

ALP Retort Cooker

Model RKE-40

Specification sheet



ALP Co., Ltd.
TOKYO JAPAN

This specification sheet describes the ALP retort cooker model "RKE-40" which sterilizes cooked food sealed in a retort pouch, such as Ready-To-Eat meals, under high temperature and pressure, and then cools while maintaining pressure. As a result, sealed foods can be stored for long periods at room temperature.

The letters in blue appearing on the pages later are options depending on the conditions.

1. Features

- **Sterilizes packaged/pre-cooked foods as Ready-To-Eat Meals without burst**

"Packaging burst" which is troublesome tending to be caused when heating and cooling packaged foods including Ready-To-Eat Meals is solved by operating a pressurizing compressor during the cooling process and allows sterilization reliably.

- **Ideal for a pilot/small-batch production processing up to 300 pillow pouches per day**

Processes pillow pouches with 180 x 140 x 20mm for up to 96 pcs. (divided into three baskets with three partition) at one cycle. That is about 300 pouches of the same size can be sterilized per a day.



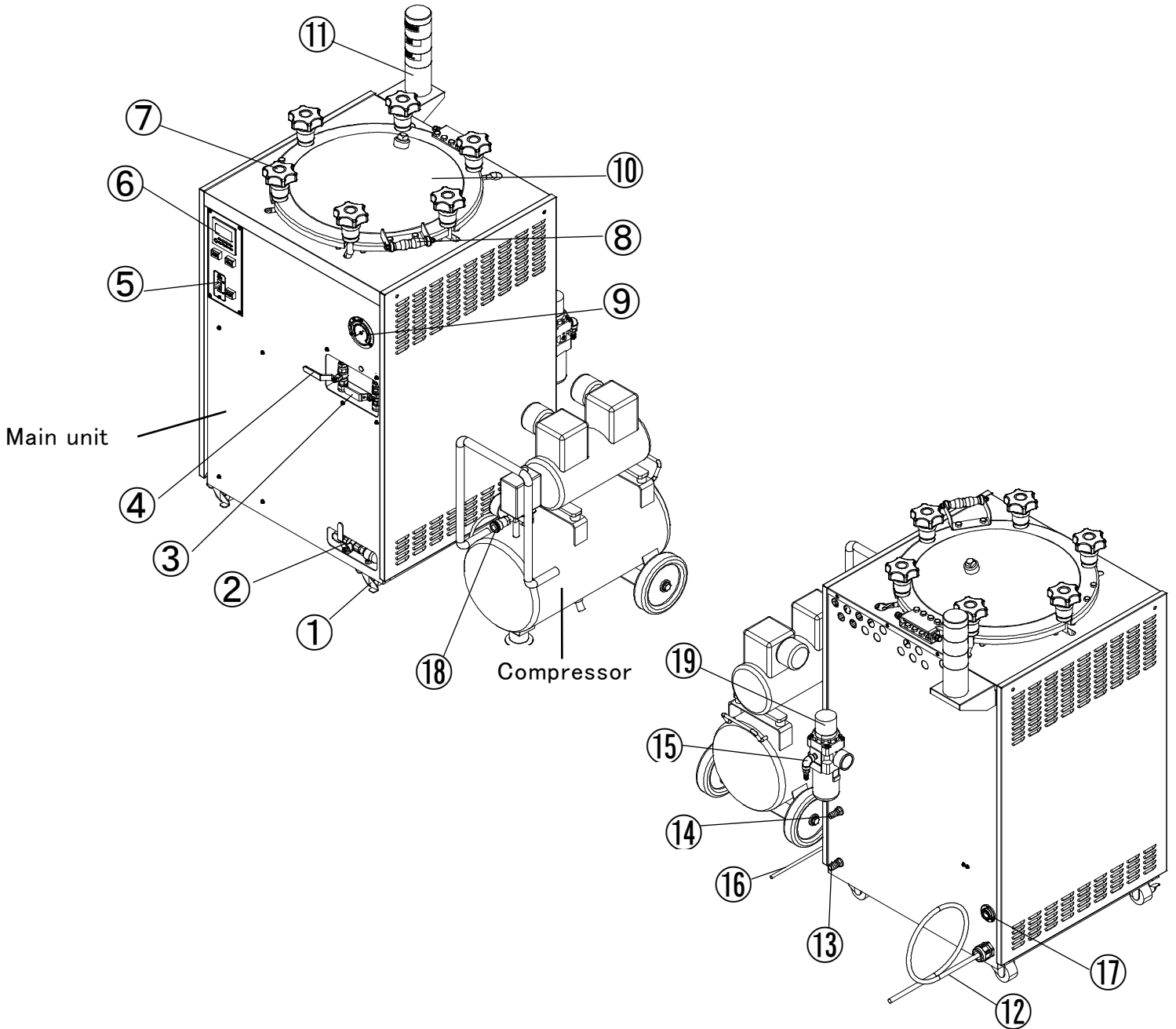
- **A semi-automatic operation achieving an affordable price!**

From the heating to sterilization is operated automatically and the water supply and the cooling is operated manually which results in a simple structure to realize an affordable price!

