhaust temperature, clearance exhaust cycle, printer switch in both English and Chinese (if any), select the parameters to adjust, and according to the corresponding window up/down keys, adjust, adjust, press the start key, until the return to the parameters window, close the switch, save the parameters.

Note:

Sterilization temperature correction/exhaust upper limit temperature/intermittent discharge time and cycle adjustment during sterilization: the parameters in this step are related to the performance of the equipment, and users should not change or set them easily

If it is really necessary for the user to adjust the parameters, it can be adjusted according to the following steps.

06 Attention and Maintenance

Note: 1. Please ensure the e.m.c environment before use to make the equipment work normally.

2. It is recommended that the user evaluate e.m.c before the equipment is used to ensure the normal operation of the instrument.

3. Do not use this instrument near strong radiation source, otherwise it may interfere with the normal operation of the instrument.

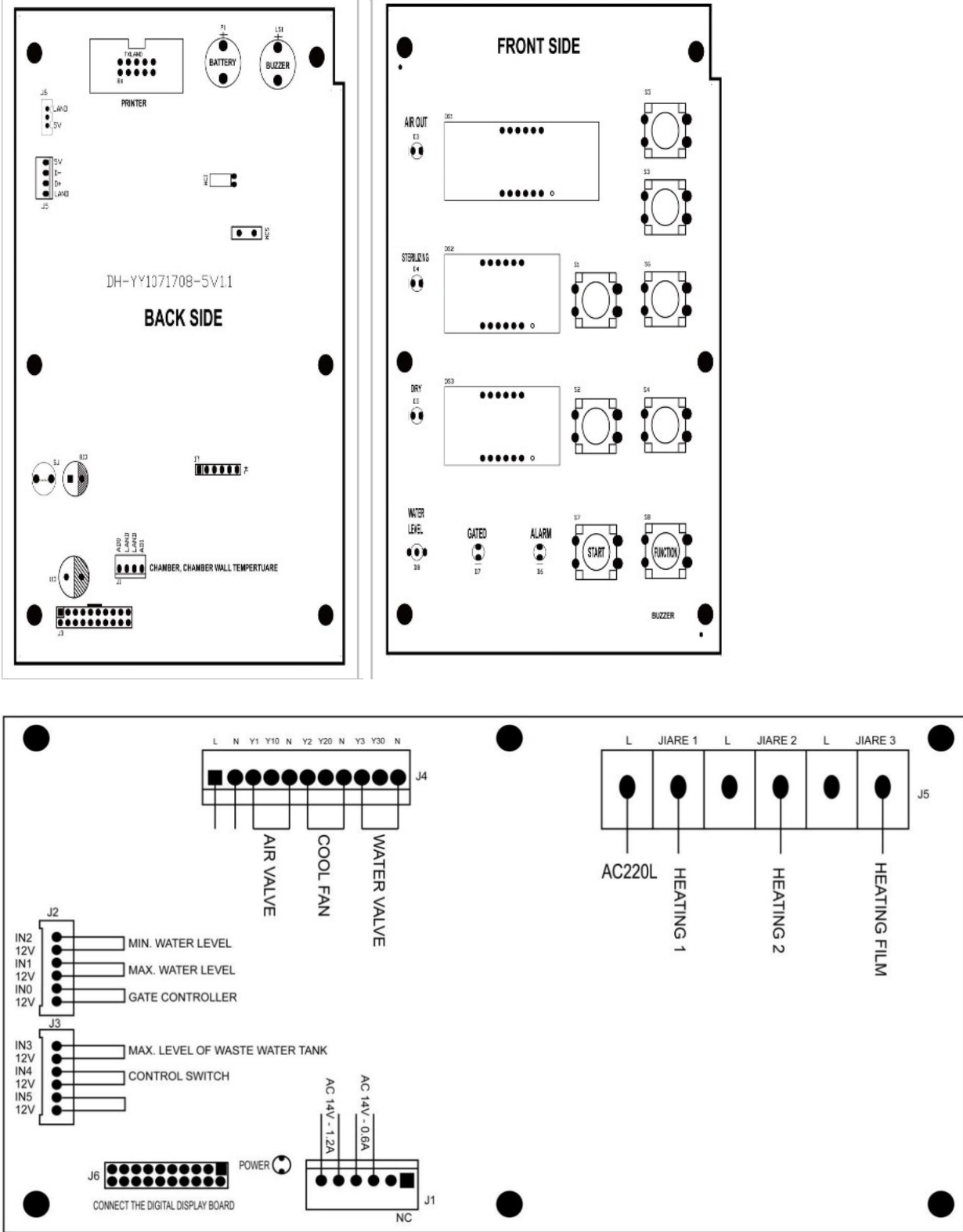
This product will not generate strong electromagnetic wave during operation, but to ensure the normal use of other medical devices, try to avoid using it at the same time with other

highly sensitive instruments and equipment, so as to avoid the interference of electromagnetic source.

