



## HORIZONTAL AUTOCLAVE BKM-701

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## LARGE-SCALE PRESSURE STEAM STERILIZER

This sterilizer adopts pressurized saturated steam to sterilize articles. It eliminates the impact of cold air on temperature through pulsating vacuum exhaust, and finally removes moisture via vacuum pumping combined with jacket drying to dry the articles. It leverages the physical property that pressurized saturated steam releases a large amount of latent heat during condensation, keeping the articles to be sterilized in a high-temperature and humid environment. After a certain period of time, all bacteria and spore tissues on the articles are destroyed to achieve the sterilization effect. It is mainly applied in hospitals, chemical plants, food factories, scientific research institutions, pharmaceutical factories and other establishments for disinfection and sterilization of surgical instruments, dressings, medicines, culture media, food and other items.



### 1. Door

- (1) Lifting doors with automatic opening and closing; the sealing ring is driven by inflation pressure to achieve automatic sealing.
- (2) Brand-new high-quality round hollow door sealing rings made of high-tear-resistance silicone rubber material. Their surfaces are coated with parylene, making them wear-resistant and smooth. They deliver superior sealing performance and a longer service life, with a cycle life of up to 1,500 times. Thanks to the excellent fitting performance between these sealing rings and the side walls of sealing grooves, the risk of compressed air inside the sealing grooves leaking into the inner chamber is reduced, thus guaranteeing sterilization effects.

### 2. Pressure Vessels (Main Body and Doors):

## SPECIFICATIONS

|                                  |                                                                                                                      |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Model                            | BKM-701                                                                                                              |
| Capacity                         | 150L                                                                                                                 |
| Sterilization Temperature        | 139°C                                                                                                                |
| Working Pressure                 | 0.25 MPa                                                                                                             |
| Features                         |                                                                                                                      |
| Track Method                     | /                                                                                                                    |
| Design Pressure                  | Inner chamber: 0.1-0.3 MPa (gauge pressure); Jacket: 0.3 MPa (gauge pressure)                                        |
| Design Temperature               | 144°C                                                                                                                |
| Maximum Working Pressure         | Inner chamber: 0.25 MPa (gauge pressure); Jacket: 0.25 MPa (gauge pressure)                                          |
| Power Supply                     | AC 380 V $\pm 10\%$ , 50 Hz $\pm 1$ Hz, Power: 3.6 kW + 22 kW                                                        |
| Container Category               | I                                                                                                                    |
| Interior Dimensions              | Diameter: 45 cm, Depth: 95 cm                                                                                        |
| Overall Dimensions (L x W x H)   | Length: 120 cm x Width: 90 cm x Height: 166 cm                                                                       |
| Net Weight of Equipment          | 430 kg                                                                                                               |
| Steam Pressure                   | 0.3 MPa-0.5 MPa (gauge pressure)                                                                                     |
| Steam Consumption                | 20 kg per time                                                                                                       |
| Cooling Water Source Pressure    | 0.15 MPa-0.3 MPa (gauge pressure)                                                                                    |
| Consumption of Cooling Water     | 30 kg per time                                                                                                       |
| Compressed Air Source            | 0.5 MPa-0.7 MPa (gauge pressure)                                                                                     |
| Compressed Air Production Rate   | 0.5 m <sup>3</sup> /min                                                                                              |
| Standard Control Format          | Touchscreen + PLC Control                                                                                            |
| Container Design Life            | Inner tank made of 304 stainless steel, jacket made of Q345R, service life of 10 years (20,000 sterilization cycles) |
| Internal chamber design pressure | -0.1-0.3 MPa                                                                                                         |
| Jacket design pressure           | 0.3 MPa                                                                                                              |
| Maximum Operating Temperature    | 139°C                                                                                                                |

|                                                |                                       |
|------------------------------------------------|---------------------------------------|
| Opening Pressure of Inner Chamber Safety Valve | 0.3 MPa                               |
| Jacketed safety valve opening pressure         | 0.3 MPa                               |
| Internal chamber hydraulic test pressure       | 0.38 MPa                              |
| Jacket test pressure                           | 0.48 MPa                              |
| Temperature display accuracy                   | 0.1°C                                 |
| Pressure Display Precision                     | 0.1 kPa                               |
| Temperature control accuracy for sterilization | ±0.2°C                                |
| Temperature homogeneity                        | ±1°C                                  |
| Final vacuum                                   | -96 kPa                               |
| Vacuum leakage rate                            | ≤0.13 kPa/min                         |
| Alt Name                                       | Large-scale pressure steam sterilizer |

## FEATURES

### 1 .Door

(1) Lifting doors with automatic opening and closing; the sealing ring is driven by inflation pressure to achieve automatic sealing.  
(2) Brand-new high-quality round hollow door sealing rings made of high-tear-resistance silicone rubber material. Their surfaces are coated with parylene, making them wear-resistant and smooth. They deliver superior sealing performance and a longer service life, with a cycle life of up to 1,500 times. Thanks to the excellent fitting performance between these sealing rings and the side walls of sealing grooves, the risk of compressed air inside the sealing grooves leaking into the inner chamber is reduced, thus guaranteeing sterilization effects.