*** Unsuitable to sterilize heat-sensitive ones such as beverages, dairy products, vegetables.**

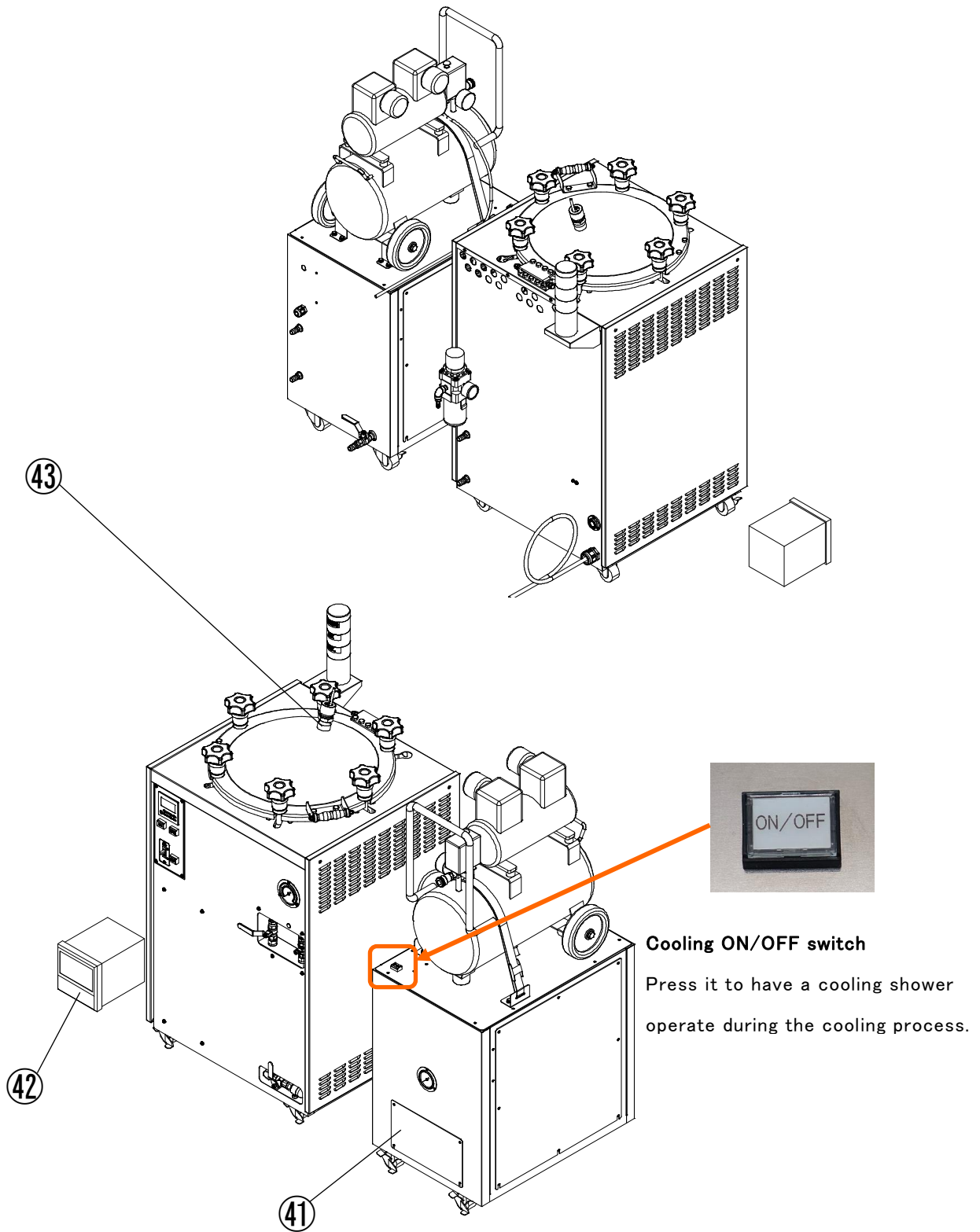
2. Name of each part

2.1 Standard version



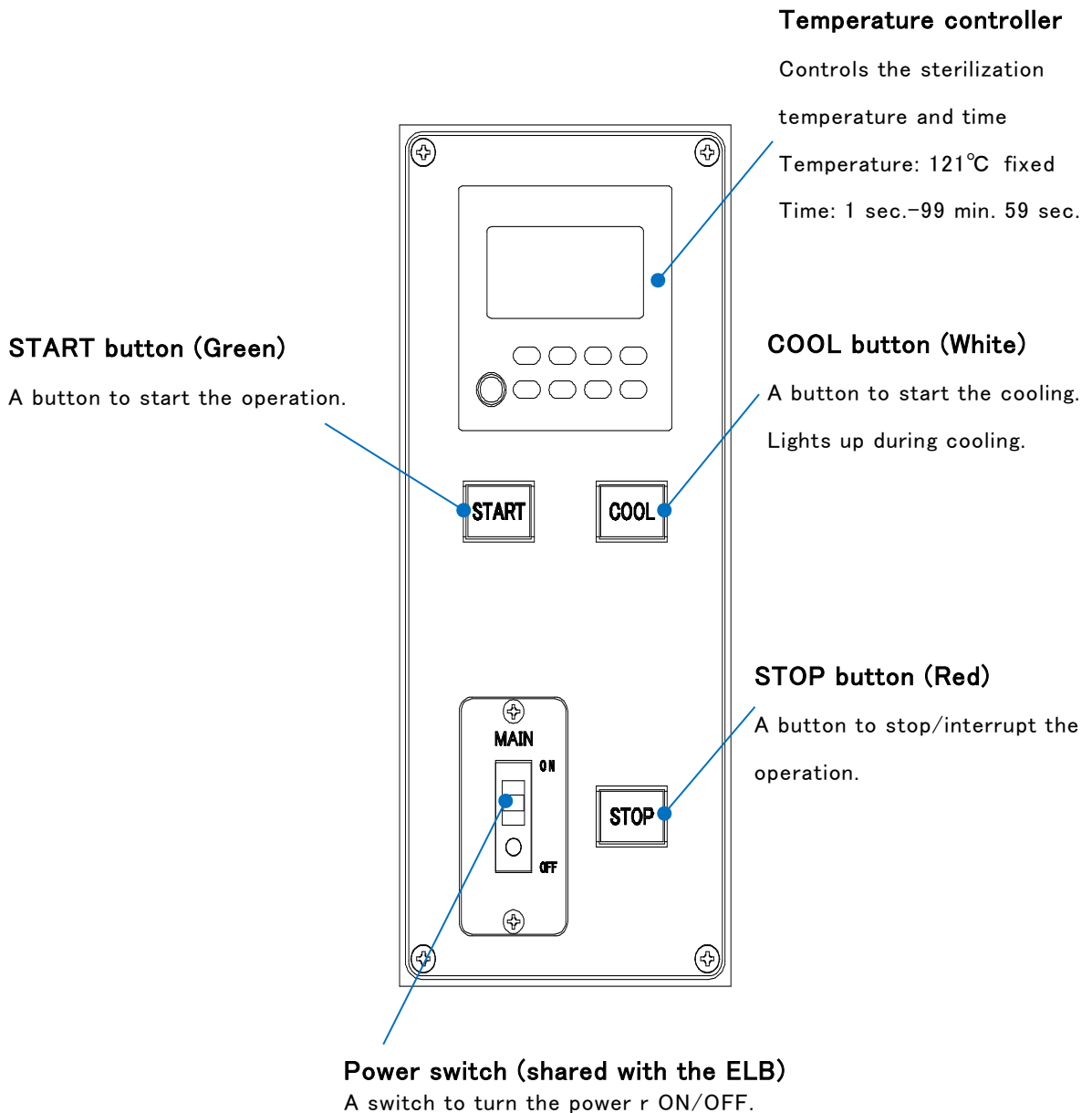
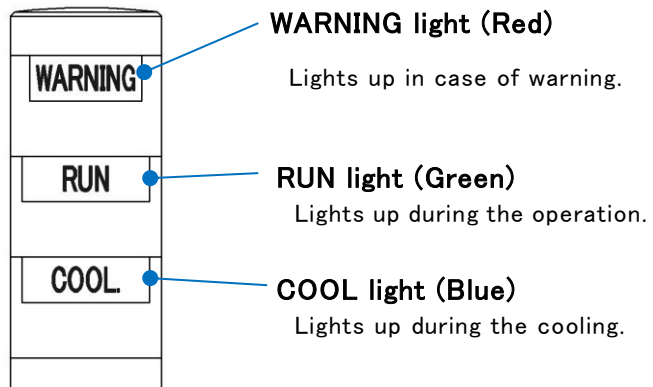
No.	Part name	No.	Part name
1	Caster	11	Indicator light
2	Drain lever (Yellow)	12	Power cable
3	Cooling lever (Blue)	13	Exhaust/Drain port
4	Pressurizing lever (Red)	14	Water supply port
5	Power switch	15	Air inlet
6	Operation panel	16	Compressor power cable
7	Lid lock handle	17	Water pumping unit connector
8	Lid handle	18	Compressor air inlet
9	Pressure gauge	19	Filter regulator
10	Lid		

2. 2 Optional equipment



No.	Product name	No.	Product name
41	Water pumping unit	42	Recorder
43	Item temperature sensor		

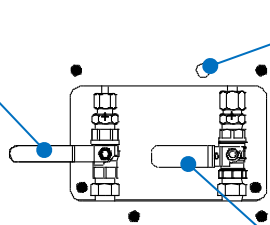
2. 3 Indicator light & Operation panel



2. 4 Manual valves for cooling process

Pressurizing lever (Red)

Turn it manually to send air into the chamber from the compressor during the cooling process.



Water level alarm (Red light)

