

New Pharmaceutical Law Approved

Fully Automatic Horizontal Autoclave with Drying Function

# HRG-112/140

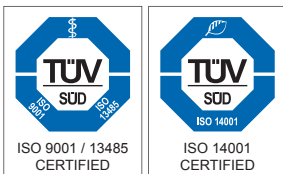


**Manual sliding door for Power saving.  
Slide tray for easy loading / unloading.**



HRG-112

HRG-140



Products shown in this brochure are manufactured by the company, ISO 9001 / 13485 / 14001 certified.

**STERILIZING  
SIMPLY AND WELL**

**HIRAYAMA**

Fully Automatic Horizontal Autoclave with Drying Function

# HRG-112/140

## We offer user-friendly technology

HRG series autoclave is a large capacity steam sterilizer having a horizontal cylindrical chamber and is equipped with drying function.

A manual vertical sliding door which can be operated easily is employed.

A slide tray is installed in the chamber, so, it is easy to put a load in or take it out. The height of the chamber is optimized to reduce work burden when removing the load.

This autoclave has been developed based on our continual research for user-friendly technologies in which user's safety and convenience should be taken into account.



MODEL:  
HRG-112

112L  
124L

MODEL:  
HRG-140

140L  
152L

### Vertical Sliding Door

A manual vertical sliding door is employed. Smooth and easy door operation. An auto lock for safety. Unlocking the door is possible by pressing one button. Everyone can operate the door easily, reliably and safely. A vertical sliding door saves space and makes effective use of the limited place.

\* When the door is locked, the UNLOCK indicator lamp lights up in red. When unlocking is possible, the UNLOCK indicator lamp lights up in green. Pressing the UNLOCK button to unlock the door extinguishes the green indicator lamp.



### Safety Interlock

The autoclave is equipped with a dual-sensing door interlock system which prevents door opening by sensing chamber pressure, chamber temperature and water level in the chamber when a cycle is interrupted as well as when a cycle is in progress. This also enhances safety of the equipment.

### Slide Tray

A slide tray which is convenient when putting a load in the chamber and taking it out is equipped. As a load can easily be set beside an operator and operator does not need to put a hand in the back of the chamber at the end of sterilization cycle, operator's safety becomes still higher. In addition, the slide tray is removable for easy cleaning of the chamber. We always strive to improve safety and operability.

\* A floating sensor in the photo is an option.



### Temperature to unlock the door

For the LIQUID cycle, the temperature to unlock the door can be set within the range of 60°C–95°C to take out the load more safely.

\* The setting range of the temperature to unlock the door

LIQUID cycle 60°C–95°C (Initial setting, 60°C)

SOLID cycle 97°C (Fixed)

# Fully Automatic Horizontal Autoclave with Drying Function

## Programmable auto-start

The autoclave is equipped with a programmable auto-start for starting a cycle at desired time of up to 23:59, 6 days from now.

\* This function is not available for ADD. DRY cycle.

## Double check system for air in the chamber

Air in the chamber which may cause inadequate sterilization is checked twice so that the appropriate sterilization condition for a load can be maintained.

\* Check is performed when 5 minutes elapsed from startup of air removal after the chamber temperature reached 97°C, and when pressure exhaust is carried out.

## Setting range of the air removal time

Initial setting : 5 minutes

Setting range : 5-10 minutes

\* This function is useful for sterilization of a Durham tube etc.  
\* Use a Durham tube of 6 mm or more in the inside diameter.

## Memory function

A memory function which can register 3 programs for each cycle is provided.

## Selectable automatic exhaust level

The exhaust level in the LIQUID cycle can be set from level 0 to level 3 for each program number. Setting can be changed during exhaust.

## Vapor condensing system improves working environment

Water vapor contained in exhaust is condensed by a water cooling unit to prevent unpleasant smell from leaking into the room, so the working environment is improved.

## Drying efficiency is increased

The autoclave incorporates high-efficiency vacuum pump so as to increase drying efficiency further. Moreover, the additional drying stage which can be set up easily with the operation panel is also provided.

## Dressing drums can be loaded

HRG-112 : Up to 4 dressing drums can be loaded.

