



B-Class

B-Class small steam sterilizer is optimum to sterilize all the steam penetrable medical devices and supplies such as wrapped or non-wrapped solid devices, instruments including narrow lumen, all of the porous products, liquid products, regardless of package and load type.

■ The Excellence of HANSHIN's B-Class Small Steam Sterilizers

▶ Perfect sterilization of inside narrow and long lumen difficult to penetrate the sterilant by pre-vacuum effect applying pressure pulse

HANSHIN's B class sterilizers are an exclusive small size steam sterilizer capable of sterilizing and drying the items which are hard to be sterilized in perfect and safely including narrow lumen loads such as catheter, endoscope, and porous loads such as sponges or textile within the shortest time by powerful air removal system applying pressure pulse, and are fully satisfying the conditions of Narrow Lumen Test(Helix Test) with PCD(Process Challenge Device) regulated to the European Standards(EN 13060, EN 867-5).

All of our sterilizers obtained the CE mark certificate from a strict notified body in Europe by passing all the tests and thus were recognized as the best performance and quality in small steam sterilizers.

※ B-Class sterilizer can not sterilize the items which are not able to penetrate the sterilant such as oil, vaseline and powder. (The dry heat sterilization is available for these items)

▶ Maximum drying performance after sterilization by innovative vacuum drying process

Drying of load is a very important factor of the sterilization process. The wet load and packaging material provide a liquid passage for introducing the external bacteria into the package, and the aseptic condition is broken while delivering the sterilized load to the point of use or storing for a period of time after sterilization.

Therefore the exclusive cycle programs for HANSHIN's B class sterilizers have a unique drying process that the load is dried in a vacuum after sterilizing process, and the load passed through this drying process is complied with the strict dryness requirement of the European Standards(EN 13060).



- ✓ **The Chamber That Has No Heater - External Steam Generator Type**
- ✓ **The Chamber That Has No Welding - Durable and Safe Chamber**
- ✓ **Separation of Reservoir And Collection Container - Clean Sterilization**

New Economic B-Class Small Steam Sterilizer, More Fast and More Clean Sterilization !

Technical Advantages of HANSHIN's BL series

▶ Shortened cycle time

The total required cycle time of these new B-class small steam sterilizers are shortened about 30% compare to the previous B-class models even though having the advantages of B-class sterilizer, therefore the operating efficiency of sterilizer is improved remarkably satisfying the requirements of sterilization and dryness performance regulated to the European Standards (EN 13060).

▶ Unique exterior small steam generator

The built-in exterior small steam generator which is newly-developed by our advanced technology can vaporize feed water supplied from the reservoir instantly and the generated steam is injected into the chamber as a sterilizing media, therefore the chamber is less contaminated than the internal steam generating type and the usable loading space is widened because there is no heater assembly in the chamber.

▶ Use of clean steam every cycle

The used water after completion of a sterilizing cycle is collected in the collection container designed separately with the reservoir, therefore clean saturated steam always can be supplied to perform every sterilizing cycle.

▶ Safe and durable unwelded chamber

By adopting an integral chamber unwelded, the durability is excellent and a trouble such as leaking of pressurized vapor and vacuum during processing a cycle is not occurred accidentally.

▶ Various cycle programs of the optimum condition

6 kinds of basic cycle program for sterilizing the medical instruments wrapped or unwrapped, the synthetic resins products, the rubber products, the textile products, the glass products, the liquids contained in the glass bottle and the prion which is the factor of CJD (Creutzfeldt-Jakob Disease) and 2 kinds of test program for checking the ability of air removal from the chamber are installed in the sterilizer, therefore the operator could select a proper cycle program and perform sterilization conveniently. Furthermore it allows users to change the parameters of cycle program at user's pleasure if needed.

▶ Safe and convenient self-diagnosis function

If an error has occurred during operating the sterilizer, it is detected and the error code is displayed on the LCD monitor accompanying an audible alarm, and the cycle in progress is aborted automatically for safety by the built-in self-diagnosis program.

▶ Convenient monitoring of a cycle processing

The operator is able to check a cycle progressing conveniently on the LCD monitor because the state of sterilizer operation is displayed digitally in real time on it.

▶ Ubiquitous and storing function of the cycle performance data

The cycle performance records executed for 10 years are stored in the control unit in order. User can download or backup those data in the USB memory and monitor the operation of sterilizer on the external PC by connecting the USB or LAN cable to the built-in communication ports.

User can automatically search the results of sterilization cycle performed previously by input the date performed cycle or the cycle count number and prints out the result record by the built-in panel printer.

Moreover the communication program including an ubiquitous function provided allows user to manage the operation of plural (maximum 15 sets) sterilizers at once.

(except HS-1607BL) (These functions are provided as an optional specification)

▶ Preventive safety system

This sterilizer has the safety system for the safety of workplace designed that a cycle is not started unless the door has been locked, the door is not opened when the power is not supplied to the sterilizer and there exists more pressure compare to the set level in the chamber.

The safety valve operates and releases pressure automatically when an overpressure more than the limited value has been formed in the chamber for a certain reason.

▶ Printing of the cycle performance record

The panel printer can be equipped to print out the cycle performance record for securing the traceability afterwards.

(The panel printer is provided as an optional item)

Steam Generator

This device is installed in the external side and injects the saturated steam as a sterilant into the chamber generated instantly with the feed water supplied from the reservoir.



Reservoir and Collection Container

The feed water for generating the saturated steam as a sterilant in the reservoir and the used water(condensate) after completion of a cycle is stored until draining.



