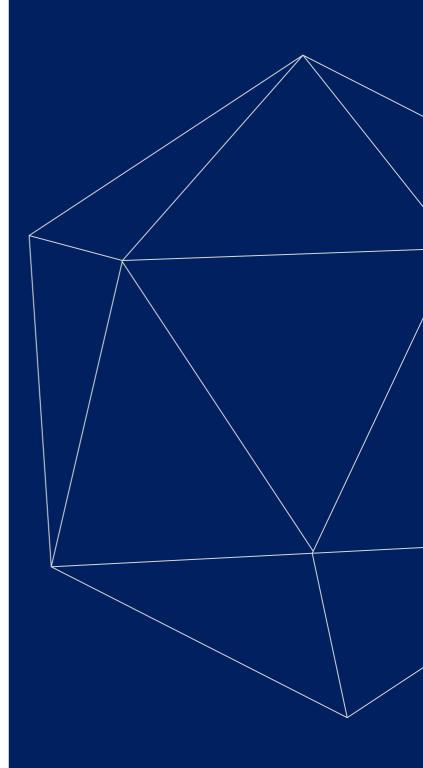


# Kalstein A different accompaniment, at your service

## LABORATORY SECTOR AUTOCLAVES





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### Online Inductions and Trainings

In any part of the world, receive your induction or training from our specialized team of engineers



#### **Quick Response**

Our work team is always available to response all your consults or questions, in order to support you in any situation.





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#### Kalstein Worldwide

With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.



Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic

**Model YR0HS-HSP100** 







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Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic

**Model YR0HS-HSP100** 





#### **Application:**

YR series horizontal pressure steam autoclave is the equipment that disinfects and sterilizes the objects with saturated steam, its structure is horizontal and heating way is electric heating. It is composed of sterilization chamber, shell, jacket, door, steam generator, vacuum system, cooling system, pipe system, control system, display system and power-supply system. It is widely used in CSSD, lab, scientific research institution, pharmaceutical, food industry and is suitable for items which are high temperature-resisting and high pressure-resisting including unwrapped or wrapped instrument, dressing, rubber, liquid, plant-in instrument, porous item, hollow instrument to be sterilized.

#### **Product Features:**

#### CAD-aided design

Application of finite element analysis tools: Good structural design stems from good design methods. The use of finite element analysis methods in the design process not only increases the design pressure of the sterilizer, but also extends the life of the sterilizer.

#### Welding:

Automatic welding using plasma welding machine, strictly follow WPS standard.

#### **Insulating Layer:**

The insulating layer is made by aluminum silicate which is the best insulating material, the thickness is 60mm, and equipped with silicate insulation cotton with strong thermal insulation performance, which effectively reduces energy loss and heat radiation.

#### **Seal Door:**

Pneumatic sealing, the door gasket is made of high-quality silicone rubber sealing ring and adopts patented compressed air sealing technology, it is fully automatic operation when sealed, the lifespan is more than 2000 sterilization cycles. The door equipped with complete electromechanically safety interlocking device to ensure the safety of personnel and equipment.

#### Main Structure:

The machine adopts rectangular horizontal triple-layer design structure, with chamber and jacket, the thickness is 8 mm. Chamber is composed of compound gauge, non-return valve, steam trap, plug screen etc. Jacket is composed of pressure gauge, safety valve, vacuum circuit breaker etc. Horizontal sterilization chamber, rectangular cross-section, European-style ring-shaped stiffener jacket structure. The unique inner shell and ring-shaped jacket combination structure enhances the strength and rigidity of the main body.

#### **Control System:**

- ✓ It is integrated by PLC + HMI + Printer. This system is easy to implement the program selection, parameter setting, equipment operation, report processing, printing, storing and others functions. The FO value and the temperature time gives double quarantee for sterilization.
- ✓ Equipped with Ethernet interface and USB interface.
- ✓ Equipped with independent temperature monitoring system.
- ✓ The controller system equipped with four-level password access authority, administrator, engineer, operator.
- ✓ When automatic controller in the failure of the circumstances, the security device makes the sterilization indoor pressure safety in the pressure of the atmosphere to the back of the state, and allow the loading door can be opened.
- ✓ In order to maintenance, test and emergency needs, manual operation can be through the use of access control tools to complete.



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### Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic

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#### **Model YR0HS-HSP100**



#### **Pipeline System:**

- ✓ The pipes are made of AISI 316L. All pipes are polished inside and outside, are seamless stainless steel medical-grade pipes, whose material composition can be traced.
- ✓ Drain lines are equipped with removable filter plugs to prevent clogging.
- ✓ The main control and action components are all internationally renowned brands to ensure stable operation of the equipment.
- ✓ The pipeline system is mainly composed of pneumatic angle seat valve, air filter, vacuum pump, heat exchanger, etc...
- ✓ Pipe insulation, reduce steam consumption, avoid scalding, and improve sterilization and drying effect.