Size : 270 φ x 220H per drum  
Maximum load : approx. 30 kg

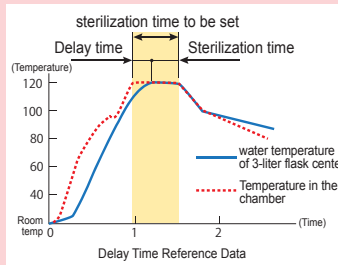
HRG-140 : Up to 5 dressing drums can be loaded.

Size : 270 φ x 220H per drum  
Maximum load : approx. 45 kg

**Steri.  
hint**

Setting the delay time is not necessary when an optional floating sensor is installed.

With a floating sensor, a sterilization timer begins to operate when load temperature reaches sterilization temperature. Therefore, setting the longer sterilization time is unnecessary.



●When sterilizing liquid, set the sterilization time 15-20 minutes longer taking delay time into account.

**Sterilization time to be set (35 minutes) = Delay time (15 min.) + Sterilization time (20 min.)**

(e.g.) When a flask is filled with 5 liters of water, it takes nearly 15 min. (delay time) for the water temperature of the flask center to reach the set sterilization temperature after the chamber temperature has attained the set value. Therefore, the sterilization time shall be set to 35 min. by increasing 15 min.

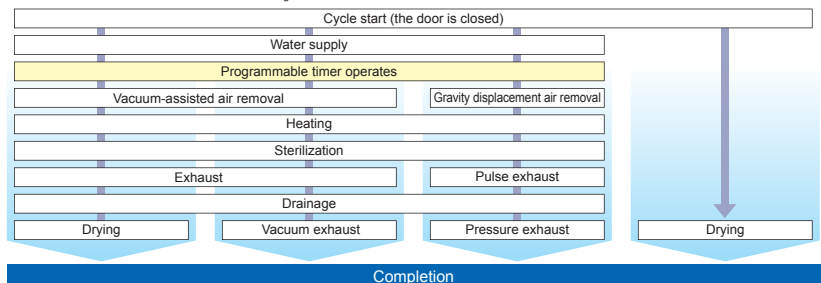
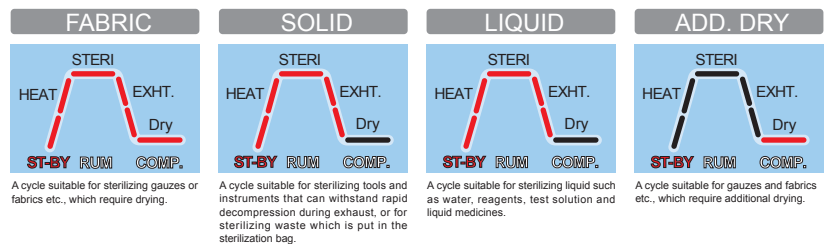
## Large operation panel

With the large operation panel, the progress of sterilization cycle can be confirmed at a glance, and the cycle selected according to the load and the current stage are indicated with lamps. The operation panel consists of large switches and display windows and is designed to be a user-friendly system.



The cycle is selectable from FABRIC, SOLID, LIQUID and ADD.DRY according to load.

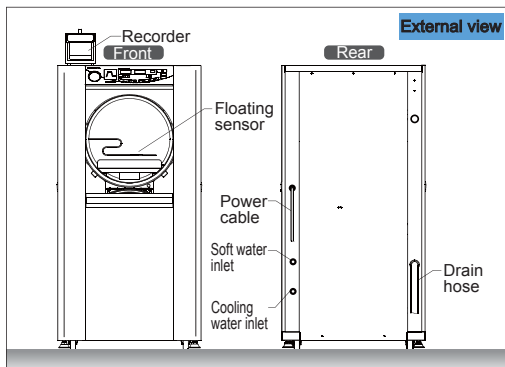
Easy-to-read display by which the progress of the sterilization cycle can be confirmed at a glance