1. When stacking sterilized articles (completely open the upper cover), the net basket should be placed in the center of the barrel (the net basket and the net basket should be concentric and stacked up and down). It is strictly forbidden to block the air outlet of the safety valve, and spare space must be left to ensure that the equipment is unimpeded to vent air, otherwise the safety valve cannot work due to air outlet blockage, causing accidents.
2. Before each use, check whether the water in the sterilizing bucket is kept at the foot.
3. When the sterilizer continues to work, allow 5 minutes for new sterilizing operations and open the upper cover to allow time for cooling.
4. When sterilizing liquid (procedure a only), the liquid should be canned in a hard, heat-resistant glass bottle, no more than 3/4 of the volume is better, the bottle mouth should be cotton yarn plug, do not use rubber or cork without holes.
Special attention: do not release the steam immediately when the sterilized liquid is finished, the residual gas can be discharged only after the pressure gauge pointer returns to zero.
5. Only for sterilizing beakers, flasks, test tubes and other containers, the opening part must be placed downward or horizontally. When the opening part is placed upward, it is not only difficult to vent air, but also not easy to permeate the steam into its interior, resulting in poor sterilization effect.
6. For different types of different sterilization requirements, such as dressings and liquids, do not put together sterilization, so as to avoid loss.
7. Confirm the sterilization performance: the sterilization performance varies due to the type, quantity, method of putting the sterilized substance into the container, so please use the sterilization indicator of OK card to confirm. Otherwise, it will lead to accidents or poor sterilization effect.
8. Do not store sterilized articles after sterilized treatment in this product: this product has no retention function of sterilized articles. In order to avoid being contaminated again, after sterilizing the culture medium and utensils, please take them out immediately and keep them in the special safety box.
9. At the end of sterilization (or in the case of failure), the pressure gauge pointer must return to zero and open the manual release valve (or place the release valve link in the release position). Allow the outside air to enter the sterilizer. After the vacuum is removed, the lid of the container can be opened (do not put the face near the lid).(please be sure to wear protective gloves to remove. As the temperature of the liquid will drop for some time, please be careful when taking out. Direct touch may cause burns after operation.
10. The pressure gauge after a long time of use, the pressure indicator is not correct or can not restore to zero, should be timely maintenance, usually should be regular (recommended every 6 months) and the standard pressure gauge, if abnormal, should be replaced with a new table. Apply proper amount of high temperature grease to the crossbar screw every six months.
11. The equipment should be kept clean and dry at ordinary times. Rubber seal gasket will age over time, should be replaced regularly (recommended 12 months).
12. In use, when the pressure gauge indicates more than 0.24mpa, the safety valve will not start. The power should be cut off immediately and the manual air valve should be opened. When the pressure gauge indicates 0 MPa, wait for 1 to 2 minutes, open the container cover and replace the safety valve in time.

13. In case of replacement of components for troubleshooting, qualified personnel with professional training or personnel sent by the manufacturer shall be required. Disconnect the power circuit breaker, drain all the residual air in the container, return the pressure gauge pointer to zero before proceeding, and send the safety valve for inspection at least once a year. Every week to lift the handle on the safety valve core down several times to prevent the valve core fouling, air leakage.
14. Do not modify and use: except for maintenance technicians, do not break down or repair without authorization. Otherwise, fire or abnormal operation may result in injury.
15. Cleaning (recommended once a month) : empty the water in the container and cut off the power circuit breaker. Remove the shelf and net basket from the container after the container has cooled. First, brush off the scale attached to the inner wall, heating tube and water level probe with a brush. Then dip the towel in alcohol or distilled water and wipe the inner surface. Store in a well ventilated room with no corrosive gas.
16. The interlock device of the door cover is composed of a self-locking device and a door control switch. In daily use, the expansion and flexibility of the locking tongue of the self-locking device should be maintained (quarterly inspection is recommended). The door control switch should keep the contact up and down flexibly. If it is found that the contact card rolling and indicator light are not working normally, it should be repaired in time.
17. Do not allow children to use or play with it: it may cause burns, electric shock or injury.
18. Do not open the drainage valve when the equipment is in operation. When discharging the heating water, it should wait for more than 2 hours after the sterilization, and only when the lid is open can the drainage be carried out. Otherwise, it will cause burns or accidents due to hot water squirting out.
19. Replacement of fuse: when the power cord of the sterilizer is connected to the power supply and the power indicator is not on, disconnect the circuit breaker, open the back cover of the sterilizer with A phillips screwdriver and check whether the fuse (specification R015, 10× 38,32 A) is damaged. If it is damaged, replace it immediately.
20. Drain the water in the container, seal the sterilizer cover, cut off the circuit breaker and remove the power cord before moving or transporting or storing. When moving (please lift the locking state of caster first) push the sterilizer horizontally; During transportation and storage (fix the sterilizer in the packing box) to prevent loosening and scratching during transportation. Avoid tipping over and causing injury or accident.
21. Environmental conditions for transport and storage:
Environmental temperature: 40°C ~ +55°C relative humidity range: 10% ~ 80% atmospheric pressure range: 500hPa ~ 1060 hPa.
22. At the end of its service life (8 years) (see the label of the product body for the production date), this product and its accessories shall be handed over to the qualified units or individuals for recycling.