#### **Sterilization Cycle:**

- ✓ Preset sterilization cycle: Based on request (We can create more new cycles if needs)
- ✓ User-defined cycle: Based on request (We can create more new cycles if needs)
- ✓ Testing cycle (B & D test, Vacuum test)

#### **Steam Generator:**

The steam generator is made of AISI 316L, insulated with resin embedded glass wool, and equipped with water level sensor, safety valve, etc., automatic water filling and blow down system.

#### **Drainage Control System:**

Automatic drainage temperature adjustment system, drainage temperature ≤55°C.

#### **Automatic Hydrophobic Device:**

Installed automatic control hydrophobic device for chamber ✓ and jacket, automatic program control, automatic drain, ensure the steam saturation.

#### **Internal Dreinage:**

The bottom of the chamber has a certain inclination, which is convenient for cleaning and drainage, and ensures the discharge of condensate in the inner chamber, and equipped with drain line strainer.

#### **Main Structure:**

The machine adopts rectangular horizontal triple-layer design structure, with chamber and jacket, the thickness is 8 mm. Chamber is composed of compound gauge, non-return valve, steam trap, plug screen etc. Jacket is composed of pressure gauge, safety valve, vacuum circuit breaker etc. Horizontal sterilization chamber, rectangular cross-section, European-style ring-shaped stiffener jacket structure. The unique inner shell and ring-shaped jacket combination structure enhances the strength and rigidity of the main body.

#### Water Seving and Noise Reduction System:

For water-saving and noise reduction system, which can save 30% recycled water consumption of vacuum pump and reduce the noise of vacuum pump.

#### **Vacuum System:**

- ✓ The highly efficient liquid ring vacuum pump is provided to effectively remove air from within the chamber. Multiple negative pressure pulsation (1-99 times) + cross pressure pulsation (1 time) + positive pressure pulsation (1-3 times) mode is adopted to reduce the alternating load of the sterilizer and improve the fatigue life of the equipment.
- ✓ The steam condenser is fitter in the exhaust / vacuum line to condense the steam before entering inside the vacuum pump.



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## Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic

**Model YR0HS-HSP100** 





#### **Maintance System:**

Special design for a unique maintenance information prompt function, to remind user of maintenance, including change door gasket, clean and change filter, lubrication and maintenance of door lifting mechanism, wiping main body regularly.

#### Fault Alarm System:

Perfect fault information prompt and fault self-diagnosis function.

#### **Advanced Configuration**:

All major components are world famous brand, stable performance, reliability and long service life.

#### **GPM &: Certificated**

Equipped with standard GMP verification port. Certificate: CE, ISO9001, ISO13485, ASME, FDA, IEC60601-1, IQ, PQ, OQ

#### **Safety System:**

- ✓ Low water cutoff sensor
- ✓ Mechanical pressure relief safety valve for chamber and jacket
- ✓ Over-pressure protective device
- ✓ Over-temperature protective device
- ✓ Protective measure device of door safety
- ✓ Interlock function device
- ✓ Door safety interlock device: The program can't start up when the door is not closed well. When the pressure of chamber is not 0, the door can't be opened. The door cannot be opened when the machine is running.
- ✓ Perfect fault alarm and fault self-diagnosis function
- ✓ Emergency stop button
- ✓ Two doors cannot be opened at the same time

#### **Alarm System:**

- ✓ Alarm system with sound and indicator light device.
- ✓ Door is not closed in place alarm.
- ✓ Chamber over-pressure can not open the door alarm.
- ✓ Chamber low-pressure can not open the door alarm.
- ✓ Chamber over-temperature can not open the door alarm.
- ✓ Chamber over-temperature alarm.
- ✓ Chamber low-temperature alarm.
- ✓ Door interlock alarm.
  - Door opening and closing overtime alarm.
- ✓ Door not closed can not start program alarm.
- ✓ Program running can not open the door alarm.
- ✓ Door overload or blocked alarm.
- ✓ Door is not closed to open the chamber steam inlet valve alarm.
- Chamber low temperature and high temperature alarm during sterilization process.
- ✓ Emergency stop alarm.
- ✓ Water lacking alarm.
- Anti-dry burning alarm for electric heat pipe of steam generator.
- ✓ Sterilization failure alarm.
- ✓ Vacuum pump overload or blocked alarm.
- ✓ Sensor detection abnormality alarm.
- ✓ Chamber vacuum leak alarm.



