

# Ethylene Oxide Sterilizer

**XG2.C configuration and technical  
instructions**

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## 1、 product overview

Ethylene oxide sterilizer using pure ethylene oxide gas (referred to as EO) as a sterilizer, Advanced design,reasonable structure,stable performance, reliable sterilization effect, Ethylene oxide has strong penetrating power, reliable sterilization, Wide sterilization spectrum, strong bactericidal power, it can kill a variety of micro-organisms, viruses, spores, bacteria, propagules, it can penetrate the pores and reach the deep part of the items, but no damage or damage to the disinfection of goods, Ethylene oxide can be sterilized at lower temperatures, so it is widely used in medical, health and other departments, it is used to sterilize for medical polymer materials, medical electronic equipment, optical instruments, health materials, medicine and other items scared of hot or wet. Ethylene oxide sterilizer using the whole process of negative pressure sterilization process, it can prevent EO gas leakage. It uses programmable controller to automatically control the entire sterilization process, with drug control, time control, temperature control, humidity control and ventilation and other functions.

## 2、 Structural features

### safety

#### ◆ Negative pressure working system

Negative pressure cycle process is safe and reliable, it ensures that the EO gas does not leak during the entire operation, even if there is leakage, also outside the air into the cavity.

#### ◆ Negative pressure prick tanks

Using a one-time dedicated aluminum alloy canned 100% pure ethylene oxide gas, removing operational risk. In the process of operation, Only the sterilizer door is completely closed, Vacuum, temperature, humidity level reach the default value, only when the cavity pressure is below 200mbar, the gas tank can automatically puncture the release of EO gas.

#### ◆ Safe automatic monitoring function

Real-time monitoring of changes in chamber pressure inside the sterilizer, if the chamber pressure rises abnormally, the alarm will be automatically transferred to the ventilation stage.

#### ◆ Shallow pulsating ventilation design

Using shallow pulsation In the ventilation phase,has the better results of analysis and remove residue  
Ventilation time sets 2-99 hours.

### ◆ Door safety chain

The door can not be opened while the program is running and the chamber is under pressure.

### ◆ Exhaust fan monitoring system (optional)

When the sterilizer starts to start, it automatically detects the operation of the exhaust fan during  
operation. The fan does not start and the system will alarm.

### ◆ Environmental concentration safety monitoring alarm system (optional)

Name	Style	Number	Unit
Alarm control host	ET-3000	1	piece
Ethylene oxide concentration detection alarm	ET-300-1	1	piece
Hydrogen peroxide concentration detection alarm	ET-300-2	1	piece

The environmental concentration safety monitoring and alarm system consists of two parts: the  
concentration detection alarm with display function and alarm control host with display function. Alarm is  
divided into hydrogen peroxide concentration alarm and ethylene oxide concentration alarm; alarm control  
host has four monitoring channels, two channels used to monitor the concentration of hydrogen peroxide  
and ethylene oxide concentration, the other two channels for the standby channel; **Also contains four  
relay, respectively used to control the indoor exhaust fan.**

### Technical characteristics:

- 1、 7-inch color widescreen display, full-screen touch operation, user-friendly Chinese user interface, built-in clock and parameter automatic storage function;
- 2、 Professional design, a product is designed specifically for hydrogen peroxide low temperature plasma sterilizer and ethylene oxide sterilizer;
- 3、 Safety performance, real-time display of the real-time concentration of each channel, 15 minutes concentration weighted average and 8 hours concentration weighted average, beyond the limit immediately after the sound and light alarm;
- 4、 Through the alarm control host as far as can be in real-time monitoring for indoor concentration in the 200 metres away;
- 5、 Alarm linkage, if the indoor gas concentration is too high, will automatically start the indoor exhaust fan;
- 6、 Alarm recording function, can record up to 1000 alarm;
- 7、 Remote control, alarm for the infrared remote control operation, without close, without opening;
- 8、 Self-test function, alarm and alarm control host has a self-test function to help users find fault in time;
- 9、 Multi-level password system to prevent users from misuse;

