

Pilot machine

Hot water spray type Pilot machine (Model : RCS-60SPXTG)

〈GGG〉 Temp. pressure control system included (Please refer to footnote on page 3.)



[Specifications]

- Capacity : 20kg
- Maximum working pressure : 0.5MPa
- Maximum working Temp : 140℃
- Material of water contact part : SUS-316
- Dimension of the processing tank
Inner Diameter : 600mm
Length : 735mm

Hot water immersion type Pilot machine (Model : RCS-40RTGN)

〈GGG〉 Temp. pressure control system included (Please refer to footnote on page 3.)



[Specifications]

- Capacity : 10kg
- Maximum working pressure : 0.6MPa
- Maximum working Temp : 150℃
- Material of water contact part : SUS-316
- Dimension of the processing tank
Inner Diameter : 400mm
Length : 800mm

Certifications

- The first section of the Tokyo Stock Exchange
- ISO 14001 ● ISO 9001 ● ASME
- China Manufacture License

The Authentication Acquisition of International Standard for Environmental Management System (ISO14001)



● Information in this document is subject to change without notice.

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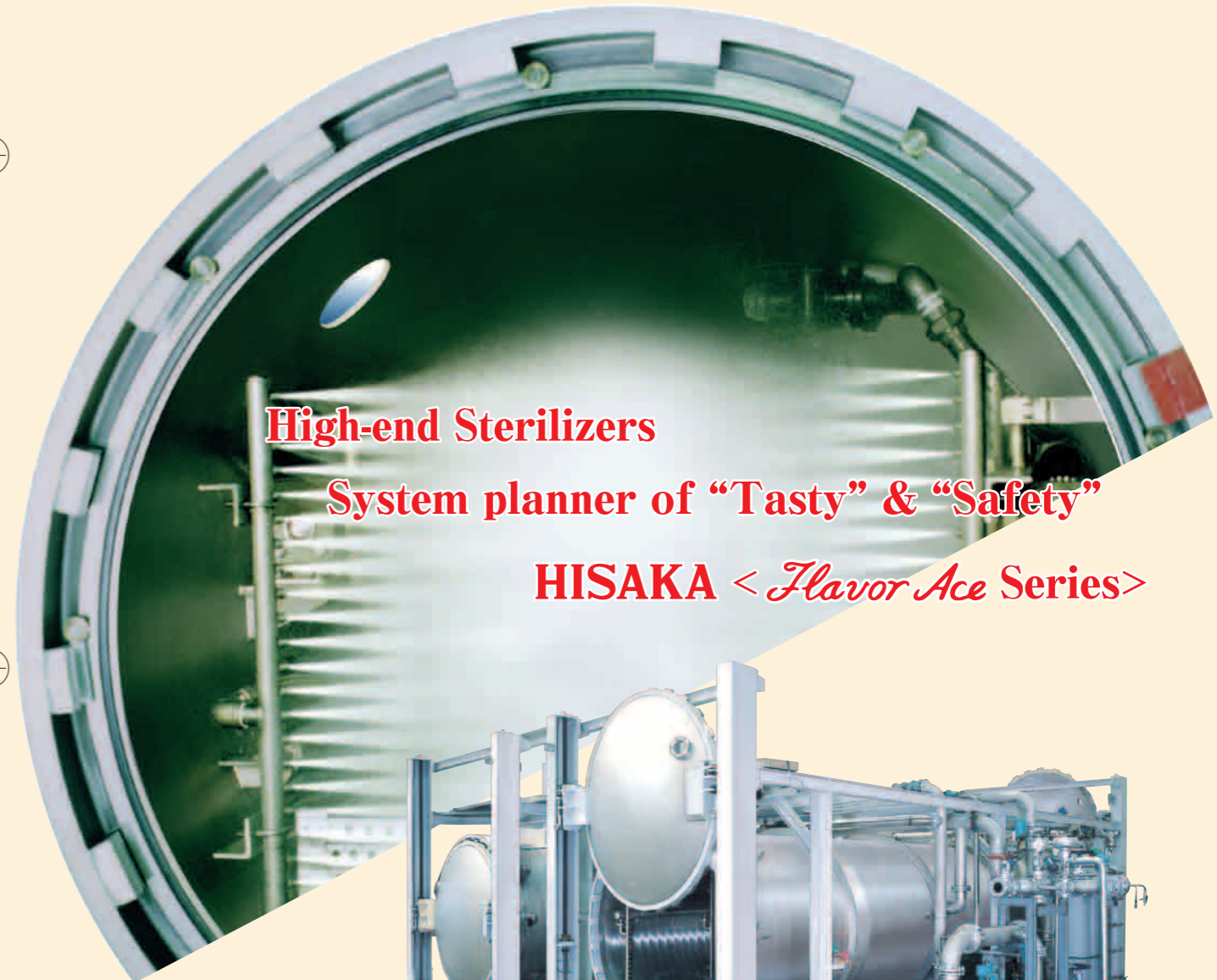
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HISAKA

High Temp. High Pressure Retort Sterilizers

RCS Flavor Ace

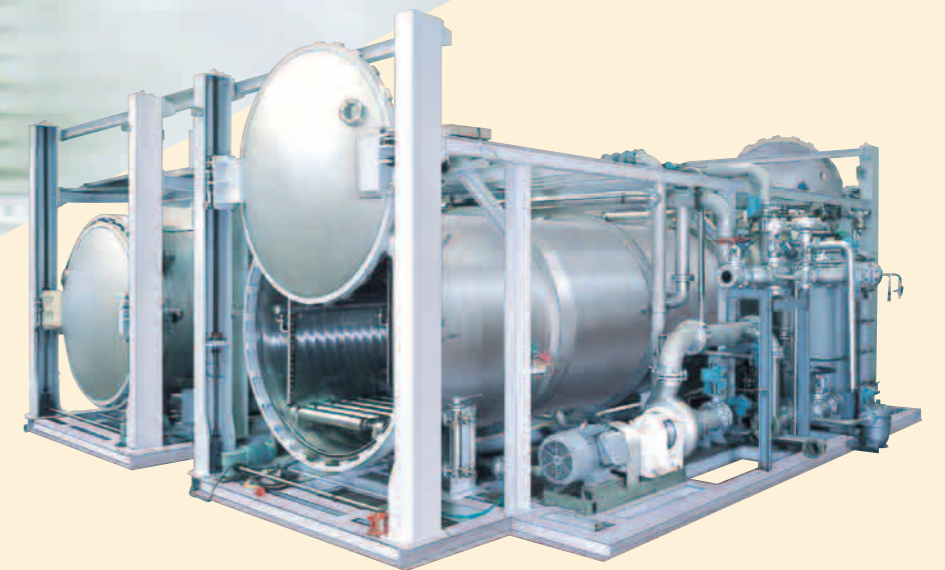
- Hot Water Spray type
- Hot Water Immersion type
- Steam type



High-end Sterilizers

System planner of "Tasty" & "Safety"

HISAKA < Flavor Ace Series >



HISAKA WORKS, LTD.

