



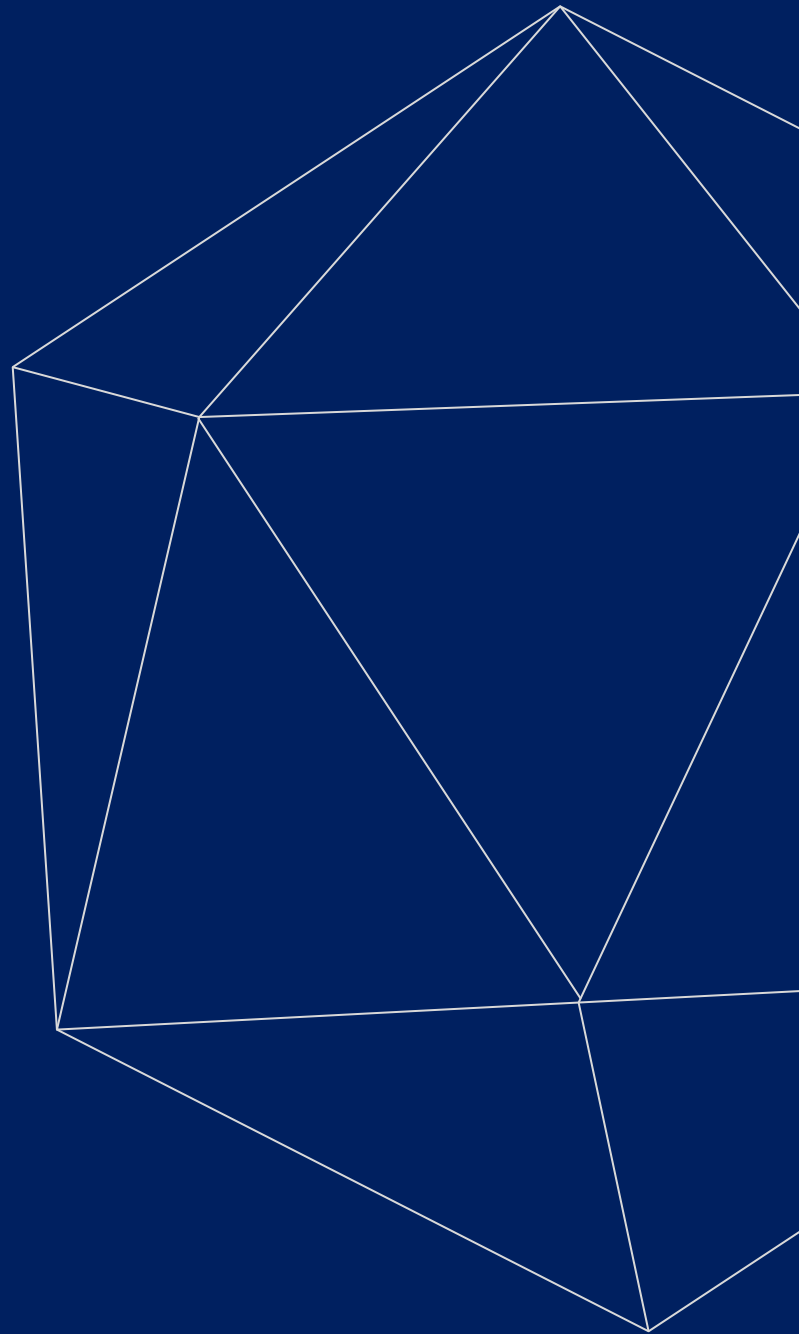
LABORATORY LINES

AUTOCLAVES



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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.



Horizontal Pulsating Vacuum Autoclave Fully Automatic Vertical Sliding Door

Model Series YR05647



Application

Kalstein's 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.

Main structure

The machine adopts rectangular horizontal triple-layer design structure, with chamber and jacket, the thickness is 8mm. 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.

Welding

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

Insulating layer

The insulating layer is made by aluminium silicate which is the best insulating material 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 electromechanics safety interlocking device to ensure the safety of personnel and equipment.



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Control system

- ✓ It is integrated by dual 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 guarantee for sterilization. Equipped with Ethernet and USB port.
- ✓ Equipped with independent temperature monitoring system.
- ✓ The master controller system equipped with three levels of authority.
- ✓ 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.

User interface

- ✓ User login: Admin, engineer, user
- ✓ Monitoring interface: Real-time running status
- ✓ Parameter setting: User-defined cycle
- ✓ Manufacturer's parameter
- ✓ Time setting
- ✓ Printing setting
- ✓ Door operation: Front door/back door
- ✓ Operation interface: Automatic operation, manual operation, cycle selection, B & D test, Vacuum test.
- ✓ Maintenance
- ✓ Emergency button and light

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...

