

Model **TR250B50**

TABLE TOP STEAM STERILIZER

fully automatic microcomputer type



USER'S MANUAL

● OUTLINE

TR250B50 Desktop Fast Pressurized Steam Sterilizer is a mini medical sterilizing device. The sterilizer uses electric heater to heat the pure water, which was put in advance in the sterilization chamber. The pressurized steam generated meets the sterilization requirement and sterilizes the objects needing sterilization. The sterilizer is equipped with a pressure controller which can be preset at within the working pressure range of 0.01489MPa-0.21MPa, the temperature could be 103℃~134℃. The sterilizer is also equipped with a timer to control the sterilization time. It can be preset at within 1min~99min59sec minutes according to sterilization requirement, and has heater overload protection and sterilization ending buzzer alarm functions. The sterilizer can be easily operated and is safe and reliable. The waste steam in sterilization chamber and safety valve is discharged into water tank of the sterilizer to ensure a clean and dry working environment.

This product is widely used in antiseptis and sterilization for medical dressing utensil, medicine, medical instruments, and etc. It is especially suitable for prompt sterilization of various kinds of operation instruments in urgent need as prompt supplementary to operation room of medical unit. It also can be used by enterprises and scientific research units as an idea device to carry out asepsis experiment.

The working environment and condition of the product:

- 1) environment temperature: 0~40℃
- 2) Relative humidity: ≤85%
- 3) Atmospheric pressure range: 86~106 KPa
- 4) Power supply: AC220V ±22V, 50Hz ±1Hz (should have ground lead)

Transport and storage environment and condition:

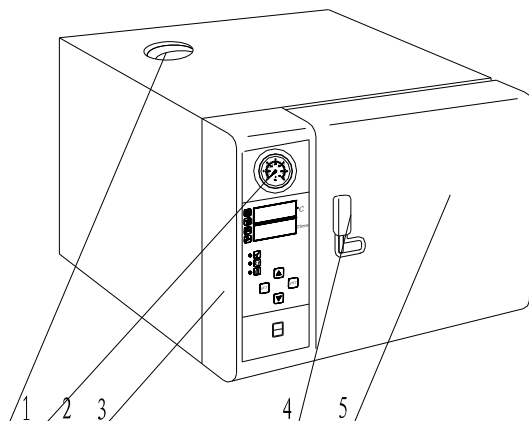
- 1) environment temperature: -20~50℃
- 2) Relative humidity: 10%~90%
- 3) Atmospheric pressure range: 50~106 KPa

This product equipped with safety valve, and will auto release when steam pressure over 0.24Mpa, when the temperature over 140℃(284°F), the power auto be cut-off double safety protection. It also equipped with water-off overheat protection, current overload power cut-off protection, and the sterilizer's door safety interlock device, is a safe and reliable product.

● Structure & Working principle

◆ General structure

This product buildup by sterilize chamber, instrument plate, water tank and control system (fig.1)



1. wster tank
2. gauge
3. control system
4. handle
5. chamber's door

fig1

◆ Working principle

The sterilizer is designed by using gravity type pressurized steam sterilization principle. Put 1~ 1.2

liter of distilled water into sterilization chamber, use electric heater to heat directly to produce pressurized steam. The pressurized steam act with microorganism on the objects to be sterilized to destroy its structure and reach the purpose of sterilization.