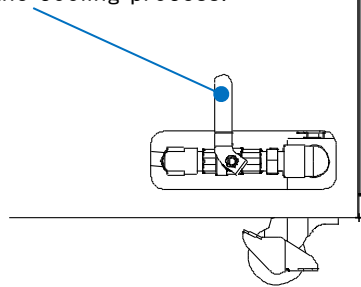
Lights up when the water level reaches the prescribed level.

Cooling lever (Blue)

Turn it manually to have a cooling shower operate during the cooling process.

Drain lever (Yellow)

Turn it manually to drain during the cooling process.



3. Utility (See the next page regarding the water supply and drainage)

3. 1 Required power supply

Main unit: AC220/230V, Single phase, 30A or more, Power cable 5m

Compressor: AC220/230V, Single phase, 10A or more, Power cable 5m

3. 2 Water supply: Water tap (Water pressure 0.20MPa or more required), Connect the included water supply hose (5m, Inner ϕ 12mm) into the water supply port (Plastic barbed fitting ⑭ in 2-1 Standard version)

Insufficient water pressure requires to use the optional equipment "Water pumping unit" (See 10. 6 for details).

3. 3 Drainage: A heat-resistant drainage facilities required (Polyvinyl chloride made piping not allowed). Lead the drain hose (5m, Inner ϕ 16mm) into a drainage ditch/pit positioned 70mm high or less from the floor.