< Flavor Ace Series > Fulfilling variation implements the optimized system

As per your Cooking / Sterilizing methods, Production scale and Functions.

**Hot Water
Spray type**
Flavor Ace

**Hot Water
Immersion type**
Flavor Ace

Steam type
Flavor Ace

Function	Type	Cooking, Sterilizing methods		
		Hot water spray	Hot water immersion	Steam
1-stage heating		●	●	●
2-stage heating		●	●	●
Programed Temp. control		●	●	※
Programed Pressure control		●	●	※
Pack ace(aeration process)		●	●	—
Rolling type(swaying)		※	—	—
Rotation type		※	※	※
Hot water collection method		※	●	—
Air replacement method		—	●	—
Immersion type Process for Can(1)		—	※	—
Immersion type Process for Can(2)		—	※	—
Process for Glass jar		※	※	—
Steaming function		※	※	※
1-stage cooling		● ● Use cooling tower	●	●
2-stage cooling		※	●	●
Pattern setting		●	●	●
High Temp. Short Time method sterilization		—	●	—
Low Temp. Sterilization (pasteurization)		●	●	—
Overshoot heating		※	—	※
Steam type sterilization		※	※	●
Both doors	manual	※	※	※
	automatic	※	※	※
Driving roller (in processing tank)		※	※	※
"FAM" (Total Management System)		※	※	※
F0-Value computer		※	※	※

HISAKA's sterilization have been high reputation in pharmaceutical industry as well.

Newly developed "GPS series" are basing on "Flavor Ace series" which is specialized for pharmaceutical industry that requires high grade has been adopted in this particular segment.

● Standard equipment
※ Optional item
— Not available
(Further more details of equipment shall be complied with the Specification Sheet when purchased.)

Principal Use (Processing method)

Cooking

Condition change due to heat

- Ham, Sausage
- Hamburger patty
- Meat ball
- Curry, stew
- Pasta sauce
- Seafood
- Seasoned fried tofu

Sterilizing

Sterilization suits to products characteristics

- Egg tofu, Sesame tofu
- Steamed egg custard
- Instant mixed rice
- Ingredients of Chinese food
- Boiled beans

Reducing the risk

Reducing the risk of bacteria for Frozen food, Raw material

- Boiled wild plants
- Peeled chestnuts
- Soup, Noodle soup
- Pudding, Jelly
- Microwave rice, Porridge
- Noodle stuff
- Canned coffee

Hot Water Spray type *Flavor Ace*

for
High Quality
products

High
Performance



Characteristics of Hot water spray

1. HACCP system management

2. F Value support

3. Uniform high dispersion with 4-direction spray nozzle

4-direction spray nozzles on each tray. It makes homogeneously dispersible cooling/heating water to sterilization each package even on the tray. Wherever top/bottom, front/rear, left/right location of trays. Spray type which has fixed nozzle directions makes uniform hot water dispersion possible, with this particular ideal system, even a machine size would be bigger, variation of Temp could be minimized in the processing tank.

4. Suitable for air contained package and glass bottle

Pressure due to buoyancy and soaked in water deeply being minimized, suit to an air contained packages and glass bottle even bigger size of the machines.

5. Economical: energy saving, water saving

Running cost can be reduced since holding water amount rather less approximately 1/6- 1/7 compare to hot water immersion type. Water collection system (optional) being available for bigger size of the machine, this makes further more energy saving implemented.

6. Without causing secondary pollution

Circulation water sterilized by plate type of the heat exchanger hence secondary pollution not to be happened as well as pre-treatment such as chlorine application is not required for cooling water. In addition, there is no concern that dirt from heated steam should not to be contaminated either.

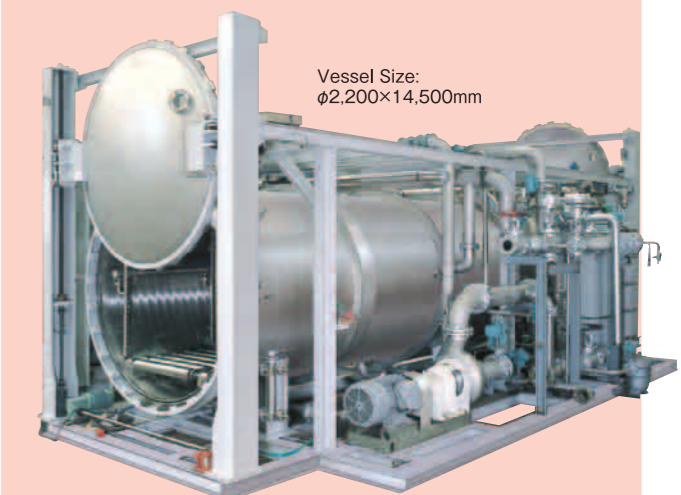
7. Free from Installation site

Hot water tank is not required, in addition, due to light weight and compact size, can be installed at the second floor, free layout can be arranged Working environment improved that makes surrounding area silence that is rather difficult to be made by direct heating method.

8. Control technology based on experiences

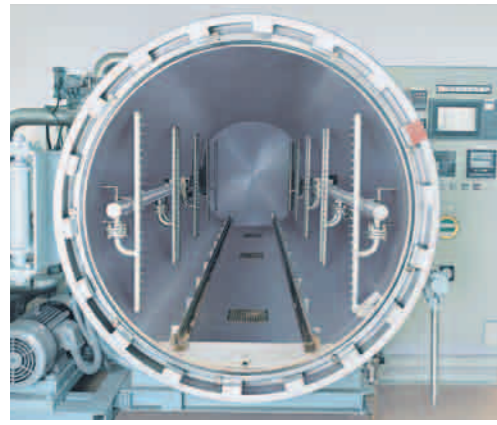
Pattern setting available for items to be sterilized Sterilizing conditions can be set up and registered beforehand. Parameters setting being simplified as easy-operation and bring the sterilizing conditions immediately with pattern cards. Control technology available not only for the single unit of sterilizer but also unattended operation in a factory.