Sterilization cycle

- ✓ Pre-set sterilization cycle: Instrument, Textile, Rubber, Liquid (new pre-set cycle can be created according to user needs)
- ✓ User-defined cycle
- ✓ Testing cycle (B & D test, Vacuum test)
- ✓ User can adjust parameters of all pre-set cycles as required and can set up new cycles through user-defined cycle. We also can pre-set new cycle according to user needs

Pipeline system

The pipes connected with the inner chamber are made of AISI 316 and the rest are made of AISI 304. All pipes are polished inside and outside, are seamless stainless steel medical-grade pipes, whose material composition can be traced. The main control and action components are all internationally renowned

Steam generator

The steam generator is made of AISI 304, insulated with resin embedded glass wool, and equipped with water level sensor, safety valve, etc, automatic water filling.



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Drainage control system

Automatic drainage temperature adjustment system, drainage temperature $\leq 55^{\circ}\text{C}$.

Automatic hydrophobic device

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

Internal drainage

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.

Water-saving 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.

Maintenance 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.

GPM & Certificates

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



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Safety system

- ✓ Low water cut-off 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

- ✓ Any alarms are audible and displayed on the LCD screen.
- ✓ 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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<ul style="list-style-type: none"> ● Number of Door <input checked="" type="checkbox"/> Single-door <input checked="" type="checkbox"/> Double-door 	<ul style="list-style-type: none"> ● Door Type <input type="checkbox"/> Motorized door <input checked="" type="checkbox"/> Automatic vertical sliding door
<ul style="list-style-type: none"> ● Side Cover <input checked="" type="checkbox"/> With side cover <input type="checkbox"/> Without side cover 	<ul style="list-style-type: none"> ● Steam Source <input type="checkbox"/> External steam supply <input checked="" type="checkbox"/> Built-in steam generator, AISI304
<ul style="list-style-type: none"> ● Material of Chamber + Jacket <input type="checkbox"/> AISI304 + AISI304 <input type="checkbox"/> AISI316 + AISI316 <input checked="" type="checkbox"/> AISI316L + AISI304 	<ul style="list-style-type: none"> ● Loading Method <input checked="" type="checkbox"/> Shelf loading <input type="checkbox"/> Loading cart and transfer trolley <input type="checkbox"/> Floor trolley loading
<ul style="list-style-type: none"> ● Material of Pipeline <input checked="" type="checkbox"/> AISI316 + AISI304 <input type="checkbox"/> AISI316 	<ul style="list-style-type: none"> ● Material of Door <input checked="" type="checkbox"/> AISI304 <input type="checkbox"/> AISI316
<ul style="list-style-type: none"> ● Material of Water Tank <input checked="" type="checkbox"/> AISI304 <input type="checkbox"/> AISI316 	<ul style="list-style-type: none"> ● Voltage <input checked="" type="checkbox"/> 208 volts, 3-phase, 60 Hertz <input type="checkbox"/> 220V, 1-Phases/3-phase <input type="checkbox"/> 440V, 3-Phases
<ul style="list-style-type: none"> ● Optional Configuration <input type="checkbox"/> Remote monitoring system 	<ul style="list-style-type: none"> ● Frequency <input checked="" type="checkbox"/> 50Hz <input type="checkbox"/> 60Hz

Note: means current configuration



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Horizontal Pulsating Vacuum Autoclave Fully Automatic Vertical Sliding Door

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Main Configuration

- ✓ Sterilization capacity: 400 Liters
- ✓ Type: Front loading fully automatic horizontal autoclave
- ✓ Class: Class B
- ✓ Door number: Single Door
- ✓ Door type: Automatic vertical sliding door
- ✓ Liquid ring vacuum pump, Pre-vacuum and Post-vacuum
- ✓ Control: dual PLC + HMI + Printer
- ✓ Display: 7.0 inch colour touch screen
- ✓ Built-in printer
- ✓ Built-in steam generator
- ✓ Built-in water pump
- ✓ Built-in water tank
- ✓ Compatible RO system
- ✓ Language: English, Spanish, Chinese
- ✓ Warranty: 2 years