4. Installation environment/location

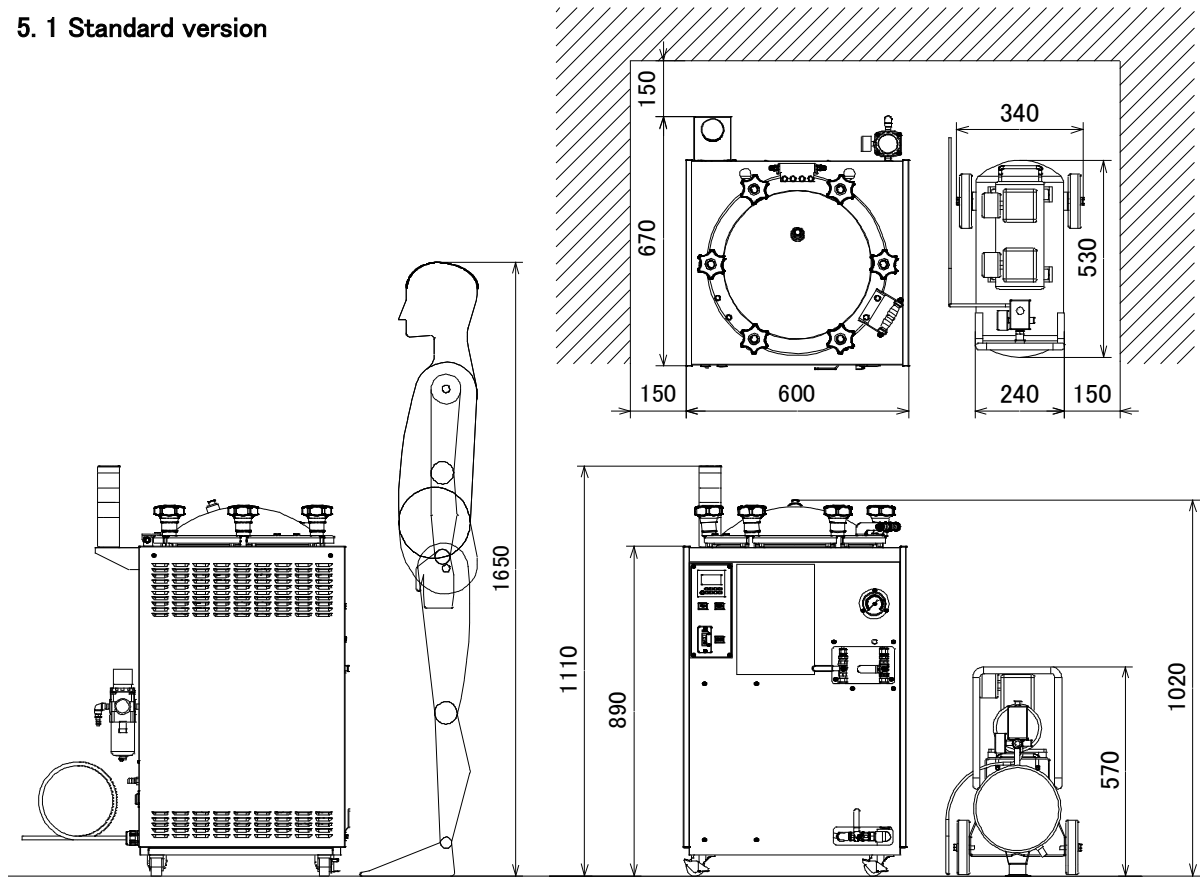
- Ambient temperature: 5–35°C
- Relative humidity: 30–85%
- Atmospheric pressure: 90–106kPa
- A robust flat floor
- Isolation distance (See 5. Installation diagram)
 - 150mm or more from the indicator light on the back of the unit
 - 150mm or more from the side of the unit

✘Environments/locations where the unit shall not be used

- Places where difference in temperature largely.
- Places exposed to direct sunlight
- Places where water drops splash (Non-waterproof structure)
- Places with a lot of dust
- Sloped places
- Places where substances such as explosive, flammable, and corrosive gases are scattered

