



Pressure Steam Autoclave With Drying

Model YR05655 // YR05660

## Instruction Manual

Thank you very much for purchasing our Kalsteins's Pressure Steam Autoclave With Drying Model YR05655 // YR05660

Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the "Warranty" at a hand place for future reference.



**Warning:** Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.



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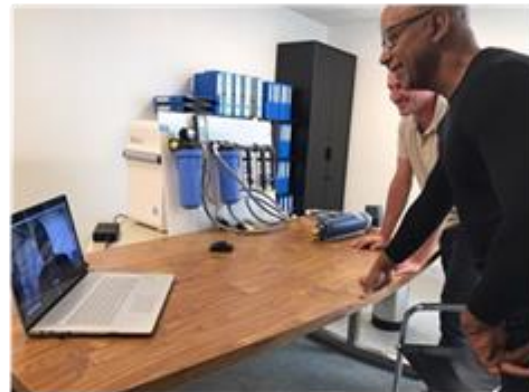
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## ■ Safety

The safety statements in this manual comply with the requirements of the HEALTH AND SAFETY AT WORK ACT, 1974.

Read following instructions before installing and using the instrument and its accessories. The apparatus should be operated by appropriate laboratory technicians.

## ■ General

The apparatus described in this manual is designed to be used by properly trained personnel in a suitable equipped laboratory. For the correct and safe use of this apparatus it is essential that laboratory personnel follow generally accepted safe procedures in addition to the safety precautions called for in this manual.

The covers on this instrument may be removed for servicing. However, the inside of the power supply unit is a hazardous area and its cover should not be removed under any circumstances. There are no serviceable components inside this power supply unit. Please avoid touching the high voltage power supply at all times.

Some of the chemicals used in spectrophotometer are corrosive and/or inflammable and samples may be radioactive, toxic, or potentially infective. Care should be taken to follow the normal laboratory procedures for handling chemicals and samples.

## ■ Electrical

Before switching on the apparatus, make sure it is set to the voltage of the local power supply.

The power cord shall be inserted in a socket provided with a protective earth contact. The protective action must not be negated by the use of an extension cord without a protective conductor.

## ■ Warning

Any interruption of the protective conductor inside or outside the apparatus or disconnection of the protective earth terminal is likely to make the apparatus dangerous. Intentional interruption is prohibited.

Whenever it is likely that the protection has been impaired, the apparatus shall be made inoperative and be secured against any unintended operation.

### **NEVER touch or handle the power supply on due to the high voltage!**

The protection is likely to be impaired if, for example, the apparatus

- Shows visible damage
- Fails to perform the intended measurements
- Has been subjected to prolonged storage under unfavorable conditions
- Has been subjected to severe transport stresses

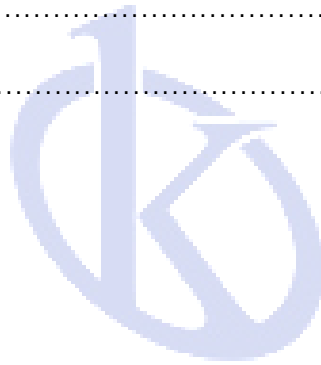
## ■ Radio Interference

For compliance with the EMC standards referred to in the EC Declaration of Conformity, it is necessary that only shielded cables supplied by us are used when connecting the instrument to computers and accessories.



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# Chapter 1 Introduction

## 1.1 Measurement Principle

YR05655 // YR05660 Series Vertical 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 room, shell, door, steam generator, pipe system, control system, digital display system and power-supply system.

## 1.2 Performance and features

The performance and features of Pressure Steam Autoclave With Drying Model YR05655 // YR05660 are as following:

- Fully stainless steel 304 material.
- Wing nut locking mechanism, safety interlock door.
- Pressure gauge, real-time display of pressure.
- PID processor control, fully automatic running.
- Digital display of working status: pressure, time, temperature, water level, error code, touch type key.
- Auto discharge the cool air, and steam discharging automatically after sterilization.
- Tempered glass anti-scald protection.
- Self-inflating type seal.
- Automatically shut off with beep reminding after sterilization.
- Standard PT/TT test interface is provided for convenient testing.
- With one stainless steel drum.
- Equipped with automatic water sensor and water level indicator.
- With draining output tap and moving wheels.
- Built in drying function.

