

LQ series Vertical Vacuum steam sterilizer

LQ series Vertical Vacuum steam sterilizer

TECHNOLOGY SPECIFICATION



WANROOE MACHINERY CO.,LTD.

Tel:0086-512-58810860

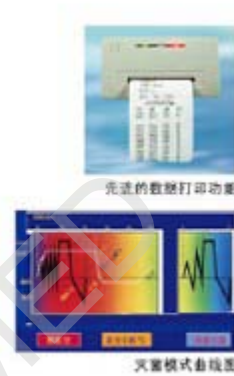
Fax:0086-512-58810663

Add:Zhangjiagang city,Jiangsu Pro,China

Web:www.wanrooemed.com

LQ series Vertical Vacuum steam sterilizer

LQ Vertical Pressure Steam Sterilizer



1. Summarize

The sterilizer adopts advanced door structure which originated by WANROOEMED, the operation of the door is flexible and the maintenance is very easy. The PLC and HMI control system are very compact and effective. The piping system adopts many world famous brand unit which working in a very high reliable. The built-in steam generating plant is of high heat efficiency and quick steam production, saving energy. The steam condensation water will be recycled by the device itself.

This sterilizer is suitable for sterilizing and drying surgical instrument, Fabrics, dressings, utensils, culture medium and so on. It has the advanced function of sterilizing data and curve printing, high-temperature rapid sterilizing and vacuum drying,

The sterilizers are suitable for the sterilization of hospital, pharmacy factory, and lab, etc.

2. Construction Feature

- 1) The sterilizer is main consist of main part, single door, pipe system, PLC and HMI control system , decorated cover, electric heating system, sterilization chamber and so on.
- 2) Main Part ,vertical and round, it has double body construction, which are propitious to warm-up dry and continuous operation during the sterilizing.

LQ series Vertical Vacuum steam sterilizer

This body is designed and manufactured according to GB150-98 <steel pressure vessel>and <pressure vessel safety technology supervise regulation>. The sterilizer chamber adopt SUS304 pressed steel which having no rust, no pollution.

- 3) The door structure device of the vertical pressure steam sterilizer is the pioneer in the same occupation in domestic market with the flexible transfer and easy maintain. The door sealing adopts self-sealing, which is reliable.
- 4) The pipeline system is consisted of imported electromagnetic valves, air filter, check valves, vacuum pump condenser, and many kinds of pipes.
- 5) Control system is consisted of PLC, color touch screen, pressure sensor and pressure controller. The touch screen can to show the operational process, sterilization parameters like temperature, pressure, sterilization time etc. In addition, all the recipes are editable by user and the process data will be printed out by the min-printer.
- 6) Decorated cover is made of stainless steel board, which is beautiful and easy to clean.
- 7) Sterilization chamber is made of good quality and acid resistant stainless steel, which is durable and stable.

3. Working procedure of sterilization

This autoclave is featured as standard with process cycles for dry loads, such as instruments, rubber goods, textiles, empty vials, filters, etc.

We will preset many programs for customers. All these programs are editable by users.

- 1) Instrument and vessel;
- 2) Dressing;
- 3) Fluid nutrient medium;
- 4) Bowie-Dick test;

LQ series Vertical Vacuum steam sterilizer

Relative procedure according to different materials.

① Instruments and vessels

The target of sterilization: Solid, instrument, and materials need to dry after sterilization.