## Specification

Model	HRG-112	HRG-140
Outside dimensions	W691 x D1048 x H1372 mm ※1	W691 x D1248 x H1372 mm※1
Inside dimensions	Φ420 x D810 mm ( Effective 112 L / Nominal 124.9L) ※2	Φ420 x D1010 mm( Effective 140 L / Nominal 152.6L) ※2
Net weight (approx.)	213 kg	229 kg
Power supply	AC220(16A) / 230(16A) / 240V(16A) Single phase	AC220(18A) / 230(17A) / 240V(18A) Single phase
Power consumption	3.5kW(220V) / 3.5kW(230V) / 3.8kW(240V)	3.9kW(220V) / 3.9kW(230V) / 4.2kW(240V)
Chamber material	Stainless steel (SUS 304)	
Sterilization temperature range	105 - 135°C Adjustable	
Sterilization timer range	1 - 60 minutes Remaining time is displayed	
Drying timer range	1 - 99 minutes Remaining time is displayed	
Programmable auto-start timer	Up to one week later. Setting the operation start time	
Exhaust level	LIQUID cycle : Level 0 - 3, 4-steps. adjustable	
Air removal time	LIQUID cycle : 5 - 10 minutes, adjustable	
Door lock temperature	LIQUID cycle : 60 - 95°C, adjustable. SOLID cycle : 97°C, fixed.	
Selectable cycle	4 cycles (FABRIC, SOLID, LIQUID, ADD-DRY), 3 programs are stored for each cycle	
Exhaust steam treatment	Water vapor is condensed by water cooling unit	
Safety valve operating pressure	0.26MPa	
Thermometer	5.0 / 137.9°C, Scale unit : 0.1°C, digital display	
Compound gauge	Digital display : -0.1 ~ +0.3MPa, Analog display : -0.1 ~ +0.4MPa	
Drying method	Vacuum and heated chamber drying	
Safety devices & Error display	Pressure safety valve, Earth leakage and over current breaker, Overheat prevention device, Error display (Overheating of a heater, Disconnection of temperature sensor wire, Over-temperature, Over-cool, Pressure abnormality, Door abnormality, Heater abnormality, Abnormality in the water supply or drainage, Vacuum abnormality)	
Supplied accessories	Slide tray x 1, Flexible hose for water supply x 2, Gasket for flexible hose x 4, Connection nipple x 2, Level vial x 1	
Power cable connection	Ring terminal (Plug is not attached)※3	
Pharmaceutical classification	Controlled medical device (Class II), Specifically designated maintenance medical device	

※1 Protrusions of width and depth are not included in the size. The installed height rises by 10mm. ※2 Distance between slide tray and top of the chamber is 345mm. ※3 Power cable comes with ring terminals, but, a plug is not attached. ※ When the autoclave is used in a place which is more than 800 m higher than sea level (low-pressure condition in a mountainous area), change of specification is necessary. Please be sure to inform of it when inquiring.



### Installation requirements

#### ●Connection method of power cable

Connect the power cable to a dedicated power circuit breaker or a switch which is placed near the autoclave.

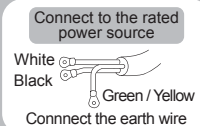
Product spec. of circuit breaker or switch : AC220 / 230 / 240V Single phase, 16A or more (HRG-112), 18A or more (HRG-140)

#### ●Water supply and drainage

Connect the autoclave to water supply ports and a floor drain.

- Soft water inlet : connect it to a soft water supply pipe or equipment (water softener)
- Cooling water inlet : connect it to a city water supply pipe or equipment (15A isolation valve)
- Water pressure : 0.05 - 0.75MPa for Soft water, 0.05 - 0.5MPa for cooling water. Higher rates of pressure will require the installation of a pressure reducing valve.
- Floor drain : 50A PVC pipe, Installation height : FL+50mm

※Install a water softener which can remove the water hardness component to prevent scale from adhering to the chamber wall.



## Option

■ Stainless steel square wire basket	■ Stainless steel square bottomed basket	■ Stainless steel dressing drum	■ Recorder	■ Floating sensor (Pt100 Ω)	■ Digital printer
HRG-112 : 390W×280D×240Hmm HRG-140 : 490W×280D×240Hmm	HRG-112 : 400W×290D×241Hmm HRG-140 : 500W×290D×241Hmm	270 φ × 220Hmm (inside 260 φ × 180Hmm)	High speed 6 dot-printing recorder, Measuring point : 6, Measuring cycle : 10 seconds, With 1 set of temperature sensor.	Activated by the temperature of the objects.	Normal paper type.

Specifications and appearance are subject to change without notice due to continuous product improvement.



Manufacturer :

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