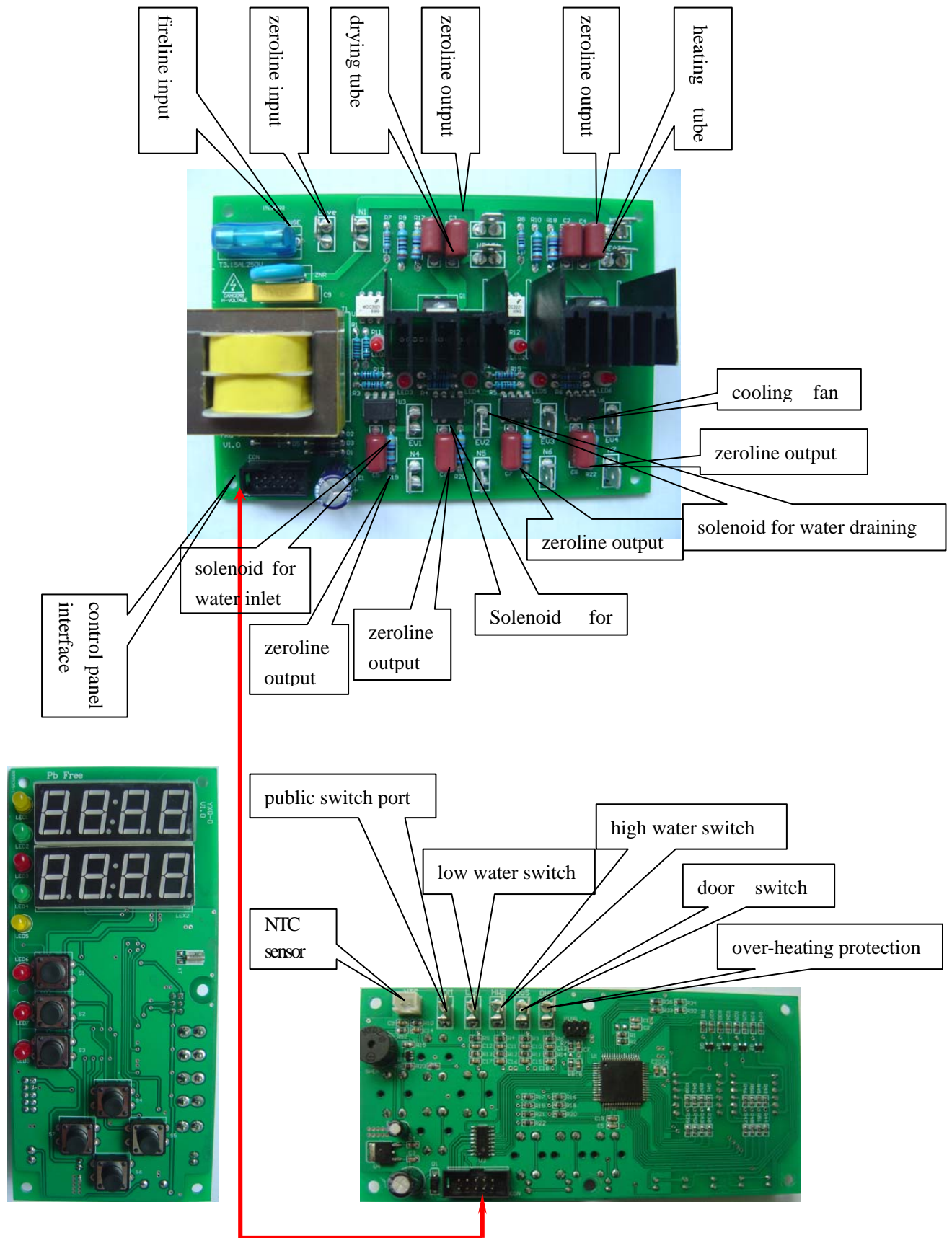


Fig2

● SPECIFICATION

- ✧ Maximum working pressure/ temperature: 0.22Mpa/ 134 °C
- ✧ Sterilization pressure/temperature choice: 0.01489MPa~0.22MPa /103~134°C
- ✧ Timer range: 1min~99min59sec
- ✧ Valid volume of the sterilizer: 50L (Φ 340X550mm)
- ✧ Dimension of the instrument plate: 500 X 250 X 30mm (4 pcs),
Power supply: 2.7KW/AC220V, 50Hz
- ✧ Dimension of the sterilizer: 77x60x54 cm
- ✧ Dimension of transportation: 90x70x70 cm
- ✧ Gross weight: 110kgs, Net weight: 92kgs

● OPERATION

◆ The preparation and inspection before use

Inspection the power supply , Power supply data conform to product requirement. Single phase (AC220V, 50Hz).

- ✧ Prepare 5 liters of distilled water.
- ✧ The binding of dressing and textile can not be too tight
- ✧ Certain amount of sterilization indicator (chemical indicating piece or biologic indicating piece)

The instruction of operating key, indicating lamps, switches and relevant marks.

◆ controll panel (see fig.3)

✧ Gauge

Display the pressure and temperature, Mpa show inner pressure and ° C show inner temperature

✧ key

SET

For setting sterilizing temperature (0~134 °C) / sterilizing time (1~99min59sec.) / for check in the course of sterilizing

▲ increase

For increase the value of temperature or time, also for clear the buzzer in using.