## 1.3 Application

The medical sterilizer use saturated steam to sterilize objects quickly and reliable. It is used in medical, public health, scientific research, agricultural field, etc. It can sterilize medical equipment, surgical dressing, glass utensils, solution culture medium, etc. It can also be used as meal steaming equipment in highland and make quality drinking water in enterprises.

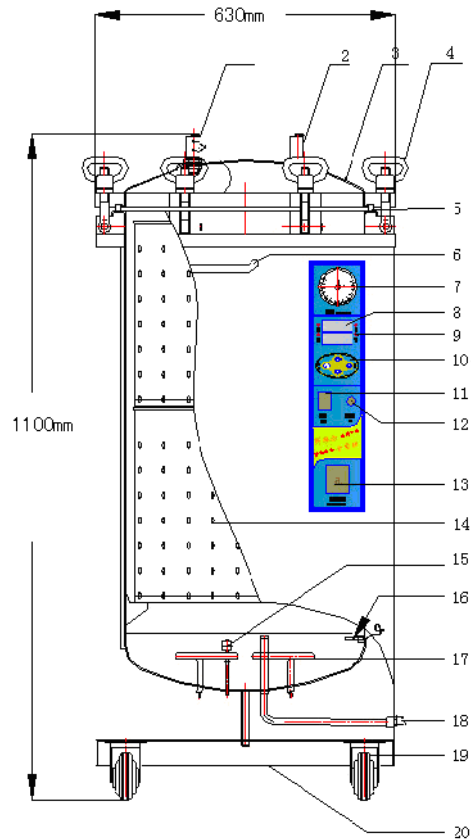


## 1.4 Technical Specifications

Model	YR05655	YR05656	YR05657	YR05658	YR05659	YR05660
Control	PID processor					
Display	Digital display					
Material	Fully stainless steel 304					
Working pressure	0.22Mpa					
Working temperature	134°C					
Working temperature range	100 – 134°C					
Sterilization time range	0 – 999 min					
Drying time range	0 – 999 min					
Temperature accuracy	0.1°C					
Heat average	≤1°C					
Voltage	110-240V. 50/60Hz					
Steam generator	Stainless steel 304					
Stainless steel drum	1 pcs					
Caster	Casters with brake					
Chamber size (Dia×D)(mm)	35L / Ø300×485 mm	50L / Ø320×545 mm	75L / Ø388×480 mm	100L / Ø388×630 mm	120L / Ø460*590 mm	150L / Ø460*700 mm
Outer size (mm)	510×510×900 mm	520×520×1000 mm	570×570×1080 mm	570×570×1180 mm	610×610×1180 mm	620×620×1210 mm
Packing size (mm)	550×540×1000 mm	570×570×1090 mm	620×620×1180 mm	620×620×1280 mm	660×670×1280 mm	670×680×1310 mm
G.W. / N.W.	65/45 kg	75/55 kg	90/70 kg	105/85 kg	115/95kg	120/105kg
Power	2.5 KW		3.5 KW	4.0 KW		



Our company is an enterprise mainly engaged in the manufacture of medical autoclave and sterilizers. The vertical steam sterilizer is new product which designed with new technology.



1. Safety valve
3. Lid of container
5. Sealing washer
7. Pressure gauge
9. Indicator light
11. Control switch
13. Air switch
15. Water level detector
17. Electrical heated tube
19. Caster

2. Steam release valve
4. Tightening bolt
6. Knob
8. Digital tube
10. Key entry area
12. Emergency stop knob
14. Interior bucket
16. Temperature probe
18. Discharge valve
20. Shell



## 1.5 Structural Features

- The sterilizer features is new, small size, large sterilization volume and quick temperature rise and saves electricity by more than 25% compared with the other products of the same products.
- The main body is made of good quality stainless steel, which features acid, alkali and corrosion resistance, strong mechanical performance, easy maintenance, etc.
- Two safety valves are fixed on the sterilizer, when the pressure of the steam reaches 0.225Mpa, they can automatically release extra high pressure, the sterilizer has double safety function and so it is more reliable safety.
- The sterilizer is full automatic operation, when the sterilization up to the preset temperature and pressure, the controller can finish the work automatically and the indicator is on, then the digital control panel shows the sterilization is finished.
- The sterilization has overload protector, when the wire is overload, it can cut of the power to ensure safety.
- The sterilization has four caster wheels, so it can be moved easily.
- Hose, please connect with cargo in the discharge valve outlet, to the outside, to prevent the steam burns.