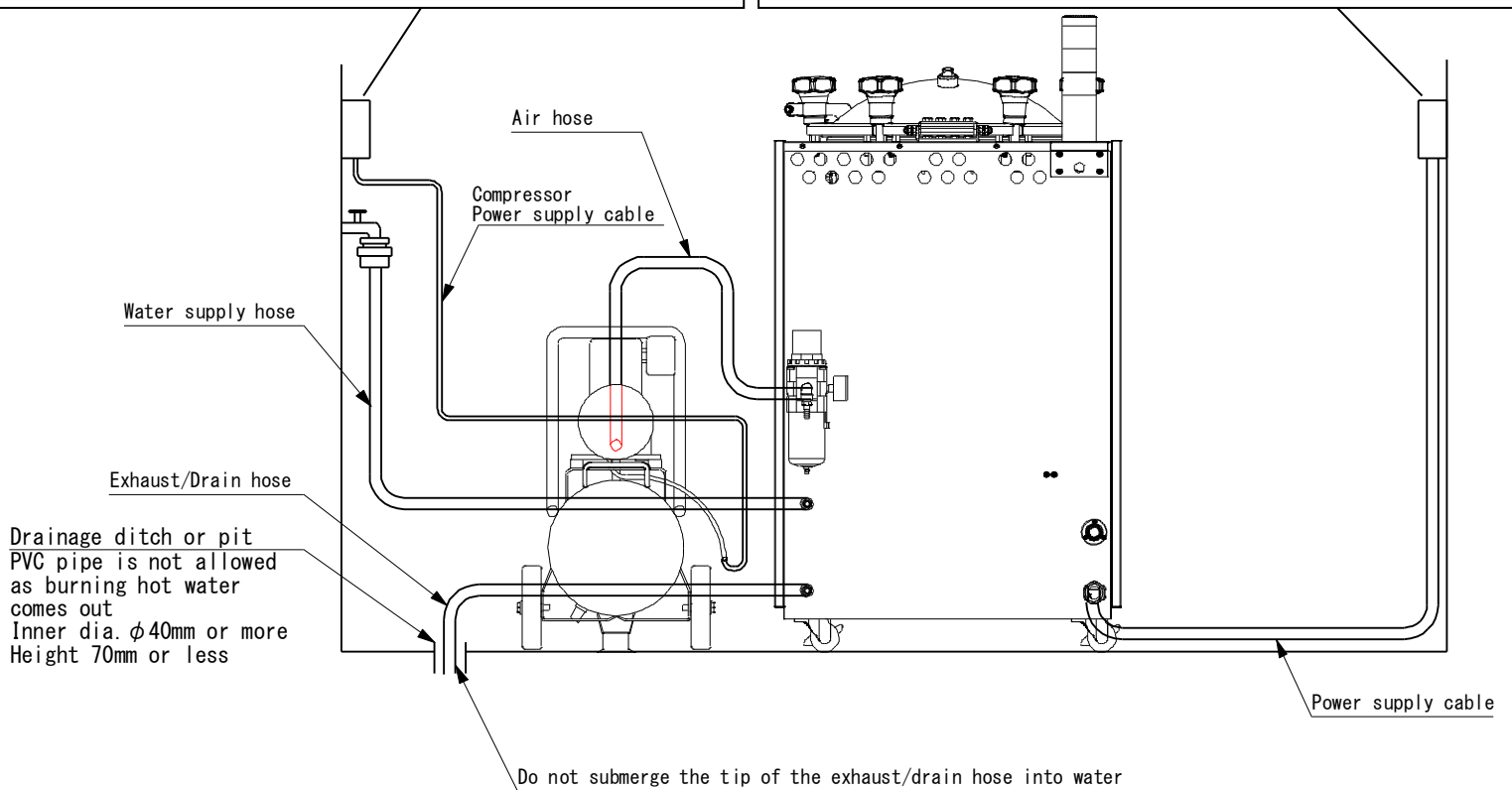
5. Installation diagram

5.1 Standard version

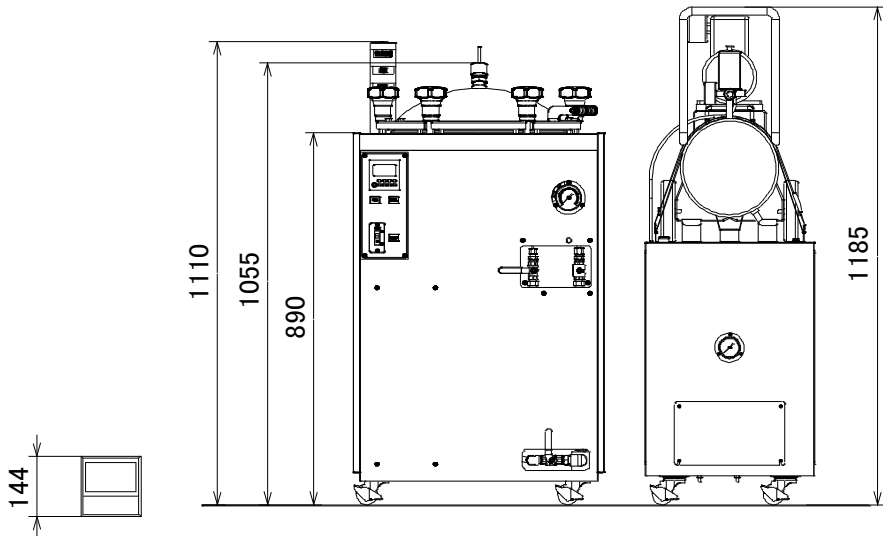
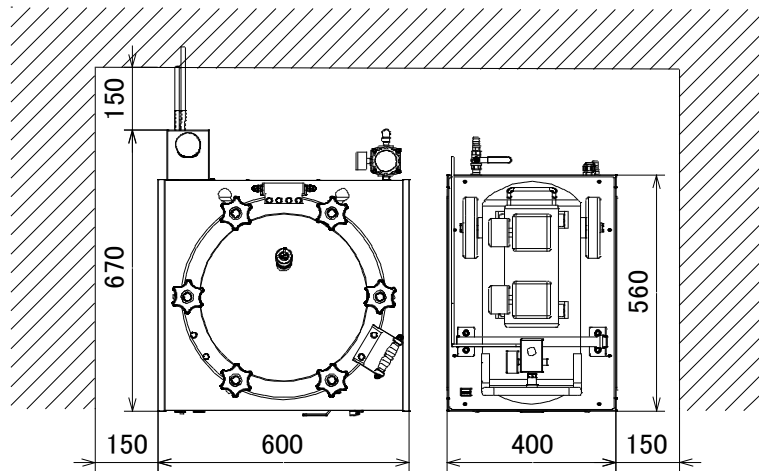
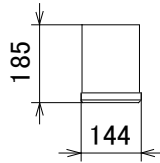


