BIOBASE

Hot Air Sterilizer
User Manual

Please read this manual carefully before use
Pay attention to saving for easy reference

Biobase Scientific (Shandong) Co.,Ltd

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Preface

Dear user

Thank you for choosing the BIOBASE electric disinfection cabinet. Thank you!

We sincerely hope that our product can bring maximum help to your work. In order to help you have a better understanding of the electric disinfection cabinet, please carefully read the manual before use. The content of this manual is very important for your safe and correct use of this machine!

After thoroughly reading the instruction manual, please keep it in a place that is easy to use for easy reference at any time.

Unpacking inspection

When the user first opens the instrument packaging box, please check the instrument and accessories. If any errors, incomplete or abnormal parts are found, please contact the seller or manufacturer.

Content

1、Precautions

1. Important safety operation information

Users need to have a complete understanding of how the instrument works before safely operating it. Please read this manual carefully before running the instrument.

No one is allowed to operate the instrument before reading the manual. If the instructions on the manual are not followed, the heat generated during operation may cause serious burns and electric shock accidents may occur. Please carefully read the following safety tips and guidance, and implement all preventive measures.

2. Security

In all processes of operating, maintaining, and repairing this instrument, the following basic safety precautions must be followed. If these measures or warnings indicated elsewhere in this manual are not followed, it may affect the protection provided by the instrument and the expected range of use of the instrument.

2.1 This instrument is a Class I B-type ordinary equipment that meets the GB9706.1 standard。
2.2 This instrument is a product for indoor use。
2.3 Please read this operating manual carefully before operating this instrument, otherwise it may cause personal injury.
2.4 Only qualified inspectors trained in the installation and use of electrical equipment can operate this instrument.
2.5 Operators should not attempt to open or repair the instrument, as doing so may disqualify you from warranty and may result in electric shock.
2. 6 If repair is required, our company is responsible for the repair.
2. 7 To avoid electric shock accidents, the input power line of the instrument must be reliably grounded.
2. 8 This instrument uses a three core grounding plug, with the third pin being the grounding pin, which should be used in conjunction with a grounded power socket.
2. 9 Before connecting to the power supply, ensure that the voltage of the power supply is consistent with the voltage required by the instrument. And ensure that the rated load of the power socket is not less than the requirements of the instrument.
2. 10 If the power cord is damaged, it must be replaced.
2. 11 When replacing, a power cord of the same type and specification must be used instead.
2. 12 Do not press anything on the power cord when using this instrument.
2. 13 Do not place the power cord in areas where personnel are moving.
2. 14 Be sure to hold the plug when plugging in and out the power cord.

2.15 When inserting the plug, ensure that it is fully inserted into the socket, and do not forcefully pull the power cord when pulling out the plug.
2.16 This instrument should be placed in a place with low humidity, low dust, and away from water sources and direct sunlight and strong light sources. The room should be well ventilated, free from corrosive gases or strong magnetic field interference, and away from heating, stoves, and all other heat sources.
2.17 Do not place the instrument in damp or dusty areas
2.18 The openings on this instrument are designed for ventilation. To avoid overheating, be sure not to block or cover these ventilation holes.
2.19 To ensure airflow circulation around the instrument, at least 30cm of clearance should be left at the rear and sides.
2.20 When stopping work, the power should be turned off. If the instrument is not used for a long time, the power plug should be unplugged and the instrument should be covered with a soft cloth or plastic paper to prevent dust from entering.
2.21 In the following situations, the power plug of the instrument should be immediately unplugged from the power socket and the supplier should be contacted or trained maintenance personnel should be consulted for handling：

- Liquid splashes into the interior of the instrument;；
- The instrument has been exposed to rain or water；
- The instrument is not working properly, especially if there is any abnormal sound or odor；
- The instrument falls or the casing is damaged；
- There are significant changes in the functionality of the instrument。

3.Instrument maintenance

This instrument should be cleaned regularly with a clean soft cloth dipped in a small amount of anhydrous alcohol to clean the heating plate.

If there are stains on the surface of this instrument, it can be cleaned with a soft cloth dipped in cleaning paste.

When cleaning the instrument, the power supply must be cut off.

It is strictly prohibited to clean the surface of the instrument with corrosive cleaning agents.