## Chapter 2 Technical Data

Sterilization volume: 50L
Max working pressure: 0.22Mpa
Max working temperature: 134°C
Timer range: 0-999min
Voltage: AC220V 50Hz
Power: 2.5KW





## 2.0 Use Manual

### 1. Adding water

Take out of the chamber fill water into the container ,when the water level is more than water level regulator 2mm-3mm,then it can be used .If the water exceed the exhausting steam hole, the water will be exhausted from the discharge valve ,If the water level less than the water regulator ,the controller refuse to work and alarm of lack of water.

### 2. Setting objects

Put the sterilization pail into the container and then put the classified and bound objects to be sterilized into the sterilization pail, space should be left between the packs for steam to go through to guarantee the quality of sterilization.

### 3. Sealing of the sterilizer

Gently close the container, make the eight tightening bolts perpendicular and gently tighten them one by one. Then tighten them with a spanner pair by pair (two corresponding bolts being a pair) to make the container and its cover fit closely so that there will be no steam leakage.

### 4. Technical data setting

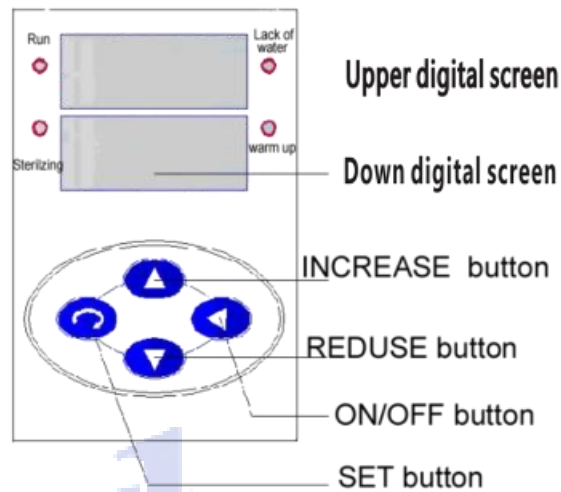
Plug the power cord that matches the power seat, open leakage protection switch, turn down the exhaust valve (The valve should always be open).

The upper digital screen display actual temperature, the down digital screen display set sterilization temperature

## 2.1 Technical Data Settings:

Plug the power cord that matches the power seat, open leakage protection switch, turn down the exhaust valve (The valve should always be open).

The upper digital screen display actual temperature, the down digital screen display set sterilization temperature.





## 2.2 Operation Indicator Light:

- Operation light: The sterilizer is working
- Sterilization light: The sterilizer is sterilizing
- Lack of water light: The sterilizer is lack of water
- Rising light: When is temperature is rising, the light is on
- Settings button: Used to set the value of the modified function and the transfer
- Rising button: Used to set values, control parameters and the running time of the query modification
- Reduction button: Used to set the value of the parameter changes
- Run button: Used to start /stop control





- Press setting key one time, the upper digital screen display temperature code (SP), the down digital screen display temperature value, click the Change button; adjust to the required sterilization temperature. (Onset temperature is the last set temperature).
- Press setting key two times, the upper digital screen display of time code (ST), the down digital screen display time values, click the Change button, adjusted to required sterilization temperature, ST is "0", the controller cancel timer function (start time set is the last time).
- Press setting key three times, the upper digital screen display time code (GST), the down digital screen display drying time value, according to the increase / decrease keys to adjust the drying time required, GST is "0", the controller cancel the timer function (start time set for the last time). (If your machine is without drying function, pls ignore this)
- Press setting key four times, the upper digital screen display sterilized category code "JSHS", the down digital screen display of the current sterilization type, according to the increase / decrease button to adjust to the type of sterilization required. When "JSHS" is "0", the default sterilizer sterilizer warehouse is a liquid type; "JSHS" value "1", the sterilizer default positions within non-sterile liquid class.
- Press setting key again, confirm technical data, the digital screen back to the main interface(The upper digital screen display actual temperature, the down digital screen display set sterilization temperature).
- Press start key, the autoclave start work and lights indicator work status. The autoclave will automatic heating, timing and finish all process. End of the work, sound and light alarm.
- If you want to cancel the sterilization work order, press the start / stop button for 3 seconds, the controller stops working, buzzer alarm is on, press any key to stop the noise.
- When water is shortage, the controller automatically stops working. Alarm is on, and presses any key to stop the noise.
- In case of emergency, timely press the emergency stop knob. Turning on the power before solve the problems.
- In the normal working status, the code appears as "STOP", you need to make an emergency stop knob out, and can continue work.