▼ decrease

For decrease the value of temperature or time, also for clear the buzzer in using.

ENT for confirm

For confirm the state of sterilizing temperature and time. Also for emergency stop in using.

✧ Screen indicate

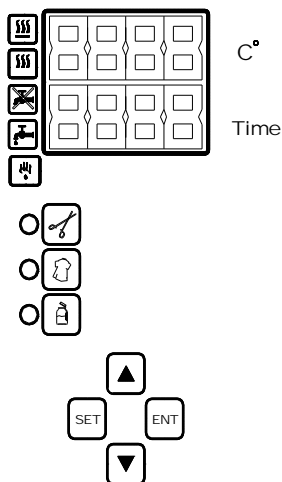


fig3

Window for temperature---display setting & real chamber temperature 0~134℃, range 103~134℃

Window for time--- display setting time and sterile back timing, range 0~99min59sec. when the chamber's temperature reached the setting value, it began back timing and flash.



Heating pilot--- push key ENT, the pilot light tell the sterilizer in heating, the pilot out tell it reached the setting temperature and stop heating.



Sterilizing pilot-----it light tell the objects be sterilized have reached the setting temperature.



Overheating pilot---the pilot flash means the water fill to chamber from the water tank, the pilot light means the water lack and the trouble of overheat.



Water fill pilot-----it light means the water is filling now.



Dry pilot—it light tell in dry heating.

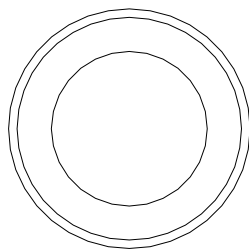
◇ outlet of water collect tank

The distilling water in the tank must be exhaust from this outlet every week.

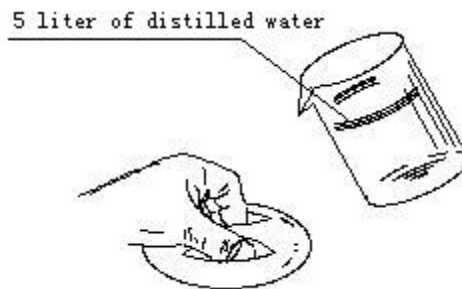
◇ outlet of water container

Water store tank's distilling water must be exhaust from this outlet every day.

◇ switch--- power on/off



water outlet



(fig4)

● Sterilizing operation

◆ Load the objects to be sterilized

Load the objects to be sterilized in instrument plate. Then put in the sterilizer and close the door.

◆ Fill water to water tank

filling 5liter distil water to water tank.

◆ Start the device

Connect the power, turn on the power switch. Three times display on screen and three times buzzer sound, the pilot of temperature and time light, it enters the state of standby.

Different article sterilizing temperature and time (form 1)

article	Put form	Sterile temperature ℃	Sterilize time min
instrument	open	134	4
		121	20
		105	25
	pile	134	12

		121	30
		105	35
Solution	open	134	12
		121	30
		105	35

- ✧ Push key SET, enters the state of setting sterilizing temperature, meanwhile the window of temperature flash, time and heating pilot light.
- ✧ push key increase ▲ the value more or key decrease ▼ the value less, you keep push seconds, the value increase or decrease continuously.
- ✧ Push key SET, enters the state of setting sterilizing time, meanwhile the window of time flash, temperature and heating pilot light.
- ✧ push key increase the minute adding, push key decrease the value less, keep push the value adding or less continuously. (useful time setting 1~99min 59sec.)
- ✧ Push key SET, enters setting dry time state, meanwhile window of time flash and the heating pilot out, dry pilot light.
- ✧ push key increase the minute adding, push key decrease the value less, keep push the value adding or less continuously. (useful time setting 1~99min 59sec.)
- ✧ Push key SET, fulfill the task of setting sterilize temperature, time and dry. meanwhile the window temperature and time stop flash, and the heat pilot out.

- ◆ start sterilizing



Push key ENT, the screen flash and shows the water filling to the chamber, until the water enters the chamber wholly, the pilot out. Then the program enter the sterilizing, the window display real chamber temperature, heating pilot and time pilot light, when the temperature reached the setting value, heating pilot out, time window display back timing begin and the heating pilot light and out in the course of sterilizing.

- ◆ sterilize end

When the back timing show zero, the temperature as real value, the sterilize end the buzzer sound, this time push key ▲ or ▼ can cancel the sound.