AC220-230V, Single phase, 10A or more, Power supply box

AC220-230V, Single phase, 30A or more, Power supply box

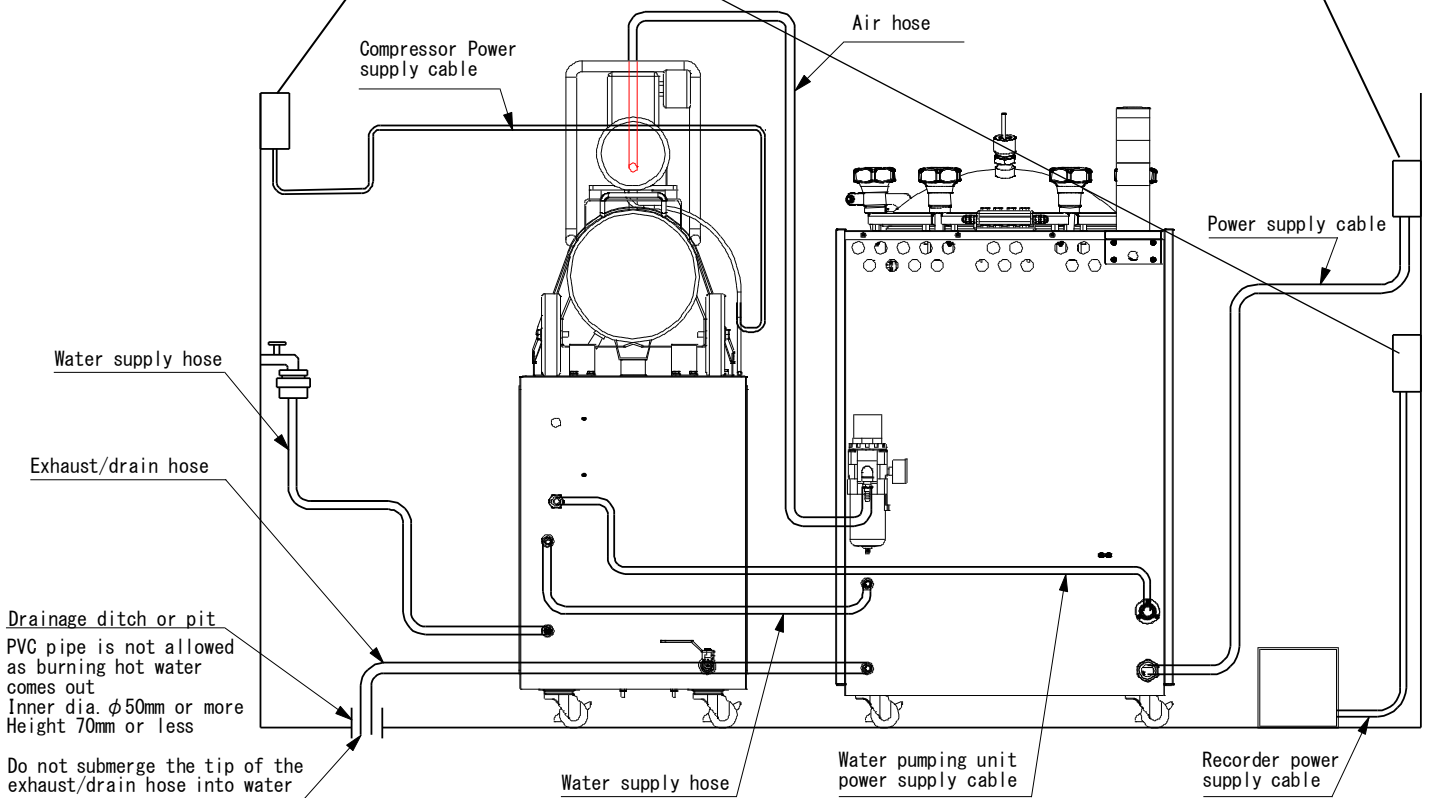


5. 2 Optional equipment



AC220-230V, Single phase, 10A or more, Power supply box

AC220-230V, Single phase, 30A or more, Power supply box



6. Exterior/External dimensions/Weight

Stainless steel plate, Melamine resin baking finish

W600 x D670 x H1110mm 82kg (excluding the compressor)

7. Standard accessories

- 1) 1 pc. x Base plate with spacer
- 2) 1 pc. x Steam diffusion plate
- 3) 1 pc. x Drain receiver
- 4) Water supply hose, Exhaust/drain hose, Air hose, Each 5m

8. Main specifications

8. 1 Chamber dimensions: 400 ϕ × 650mm (96 liters)

8. 2 Chamber details

- 6 pcs. x Lid lock handles, Lid with silicone gasket
- Internal heating element: 210V 4.0kW
- 2 pcs. of the cooling shower nozzle installed in the inside of the chamber wall.

8. 3 Maximum pressure: 0.16MPa (Fixed)

8. 4 Voltage & Current: AC220/230V, Single phase, 20/21A

8. 5 Setting temperature: 121°C (Fixed)

8. 6 Setting time range: 0 min. 1 sec. –99 min. 59 sec.

8. 7 Compressor control

- Pressurized manually by the pressurizing lever.

8. 8 Cooling method

- After the sterilization process, the items are cooled by turning the pressurizing lever, cooling lever, and drainage lever installed in the unit.

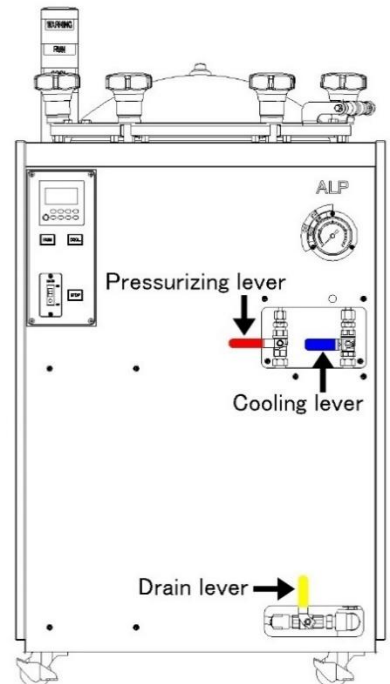
※Insufficient water pressure (less than 0.2MPa) requires to use the optional equipment 10. 6 Water pumping unit.

8. 9 Compressor (See 2. Name of each part)