### 2. Pressure Vessels (Main Body and Doors):

(1) Horizontal sterilizing chamber with rectangular cross-section, adopting the European-style(GETINGE) jacket structure with annular reinforcing ribs. Its unique combined structure of inner.The shell and annular jacket boosts the strength and rigidity of the main body. Compared with the integral jacket, it features higher load-bearing capacity and lower stress concentration. Especially under pulsating alternating pressure and temperature loads, it delivers superior load-bearing performance and extends the fatigue life of the vessel.  
(2) The bottom surface of the inner chamber is sloped to guarantee the drainage of condensed water inside the chamber.  
(3) Materials in contact with steam, including the inner tank and door panels, are all 304 stainless steel, while Q345R steel plates are used for the jacket.  
(4)The surfaces of the inner tank and doors are mechanically mirror-polished to a roughness of Ra0.6, offering outstanding corrosion resistance.

3. Siemens programmable logic controller (PLC) and color touch screen are adopted. The entire process is controlled by automatic programs, with real-time automatic display of operating status as well as parameters including temperature, pressure and time.

4. Equipped with a communication interface.

5. Programs: instruments, fabrics, BD tests, vacuum leaks, liquids, culture media and custom programs.

6. Real-time print process data via the built-in mini printer, including the sterilizer's temperature, pressure, sterilized items, sterilization duration, and operator information.

7. Pipeline System: Pipes that come into direct contact with pure steam and communicate with .The inner chambers are made of 304L stainless steel with clamp connections. All welds are produced by automatic orbital tube welders. The trouble-free service life of pneumatic valves shall be no less than 4 million operating cycles.

8. Equipped with an automatic drainage temperature regulation system, maintaining drainage temperature ≤55°C.

9. Air Filter: The sleeve housing shall be made of 304 stainless steel, and the filter element shall consist of hydrophobic polytetrafluoroethylene (PTFE). The accuracy is ≤0.22 micrometers, with a sterilization rate of 99.97%.

### 3. Safety Devices and Alarm Systems

#### 1) Door safety interlock device:

1. Equipped with a pressure safety interlock device: under normal operating conditions, steam cannot enter the inner chamber and the program cannot be activated unless the door is fully locked; the door can only be opened after the internal chamber pressure has been completely

released.

2. Liquid procedure: displacement - heating - sterilization - steam discharge - normal door opening after steam discharge.

3. Features a dual-door interlock mechanism to ensure effective isolation between the inspection packaging area, sterilization zone, and sterile item storage area.

4. Doors equipped with inflatable or pressure-driven sealing gaskets shall comply with the requirements of Section 7.102 of GB 4793.4. For doors sealed by such gaskets in sterilizers, a pressure monitoring device must be installed to ensure that when the sealing pressure drops below the minimum pressure specified by the manufacturer: a) operation is suspended; b) visual or audible alarm signals are triggered to indicate a fault; c) the door remains closed; and d) steam, water, or air cannot enter the pressure chamber.

2) Overpressure automatic protection and alarm function: Pressure control for the interlayer, inner chamber, and evaporator (if applicable) employs intelligent control via imported analog pressure transmitters, eliminating the need for manually adjustable mechanical pressure switches; it continuously monitors and collects pressure data, providing automatic overpressure protection and alarms.

3) Both the jacket and sterilization chamber are equipped with safety valves; when the pressure exceeds the set threshold, the safety valve automatically opens to release pressure.

4) Ultra-mild low-temperature alarm function: The temperature control of the inner chamber adopts Class A precision PT100 to collect temperature data in real time. It will activate automatic protection and send an alarm when the temperature exceeds the set value, and also trigger automatic protection and an alarm if the temperature drops below the set sterilization temperature.

5) Low-pressure alarm for compressed air: Equipped with a pressure switch that monitors compressed air pressure; an automatic alarm is triggered when the pressure falls below 0.4 MPa.

#### 4. Other Functional Features

1) Equipped with a pressure holding test function. Evacuate to below -0.09 MPa and hold the pressure for 10 minutes, with a leakage rate  $\leq 0.13$  kPa per minute.



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