

HMC HIRAYAMA

From high temperature vacuum cooking to retort food processing
Heating and sterilization while controlling F-value
Food safety can be managed while maintaining the delicious taste

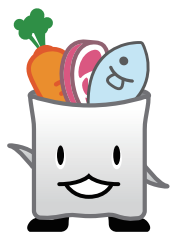


An entry model for developing retort food and canned food

Compact Retort Cooker

HLM-36EF

Equipped with F-value control



For safer and more reliable medical and laboratory equipment

HIRAYAMA

HLM-36EF entry-level model suitable for developing retort food and canned food

The HLM-36EF retort cooker **with F-value control** can easily set the F-value, providing food safety.

The HLM-36EF retort cooker can support



for retort food and canned food with this one unit.

Fields where HLM-36EF is playing an active part

Various processing industries (Agriculture, Fishery, Side dish manufacturing) / Lunch manufacturing / Hospital / Welfare care food manufacturing / Hotel / Restaurant / Confectionery / University / Cooking school, and etc.

Applications

Suitable for product development and entry into new business due to small lot production.

Sample food development / Product development, sales channel expansion / Working on the primary industrialization / Preservation and storage of food / Food loss measures / Development of food without additives and preservatives / and etc.

Sterilization

Important processes required for manufacturing and sales

In order to realize the long-term storage at room temperature, which is an advantage of retort food, it is necessary to seal the container filled with the food and then sterilize the inside of the food to make it difficult for bacteria and microorganisms to grow.

You can easily cook a variety of foods with this retort cooker



Product examples



Features

▶ F-value control

F-value is important for the sterilization of retort food. The HLM-36EF retort cooker can perform the sterilization of retort food just by setting the desired F-value and registering the upper temperature limit that the food can withstand. (MODE 1)

About F-value

F-value indicates the safety of retort food. The amount of heat equivalent to keep the core temperature of food at 121 °C for 1 minute is defined as F value = 1. The Food Sanitation Law in Japan requires to sterilize the retort food so that the F-value is 4 or more.

▶ Core temperature sensor

A movable sensor that measures the internal temperature and F-value of the food (sampling).

In MODE 1, the core temperature sensor is interlocked with the calculation and display of the F-value, and when the target F-value is reached, the sterilization (cooking) stage ends and the stage moves to the cooling stage.

In MODEs 2 and 3, when the temperature reaches the set temperature, the stage moves to the sterilization stage.

It is also linked with data printing by an optional dedicated printer.



Core temperature sensor

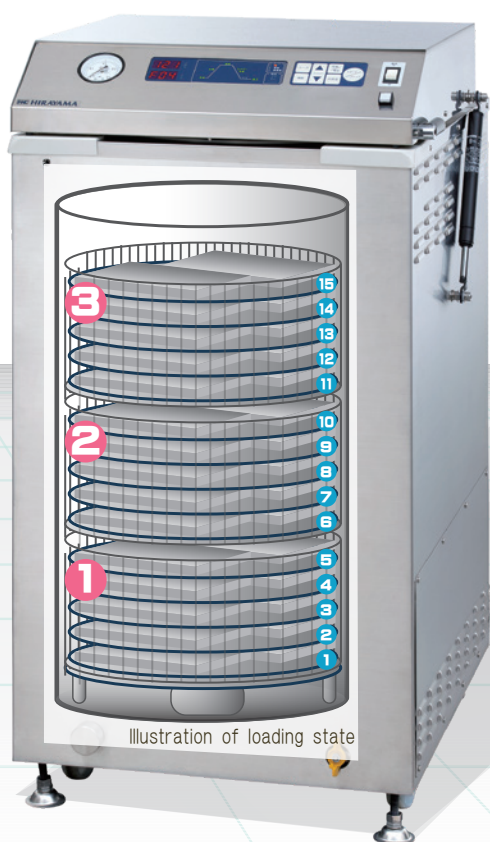
Important steps including sterilization can be performed with simple operation



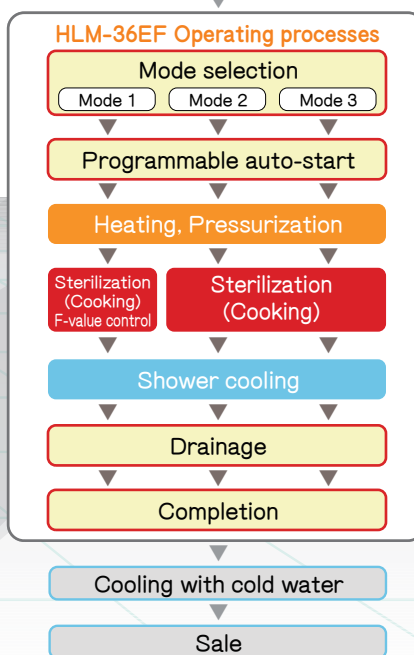
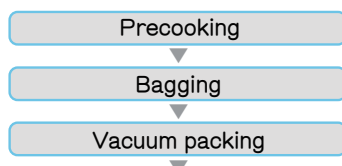
Loading capacity of HLM-36EF

- Up to **15 trays** in **3 wire baskets**
(Up to **5 trays** in **1 basket**)
(In case of wire basket size: $\Phi 330 \times H195$ mm)
- Tray (Option) Type 38 : **5-stage** stacking on basket
Type 48 : **4-stage** stacking on basket

Loading capacity by bags (for example)

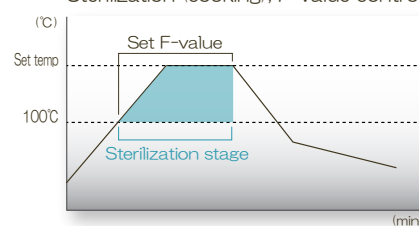


Cooking procedure



MODE selection

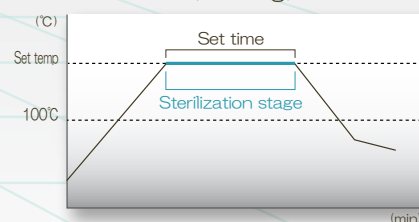
(Mode1)
Sterilization (cooking), F-value control



Sterilization is performed at the set F-value.
(The set temperature is the upper limit temperature.)
Temperature setting range: 100°C to 125°C
F-value setting range: 1 to 99

* To calculate and control the F-value in MODE 1, it is necessary to attach a pack adapter (supplied accessory) for a core temperature sensor to a bag.