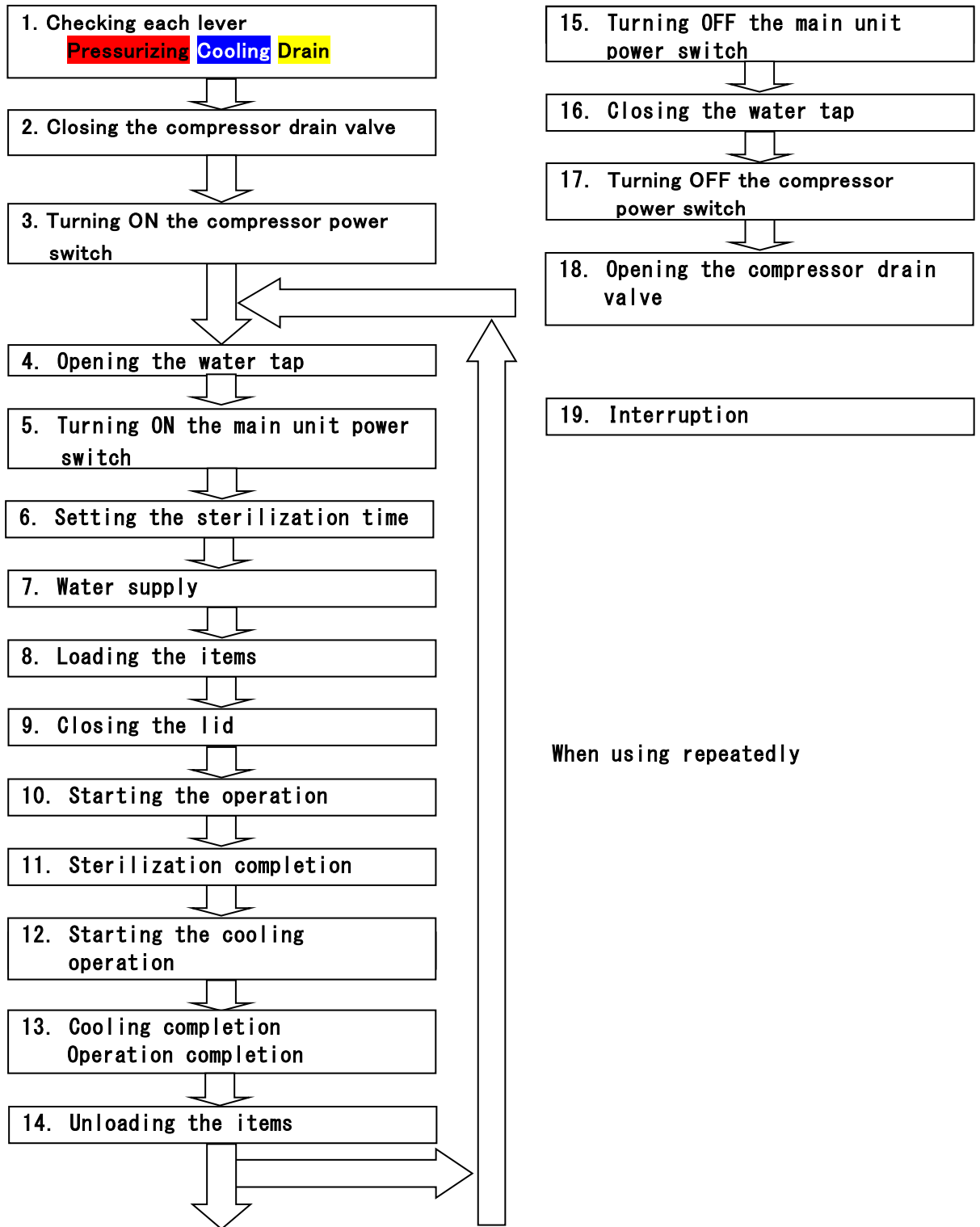
Pressurizes the packages such as retort pouches to prevent them from bursting and deforming.

Power supply cable 5m, Air hose 5m

Voltage & Current: AC220/230V, Single phase, 5A (Another power supply is required separately from the main unit)



9. Basic operation procedure



10 Options

10.1 Wire basket

It is an accessory necessary for loading pouches. There are the following variations (Maximum number of storage). Select according to the size/type of pouch and the amount of processing per operation. In case of stand-up pouches, it can be put in as them are.



$\phi 380 \times 200\text{mm}$ (3pcs.)



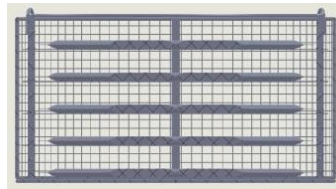
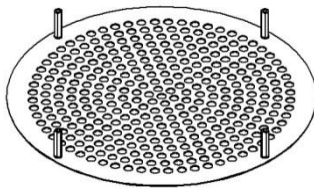
$\phi 380 \times 150\text{mm}$ (4pcs.)



$\phi 380 \times 300\text{mm}$ (2pcs.)

10.2 5-trays for retort pouch horizontal placement

Though the accommodation number of the pillow pouches into the wire basket is small, it makes the retort pouches not easily wrinkled or bent. Place the trays into the wire basket.



5-trays into one basket with $\phi 380 \times 200\text{mm}$, 3 baskets into the chamber

10.3 Partition for retort pouch vertical placement

Though it makes the pillow pouches easily wrinkled or bent, the accommodation number of the pouches into the wire basket is large



One partition into one basket with $\phi 380 \times 150\text{mm}$, 4 baskets into the chamber
One partition into one basket with $\phi 380 \times 200\text{mm}$, 3 baskets into the chamber

[Maximum accommodation number of the pouches into the basket by the trays, partition, and none]



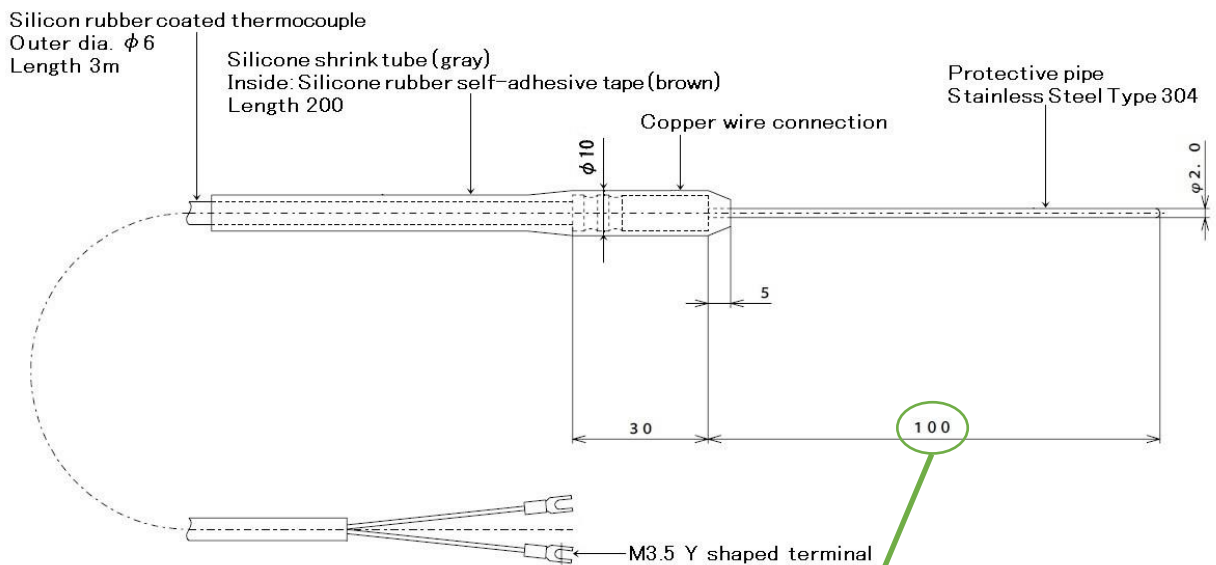
Stand-up pouch 180x140x30mm
20pcs. per basket
Total 60pcs. 3-tiered basket