2、 Instructions for use

1.Overview

The Hot Air Sterilizer is composed of a temperature control system, a heating system, an air convection system, and a box body. The heating system, circulation system, and control system cooperate to maintain a constant temperature, with stable and reliable performance. It is mainly used for disinfection of items that are not damaged, spoiled, evaporated, or resistant to moisture and heat at high temperatures, such as glass, powder, metal, etc.

2. Product Features：

1. Microcomputer integrated intelligent temperature control system, PID logic operation function, reliable temperature control.

2. The controller screen has two rows of highlighted numbers, with one screen displaying the operating temperature and set temperature.

3. Equipped with a built-in circulating fan, the thermal conductivity medium inside the cabinet is forced to circulate, ensuring temperature uniformity.

4. Modular control system, safe operation, stable and efficient.

5. There is a temperature sensor open circuit, short circuit sound and light (buzzer) alarm prompt, and the controller automatically disconnects the heating output.

6. The inner liner is made of 304 stainless steel, and the outer shell is made of high-quality cold-rolled steel plate. The surface is electrostatic coated and sprayed, and the paint surface is firm and long-lasting, never fading.

7. The self-developed special air duct structure can easily handle both drying and cultivation functions.

8. Adopting silicone rubber sealing strips and double-layer high borosilicate high-temperature resistant glass door observation windows, easy and clear observation.

9. One machine for two purposes, saving limited laboratory space.

10.The partition can be adjusted up and down, making space more fully utilized

3. Operational condition

Operating ambient temperature：5℃ ~ 40℃

Using the power supply：AC220±22V，50±1Hz；

Ambient relative humidity：≤80%RH

4. Requirements for sterilized items

4.1 General requirements for sterilized items

4.1.1 The packaging of the item should not exceed 10cmx10cmx20cm;

4.1.2 The height of the article shall not exceed 2/3 of the height of the sterilization room, and the load shall be placed in sufficient space (it can be placed in one hand). The thickness of oil and powder shall not exceed 0.635 mm, and the thickness of Vaseline gauze shall not exceed 1.3 cm;

4.1.3 The total mass of the item should not exceed 80 kg per cubic meter of sterilization room volume；

4.1.4 The total volume of the item shall not exceed 1/5 of the volume of the sterilization room；

4.1.5 Place raw items on any cross-section perpendicular to the dominant wind direction；

4.1.6 The total area of the items should not exceed 1/3 of the cross-sectional area of the sterilization room at that location；

4.1.7 Do not block the airflow direction when placing items.

4.2 Items that can be sterilized

4.2.1 Glassware, porcelain

4.2.2 Gelatin sponge, liquid paraffin, Vaseline, ointment

4.2.3 Various powders

4.2.4 Metal surgical instruments

4.3 Items that cannot be sterilized

4.3.1 Plant fiber products (such as paper, cotton products, wood products)

4.3.2 Rubber and plastic products

4.3.3 liquid

5. Product Usage Scope

Mainly used for disinfection of instruments that are not damaged, spoiled, evaporated, or resistant to moisture and heat at high temperatures, such as glass, powder, metal, etc.

Suitable for sterilization of medical devices and their accessories in laboratories, nursing clinics, hospitals, and other healthcare facilities

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6. Main sterilization factors and intensity

The main sterilization factor of this machine is convective hot air, and its temperature control range meets the industry standard YY/T 1275-2016.

7. Microbial category

The category of killing microorganisms is common bacteria in the air. The use of high-temperature dry heat can cause oxidation and protein denaturation of microorganisms, as well as poisoning caused by dielectric concentration. Among them, the main method is to destroy cell protoplasm through oxidation, causing microbial death, so it can kill all microorganisms within a certain heating time.

8. Product structure and disinfection principle

The Hot Air Sterilizer is composed of a temperature control system, a heating system, an air convection system, and a box body, as well as a heating system, a circulation system, and a control system. Hot air sterilization refers to the method of heating the item to be sterilized in dry air to a temperature sufficient to kill bacteria. Using high temperature to oxidize microorganisms, denature proteins, and concentrate electrolytes to kill them. Through high temperature, it destroys proteins, nucleic acids, active substances, etc. in cells, thereby affecting their life activities and disrupting the active biological chain of bacteria, thus achieving the goal of killing bacteria. Most sterilization of culture media is done with hot air. There are many indicators for measuring thermal sterilization, and the commonly used one is thermal death time, which is the duration required to kill a certain proportion of the original microorganisms at a limited temperature.