(Mode 2) (Mode 3)
Sterilization (cooking)



Sterilization is performed at the set temperature and time

Temperature setting range: 70°C to 125°C
Time setting range: 1 to 250 min

► Various functions and features

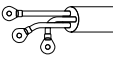
- Damage to a retort pouch is prevented by pressure control and shower cooling.
- Pressurization force setting is possible to minimize damage to the retort pouch.
- Microcomputer control allows easy setting of temperature, time, F-value, etc.
- Fully automatic operation from heating, sterilization (cooking), cooling to drainage.
- Equipped with a USB port for communication interface.
- Elapsed time from a start of operation, chamber temperature, core temperature of objects, chamber pressure, F-value, etc., can be printed with an optional dedicated printer.
- Compact, space-saving and low cost.
- It can be installed only by connecting the power supply and water supply/drainage.
- Handling qualifications for boiler and pressure vessel are unnecessary. (* Annual self-check by a user is required.)



Printer

To a person who is interested in the advancement of primary industry

We recommend this retort cooker as one of the most useful food processing apparatus to a person who is engaged in the food manufacturing industry, agricultural industry or fishery industry, and is interested in the advancement of primary industry.

Specifications	HLM-36EF
Outside dimensions	W602×D679×H1064 mm
Inside dimensions	Φ360 x D620 (Effective volume : 63 liters)
Net weight (approx.)	120kg
Power supply (heat source)	AC200V Single phase 5kW (25A)
Pressure vessel category	Small sized pressure vessel
Chamber material	Stainless steel (SUS304)
Sterilization temperature range	Mode 1 : 100 - 125°C Variable Mode 2 and 3 : 70 - 125°C Variable
F-value setting range	1 - 99, Reference temp. 121.1°C, Calculation start temp. 100°C, Addition value display method (Mode 1)
Sterilization timer	1 - 250 min The remaining time is displayed (Modes 2 and 3)
Z-value	10°C fixed
Pressurization force	OFF · 30 - 100kPa Variable, (Add to saturated vapor pressure at set sterilization temperature)
Cooling timer	10 - 250 min The remaining time is displayed
Programmable auto-start timer	1 min later to 1 week later, The start time is set
Operation process by mode	Mode 1 (F-value control): Standby→ Heating/Pressurization→ Sterilization(Cooking)→ F-value→ Shower cooling→ Drainage→ Completion Modes 2 and 3 (Time control): Standby→ Heating/Pressurization→ Sterilization(Cooking)→ Shower cooling→ Drainage→ Completion
Maximum working pressure	0.235MPa
Thermometer	Chamber temperature : Digital display 5 - 129°C / Core temperature : Digital display 45 - 129°C
Pressure gauge	Analog display 0 - 0.4 MPa
Clock	24-hour system clock, Date and time are alternately displayed
Safety devices and alarms	Pressure safety valve, Earth leakage and over current breaker, Low water cut off device Error display: Low water heating, Temperature sensor wire disconnection, Over temperature, Over pressure, Abnormality in the lid lock
Supplied accessories	Pack adapter x 5, Packing for pack adapter x 100, Gasket for pack adapter x 5, Stainless steel wire basket x 3, Bottom plate x 1, Pressure gauge for water pressure measurement x 1, Water supply piping parts x 1 set
Power supply connection terminal	Ring terminal  Cord length 3.6 m

* A crimp terminal is attached to the power cord. Please note that a plug is not supplied.

* When the apparatus is used at a place which is more than 800 m above sea level (low atmospheric condition in the mountainous area), please contact us or our distributor before using. The specification change is necessary.

Installation requirements

- Power supply : AC200V, Single phase, 25A or more
- Water supply : Water supply port : 3/8" female thread
Connect it to the water supply facility having water pressure of 0.23-0.40MPa and flow rate of 6 ℓ / min or more.

- Drainage : Drain outlet : 3/8" female thread
Connect it to drainage facility with a heat-resistant and pressure-resistant hose.
※Exhaust and drainage are hot and high pressure, be careful of burns.
※Connect the hose so that exhaust and drainage are not disturbed.

Optional devices and accessories



Printer

Elapsed time from a start of operation, chamber temperature, core temperature of objects, chamber pressure and F-value are printed.
(supplied with dedicated printer cable)



Round wire basket (SUS)
Φ330xH195 (I.D.)
Φ330xH270 (I.D.)



Tray (SUS)

- ① Type 38
Φ320xH 38 (I.D.)
Storable up to 5 trays in one wire basket, and up to 15 trays in the chamber.
- ② Type 38 set
15 sets,
for standard baskets
- ③ Type 48
Φ320xH 48 (I.D.)
Storable up to 4 trays in one wire basket, and up to 12 trays in the chamber.
- ④ Type 48 set
12 sets,
for standard baskets

The standard basket is Φ330xH195 (I.D.) type.

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



ISO 13485 CERTIFIED
Manufactured under
ISO 13485

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