Pillow pouch 180x140x20mm
32pcs. per basket
Total 96pcs. 3-tiered basket

Pillow pouch 180x140x20mm
20pcs. per basket
Total 60pcs. 3-tiered basket

10. 4 Item temperature sensor (Sensor fittings included) (See 2. 2 Optional equipment No. 43)

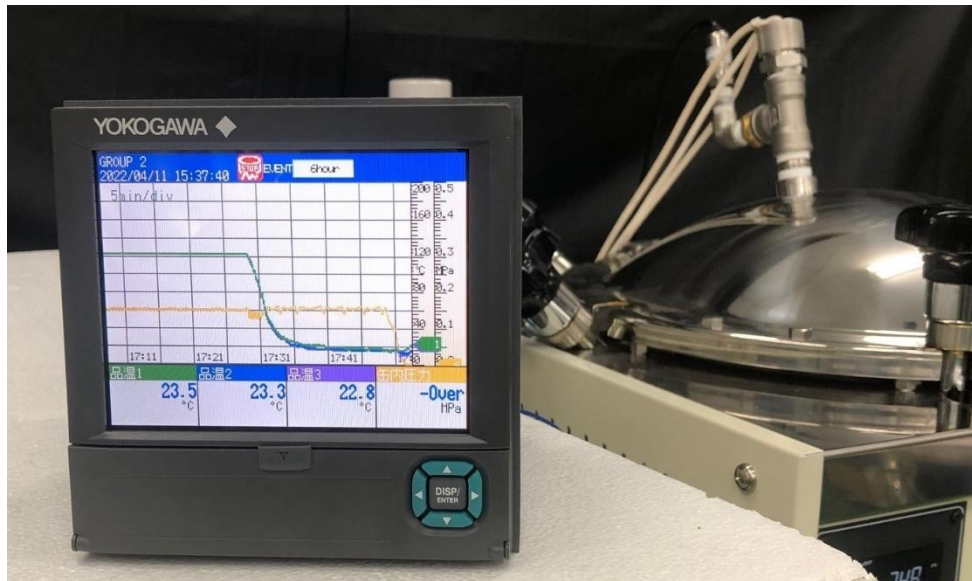
Insert the sensor (Type T thermocouple) from the port seal fitting located on the outside of the lid to the seal fittings on a pouch to measure the core of the item to record the temperature and F-value in the recorder (described on 10. 4). You can specify the protective pipe length either 100 or 150 mm. It can be fix on the dedicated sensor holder on the inside of the lid when not in use.



You can specify the protective pipe length either 100 or 150 mm

10. 4 Recorder (See 2. 2 Optional equipment No. 42)

Records the item temperature to calculate it into the F-value. You can retrieve the measured data from the recorder by the USB memory and verify the temperature profile by PC.



10. 5 Sensor fittings and holder for retort pouch

You can measure the core of the item with it by inserting the sensor into a sealed pouch with the item. They are attached when you select the item temperature sensor.



10. 6 Water pumping unit (See 2. 2 Standard with optional equipment No. 41)

Use it necessarily if water with pressure 0.2MPa or less (Lower water pressure than that result in the water not coming out from the shower nozzle during the cooling process, causing not cooling the items).

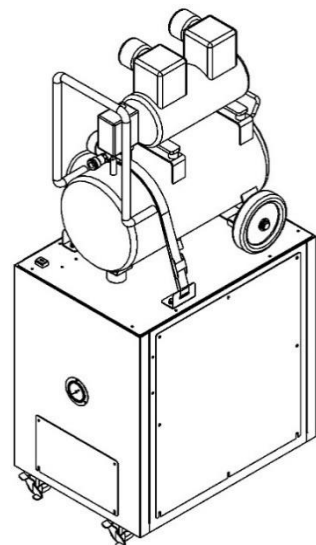
Connect the unit to a water source to store water into the built-in tank.

The compressor can be placed on the top results in a space saving.

10. 7 Compressor less version

If there is the existing air piping at the site, the air (Note: It must be dry & clean quality with pressure 0.3MPa or more) can be used for the unit.

Thus, such the surroundings, you can select this version.



11 Safety device and alarm

11.1 Safety valve

A mechanical safety valve which is independent from the electric circuit spouts out at the prescribed setting 0.20MPa to prevent the pressure from rising any further.

11.2 Earth leakage breaker

It shared with overload and short circuit protection, Rated current 30A, Sensitive current 30mA
In the event of an electric leakage or overcurrent, the main power supply is shut off.

11.3 Water lack alarm

In the event that the water level in the chamber falls below the prescribed level, the WARNING lights up in red with beep and the heater circuit is shut off.

11.4 Overpressure alarm

In the event that the chamber pressure reaches the prescribed pressure 0.19MPa, the WARNING lights up in red with beep and the heater circuit is shut off.

11.5 Control sensor error

In the event that the control sensor is failed (e.g. wire disconnection), "-----" is indicated on the temperature display and the heater circuit is shut off.

11.6 Water level alarm

In the event that the water level in the chamber exceeds the prescribed level (about half to two thirds of the chamber volume), the capacitive liquid level sensor detects it, the "Water level alarm" lights up with beep kept.