Easy control for uniform Temp and Pressure though bigger size of the machines.



Uniform Heating

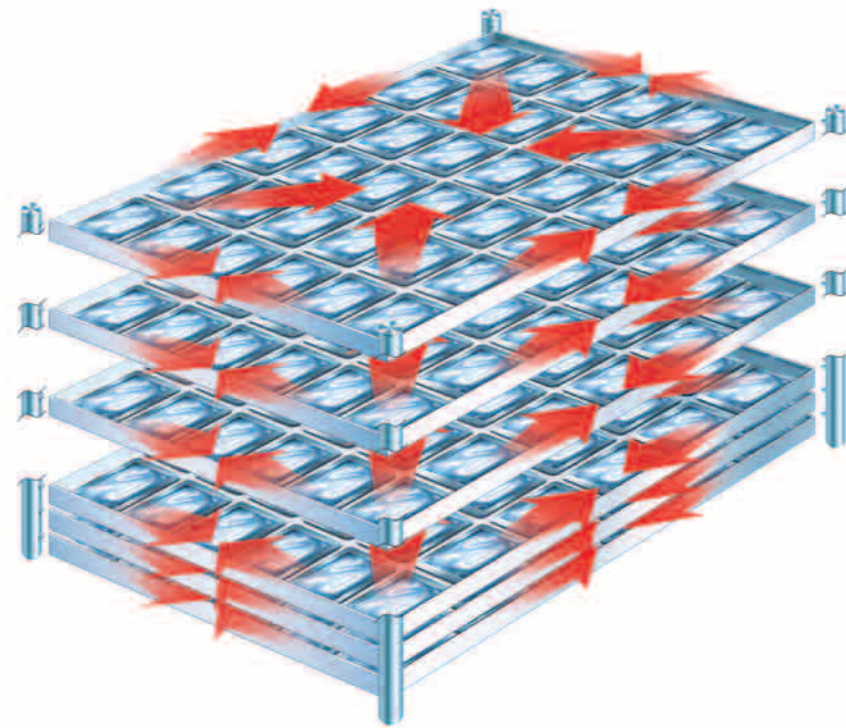
Uniform dispersion of heating / cooling water



Nozzle (in processing tank)



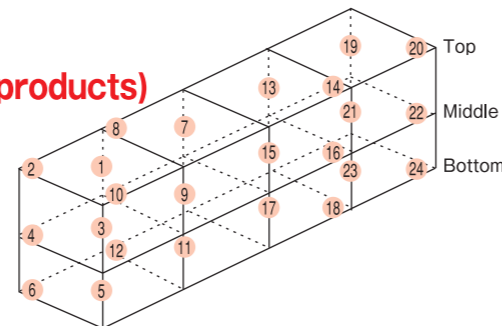
High pressure in Spray



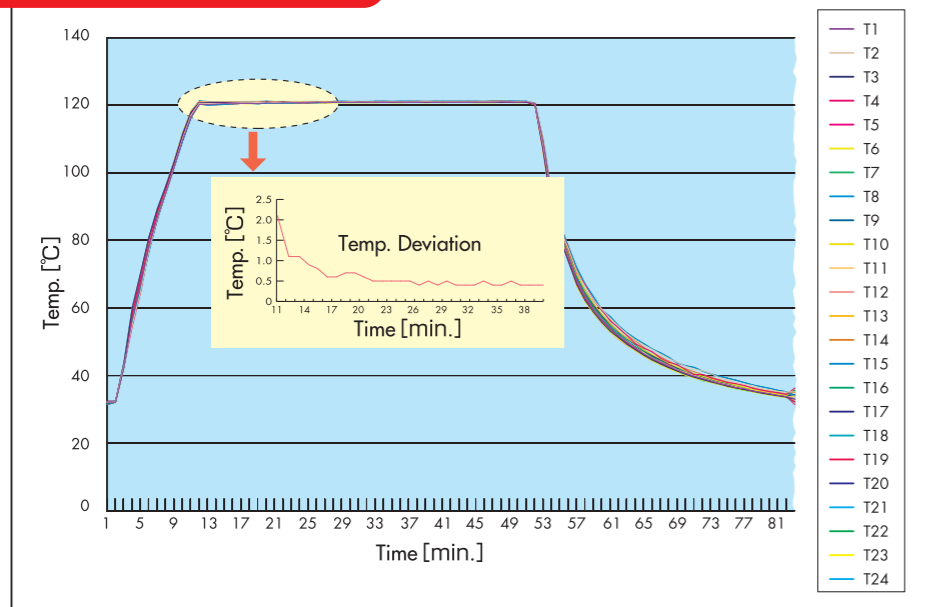
In processing tank, each tray equip 4-direction spray nozzle. It makes homogenously dispersible cooling/heating water.

Temp. distribution Study US FDA registration procedure (Full-loaded of products) uniform Temp distribution demonstration.