Safety Valve

This valve is opened automatically and releases the overpressure(more than 2.8 bar) safely formed in the chamber due to an abnormal operation of sterilizer and is set to 2.8 bar pressure(Capacity: 129 kg/hr, Minimum operating pressure margin: 10%) at the maximum temperature of 150℃.

This is the finished product imported from USA, which received approvals of ASME Section VIII Div 1 Pressure Vessels in America and Pressure Equipment Directive 97/23/EC(PED), Directive 2002/95/EC(RoHS) in Europe.



Control Panel Message Screen (LCD)

The parameters of the selected cycle program and the state of cycle progressing are displayed digitally in real time on this LCD monitor to check and control the operation of sterilizer.



Control Panel Operation/Control Part

The operator can operate the sterilizer and change a cycle program by using the functional buttons arranged on this control panel. The water level in the reservoir and collection container and overheat state are indicated visually by the LEDs on it.



Vacuum Pump

This pump removes air in the chamber enough to the set vacuum level and allows the loads to be sterilized and dried completely under the optimized condition.



Panel Printer (optional)

The temperature/pressure graph and the cycle performance record through a cycle progress are printed out.



Manual Reset Switch of Thermostat

The thermostat cuts off electric power to the heater automatically when the heater is overheated higher than the set temperature. the operators should press this reset switch manually to recover power supplying to the heater after removing the cause and cooling the heater.



B-Class *Graphic LCD Monitor type* Pre-vacuum Air Removal & Post-vacuum Drying

HS-2321BL

HS-3041BL

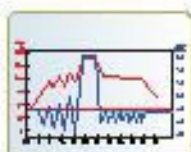


*Rectangular
Chamber type*

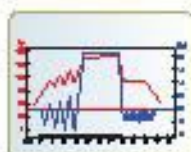


HS-3041BL (40.5 J)

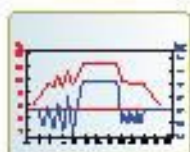
Cycle Graph



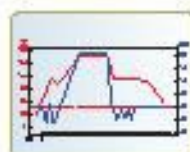
Cycle P1 Unwrapped



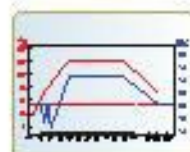
Cycle P2 Wrapped



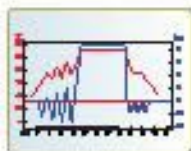
Cycle P3 Unwrapped



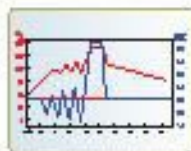
Cycle P4 Flash



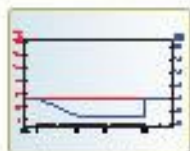
Cycle P5 Liquid



Cycle P6 Prion



Bowie-Dick / Helix Test



Vacuum Leak Test

— SPECULUM
— TEMPERATURE

Cycle Program

Item	Basic Cycle						Test Cycle	
Cycle No.	P1	P2	P3	P4	P5	P6	Bowie-Dick / Helix Test	Vacuum Leak Test
Load Type	Unwrapped	Wrapped	Unwrapped	Flash	Liquid	Prion	Test Pack / PCD	N/A
Exposure Temp.	134°C	134°C	121°C	134°C	121°C	134°C	134°C	Dwell : 5 min Test : 10 min
Exposure Time	5 min	15 min	15 min	5 min	30 min	20 min	3.5 min	
Dry Time	20 min	30 min	20 min	3 min	-	20 min	-	
Cooling Time	-	-	-	-	60 min	-	-	

Feature

These practical B-Class sterilizers are designed to reduce cost remaining B-Class performance, therefore all the medical devices and supplies within the sterilizable articles of B-Class can be sterilized economically, and their rectangular chamber allows user to use wide usable space in the chamber.



Appliance Table AT-850



HS-2321 BL (21.5 ℓ)



HS-3041 BL (40.5 ℓ)

Specifications

Model	HS-2321BL	HS-3041BL
Overall Size	W513 x D625 x H442 mm	W615 x D757 x H505 mm
Chamber	W225 x D425 x H225 mm, Vol: 21.5ℓ, Material: STS 316L	W302 x D450 x H302 mm, Vol: 40.5ℓ, Material: STS 316L
	Max. Working Pressure: 2.40bar, Max. Working Temperature: 138.0 °C	Min. Working Pressure: -1.00bar, Test Pressure: 5.13bar
Tray	W211 x D385 x H18 mm, 4ea	W288 x D410 x H18 mm, 4ea
Reservoir / Collection Container	Vol: 6ℓ / 6ℓ (full water level)	Vol: 7.5ℓ / 7.5ℓ (full water level)
Operating Temperature	121.0 °C ~ 135.0 °C (display resolution: 0.1°C)	
Sterilant	Saturated Steam	
Air Removal Method	Vacuum	
Air Removal Equipment	Vacuum Pump (Diaphragm type)	
Air Filter	Filtration Efficiency: 99.999% for 0.3μm Particles	
Controls	Microprocessor	
Display	Graphic LCD (LED back lighting)	
Panel Printer (option)	Direct Thermal Printing Type, Printing Paper Roll: W58 x Ø40 mm, L=13 m	
Power Source	AC 230V, 50/60Hz	
Power Consumption	2,600W	3,300 W
Weight	53 kg	78 kg
Environment Conditions (IEC 61010-1)	• Altitudes up to 2,000 meters • Temperature range of +5 °C to +40 °C • Maximum relative humidity of 80% for temperatures up to 31 °C decreasing linearly to 50% at 40 °C • Main supply voltage fluctuation of ±10% of nominal • Installation Category (Overvoltage Category) II, Pollution Degree 2	