1. Ready: Close the door properly, air compressed properly and the touch screen showing "ready".
2. Heating: press the button of start, when the pressure to designed pressure, the vacuum procedure starting.
3. Vacuum: vacuum pump operating, when the inner shell pressure to designed subpressure, then steam into inner shell .when the pressure to designed pressure, vacuum it again, circulation the operation to the designed times.
4. Rising: when the pressure of inner chamber rising to designed pressure, temperature rising to designed value.
5. Sterilizing: keep the pressure and temperature at the designed scope, when the designed time reaching, it turning into drying.
6. Drying: exhausting steam to safe pressure, vacuum pump starting to drain out steam, then let compressed air in, vacuumize the chamber and supply compressed air in turn. When setting time is reached, stop vacuum drying, supply air for chamber.
7. End: when the chamber pressure rising to 0Mpa, the Procedure finishing. Then press the button of close, open the door and fetch materials

②Dressing

The target of sterilization: sterile gown, operation kits, dressing materials need to dry after sterilization

1. Ready: Close the door properly, air compressed properly and the touch screen showing "ready".
2. Heating: press the button of start, when the bottom pressure of chamber to designed pressure, the vacuum procedure starting.
3. Vacuum: vacuum pump operating, when the inner shell pressure to designed subpressure, then steam into inner shell .when the pressure to designed pressure, vacuum it again, circulation the operation to the designed times.
4. Rising: when the pressure of inner chamber rising to designed pressure, temperature rising to designed value.
5. Sterilizing: keep the pressure and temperature at the designed scope, when the designed time reaching, it turning into drying.

LQ series Vertical Vacuum steam sterilizer

6. Drying: exhausting steam to safe pressure, vacuum pump starting to drain out steam, then let compressed air in, vacuumize the chamber and supply compressed air in turn. When setting time is reached, stop vacuum drying, supply air for chamber.

7. End: when the chamber pressure rising to 0Mpa, the Procedure finishing.

Then press the button of close, open the door and fetch materials

③ Fluid nutrient medium

The target of sterilization: culture medium, solution

1. Ready: Close the door properly, air compressed properly and the touch screen showing "ready".
2. Heating: press the button of start, when the bottom pressure of chamber to designed pressure, the vacuum procedure starting.
3. Rising: when the pressure of inner chamber rising to designed pressure, temperature rising to designed value.
4. Sterilizing: keep the pressure and temperature at the designed scope, when the designed time reaching, it turning into exhausting steam.
5. Exhausting steam : the temperature of chamber lowering to designed steam exhausting temperature, open the steam exhausting.
6. End: when the chamber pressure rising to 0Mpa, the Procedure finishing. Then press the button of close, open the door and fetch materials

④Bowie-Dick test

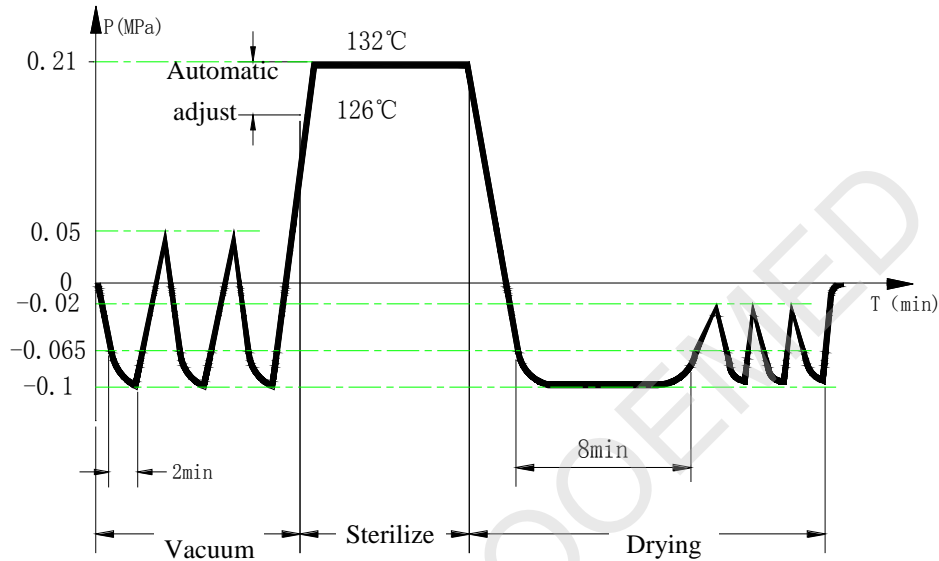
The target of sterilization: designed by B-D test to check the performance of the equipment, the designed temperature is134°C, sterilization time is 4 minutes.