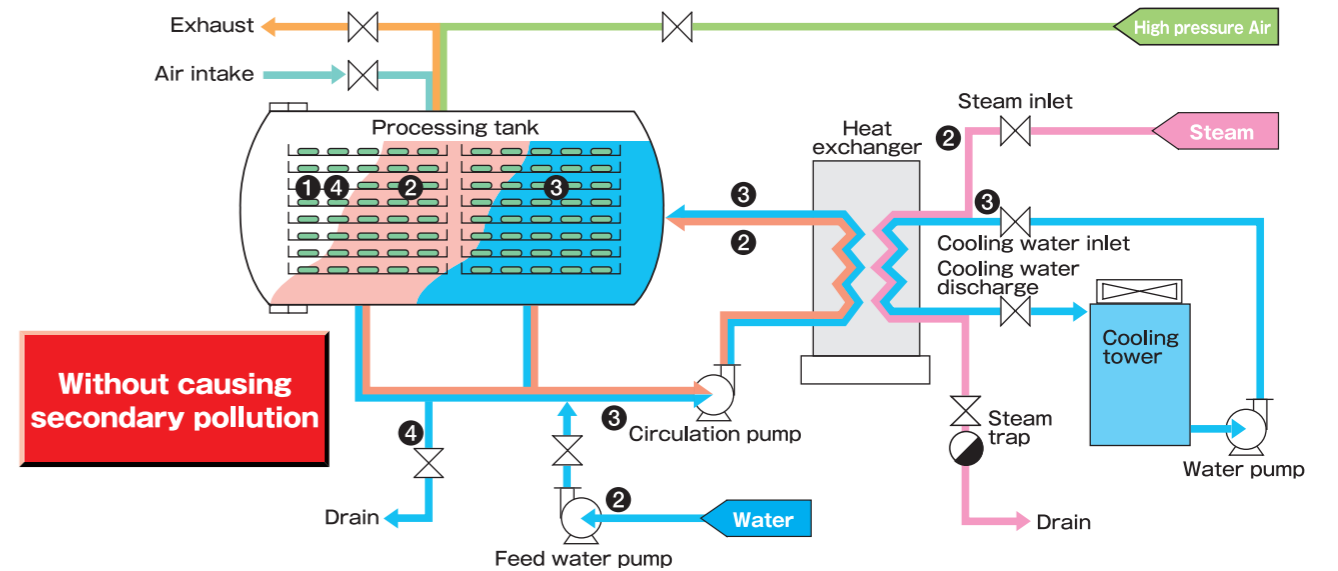
As right hand side of sketch shows, sensors installed at the center and at 2-point of corners on the loaded trays (Top/Middle/Bottom), this shows 4-basket hence total comes to 24-point to be measured.



24-point Temp measurement data



Flow sheet ①Prepare ②Water supply & Heating ③Cooling ④Draining



Without causing secondary pollution

Capacity (Pouch)

- Pouch converted size 130 x 170 x 20mm
- (in terms of) Rolling type Incl. 3kg 270x400x50mm

Items	Type	Type 100		Type 120		Type 130	
		static type	rolling type	static type	rolling type	static type	rolling type
Actual dimension/basket (mm)		550x940xH700	750x940xH800	750x940xH730	850x940xH860	850x940xH770	
Tray layers/basket		23	26	11	28	12	
Pouch capacity/tray		21	30	4	35	6	
Pouch capacity/basket		483	780	44	980	72	

Rolling type (option)

Trays loaded and rolling on (swaying)

Good for bigger size of pouches
By means of rolling, it agitates food stuff in the pouches within short time and uniform heating/cooling can be done, processing time drastically reduced and quality deterioration can be minimized.

<GGG>Temp. Pressure control system

To be corresponding with an advanced system for Air contained package

Hot Water Spray type Hot Water Immersion type

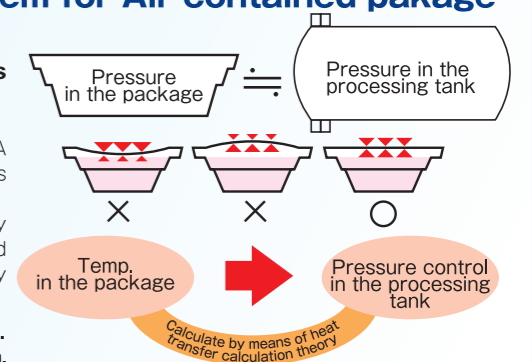
Accurate pressure control

Next-G Process system for air contained packages ("GGG") Patented

HISAKA is the pioneer to handle air contained packages, HISAKA has been highly evaluating as good marks to process for various kind of air contained packages.

This particular system has been developed further by means of heat calculation theory adopted with an actual accumulated data, calculate products Temp in the air contained packages and simulate subtle changing gas phase pressure, it makes high accuracy pressure control happened that is more reproducible than ever.

- It can be sterilized with No deformation for various kind of plastic packages.
- Software technology applied which contains many achievements and abundant data.



Hot Water Immersion type *Flavor Ace*

Excellent Versatility

High Performance



Uniform Heating

Specialized technology for uniform water flow on Heating / Cooling water that is HISAKA's water flow switching method.

Speciality of Hot water immersion

1. HACCP system Management

2. F Value support

3. Dispersion of uniform water flow (water flow switching method)
Switching water flow in the processing tank to makes uniform water flow wherever location (top/bottom/left/right) of the trays.

4. High Temp. Short Time processing

Hot water prepared in the hot water tank beforehand, make high Temp and short time processing implemented.

5. Handle bigger size of Cans and institutional pouch products

In terms of the static type of sterilizer, it is difficult to have heat penetration into core of products within short time, especially high viscosity products mainly applied for bigger size of cans and pouches as institutional products.

Heat penetration can be done into core of high viscosity products by Rotating device (Pic. on page 6) hence effective sterilization implemented.

6. Air contained container available

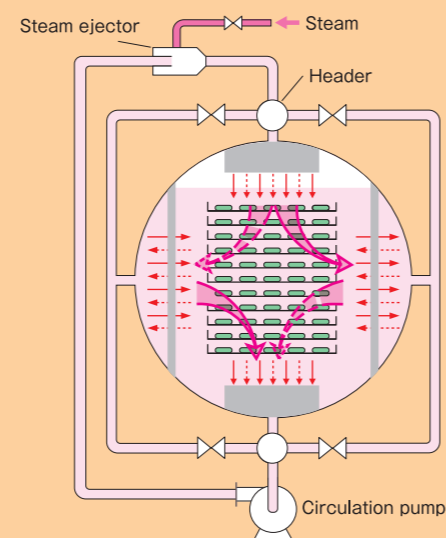
Operate the sterilizer with optimized Temp in the hot water tank, processing Temp, Temp curve, Pressure curve, those good for air contained container as well.