# XG2.C ethylene oxide sterilizer configuration and technical description

TD-EO-A001-006. R6

## Technical

### Parameters:

#### 1) Concentration detection alarm

Name	Hydrogen peroxide and ethylene oxide concentration detection alarm
Range selection	0-30ppm (other range, please contact us)
Resolution	0.01ppm
Display	With display function
Operating Voltage	12-35VDC
Accuracy	$\leq \pm 2\%FS$
Detection method	Diffuse
Main material	Aluminum alloy + imported anti-corrosion alloy
Alarm mode	LED lights alarm + stainless steel explosion-proof sound and light alarm
Voice strength	85dB@1 meter
Explosion proof certification	Exd II CT6 Gb
Protection class	IP66
Dimensions	190*180*100mm (length Width Thickness)
Power consumption	<1W

#### 2) Alarm control host

Name	Alarm control host
Installation method	Wall mounted
Operating Voltage	Main voltage: 220VAC 或 110VAC/ (50~60)Hz Standby voltage: 24VDC/4.6AH (Optional)
Rated power	$\leq 10W$
Alarm mode	Audible alarm

## reliable

### ◆ Reliable sterilization

Through the Chinese Academy of Military Medical Sciences sterilization test, can provide test reports;  
access to the ministry of Health permission approved documents.

### ◆ Precise control of sterilization parameters

Degree, humidity, pressure were accurately collected by the relevant probe, run by the PLC strict  
control procedures. The sterilization process is timely and multi-parameter printing for archival filing.

### ◆ Humidification control system

Precise control of humidification water, built-in humidity sensor, to ensure that sterilization humidity  
requirements.

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### ◆ Double pressure control system

Using two inlet pressure sensors, while monitoring the pressure changes to ensure that pressure control foolproof.

◆ There are low temperature 37 °C, high temperature 55 °C, double program selection.

◆ Operator password settings to prevent others from operating

### ◆ Power off memory function

Program running a sudden power outage, the system can remember the relevant sterilization information, to be restored after the power supply, continue to run the original program.

### ◆ The inner cavity of the sterilizer is made of aluminum alloy

Aluminum body thermal conductivity is good, the temperature is more uniform, to ensure the sterilization effect.

### ◆ Imported vacuum pump

Vacuum pump pumping speed fast, stable, take time and strong ability

### ◆ Intelligent automation design

PLC control, liquid crystal display working status (including temperature, humidity, pressure, etc.). Such as failure and error, automatic stop or emergency treatment, alarm printing and record all information.

### ◆ Touch screen Chinese display, simple and convenient

### ◆ Built-in micro-printer, timely print sterilization data and a variety of related information

Users are free to select reports, curve printing. Device number, sterilization lot number, fault code and other sterilization information at the same time print, print data has a unique logo.

### ◆ Configuration 2 stainless steel basket

### ◆ Supplies available

Xinhua Medical can provide you with ethylene oxide gas cylinders and chemical instructions cards, biological indicators, bags, biological incubators and other supplies, easy to use.

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◆ **Emissions: Emissions to the atmosphere.**

◆ **Electric lift door**

**Electric lift doors, sealed and reliable, easier to operate**

◆ **Built-in air compression system**

The equipment has an air compression system consisting of air compressors, air tanks and pressure switches. No need for external compressed air handling system, only 220v power supply to start work.

◆ **Automatic lift truck (optional)**

The truck is equipped with rechargeable lithium battery, with the location memory function, easy to operate, reduce the operator labor intensity.

### 三、Model structure

The sterilizer consists of a main body, a door, a piping system, a control system, a basket and an exterior trim. control system, a basket and an exterior trim.

#### 1.subject

The use of rectangular structure, loading space utilization is high. The inner shell is made of high quality aluminum alloy material, and after special surface treatment, the whole body is durable, corrosion-resistant, high pressure.