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: $\leq \pm 0.2^{\circ}\text{C}$
- ✓ Temperature display accuracy: 0.1°C
- ✓ Sterilization time range: 0-999min
- ✓ Drying time range: 0-999min
- ✓ Vacuum rate: -97Kpa
- ✓ Temperature equilibrium: $\leq \pm 0.5^{\circ}\text{C}$
- ✓ Safety valve open pressure: 0.28Mpa
- ✓ Water source: 0.15-0.3MPa
- ✓ Steam pressure: 0.2-0.6Mpa
- ✓ Compressed air source: 0.4MPa-0.7MPa



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Program	Sterilization Temperature	Sterilization Time	Drying Time
Unwrapped instruments	134°C	6 mins	8 mins
Wrapped instruments	134°C	7 mins	15 mins
Textile	134°C	7 mins	15 mins
Implant	134°C	10 mins	15 mins
Liquid	121°C	20 mins	No
Rubber	121°C	20 mins	15 mins
Hollow	134°C	6 mins	10 mins
Prions	134°C	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		√	
User-defined cycle		√	
Vacuum test		√	
Fast program		√	
Auxiliary program		√	
Manual control /Automatic control		√	

Note 1: Users can adjust parameters of all pre-set cycles as required.

Note 2: Users can set up new cycles through user-defined cycles.

Note 3: We can pre-set new cycles according to user needs.



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Model	Description	Wooden Package (cm) L*W*H	Packing G.W.(KG)
YR05647	Single Door - 450*450*750 - 150L	140*135*195	700
YR05647-1	Double doors- 450*450*750 - 150L	140*135*195	700
YR05648	Single Door - 550*550*700 - 200 L	140*135*195	800
YR05648-1	Double doors- 550*550*700 - 200 L	140*135*195	800
YR05649	Single Door - 550*550*850 - 250 L	140*135*195	950
YR05649-1	Double doors - 550*550*850 - 250 L	140*135*195	950
YR05650A	Doble doors - 550*550*1000 - 300L	165*145*200	820
YR05650	Single Door - 610*610*1000 - 360L	165*145*200	1050
YR05650-1	Double doors - 610*610*1000 - 360L	165*145*200	1050
YR05650A	Double doors - 550*550*1000 - 300L	135*185*129	820
YR05651	Single Door - 652*700*900 - 400L	165*150*205	1250
YR05651-1	Double doors - 652*700*900 - 400L	165*150*205	1250
YR05652	Single Door - 652*700*1000 - 450L	168*155*205	1280
YR05652-1	Double doors - 652*700*1000 - 450L	168*155*205	1280
YR05653	Single Door - 652*700*1320 - 600L	210*160*205	1400
YR05653-1	Double doors - 652*700*1320 - 600L	210*160*205	1420
YR05654	Single Door - 652*700*1750 - 800L	220*160*205	1700
YR05654-1	Double doors - 652*700*1750 - 800L	220*160*205	1730
YR05654-1A	Double doors - 1000L		



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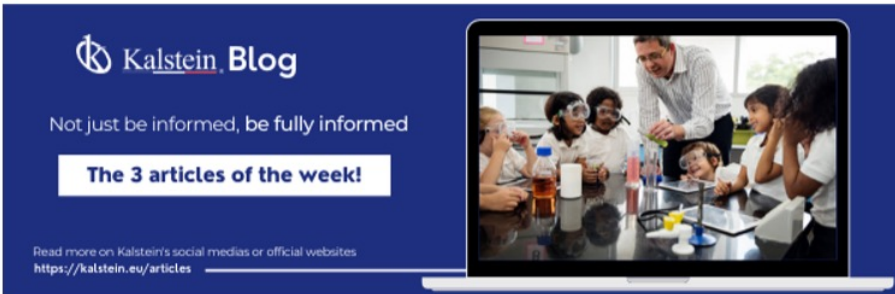
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Not just be informed, be fully informed

The 3 articles of the week!

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1
Read this ARTICLE NOW



How does the climate affect your microscope?

microscope is an instrument that allows observing and measuring objects at a very small scale. This is achieved through a complex system of lenses, which form

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Article of the week:
How does the climate affect your microscope?

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2
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What is the importance of the laboratory refrigerator?

refrigerator is a device that is one of the most used equipment in laboratories to maintain, in a controlled environment (refrigerated space), various fluids and substances.

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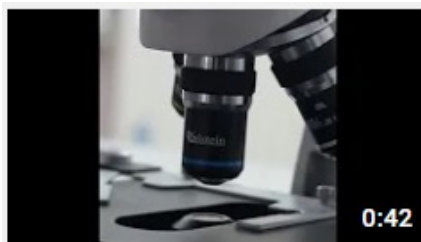
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