1. Ready: Close the door properly, air compressed properly and the touch screen showing "ready".
2. Heating: press the button of start, when the bottom pressure of chamber to designed pressure, the vacuum procedure starting.
3. Vacuum: vacuum pump operating, when the inner shell pressure to designed subpressure, then steam into inner shell .when the pressure to designed pressure, vacuum it again, circulation the operation to the designed times.
4. Rising: when the pressure of inner chamber rising to designed pressure, temperature rising to designed value.
5. Sterilizing: keep the pressure and temperature at the designed scope, when the designed time reaching, it turning into drying.

LQ series Vertical Vacuum steam sterilizer

6. Drying: exhausting steam to safe pressure, vacuum pump starting to drain out steam, then let compressed air in, vacuumize the chamber and supply compressed air in turn. When setting time is reached, stop vacuum drying, supply air for chamber.
7. End: when the chamber pressure rising to 0Mpa, the Procedure finishing. Then press the
8. button of close, open the door and fetch materials.

The curve of procedure



time	Sterilization time (minute)			
	115°C	121°C	126°C	133°C
type of materials	0.070 MPa	0.105 Pa	0.140 MPa	0.210 MPa
Culture medium	20			
Rubber		15~20	10~20	
Vessel(glass)		15~20	10~15	4~6
instrument (metal)		15~20	10~15	4~6
pressing (fabric)		30~45	30	4~6
Bottle(Water solution)	30~45		15~45	

LQ series Vertical Vacuum steam sterilizer

4. Main parameters

Model	LQ-50L	LQ-75L	LQ-100L
Sterilizing Chamber Volume:	φ400*400(mm)	φ400*600(mm)	φ400*800(mm)
Overall Size(L*W*H mm)	800*530*900	800*530*1100	800*530*1300
Design Pressure	0.245Mpa	0.245Mpa	0.245Mpa
Sterilizing Pressure	0.07-0.22Mpa	0.07-0.22Mpa	0.07-0.22Mpa
Sterilizing Temperature	115-134°C	115-134°C	115-134°C
Heat Equilibrium	≤±1°C	≤±1°C	≤±1°C
Vacuum	-0.09Mpa	-0.09Mpa	-0.09Mpa
Power	4.5Kw/AC220V, 50Hz	4.5Kw/AC220V, 50Hz	4.5Kw/AC220V, 50Hz
Net Weight (kg)	150	180	220

LQ series Vertical Vacuum steam sterilizer

The main configuration of vertical pressure steam sterilizer

No	Name	Model	Manufacturer	Remark
1	Main part	01-00	WANROOEM ED	Inner chamber and jacket are made of SUS304, according to GB-150
2	PLC	S7-200	SIEMENS, Germany	Reliable running, high stability
3	Touch screen	TP106	TRE	A wonderful man-machine dialogue interface: A color touch-screen display, easy for operation
4	Sterilization software		WANROOEM ED	Clients can change the relative parameters according to different technological parameters
5	Vacuum pump	120RND	G&M Tech INC. Korea	High vacuum, low noise, easy to maintain
6	Temperature detector	WZP-269	SIPAI Shanghai	Pt100, A level precision, temperature equilibrium $\leq 0.15^{\circ}\text{C}$
7	Pressure controller	SNS series	TOKYO Japan	Reliable, performance, accurate control
8	electromagnetic valve	VCS series	SMC Japan	High performance, durable
9	Air filter	FA series	Santong Jiangsu	Diameter $0.22\mu\text{m}$
10	Pressure sensor	MB	DANFOSS Denmark	Excellent anti-jamming, high precision
11	Pressure gauge	YTF-98ZK	Brighty, Shanghai	Correct instruction, convenient inspection and maintenance, beautiful and durable