7. Control technology based on experiences

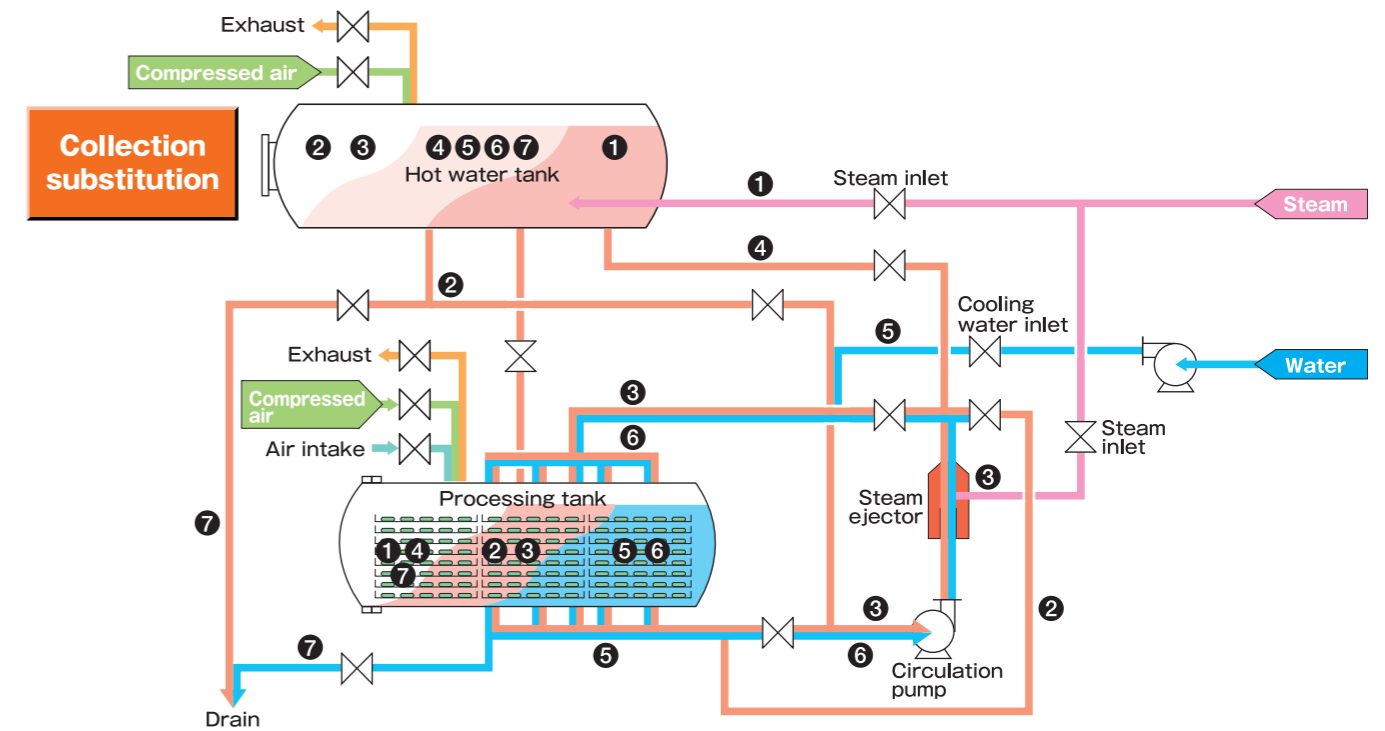
Pattern setting available for items to be sterilized. Sterilizing conditions can be set up and registered beforehand. Optimized parameters bring up immediately with pattern cards that prevent having operation mistake. Control technology available not only for the single unit of Hot water immersion type of sterilizer but also unattended operation in a factory.

Water flow switching method

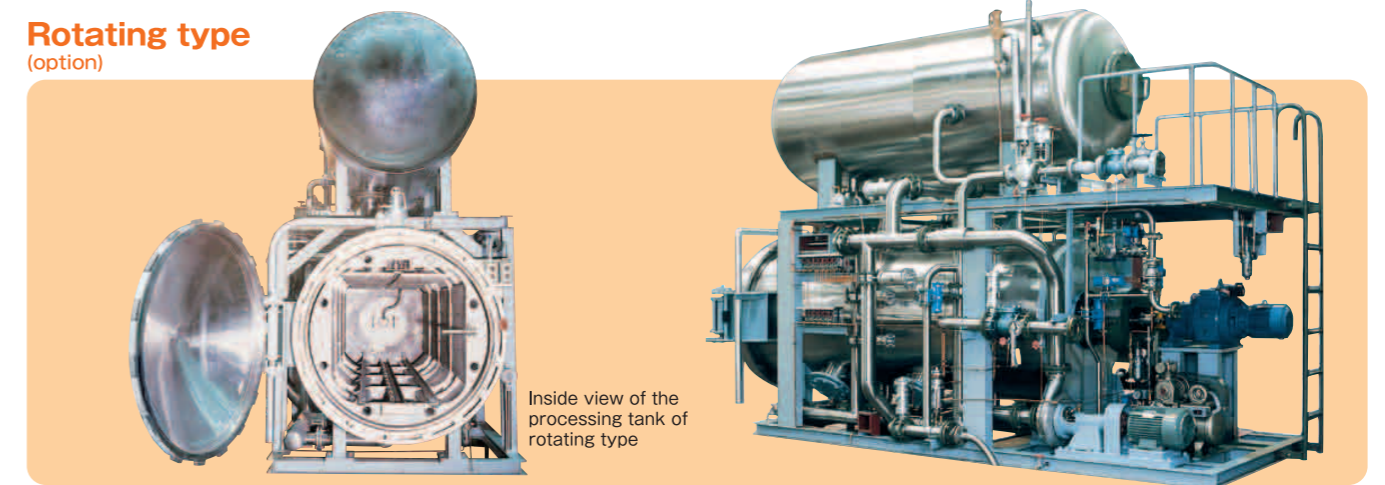
Water flow in the processing tank
In order to sterilize foodstuff with uniformity, change water flow by circulation pump and switching valve.



Flow sheet ① Prepare ② Hot water injectioning ③ Heating (use steam ejector) ④ Salvaging (to hot water) ⑤ Water Supply (Cooling water) ⑥ Cooling ⑦ Draining



Rotating type (option)



Capacity (Pouch)

Items	Type	Type 60		Type 100		Type 120		Type 130	
		static type	rolling type	static type	rolling type	static type	rolling type	static type	rolling type
Actual dimension/basket W×L×H mm		400×940×380	310×880×310	620×940×660	610×920×560	820×940×790	810×920×690	860×940×870	860×920×780
Tray layers/basket		14	9	24	16	29	20	32	23
Pouch capacity/tray		15	10	20	20	30	30	30	30
Pouch capacity/basket		210	90	480	320	870	600	960	690

Capacity (Can)