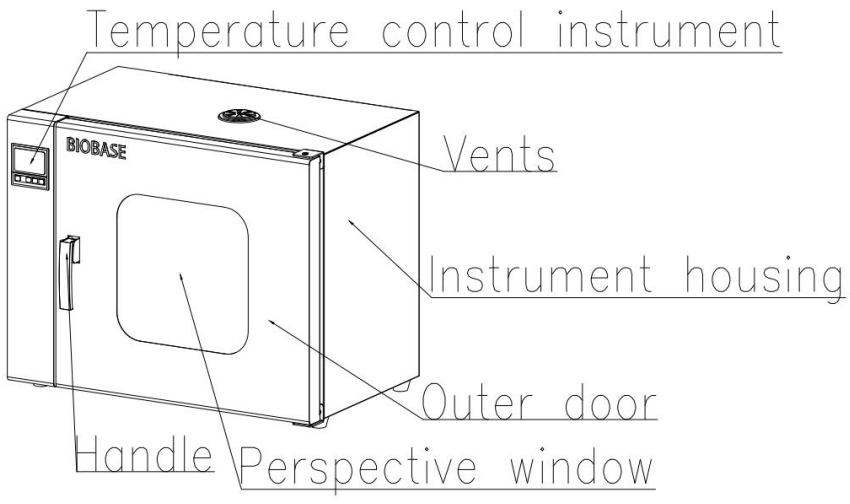
9. Technical Parameter

product name	**Hot Air Sterilizer**					
model	**BJPX-SH23**	**BJPX-SH55**	**BJPX-SH88**	**BJPX-SH105**	**BJPX-SH140**	**BJPX-SH200**
Rated frequency	**50Hz/60Hz**					

rated power	600W	1000W	1200W	1600W	2000W	2300W
rated voltage	AC 220V (200V-240V)					
Temperature Control Range	Rt+10℃--250℃					
resolution ratio	0.1℃					
temperature fluctuation	±3℃					
temperature uniformity	±5℃					
time range	0～9999 minute					
a partition	Standard configuration: 2 pieces, adjustable position, can accommodate multiple layers					
working conditions	1. Environmental temperature: 5 ℃~40 ℃ 2. The relative humidity shall not exceed 80% 3. Power supply: AC220 ± 22V, 50 ± 1Hz 4. There is no flammable, corrosive gas or conductive dust around					
Workspace Material	Stainless steel, cabinet body 1.0mm thick according to national standard					
Appearance structure	1. The surface should be free of obvious scratches, rust spots, and pressure marks, with a smooth and smooth appearance. The screw cap should be free of rust and slipping, and the screw should have no cracks or scars in the opening groove; 2. The text and graphic symbols indicating the function should be correct, clear, upright, and firm; 3. The display panel displays normally, the button switches operate flexibly, without blockages, and the functions are accurate.					

10. Basic operating instructions

10.1 Structure diagram



10.2 Installation

Remove the packaging of the electric disinfection cabinet, take out the machine, and plug in the power to use it.

10.3 Simple operating instructions

10.3.1 Open the cabinet door, place the items to be processed on the partition inside the cabinet, and close the cabinet door；

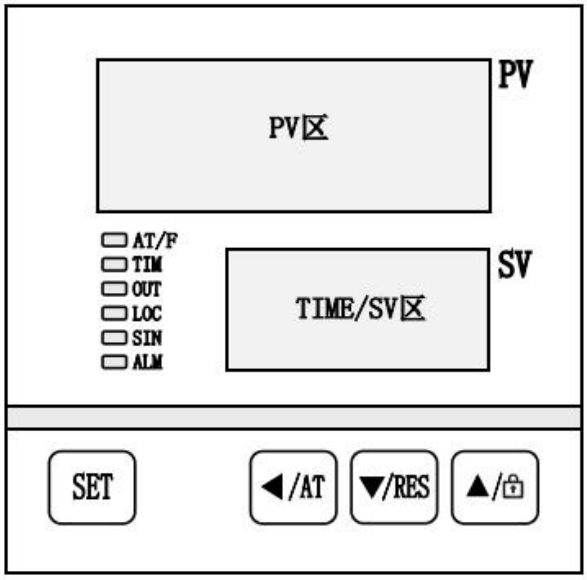
10.3.2 Turn on the power supply and place the power switch on the left side of the power supply in the "1" position. At this time, the instrument will display a digital display, indicating that the device has entered a working state；

10.3.3 Set the desired temperature inside the cabinet by operating the temperature controller on the control panel；

10.3.4 The instrument starts working, and the temperature inside the cabinet gradually reaches the set value. After the required time, the processing work is completed；

10.3.5 Turn off the power, wait for the temperature inside the cabinet to approach the ambient temperature, open the cabinet door, and remove the object.