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Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic



**Model YR0HS-HSP100** 



#### **Main Material:**

Number of Door	Door Type			
Single-door	Motorized door			
Double-door	Automatic vertical sliding door			
<ul> <li>Side Cover</li> </ul>	Steam Source			
✓ With side cover	External steam supply			
Without side cover	Built-in steam generator			
<ul> <li>Material of Chamber + Jacket</li> </ul>	Loading Method			
AISI 304 + AISI 304	Loading tray			
AISI 316L+ AISI 304	Loading cart and transfer trolley			
AISI 316L + AISI 316L	Floor trolley loading			
Material of Pipeline	<ul> <li>Material of Door</li> </ul>			
□ AISI 304	□ AISI 304			
AISI 316L	☑ AISI 316L			
<ul> <li>Material of Water Tank</li> </ul>	<ul><li>Voltage</li></ul>			
AISI 304	380V, 3-Phase			
AISI 316L	220V, 3-phase			
	440V, 3-Phase			
Optional Configuration	<ul><li>Frequency</li></ul>			
Remote monitoring system	50Hz			
	60Hz			



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## Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic



**Model YR0HS-HSP100** 



#### **Main Parameters:**

- ✓ Design pressure: -0.1/0.3Mpa
- ✓ Design temperature: 150°C
- ✓ Working temperature range: 105°C-139°C
- ✓ Working pressure range: 0-0.25Mpa
- ✓ Temperature control accuracy: ≤ ± 0.2°C
- ✓ Temperature display accuracy: 0.1°C
- ✓ Sterilization time range: 0-999min
- ✓ Drying time range: 0-999min
- ✓ Vacuum rate: -97Kpa
- ✓ Temperature equilibrium: ≤±0.5°C
- ✓ Safety valve open pressure: 0.28Mpa
- ✓ Water source: 0.15-0.3MPa
- ✓ Steam pressure: 0.3-0.6Mpa
- ✓ Compressed air source: 0.4MPa-0.7MPa

#### **Main Configuration:**

- ✓ Type: Front loading fully automatic horizontal autoclave
- ✓ Class: Class B
- ✓ Door number: Single-door/double-door
- ✓ Door type: Automatic vertical sliding door
- ✓ Liquid ring vacuum pump, Pre-vacuum and Post-vacuum
- ✓ Control: PLC + HMI + Printer
- ✓ Display: 7 inch color touch screen
- ✓ Built-in printer
- ✓ Built-in steam generator
- ✓ Built-in water feeding pump and water tank
- ✓ With USB interface, Ethernet interface, remote control system(optional), storage system, cycle counting function, cycle record, password authority function, water saving system, noise reduction system.
- ✓ Loading: Loading cart + Transfer trolley
- ✓ Language: English, Spanish, Chinese
- ✓ Warranty: 2 years



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#### **Sterilization Cycle Parameters**:

Program	Sterilization Temperature	Sterilization Time	Drying Time			
Unwrapped instruments	134° <b>C</b>	6 mins	8 mins			
Wrapped instruments	134° <b>C</b>	7 mins	15 mins			
Textile program	134° <b>C</b>	7 mins	15 mins			
Implant program	134° <b>C</b>	10 mins	15 mins			
Liquid program	121° <b>C</b>	20 mins	No			
Rubber	121°C	20 mins	15 mins			
Hollow	134° <b>C</b>	6 mins	10 mins			
Prions	134° <b>C</b>	18 mins	15 mins			
PCD	134°C	3.5 mins	5 mins			
Bowie-Dick test	134°C	3.5 mins	5 mins			
Gravity program √						
High vacuum program	High vacuum program $\sqrt{}$					
User-defined cycle √						
Vacuum test √						
Fast program √						
Auxiliary program	Auxiliary program $\sqrt{}$					
Manual control /Automatic control		V				

- Note 1: Users can adjust parameters of all preset cycles as required.
- Note 2: Users can set up new cycles through user-defined cycles.
- **Note 3:** We can preset new cycles according to user needs.



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Single Door / Double Door Horizontal Pulsating Vacuum Autoclave Fully Automatic

Model YR0HS-HSP100





#### Size & Utilities:

Model	Chamber size (W×H×D)	Outer size (W×H×D)	Steam Consumption (kg/cycle)	Water Consumption (kg/cycle)	Net Weight (kg)	Power (kw)
YR0HS-HSP100	100L 450*450*500 mm	1190*1700*900mm	10	60	500	12
YR0HS-HSP250	250L 550*550*850 mm	1290*1850*1200m m	16	120	750	22
YR0HS-HSP600	600L 652*690*135 0mm	1400*1950*1700m m	35	220	1150	39

#### Note 4:

600L Double-door: 1 pcs loading cart with 2 pcs trays + 2 pcs transfer trolleys 600L Single-door: 1 pcs loading cart with 2 pcs trays + 1 pcs transfer trolley



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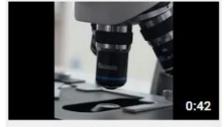
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