- ◆ cooling

This time auto steam release, you can open the door when the gauge back to zero.

- ◆ dry

Open the door, make the door open about 1cm space, push key DRY, enters the state of dry, this time the drying time window show back timing, dry pilot light and out.

- ◆ dry ending

When the back timing show zero, the temperature as real value, the dry end and buzzer sound, this time push key ▲ or ▼ can cancel the sound.

● trouble dealing


- ◆ Door's pilot light and buzzer sound, heat pilot out, you can re-close the door and restart the machine.
- ◆ check the temperature and time you forgotten.
- ✧ Push key SET in the course of sterilizing, show instant setting temperature flash, useless you push key ▲ or ▼ this time.
- ✧ Push key SET again, show instant setting time flash, useless you push key ▲ or ▼ this time.
- ✧ Push key SET, recover the state of sterilizing and the checking end.
- ✧ Operation error--- if you do not push the key SET, but push the key ENT, the buzzer sound, just push key ▲ or ▼ can stop the sound. Then reset the temperature etc according to the item 4 above in STERILIZING OPERATION.
- ◆ Water lack and overheat



the buzzer sound in the course and the pilot light tell the chamber water lack and overheat, the machine will auto release the pressure to zero, you can shut down the power, then restart the sterilizing operation.

- ◆ over current protection

the over current occur, the fuse auto cut out, you can dealing the trouble then restart and setting temperature and time etc.....

- ◆ emergency stop 

For accident or mistake operation you must stop the machine, push key ENT, the buzzer sound, just push key ▲ or ▼ can stop the sound. Then reset the temperature etc according to the item 4 above in STERILIZING OPERATION.

● Safety protection device

- ◆ The door not be closed the machine not work.
- ◆ Water-off & over-temperature protection. When the heating element is heating without water, the power supply will be cut.
- ◆ Over-current protection. If the current exceeds the rated value, the power broken circuit will cut power automatically.
- ◆ Safety valve. When the pressure exceeds 0.24Mpa, the sterilizer will automatically exhaust to drop the pressure.
- ◆ Over temperature protection. When the chamber's real temperature $\geq 140^{\circ}\text{C}$, the power supply will be auto cut.

● MAINTENANCE

- ◆ To ensure the reliability of the sterilization effect chemical indicating piece of biologic indicating piece must be put into the sterilization chamber, together with the: objects to be sterilized. After sterilizing, the sterilization effect can be checked.
- ◆ if the trouble occur in the sterilizing, please dealing it and and wait for 5sec. Then restart the machine, all setting previons is useless.
- ◆ Safety valve must be checked once every year If it is in malfunction, replace it. If the safety valve is in malfunction during use and the pressure keeps increasing, the power supply must be cut to ensure a safe use.
- ◆ The rubber seal ring is easily aged. If aging causes leakage, the seal ring should be replaced in time.
- ◆ The temperature & pressure meter must be standardization every year.
- ◆ The machine must be keeping clean, and protecting the incrustant occurs on the surface, often method is wash it with distilling water once a week.
- ◆ If the water tank use not often, please clean by distiller water before use; often use clean by distiller water every week.
- ◆ Ordinary trouble and repair

trouble	possible cause	solve method
Buzzer alarm, meantime OVER HEATING flash.	The chamber's water too little, and the heat element drying heating.	Turn control valve to FILL, fill water to chamber 1-1.2 L at least
	Over heating protector broken	Replace the protector.
Circuit switch (power switch) suddenly cut off	Over current lash.	Inspect source power net.
	Electric short circuit	Inspect sterilizer's circuit, if the burn smell occur, replace the part be burned.
Power pilot light, heating pilot not light, unnormal operation	Door not closed, or door switch damaged	Close the door or change the switch

● **NOTICE:**

- ◆ The different kinds objects and the objects that will affect each other during the process of sterilization could not be sterilized in the same sterilization chamber at the same time
- ◆ Sterilization spare parts;
 - ◇ Sterilizing plate : mainly to put instruments.
 - ◇ Drum for put dressing
- ◆ Clamp: use for moving sterilization plate from chamber.

●  **WARNING**

When the pressure exceeds 0.24Mpa, the sterilizer should automatically exhaust to drop the pressure. If safety valve fails and pressure keeps increasing, please cut off the power as soon as possible. The warning mark is on the rear panel of the apparatus.