23. Wiring diagram:



If necessary, you can provide the circuit diagram and the necessary data for the repair. If you have any trouble in the maintenance of the electrical circuit, you can contact our company.

07 Analysis and Elimination of Common Faults

NO.	The fault phenomenon	Cause analysis,	Elimination method
1	The water level light is on, indicating no rise in temperature.	A. sterilization time is not set B. circuit board damaged C. The electric heat pipe is damaged	Set sterilization time Replacement by a professional Replacement by a professional
2	Working condition, shell live.	the electric heat pipe is damaged No grounding wire for power supply	Replacement by a professional Professional installation of grounding wire
3	Temperature digital display window is -- --	the temperature sensor is damaged circuit board damaged	Replacement by a professional Replacement by a professional
4	Digital display window for - O O O or scrambled code	Circuit board damaged	Replacement by a professional
5	The water level exceeds the water level float ball, and the water level light is red. Water level does not reach the water level float ball, water level light green flash or light	Water level float damaged	Replacement by a professional
6	The pressure gauge contains steam.	The spring tube of the pressure gauge is leaking	Replace the pressure gauge by a professional
7	Press the shift key and there is no flicker in the corresponding position.	Control panel damage	Replacement by a professional
8	ERR - 1 or gate control light is not on.	the cover is not tightly closed in place. B. the chain lamp is broken.	A. open the lid and replace it tightly Airtight. replace the chain indicator. (professional maintenance)
9	According to ERR - 2	The water level is below the low water level	Add enough water.
10	According to ERR - 3	Excessive sterilization temperature	Thyristor failure, temperature sensor Failure (professional maintenance)

11	According to ERR - 7	The sterilization process interrupts electricity	Press the function key to unlock manually
12	According to ERR - 8	Artificial reset in sterilization process	Press the function key to unlock manually
13	According to ERR - 9	The temperature is not displayed or displayed at 150°C	Replacement and inspection by professionals Whether loose
14	According to ERR - 10	The temperature is not displayed or displayed at 150°C	Replacement and inspection by professionals Whether loose
15	The alarm light flashes and there is an alarm sound	The waste water tank is full	Open the drain valve of the waste water tank and release the water

Packing list:

No	Name	Quantity	Note
1	Vertical steam sterilizer	1	
2	Product manual	1	
3	Pressure vessel quality certificate	1	
4	Basket	2	
5	Put the trachea	1	2 M length

08 Electromagnetic Compatibility Requirements

Table 201
1 set of class B

Guidelines and manufacturer's statement - electromagnetic emission		
Vertical steam sterilizer is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall guarantee its use in such electromagnetic environment:		
Emission test	compliance	Electromagnetic environment - guide
Rf emission GB4824	1 set of	Vertical steam sterilizers use rf energy only for their internal functions. As a result, its rf

		emission is very low, and the possibility of interference to nearby electronic equipment is very small
Rf emission GB4824	Class B	The vertical steam sterilizer is suitable for use in all facilities, including domestic facilities and directly connected to the public low-voltage supply grid of domestic homes
Harmonic emission GB17625.1	Class A	
Voltage fluctuation, flicker emission GB17625.2	Conform	

Table 202

Guidelines and manufacturer's statement - electromagnetic disturbance immunity			
Vertical steam sterilizer is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall guarantee its use in such electromagnetic environment:			
Disturbance immunity test	IEC60601 test level	In line with the level	Electromagnetic environment - guide
Electrostatic discharge GB/T17626.2	±4kV contact discharge ±4kV air discharge	±4kV contact discharge ±4kV air discharge	The floor should be wood, concrete or tile, and if the floor is covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient pulse group GB/T17626.4	±2kV on the power line ±1kV on input/output line	±2kV on the power line Do not apply	The network power supply should be of the quality typical for use in commercial or hospital environments
surge GB/T17626.5	±0.5 kV line to line Plus or minus 1 kv line to ground	±0.5 kV line to line Plus or minus 1 kv line to ground	The network power supply should be of the quality typical for use in commercial or hospital environments
Voltage drop, short interruption and voltage change on power input	Less than 5%U _T , lasts 0.5 weeks (on U _T 95% temporary drop) 40% U _T , 5 weeks (on U _T , 60% drop)	Less than 5% U _T , lasts 0.5 weeks (on U _T 95% temporary drop) 40% U _T , 5 weeks (on U _T , 60% drop) 70% U _T for 25	The network power supply should be of the quality typical for use in commercial or hospital environments. If the user of a vertical