Can type	Can size	Type	Cage size	Type 100 606×916×570			Type 120 786×916×700			Type 130 846×916×800		
				Cans capacity/Spacer	Spacer layers/Cage	Cans capacity/Cage	Cans capacity/Spacer	Spacer layers/Cage	Cans capacity/Cage	Cans capacity/Spacer	Spacer layers/Cage	Cans capacity/Cage
No.1 Can	φ 156×177H	High spacer		20	2	40	25	3	75	30	4	120
No.2 Can	101×121			50	4	200	70	5	350	77	5	385
No.4 Can	76×113			91	4	364	130	5	650	132	6	792
No.6 Can	76×59			91	7	637	130	9	1170	132	11	1452
No.7 Can	67×101			113	4	452	163	6	978	175	6	1050
Flat No.2 Can	86×51			67	8	536	95	10	950	105	12	1260
Flat No.3 Can	76×34			91	12	1092	130	15	1950	132	17	2244
Crab No.2 Can	87×56			67	8	536	95	10	950	105	11	1155
Tuna No.2 Can	87×46			67	9	603	95	11	1045	105	13	1365
Tuna No.3 Can	67×40			113	10	1130	163	13	2119	175	15	2625
Fruit No.7 Can	67×81			113	5	565	163	7	1141	175	8	1400

F VALUE COMPUTER (option)

Best solution of sterilizers FVAC-VI

FVAC-VI

Products Temp and its F0 value in the sterilization process as critical factors in food / pharmaceutical industry, this particular F value computer measures, collects, manages Products Temp and its F0 value.

Can be applied not only for Temp sensor but for pressure/displacement sensor, this particular unit is good for new product development as well as pursuing high quality of food manufacturing.



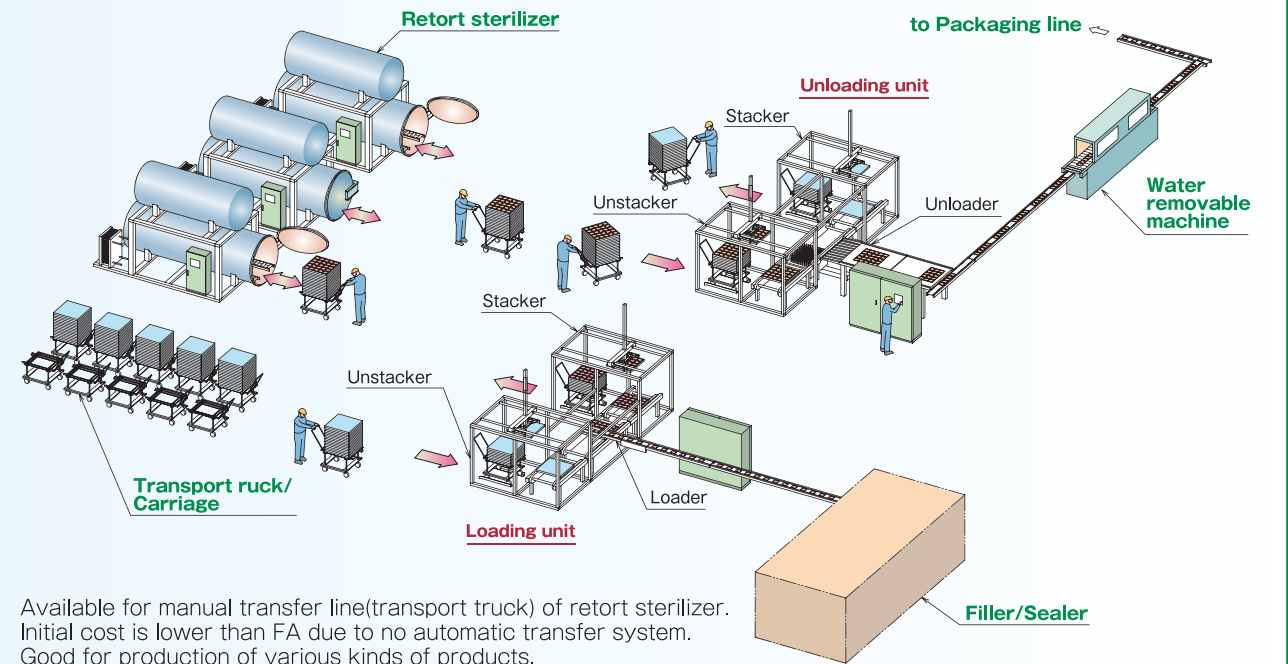
FA SYSTEM (option)

- Reduction of labor costs
- Labor saving
- Design with order-made
- Reliability/Good marks



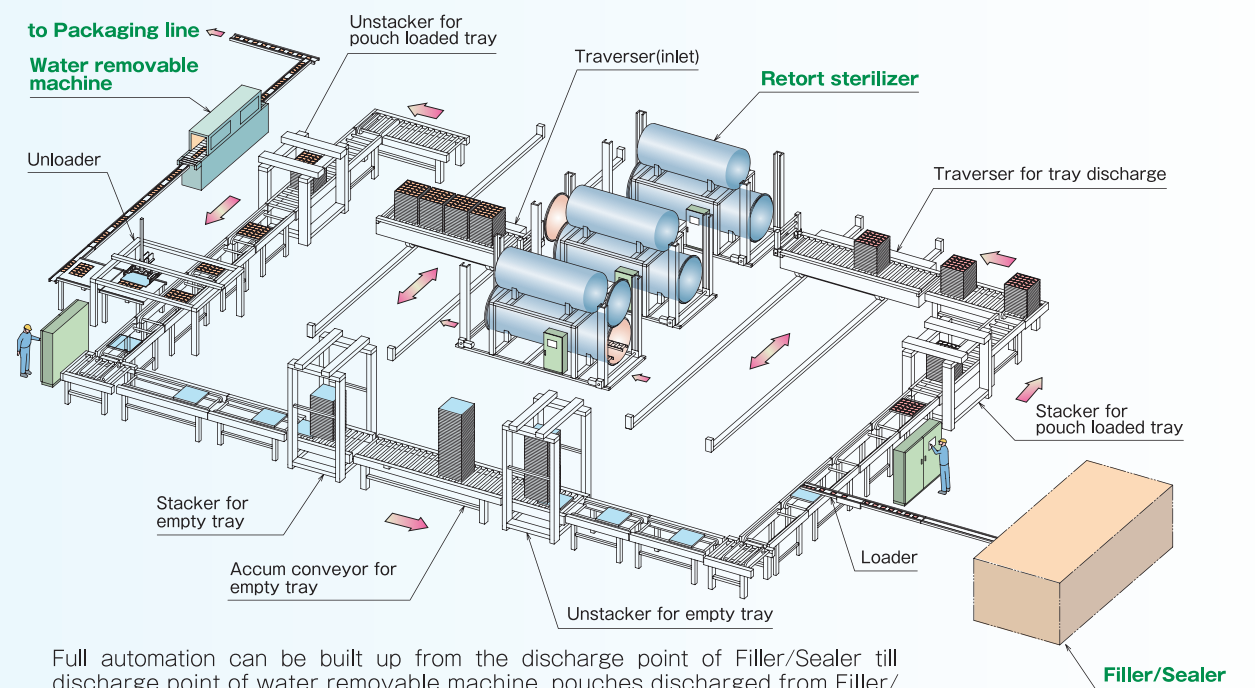
FA system CASE STUDY

Semi-automatic transfer system (FAU) Factory automation unit



Available for manual transfer line(transport truck) of retort sterilizer. Initial cost is lower than FA due to no automatic transfer system. Good for production of various kinds of products.