10.4 Operation panel



Key defines

【Set】: Set key, in the main screen state, click this key to enter the temperature and time target value Setting state, long press this key for 3 seconds to enter the internal parameter Setting state.

【◄/AT】: Shift / Auto-tuning, in the Setting state, click this key to change the Setting value.In the main screen state, long press this key for 6 seconds to temperature auto-tuning selection state.

【▼/RST】: Decrease / rerun key. In the Setting state, click or long press this key to decrease the Setting value. In the main screen state, long press this key for 3 seconds

to restart the run.

【▲/🔒】： Increase / lock screen key. In the Setting state, click or long press this key to increase the Setting value.In the main screen state, click this key to lock or unlock the screen.

LED indicator Defines:

a．【AT/F】indicator : The lamp will be on when the temperature unit is degree Fahrenheit .The lamp will flash in auto-tuning, it will flash. In other states, it will be off.

b．【TIM】indicator : The lamp will be on when there is a timing Setting,it will flash in reservation timing, it will be off when no timing function.

c．【OUT】indicator : The lamp will be on when there is heating output , otherwise it will be off.

d．【LOC】indicator : The lamp will be on when the screen is locked, otherwise it will be off.

e．【SIN】indicator : Invalid reservation

f. 【ALM】indicator: The lamp will be on when there is temperature deviation alarm or abnormal temperature measurement. It will flash when there is temperature deviation alarm. Under normal condition, it will be off.

10.5 Panel operation and usage methods

10.5.1 Controller power on display

After all displays are lit up for about 3 seconds, the PV area displays [P (K) - E9], and the SV area displays the version number for about 1 second before entering the normal display state.

10.5.2 Reference and setting of temperature and time

In the display status of the Home screen, click the [Set] key to enter the temperature setting status. The PV area displays the prompt SP, and the SV area displays the temperature setting value. The modification method is the same as above; Click the [Set] button again to enter the time setting state. The PV area displays the prompt ST, and the TIME area displays the time setting value; Click the [Set] button again to exit this setting state and the set values will be automatically saved.

When the set time is "0", it indicates continuous operation. When the set time is not "0", before the timing starts, if the timing direction is countdown, the TIME area will display the timing time. If it is positive, the TIME area will display "0". When the timing starts, the "indicator" will flash. When the timing is completed, the TIME area will display End. The buzzer will beep and stop beeping for EST seconds. At this time, you can press and hold the [decrease] button for 3 seconds to restart the operation.

Note: "Indicator" is "Decimal separator of one digit in TIME display area".

10.5.3 Appointment function

When there is an appointment time setting, the instrument automatically disconnects the heating output.

During the appointment timing process, the TIM light flashes and the TIME area countdown displays the appointment running time.

10.5.4 Temperature measurement value abnormal alarm

If the PV area displays "----", it means that the temperature sensor is faulty or the temperature exceeds the measurement range or the controller itself is faulty. The controller automatically disconnects the heating output, the buzzer continuously sounds, and the alarm light remains on. Please carefully check the temperature sensor and its wiring.

10.5.5 Deviation over temperature alarm

During operation, when there is an upper deviation over temperature alarm, the buzzer beeps and the alarm light remains on, disconnecting the heating output; When a deviation over temperature alarm occurs, the buzzer beeps and the alarm light flashes. If an over temperature alarm is generated due to changing the temperature setting value, the alarm light will light up, but the buzzer will not sound.

10.5.6 Lock screen function

Provide three screen locking methods, password unlocking operation method: In the lock screen state, click the [Add] button, the PV area displays the input password prompt PA, and the SV area displays the password value. After entering the correct password, click the [Set] button to unlock.

10.5.7 When the buzzer sounds, you can press any key to silence it.

3、 Common fault analysis

Before diagnosing the fault, please confirm whether the power supply is connected properly, whether there is obvious damage to the power cord, and whether the fuse is in good condition.