## Exhaust

Sterilization category code "JSHS" is equal to 1: At the end of sterilization, lower exhaust valve opens automatically be sterilized after atmospheric pressure was reduced warehouse, end warning buzzer sterilization.

Digital display "End".

Sterilization category code "JSHS" equal to 0: At the end of sterilization, lower exhaust valve should be closed, the pressure to be sterilized warehouse to cool down to atmospheric pressure after the end of the sterilization buzzer alarm. Digital display "End".

## Drying

Once sterilization is complete, open the high pressure faucet and under exhaust valve(in the bottom), press the Set button three times, the upper digital screen display "GST", the down digital screen display drying time, the drying time can be increased or decreased according to the actual situation. Press the Start button to start the drying system, when finish, sound and light alarm.

## End

When sterilization is completed, turn off the power, after checking the pressure gauge pointer to zero, it is timely to open the container lid, to avoid negative pressure barrel, resulting in deformation of the liner.



## 2.3 Notice the use and maintenance

Sterilizer used must be operated in accordance with the contents of this note, to prevent accidents.

- Should ensure that the water, the water level is too high, too wet dressing and a waste of power, the water level is too low the equipment will not work, so if you need to carry out disinfection and sterilization should add proper water.
- Start heating, steam release valve must be open; to make the cold air to escape, otherwise they will not get a good sterilization effect.

Every time after the disinfection and sterilization must turn off the power switch.

- Sterilization of the solution, the solution should be poured into the high temperature inside the bottle, poured into the volume of the bottle 3 / 4 of volume is appropriate, the mouth stuffed with gauze and avoid the cork with no ventilation.
- After sterilization is finished: If the sterilized object is a solid article, the two safety value can be switched to steam let-out position and when of the pressure gauge return to "0" position, the cover of the container can be opened, if the sterilized object is a solution or culture medium, never let out steam immediately. You should first turn off the power and wait till the hand of the pressure gauge return to "0" before opening the cover of the container.
- After sterilization, drain the water from the sterilizer while it is hot and clean the water stain in the container to improve the quality of sterilization, save energy and prolong the service life. If there is much water stain that cannot be cleaned, the solution made up of 10Kg of water. 1kg of caustic soda and 0.25kg of kerosene can be used. Put the solution into the container and let it soak for about 10 hours. Then clean the water and finally rinse with clean water.

Replace the sealing washer in time as it will age after a long time of use and affect the sealing effect.

The pressure gauge should be tested at least once a year. If the hand of the gauge cannot return to "0" position, it should be professionally repaired or replaced, otherwise the sterilization effect and safety will be affected.

The time, pressure and temperature each object of sterilization needs					
Object of sterilization	Time For temperature holding(min)	Steam pressure (gauge pressure)			Relative Temperature of saturated steam
		Mpa	Kgt/cm2	Lbf/In2	
Rubber	15	0.1- 0.105	1 -1.05	14.3 - 15	121
Dressing	30 - 45	0.105 - 0.14	1.05 -1.4	15 - 20	121 - 126
Utensils	15	0.105 - 0.14	1.05 -1.4	15 - 20	121 - 126
Appliances	10	0.105 - 0.14	1.05 - 1.4	15 - 20	121 - 126
Bottled solutions	20 -40	0.105 - 0.14	1.05 - 1.4	15 - 20	121 - 126