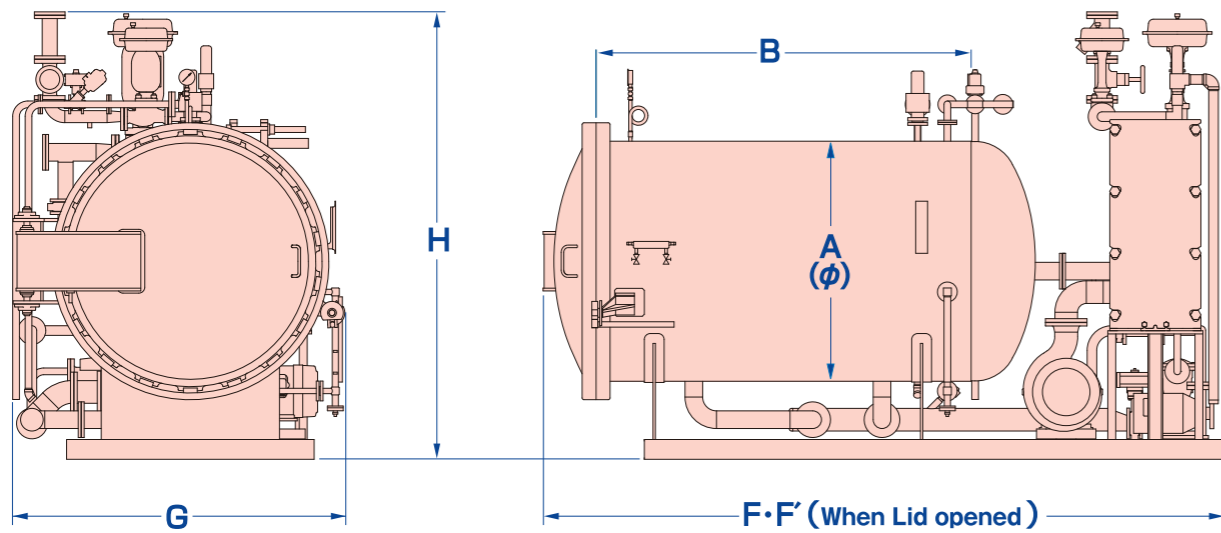
Full automatic transfer system (FA) Factory automation



Full automation can be built up from the discharge point of Filler/Sealer till discharge point of water removable machine, pouches discharged from Filler/Sealer being loaded on the trays automatically and transfer them with the automatic conveyor and put pouch loaded trays into sterilizer and discharge them as full automatic system. This system is good for mass production with single item.

SPEC Sheet

Hot Water Spray type



Dimension and weight table

Items	Type	Type 100			Type 120			Type 130				
		# 10	# 20	# 30	# 20	# 30	# 40	# 20	# 30	# 40		
A(φ)	mm	1000	1000	1000	1200	1200	1200	1300	1300	1300		
B	mm	950	1900	2870	1900	2870	3820	1900	2870	3820		
F	mm	Static type		2300	3320	4280	3450	4420	5420	3490	4460	5480
		Rolling type		—	—	—	4500	5515	6455	4600	5615	6555
F' When Lid opened	mm	Static type		3380	4410	5370	4710	5680	6680	4820	5790	6810
		Rolling type		—	—	—	5750	6845	7785	5875	6945	7885
G	mm	1520	1520	1520	1680	1700	1700	1790	1790	1790		
H	mm	2140	2260	2260	2260	2390	2390	2260	2390	2410		
Machine weight	ton	Static type		2.7	3.0	3.5	3.3	3.8	4.3	3.8	4.0	4.4
		Rolling type		—	—	—	4.5	5.5	6.0	5.0	5.8	6.1
Operating weight	ton	Static type		3.3	3.6	4.2	4.0	4.8	5.6	4.6	5.3	6.0
		Rolling type		—	—	—	5.2	6.5	7.3	5.8	7.1	7.7