Serial Number	Fault phenomenon	Cause analysis	Processing method
1	After turning on the power switch The display screen does not light up	Power not connected	Check the power supply and connect it
		Fuse burned out	Replace the fuse
		Damaged switch	Swap switch
2	Temperature display and actual temperature Serious discrepancy	Sensor damage	Replace temperature sensor
		Fan failure	Air exchange fan
3	Temperature controller temperature does not rise	Set temperature low	Adjusting the set temperature
		Damaged heating element	Replacing heating elements
		Damaged temperature controller	Replace the temperature controller
4	Abnormal overtemperature alarm	Set temperature low	Adjusting the set temperature
		High ambient temperature	Reduce ambient temperature
		The temperature controller is faulty	Replace the temperature controller
5	The button does not work	Button damage	Replace the temperature controller

（1）The operation of the above electrical components must be carried out by qualified electricians under safe conditions (cutting off the power supply). Other components are not allowed to be disassembled, otherwise the consequences will be borne by the user themselves;

（2）When the equipment encounters a malfunction other than the above, and the operator cannot immediately eliminate it, please notify our company's maintenance department immediately. For your safety, please do not repair the equipment on your own;

（3） The maintenance work of this equipment is only undertaken by trained and recognized technical personnel;

（4）If you need to order parts, you can contact our technical service department. Please indicate the model and number of the product you purchased.

NoteA: If the user cannot solve the problem, please contact the agent engineer as soon as possible and do not handle it yourself, otherwise the warranty will not be granted.

NoteB: The oxidation and yellowing of the inner cavity caused by prolonged high-temperature operation of the electric disinfection cabinet is a common phenomenon in the industry and a natural phenomenon. It is not due to damage to the inner container of the disinfection cabinet or product quality issues. Because the electric heating disinfection cabinet is already a high-temperature drying equipment when operating at a higher temperature range, and the state and color of stainless steel will change under high temperature conditions. At a closer look, it is actually a color purple, rather than the usual yellow/black, similar to the principle of high-temperature calcined steel. Moreover, sintering at high temperatures for a long time and material detachment from the inner liner are normal phenomena. The above issues will not affect the normal use of the equipment, so there is no need to worry

4、Maintenance and upkeep

frequency	operate
every day	Clean the inner chamber and partition frame, as well as the perspective window glass
weekly	Cleaning door sealing strip
Every 1-3 years	Replace the door sealing strip
Vulnerable parts	Fuse (fuse)
	Glass

⚠warning

Please use a power outlet with a grounding wire to prevent electric shock. If the power socket is not grounded, qualified engineering and technical personnel must install the grounding wire.

Do not ground the equipment through gas pipe, power supply pipe, telephone line or Lightning rod. This type of grounding may cause electric shock due to incomplete circuit.

Do not place this device in a damp place or a place where it may splash into water, as this may cause leakage or electric shock due to reduced insulation.

Note: The vulnerable parts such as sealing strips that require maintenance are consumables and are not covered by the warranty!

Label State

High temperature warning label

F10AL250V

Grounding identification

5、Warranty Commitment

Warranty content

1. The warranty period is twelve months from the date of purchase, providing warranty for faults caused by defects in materials and manufacturing. During the warranty period, our company will selectively repair or replace the instruments that have been proven to be defective. The products under warranty must be delivered by the user to the maintenance department determined by our company. The shipping cost of the instrument from the user to the maintenance department shall be borne by the user.

2. For repairs outside the warranty period, our company will appropriately charge the cost of repairs.

3. In the spirit of serving users, we will do our best to provide convenience to users one year later.

4. The equipment has a service life of 5 years and a production date.

5. Provide equipment drawings and some necessary technical data to the maintenance units and personnel trained and recognized by our company.

Warranty scope

The above warranty is not applicable to damage caused by improper use and maintenance by users, use under non compliant conditions, unauthorized repairs or modifications.

Appendix A

Packing list

Serial Number	name	category	number	notes
1	Hot Air Sterilizer	host	1	
2	instructions	file	1	
3	warranty card	file	1	
4	Qualification Certificate	file	1	
5	Packing list	file	1	
6	fuse	spare parts	2	
7	a partition	spare parts	2	
8	power line	spare parts	1	

The items listed in this order match the physical items contained in the box

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