#### 2. door

Using electric lift door structure. Seal ring with good temperature performance and elasticity of silicone rubber, sealed door with multi-level interlock control

#### 3.pipeline system

The piping system consists of a controlled pneumatic valve, a vacuum pump, a puncture cylinder, a carburetor and a connecting pipe. Control valves, vacuum pumps, puncture cylinders, air compressors are used imported accessories, no action errors and reliable quality

Using a special control circuit to ensure that the ethylene oxide gas tank only in the sterilization chamber deep vacuum puncture success, and the introduction of effective control of the location of the test to ensure that ethylene oxide gas tank into °

#### 4. Control System

Selection of Germany's Siemens s7-200 series PLC as the main controller, Xinhua LCD screen as a man-machine interface, Xinhua thermal printer as a print recording device.

#### 5. The basket

Basket is divided into baskets and baskets, all stainless steel mesh structure, do not pollute the sterilized items.

### 三、Main technical data

#### ◆ Sterilizer technical indicators

Rated operating temperature: 37℃-63℃

Relative humidity: 50%~80%

Gas concentration: 740~760mg/L

Ventilation time setting range: 2.5~99hours

#### ◆ Power requirements parameters

Voltage: AC220V, 50Hz, ±10% deviation

### 四、Sterilization process

Work process: take the time (including temperature) - pressure - humidification - sterilization (including dosing) - pulsating - ventilation

### 五、Technical Data Sheet

Order number Technical Parameters	XG2. C	XG2. C-220
Sterilization chamber size (LxWxH) mm	750x450x400	1250x450x400
Sterilization chamber volume L	135	225
Dimension (LxWxH) mm	950x860x1730	1450x860x1730
Packing size (LxWxH) mm	1050x960x1900	1550x960x1900
N. W Kg	300	400
power supply AC220/50Hz	3.5Kw	4.5Kw
Sterilization temperature	37℃ 和 55℃	37℃ 和 55℃
Ethylene oxide gas / cycle	100g	170g

# XG2.C ethylene oxide sterilizer configuration and technical

TD-EO-A001-006. R6

## 六、 Main component configuration table

Serial number	Component name	style	Manufacturer	Technical Description
1	Sterilizer body	XG2. 01	wanrooe Medical	High quality aluminum alloy, surface oxidation treatment.
2	Sealed door	XG2. 03	wanrooe Medical	Aluminum alloy door, equipped with electrical and mechanical safety interlock device.
3	Door control switch	D4NA-412G	Taiwan TEND	Reliable action, high temperature
4	Master	CPU226	Germany SIEMENS	Powerful, advanced performance, high reliability
5	LCD screen	XHPC5. 11-485	wanrooe Medical	Display the work process, easy to operate.
6	Thermal printer	LTP245-C	wanrooe Medical	Multiple sterilization parameters recorded, high resolution, long service life.
7	Humidity transmitter	SC01	Tianjin fine stone technology	Good accuracy, high reliability, stable output
8	Pressure Transmitters	EC0-1	Germany WIKE	Good accuracy, high reliability, stable output
9	Temperature Sensor	Pt100	zibo	A-level accuracy, measurement error $\leq 0.15^{\circ}\text{C}$ .
10	Piping system	XG2. 04	wanrooe Medical	Copper or stainless steel pipe fittings.
11	Pneumatic valve	550 style	Germany GUME	No action error, lifetime warranty.
12	Vacuum pump	2660	American Thomas	Vacuum speed, high reliability
13	Puncture cylinder	QGS63	Germany	Work resistance is small, high reliability.
14	germ-free filter	sartorius	Germany	Ultra-fine aseptic filtration, sterilization rate reached
15	Environmental concentration safety monitoring alarm system (optional)	ET-3000	wanrooe Medical	7-inch color widescreen display, full-screen touch operation, remote monitoring, real-time display of the channel's real-time concentration, 15-minute weighted average and 8-hour concentration weighted average, beyond the limit immediately after the sound and light alarm;
16	The basket	XG2. 05	wanrooe Medical	Stainless steel mesh structure, beautiful and durable.
17	Decorative cover	XG2. 07	wanrooe Medical	Paint spray, easy to clean.