line GB/T17626.11	70%U _T for 25 weeks (on U _T , 30% drop) Less than 5% U _T , lasts 5s (on U _T 95% temporary drop)	weeks(on U _T , 30% drop) Less than 5% U _T , lasts 5s (on U _T 95% temporary drop)	steam sterilizer needs continuous operation during a power outage, it is recommended that the vertical steam sterilizer be supplied with an uninterruptible power supply or battery power
Power frequency magnetic field 50 hz GB/T17626.8	3 A/m	3 A/m	The industrial frequency magnetic field should have the horizontal characteristics of the industrial frequency magnetic field in the typical commercial or hospital environment
Note: U _T means the ac grid voltage before the test voltage is applied			

Table 204

Guidelines and manufacturer's statement - electromagnetic disturbance immunity			
The vertical steam sterilizer is intended to be used in the electromagnetic environment specified below, and the purchaser or user shall guarantee its use in such electromagnetic environment.			
Disturbance immunity test	IEC60601 test level	In line with the level	Electromagnetic environment - guide
The radio frequency transmission GB / 17626.6 Radiofrequency radiation GB / 17626.3	3V (effective value) 150 KHZ ~80 MHZ 3 V/m 80 MHZ ~ 2.5 GHz	3V (effective value) 3 V/m	Portable and mobile radio frequency communication equipment shall not be closer to any part of the vertical steam sterilizer (including the cable) than the recommended isolation distance, which shall be calculated using a formula corresponding to the frequency of the transmitter. Recommended isolation distance $d = 1.2 \sqrt{P}$ $D = 1.2 \text{ 80MHz} \sim 800\text{MHz} \sqrt{P}$ $D = 2.3 \text{ 800MHz} \sim 2.5\text{ghz} \sqrt{P}$ Where: P -- the maximum output power of the transmitter provided by the transmitter manufacturer, in watts (W) D -- -- recommended isolation distance in meters (m) The field intensity of a stationary rf


			<p>transmitter, determined by surveying the electromagnetic field *should be lower than the coincidence level in each frequency range *.</p> <p>Interference may occur near devices marking the following symbols.</p> 
<p>Note 1 at 80MHz and 800MHz, a higher frequency formula should be used.</p> <p>Note 2: these guidelines may not apply in all cases. Electromagnetic propagation is influenced by the absorption and reflection of buildings, objects and the human body.</p>			
<p>The field strength of stationary transmitters, such as radio telephone and ground mobile radio stations, ham radio, am and FM radio broadcasts, and television broadcasts, cannot be predicted theoretically. In order to evaluate the electromagnetic environment of the fixed radio frequency transmitter, the investigation of electromagnetic field should be considered. If the field intensity in the place where the vertical steam sterilizer is measured is higher than the above rf coincidence level, the vertical steam sterilizer should be observed to verify its normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorientation or position of the vertical steam sterilizer.</p> <p>* in the whole frequency range of 150kHz ~ 80MHz, the field intensity should be lower than 3V/m.</p>			

Table 206

Recommended isolation distance between portable and mobile radio frequency communication equipment and vertical steam sterilizer

Vertical steam sterilizers are expected to be used in electromagnetic environments where rf radiation disturbance is controlled. According to the maximum output power of the communication equipment, the buyer or user of the vertical steam sterilizer can prevent electromagnetic interference by maintaining the minimum distance between the portable and mobile radio frequency communication equipment (transmitter) and the vertical steam sterilizer

Maximum rated output power of transmitter W.	Interval distance /m corresponding to different frequency of transmitter		
	150 KHZ to 80 MHZ $D = 1.2 \sqrt{P}$	80 MHZ to 800 MHZ $D = 1.2 \sqrt{P}$	800 MHZ ~ 2.5 GHz $D = 2.3 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	1.2	1.2	23

For the maximum rated output power of the transmitter not listed in the above table, it is recommended that the isolation distance d, in meters (m), can be determined by the formula in the corresponding frequency column of the transmitter. Here, P is the maximum rated output power of the transmitter provided by the transmitter manufacturer, in watts (W).

Note 1 at 80MHz and 800MHz frequency points, a higher frequency formula should be used.

Note 2: these guidelines may not apply in all cases. Electromagnetic propagation is influenced by the absorption and reflection of buildings, objects and the human body.

This product will not generate strong electromagnetic wave during operation, but to ensure the normal use of other medical devices, try to avoid using it at the same time with other highly sensitive instruments and equipment, so as to avoid the interference of electromagnetic source.



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