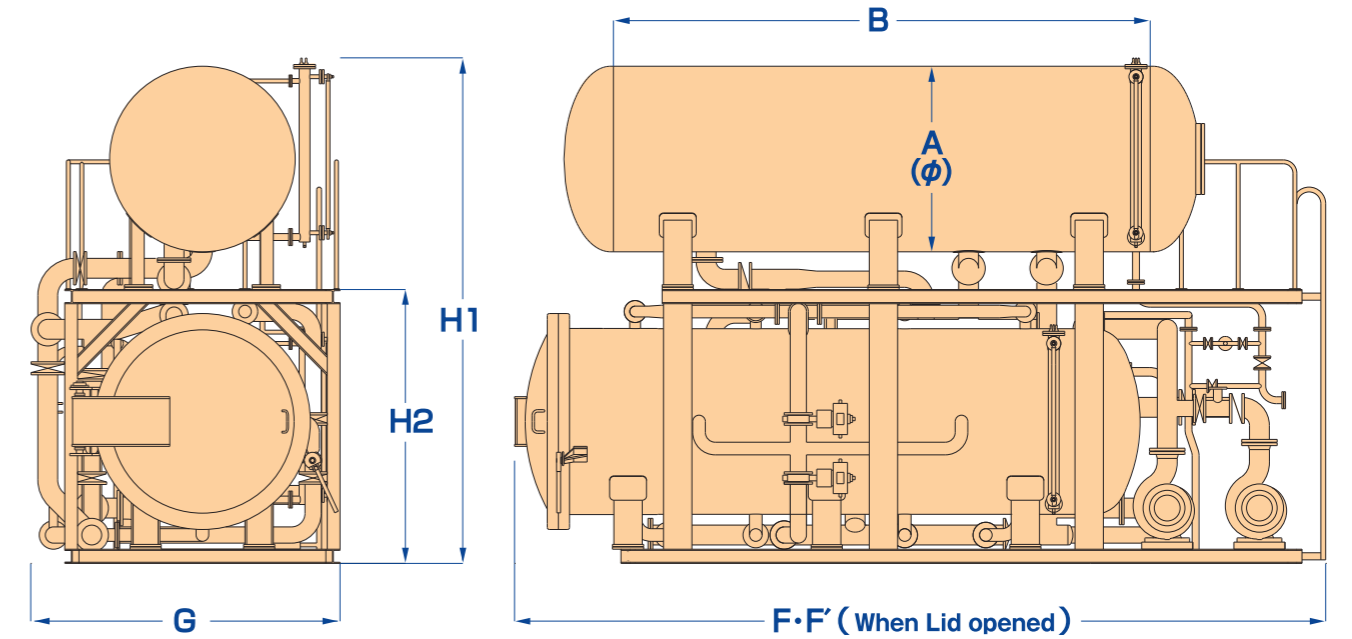
Auxiliary Apparatus

Auxiliary Apparatus	Type	Type 100			Type 120			Type 130		
		# 10	# 20	# 30	# 20	# 30	# 40	# 20	# 30	# 40
Air tank	m ³	0.5	1.0	1.0	1.0	1.5	1.5	1.0	1.5	2.0
Air compressor	kW	1.5	2.2	3.7	3.7	3.7	5.5	3.7	5.5	5.5
Water storage tank	m ³	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Water supply pump	kW	0.75	1.5	1.5	1.5	2.2	2.2	2.2	2.2	2.2
Cooling Tower	TR/kW	30/0.75	40/1.5	60/1.5	60/1.5	100/2.2	125/3.7	80/1.8	100/2.2	125/3.7
Water feed pump	kW	3.7	3.7	5.5	5.5	7.5	11	5.5	7.5	11

Utility

Items	Type	Type 100			Type 120			Type 130				
		# 10	# 20	# 30	# 20	# 30	# 40	# 20	# 30	# 40		
Tank Capacity	m ³	1.00	1.78	2.52	2.58	3.65	4.82	3.05	4.29	5.70		
Water amount	ℓ	150	200	260	280	390	490	300	400	500		
Steam amount	kg/batch	68	102	145	149	207	263	178	244	361		
Required boiler capacity	t/h	0.75	1.0	1.5	1.5	2.0	2.5	1.5	2.0	2.5		
Equipment power	kW	Static type		11	13	18	18	22	30	19	23	30
		Rolling type		—	—	—	19.9	23.9	31.9	20.9	24.9	31.9
Power consumption	kW/h	Static type		4	6	9	9	12	16	10	14	18
		Rolling type		—	—	—	10.9	13.9	17.9	11.9	15.9	19.9

Hot Water Immersion type



Dimension and weight table

Items	Type	Type 60		Type 100			Type 120			Type 130				
		# 10	# 20	# 20	# 30	# 40	# 20	# 30	# 40	# 20	# 30	# 40		
A(φ)	mm	600	600	1000	1000	1000	1200	1200	1200	1300	1300	1300		
B	mm	1220	2200	1950	3050	4000	1950	3050	4000	2000	3050	4000		
F	mm	Static type		2040	2870	3440	4510	5410	3530	4630	5580	3730	4730	5730
		Rolling type		2620	—	4120	5220	—	4240	5370	6520	4470	5920	6970
F' When Lid opened	mm	Static type		2750	3570	4530	5600	6500	4800	5900	6860	5060	6060	7060
		Rolling type		3320	—	5200	6310	—	5510	6640	7790	5790	7240	8290
G	mm	1270	1310	1910	1930	1930	2120	2120	2190	2220	2260	2290		
H1	mm	2230	2250	2970	2970	2970	3420	3420	3420	3570	3570	3570		
H2	mm	—	—	1680	1680	1680	1880	1880	1880	1930	1930	1930		
Machine weight	ton	Static type		1.3	1.4	2.5	3.0	3.5	3.5	4.0	5.0	4.0	4.5	5.5
		Rolling type		1.7	—	4.0	5.0	—	5.0	6.0	7.0	6.0	7.0	8.0
Operating weight	ton	Static type		1.85	2.4	5.5	7.5	9.0	8.0	10.5	13.5	9.5	12.0	15.5
		Rolling type		2.25	—	7.0	9.5	—	9.5	12.5	20.5	11.5	14.5	18.0

Auxiliary Apparatus

Auxiliary Apparatus	Type	Type 60		Type 100			Type 120			Type 130		
		# 10	# 20	# 20	# 30	# 40	# 20	# 30	# 40	# 20	# 30	# 40
Air tank	m ³	—	0.5	1.0	1.0	1.5	1.0	1.5	2.0	1.5	2.0	2.5
Air compressor	kW	3.7	0.75	2.2	3.7	5.5	3.7	5.5	5.5	5.5	5.5	7.5
Water storage tank	m ³	0.5	1.0	2.0	3.0	4.0	3.0	4.0	5.0	4.0	5.0	6.0
Water supply pump	kW	3.7	3.7	11	15	18.5	15	18.5	30	18.5	30	30

Utility

Items	Type	Type 60		Type 100			Type 120			Type 130				
		# 10	# 20	# 20	# 30	# 40	# 20	# 30	# 40	# 20	# 30	# 40		
Tank Capacity	m ³	0.34	0.62	1.69	2.45	3.22	2.49	3.50	4.66	3.00	4.25	5.53		
Water amount	ℓ	250	450	1250	1850	2400	1850	2650	3500	2400	3150	4300		
Steam amount	kg/batch	20	40	80	120	160	130	195	260	160	235	320		
Required boiler capacity	t/h	0.15	0.25	0.5	0.75	1.0	0.75	1.0	1.5	1.0	1.5	2.0		
Equipment power	kW	Static type		10	10	18	25	33	25	33	48	33	48	50
		Rolling type		11	11	20	28	—	28	37	52	37	54	58
Power consumption	kW/h	Static type		3	3	6	9	12	9	12	16	12	16	17
		Rolling type		4	4	8	11	—	11	16	20	16	20	23