



# INVERTED PRESSURE STERILIZED BOILER

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Inverted Pressure Sterilized Boiler is used for sterilization and high-temperature test of packaging materials (including adhesives and printing ink) in the industries of packaging, plastic films, food, medical units, inspection agency, research institute etc.

## **APPLICATIONS**

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The Inverted Pressure Sterilized Boiler is specifically designed for high-temperature sterilization and accelerated aging tests of flexible packaging materials. It is widely used in industries such as food packaging, medical supplies, plastic films, and adhesives where heat resistance and sealing performance must be validated.

This system supports sterilization testing under controlled counter-pressure conditions, simulating real-world processing environments like retort sterilization. It is particularly effective for evaluating the integrity of sealed pouches, inks, and laminated films without causing distortion or rupture.

Ideal for manufacturers, quality control labs, inspection agencies, and research institutions, the boiler enables users to conduct repeatable tests with automated temperature control, efficient cooling, and integrated safety features.

Whether used for regulatory compliance, R&D, or packaging optimization, this unit offers a reliable, user-friendly solution for evaluating heat stability and material performance under sterilization conditions.

## **FEATURES**

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- Auto temperature rise, auto temperature keeping, auto time count.
- Counter-pressure method.
- Unique chamber design, can thoroughly sterilize items, can prevent sample bags from wrinkling or breaking.
- Water shower cooling and air cooling, with high efficiency and good effect, fast heating and cooling.

- Control of water level, time and temperature; multiple safety protection against water shortage and over temperature, and auto power off.
- Intelligent, wholly automatic, digitalized, and real-time display of working status, easy to use; the meters integrated into computer module panel, with powerful performance and reliability.
- Stainless steel body, high capacity, light weight, special design for easy shift to other place, convenient for care and maintenance.

## THEORY & METHOD

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### Working principle

The instrument adopts electronic heating method and uses saturated water vapor steam to damp and heat the tested items under pressure condition. After keeping temperature and pressure for a certain period of time, microorganisms are killed and tested items are sterilized.

Counter-pressure method: During the cooling process after sterilization of tested items (bags), the temperature inside the bag remains higher than outside the bag in the tank, and this can cause pressure difference and make the bag burst. To prevent the bursting, we can inject balancing pressure (counter-pressure) air during the cooling process to keep pressure in the tank and eliminate the pressure difference while temperature decreases gradually.

## TECHNICAL SPECIFICATIONS

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Tank size (inner)	φ400mm□ H 500mm
Outer size	585mm x 565 mm x 1180mm
Tank capacity	50L

Working pressure	0~0.22Mpa (saturated water vapor pressure)
Water injection pressure	$\geq 0.32$ Mpa
Counter-pressure	0.14~0.165Mpa
Sterilizing temperature	100~135°C
Power supply	220V 50Hz
Power	4.5kw $\pm$ 10%
Weight	90 kg



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